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Competition Law Enforcement in the BRICS and in Developing Countries

Legal and Economic Aspects

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Editors

Competition Law Enforcement in the BRICS and in Developing Countries

Legal and Economic Aspects

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Introduction

The Competition and Regulation European Summer School and Conference *(CRESSE)* is an informal network of academics and professionals with an interest in Competition Policy and Sectoral Regulation. It was initiated by **Yannis Katsoulacos** (Athens University of Economics and Business) in 2005. The annual Conference organised by CRESSE has since grown to become one of the most important annual events worldwide in the competition and regulation conferences' calendar with the support of a Scientific Committee that, apart from Yannis Katsoulacos, is also composed of **Joe Harrington** (Business Economics and Public Policy Department, The Wharton School, University of Pennsylvania), **Massimo Motta** (Barcelona Graduate School of Economics, member from 2006 to 2010), **Pierre Regibeau** (Charles River Associates), **Patrick Rey** (University of Toulouse), **Tom Ross** (Sauder School of Business, University of British Columbia), and **David Ulph** (University of St. Andrews). The objective is to provide a forum in which the latest research in the areas of competition and regulation is presented and discussed. Presentations in the 3-day annual Conference include about five invited speakers and a limited number of papers selected from those submitted following a Call in the major IO journals and the Conference website (www.cresse.info).[1] The annual CRESSE Conference is organised in the first weekend of July in Greece, the institution responsible for the organisation being the Athens University of Economics and Business.

CRESSE also organises an annual Summer School and a Lawyers' Course in which Visiting Faculty from a large number of European and US Universities provide high-quality training to practitioners of competition policy and sectoral regulation who wish to be acquainted with the most recent economic and legal

[1] In the ninth (2014) and tenth (2015) CRESSE Annual Conferences, the Keynote Lectures were given, in 2014, by Professor Michael Riordan (Columbia University) and Professor Luis Cabral (Leonard N. Stern School of Business) and in 2015 by Professor Jean Tirole (Toulouse of Economics, 2014 Nobel laureate), Professor Ariel Pakes (Harvard University), and Professor Hal Varian (University of California at Berkeley).

developments. It is also active in disseminating research in the areas of competition policy and regulation and in contributing through the organisation of special policy sessions and round tables that deliver public debates on topical policy issues.

Since the 2014 Conference, recognising the increasingly important role that Competition Law enforcement plays in the BRICS and developing countries, CRESSE has been organising special sessions and policy panels in which contributors (academics and policymakers) from these countries as well as from the countries with mature jurisdictions discuss the distinct issues and challenges in implementing competition policy faced in the non-Western world. Indeed, the growth in the legislative and institutional framework for implementing and enforcing competition law has been extremely impressive in many developing countries and the BRICS. An appreciation of how significant this growth has been and the prominence currently assigned to competition policy can be obtained by deliberating the presentations on competition policy developments in each of the five BRICS countries, made in the recent 4th BRICS International Conference, where it was recognised that “Competition policy enforcement has a very important role to play in the developmental trajectory of BRICS economies and the attainment of inclusive economic growth”.[2]

This volume contains papers, which are based on presentations at the 2014 and 2015 CRESSE Conferences, related to developments in competition policy enforcement in BRICS. The papers were selected from a number of submissions for inclusion in the volume. For the vast majority of cases, the papers present original research, rather than being review papers, and contain important new insights into policy developments and/or empirical results.

The papers can be split into two broad categories. The first category contains papers that deal with various broad and more specific issues of enforcement. Apart from the presentation of the new (2013) OECD indicators of Competition Law and Policy with evidence about how Brazil, India, Russia, and South Africa perform relatively to OECD countries, these issues include those of institutional design, the incorporation of public interest concerns in Competition Authority objectives, procedural fairness, procurement procedures, and compulsory licensing. The second category of papers focuses on a distinct theme and this concerns developments in the application of economic analysis and evidence in Competition Law enforcement in the BRICS. Economic analysis is thought to improve the overall welfare effects of Competition Law enforcement by reducing the decision errors of the agencies and by improving the deterrence effects on welfare of the enforcement procedures. It has been extensively applied for many years in competition law enforcement in the developed economies in order to provide analytical tools and models for understanding cartel behaviour, types of monopolisation, the impact of vertical and horizontal mergers, as well as playing, more recently, an increasingly important role in the assessment of legal standards and the shaping of tools of enforcement, such as leniency programmes, detection, determination of fines and

[2] http://brics2015.co.za/bricsprogramme2.pdf

settlements, and alternative sanctions. The importance of the role of economic evidence and of relying on the predictions of sound economic analysis in competition law enforcement has been stressed by international organisation such as the OECD not just in the context of developed countries but equally and perhaps more importantly in developing ones.

January 2016

Frederic Jenny
Yannis Katsoulacos

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The Institutional Design of Competition Authorities: Debates and Trends

Frederic Jenny

Abstract The issue of institutional design of competition authorities has attracted increasing interest since the early 2000 but requires further elaboration. This article attempts to fill some gaps by providing a general framework to examine a number of dimensions of this issue under three headings: the goals, the functions and the organization of competition authorities. While there is no unique institutional design which would fit all countries, a number trade-offs should be considered in designing a competition authority. These trade-offs may lead to different designs across countries depending on the local conditions. Ultimately choosing the best possible design for the competition authority given the local conditions is crucial to ensure that the competition authority is most effectively able to discharge its duties.

Keywords Antitrust law • Enforcement • Competition authority • Institutional design

1 Introduction

The issue of the institutional design of competition authorities has attracted increasing interest since the early 2000 for a variety of reasons.

Prominent among the reasons for which the issue of the institutional design of competition authorities has become an increasingly important topic of discussion is the fact that as competition authorities have become more prominent and powerful in a number of countries they have also become more conscious of the fact that they need to be (and to be seen to be) effective in discharging their duties. Thus in a number of countries, there have been recent changes in the institutional design of competition authorities (for example, in Europe, in Denmark, in the Netherlands, Spain and the United Kingdom) or there are changes contemplated (for example in Australia). Some of those changes have been partly spurred by economic

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constraints on government in periods of low growth (for example in the Netherlands), partly spurred by the desire to increase the effectiveness of the competition law system (for example in the United Kingdom), partly spurred by the desire to better integrate regulatory policy and competition policy (for example in Spain).

The fast increasing globalization of markets which has characterized the last decade of the twentieth century and the first decade of the twenty-first century has led to an increasing interest both in facilitating international trade and in promoting the convergence of competition law regimes in trading nations. This has led to reflections on what the competition law regimes should converge on. Although this debate has been largely focused on the substance of the competition analysis, it has also touched upon institutional issues. For example, there has been a lively debate on the importance of ensuring that competition authorities throughout the world are in a position to examine speedily transnational merger transactions which fall under their domestic merger control law and therefore on the importance of the adequate funding of competition authorities. Similarly, the question of the independence of competition authorities has been raised as some of the important exporters or foreign investors feared that they would be treated unfavourably by competition agencies in some countries in which such agencies seemed to be dependent on the national government or national dominant firms .

Furthermore, in a world in which a large number of countries have recently adopted a competition law and created a new competition authority (the number of competition authorities in the world has increased by at least 40 over the last 20 years), there has been an increasing demand on the part of developing countries for guidance on the institutional design they should adopt for their newly created competition institution.

Finally, a number of well known competition specialists have produced influential articles about the design of competition authorities. The most prolific and influential of those authors, Bill Kovacic, has had a long standing interest in the issue of institutional design and has long argued in articles and conferences that it was important for competition authorities to devote more attention to the issue of the relationship between the goals of competition law, the effectiveness of the agency and its institutional design.[1] Other prominent competition authors such as Philip Lowe or Eleanor Fox have also contributed to the discussion .[2]

The scope of what one should consider to be the institutional design of a competition authority is extremely wide as it covers every aspect of the governance of the authority, of its internal organization and of its relationship with the outside (be it the government, parliament, the business community). Rather than attempting to

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[1] See, for example, William E. Kovacic and David A. Hyman "Competition Agency Design: What's on the menu" GWU Legal Studies Research Paper n°2012-135,

[2] See for example, Philip Lowe "The design of competition policy institutions for the 21st century—the experience of the European Commission and DG Competition" in Competition Policy in the EU Fifty Years on from the Treaty of Rome, edited by Xavier Vives, Oxfrod University Press, 2009 and Eleanor M. Fox and Michael J. Trebilcox: "The Design of Competition Law Institutions and the Global Convergence of Process Norms: The GAL Competition Project", New York University Law and Economics Working Papers, 8-1-2012.

systematically cover all the bases this article focuses on a limited but significant number of dimensions of the institutional design of competition authorities which have been recently publicly discussed. It builds primarily on a set of OECD Competition Committee Roundtable on institutional design as well as on some OECD roundtables on issues related to specific dimensions of the institutional design of competition authorities which were held over the last 15 years. The OECD Competition committee held its first roundtable on the optimal design of a competition agency in its Global Forum on Competition in February 2003. It held a second roundtable on changes in the institutional design of competition authorities in December 2014 and again in the spring of 2015. In between the OECD Competition Committee held roundtables on the relationship between Competition Authorities and Sectoral Regulators in 2005 and on the Interface between Competition and consumer Policies in 2008. Besides the work of the OECD, the ICN also did work on institutional issues, for example through its Agency Effectiveness Project the results of which were presented In Kyoto during the ICN annual conference in 2008.

This chapter will discuss a number of questions related to the institutional design of competition authorities regrouped under three main themes: the goals of competition authorities, the functions of competition authorities and the organization of competition authorities.

For each theme we will show the diversity of situations prevailing across jurisdictions and explain the main justifications for each institutional design.

A short conclusion will follow.

2 The Goals of Competition Authorities

The question of what are the goals of competition authorities is by no means new and it has been the object of repeated discussions over the last 10 years. It was first discussed in the OECD Competition committee in May 1992. Then it was discussed in the OECD Global Forum on Competition in February, 2003.[3] Finally this issue was raised again in a recent debate on institutional changes at OECD in the December 2014.[4]

In 2003, the OECD secretariat note[5] observed that “the basic objectives of competition authorities were to maintain and encourage the process of competition

[3] See OECD Global Forum on Competition 2003, Session I “The objectives of Competition Law and Policy”, available at www.oecd.org/competition/globalforum/GlobalForum-February2003.pdf

[4] See Summary Record of the Roundtable on Changes in Institutional Design, Annex to the Summary Record of the 122th Meeting of the Competition Committee Held on 17–18 December 2014, 23 March 2015, DAF/Comp/M (2014)3/ANN4/Final and the documents submitted at www.oecd.org/daf/competition/changes-in-competition-institutional-design.htm

[5] See Note by the Secretariat, The objectives of Competition Law and Policy, OECD Global Forum on Competition 2003, available at www.oecd.org/competition/globalforum/GlobalForum-February2003.pdf

in order to promote efficient use of resources while protecting the freedom of economic action of various market participants". It also noted that competition policy was also viewed to achieve or preserve a number of other objectives as well: pluralism, de-centralisation of economic decision-making, preventing abuses of economic power, promoting small business, fairness and equity and other, socio-political values.

Consumer surplus

A lively debate around the goals of competition law took place in the United States in the aftermath of the publication of Robert Bork "the Antitrust Paradox"[6] in the late seventies. The debate turned around the question of whether the standard for illegality under competition law should be a "consumer welfare" test or a "total welfare" test. However as Herbert Hovenkamp observed[7]: "the volume and complexity of the academic debate on the antitrust welfare definition creates an impression of policy significance that is completely belied by the case law, and largely by government enforcement policy". Indeed, as J. Kirkwood and R.H Lande found in 2008[8] and as Hovenkamp observed in 2013 the reality is that US enforcement agencies have consistently follow a consumer welfare standard.

Over time the narrow economic goal of protection of consumer surplus has gained wide acceptability.

Wider economic goals

However, whereas nearly all competition authorities are concerned with the protection of the consumer surplus, there are differences of opinion about whether the protection of consumer surplus is a natural result of competition or an underlying goal of competition law.

Furthermore, among the jurisdictions for which consumer surplus is indeed a goal of competition law, there are differences of opinion between those which consider that consumer surplus is the only goal of competition and those which consider that competition law enforcement may also have other economic goals.

Finally, among the jurisdictions for which consumer surplus is one of the economic goals of competition there are differences between those which consider that economic goals are the sole goals of competition law and those for which competition law may also have social or political goals.

[6] Robert H. Bork "The Antitrust Paradox: A Policy at War with Itself", New York: Basic Books, 1978.

[7] Herbert J. Hovenkamp, "Distributive Justice and Consumer Welfare in Antitrust", August 2011, Available at SSRN.

[8] Jack Krirkwood: "The fundamental goal of Antitrust: Protecting Consumers, Not Increasing Efficiency", Notre Dame Law Review 84 (1), pp 191–243 Seattle University of Law Digital Commons.

In 2011 the International Competition Network published a document on "Competition Enforcement and Consumer Welfare".[9] It recorded the responses to a 2010 ICN survey.[10] Many respondents stated that even if consumer welfare were an important end goal, economic growth in general and total welfare were the more specific goals of competition law.

In countries like Australia, Norway or Swaziland, the goal of competition law is the protection of total welfare rather than consumer welfare.

Thus, in Australia, the ACCC has powers to grant exemption from competition law in certain circumstances, such as where benefits to the public from the anti-competitive conduct outweigh the detriment that the conduct may cause. In assessing benefits to the public the ACCC may have regard to total welfare effects.

In Norway, the goal of the Competition Act is: "(. . .) to further competition and thereby contribute to the efficient utilization of society's resources."

The competition authority of Swaziland also uses a total welfare standard and noted in its response to the 2010 ICN survey that "besides consumers, there are other equally important stakeholders, such as competing businesses, and that this can lead to the importance of ensuring welfare of groups other than consumers". The strategic goal of the Competition Authority of Swaziland is thus to promote active competition for the public benefit.

In Kenya competition law sometimes seeks to maximize producer and consumer surplus, not consumer surplus alone.

Among the countries that have a broader economic agenda than the strict promotion of consumer surplus, one may also include Germany, Hungary, Iceland, Ireland Korea, Switzerland or Uzbekistan. In Germany, according to a recent draft guideline issued by the Bundeskartellamt, the purpose of merger control is "to protect competition as an effective process," which the draft guidelines explain "may sometimes coincide with protecting competitors."[11] In Hungary, the goals of the competition law are the maintenance of effective competition and the promotion of efficiencies. The Icelandic Competition Act aims to promote effective competition and thereby increase the efficiency of the factors of production of society. According to the Irish Competition Authority, the primary goal of its work is to ensure competitiveness in the Irish economy, which will ultimately benefits the consumer (although the benefits of this law enforcement activity might not always be immediately clear to consumers). The main goal of Switzerland's Cartel Act is to prevent the harmful economic or social effects of cartels and other restraints of competition.

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[9] International Competition Network: "Competition Enforcement and Consumer Welfare: setting the Agenda", 10th Annual ICN Conference, The Hague May 17–20, 2011 available at www.internationalcompetitionnetwork.org/uploads/library/doc857.pdf.

[10] 57 competition authorities and 19 non-Governmental advisors to competition authorities responded to the questionnaire sent out by the Netherlands Competition Authority (NMa) in 2010.

[11] See Bundeskartellamt "Guidance on Substantive Merger Control", 29 March 2012, paragraphs 6 and 7.

Non-economic goals

Besides broader economic goals than the promotion of consumer surplus, a number of competition laws also have social or political goals. These might include, for example, the promotion of employment, regional development, national champions (sometimes couched in terms such as promoting an export-led economy or external competitiveness), national ownership, economic stability, anti-inflation policies, social progress, poverty alleviation, the spread of ownership stakes of historically disadvantaged persons, security interests and the "national" interest. In addition, a number of domestic competition laws in Europe include the Treaty of Rome objective of market integration within the European Union.

As the OECD Secretariat noted in 2011[12]: "The specific objectives behind merger control (. . .) may differ between jurisdictions". "(. . .) For example, protecting local or small and medium size competitors, achieving various socio-economic and socio-political objectives, protecting employment, encouraging enterprise, and achieving various industrial policy objectives including promoting the international competitiveness of the local economy and building strong national firms."

In the note prepared for the discussion of the objectives of competition law and policy which took place in the OECD Competition Committee in 2003,[13] the Secretariat offered the view that: "Among OECD countries, there appears to be a shift away from use of competition laws to promote what might be characterised as broad public interest objectives, and use of public-interest based authorisation procedures, exemptions or political over-rides (collectively, "public interest objectives") in competition laws, that contemplate a consideration of factors which extend well beyond what appear to be the generally accepted "core" competition policy objectives of promoting and protecting the competitive process, and attaining greater economic efficiency (the " core competition objectives")".

In hindsight, this assessment seems to have been overly optimistic. It is true that countries which did not have a public interest provision in their competition law did not add such provisions to their competition law. But it is equally true that (1) a number of countries which had a public interest provision in their competition law did not eliminate them and that (2) a number of developing countries which have since adopted a competition law have included public interest provisions in their law.

Among the countries which had a public interest goals in their competition law and did not eliminate them (even if they use them sparsely) , one can mention Canada. The goals of competition law in Canada are to promote the efficiency and adaptability of the Canadian economy, to expand opportunities for Canadian

[12] OECD Policy Roundtables, Cross-Border merger Control: Challenges for Developing and Emerging Economies, Background note, 2011, available at www.oecd.org/daf/competition/mergers/50114086.pdf

[13] See OECD Global Forum on Competition 2003, Session I "The objectives of Competition Law and Policy", p 3, available at www.oecd.org/competition/globalforum/GlobalForum-February2003.pdf

participation in world markets while at the same time recognizing the role of foreign competition in Canada, and to ensure that small and medium-sized enterprises have an equitable opportunity to participate in the Canadian economy.

Similarly, the Korean competition law goals are a mix of economic and non-economic goals. Article 1 of Korea's Monopoly Regulation and Fair Trade Act (MRFTA)[14] states that "The purpose of this Act is stimulate the creative initiative of enterprisers, to protect consumers, and to strive for the balanced development of the national economy by promoting fair and free competition through the prevention of the abuse of market dominance and excessive concentration of economic power by enterprisers and through regulation of improper concerted practices and unfair trade practices".

With respect to the developing countries which have public interest clauses in their law one can mention that the Competition Act of South Africa and that of Namibia have very wide goals that are both economic and non-economic.

The purpose of the South African Competition Act[15] is to promote the efficiency, adaptability and development of the economy; to provide consumers with competitive prices and product choices; to promote employment and advance the social and economic welfare of South Africans; to expand opportunities for South African participation in world markets and recognize the role of foreign competition in the Republic; to ensure that small and medium-sized enterprises have an equitable opportunity to participate in the economy; and to promote a greater spread of ownership, in particular to increase the ownership stakes of historically disadvantaged persons.

Similarly, the Anti-Monopoly Law of China (the "AML"), which took effect in 2008, has a variety of goals including "the protection of fair competition in the market" and "the interests of consumers," but also "the promotion of the healthy development of the socialist market economy." Another stated objective of the Chinese AML is to protect the "lawful business operations" of undertakings in industries "controlled by the State-owned economy and concerning the lifeline of national economy and national security."

The goals of single functions competition law institutions

There are three themes of discussion around the goals of competition law.

The first one is a discussion on why competition authorities' goal should be to protect consumer surplus; the second is a discussion on why competition authorities should not have other goals besides the protection of consumer welfare and the third one is a discussion about why competition authorities should not have public interest goals.

First, the justification for following such a standard is usually that the balance between consumer welfare losses and the attributable efficiency gains would be too complicated for competition authorities to perform.

[14] Available at http://www.moleg.go.kr/english/korLawEng?pstSeq=54772

[15] South African Competition Act n°89 of 1998.

Second, the justification for competition authorities having only one (economic) goal is that non-competition policy mechanisms are generally superior for achieving noncompetition policy objectives. In other words, it is considered that restricting competition in order to achieve a broader policy objective, whether economic or not, will have inevitable anti-competition side effects, e.g. granting protected monopoly profit to a firm or firms.

Third the justification for not entrusting competition authorities with "public interest" goals is that broadly specified policy objectives can be ambiguous and as such are subject to "capture" or "hijack" by the politically strongest private interests, usually those of producers or workers. Thus de jure public interest objectives may de facto serve private interests.

Those justifications are not fully satisfactory.

First, with respect to whether competition authorities should follow a consumer surplus standard rather than a total welfare standard, we know that in doing so, competition authorities may not take into consideration efficiency gains which could outweigh the consumer loss due to the increase in price and reduction in output due to the anticompetitive nature of the practice or the transaction. Thus, using the wrong test may entail a social cost. On the other hand assigning a total welfare standard to the competition authority may lead it to err in its judgment because of the complexity of the assessment it has to do. Thus it may also entail a social cost. Assuming that society is risk neutral, the question is then whether the expected cost of the errors due to the adoption of a consumer welfare test (i.e. the probability of such an error multiplied by its cost when it happens) is larger or smaller than the expected cost of errors that would happen if the competition authority had to perform a more complex task by following a total welfare test. This a difficult question and we are not aware of any empirical work which would support the choice of a consumer surplus standard over that of a total welfare standard.

Second with respect to the idea that using a restriction in competition to achieve a broader policy objective will entail a social cost, this argument is convincing from society's point of view only if the alternative ways to fulfill the broader policy objectives (presumably through another agency) do not entail social costs which larger than the ones incurred if the competition authority restricts competition to fulfill these objectives. If, for example, the agency in charge of fulfilling these other objectives has a higher chance of being captured or if the consequence of its actions is to restrict competition more than what the competition authority would have deemed necessary to fulfill those objectives, it may be that letting another agency fulfill these objectives may end up being more costly to society than entrusting the competition authority with the fulfilment of these objectives.

Finally, with respect to the argument that public interest goals may lead to a capture of the competition authority by private interest, one can argue that the competition authority will not be as easily captured as another agency dedicated to the fulfillment of these public interest clauses would be. Also, one could argue that the competition authority, precisely because it is in charge of promoting

competition, will be more restrained in the enforcement of the public interest provisions than other parts of government would be.

Thus the objections to the fact that the competition authority may have to enforce public interest provisions when they enforce competition law are unconvincing because they fail to consider the possible costs of alternative solutions.

For sure, a number of critics of public interest provisions in competition laws would prefer that such provisions did not exist. They rightly point out that the enforcement of such clauses may lessen the intensity of competition and be contradictory with the objectives of competition law and policy. But what they fail to acknowledge is that in a number of countries, particularly developing countries (for example in South Africa or in China), the only alternative is between a competition law containing public interest provisions and no competition law at all. In this second best situation it is arguable whether or not such clauses should be tolerated.

The issue of the goal of competition law must also be considered in relation with the possibility of multiple functions of competition authorities, a question to which we now turn.

3 The Functions of Competition Authorities

The second dimension of institutional design we want to explore is the question of the functions of competition authorities.[16]

Competition enforcement and consumer protection

The first sub-question is that of knowing if competition authorities should also be entrusted with consumer protection responsibilities. Over the recent years, quite a number of OECD countries have changed their institutional design from that point of view. For example, basing ourselves on the submission to a recently held roundtable on Changes in Institutional Design at the OECD Competition Committee (December 2014), it appeared that seven countries have merged the competition and the consumer enforcement functions in a single agency since the beginning of

[16] The Secretariat note on the Optimal Design of a Competition Agency established by the Secretariat for the OECD Global Forum on Competition in 2003 reported on 37 answers received from Member and non Member states and stated: "No other individual task is performed by as many as one third of the Competition Authorities replying to the questionnaire. The most common tasks outside the core competition law and policy area are, in falling order, consumer protection, sectoral regulation, price control, state aid control, and public procurement control. The share of responses indicating those tasks range from 30 % for consumer protection down to 20 % for public procurement control. One response indicates more than 40 % of total resources being devoted to consumer protection. For those other respondents that were able to assess resources spent on consumer protection, this share stays within the interval 5–15 %. Telecommunications is the sector most commonly regulated by Competition Authorities, followed by the energy sector. No Authority has reported that more than 20 % of total resources are spent on sector regulation".

the century (Denmark (2010), Finland (2013), Ireland (2014), Italy (2007, 2014), Korea (2006, 2008), Lithuania (2000), Netherlands (2013)). But three jurisdiction have separated consumer protection from competition partly (in the case of the United Kingdom (2013–14)) or completely (in the case of Iceland (2005) and Japan (2009)). Finally, four countries (Brazil (2012), Bulgaria (over the last few years), Estonia (2008), Chinese Taipei (2005)) have considered merging those functions and decided against doing it. Altogether nearly half of the competition authorities of the OECD countries have consumer and competition law enforcement functions whereas the other half do not have a consumer protection function. In some countries, where there are several competition authorities, the picture is even more complex because one agency is a single function competition authority whereas the other one has both a competition and a consumer enforcement function (this is the case in the US where the US FTC has both competition and consumer protection enforcement functions whereas the DoJ is a single function competition authority and in France where the Autorité de la concurrence is a single function competition agency whereas the competition division of the Ministry of economic Affairs (DGCCRF) has both a competition enforcement function (at the local level) and a consumer protection function.

These figures reflect a certain ambivalence about the wisdom of merging the two functions. The arguments in favour of merging the functions and against merging them have been extensively researched in a background paper prepared by Allan Fels and Henry Ergas for the above mentioned discussion of Institutional changes in the OECD Competition Committee.[17]

They, first observe that each of the two policies can be used to advance the goals also pursued by the other: "competition policy, by keeping markets effectively competitive, can reduce the work that needs to be done by consumer policy; consumer policy, by enhancing the ability of consumers to exercise choice, can help make markets more effectively competitive and force firms to compete on the merits, thereby supporting the ends of competition policy". As former FTC Chairman Timothy Muris has said, "The policies that we traditionally identify separately as 'antitrust' and 'consumer protection' serve the common aim of improving consumer welfare and naturally complement each other."[18]

But Fels and Ergas also note that each policy can create challenges for the other.

They thus note that " when a market becomes more exposed to competition than it was previously (say, because of the removal of trade barriers or deregulation), the incentives of market participants may change in ways that raise consumer

[17] Note by Allan Fels and Henry Ergas, Institutional design of competition authorities, OECD Competition Committee, 17–18 December 2014, Doc DAF/COMP/WD(2014)85, available at http://www.oecd.org/daf/competition/changes-in-competition-institutional-design.htm

[18] Timothy J. Muris, FTC Chairman, The Interface of Competition and Consumer Protection, Remarks before the Fordham Corporate Law Institute's Twenty-Ninth Annual Conference on International Antitrust Law and Policy, at 3 (Oct. 31, 2002), available at http://www.ftc.gov/sites/default/files/documents/public_statements/interfacecompetition-and-consumer-protection/021031fordham.pdf

protection concerns" and that in some sectors consumers may have a difficult time coping with the complexities of competition . Examples are numerous and would include the fact that the opening up to competition of a number of sectors in transition economies has led to deceptive practices that required consumer protection, that the introduction of competition into some public utility markets (such as electricity and telecommunications) has given an incentive to firms to lock in consumers so as to avoid losing customers to the competitors. Consumers may have difficulties dealing with complex pricing schemes on service markets (such as in banking) or be exposed to risks in competitive markets when they cannot assess the quality of services (such as on professional services markets).

Equally consumer protection may lessen competition both by imposing constraints on suppliers (such as a ban on comparative advertising or the imposition of regulatory standards) or by promoting transparency which may lead to a weakening of competition.

Fels and Ergas then assess the growing importance of behavioural economics and changes in the extent and functioning of markets on the debate on the relationship between the two sets of policies. They point out that in recent years researches in behavioural economics have explored issues about the inherent limitations on the quality and efficacy of consumer choice. Those studies have important implications for policy design, most obviously of consumer protection measures. It should also be noted that market forces may in some cases be important ways of addressing concerns about the efficacy with which consumers take complex choices, because firms in competitive markets have incentives to offer consumers solutions that allow potential gains from trade to be more fully realised. It remains, however, that there are cases where the two policies should interact and be coordinated (such as for example in professional services, health care).

Altogether according to Ergas and Fels, there are three major advantages to integrating the primary responsibility for competition policy and consumer policy within a single institution. There can be advantages from using those two as instruments that can be flexibly combined and more generally managed within a single portfolio of policy instruments; second there are possible gains from developing and sharing expertise across these two areas (for example to develop an understanding of the interaction between the supply side and the demand side of markets); and third the visibility and understanding of consumer and competition policies may be greater if they are integrated ion the same agency.

Whereas the second and the third advantages are widely recognized, there is less consensus about the usefulness of combining in a flexible way the policy instruments of competition law and consumer protection. For example, FTC Commissioner Maureen Ohlhausen recently stated[19] "In some cases, the FTC has blurred the line between competition and consumer protection—with respect to both the

[19] Maureen K. Ohlhausen, "One Agency, Two Missions, Many Benefits: The Case for Housing Competition and Consumer Protection in a Single Agency", Fordham Competition Law Annual, 2014.

alleged violation and the remedy sought by the agency—to the potential detriment of effective and transparent enforcement in both areas. This blurring of the lines, while in some sense an integration of competition and consumer protection principles, is more accurately viewed as an improper and unhelpful muddying of the two disciplines".

But integrating consumer and competition policy may also entail costs. There are differences in the nature of the instruments and in the ways in which the policies are implemented[20] more limited instruments in the case of competition policy than consumer policy, a large number of smaller cases in consumer protection, a small number of larger cases in competition enforcement, geographically localized policy in consumer protection and centralized policy in competition). These differences may create practical difficulties in the management of consumer protection and competition policy within a single organization.

Furthermore, because of these differences and the fact that consumer policy is inherently less centralized than competition policy, the degree of integration between these policy instruments may be difficult or impossible to achieve.

Finally commentators have mentioned other possible practical difficulties of integrating those functions within an agency such as the potential for one mission to dominate the other to the detriment of the latter, a lack of clarity of purpose of the agency, resulting in diminished support for the agency's overall mission, the potential for "destructive rivalry" between the competing missions within an agency for prestige, headcount, and budgetary resources[21]

As a result of these conflicting tendencies, Ergas and Fels conclude:

> In practice, what appears most important is:
>
> – To ensure that the competition authority has in-house access to the skills involved in the formulation of consumer policy, and at the very least a watching brief with respect to consumer policy, as well as scope to intervene in consumer policy decisions that have material competition implications; and
> – That there be within government, an entity that has "whole of government" oversight of consumer protection, and that exercises that oversight in a manner mindful of competition concerns.

It is useful, keeping this approach in mind, to eek the perspective expressed by the competition authorities which have merged the two functions and by those

[20] See, for example "Simon Priddis", "Let Me Not to the Marriage of True Minds Admit Impediments": Competition and Consumer Law in the UK, 21 Antitrust 89, 89 (Summer 2007): "Notwithstanding the abstract merits of this integrated approach, practical impediments to success remain, not least since competition and consumer protection law arise from sharply contrasting policy perspectives, use different tools to achieve their respective objectives, and historically at least, have measured success in different ways.". (Quoted by Maureen Ohlhausen).

[21] William E. Kovacic & David A. Hyman, Competition Agencies with Complex Policy Portfolios: Divide or Conquer?, at 38 (GW Law Faculty Publications & Other Works, Paper 631, 2013), available at http://scholarship.law.gwu.edu/cgi/viewcontent.cgi?article=1779&context=faculty_publications

which have decided against such a merger during the OECD roundtable on Institutional changes.

Among the countries which have recently merged the two functions (Denmark 2010, Finland 2013, Ireland 2014, Italy 2014, Korea 2008, Lithuania 2000, Netherlands 2013), the motivation most frequently mentioned in the OECD discussion on institutional changes are the increase in the effectiveness of both policies, the development of synergies between consumer policy and competition policy, and the development of expertise in the understanding of market mechanisms. Furthermore two countries (Ireland and the Netherlands) indicate cost saving as an important determinant of the merger of the functions and one country (Korea) indicates that the objective was to make consumer policy more consistent with competition policy.

Thus the reasons for which competition enforcement and consumer protection have been brought together in those countries are broadly in line with the complementary nature of the two policies outlined by Ergas and Fels and the desire to make both policies more effective.

For example, echoing the assessment of Ergas and Fels, the Irish contribution the OECD Roundtable on Institutional design[22] explained that the rationale for "amalgamation" of the two functions in this country rested on the idea "that combining competition enforcement, consumer protection and consumer awareness in one body will build a more effective organisation which is better equipped to foster a pro-competition culture across the economy. An independent authoritative body provides a source of consistent information to business and consumers about their rights, and provides administrative savings and skill enhancement through the pooling of information, skills and expertise. Competition authorities are expert in assessing how firms compete with one another thanks to an internationally accepted toolkit for competition analysis while the enforcement of consumer law brings awareness of problems that arise in business to consumer transactions even in markets that are competitive. In addition, the rapid rise of behavioural economics has given regulators deeper insight into how consumers actually make choices in competitive markets. The experience of deregulation has shown that supply side reform on its own is not sufficient to ensure that all consumers fully benefit from competition as there may be behavioural barriers which prevent consumers from making the best choices for themselves or indeed unfair commercial practices causing consumer harm before and after they buy. The increasing awareness of behavioural issues in competitive markets serves to reinforce the logic of having competition and consumer experts working side-by-side. In newly competitive markets there tends to be gaps in understanding among consumers and this confusion can be exploited by firms. This gap can be bridged by co-ordinating consumer and competition policy".

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[22] Note by Ireland , Roundtable on Changes in Institutional design of Competition Authorities, OECD, 1 December 2014, DAF/COMP/WD(2014)95, available at http://www.oecd.org/daf/competition/changes-in-competition-institutional-design.htm

In addition, the Irish competition authority considered that there could also be operational advantages from having the competition and consumer functions within the one regulator. It stated "For example, a competition case might raise concerns about consumer harm due to market power but there might be insufficient evidence or constrained resources to bring an enforcement action. Having a single agency overseeing both competition and consumer protection allows the different courses of action to be considered simultaneously".

The contribution of Poland to the OECD roundtable on changes in institutional design[23] emphasized the particular complementarity of the two policies in transition economies where there is no widespread culture of market economy. It stated: "A consumer perspective in competition enforcement is of particular importance in transition economies, where market liberalisation is often, rightly, a key policy objective as a means of creating foundations for long-term growth and consumer welfare. However, short-term impact on consumers cannot be ignored. A liberalized market must from the start meet consumer expectations with regard to access, choice, price, quality, security and reliability, and must be independently regulated and enforced. From UOKiK's experience, we often see that such liberalisation aimed at long-term benefits for consumers may result in short-term infringement of consumer rights. This is why we believe that impact assessment accompanying legal regulatory changes needs to include a consumer impact forecast for both the short and the long run. A competition and consumer protection agency is well placed to offer government a balanced view in this respect during the legislative process. It is also well positioned to counteract any short-term negative effects of market liberalization without jeopardizing its long-term benefits.

A practical example would be the electricity markets. Since the opening of residential retail markets in Poland in July 2007 there have been numerous problems with door-to-door selling. In this case, antitrust law is not the solution. This issue should be addressed through other means such as legislation on commercial practices, trade standards etc. Door-to-door selling became a major source of consumer dissatisfaction shortly after the retail market was fully opened up to competition. The bulk of consumer complaints focused on the fact that they were being misled into signing contracts to switch suppliers when they were under the impression that they were only agreeing to approve a visit from a consultant, obtain information or have their meters read. UOKiK is currently conducting a number of proceedings against the most aggressive suppliers. These cases show that market liberalisation may create incentives for unfair, deceptive and unlawful business practices, against which our consumer protection law is the only defence. Similar problems occurred during the liberalisation of the telecom market in the early 2000s. However, actions undertaken by the telecom regulator as well as the competition authority to create a diverse market along with consumer rights

[23] Note by Poland, Roundtable on Changes in Institutional design of Competition Authorities, OECD, 10 December 2014, DAF/COMP/WD(2014)135, available at http://www.oecd.org/daf/competition/changes-in-competition-institutional-design.htm

enforcement have led to a substantial improvement in the sector, as demonstrated by today's fierce price and quality competition as well as fewer consumer complaints."

It seems that the concerns about the difficulty of integrating the two policies have not been a major concern in those countries.

The objective of cost savings invoked by some countries may not be met to the extent that, as Ergas and Fels argue, the integration of both instruments may be quite challenging given their different natures. Yet it seems reasonable to assume that some cost saving can be achieved in the support functions (such as communication, personnel, general administration etc....) when the two instruments are merged in a single institution.

In those countries which merged the consumer protection and the competition authority, different concerns were raised at the time of the merger or shortly after.

In several case there was a negative reaction on the part of consumer representatives about the merger of the functions (for example in Korea) or a concern that either competition law enforcement would come to dominate consumer protection or that "easy" consumer protection cases would crowd out the "more difficult" competition cases. This last consideration was , for example, the reason advanced by the Monash Business Policy Forum in Australia to advocate the separation of the consumer functions from the ACCC. It argued that such a separation was necessary in order to[24] "free a potential bias in the present operation (of the ACCC) where consumer protection gets more enforcement work because it is easier law to prosecute".

The difficulty of prioritization of cases in agencies that have both consumer protection and competition law enforcement functions was also mentioned in the contributions to the OECD Competition Committee Roundtable on Institutional Changes. For example, the contribution from Finland[25] illustrated the problem it faced in the following way: "In the field of competition law, the legislation practically obligates the authority to prioritize between investigated cases and also gives the right not to investigate insignificant issues, whereas there are no actual provisions regarding prioritization in consumer affairs. However "The Consumer Ombudsman must be active especially in areas which are particularly significant for consumers or where it can be assumed that problems for consumers would most commonly occur", but in practice as there is a lack of appropriate provisions regarding prioritising, enforcement has to be targeted at all the areas that are defined as being under the aegis of the Consumer Ombudsman".

In some other case the agency felt it difficult to merge the different cultures of the consumer protection personnel and of the competition enforcers. Those

[24] "Break-up bid to put watchdog on leash", The Australian November 14, 2013.

[25] Note by Finland, Roundtable on Changes in Institutional design of Competition Authorities, OECD, 17 November 2014, DAF/COMP/WD(2014)92, available at http://www.oecd.org/daf/competition/changes-in-competition-institutional-design.htm

concerns are understandable in light of the difference in the instruments described by Ergas and Fels.

But other concerns were also expressed with respect to the identification of a common strategy and the structure of the new institution.

Finally, in organizational terms it is worth noting that overall either the functions of consumer protection and competition are separated by law (Finland) or the enforcement of consumer protection, and competition are de facto separated (for example in Denmark and in the Netherlands). Ireland seems to follow a more integrated model than the other countries which have merged consumer protection and competition enforcement into a single body. In most cases, however, a number of support functions are merged, such as communication, policy and legislation, strategy.

The market analysis function is integrated (used both for consumer protection and competition enforcement) in Denmark and the detection function is integrated in the Netherlands.[26]

Finally, it should be noted that in the countries which have decided to unbundle the consumer protection and competition enforcement functions and to create two separate institutions (Iceland and Japan) , the reason given was to increase the effectiveness of competition policy (in Iceland) and to increase the effectiveness of consumer policy (in Japan). These motives may be explained by the difficulty of agencies having the two functions to find the proper balance between them and to prioritize their enforcement activities. This is suggested, for example, by the contribution from Iceland to the OECD Debate on institutional changes[27] which stated: "In the view of the Icelandic Competition Authority (ICA), the move from a multifunctional design towards a single functional one has made competition enforcement and advocacy more effective. The fact that the ICA is "solely" responsible for competition enforcement and advocacy, enables a very clear goal-orientation, which in return facilitates prioritization and makes the Authority well equipped to tackle changes in the economic environment. The institutional design has enabled the ICA to put its weight on the most important tasks at any given time, and by that facilitate quality decisions and active advocacy and guidance. The prerequisite for quality decisions is the ability to attract and maintain high-level expertise. The current institutional design has served as a basis for success in this

[26] It should be noted that the savings to be obtained from having a single body for competition law enforcement and consumer protection are not negligible even if the administrative functions are merged. For example the contribution from Denmark to the OECD Competition committee roundtable on institutional design gave an evaluation of the cost savings associated with the merger of the two functions and stated: "When it comes to economies of scale there have been clear advantages of the merger. Calculations show savings of around DKK 4–4½ million (about 500,000–600,000 €) a year. The savings are mainly caused by saved administrative costs and saved house rent after the two authorities moved from two domiciles to one".

[27] Note by Iceland, Roundtable on Changes in Institutional design of Competition Authorities, OECD, 18 November 2014, DAF/COMP/WD(2014)94, available at http://www.oecd.org/daf/competition/changes-in-competition-institutional-design.htm

regard. The ICA has also been able to use its focus and goal orientation to prioritize cases with the aim to improve the length of procedures".

The second sub-question is that of knowing whether the competition enforcement function should be merged with regulatory functions.

Competition and sectoral regulation

There is a diversity of situations throughout the world with respect to the relationship between competition law enforcement and the enforcement of sectoral regulations.

In Australia, for example, the ACCC has a range of regulatory functions in relation to national infrastructure industries as well as a prices oversight role in some markets where competition is limited. According to the Australian contribution to the OECD debate on Institutional changes[28] the regulatory functions of the ACCC include: "assessing access undertakings under the 'National Access Regime', which facilitates third party access to certain services provided by means of significant infrastructure facilities; a number of responsibilities regarding the National Broadband Network; supporting the development and operation of efficient water markets in the Murray-Darling Basin; and assessing notifications of price increases in relation to certain services (regional air services, services to airports and airlines, and certain services provided by Australia Post)".Within this model there is a specificity with regard to the energy market. Under the Competition and consumer Act of 2010, the Australian Energy Regulator is an independent entity staffed and funded through the ACCC's agency appropriation which has some regulatory functions mostly related to energy markets in eastern and southern Australia and which assist the ACCC with energy-related issues arising under the Consumer and Competition Act, including enforcement, mergers and authorizations. Thus in the field of electricity there are two, closely related, regulators, one of which is the ACCC.

At the other end of the spectrum, in the United Kingdom, the sectoral regulators[29] have powers to apply some aspects of competition law in relation to their particular industry sector. 'Concurrently' with the Competition and Markets Authority they enforce the prohibitions on anti-competitive agreements and abuse of dominance under Articles 101 and 102 TFEU and the UK national equivalents. They also have the power to make a Phase 1 market study and refer a market for a full Phase 2 market investigation by the CMA Panel. These competition powers are in addition to the sector regulator's regulatory powers.

[28] Note by Australia, Roundtable on Changes in Institutional design of Competition Authorities, OECD, 4 December 2014, DAF/COMP/WD(2014)87, available at http://www.oecd.org/daf/competition/changes-in-competition-institutional-design.htm

[29] The regulated sectors are: energy (gas and electricity); water and sewerage services (in England, Wales and Northern Ireland); rail; air traffic control; airport operations; telecoms, broadcasting, spectrum and postal services; healthcare services in England; and, from April 2015, financial services and payment systems.

In between those two extreme models, a number of countries follow a "division of labor" model between the competition authority and the sectoral regulators. For example, in Portugal[30] "the powers to enforce and promote competition rules, to defend consumer's interests as such, and to regulate markets are entrusted to different bodies: the Portuguese Competition Authority, the Directorate-General for Consumers and National Regulatory Authorities, respectively".

In the recent years there have been changes in the allocation of regulatory and competition law enforcement powers. In a number of countries some of the regulatory functions were given to the competition authority. Such was the case, for example in Denmark (2009) where the competition authority was given regulatory functions in the water distribution sector, in Estonia (2008) where the competition authority was given regulatory functions in the energy, rail, and telecom sectors, in the Netherlands (2013) where the competition authority became the telecom and post regulator, in Spain (2013) where the competition authority became the airports, audio visual products, energy, rail, post, and telecom regulator or in Lithuania (2009, 2011) where the competition authority became the rail regulator.

Conversely in a few countries there was a movement to separate competition law enforcement from sectoral regulatory functions. Such was the case in Denmark (2010) where the Danish Energy Regulatory Authority was separated from the Competition Authority (at the same time that the consumer protection function was added to the competition authority) . This was also the case in Estonia in 2014 where the competition authority which had been given, in 2008, regulatory functions in the energy, water, heating , post, railway, airport, telecom, lost its regulatory functions in the telecom sector (which it previously shared with a technical regulator). As we shall see below there is also a lively debate in Australia on whether the ACCC should keep its regulatory functions.

The arguments in favour of entrusting competition authorities with regulatory functions are the following:

First the fact that the competition authority will have a more flexible range of instruments to promote and maintain competition, particularly in newly deregulated sectors.

Second, the fact that the competition authority may be better able to detect/manage policy or enforcement conflicts (e.g., ensuring that a competition remedy does not conflict with regulatory requirements or vice versa).

Third, the fact that the pooling of sectoral responsibilities may make the agency more adaptable to changing markets (e.g., where convergence is occurring such as in the information sector).

Fourth, the fact that there is less risk that the competition authority will be captured than the sectoral regulators because competition authorities deal with a wide

[30] Note by Portugal, Roundtable on Changes in Institutional design of Competition Authorities, OECD, 10 December 2014, DAF/COMP/WD(2014)102, available at http://www.oecd.org/daf/competition/changes-in-competition-institutional-design.htm

variety of markets whereas sectoral regulators always deal with the same, comparatively small, number of regulated firms.

Along those lines, Ergas and Fels, examining the allocation of responsibility for regulating the former public utilities to the competition authority (as was done in Australia and in New Zealand) state: "The advantage of (this) approach, at least in theory, is that it extends the range of instruments that the authority can bring to bear. For example, it may be that the most efficient solution to a particular regulatory problem is to restructure the market in ways that promote competition and then more vigorously enforce the competition rules. By 'internalizing' into the same authority the competition and regulatory instruments, the authority may be more inclined to efficiently mix and match problems and instruments, avoiding the 'silo mentality' that can compromise good decision-making. At the same time, there may be instances where identifying the efficient regulatory solution requires an analysis of competition impacts, which such an integrated authority may find it easier to undertake".

Against those possible advantages, there are a number of possible difficulties associated with the merging of regulatory and competition law enforcement responsibilities into a single entity.

A first category of difficulties may accrue from the complexity involved in managing different functions. As we saw when discussing the amalgamation of consumer protection and competition law enforcement, prioritization of cases and the efficient allocation of resources becomes more difficult as the number of different functions of the authority increases.

A second category of difficulty may come from the fact that, as the competition authority accumulates different functions, its support is eroded because it becomes more and more difficult for economic actors and the general public to understand what it does and to assess its quality and its accountability.

A third source of difficulty may be due to the complexity of mixing within the same organization staff members having different cultures and approaches (the ex-ante and prescriptive approach of regulators and the ex-post and legalistic approach of competition enforcers).

A fourth source of difficulty may be due to the loss of competition between sectoral regulators and the competition authority in advocating regulatory changes for the regulated sectors. This loss of competition between regulators may entail a social cost for society.

A fifth source of difficulty may be due to the fact that the goals which should be ascribed to an institution which is both a competition policy enforcer and a sectoral regulator are far from clear.

This last point was made by the Dutch contribution to the OECD debate on institutional changes.[31] As mentioned earlier, the Netherlands Authority for

[31] Note by the Netherlands, Roundtable on Changes in Institutional design of Competition Authorities, OECD, 2 December 2014, DAF/COMP/WD(2014)100, available at http://www.oecd.org/daf/competition/changes-in-competition-institutional-design.htm

Consumers and Markets was created on 1 April 2013 through the consolidation of the Netherlands Consumer Authority (CA), the Netherlands Independent Post and Telecommunication Authority (OPTA) and the Netherlands Competition Authority (NMa). In its contribution the competition authority stated: “As ACM sees it, one of the authority’s strengths is its focus on consumers. This focus has not gone un-criticized within the Dutch system, where many commentators argue that ACM should more correctly focus on orderly market processes and on competition in the market, rather on the effects on consumer welfare. ACM’s Establishment Act determines that ACM is to ensure that markets function well, that market processes are orderly and transparent, and that consumers are treated with due care. (...) Eighteen months after the merger, ACM can raise these issues for discussion but cannot, as yet, give experience-based answers to these questions”.

Over and beyond the advantages and difficulties previously mentioned from entrusting sectoral regulatory functions to competition authorities, one should note that if regulatory oversight can be complementary to competition law enforcement (for example both may require a common vision of what the relevant markets are and it is clear that the possibility of effective competition on a regulated market is a function of both the structure of the market and the sectoral regulation applicable to it), the deregulation of a market and the establishment of a competitive market is a fundamentally different function than the protection of competition on a deregulated and structurally competitive market. The opening up of a formerly legally monopolized markets to competition, particularly in sectors where the incumbents are managing essential facilities, requires a number of ex ante decisions of an industrial policy nature to establish the possibility of competition such as: at which rhythm should entrants be allowed (to avoid too much competition among the entrants resulting in an inability for each of them to meaningfully compete with the incumbent); which entrants should be chosen; what should be the interconnection obligations of the incumbent monopolist both quality-wise and from the standpoint of the financial terms; what public policy is necessary to decrease the importance of the bottlenecks and to facilitate the development of infrastructures etc.... To discharge these functions it is not clear what the comparative advantage of a competition authority is.

Thus in a number of European countries (France, for example) the choice was made to entrust competition law enforcement and sectoral regulations to different agencies but to ensure that the two agencies would communicate on questions of mutual interest. Thus , for example, the Autorité de la concurrence in France has the duty when it deals with a competition issue in a regulated sector to ask the opinion the sectoral regulator on the technical issues underlying the competition question it deals with. The opinion of the sectoral regulator is not binding on the competition authority but it is made public and the competition authority must explain in its decision why it departs from the opinion of the sectoral regulator. Likewise when the technical regulator is dealing with a technical issue which may have an impact on competition, it must consult the competition authority on the implications for competition of the question it deals with.

Such arrangements allow each institution to fulfill its function and to have the input of the other institution without having to bear the costs of difficulties attached to multi-task institutions. Such a system requires, however a clear delineation of the responsibilities of each institution as well as a clear and transparent procedure for the exchange of opinions between the competition authority and the sectoral regulators. Yet it is not always the case that such responsibilities are clearly delineated and, for example, during a period in the nineties, Spain had a system where the competition authority and the sectoral regulator were simultaneously competent to deal with a number of issues which caused a certain amount of confusion and dissatisfaction. But when the system is well set up, as it is in France, it can run very smoothly to ensuring the cooperation and the consistency of the sectoral and the competition enforcement approaches.

The optimal arrangement when it comes to whether one should entrust sectoral regulatory functions to the competition authority may differ depending on the size of the country. Indeed smaller countries may have difficulties supporting separate institutions given their public resource constraints and the important weight attributed to possible economies of scope or economies of scale in those countries may tip the balance of advantages and costs in favour of multi-function agencies.

Finally, the choice of having a single function competition agency or a multifunction agency with sectoral regulatory powers or a system of cooperation between agencies may also be determined by the economic history and past experiences of the country in the area of deregulation.

For example, in the case of Australia , Ergas and Fels suggest that the decision to confer responsibility for economic regulation of telecommunications on the ACCC was shaped , among other factors, by the perception that the industry-specific regulator had not been a success and by the unfounded expectation that industry-specific telecommunications regulation would ‘wither away’, as a rapid transition to competition was envisaged. They explain the current debate over whether the sectoral regulation functions of the ACCC should be transferred to another institution by the fact that the historical factors in favour of the multi-function agency are not relevant anymore in Australia.

Similarly the contribution of Spain to the OECD debate on institutional changes[32] makes the point that the regulatory model for energy and telecommunications based on specialized regulators had been designed at the beginning of the liberalization process but that, as competition developed in both sectors and as the frontier between telecommunication and the digital economy became more blurred, the need for better coordination among sectoral regulators, on the one hand, and between sectoral regulators and competition law enforcers, on the other hand, required a different and more integrated regulatory system which led in 2013 to the creation of the new Spanish National Authority for Markets and Competition.

[32] Note by the Netherlands, Roundtable on Changes in Institutional design of Competition Authorities, OECD, 18 November 2014, DAF/COMP/WD(2014)103, available at http://www.oecd.org/daf/competition/changes-in-competition-institutional-design.htm

4 The Organization of the Competition Authority

A third set of question relates to how , given its assigned functions, the competition authority should be organized.

We will try to address the following questions: what are the respective advantages of the prosecutorial model and the administrative model of competition authorities? Should investigation and adjudication be separated? Should competition authorities have a single commissioner or have a board and, in the latter case, what the function of the board should be? How to ensure the independence of the competition authority be (and what one means by independence)? What are the ways to organize the funding of competition authorities? A final question will deal with the management of its resources by the competition authority (recruitment of staff, prioritization of cases, organization of the work between lawyers and economists).

Administrative versus prosecutorial model

In a prosecutorial model, the competition authority prosecutes the cases that it brings in an adversarial proceeding in a courtroom. In such a model the court is the decision maker and not the competition authority. This is, for example the case in the Us (for the Antitrust Division of the Department of Justice), Australia, Canada and Ireland as well as in some European countries (in Austria and in Sweden).

In an administrative model, the competition authority investigates and adjudicates cases. This model is the dominant model among European member states. It is also the model followed by the FTC in the United States and by a large number of countries throughout the world. The administrative model has itself two variants: the variant in which the authority's decision are appealable to a general court (such as for example in France or in the EU) and the model in which the competition authority's decisions are appealable to a specialized court (such as in Portugal or in the United Kingdom or in Mexico under the new law of 2013).

The question of whether a prosecutorial model is preferable to an administrative model was hotly debated recently both in the United Kingdom and in Switzerland, two countries which ultimately decided to stick with the administrative model. There was also some discussion along those lines in Germany.

The perceived legal advantage of a prosecutorial model is, first and foremost, the fact that the impartiality of the proceedings is better protected through the separation of investigation and adjudication in a judicial context than in administrative proceedings were those functions are combined in a single entity.

In Europe, however, this argument has not been successful. As mentioned by Slater, Thomas and Waelbroeck[33] "Traditionally, the view is taken that, it is sufficient for Commission decisions in antitrust cases to be subject to review by

[33] Donald Slater, Sébastien Thomas and Denis Waelbroeck: "Competition Law Proceedings before the European Commission and the Right to a Fair Trial: No Need for Reform?", The Global Competition Law Centre Working Papers Series GCLC Working Paper 04/08.

the Community courts and particularly by the Court of First Instance ("the CFI"), even if the Commission itself is not an "independent and impartial tribunal" under Article 6 ECHR". The same view applies in the Member states which are (unlike the European Union) signatories of the European Convention on Human Rights. This view is based on the European Court of Human Rights Le Compte, Van Leuven and De Meyere v Belgium judgment,[34] in which the European Court stated that: "Whilst Article 6 par. 1 (art. 6-1) embodies the "right to a court" (. . ..), it nevertheless does not oblige the Contracting States to submit "contestations" (disputes) over "civil rights and obligations" to a procedure conducted at each of its stages before "tribunals" meeting the Article's various requirements. Demands of flexibility and efficiency, which are fully compatible with the protection of human rights, may justify the prior intervention of administrative or professional bodies and, a fortiori, of judicial bodies which do not satisfy the said requirements in every respect; the legal tradition of many member States of the Council of Europe may be invoked in support of such a system".[35,36]

Similarly in Member States which have signed the European Convention of Human Rights, the Le Compte, Van Leuven and De Meyere v. Belgium, judgment of the ECHR is seen as the basis on which administrative agencies even when they do not meet the standards of an independent and impartial tribunal are not considered to breach the right of parties to a fair trial provided that their decisions can be appealed to such an independent and impartial tribunal.

A second possible advantage of a prosecutorial model is the economic equivalent of the legal advantage previously discussed: a prosecutorial system to avoid the confirmation bias which is likely to characterize the administrative proceedings of a competition authority which acts as investigator and adjudicator.

[34] Judgement ECHR Le Compte, Van Leuven and De Meyere v. Belgium (Application no. 6878/75; 7238/75), 23 June 1981.

[35] Thus, for example, in the Schneider Electric SA judgement, the Court of First Instance held that: "181 Observance of all persons' right to a hearing before an independent and impartial tribunal is guaranteed by Article 6(1) of the Convention, to which reference is made by Article 6(2) of the Treaty on European Union and which was reaffirmed by the second paragraph of Article 47 of the Charter of Fundamental Rights of the European Union".

"182 As an integral part of the fundamental rights protected in the Community legal order, compliance with which by the Commission in the conduct of its control procedures relating to concentrations is ensured by the Community judicature, the right to a fair hearing is manifestly a rule intended to confer rights on individuals (Case T-309/03 Camos Grau v Commission [2006] ECR II-1173, paragraphs 102 and 103)".

"183 However, provided that the right to an impartial tribunal is guaranteed, Article 6(1) of the Convention does not prohibit the prior intervention of administrative bodies that do not satisfy all the requirements that apply to procedure before the courts (see European Court of Human Rights, Le Compte, Van Leuven and De Meyere v. Belgium, judgment of 23 June 1981, Series A No 43, § 51)".

[36] Note that the second paragraph of art 47 of the Charter of Fundamental Rights of the European Union states : "Everyone is entitled to a fair and public hearing within a reasonable time by an independent and impartial tribunal previously established by law. Everyone shall have the possibility of being advised, defended and represented".

The possibility of a bias is consistent with behavioural economics and has some empirical support.

Behavioural economics suggests that a confirmation bias occurs when people filter out potentially useful facts and opinions that don't coincide with their preconceived notions. Behavioural economics holds that such bias affects perceptions and decision making in all aspects of our lives and can cause us to make less-than-optimal choices. Thus, if a competition authority is both a prosecutor and an adjudicator, it may be tempted to confirm and justify as an adjudicator its decisions to prosecute by finding the parties it has decided to investigate guilty of a violation or engaged in an anticompetitive transaction.

This theory has found support in a small number of empirical studies. For example, two economists analyzed the decisions of the US FTC when the FTC sat in appeal of its own administrative law judge decisions following previous FTC decisions challenging mergers and referring them to the FTC administrative law judge for adjudication (see footnote 36). They found that the appeal was much less likely to be successful when the FTC commissioners sitting in appeal were the same as the commissioners who had originally opposed the merger and more likely to be successful when the commissioners sitting in appeal were different from the commissioners who had originally objected to the mergers.

A third advantage of the prosecutorial model is held to reside in the fact that the judicial decision process is (often) more transparent than the administrative process and therefore more credible. This argument was invoked in the United Kingdom by those who were in favour of switching to a prosecutorial model during the discussions that led to the creation of the Competition Market Authority. Indeed, there were complaints about what parties and their counsels perceived to be the lack of transparency of the OFT decision making process and the impossibility to either know who made decisions or to be heard by the decisions makers.

However one should note that those arguments are somewhat inconclusive in the sense that one could conceive of an administrative model in which the prosecution and the adjudication would be separate and done by different staff members and in which the decision making would be transparent.

Thus even if one accepts the usefulness of the separation of investigation and adjudication and of the transparency of the process, it does not follow that the administrative model is necessarily flawed.

Finally, it is sometimes argued that the number of appeals would be lower if the courts rather than the competition authorities made the decisions and that this would save time and money in the enforcement system. This assertion, however is called into question by the fact that judicial proceedings can drag on for a long time. For example, the Annual Report of the Austrian Federal Competition Authority 2011 stated that "the proceedings before the Cartel Court often drag on for years without there being comprehensible reasons for their excessive length". It mentions cases brought in 2004, 2007 and 2009 but not resolved by the end of 2011. In the

case of Sweden, the court proceedings in the TeliaSonera abuse of dominance case started in December 2004 and the Stockholm City Court made a decision on 2 December 2011. Thus the court proceedings in this last case took 7 years (minus 2 years because of a reference to the ECJ).

The prosecutorial model is also frequently considered to have some drawbacks compared to the administrative system.

First, the Courts hearing the competition cases are often not specialized unlike competition authorities with the result that they are less likely to understand the underlying economic issues. The reason is that generalist judges for whom competition cases represent but a small minority of the cases on their dockets, have less incentive to invest their time in learning the intricacies of the economic underpinnings of competition law than specialized judges for whom competition cases represent a large portion (or the entirety) of their caseload. Thus the quality of the lower level decisions in the prosecutorial model may be an issue unless the relevant court is specialized.

Second, because competition cases are often seen as more complex and involving more work for the judges than the other cases coming to the court, because of the difficulty to understand the underlying economic issues, they may not be given a high priority by the courts resulting in delays in the court proceedings.

Altogether a number of the arguments offered in favour or against the administrative model or in favour or against the prosecutorial model appear not decisive. The only decisive advantage that the prosecutorial model offers is that it guarantees a separation between investigation and adjudication, something which is not guaranteed to the same extent in the administrative model.

Separation between adjudication and investigation

As mentioned earlier, within the administrative model several sub-models can exist reflecting varying degrees of separation between investigation and adjudication.

As the EC study on institutional design of competition authorities suggest[37] that two main configurations can be distinguished within the administrative model: “the first involves a functional separation between the investigative and decision-making activities of the single administrative institution whereby the inquiry is carried out by investigation services and the final decision is adopted by a board/college/council of this administrative institution. For example, in France and Spain a full functional separation between investigative and decision-making bodies has been set up, where their respective competences are carried out independently from one another. The second configuration follows a more unitary structure and does not

[37] Enhancing competition enforcement by the Member States’ competition authorities: institutional and procedural issues, Commission Staff Working Document Accompanying the document Communication From the Commission to the European Parliament and the Council, Brussels, 9.7.2014, SWD(2014) 231 final, available at http://eurlex.europa.eu/legalcontent/EN/TXT/PDF/?uri=CELEX:52014SC0231&from=EN

have different bodies carrying out different steps in the procedure although there may be different divisions (e.g. a Competition department and a Legal department) inside these authorities that deal with separate aspects of the same case".

The functional separation of adjudication and investigation is widely considered to have a number of advantages for the competition law enforcement process and to improve the quality of decisions.

The first benefit of the separation of investigation and adjudication is the possibility to avoid mistake by having "a second set of eyes" reviewing the evidence and the proposed qualifications.

This is, for example, largely why, previous to the creation of the CMA in the United Kingdom, merger enforcement was split between two institutions, the Office of Fair Trading and the Competition Commission. The OFT reviewed information relating to merger situations and, where necessary, referred any relevant mergers to the Competition Commission for further investigation if it is felt that the merger was likely to lead to a substantial lessening of competition within any market for goods or services in the UK. This system has now been abandoned with the creation of the Competition and Market Authority.

However within the CMA a separation has been kept between investigation and decision making in the context of the CMA for mergers reaching what was once referred to as a Phase 2 level of enquiries. "Phase 2" merger and market decisions must be made by a group drawn from a separately appointed panel of experts (the Panel) who are not CMA staff. The investigatory teams in the two phases are also largely different.

A second possible benefit from the separation of investigation from decision making within the administrative model is that more information is likely to be provided to the decision maker when the decision-maker is independent of both the investigator and the defense. Indeed in such a case neither party has an incentive to hide information.

A third advantage of the separation between investigation and decision within the competition authority making lies in the fact that the authority is perceived to be more respectful of due process and therefore more legitimate. For example, during the revision of the Mexican competition law which led to the creation of the Federal Economic Competition Commission (Cofece) and of the Federal Institute of Telecommunications (Instituto Federal de Telecomunicaciones) (IFT) in July 2013, the separation of investigation and adjudication in both institutions was seen as necessary in order to guarantee impartiality and objectivity of the competition authorities. Thus, the reform provided for a separation between the authority in charge of the investigation and the authority in charge of the resolution (both within each institution).

A fourth, and may be the most important benefit from the standpoint of the quality of the decision making process is the fact that the separation of investigation and decision making limits (somewhat) the risk of confirmation bias whereby an authority having invested a large amount of resources to bring a case against a firm or a set of firms has a natural tendency to legitimize its past efforts by finding the investigated firms in violation of the competition law.

If there are thus clear potential benefits of separating investigation and adjudication, some have questioned the importance of those benefits and others have pointed out that there are nevertheless costs and inefficiencies involved in keeping the two functions apart.

Belgium is, for example a country which underwent a change of institutional design of its competition authority in 2013. The contribution of Belgium to the Competition committee roundtable on institutional design[38] states that the newly established Belgian Competition Authority (BCA) is an autonomous authority with its own legal personality. It is managed by a board of four members appointed by the Government with a mandate of 6 years: the president, the competition prosecutor general (auditeur général), the chief economist and the general counsel. Formal cases are opened by the prosecutor general after hearing the chief economist. Investigations are managed by the prosecutor general who appoints one member of the investigation service in charge of the daily management of the case and one as 'peer reviewer'. These three officers can together decide as auditorat (1) to bring the case before the Competition College, or (2) to settle the case, or (3) to drop the case. The Competition Colleges consist of the president and two assessors designated in alphabetic order from a list of twenty. They hear and decide the cases brought for them by the auditorat (or the parties who wish to appeal a decision of the auditorat to drop a complaint.

An interesting comment by the President of the BCA (who was the director general for competition of the Authority before the institutional change) is found in the Belgian contribution to OECD.[39] It states: " I wish to reiterate, however, what was said in earlier surveys of the OECD and the IMF. As Director General in the previous authority in which I was member of the Board of the ministry of economic affairs, I never experienced the slightest restriction of the independence of the agency. This of course also held true for the Competition Council that was an administrative tribunal whereby the authority only act in formal infringement cases as the prosecutor".

In administrative models in which a board independent of the investigatory team is called upon to make the final decision on a merger or on an antitrust violation three risks exist.

The first risk is that the board may lack means to monitor that quality and/or the quantity of the work done by the investigatory body of the same agency. The lack of possible feedback from the decision board to the investigatory arm of the competition authority may lead to a suboptimal use of resources and/or an ineffective process if the two parts of the administrative agency do not share the same vision of the goals of the institution.

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[38] Note by Belgium, Roundtable on Changes in Institutional design of Competition Authorities, OECD, 21 November 2014, DAF/COMP/WD(2014)88, available at http://www.oecd.org/daf/competition/changes-in-competition-institutional-design.htm

[39] Ibid.

First there is the risk that the decision-makers, because they have not participated in the investigation, may not know or understand as well as the investigatory team the implications of the results of the investigation. This could happen in some very fact intensive cases where the analysis requires the ability to put into context numerous elements revealed by the investigation. Even if the decision makers read the investigatory file they may not have as intimate a knowledge or understanding of this file as the investigators themselves who have spent many months painstakingly putting together its elements.

Alternatively, in some institution the decision-makers benefit from a second investigatory team, usually separate from the team which conducted the initial investigation.

The risk in that case is the opposite. Indeed the risk exists that there may be unnecessary duplication between the two successive investigations. This was, for example, frequently a complaint voiced by the business community when, previous to the creation of the CMA, merging businesses were faced by requests for information , first, by the Office of Fair trading and, second, when there was a reference to the Competition Commission by the staff of the Commission. The business community clearly felt that these repeated requests, often on the same points imposed on them an unnecessary cost. As mentioned earlier the CMA has since tried to alleviate the problem by including in the second phase investigatory team some members of the original investigatory team. But the trade-off between ensuring the independence of the investigatory and the adjudicative processes and making sure that the adjudicators are not entirely dependent on the information provided by the primary investigators is a tricky one.

The problem of the separation of the adjudication from the investigation is particularly acute in civil law systems when the decision maker is a court and when the court does not have separate investigatory powers or independent means of investigation. In such cases, the court may be in fact very dependent on the evidence and the economic interpretation of this evidence proposed by the prosecuting entity even if the defendants lawyers try to provide the court with whatever evidence would exculpate their clients. The court often cannot ask for additional or different investigations and the defendants do not have the powers of investigation of the prosecutor.

Thus the separation of investigation and adjudication may come with two costs: the cost of duplication and/or the cost of a diminution of the relevance or the quality of the investigation for the adjudicator which partly offset some of the benefits of the system. The author's personal experience in the French system suggests another illustration of this phenomenon. In the case of France, within the Autorité de la concurrence, there is a strict separation between the investigatory team (under the leadership of the Rapporteur Général) and the board under the leadership of the President of the Authority. As a result it is quite difficult for the board to deal with an unsatisfactory or slightly incomplete investigation. The board is limited by the charges which have been notified in the statement of objection. When it feels that a charge is missing , it has the power to send back the case to the investigatory team but is necessarily limited in its ability to say exactly what it considers is missing in

the investigation for fear of jeopardizing the independence of the investigation and the adjudication. The investigators understandably consider that having a case sent back to the investigatory team by the board is one of the worst outcomes for them as it clearly establishes that the initial investigation was insufficient. This has two effects on the investigators; first they try to do as good a job as possible and this tends to ensure a high level of quality of the investigations. But, second, it also leads the investigators to send to firms statements of objections with charges which go far beyond what would be reasonable and justified. The reason is that the investigators, not knowing always what the board would consider to be sufficient evidence of a violation would rather notify violations that do not have merits which the board will not retain in its final decision than not include in their statement of objection questionable charges of violations of the law because in the latter case, they run the risk of having the board send back the case for further investigation. This is not costless for investigated business as they have to answer numerous dubious charges of violations, even in cases where it is clear that the case officer is not fully convinced of the validity of his reasoning. Furthermore dubious charges of competition law violations are often all the more difficult to fight that their legal or factual or analytical basis is very shallow.

A third possible drawback of the separation between investigation and adjudication was much discussed in the United Kingdom during the lengthy process which eventually led to the creation of the CMA. One of the questions discussed at some point in the process was whether a prosecutorial model should be preferred to an administrative model. The OFT staff was rather alarmed by the prospect of a prosecutorial model which would imply they (or their successors) would not be in charge of making decisions on case. The argument they put forth was that moving to a system were the investigative staff would not make decisions would discourage the most talented staff who would see their area of responsibility restricted to the investigation. The argument was made that the separation of investigation and adjudication could have the effect of lowering the quality of the investigatory staff of the competition authority.

It is fair to say that no empirical evidence was presented to back such an assertion. Many competition authorities such as, for example, the US FTC or the French competition authority have a long tradition of separation of investigation and adjudication and top quality staff. So it is entirely possible that the argument was nothing more than a corporatist argument by the OFT staff to retain its status.

Some of the afore-mentioned costs or risks of the separation between investigation and adjudication may explain why the European Commission chose an opposite path to that of a number of competition authorities. Several decades ago the functions of investigation and adjudication were separate within the Directorate in charge of competition then called DG4. The service in charge of investigation would eventually turn over its files to the service in charge of decision making and the two services were independent of each other. This organization has given way to a different one were the services of the Directorate General for Competition which are in charge of the investigation are also the drafters of the draft decision (after consultation with other interested services and, in particular, the legal service)

under the supervision of the Commission and the Commissioner's cabinet. This decision is eventually examined by the Commission. Over the years, this model has drawn criticism for three main reasons: the lack of separation between investigation and adjudication; the fact that the parties rarely if ever meet the decision makers and the fact that the Commission itself will mostly be former ministers.

Finally, it is worth mentioning that South Africa went from an integrated administrative model to a prosecutorial model in 1999 with the competition agency bringing cases to the Competition Tribunal and the decisions of the Competition Tribunal being reviewed by the appeal court. This move, which was followed by a number of African countries, ensures the independence of the investigation and the adjudication. However the South African delegation to the OECD debate on changes in institutional designs of competition authorities considered that it was too early to say whether the model adopted in 1999 has worked out or not. According to the delegation of South Africa, some of the likely advantages of the new model are a better respect of due process, more independence in decision making , a diminished likelihood that the competition authority might be captured, a lesser probability of corruption and a more rigorous decision making process. Against these potential benefits some of the drawbacks of the new system may be, first the fact that cases may take longer to be disposed and the fact that the cost of running two institutions is higher for the government than in an integrated system. In addition, the South African delegation noted that for such a bifurcated system to work well, it is necessary that there be sufficient expertise in the adjudicative body.

The organizational structure of competition authorities: collegial board versus single commissioner

There is a variety of organizational designs of competition authorities. The competition authority may consist of a single Commissioner (as in Canada or in the Antitrust division of the Justice department) or be a collegial body (such as the US FTC) . If there is a collegial body it may be an administrative board (such as in the CMA in the United Kingdom) or a board making decisions on cases (such as in the case of France). Finally the board members may be full time or part time members.[40]

The collegial body model with a decision making board allows for the possibility of board members having different areas of expertise (for example law, economics, business) and thus may seem to be more legitimate to make competition decisions which require a combination of skills. The single decision maker may have fewer

[40] The Secretariat note on the Optimal Design of a Competition Agency established by the Secretariat for the OECD Global Forum on Competition in 2003 reports on 37 answers received from Member and non Member states and states: "Out of the around 90 % of Competition Authorities that have competence to take certain kinds of decisions on individual competition law cases, around two thirds have a specific collegiate body for decision-making. In the remaining third the power to take such decisions is assigned to the Head of the Authority. When decisions are taken by bodies external to the Competition Authority, categories mentioned by respondents include courts of general jurisdiction, specialized courts and other collegiate bodies, and ministers".

skills than a collegial body and therefore a more limited ability to take into consideration all the relevant elements which should be considered in a given case.

The fact that a competition authority has a collegial body may also seem to be likely to make its capture (by business interests or by government) more difficult than if the competition authority is a single individual. Indeed it would seem that as the number of commissioners increases the likelihood that they are all captured by the same interest diminishes.

Finally the collegial model may, if the appointment of the board members are staggered, lead to more stability in the jurisprudence whereas a change of a single commissioner at the end of his term may lead to wide swings in the way the competition maw develops.

There are, however, possible downsides of the collegial body model.

First, the decision making process may be slower in a collegial body than when a single individual is responsible for the decision.

Second, the decisions of the authority may be less consistent in collegial bodies if there are disagreements among the members than the decisions made by a single head of agency.

Third, when there are disagreement between the board members, the competition's decisions may be criticized publicly by the members of the board which were in the minority and this may contribute to a loss of trust in the institution.[41]

Independence of competition authorities

The issue of the independence of competition authorities has been increasingly important in the debate about the optimal design of a competition authority and has several dimensions: structural independence, operational independence, organizational independence and financial independence. We will deal with organizational and financial independence later on and the current development will be devoted to the issue of operational independence.

Twenty years ago most delegates to the OECD competition committee were representative of ministries. Nowadays they are mostly representatives of independent administrative agencies which are not directly part of the executive. It is now considered to be appropriate for a competition authority to be insulated from government interferences in its law enforcement activity. Equally, conventional wisdom also suggests that competition authorities should be independent of business interests to protect the integrity of their law enforcement activity.

[41] Open conflicts among the board members of a competition authority have developed at different time in a number of countries such as Brazil, Mexico, the United states, Portugal, Spain etc.... in some cases the conflicts have been so acute that they have brought down the institution altogether with the result that entirely new boards were brought in or that a completely new institution with different responsibilities or designs replaced the dysfunctional institution.

Yet as a recent EC study noted,[42] even in Europe "a number of NCAs are formally assigned to, or come under the responsibility of, a minister or ministry. Moreover, some NCAs may in principle be subject to general supervision or to general instructions by the executive branch or parliament although, such supervision may not have been exercised in practice, or at least not recently". The degree of independence from government that a competition authority enjoys may also vary with the subject matter it deals with. Thus, for example, the above quoted EC document stated "In a number of Member States a specific form of government intervention exists in merger cases. It usually means that the government or competent minister may intervene on public interest grounds after the NCA has analysed the merger's impact on consumers and businesses. In one Member State, the Prime Minister may declare a merger to be of state interest and, as a consequence, exempt from competition scrutiny by the NCA".

It is assumed that the more independent the competition authority is structurally and operationally, the less likely it is that it will be under pressure to start investigations or to decide on cases for reasons extraneous to the logic of competition. This is important because competition laws are written in such a way that competition authorities often have a wide discretion when it comes both to the prioritization of cases and the competitive assessment they make in each case. They can thus relatively easily hide motives unrelated to competition or consumer benefit, if they have such motives, in decisions which look formally fairly reasonable by manipulating market definition, a finding of market power, concerns about a vertical restriction or an abuse of dominance or the counterfactual to assess the impact of a merger on competition .

Because it is thus not easy to detect departure from an economically justified interpretation of competition laws, it is particularly important that competition authorities be as sheltered as possible from the risk of capture by the executive branch of government or by business interests . Thus the first benefit expected from independence of the competition authority is a better quality of decisions and an implementation of competition law more in line with economic analysis and legal principles. If independence does not guarantee the competence of the competition authority, at least it limits the risks that illegitimate goals will interfere with the decision making process.

A second benefit, linked to the first one may be a greater consistency of decisions. Indeed if one assumes that the executive is tempted to intervene in some cases where it may have a particular interest, those cases may end up being treated by the competition authority differently than other cases. A similar situation may accrue if the competition authority is captured by business interests. The cases

[42] Commission Staff Working Document Enhancing competition enforcement by the Member States' competition authorities: institutional and procedural issues Accompanying the document Communication from the Commission to the European Parliament and the Council Ten Years of Antitrust Enforcement under Regulation 1/2003: Achievements and Future Perspectives.

were those business interests are involved may be treated more leniently than other cases.

Consistency in the treatment of cases may contribute to build trust of the stakeholders in the institution and make it more respected by the firms.

A third possible benefit of the structural and operational independence of the competition authority is the fact that it limits the incentive of economic agents to lobby the authority since this lobbying is less likely to be successful, thus freeing resources which can be put to a better use for society.

Thus as Bill Kovacic and Marc Wineman put it[43] "Implicit or explicit in many discussions of independence are conditions that we believe represent a sensible core domain of decisions that are shielded from political interference. The most important of these is the exercise of law enforcement authority which can lead to the imposition of significant sanctions upon juridical persons and natural persons. The political branches of government ought not to be able to (a) dictate, by rule or by custom, which entities an agency investigates; (b) determine whether the agency will prosecute such parties; or (c) influence how specific disputes will be resolved, including the choice of punishments for alleged wrongdoers.(. . .) These conditions assume greater importance as the severity of the agency's power to punish increases."

If there are advantages to the structural and operational independence of the competition authority vis à vis the government in its enforcement function, there may be also be trade-offs between the protection of the integrity of the enforcement activity of the competition authority and its ability to advocate. Indeed, the more independent of the executive is the competition authority the less effective its advocacy is likely to be.

This trade off , and the necessity to be effective in advocacy, is the justification often given by the Korean competition authority to justify the fact that the head of the Korean competition authority participates in the Cabinet meetings. As the KFTC has remarked in many occasions, this allows the competition authority to be informed in a timely fashion of any governmental plans which may have a negative impact on competition and to advocate against them.

There may also be a trade-off between accountability and independence. Accountability, if it takes the form, for example, of a close scrutiny by the executive or the legislative branch of the ways in which the competition authority has discharged its functions and/or has allocated its revenues, may limit the ability of the competition authority to act in the way it considers most appropriate for fear of displeasing the bodies which are reviewing its activities (and sometimes deciding on its budget). But at the same time there cannot be independence (and the ability for the competition authority to impose strong sanctions) without accountability.

[43] William Kovacic and Marc Wineman "The Federal Trade Commission as an Independent Agency: Autonomy, Legitimacy and Effectiveness", Iowa Law Review, Vol 100, p 2085.

Kovacic and Wineman ask what safeguards are most appropriate to guarantee the level of operational independence needed for competition authorities. They suggest the following list:

- Legal commands or customs that impede the head of state, government ministries, or the legislature from taking direct or indirect steps to shape broad policy or to determine how the agency exercises its power to prosecute cases or adopt secondary legislation.
- An absence of judicial review of agency decisions, or requirements that courts abide by a highly deferential standard of oversight.
- The absence of, or severe limits upon, the ability of citizens, nongovernment bodies, or commercial entities to influence the agency's agenda or to monitor its operations by having access to the agency's records or by participating in its activities.
- Sources of funding that do not depend upon the exercise of discretion by the head of state, executive ministries, or the legislature.

However they recognize that meeting those formal conditions could be problematic from the point of view of the accountability of the competition authority and they argue that a more limited set of conditions which allow political institutions to offer guidance or recommendations to the competition authority about large issues of policy but would prevent them from dictating or blocking a specific decision may be more realistic.

The situation in which the competition authority is part of a ministerial department is generally considered to be least consistent with the requirement of independence. Indeed in such a model, the head of the agency generally can be dismissed at will by the executive.

More consistent with the necessity to ensure the independence of the competition authority is the situation where the Competition agency is an administrative body which is outside the ministerial structure if its members are appointed for a fixed term and cannot be removed from office except for cause.[44]

Mexico is one of the countries which underwent a significant institutional change of its competition authority in 2013. Two agencies with full constitutional autonomy—responsible for competition matters were created: the Federal Telecommunications Institute (Instituto Federal de Telecomunicaciones—IFT), for broadcasting and telecommunications, and the Federal Economic Competition Commission (Comisión Federal de Competencia Económica—COFECE), for all other sectors. COFECE replaced the former Comision Federal de la Competencia , a body with technical autonomy which formed part of the Ministry of Economy.

[44] Thus it appears that from a formal standpoint, in the United States the status of the Antitrust Division of the Justice department of the United States is less protective of its independence than the status of the Federal trade Commission. The head of the Antitrust Division can indeed be dismissed at the will of the president of the United States unlike the head of the FTC even though in practical terms the independence of the head of the Antitrust Division of the US Justice Department seems to be respected.

Cofece was given special institutional characteristics and new powers to effectively promote and protect the competition process. This autonomy includes features such as: (a) distinct legal personality and self-patrimony; (b) full independence in the decision-making process; (c) budgetary autonomy, (d) the power to enact rules regarding administrative organization, (e) the power to enact implementing regulation; (f) the power to file a constitutional recourse before the Supreme Court of Justice in case the Federation violates or affects its authority.

With respect to accountability, COFECE is obliged to submit reports to the Executive and the Federal Congress, and is subject to various accountability and transparency mechanisms and an Internal Comptroller, appointed by the Chamber of Deputies, has to oversee the application of the COFECE's budget as well as the conduct of public officers regarding administrative responsibilities.

Besides the formalistic safeguards mentioned previously several set of provisions can protect the independence of the competition authority.

First, the conditions of the appointment of its members, the rules governing the conflicts of interest of the board members as well as the time limits put on their mandates can contribute to the independence of the competition authority. From that standpoint, it seems preferable that the chair and the Commissioners be appointed for a period sufficiently long so that they can acquire the basic skills necessary to deal with the interface and law and economics. But it is equally important that the mandate of the members of the board not be renewable for another mandate at the end of its mandate. Indeed , if board members can be re-appointed, the possibility exist that they will eventually become concerned with their chances of re-appointment and will start adapting their judgement to what they believe would please the authority in charge of reappointing them, thus foregoing deliberately their independence. The staggering of the appointment of the board members may from that point of view have the added advantage of making the appointment of any commissioner less important for the balance of the institutions.

Over an beyond the formal rules, it is widely acknowledged that greater transparency in operations can, in general, increase the agency's perceived legitimacy and can be a useful barrier against government or business encroachments. Transparency can be achieved through a diversity of technical means such as press releases, the publication by the Commission of guidance papers, the publication of well-written and well-argued decisions etc.... The more transparent the process of decision making by the Competition authority the more visible would be the result of an undue influence and the less likely it is that the competition authority will let itself be influenced by outside forces.

It should, however, be noted that excessive transparency may have some drawbacks. The experience of Cade in Brazil in its early years provides an interesting example. The Cade board had the duty to deliberate in public. This meant that each of the commissioners had to announce publicly its vote and what justified it. There were allegations that this excessive transparency led to the fact that each Cade commissioner in the deliberation was more interested in what the press would report about their position than in establishing a real dialogue with the other

commissioners and that this may have affected both the quality of decision making and the independence of judgment of the Cade Commissioners.

Closely related to the discussion on the independence of competition authorities, there is a debate on whether Ministers or Governments should be allowed to give a strategic steer to the Competition authorities.

In its contribution to the OECD Competition Committee debate on institutional changes[45] the EC Commission states: "The majority of NCAs are not subject to supervision by another state body. However, a number of NCAs are formally assigned to, or come under the responsibility of, a minister or ministry. Moreover, some NCAs may in principle be subject to general supervision or to general instructions by the executive branch or parliament although, such supervision may not have been exercised in practice, or at least not recently. In addition, the degree of supervision differs and may range from guiding and co-ordinating the NCA's activities or outlining the NCA's activities without intervening or deciding on individual cases or on the actual application of the law, to giving instructions regarding the general application of the law or regarding budgetary issues or general policy matters which is also directed to other governmental institutions. In a number of Member States, the minister may instruct the NCA, for example, to carry out sector inquiries or competition studies or analyses, which the NCA cannot otherwise initiate itself, but without, however, directing the outcome. The minister may also instruct the NCA to investigate a particular case or examine the need for interim measures".

The debate on the appropriateness of strategic steers of competition authorities can be illustrated by the recent divergent evolutions of the UK and Portuguese competition laws.

A new feature in the recent landscape changes in the UK is the requirement for the Government to provide the CMA with a strategic steer. The UK delegation to the debate on institutional changes held at OECD states[46] "Whilst at the time of the reforms certain concerns were raised that such a statement risked weakening the CMA's perceived independence, the Steer is a public document setting out the Government's high-level aims and expectations for the CMA in an open and transparent way". And "Whilst the CMA has regard to the Steer and remains accountable to the Government for its performance assessed by reference to the Performance Framework, its decision-making remains fully independent from Government". Thus according to the Delegation from the United Kingdom, the ability of the government to give the CMA a strategic steer is a minor concession to the request for the accountability of the institution and the fact that the steer is public should be seen as a protection against undue secret pressures. Incidentally

[45] Note by the European Union, Roundtable on institutional changes, OECD Competition Committee, DAF/COMP/WD(2014)107, 5 December 2014, available at http://www.oecd.org/daf/competition/changes-in-competition-institutional-design.htm

[46] Note by the United Kingdom, Roundtable on institutional changes, OECD Competition Committee, DAF/COMP/WD(2014)105, 18 November 2014, available at http://www.oecd.org/daf/competition/changes-in-competition-institutional-design.htm

this is not the only element of accountability of the Competition Authority in the case of the United Kingdom. The CMA is also subject to a performance framework which is agreed with the government . The Performance Framework sets out the performance the Government expects from the CMA and describes how the CMA will fulfil the performance reporting requirements of the Act. The CMA Board is accountable for the success of the CMA as a whole and the delivery of the objectives set out in the Performance Framework. Thus, the CMA must report annually on a number of benchmarks, including: the delivery of a target of direct financial benefits to consumers of at least ten times its relevant costs to the taxpayer (measured over a rolling 3-year period); the ratio of direct financial benefits to consumers and costs for its principal tools and, finally, its assessment of wider benefits of its work, for example on growth, business and consumer confidence in markets, compliance with competition law and deterrence of anticompetitive behaviour.

Not everybody takes a positive view of the United Kingdom situation in which the UK Governmùent can give a strategic steer to the CMA. For example the business community (The Business and Industry Advisory Committee of OECD) stated in its contribution to the debate on institutional changes[47]: "In the U.K., for example, in the CMA's infancy, there are questions regarding its independence from government. When the CMA was formed, the government outlined a non-binding ministerial statement of strategic priorities for the CMA, or a "steer", which essentially outlined how the government thought the new body would fit within its broader economic policies. Further, the CMA possesses broad new investigative powers regarding issues of 'public interest', such as national security, and the government recently called upon it to intervene in the energy and financial services sectors. While the CMA has emphatically stated that it will make its own decisions on which markets to investigate, there are nevertheless questions regarding its independence from government".

The situation in the United Kingdom is in sharp contrast with the situation in Portugal. The previous Portuguese Competition Act's bylaws of 2003 stated that the independence of the competition authority in the performance of its duties was "without prejudice to the guidelines on competition policy set out by the Government (. . .) or to the acts subject to ministerial oversight" (article 4). The need to comply with Government competition guidelines was perceived by some as lessening the competition authority's independence. This provision has now been removed from the Bylaws, which state instead that the Competition authority "is not subject to governmental supervision" and that "the Government cannot make recommendations or issue directives to the Board on the priorities to be adopted by the Portuguese Competition Authority in carrying out its mission" (Article 40(1) of the PCA's Bylaws). The law explicitly excludes, therefore, the possibility of external interferences with the activities of the Competition Authority.

[47] Note BIAC, Roundtable on institutional changes, OECD Competition Committee, DAF/COMP/WD(2014)126, 10 December 2014.

To sum up, it is fair to say that competition authorities which can receive a strategic steer (such as the CMA in the United Kingdom, but also the ACCC in Australia) from their government would probably be happier if this possibility did not exist as they are faced with an unsatisfactory alternative : either they disregard the steer they have received and they risk being isolated from other policy makers or they follow the steer at the risk of being perceived as subservient to the government.

Performance indicators are a politically more neutral way of ensuring that the Competition Authority is accountable. However they can have drawbacks and lead the competition authority astray if they are simplistic or badly conceived. For example, it seems clear that the preference of the OFT for advocacy and negotiation over enforcement came from the fact that the assumed direct effect of settlement or the publication of guidelines always seemed to be much more important than the effect of an enforcement decision. Similarly, the OFT was not keen on small enforcement cases and only accepted to take very large cases that could have an influence throughout the entire industry rather than on some firms both because the assumed effect of those cases applied industry wide and because there were some scale economies in the investigation of such cases. However, what was crucially lacking in the methodology used to assess the effect of the actions of the OFT was the deterrent effect of enforcement (which depends both on the probability of detection and the severity of the sanction); furthermore, taking only very few and very large enforcement case, some of which failed at the appellate level, was increasing the risk that OFT would be perceived as an ineffectual enforcer.

Funding of competition authorities

Competition authorities have often argued that securing sufficient funding was a necessity and that lack of proper funding could jeopardize the quality and the integrity of the decision making process and ultimately of the competition law enforcement process.

Very little will be said in this article on the amount of funding necessary for a competition authority. The heterogeneity of competition authorities for reasons discussed in this article with respect to their role, their scope of activity, the legal context in which they operate, the size of the countries over which they have jurisdiction, the level of market development of the economy they oversee, the importance assigned to market competition etc... makes it exceedingly difficult to compare budget allocations for competition authorities across countries and to come up with a conclusion on an appropriate benchmark for the funding of a competition authority.

The best resourced competition authorities (having a budget above or roughly equal to US$90 million) are the US Department of Justice Antitrust Division, the US Federal Trade Commission, the Korean Fair trade Commission, the EU Competition Division and the Japanese Fair Trade commission of Japan.

Non European competition authorities with a mid-range budget (between US$15 and 30 millions) are found in Israel, Turkey, South Africa, or Canada.

Within Europe, the competition authorities of the United Kingdom, Sweden, Germany, France , Italy and Spain have budgets upward of US$20 Million (US$24 million for France and nearly US$75 million for the United kingdom). The competition authorities of Norway, Denmark, and Greece have a budget of US$10–15 million. Hungary, Poland, Ireland, Portugal, Belgium, the Czech Republic have budgets between US$5 and 10 million. Finally, the competition authorities of four countries Cyprus, Austria, the Slovak Republic, Lithuania and Latvia have budgets between US$1 and 3 million and a number of smaller countries have budgets inferior to US$1 million (Slovenia, Malta, Estonia) .

In Latin America Mexico has the best resourced competition authority with a budget of US$30,000,000. In three countries Brazil, Chile, Ecuador, the competition authority seems to have annual resources comprised between US$9 and 15 million. In three countries Argentina, Columbia, El Salvador, the competition authority has an annual budget comprised between US$2 and 3 million and in four countries Honduras, Uruguay, Costa Rica, Nicaragua the annual budget of the competition authority is comprised between US$900,000 (in the case of Honduras) and US$300,000 (in the case of Uruguay).

As mentioned earlier those figures are not easily comparable, among other reasons, as the scope of activity of the competition authorities varies widely from one country to the next and as the economic sizes of countries are themselves very different.

In its peer reviews the OECD has taken the habit of comparing the resources allocated to the competition authority with the resources allocated to other regulators such as the telecom or the electricity or the media regulators. Even though those comparisons are not without their problems, they show that in a number of countries, the competition authority is rather poorly resourced compared to the technical regulators without such difference being clearly justified.

There are, however, at least three issues worth raising regarding the financing of competition authorities. The first issue is that of the independence of the funding from the case selection and from the decision making of the competition authority. The second issue is that of the possibility for the competition authority to be self-funded. The third issue is that of the budgetary autonomy of the authority in the spending of its budget.

The first question is crucial and the source of the funding of the competition authority can be problematic in two types of circumstances. First, if the government or parliament have the ability to "punish" the competition authority for either pursuing cases that they do not like or for findings that they disagree with, by modifying the budget allocated to the competition authority, the independence of

judgment of the competition authority (i.e. its ability to decide to pursue cases uniquely on the legal and economic merits of those cases) will be in jeopardy.[48]

This could, for example, explain partly the findings of some researchers investigating the US FTC merger challenges. It is worth remembering that the US Federal Trade Commission has to go through a Congressional reauthorization process at regular intervals through the Senate Committee on Commerce Science and Transportation and the House Committee on Energy and Commerce. Furthermore, the appropriation committees of the House and Senate appropriate funds for the agency on an annual basis. Coate, Higgins and Mc Chesney[49] studied the FTC challenges to mergers during the period 1982–1986. They suggested that political pressure on the FTC to investigate more merger cases came in two different varieties: the call by Congress on FTC commissioners and staff to defend their antitrust record (hearings during which individual congressmen and senators can even advocate particular enforcement actions) and the budget process whereby "antitrust agencies budgets are allocated according to the enforcement zeal shown". Analyzing the enforcement record of the FTC they find that to challenge mergers the FTC relies on a number of the (economic) criteria mentioned in the merger guidelines (such as the Herfindhal-Hisrschman Index, the ease of entry, and the likelihood of collusion) but also on the "the desires of politicians to stop mergers". They conclude " As we show in statistical tests, greater political pressure does cause the FTC to challenge more mergers".

Second, if the competition authority has a financial stake in the outcome of the cases it investigates, which is the case, for example, if it directly benefits from the fines it imposes, then there is the possibility of "moral hazard" and the decisions of the competition authority may not be based exclusively on the legal and economic merits of the cases it handles. This is why it is generally considered to be inappropriate for a competition authority to be directly funded by the fines it imposes on competition law violators. It is thus generally held that the sanctions meted out by the competition authorities should go to the general budget rather than to the specific budget of the competition authority. Not all countries abide by this principle. For example, the competition authorities of Portugal, Bulgaria and Peru are partly financed by the fines they impose on competition violators. Portugal and Bulgaria can use (for funding their budget) up to respectively 40 and 25 % of fines.

[48] The Secretariat note on the Optimal Design of a Competition Agency established by the Secretariat for the OECD Global Forum on Competition in 2003 reports on 37 answers received from Member and non-Member states and states: "The decision on the budget of the Competition Authority often involves several levels of government. 60 % of the replies indicate that the Parliament or other legislative assembly is involved in the procedure. Where Parliament is not involved, the decision is normally either taken by the Government or by a Minister (around 15 % in each category). A few authorities have no separate budget. Less than one fifth of the Competition Authorities have revenues from fines or fees contributing to their funding".

[49] Malcolm B. Coate, Richard S. Higgins and Fred Mc Chesney, Bureaucracy and Politics in FTC Merger Challenges, The Journal of Law and Economics, Vol 33, N°2 October 1990, pp 463–482.

The Hungarian competition authority is allowed to use (indirectly) 5 % of its fines for funding conferences and external research projects.

Whereas, it is generally the case that competition authorities are not the direct recipient of the fines that they impose, there is, however, a more subtle way in which competition authority indirectly benefit from the aggregate amount of sanctions they impose. It is indeed very tempting for competition authorities who are competing with other administrative agencies for the allocation of public funds to make the point that they contribute, through their fining policy, sometimes mightily to the resources of the state and that therefore their efforts should be appropriately rewarded by an adequate budget.

However, some authors have suggested that allowing the competition authorities to benefit from some of the fines they impose on violators may, in some circumstances, in fact contribute to correcting their natural bias toward under-enforcement. Pierluigi Sabbatini[50] suggest two reasons for the suboptimal level of fines meted out by European competition authorities. First, to appear to be successful, competition authorities want to ensure a high success rate before appeal courts and therefore have a high incentive to favour relatively low fines (so as to reduce the incentive to appeal), commitment decisions (which will not be appealable) or simple cases involving firms with large turnover (and fines that appear high in absolute value, thus ensuring the visibility of the enforcement action of the competition authority, but are low in percentage terms, thus ensuring the acceptability of the fines). Second, Sabattini suggests that competition authority officials may have an incentive to act in a way that benefits their future careers prospects and their opportunities once they will have left the competition authority. Some of those staff are likely to join an economic consultancy firm or a law firm or academia after the end their career at the competition agency. This would lead them to want to open many cases and follow a high sanction strategy. But commissioners or board members of competition authorities, who are usually political appointees, may in some cases be more interested in pursuing a career in government after they term ends at the competition authority. In order to have a higher chance of being appointed to another government job or in a political position, their technical skill at deterring competition violators may be less important than their skill at mediating between different interest groups. This would lead them to overlook the deterrent effect of punishment and to focus more on the adequacy of sanctions with respect to the harm done to the immediate victims of the antitrust behaviours examined.

Assuming on this basis that competition authorities (at least in the European context) tend to be myopic (or to under enforce as is claimed by Connor), Sabbatini goes on to suggest that this bias could be partly eliminated, first, if the competition authority were entitled to retain a limited portion of the sanctions which have been confirmed at the appellate level, second if the sums retained by the competition

[50] Pierluigi Sabbatini "Funding the budget of a competition authority with the fines it imposes" SSRN Electronic Journal 10/2009; DOI: 10.2139/ssrn.1492666.

authorities would come in addition to (and not in substitution to) their governmental funding and, third if these sums could only be used for purposes specifically designed to incentivize the staff to bring about successful fining cases (i.e. fining cases upheld on appeal or not appealed) and to improve the quality of decisions. For example, such sums could be used to provide additional incentives for the staff to successfully bring cases of sanctions, to fund temporary personnel such as the members of the chief economist staff or to finance conferences or studies on competition policy.

In conclusion of this point there may be a complex set of trade-offs between the quality of the enforcement of the competition authority and the independence of its budget from the sanctions it metes out.

The second issue related to funding is that of the possibility for the competition authority to be self-funded.

As was clear from the previous development, the funding of the competition authority through the budgetary process cannot immunize the competition authority against more or less subtle pressures to adapt its performance to the expectations of those (government or parliament) who control its budgetary process. For that reason, the allocation of funds to the competition authority through the budgetary process leaves the possibility that the competition authority will behave strategically in dealing with its cases in order to maximize its chances of seeing its budget increase.

Self-funding of the competition authority can in some circumstances avoid this problem. By self funding we mean that the competition authority benefits from resources which are both independent of its record and of the budgetary process.

A good example of a self-funding mechanism for the competition authority is given by the case of the Turkish Competition Authority. Article 39 of the Turkish Competition Act provides that the revenues of the Authority are made, first, of funds to be allocated to the Authority in the budget of the Ministry of Customs and Trade, second, of a tax of 4/10000 on the capital of all newly established incorporated limited liability partnerships or of the increase in capital of already established partnerships and third, of publications or other revenues of the Authority. Since its creation, in 1997, the Turkish Competition Authority (which had a budget of US $27,000,000 in 2014) has relied entirely on the tax on limited liability partnerships to fund its budget and has never needed to benefit from tax revenues of the Ministry. Thus the Turkish competition authority has avoided the implicit or explicit bargaining associated with the budget process and the volume of its resources, provided by the shareholders of limited liability partnerships rather than by the taxpayers, is independent of its enforcement decisions.

This type of self-funding mechanism which allow the funding of a regulator by the regulated firms rather than by the taxpayers can have a great appeal in countries where the government is cash strapped but one of the risks faced is that this formula be replicated to fund a number of other regulators in which case the transaction costs on the formation of limited liability firms can become quite significant leading firms to incorporate themselves outside of the country.

In its contribution to the 2014 roundtable on Changes in Institutional Design,[51] the Italian Competition Authority explained that it had adopted a new funding system since 2012 (effective in 2013) which is somewhat similar to the Turkish system. Law Decree no. 1 of 24 January 2012 introduced a mandatory contribution for companies incorporated in Italy whose turnover exceeds the threshold of 50 million euro. This contribution replaces previous financial resources of the Italian Competition Authority, i.e., public budget and merger fees. The contribution stated: "As a result of the new funding system, the Authority no longer needs to engage in negotiations with the Government every year to secure its financial resources, thus being reinforced in its independence".

Another slightly different example of a (partly) self-funding system is that of the Portuguese Competition Authority which was modified in 2014 following the adoption of a Framework Law setting the main principles for the functioning of regulatory bodies in Portugal under the Economic Adjustment Programme.[52] One of the key structural reforms set out by the Programme has been to ensure the independence and adequate financing of sectoral regulators and of the Competition Authority.

According to Article 35 of the Portuguese competition law the Portuguese Competition Authority, first, may charge fees for the services it provides, second, receives 40 % of the proceeds of fines imposed for competition law violations, third, receives revenues from a tax imposed on a large number of sectoral regulators.[53] The amount of the tax is fixed yearly by the Minister of Finance for each sectoral regulator and must be comprised between 5.5 and 7 % of the own resources of the regulator (excluding the product of fines or sanctions it has imposed) and , finally, if necessary, may receive a budget allocation from the Ministry of the economy.

Another way to provide self-funding for the competition authority is to allow it to charge for services rendered. In particular in a number of countries, the competition authorities when they review mergers can charge a filing fee.[54] The question

[51] Note by Italy, Roundtable on Changes in Institutional Design of Competition Authorities, OECD, DAF/COMP/WD(2014)96, 17–18 December 2014.

[52] The EU/IMF Economic Adjustment Programme for Portugal provided official sector financing by the European Union, the euro-area Member States and the IMF of some 78 billion €, for Portugal's possible fiscal financing needs and support to the banking system. One third was to be financed by the European Union under the European Financial Stabilisation Mechanism (EFSM), another third by the European Financial Stability Facility (EFSF), and the remaining third by the IMF under an Extended Fund Facility.

[53] The sectoral regulators contributing to the budget of the Competition Authority are: the Supervisory Authority of Insurance and Pension Funds, the Securities Market Commission, the National Communications Authority, the Transportation and Mobility Authority, the National Civil Aviation Authority, the Public Procurement Markets, Real Estate and Construction, the Regulatory Authority for Water Services and Waste, the Regulatory Authority for Energy Services, and the Regulatory Authority of Health.

[54] In the first survey on the question of filing fees in 2005, The ICN found that of the 73 jurisdictions with pre-merger notification regimes of which the working group was aware, 42 did not charge a filing fee and 31 charged a filing fee for mergers (see "Merger Notification Filing Fees: A Report of the International Competition Network", April 2005).The developments which follow are largely based on this document.

of whether a competition authority is authorized to charge a filing fee for merger review depends partly on whether the prevailing view is that the cost of the service should be borne by the merging firms who benefit directly from the merger control service or whether one considers that it is a public service that should be funded through taxpayers.

In countries where it is considered that the cost of the merger control should be borne by its direct users, several institutional designs are possible.

First, the filing fees can go to the general budget and not to the budget of the competition authority itself. Alternatively, the filing fees can go directly to the budget of the competition authority.

Second, the filing fee may be a flat fee,[55] a function of the size of the transaction,[56] a function of the services rendered by the competition authority[57] or a function of the complexity of the competitive analysis the merger entails.[58] In this last case the fee can vary depending on whether a phase II investigation is undertaken by the competition authority.

A flat fee may be easily predictable but seen as unfair as the parties to smaller transactions are subsidizing the parties to larger transactions. Fees based on the size of the transaction may lead to uncertainties or controversies about the computation of the size of transactions. Fees based on the costs incurred by the Competition Authority are more likely to allow the competition authority to recover the full cost

[55] For example in Canada, the filing fee is C$50,000 irrespective of the size of the transaction. In Austria, the filing fee is 1500 €, regardless of the size of the transaction (or the turnover of the parties to the concentration).

[56] For example, the United States Federal Trade Commission charges a filing fee which is a function of the size of the transactions reportable under the Hart-Scott-Rodino Antitrust Improvements Act of 1976. The fee is US$45,000 for transactions valued in excess of $76.3 million but less than $152.5 million, US$125,000 for transactions valued at $152.5 million or greater but less than $762.7 million and $280,000 for transactions valued at $762.7 million or greater. In 2015 the total budget of the US FTC for competition of US$127 while the merger filing fees amounted to US $100 million.

In Zambia, the filing fee payable for a merger application is 0.1 % of the turnover or assets, whichever is the higher, subject to a cap of 16,666,667 fee units. Following the value adjustment to the fee unit in 2015, the cap in filing fees equates to ZMW 5 million (approx. US$631,552).

[57] For example, in Switzerland, there is a fixed fee of Sfr5000 for Phase I proceedings (which includes the pre-notification procedure). If a Phase II proceeding is opened by the Competition Authority , fees will be calculated on the basis of the time spent by the secretariat on the case (Sfr100 to Sfr400 per hour, depending on the seniority of the staff involved and the priority of the case). Fees in Phase II proceedings can reach Sfr100,000 or more.

[58] For example in India, the Combination Regulations provide that filings should ordinarily be made using Form

The CCI's short form notification template—in particular, where certain criteria are met which would ordinarily suggest an absence of competition concerns. However, the Competition Commission of India has the power to require the parties to notify using the substantially more onerous Form II, and will "stop the clock" for the period in which it takes the parties to provide this additional information. Form I must be accompanied by a filing fee of INR 50,000 (approximately US$1100), while a fee of INR 1 million (approximately US$22,000) applies for Form II and there is no fee for Form III filings.

of merger control but may be difficult to predict for the parties and may be disproportionately high in sectors which have not previously been studied by the competition authority. Finally, when fees are based on the complexity of the transaction, there is the risk of a moral hazard problem as the competition authority may have an incentive to artificially open unjustified second phase investigations.[59]

When the fees are supposed to cover the cost of the merger reviews, one of the difficulties is to determine the average cost of such reviews. As the ICN study states: "Setting the level of filing fees to cover the cost of merger review is not an exact science, as the number of annual merger notifications can vary significantly and the measure of the cost of reviewing any particular transaction varies depending on what costs are taken into account, such as whether fixed costs are considered. Full cost recovery is not always a practical or desirable policy goal. For example, the UK Competition Commission's costs of reviewing twelve mergers referred in 2002 and 2003 varied from £262,000 to £524,000 per case. A UK Consultation Paper on merger fees published in 2004[60] noted that "a fee based on even the lowest of these costs would seriously impact the economic rationale of some mergers."" Similarly, a discussion paper published by the New Zealand Ministry of Economic Development in 2004[61] on the pros and cons of increasing the merger control filing fees levied for the Commission's services emphasized that merger control "fell well short of full cost recovery" and that "the fees levied did not even begin to cover the cost incurred by the Commission in processing applications."

In some countries, particularly in developing countries where the cost of reviewing the merger may be substantially lower than the filing fee, the explicit goal of merger review filing fees is to finance, if possible, the overall budget of the competition authority, or to contribute to the budget of the competition authority over and beyond the cost of processing the merger applications.

[59] For example in "Funding the budget of a competition authority with the fines it imposes" (see footnote 50) Pierluigi Sabbatini, talking about the Italian Competition Authority, states: "Fees to be paid on notified mergers are also a common source of finance among antitrust agencies. This type of financing shows some problems too. It is unpredictable, increases transaction costs of mergers and could distort incentives. Sometimes, as happens in Italy, these fees must be related to the effective costs incurred in the merger control by the CA. If the authority is in shortage of funds, it has a clear incentive to show an high degree of severity regarding mergers so as to increase the number of investigations (phase two of merger control). In this way more resources are employed in merger control and an increase in fees could be justified. Criteria for selecting cases are therefore distorted".

[60] UK Merger Fees: Consultation on possible changes to the system of charging firms for the cost of merger control, Consultation Document (Aug. 2004), www.dti.gov.uk.

[61] New Zealand Ministry of Economic Development, Fees for Clearance and Authorization Applications (Nov. 2004).

A particularly telling (and ultimately unsuccessful) example of a merger control filing fee mechanism which was designed to allow the cross subsidization of the other activities of a Competition Authority was the Comesa[62] merger control set up. Initially the filing fees were set at an extremely high level for regional mergers (namely, "where" both the acquiring firm and target firm or either the acquiring firm or target firm operate in two or more [COMESA] Member States). The Assessment Guidelines published in 2013 stated that that the filing fee was equal to the lower of (1) COM$ 500,000 (approx. 389,166 €) or (2) the higher of 0.5 % of the parties' combined annual turnover or value of assets in the COMESA Common Market Area. The law provided for the establishment of a turnover or asset threshold below which merging firms did not have to notify their mergers but this threshold was initially set at $ COM 0; furthermore the competition authority gave an extensive interpretation of the concepts of "operation in the member states" and an extensive interpretation of the concept of "control" for the purpose of defining when a merger has occurred. Finally, under the initial guidelines published in, it was not clear that where the merger control applied at the Comesa level, national merger controls did not apply.

The result was that very few mergers were notified to the Comesa Competition Commission. The number of mergers notified to the Comesa Competition Commission averaged about one a month for its first year of operation and there are allegations that a number of notifiable mergers were not notified as many merging firms considered that the cost of filing was prohibitive given their very low level of activity in the Comesa region.

In October 2014, revised guidelines were published by the Comesa Competition Authority which established a positive threshold of assets or turnover (US$5 million) for the target company unless each of the merging parties generated two thirds of their annual turnover within the same COMESA member state. This means that mergers which have no nexus in the region will not have to be notified to the Comesa Competition Commission but that for the notifiable mergers, the merging parties continue to face in Comesa one of the highest merger filing fees in the world. According to sources in the Comesa competition commission, the number of notified mergers has not increased since the revision of the guidelines

Thus there is clearly a limit on the possibility to cross subsidize the general activity of the competition authority through the merger control fees. Raising those fees to very high levels compared to the levels in other jurisdictions may either discourage mergers (irrespective of whether they are anticompetitive or not) or push merging parties to bypass the notification procedures. In both cases the

[62] The Common Market for Eastern and Southern Africa (Comesa) is a regional organisation whose mission is to promote economic integration through trade and investment in Eastern and Southern Africa (the Common Market). COMESA comprises 19 member states: Burundi, Comoros, the Democratic Republic of Congo (DRC), Djibouti, Egypt, Eritrea, Ethiopia, Kenya, Libya, Madagascar, Malawi, Mauritius, Rwanda, Seychelles, Sudan, Swaziland, Uganda, Zambia and Zimbabwe.

revenue of the competition authority will be less than hoped for and the merger fee setting policy will lead to efficiency losses.

Finally, it is worth pointing out that if self-funding mechanisms, properly implemented, can enhance the budgetary independence of competition authorities, they make the funding of these Authorities independent of their level of activity. This may, in certain circumstances (for example when there is a decrease in the number of economic mergers due to a downturn in economic activity), be problematic for the Competition Authority which may be lacking the resources necessary to discharge its duties in the short term. This explains why in most cases, as we saw, the laws provide for different forms of financing of the competition authority (such as a combination between possible budgetary entitlement and a self-funding mechanism).

Management of its resources by the competition authority

The effective management of its resources by a competition authority requires that, on the one hand, it be able to choose the most qualified personnel, given its financial constraint, and, on the other hand, that it uses its resources in the most effective way given its goals. With respect to this second point two issues can be discussed: the issue of prioritization of cases and the issue of the working methods of the competition authority.

It is not always true that competition authorities are at liberty to choose their staff members through an open, transparent and competitive process. Particularly in countries which transition from a system of price regulation to a system of market competition or in which several formerly independent regulators are merged within the competition authority or in countries in which the competition authority is a department of an economic ministry, competition authorities may face constraints in terms of recruitment of their staff and only be allowed to recruit from the pool of employees of the former price regulators or sectoral regulators or of the ministry they belong to. Similarly competition authorities may not always be at liberty to determine the compensation or the status of their employees and may be bound by the general rules applicable to civil servants.

For example, one can compare two different situations.

When the Turkish competition authority was created in 1997, it benefited from a substantial budget, the possibility to recruit freely its staff and the ability to set to a large extent the level of compensation of its employees. As a result it was able to attract a very large number of quality applicants with law or economic degrees who preferred to work for the competition authority rather than to work for other parts of the civil service or even in the private sector.

In France in 2008, there was a wide ranging reorganization of the competition law enforcement system. Up to that point, the Directorate for competition, consumer affairs and fraud of the Ministry of economic affairs (which was a distant successor of the price division of the Ministry) had a subdivision in charge of the basic fact gathering in competition cases as well as the powers necessary to do the dawn raids to gather evidence. The Competition Authority for its part, because it did not have the resources to do the basic investigation, relied largely on the

preliminary investigations of the Ministry and limited itself to the analysis and the adjudication of cases. The separation between basic investigations and analysis of the cases and the fact that in some cases the basic investigation of the Ministry was considered by the Competition Authority as insufficient to serve as a basis for a competition case while in some other cases where the Competition Authority requested further investigation of a case, the Ministry did not come up sufficiently rapidly or adequately with the requested elements inevitably led to frictions between the Competition Authority and the Ministry. Thus in 2008, the competition authority, was given the means to do the preliminary investigations of the cases and its powers were enlarged. The Competition Authority was allowed to hire 60 new staff members to discharge its enlarged duties but was constrained in its possibilities of recruitment by the fact that the former investigators of the competition, consumer protection and fraud division of the Ministry had either to change job within the Ministry or to exercise a right to request their transfer to the Competition authority (48 of them did). It turned out that some of these former investigators were not particularly fit to become competition case handlers in a framework were investigation and analysis were integrated and had to be retooled at a non-negligible cost by the Competition Authority.

There are at least two possible problems associated with constraints imposed on the recruitment of staff members by the competition authorities.

First, it is often the case that governments moving toward a more important role for the market economy, tend to reduce their regulatory functions and to expand the surveillance function of the competition authority. Thus there is a problem of reallocating civil servants which have some economic experience to different tasks. However, what is not always perceived is that the handling of competition cases requires legal and economic analytical skills which are different from those useful in regulation whether this regulation is done by economic ministries or by independent sectoral regulators. Indeed economic regulation is mostly an a priori administrative intervention which is designed to ensure a pre-determined economic performance of the regulated firms or industries, whereas competition law enforcement is an a posteriori judgement on whether a violation of the competition law resulting in a less intense or less free competition on the market deserves sanctioning. Thus the civil servants experienced in economic regulation may not be the best prepared people to handle competition cases. Furthermore when they have had a long experience in regulation, they may have less flexibility to adapt themselves to a new task. For example, former staff members of price divisions in economic ministries, may, in handling competition cases, focus on whether investigated firms are able to justify their prices by their cost rather than on what would be the pricing mechanism if the market was competitive. Former staff members of sectoral regulators handling competition cases may have normative views about what the level of efficiency of the firms should be rather than focus on whether it can be established that their behavior investigated qualifies as violation of the competition law; they may also more prone to recommend behavioural remedies than would be justified from the competition standpoint because of their regulatory culture.

Altogether constraints on the ability of competition authorities to choose their staff outside established ministries or sectoral regulators may involve significant costs for the competition authority in adapting the skills of these staff to their purpose.

Second, in many countries, and in particular in developing countries, the scale of salaries of civil servants with a legal or economic background is quite a bit lower than the scale of revenues that people with the same level of education and skills could get in the private sector. Imposing on a competition authority that its staff should be paid according to the pay scale of the civil service has two opposite effects. On the one hand it lowers the budgetary expenses of the competition authority compared to what those expenses would be if its staff was paid competitive wages. On the other hand, however, it contributes to the importance of the turnover of staff personnel in competition authorities and to make competition authorities less able to discharge their duty than they would be if they could pay higher salaries and had a more stable personnel.

The high level of turnover of the staff of young competition authorities, particularly in developing countries, is fueled by a combination of factors. As mentioned earlier, the turnover in the staff of young competition authorities is, prima facie, due to the difference in potential revenues between the private and the public sector for legally or economically trained staffs. But this difference in potential revenues is itself due to three factors. First, because competition procedures, unlike many other economic administrative procedures, take the form of contradictory legal proceedings, there is a great demand in the private sector for skilled competition law experts with a legal or economic background to help defendants present their cases. Second, the combination of legal and microeconomic skills necessary to argue against the allegations of a competition authorities are quite specific because competition authorities generally follow a rule of reason approach to competition law enforcement which means that an intimate knowledge of the thinking of the competition authority is often as useful to assess how to mount a defence as the examination of legal precedents. This means that former staff members of the authority who have an intimate knowledge of the functioning of the competition authority may be more valuable than equally competent outsiders. Third, as competition authorities become more experienced at handling cases and at imposing fines, the stakes for firms which are alleged to have violated competition law increase and the so does the private demand of law firms or economic experts consulting firms for the services of former staff members of competition authorities.

Whatever its level of resources and its ability to retain its staff, the competition authority has to decide how it is going to allocate its limited resources.

In most countries merger control is an ex ante authorization process which includes an obligation on the parties to notify reviewable mergers and the competition Authority has no possibility of to prioritize its activity in this area as it has to make a decision for each notified merger on whether the merger can go through or is approved under conditions or is blocked on competition grounds.

However, when it comes both to antitrust enforcement and to the advocacy function of competition authorities, the competition authority may have some discretion to decide on its priorities.

In some countries the competition authority has a very limited ability to allocate its resources because it is required to act on all of the cases for which it gets a reference.

An example is provided by the French competition authority which has an obligation to publish an appealable decision in each case for which it gets a reference. For cases which are without merit whatsoever, either because the issue raised is outside the scope of the competition law or because there is no evidence of anticompetitive practice, the Competition Authority can decide to throw out the case without investigation it but must publish an appealable decision explaining that the reference was misguided. But for cases which have merits but that it would not have chosen to investigate, for example because the social cost involved in pursuing those cases is disproportionate compared to the social benefits of the case (including its potential deterrent effect), the Competition Authority must investigate to avoid the possibility (which has occurred in several occasions) that the Court of appeal will overturn its decision to dismiss the case as unjustified.

The reason for which the French Competition Authority has this obligation to investigate all cases is that, because it is not a court but merely an administrative (independent) body, there was a concern that it should not be given the ability to pick and choose the cases it wanted to investigate. Thus there was a conscious decision of preserving fairness to the detriment of effectiveness. However, to the extent that its resources allow it to initiate cases over and beyond the cases for which it gets a reference, the French Competition Authority can and does choose its priorities.

In some other countries, where the competition authority did not have much freedom to choose its antitrust cases, a reform of the procedure increased its degree of liberty. Such was the case, for example, in Greece. The Greece's Economic Adjustment Programme, included a variety of fiscal measures, as well as structural reforms aimed at enhancing the overall competitiveness of the Greek economy. Acknowledging the central role of the Hellenic Competition Authority in the efforts to strengthen the functioning of the Greek economy, the Economic Adjustment Programme also included a competition-related component providing for the revision of the Greek Competition Act. Among other objectives, the proposed revision of the Greek Competition Act aimed at consolidating the deterrent and overall systemic effect of its enforcement action, focusing notably on procedural efficiency and independence. One of the weaknesses which had been identified as hindering the effectiveness of the Competition Authority was the fact that it did not have a margin of discretion in setting its own strategic objectives and priorities. A new Competition Act (2011) enhanced the Hellenic Competition Authority's ability to set strategic goals and to prioritize important cases, with a view to increasing the systemic effect of its enforcement action. The Greek contribution to the OECD

debate on changes in institutional design of competition authorities states[63] "The Hellenic Competition Commission adopted—pursuant to Art. 14 (2) of the Law—an internal management tool in the form of a "Point System" for the investigation of cases by the Directorate-General (decision no. 539/VII/2012). In particular, the Directorate-General shall now investigate pending cases according to their ranking on the basis of a point system, which essentially exemplifies and quantifies the priority criteria set out in the abovementioned decision. The Point System aims at enhancing the efficiency of investigations, the focus being on important cases with increased estimated impact on the functioning of effective competition and/or overall systemic effect, while promoting a more coherent and targeted policy of prioritizing pending cases, whereas it provides for the possibility of rejecting complaints that get a low priority ranking".

Similarly, in 1996, Hungary went from a system of no discretion to a system of discretion for the competition authority to choose the cases it pursues.

In most countries where the Competition Authorities have the power to select the cases it wants to investigate, they have established a system of prioritization. The criteria for prioritization and the process of prioritization, however, vary from country to country as is documented by the ICN.[64]

Some countries prioritize markets where they believe they are the most likely to find competition law violations, other countries prioritize sectors that have been recently liberalized or sectors which are prone to market failures. Another group of countries prioritize sectors because of their significance which may be judged by the importance of the turnover of firms in the sector, the impact of the investigation, or the likely deterrence effect of the investigation. Still other countries adopt a principled approach to prioritization setting a number of criteria to be considered simultaneously such as the effect on consumers, the strategic significance of the sector, the likelihood of a successful outcome, the resources to be mobilized for the case etc...

Countries also differ on the extent to which they make their prioritization criteria public and the extent to which they justify the reasons why they refuse to investigate certain cases. Whereas in some countries the prioritization criteria are publicly discussed by the competition authority with stakeholders, in other countries they result from internal consultations and are not always known by firms.

The ICN document on prioritization stated several reasons why agencies might want to communicate their prioritization criteria externally and why they might be reticent to do so.

Reasons to communicate prioritization criteria to the general public include the desire to increase the transparency of the work of the agency, the desire to build a

[63] Note by Greece, Roundtable on Changes in Institutional Design of Competition Authorities, OECD, DAF/COMP/WD(2014)93, 21 November 2014, available at http://www.oecd.org/daf/competition/changes-in-competition-institutional-design.htm

[64] See the Agency Effectiveness Competition Agency Practice Manual (CHAPTER 1 Strategic Planning and Prioritization), March 2010.

strong relationship with different stakeholders, the desire to build a strong network of partners of the agency in order to promote a competition culture or the desire to encourage complaints that reflect the priorities of the competition authority.

On the other hand, competition authorities may be reluctant to publish their prioritization criteria or to discuss them with stakeholders for fear of giving an incentive to the firms in the targeted sectors to conceal the proofs of their violations of the law or for fear of raising the expectations of stakeholders with respect to the delivery of enforcement decisions in the sectors prioritized or for fear of disclosing confidential information or for fear of prompting challenges of their prioritization criteria. For example, the Greek contribution to the OECD debate on Changes in institutional design[65] stated: "The Point System is intended solely for internal use (such that the ranking of each individual case at the investigation phase is not made public, nor notified to the complainant), in an apparent attempt to immunize the system from litigation".

Whereas there is no question that prioritization is a useful tool of management to help competition authorities to focus on the achievement of their strategic goals, too strict a prioritization process can lead to rigidities in the agenda setting of the competition authority to the detriment of the agility necessary to deal with new or important challenges as they arise. Thus a regular reassessment of the prioritization criteria and an occasional departure from those criteria may be necessary to make the competition authority sufficiently responsive to its environment.

Related to the last point, it is worth noting that a number of requests for international cooperation on antitrust cases seem to be denied by the requested authority on the basis of the fact that the request clashes with the priorities of the requested authority. Indeed, unless international cooperation is itself one of the criteria of prioritization, there is the possibility that the move toward more extensive prioritization processes by competition authorities may lead to a decrease in the flexibility needed to accommodate requests for help from foreign agencies.

Assuming that the resources are adequate in quantity and quality and that the prioritization processes of competition authorities has helped them select the most relevant cases given their strategic goals, one last question is whether there are working methods to ensure that legal staff and the economic staff of the Competition Commission work most efficiently to deliver high quality investigations at the least cost for the Authority.

There does not seem to be a unique solution to this problem as there is a trade-off between two possible desirable objectives: first, the objective of integrating the legal and economic approaches to ensure that the economic case of the competition authority will stand in court and that the legal case make economic sense and, second the objective of not allowing compromise which may ruin the integrity of each approach at the investigative stage.

The practices of competition authorities seem to vary significantly on the organization of their staff for working on cases.

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[65] See footnote 64.

For example during the debate at OECD on Changes in Institutional Designs the competition authority of the Netherlands,[66] discussing its handling of mergers, explained that "there was a concerted effort within the ACM to set-up case teams that bring together the knowledge necessary to deal with the case at hand and to harmonize procedures and working methods". It further stated : "This flexibility is crucial. What emerges from an analysis of these initial structural issues is that designing an authority is not—or at least not only—about the structure. To a far greater extent, it is all about people, about how they work and how they work together".

But during the same debate the US FTC contribution explained that the competition lawyers and the competition economists within the FTC worked mostly separately from each other on cases. It stated: "At all critical points of a competition investigation, including the decision to issue compulsory process, to begin adjudicative procedures, or to accept a consent decree, the lawyers and economists write separate recommendation memoranda and submit them to the decision-makers through their own Bureau management. When appropriate, Bureau of Economics and Competition managers write memoranda presenting their own views. Before the matter reaches the Commission for decision, the Director of the Bureau of Competition convenes a meeting to evaluate the matter in which the staff economists and managers from both Bureaus participate. Both sets of memoranda are provided to the Commission and representatives of both Bureaus present their views at Commission meetings".

5 Conclusion

Altogether several conclusions emerge from the preceding analysis.

First, institution building is an art rather than a science when it comes to designing competition authorities. In many countries, both developing and developed, the institutional design of competition authorities is repeatedly modified over time. Given the number and the complexity of the trade-offs involved, it is only natural that countries need to experiment before they settle on a set of institutional characteristics for the competition authority. In that perspective, establishing a process to regularly review the adequacy of the institutional design of the competition authority is likely to be useful, particularly in the first few years after the creation of a competition authority. As Philip Lowe, the Director General of the Directorate-General for Competition at the European Commission stated in 2008[67] " In order to fulfil their role effectively (competition policy) institutions must

[66] Note by The Netherlands, Roundtable on Changes in Institutional Design of Competition Authorities, OECD, DAF/COMP/WD(2014)100, 2 December 2014, available at http://www.oecd.org/daf/competition/changes-in-competition-institutional-design.htm

[67] The design of competition policy institutions for the 21st century—The experience of the European Commission and DG Competition, Competition Policy Newsletter, Number 3 2008 (a longer version of this article was published in "Competition Policy in the EU: Fifty Years On from The Treaty of Rome", Xavier Vives Editor, Oxford University Press, 2009.

constantly assess and reassess their mission, objectives, structures, processes and performances. It is only through realizing and adapting to changes in their environment and through carrying out the corresponding improvement that their competences, powers, budget and ultimately existence can be justified before a wider public".

Second, clearly there is no ideal model that fits all situations. Thus, the best way to go about designing a competition authority is for a country to start by considering the issues which seem to be most relevant to its domestic circumstances and the trade-offs they have to make. For example, in countries in which the main problem is the fact that its judiciary is weak, ill-informed of non-legal matters and slow, it may be necessary not to choose a prosecutorial model but to choose the administrative model even if a prosecutorial model offers superior guarantees in terms of separation of investigation and adjudication. If, on the other hand, the main concern is that the civil service or the political class are corrupt, it may be useful to consider the adoption of various measures guaranteeing the transparency of the appointment process of the members of the Competition Authority and the independence of the status of the members of the competition authority as well as the transparency and the integrity of its decision-making process even if there is a risk that a very independent institution may carry less weight in terms of advocacy. If the main issue faced by the country is the fact that the development of market competition is likely to be challenged because the economic power is concentrated in the hands of a few operators (whether they are chaebols in Korea or oligarchs in Russia), the political backing of the competition authority becomes important to ensure that the market player understand that the government is serious about the promotion of competition and to ensure that the competition authority is not outmaneuvered by the holders of privileged situations. In such cases, it may be that the power of the institution (and its proximity to the ventral government) may become more important than its independence to bring about the hoped for changes. If in a country economic and legal expertise on competition are scarce, the country may have no choice but to settle for a simpler law, a lower cost approach to competition with per se violations and/or a smaller and less costly competition authority without separation between investigation and adjudication etc....

Third, it should be clear that the institutional design of a competition authority will have an influence on the way the competition authority will discharge its duties. Competition authorities which must meet performance indicators will naturally tend to prefer advocacy to enforcement because deterrence of enforcement actions is usually very difficult to measure. Competition authorities which have regulatory functions in certain sectors are likely to have different goals and also to use a more regulatory approach (through the use of behavioural remedies) than competition authorities which are only responsible for competition. Competition authorities which do not have adequate funding will deliver lower quality decisions or advice than more richly funded competition authorities either because they will have insufficient staff at their disposal or because their most qualified staff will be regularly poached by the private sector and they will face a much higher level of turnover of their staff. Those differences in performances or in the way competition

authorities discharge their duties are inevitable because competition authorities are set in different legal, political, sociological or economic environment.

What is important however, and what may not have been sufficiently emphasized in the past, is that each country chooses the best possible institutional design given the constraints it faces. There has been a great deal of efforts in the past 20 years to promote substantial convergence among competition authorities and this effort has largely succeeded in bringing about a common understanding of what competition analysis entails and to develop best practices. But, there may have been insufficient thoughts about the institutional design of competition authorities and about the interaction between the institutional design of the authorities and their ability to successfully implement these good practices. Many questions raised by officials in charge of establishing or upgrading competition authorities have been answered through various programs of technical assistance on the basis of the experience of more established competition authorities rather than on the basis of a careful analysis of the local circumstances and of the particularly important trade-offs faced by the countries requesting this assistance. The result is a certain frustration of competition officials in new or small agencies in number of developing countries which are facing great difficulties in emulating the more established competition agencies because while they operate in a very different context and with different constraints, their institution is not well adapted to their environment. In other words, the long term effectiveness of competition authorities is not only dependent on the substantive quality of the economic analysis they perform or of the way they are managed but also dependent on the relevance of their institutional set up in the countries in which they are established.

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New Indicators of Competition Law and Policy in 2013 for OECD and Non-OECD Countries

Enrico Alemani, Caroline Klein, Isabell Koske, Cristiana Vitale, and Isabelle Wanner

Abstract This chapter presents the new OECD competition law and policies (CLP) indicators which measure the strength and scope of competition regimes in 49 jurisdictions (34 OECD and 15 non-OECD, including Brazil, India, Russia and South Africa). The indicators cover areas for which there is a broad consensus among member countries on what constitutes 'good' practice for competition regimes. The results suggest that competition regimes are broadly similar across countries in these areas because most countries have adopted all or a large number of the 'good' policy settings captured by the indicators. On average, the design of competition laws and policies appears to be closer to best practice in OECD countries than in non-OECD countries. The four BRICS jurisdictions show a more mixed picture, with Brazil and Russia closer to best practice, while in India and South Africa there appears to be room for improvements. Jurisdictions differ relatively more on the enforcement of competition law than on the competition law itself.

Keywords Competition law and policy • Indicators

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1 Introduction

This chapter presents a set of competition law and policy (CLP) indicators that measure the strength and scope of competition regimes in 34 OECD and 15 - non-OECD jurisdictions, including four BRICS countries: Brazil, India, Russia and South Africa.[1,2]

The indicators are set to assess the ability of a country's competition regime to achieve more competition while allowing efficiency gains. They cover areas for which there is a broad consensus on what constitutes a 'good' policy setting in that respect. These areas do not provide a complete description of a jurisdiction's competition regime, but they include some of the essential elements that any effective regime should have. As such these indicators permit simple cross-country comparisons and can help to identify areas for reforms and improvement.

Non-OECD jurisdictions can especially benefit from the results of this exercise. The CLP indicators indeed show that the OECD countries have mostly converged towards what tend to be considered as good practice in many areas of competition policy, and their competition regimes usually present all the key elements that are considered essential for a sound and effective regime. Many non-OECD countries, instead, have not yet reached this stage, and the CLP indicators for most of them are above OECD average levels. The indicators can thus indicate avenues for further analysis and reform. In terms of the four BRICS countries included in the sample, as will be discussed later, Brazil and Russia appear to have values very close to those of the OECD countries, while India and South Africa show values of the indicators that clearly indicate scope for further improvement.

Further these indicators can represent a useful input in the analysis of the impact of the quality and strength of competition regimes on economic performances and macro-variables. Using several indicators summarising key institutional and enforcement features of competition regimes, akin to the CLP indicators herein presented, Buccirossi et al. (2013) have found an empirical link between competition policy and total factor productivity growth. However their analysis is limited to 12 OECD countries. The CLP indicators cover a much wider number of countries; hence they can permit to extend this type of analysis to a larger group of economies, including many emerging ones, such as the BRICS.

Two overlapping sets of CLP indicators are constructed from the same database, a first (more aggregated) one that includes four indicators and a second (more disaggregated) one that covers 12 indicators. In the first—more aggregated—

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[1] The 34 OECD jurisdictions are: Australia, Austria, Belgium, Canada, Chile, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Korea, Luxembourg, Mexico, Netherlands, New Zealand, Norway, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, United Kingdom, United States.

[2] The non-OECD jurisdictions covered in the analysis are Brazil, Bulgaria, Colombia, Egypt, the European Union, India, Indonesia, Latvia, Lithuania, Malta, Peru, Romania, Russia, Ukraine and South Africa. Among the BRICS country only China is not included, because despite having sent the questionnaire to the competition authorities, the authors did not receive any answer.

indicator set, three of the four indicators measure the effectiveness of competition regimes and cover the following areas: (1) scope of action (the legal powers to investigate and impose sanctions on antitrust infringements and to investigate, remedy, or block mergers); (2) policy on anticompetitive behaviours (approaches toward the assessment of horizontal and vertical agreements, exclusionary conducts and mergers as well as effective action taken against anticompetitive behaviours); (3) probity of investigation (independence and accountability of the institutions enforcing the competition law as well as their procedural fairness). The fourth indicator captures competition advocacy, i.e. activities promoting competition by other means than standard enforcement of the competition law, such as the review of regulation that might have an impact on competition. The second (more disaggregated) indicator set covers the same topics, but breaks them down into more specific policy areas. In both cases, the indicators capture both *de jure* and *de facto* information.

The CLP indicators are by nature an imperfect reflection of complex policy settings. They do not describe all individual aspects of competition regimes, since they try to capture features that are common to all regimes, and ignore possible interactions across different dimensions of competition policy.[3] In addition, restricting the indicators to policy dimensions for which there is a broad agreement among member countries as to what constitutes best practice has the downside that dimensions whose effects are more controversial, but that might still matter for growth, are left out from the dataset. This reduces the variability in the dataset and, to the extent that the omitted dimensions are important for growth, may make it more difficult to empirically establish a link with economic outcomes.[4] Finally, the indicators may be sensitive to the methodology used to aggregate detailed information.[5]

Consequently, the indicators should be seen as providing an approximate indication of the overall strength and scope of a competition policy regime, rather than a complete and detailed representation of its characteristics, and as such they should be interpreted with caution. Despite these limitations the indicators can be a useful tool for policy makers and practitioners. Simplifying and quantifying information provides comparable measures of various dimensions of competition law and policy, thereby contributing to international dialogue, transparency, accountability, and, ultimately, improvements in policy settings.

The following conclusions emerge from an analysis of the indicators:

- The results suggest that competition regimes are broadly similar across countries in the policy areas covered by the analysis because most countries have adopted all or a large number of the ‘good’ policy settings captured by the indicators.

[3] The indicators do not cover specific policy features that are present only in one or a few regimes. For instance, competition tools, such as market investigations, used in the United Kingdom are not captured by the indicators.

[4] For instance, the human and financial resources of the competition agency, the length of procedures, and the level of sanctions are not included in these indicators.

[5] This caveat is addressed by carrying out sensitivity analysis.

Differences across jurisdiction materialize in a limited number of questions. On average, though, the design of competition laws and policies appears to be closer to best practice in OECD countries than in non-OECD countries. BRICS countries present a mixed picture: India and South Africa tend to have higher scores than the OECD average and even of the non-OECD average in most areas, while Brazil and Russia have scores in line with those of most OECD countries and show clear convergence with "good practice" in most elements of their competition regimes.

- Jurisdictions differ relatively more on the enforcement of competition law than on the law itself. Differences are larger for the indicators assessing the probity of investigation and competition advocacy than for those covering the scope of action and the policies on anticompetitive behaviours.
  - Regarding the probity of investigation, the main differences across countries relate to the provision of guidelines by competition agencies.
  - As regards advocacy, the obligation for the government to reply to the recommendations made in market studies and the competition assessment of new regulation are the main sources of divergences.
- The indicators are sensitive to the choice of weighting scheme used for aggregating detailed information. Nevertheless, groups of countries with statistically different outcomes can still be identified.

The remainder of this chapter is structured as follows: Sect. 2 discusses the data collection process and the design of the indicators and Sect. 3 presents the indicator values. Section 3 also discusses the results of two statistical tests performed to assess the robustness of the indicators values to the weighting scheme used to aggregate information. It also presents a first analysis of the correlation between the CLP indicators and other policy indicators, including the 2013 PMR indicators.[6]

2 Two Overlapping Sets of Indicators to Measure the Strength and Scope of Competition Law and Policy

The indicators are constructed for all OECD and selected non-OECD jurisdictions (49 jurisdictions in total) and refer to the year 2013.[7] They are based on answers provided by the jurisdictions' competition authorities to a questionnaire on competition law and policies that was circulated in the spring of 2013. The coverage rate of the resulting database is equal to 100 %.[8]

[6] This analysis is set to be complemented by further empirical analysis to explore the effects of different competition law and policy settings on economic performance.

[7] They reflect the situation on 1st January 2013. Recent reforms implemented over the year are not taken into account.

[8] Some questions were not applicable for some jurisdiction because they relate to policies that are not in place in these countries. The scoring of these questions is detailed in Annex 1.

A score is assigned to each possible answer to the questions included in the questionnaire. The scores vary on a 0–6 scale (from the most to the least effective competition regime). This is the same approach used by the OECD for the PMR indicators. They assess whether competition policy features are effectively preventing anticompetitive behaviours that harm productivity growth (i.e. exclusionary conducts, and anticompetitive horizontal and vertical agreements), blocking anticompetitive mergers and removing barriers to competition. The indicators are computed based on binary information which limits the number of assumptions that need to be made when scoring the observations. Each data point refers to a particular feature of the competition regime and assesses whether it is conducive to higher efficiency or not.[9] The indicators are constructed based on a simple weighting system to ease the use and interpretation of the results.

In the European Economic Area (EEA, i.e. the European Union member states plus Norway, Iceland and Lichtenstein), both national and European institutions have complementary competence to enforce competition law. The European competition law is enforced by the national competition authorities, the European Commission, and the EFTA Surveillance Authority (for Norway, Iceland, and Liechtenstein).[10] Thus, for EU Member States, Norway, and Iceland, the CLP indicators should reflect the features of the national competition regime, but also incorporate information on the EEA competition regime. The option retained here is to compute the simple average of national and EEA scores, following Buccirossi et al. (2011).[11] For purpose of comparison, the CLP indicators are also calculated by only considering country-specific scores. Besides, when a jurisdiction has two competition agencies (as in the United States and the United Kingdom), its CLP indicators include the relevant information on both institutions.[12]

Two sets of indicators are computed, each reflecting a different way of aggregating the data (Fig. 1). For the first (more aggregated) indicator set, the information collected from the questionnaire is regrouped in four indicators: 'scope of action', 'policy on anticompetitive behaviours', 'probity of investigation', and 'advocacy' (set 1 in Fig. 1). For the second (more disaggregated) indicator set, the information is regrouped into 12 indicators capturing more specific features of competition law and policy: 'competences', 'powers to investigate', 'powers to sanction and remedy',

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[9] Scoring continuous information requires assumptions about ranges and thresholds in the scoring system, which is avoided in the new indicator set.

[10] A number of rules regulate the collaboration between the European Commission, the EFTA Surveillance Authority and the national competition authorities (European Commission 2004). For instance, the Commission examines mergers that have a Community dimension, the latter being defined based on criteria relative to the turnover of the companies involved.

[11] While ideally the weights should reflect the relative importance of the EEA competition regime for the various Member States, measuring this in practice is not straightforward and hence for reasons of simplicity and transparency, the choice was made to apply equal weights.

[12] The questionnaire was sent to all competition agencies within a jurisdiction. When a jurisdiction has two competition agencies and the question applies to both of them, the score is an average of the two answers. When a question is applicable to only one of the agencies, because only one agency has competences in the area covered by the question, only the score of this agency is considered.

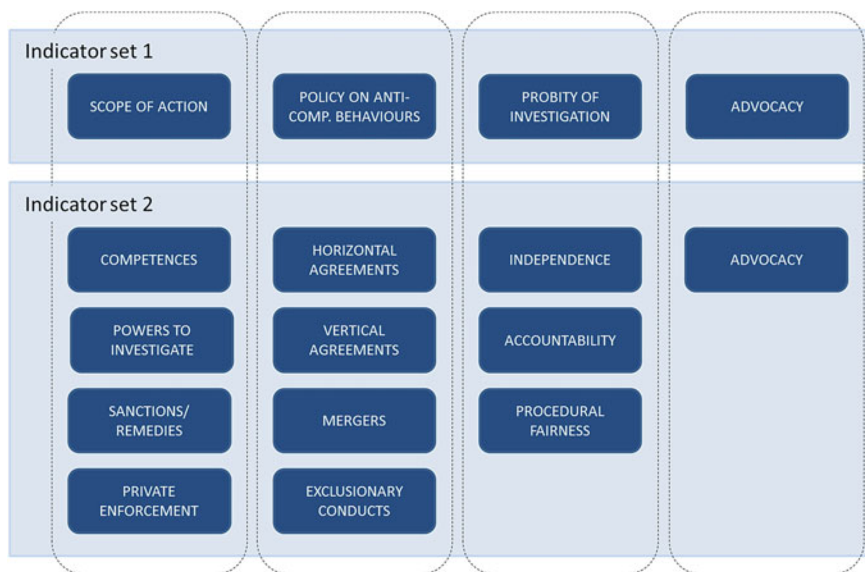


Fig. 1 Two overlapping sets of indicators on competition and policy

'private enforcement', 'policy on horizontal agreements', 'policy on vertical agreements', 'policy on mergers', 'policy on exclusionary conducts', 'independence', 'accountability', 'procedural fairness', 'advocacy' (set 2 in Fig. 1).[13] Each of the four components of the first set covers several specific components of the second set, as illustrated in Fig. 1 (dotted lines).

Each individual indicator in the two sets is constructed by aggregating raw information using equal weights (i.e. if an indicator is based on seven questions, each of the questions is given a weight of one-seventh). This means that each question has the same importance for the construction of the indicator. This aggregation method implies that the four indicators of the first set are not a simple average of the indicators of the second set.[14] While the choice of equal weights is ultimately arbitrary, it has the virtue of simplicity and transparency.

More specifically, the four components of the more aggregated indicator set cover the following features of competition regimes:

- *Scope of action*: The effectiveness of a competition regime depends on the scope of the activities it can undertake to deter, discover, stop and punish anticompetitive behaviours and mergers. These are measured by the extent of exemptions from the competition law for public and foreign firms, the powers of the institutions enforcing the competition law to investigate and to impose sanctions on competition law

[13] Both indicator sets are described in detail in Annex 1.

[14] For example, the indicator 'scope of action' from the first set is constructed as the simple average of the 21 questions that are used in the indicators 'competences' (two questions), 'powers to investigate' (six questions), 'powers to sanction and remedy' (ten questions), and 'private enforcement' (three questions) from the second set and is not the average of these four indicators.

infringements and to investigate and remedy or block anticompetitive mergers, and the possibility for individuals, firms or group of consumers to take legal action against firms whose actions have caused them economic or financial harm.

- *Policy on anticompetitive behaviours*: An effective competition law and policy regime is one where anticompetitive behaviours and mergers that result in welfare and productivity losses are punished or blocked. This requires that during the investigation of an allegedly antitrust infringement or of a merger, the economic impact of each case is assessed and potential efficiencies generated are taken into account. The 'policy on anticompetitive behaviours' indicator assesses whether anticompetitive behaviours and anticompetitive mergers are prohibited in the jurisdiction and what factors are considered when assessing them. It also captures whether in the last 5 years there have been interventions against such behaviours and mergers (e.g. by blocking an anticompetitive merger, or by imposing sanctions on a firm for its exclusionary conduct).
- *Probity of investigation*: The degree of probity of an investigation measures the quality, soundness and transparency of competition law enforcement. It is measured here in terms of three main sub-components: the independence of the institutions enforcing competition law (i.e. whether governments interfere with the investigations or the decisions taken on antitrust infringements and mergers); the fairness of the procedure (i.e. the right of investigated firms to be heard and to receive information on the procedures); and the accountability of the competition regime (i.e. whether the activities and the decisions of the agency are transparent and could be appealed to in court).
- *Advocacy*: This indicator captures the capacity of the competition regime to advocate for a more competitive environment at different government levels, by reviewing new regulation for its impact on competition, and performing market studies that deliver recommendations on how to foster competition.

3 Competition Laws and Policies in OECD and Selected Non-OECD Countries

3.1 Cross-Country Differences in Competition Laws and Policies

This section presents the main results for the more aggregated indicator set.[15] The results indicate that, in January 2013, competition regimes were broadly similar across countries in the policy areas covered by the indicators. The CLP indicators can potentially vary from 0 to 6, but most jurisdictions covered are scored between 0 and 2 (Table 1). This is because most competition regimes have adopted all or a large number of the 'good' policy settings captured by the indicators. One should

[15] Results for the more disaggregated indicator set can be found in Table 7 in Annex 1.

Table 1 Competition law and policy indicators—set 1. 0 to 6 from the most to the least conductive to competition

	Scope of action	Policy on anticomp. behav.	Probity of investigation	Advocacy
Australia	0.29	0.00	0.15	0.43
Austria	0.14	0.00	0.90	0.86
Belgium	0.14	0.00	0.00	0.64
Brazil	0.00	0.00	0.30	1.29
Bulgaria	0.00	0.32	0.00	0.86
Canada	0.43	0.63	0.60	1.71
Chile	0.43	0.32	1.20	1.71
Colombia	0.00	0.32	1.20	1.71
Czech Republic	0.14	0.00	0.00	0.43
Denmark	0.29	0.00	0.00	0.21
Egypt	2.29	2.21	2.57	1.71
Estonia	0.14	0.00	0.90	0.64
Finland	0.29	0.16	0.15	0.64
France	0.00	0.00	0.00	0.64
Germany	0.00	0.00	0.30	0.86
Greece	0.14	0.16	0.00	0.64
Hungary	0.00	0.16	0.60	0.64
Iceland	0.07	0.16	0.15	1.61
India	0.86	0.95	0.30	1.29
Indonesia	1.71	0.95	0.00	1.71
Ireland	0.29	0.32	0.15	0.43
Israel	0.00	0.32	1.05	4.29
Italy	0.14	0.16	0.00	0.64
Japan	0.57	1.58	0.00	0.86
Korea	0.57	0.00	0.00	0.43
Latvia	0.29	0.00	0.75	0.64
Lithuania	0.14	0.00	0.45	0.86
Luxembourg	1.00	0.63	0.60	1.71
Malta	0.29	0.63	0.15	1.07
Mexico	0.00	0.32	0.30	1.29
Netherlands	0.29	0.32	0.15	0.64
New Zealand	0.29	0.00	0.00	0.43
Norway	0.36	0.47	0.45	0.75
Peru	0.29	0.32	1.80	0.86
Poland	0.14	0.00	0.45	0.64
Portugal	0.14	0.00	0.00	0.86
Romania	0.00	0.00	0.15	0.64
Russia	0.29	0.00	0.30	0.00
Slovakia	0.00	0.32	0.45	1.07
Slovenia	0.29	0.16	0.90	0.64

(continued)

Table 1 (continued)

	Scope of action	Policy on anticomp. behav.	Probity of investigation	Advocacy
South Africa	1.14	0.32	1.50	0.86
Spain	0.00	0.00	0.08	0.43
Sweden	0.29	0.00	0.60	0.86
Switzerland	0.29	0.00	1.20	0.43
Turkey	0.29	0.00	0.00	0.86
Ukraine	0.29	0.95	1.80	0.43
United Kingdom	0.29	0.00	0.08	0.21
United States	0.43	0.00	0.75	1.29
OECD	**0.24**	**0.18**	**0.36**	**0.89**

Source: OECD calculations
Note: For EEA Member States, the indicators reflect both national and EEA competition law and policy

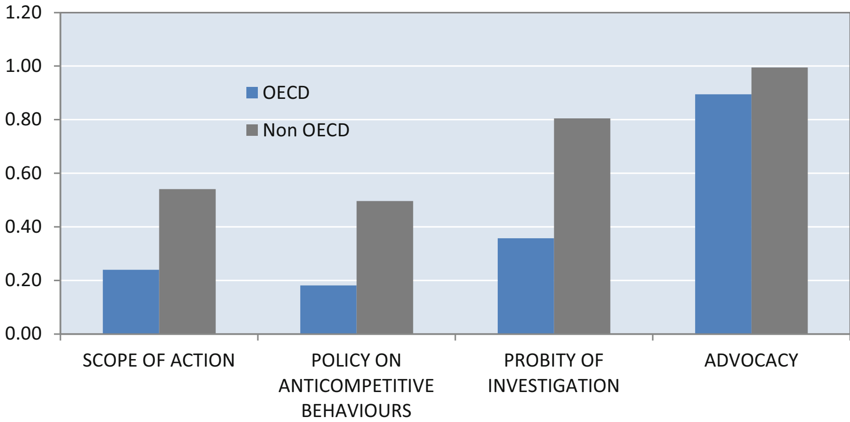
note that the indicators do not perfectly reflect the complexity of these policy settings. They are based on a questionnaire whose format inevitably imposes a limited range of nuances. As a result, similar indicators values can hide important differences across competition regimes. Also, cross-country differences are often driven by a few data points. Nevertheless, the variability of the indicators is not particularly low compared to other OECD policy indicators.[16]

On average, the results suggest that OECD countries have competition policy regimes that are closer to best practice than non-OECD countries (Fig. 2, Panel a). They also suggest that BRICS countries (excluding China), when considered separately appear to have regimes that are closer to best practice than the other non-OECD countries, tough this result is mostly driven by the low scores of Brazil and Russia. One interesting result is that in the area of advocacy BRICS countries (excluding China) score better, by a very small amount, than OECD countries (Fig. 2, Panel b). In this case the outcome is driven by very low scores in Russia and in South Africa.

3.1.1 Scope of Action

This indicator covers three main features of competition law and policy: (1) the absence of exemptions from the competition law for public and foreign firms, (2) the powers of the institutions enforcing the competition law to investigate and impose sanctions on antitrust infringements and to remedy or block anticompetitive

[16] For OECD countries, the indicators of 'policy on anticompetitive behaviours' and 'probity of investigation' show a degree of variability similar to that of the overall PMR indicator or the FDI restrictiveness index. The indicator of 'scope of action' shows less variability, while the indicator of 'advocacy' has a larger variance, but this is mainly driven by one outlier.



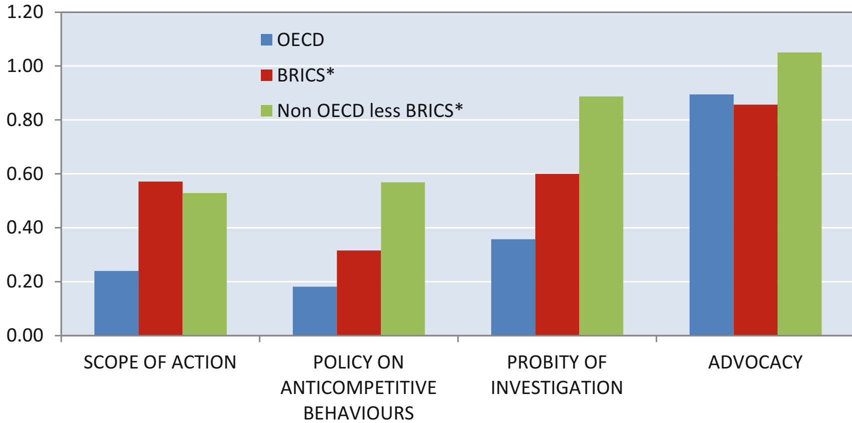


Fig. 2 Average level of CLP indicators across different sets of countries. Panel (**a**): Average level of CLP indicators in OECD and non-OECD countries. 0 to 6 from most to least conductive to competition. Panel (**b**): Average level of CLP indicators in OECD, BRICS* and other non-OECD countries. 0 to 6 from most to least conductive to competition. *China is not included. *Source*: OECD calculations

mergers, and (3) the extent of private enforcement. There are only minor differences in the scope of action against anticompetitive behaviours for most of the countries covered. The indicator varies between 0 and 1 for all countries but three (Fig. 3).

In all jurisdictions, but Indonesia, competition law applies to firms located outside the jurisdiction whose behaviour directly affects competition or consumers

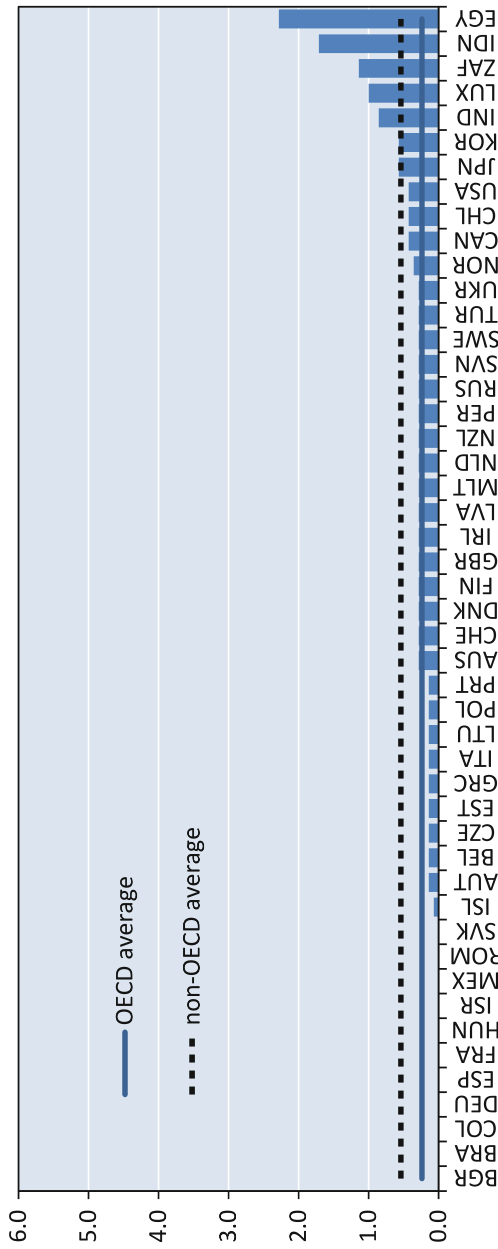


Fig. 3 CLP indicator on scope of action. 0 to 6 from the most to the least conductive to competition. *Source*: OECD calculations. *Note*: Countries with the same score are ranked by alphabetical order (for instance, the indicator value is the same for Bulgaria and Romania)

in domestic markets.[17] In most countries, state-controlled firms are exempt from the application of competition law in some sectors or for some antitrust infringements.

The powers to investigate and to sanction captured by the indicator are quite similar across jurisdictions.[18]

- Egypt and Luxembourg stand out because they do not have a merger control regime and their competition agencies (or courts) have thus less power to impose sanctions and remedies on anticompetitive behaviours.
- All jurisdictions can compel firms and third parties to provide information to help an investigation on antitrust infringements. Likewise, in almost all countries that control mergers, institutions enforcing competition law can oblige third parties to provide information to help an investigation on mergers (the only exception being South Africa).[19] With the exception of Indonesia, all jurisdictions have the right to perform unannounced investigations and only four jurisdictions have not used this power over the past 5 years (India, Luxembourg, Malta, and New Zealand).[20] All jurisdictions except Sweden can impose sanctions on firms that hinder an investigation and around two thirds of the jurisdictions have done so over the past 10 years.[21]
- In all jurisdictions remedies and sanctions can be imposed on firms that have committed an antitrust infringement or do not comply with the remedies imposed.[22] All jurisdictions that have a merger control regime can impose or accept remedies to clear a merger. In more than 80 % of the jurisdictions interim measures can be imposed if there is a concern that the alleged antitrust infringement may lead to irreversible damages. In most jurisdictions, the legal

[17] Competition law could apply to international cartels or mergers outside the jurisdiction that affects local consumers. For instance, a merger outside South Africa may have to be notified and approved if the parties' sales or assets in South Africa exceed the notification thresholds.

[18] 80 % of countries score 0 for the indicator 'powers to investigate' and 90 % score less than 1 for the indicator 'powers to sanction'.

[19] In the United Kingdom, only the Competition Commission is allowed to compel firms and third parties to provide information.

[20] In the United States, the Fair Trade Commission cannot perform unannounced investigations, but the Department of Justice can.

[21] Sanction is a broad term that includes fines and other forms of penalties aimed at ensuring compliance with the law. Sanctions can be criminal (such as imprisonment) and non-criminal (such as fines) and can be imposed on firms and/or individuals. The indicator does not measure whether jurisdictions can impose sanctions on individuals nor does it make a distinction between financial and criminal sanctions since there was no agreement among member countries as to what constitutes best practice in this policy domain. The fact that no sanction has been imposed on a given time period is difficult to interpret. The absence of sanction could be due to the absence of infraction.

[22] Remedies are measures that aim at eliminating competition problems. For instance, competition agencies use remedies in merger cases to eliminate the risks that a given transaction may pose to competition. Such remedies include for example the sale of a part of activity, the transfer or licensing of intellectual property rights, transparency provisions, or contracting limitations.

procedures can be shortened by settling voluntarily with the parties investigated or by accepting remedies at an early stage in the latter.

- In this area the four BRICS countries included in the sample when considered jointly score worse than all the other non-OECD countries (see Fig. 2, Panel b), because India and South Africa have among the highest scores. However, Russia and Brazil individually show very low levels of the indicator.

All countries have provisions that allow individuals and firms to bring legal actions to seek damages from firms that have committed an antitrust infringement. More than two thirds of the jurisdictions also offer this opportunity to groups of consumers.

3.1.2 Policy on Anticompetitive Behaviours

This indicator collects information on whether anticompetitive behaviours and mergers are punished or blocked, what factors are considered when assessing them, and whether in the last 5 years there have been interventions against such behaviours and mergers. As in the case of the indicator of 'scope of action', the indicator of 'policy on anticompetitive behaviours' shows few differences across countries (Fig. 4). These differences are mainly driven by the *de facto* questions asking whether at least one anticompetitive behaviour has been punished and one merger has been blocked or remedied in the past 5 years.[23]

All jurisdictions prohibit anticompetitive exclusionary conducts by dominant firms, as well as anticompetitive horizontal and vertical agreements. During the investigation phase, carrying out an economic analysis helps to determine whether a conduct is likely to raise competition concerns but also to identify efficiency gains it may generate. For instance, some antitrust behaviours and some mergers may negatively affect competition but also bring economic benefits to consumers that outweigh the former (e.g. economies of scale, reductions in transaction costs). Only a detailed economic analysis can identify these effects (OECD 2012). Two jurisdictions (Japan and Slovakia) do not conduct economic analyses and four jurisdictions (Canada, Egypt, Hungary and Ukraine) do not consider potential efficiencies when investigating certain antitrust infringements.

As regards enforcement, almost two thirds of the jurisdictions have imposed sanctions or remedies on at least one anticompetitive horizontal agreement other than a cartel, one anticompetitive vertical agreement and one exclusionary conduct over the past 5 years. A well-designed leniency programme—i.e. a programme that encourages companies involved in a cartel to actively cooperate with the enforcement authorities against a full or partial immunity from sanctions—is a key

[23] The fact that action has been taken over the past five years imperfectly reflects the capacity of the competition authorities to hamper anticompetitive behaviours, in particular for small jurisdictions in which the number of antitrust infringements might be relatively low compared to the average.

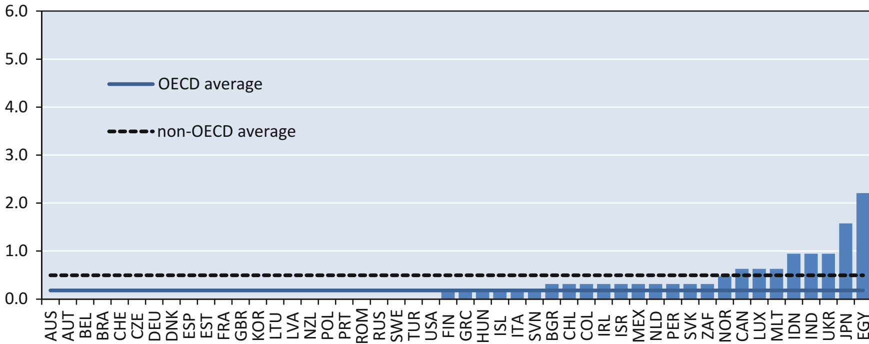


Fig. 4 CLP indicator of policy on anticompetitive behaviours. 0 to 6 from most to least conducive to competition. *Source*: OECD calculations

instrument for destabilising cartels (OECD, 2002). All jurisdictions, but Malta and Indonesia, have a leniency programme for cartel participants and all but Bulgaria, Egypt, India, and Ukraine have received at least one application in the last 5 years. Among the countries that control mergers, only five have not blocked a merger or cleared it with remedies over the past 5 years (Bulgaria, India, Indonesia, Malta, and Peru). Among the four BRICS countries, Russia and Brazil do well and indeed are below the OECD average, while South Africa is just slightly above and India scores rather high in all the elements included in this area.

3.1.3 Probity of Investigation

This indicator measures the independence of the bodies enforcing competition law, the fairness of the investigative procedure, and the accountability of the institutions enforcing competition law. The indicator of probity of investigation also shows a pretty strong degree of homogeneity across countries (Fig. 5). Most countries appear to have adopted practices that promote transparency, independence and accountability in the enforcement of competition law. Government interventions in investigations and decisions on antitrust cases and mergers have happened in only four jurisdictions over the past 5 years (Germany, the United Kingdom, Spain and Hungary). All competition agencies publish a report on their activities. In most jurisdictions all the decisions that ascertain the existence of an antitrust infringement and all the decisions that block a merger or clear it with remedies are published.[24] In all jurisdictions, but Austria, all decisions on antitrust matters can be appealed in court with respect to their substance. In all jurisdictions, except Ukraine, parties investigated for an antitrust infringement or a merger can consult the competition agency to receive additional information on the procedure. Parties

[24] Australia and Israel do not publish all decisions on mergers. The Netherlands and Ukraine do not publish all decisions on both mergers and antitrust infringements.

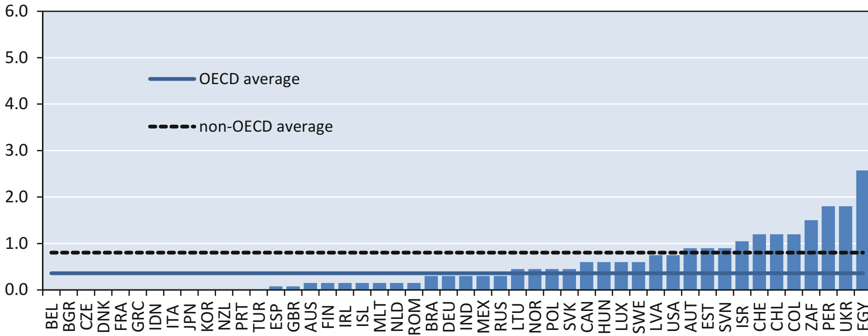


Fig. 5 CLP indicator on the probity of investigation. 0 to 6 from most to least conductive to competition. *Source*: OECD calculations

also have the right to be heard and present arguments for their defence in most jurisdictions (the exceptions being Egypt for antitrust infringements and Finland for mergers).

The main differences across countries lie in the answers to the questions on the publication of guidelines by competition agencies. Publishing guidelines is important practice for an effective enforcement of competition law, as it contributes to the deterrence effect by clarifying the law and informing firms on the risks and consequences of breaking it (OECD 2007). While around 80 % of the agencies publish guidelines on the investigative procedure and on how mergers are assessed, only around 60 % do so for the assessment of abuses of dominance, horizontal and vertical agreements and for the setting of monetary sanctions.

With respect to the BRCIS countries, in this area Brazil, Russia and even India are close to the OECD average, while South Africa is among the worst performers.

3.1.4 Advocacy

Competition advocacy is quite widespread among the countries covered by the indicators (Fig. 6). All competition regimes advocate competition at the central government level. Most of them also do so at the local level (Luxembourg and Colombia being the only exception). In all jurisdictions, except Israel, it is possible to conduct market studies that lead to recommendations on how to remove barriers to competition. All of those jurisdictions, but Luxembourg, have performed at least one market study in the past 5 years.

Nevertheless, room for improvement exists for competition advocacy. In most jurisdictions the government does not have to reply to the recommendations included in market studies. There is an obligation to respond only in Denmark, the United Kingdom, Ireland, Norway, and Russia. Among the governments which are not required to provide a response, less than one third usually does so in practice. Besides, in more than half of the jurisdictions, not all new regulations

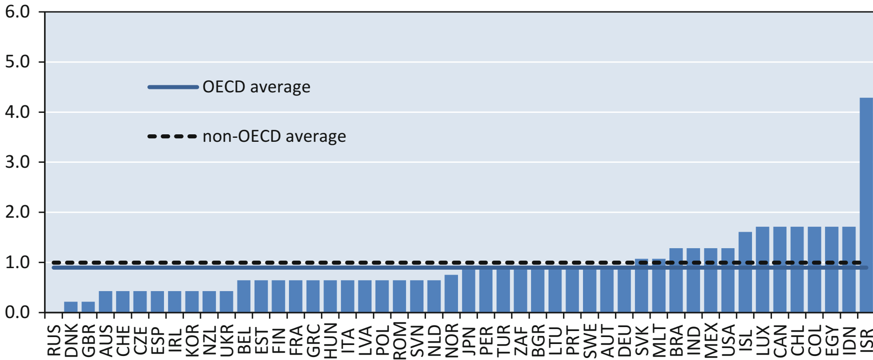


Fig. 6 CLP indicator on advocacy. 0 to 6 from most to least conductive to competition. *Source*: OECD calculations

that may have an impact on competition are subject to a competition assessment. And in eight jurisdictions, no regulation is subject to a competition assessment (Canada, Chile, Egypt, Indonesia, Iceland, Israel, Malta, and Slovakia).

The four BRICS countries—Brazil, India, Russia and South Africa—jointly have a score just below that of the OECD average for advocacy (see Fig. 2, Panel b), tough this hides considerable differences: Russia and South Africa score well, while India and Brazil could both clearly improve.

3.2 Impact of Integrating EU Legislation in the Indicators for EU and EFTA Member States

As mentioned above, the EU and national institutions share responsibility in the enforcement of competition law in the European Union. Thus, indicators computed for EU Member States cover both the national and the EU competition regimes and are obtained by taking the simple average of the national and the EU scores. The EU competition rules also apply to Norway and Iceland and are enforced by the European Commission and the EFTA Surveillance Authority in a complementary manner. The indicators for these two countries are computed as for the EU Members States, i.e. an equal weight is attributed to the national and supranational competition authorities.[25]

The scores of EU Member States generally improve when taking into account EEA legislation since the European Commission is scored 0 for all indicators but

[25] As for EU Member States, the national score accounts for one half of the indicator value. The scores of the European Commission and the EFTA Surveillance Authority respectively account for one quarter of the indicator value, which provides a weight of one half to the supranational authorities.

Table 2 National competition laws and policies for EEA countries—set 1

	Scope of action	Policy on anticomp. behaviour	Probity of investigation	Advocacy
Austria	0.29 (0.14)	0.00 (0.00)	1.80 (0.90)	1.29 (0.86)
Belgium	0.29 (0.14)	0.00 (0.00)	0.00 (0.00)	0.86 (0.64)
Bulgaria	0.00 (0.00)	0.63 (0.32)	0.00 (0.00)	1.29 (0.86)
Czech Republic	0.29 (0.14)	0.00 (0.00)	0.00 (0.00)	0.43 (0.43)
Denmark	0.57 (0.29)	0.00 (0.00)	0.00 (0.00)	0.00 (0.21)
Estonia	0.29 (0.14)	0.00 (0.00)	1.80 (0.90)	0.86 (0.64)
Finland	0.57 (0.29)	0.32 (0.16)	0.30 (0.15)	0.86 (0.64)
France	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.86 (0.64)
Germany	0.00 (0.00)	0.00 (0.00)	0.60 (0.30)	1.29 (0.86)
Greece	0.29 (0.14)	0.32 (0.16)	0.00 (0.00)	0.86 (0.64)
Hungary	00.0 (0.00)	0.32 (0.16)	1.20 (0.60)	0.86 (0.64)
Iceland	0.00 (0.07)	0.00 (0.16)	0.30 (0.15)	1.71 (1.61)
Ireland	0.57 (0.29)	0.63 (0.32)	0.30 (0.15)	0.43 (0.43)
Italy	0.29 (0.14)	0.32 (0.16)	0.00 (0.00)	0.86 (0.64)
Latvia	0.57 (0.29)	0.00 (0.00)	1.50 (0.75)	0.86 (0.64)
Lithuania	0.29 (0.14)	0.00 (0.00)	0.90 (0.45)	1.29 (0.86)
Luxembourg	2.00 (1.00)	1.26 (0.63)	1.71 (0.60)	3.00 (1.71)
Malta	0.57 (0.29)	1.26 (0.63)	0.30 (0.15)	1.71 (1.07)
Netherlands	0.57 (0.29)	0.63 (0.32)	0.30 (0.15)	0.86 (0.64)
Norway	0.57 (0.36)	0.63 (0.47)	0.90 (0.45)	0.00 (0.75)
Poland	0.29 (0.14)	0.00 (0.00)	0.90 (0.45)	0.86 (0.64)
Portugal	0.29 (0.14)	0.00 (0.00)	0.00 (0.00)	1.29 (0.86)
Romania	0.00 (0.00)	0.00 (0.00)	0.30 (0.15)	0.86 (0.64)
Slovakia	0.00 (0.00)	0.63 (0.32)	0.90 (0.45)	1.71 (1.07)
Slovenia	0.57 (0.29)	0.32 (0.16)	1.80 (0.90)	0.86 (0.64)
Spain	0.00 (0.00)	0.00 (0.00)	0.15 (0.08)	0.43 (0.43)
Sweden	0.57 (0.29)	0.00 (0.00)	1.20 (0.60)	1.29 (0.86)
United Kingdom	0.57 (0.29)	0.00 (0.00)	0.15 (0.08)	0.00 (0.21)

Note: The indicators that reflect both national and EEA competition law and policy are presented in brackets

advocacy.[26] Hence, the scores for EU Member States are generally cut in half (i.e. improve) when the EU regime is incorporated (Table 2 and Table 21 in Annex 1). In the case of advocacy, the decline is smaller and the scores of Denmark and the United Kingdom even go up when the EU is taken into account. The picture is less clear for Norway and Iceland. The EFTA Surveillance Authority has higher scores compared with the Commission for 'scope of action', 'policy on anticompetitive

[26] The EU Commission scores 0.4 for the indicator on advocacy because the Commission is not obliged to respond to the recommendations included in the market studies performed at the EU level (but usually do so).

behaviour' and 'advocacy'.[27] Hence, when integrating information on the EEA competition regime, the scores of Iceland and Norway increase for 'advocacy'. The score of Iceland also rises for 'scope of action' and 'policy on anti-competitive behaviour'. Indicators that do not incorporate the EEA legislation (as shown in Table 2) could be used to investigate differences across the national institutions enforcing competition law in the European Economic Area.

3.3 Robustness Tests

Composite quantitative indicators that are derived from lower-level qualitative information are prone to aggregation errors, reflecting uncertainty regarding the appropriate weighting scheme. Ideally the weighting scheme should reflect the relative contribution of each observation to the effectiveness of the competition regime but this is unknown *a priori*. To make clear what arbitrary assumptions are used and to facilitate the reading of the results, equal weights are used to construct the indicators. Two types of tests—one based on random weights and one based on a factor analysis—are used to investigate how sensitive the cross-country differences in the various dimensions of competition law and policy are to the choice of the weighting scheme.

The random weights analysis consists in re-computing the indicators using randomly drawn weights for the aggregation. This technique consists of generating 10,000 sets of weights and calculating 10,000 corresponding values of the indicators by aggregating individual questions based on these weights. The random weights are drawn from a uniform distribution between zero and one and are then normalised so that they sum to unity.[28] The 10,000 indicator values are used to compute 90 % confidence intervals around the mean value of each indicator.[29] Indicators with a relatively large confidence interval (i.e. indicators that can take a wide range of different values depending on the weighting scheme used) are more difficult to interpret.

The random weight exercise shows that the weighting scheme has an impact on the values of the indicators. In a number of cases, differences in the values of the

[27] The EFTA Surveillance Authority has taken less action against anticompetitive behaviours than the European Commission over the past few years. Over the past ten years, the Authority has not imposed sanctions on a firm and/or individuals for hindering an investigation. It has not blocked or cleared a merger and has not imposed sanctions or remedies on a cartel over the past five years. Also, it does not advocate competition at local government levels and cannot provide recommendations in its market studies.

[28] In absence of knowledge about the probability distribution of the weights, the choice of a uniform distribution was made for simplicity.

[29] This shows the range of values the indicator takes in 90 % of the cases among the 10,000 draws.

indicators across countries vanish once the 90 % confidence intervals are considered (Fig. 7, Panels a–d).[30] The 90 % confidence intervals are larger for the indicators of 'probity of investigation' and 'advocacy' compared to those of 'scope of action' and 'policy on anticompetitive behaviours'. This might be due to the fact that a large number of observations have the same score (zero in many cases) in the latter two indicators. These large confidence intervals indicate that the relatively high variability of the indicators for probity of investigation and advocacy relates to some extent to the weighting scheme used and that some differences in the values of these indicators are not statistically significant.[31]

Despite the sensitivity of the results to the weighting scheme, it is still possible to identify groups of countries with scores that are statistically different, for instance, groups of countries that significantly deviate from the OECD average (Table 3).[32] While the composition of these groups tends to vary across indicators, some jurisdictions have a stronger competition regime than the OECD average for most of the four more aggregated indicators (Australia, Czech Republic, Denmark, Korea, France, Spain, and the United Kingdom) and others underperform compared to the average for three out of the four indicators (Egypt and Luxembourg).[33]

The second robustness test—based on factor analysis—also indicates that two groups of countries could be distinguished as regards the effectiveness of their competition regime. The factor analysis is a statistical technique that permits to identify the relative contribution of each component of the competition regimes captured in the questionnaire to the overall variance in the data. In other words, it highlights the components that contribute more to the variance of information across countries. The contributions of each component could be used as weights to compute the indicators as done, for instance, in Nicoletti et al. (1999).[34] The indicators of 'scope of action', 'policy on anticompetitive behaviours' and 'advocacy' obtained with this technique are generally close to those obtained with the equal weights (Fig. 7). By contrast, the indicator of 'probity of investigation' is systematically above the one measured with equal weights. This is due to the fact

[30] The scores of jurisdictions are considered as significantly different when their confidence intervals do not overlap.

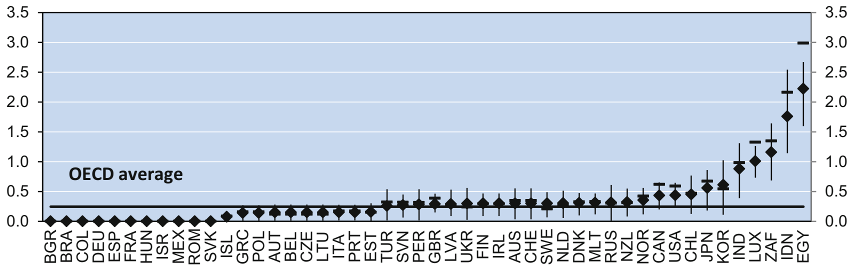
[31] The variability of the indicators is measured by their standard deviation. Standard deviation of 'probity of investigation' and 'advocacy' amounts to around 0.6 and 0.7 respectively compared with 0.4 for 'scope of action' and 'policy on anticompetitive behaviours'.

[32] When the confidence interval of a score does not include the OECD average, the score is considered as statistically different from the average (above or below). Jurisdictions with scores above and below the average are grouped and presented in Table 3.

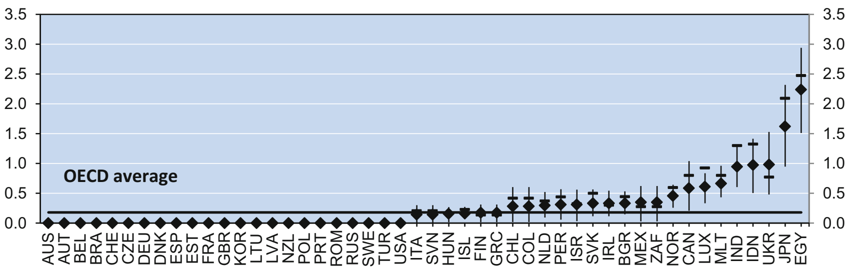
[33] It should be borne in mind that the differences in scores might be driven by one or two questions and thus might not be significant in an economic sense.

[34] This means that the largest weights are assigned to those questions that have the largest variation across countries. This technique was used to compute the initial version of the PMR indicators. Details on the method are provided in Annex 2.

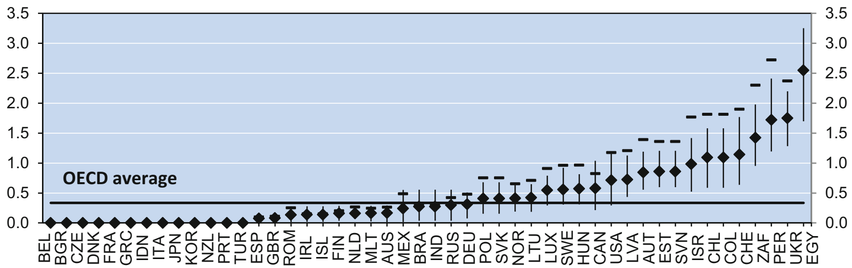
a



b



c



d

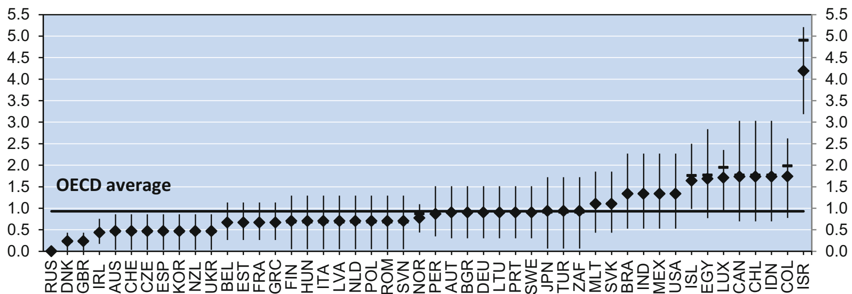


Fig. 7 Results of the random weights exercise. Panel (**a**): Scope of action. Panel (**b**): Policy on anticompetitive behaviour. Panel (**c**): Probity of investigation. Panel (**d**): Advocacy. *Note*: The *diamonds* show the mean estimates and the *lines* indicate the 90 % confidence interval obtained with the random weight exercise. The *horizontal bar* shows the factor analysis estimates. The OECD average is based on the indicators obtained with the random weights exercise

Table 3 Country groupings implied by the random weights analysis

	Scope of action	Policy on anticompetitive behaviour	Probity of investigation	Advocacy
Competition regimes more conductive to competition compared to the OECD-average	Brazil, Bulgaria, Columbia, Germany, Spain, **France**, Hungary, Iceland, Israel, Mexico, Romania, Slovak Republic	**Australia**, Austria, Belgium, Brazil, **Czech Republic**, **Denmark**, Germany, **Spain**, Estonia, **France, United Kingdom,** **Korea**, Lithuania, Latvia New Zealand, Poland, Portugal, Romania, Russia, Switzerland, Sweden, Turkey, United States	**Australia**, Belgium, Bulgaria, **Czech Republic**, **Denmark**, **Spain**, Finland, **France, United Kingdom,** Greece, Indonesia, Iceland, Ireland, Italy, Japan, **Korea**, Malta, Netherlands, New Zealand, Portugal, Romania, Turkey	**Australia,** **Czech Republic**, **Denmark**, **United Kingdom**, Ireland, **Korea**, New Zealand, **Spain**, Switzerland, Russia, Ukraine
Competition regimes less conductive to competition compared to the OECD-average	**Egypt,** Indonesia, India, **Luxembourg,** South Africa	Canada, **Egypt**, Indonesia, India, Japan, **Luxembourg** Malta, Norway, Ukraine	Austria, Columbia, Switzerland, Chile, **Egypt**, Estonia, Israel, Latvia, Peru, Slovenia, Ukraine, South Africa	Iceland, Israel, **Luxembourg**

Note: Countries which are in the same group (i.e. 'Above OECD average effectiveness', 'Below OECD average effectiveness') for at least three out of four indicators are highlighted in bold

that this indicator includes a relatively high number of questions for which the jurisdictions have the same scores (in general a zero score). These questions do not contribute to the variance in the data and are thus not included in the calculation of the indicator. As a result, the questions including non-null observations have a significantly higher weight in the indicator obtained with the factor analysis than in the indicator obtained with equal weights, inducing larger values for the former. Nevertheless, the positions of jurisdictions relative to the OECD average shown in Table 3 remain broadly unchanged.[35]

The weighting scheme obtained with the factor analysis maximises the variations in the indicators. The counterpart is that a range of information contained in the data is ignored by the indicators (i.e. those questions for which there is no

[35] The scores of the jurisdictions are compared with the average level of the indicators values obtained with the factor analysis method in the OECD. The average is close to the average obtained with the random weights for all indicators, but for the indicator of 'probity of investigation' (0.6 versus 0.4).

variation across countries). Since providing a comparative analysis of competition regimes across countries is one of the purposes of the indicator set, omitting the questions without variability is a serious drawback as these questions provide insights into which policies and practices are uniformly adopted by all countries. Furthermore, this type of weighting scheme is sensitive to modifications in the data. Weights used to compute the indicators are likely to change with data revisions and up-dates, hampering the comparability of the indicators over time. For these reasons, equal weights rather than the 'factor analysis' weights have been used to compute the CLP indicators. Future refinement of the indicators should aim at computing a weighting scheme that better reflects the relative contribution of each question to the effectiveness of competition regimes.

3.4 Correlation Analysis

This section is a first attempt to assess the empirical linkages between the CLP indicators and other policy indicators. The section assesses the correlation between the four more aggregated CLP indicators and other policy indicators, i.e. the indicator on competition enforcement published in the Global Competition Review (GCR), the indicator on the effectiveness of anti-monopoly policy published by the World Economic Forum (WEF) in the annual Global Competition Report, the OECD PMR indicators and the World Bank's Worldwide Governance Indicators (WGI). Because this assessment is based on a simple correlation analysis, it does not allow to determine causality links but only to identify possible relationships between the indicators. They should thus be interpreted with caution.

Most of the four CLP indicators are positively correlated with each other, but with a correlation varying from around 0.3 to 0.7 (Table 4).[36] The level of correlation is quite low for most combinations of indicators, suggesting that further aggregating the information into one single composite indicator might not be appropriate. Only the indicators of 'scope for action' and 'policy on anticompetitive behaviours' might be combined since the correlation between them is close to 1. This strong correlation indicates that those jurisdictions that allow more actions against anticompetitive behaviours by law are also those that are the most active against these behaviours in practice.

The CLP indicators are not correlated with the GCR and the WEF indicators, two indicators that are widely used to assess competition regimes (see the last two columns of Table 4). This is not surprising insofar as the indicators do not cover the same policy areas. The information captured by the GCR indicator is complementary to that of the CLP indicators, with a strong focus on *de facto* information, such

[36] Only the correlation between 'scope of action' and 'advocacy' is not significantly different from zero. A simple test for statistical significance concludes that there is no correlation if correlation is below 0.3.

Table 4 Correlation of competition law and policy indicators. OECD CLP (set 1), GCR and WEF indicators

	Scope of action	Policy on anti-comp. behav.	Probity of investigation	Advocacy	GCR	WEF
Scope of action	1.00	0.73***	0.40***	0.19	0.17	0.03
Policy on anticomp. behaviour	–	1.00	0.43***	0.33**	0.05	–0.19
Probity of investigation	–	–	1.00	0.31**	–0.17	–0.25*
Advocacy	–	–	–	1.00	–0.12	–0.11
GRC	–	–	–	–	1.00	0.39**
WEF	–	–	–	–	–	1.00

Note: WEF refers to the indicator on the effectiveness of the anti-monopoly policy published in the Global Competitiveness Report 2012–2013 by the World Economic Forum. GCR refers to the indicator of the Global Competition Review on competition enforcement and is the average of this indicator between 2010 and 2013. The results do not change when the correlation coefficients are calculated with the GCR indicator for 2013. Asterisks (*, **, ***) indicate the significance level (10 %, 5 %, 1 %) of the correlation coefficients

Source: Global Competition Review, Rating enforcement 2010, 2011, 2012, 2013; World Economic Forum, Global Competitiveness Report 2012–2013

as the level of resources of competition agencies (financial and human) and the number of cases addressed in the jurisdiction over the past year.[37] Furthermore, the GCR and WEF rely on subjective assessments. The WEF indicator is based on a survey of top business executives regarding their perception of the effectiveness of the antimonopoly policy.[38] It is simplistic as it is based on a single question and thus does not capture the different dimensions of competition law and policy reflected in the CLP indicators. Also, since it is based on people's perceptions, the indicator may be biased by executives' beliefs or economic conditions (Bertrand and Mullainathan 2001; Olken 2009).

Correlations between the CLP indicators and the World Bank's Worldwide Governance Indicators (WGI) are also examined.[39] The results suggest that jurisdictions where the governance is perceived as of good quality might be also those where the competition laws and policies are closer to best practice according to the

[37] The GCR rating of competition agencies varies from 2 for the least effective agency to 5 for the most effective agency.

[38] Business executives are asked to what extent anti-monopoly policy promotes competition in their country (answer choices range from 1 for 'does not promote competition' to 7 for 'effectively promotes competition').

[39] The World Bank's Worldwide Governance Indicators (WGI) measure the quality of public governance, i.e. the traditions and institutions by which authority in a country is exercised, in six areas (Voice and Accountability, Political Stability and Absence of Violence, Government Effectiveness, Regulatory Quality, Rule of Law, Control of Corruption) for 215 economies over the period 1996–2012.

Table 5 Correlation between CLP and WGI indicators

	Scope of action	Policy on anticomp. behav.	Probity of investigation	Advocacy
Control of corruption	−0.17	−0.24*	−0.27*	−0.07
Rule of law	−0.21	−0.30**	−0.31**	−0.11
Regulatory quality	−0.34**	−0.41***	−0.29**	−0.09
Government effectiveness	−0.27*	−0.35**	−0.34**	−0.08

Note: Asterisks (*, **, ***) indicate the significance level (10 %, 5 %, 1 %) of the correlation coefficients. The negative correlation indicate a positive link between the quality of governance and the effectiveness of competition regime, the CLP indicators varying from 0 to 6 from the most to the least effective regime and the WDI indicators varying between around −2.5 and 2.5 from the lowest to the highest quality of governance
Source: Worldwide Governance Indicators (WGI), World Bank

CLP indicators. Each WGI indicator is positively correlated with at least two CLP indicators. In particular, a link is found between indicators for 'scope of action', 'policy on anticompetitive behaviours', and 'probity of investigation' and the World Bank's indicators of 'regulatory quality' which reflects perceptions of the government's ability to formulate and implement sound policies and regulations which permit and promote private sector development. These three CLP indicator are also significantly correlated with the indicator of 'government effectiveness' which captures the quality of public services, the degree of independence of the civil service from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies. These relationships might not be robust nor causal as they do not take into account other factors that might play a role in both the quality of governance and the effectiveness of competition policy (for instance the level of resources devoted to ensure the good functioning of the institutions).

The CLP indicators are generally not correlated with the OECD PMR indicators (Table 5).[40] Taken at face value, this would suggest that countries where product market regulations are conducive to competition and growth are not necessarily the countries with the most effective competition regimes (as measured by the CLP indicators). At the same time, a positive and significant correlation is found between a few PMR and CLP indicators. The PMR indicator on 'regulatory protection of incumbents' is positively linked with the CLP indicators on 'advocacy', 'policy on anticompetitive behaviours', and 'scope of action'. The first correlation suggests that competition advocacy might play a role in designing good regulation, notably as regards regulatory entry barriers. The second and third correlation may show that

[40] The PMR indicators aim at describing patterns and developments of regulation that potentially affect product market competition. The indicator set comprises one aggregate indicator, three high-level components, which are broken down into seven mid-level indicators (used in Table 5) and eighteen low-level indicators. It covers 33 OECD and 21 non-OECD countries.

Table 6 Correlation between CLP and PMR indicators

	Scope of action	Policy on anticomp. behav.	Probity of investigation	Advocacy
Product market regulation	−0.04	0.00	0.22	0.27*
Public ownership	0.10	−0.05	−0.12	−0.07
Involvement in business operation	0.18	0.17	0.14	0.24
Complexity of regulatory procedures	0.06	0.07	0.21	0.23
Administrative burdens on start-ups	−0.14	0.03	−0.09	0.14
Regulatory protection of incumbents	0.26*	0.30**	0.12	0.33**
Explicit barriers to trade and investment	0.22	0.27*	0.26*	0.23
Other barriers to trade and investment	−0.06	0.15	0.20	0.23

Source: Preliminary 2013 Product Market Regulation Indicators

countries with legal regulatory barriers to competition, such as restrictions on the number of firms allowed to operate a business in some markets, exemptions to public firms to competition law, or restrictive conditions for third parties access in networks sectors, do not have strong competition regimes. The PMR indicator of ‘barriers to trade and investment’ captures the restrictions to foreign direct investment and the tariffs barriers. It is positively correlated with the indicator of ‘probity of investigation’ and ‘policy on anticompetitive behaviours’, indicating that open economies may be more likely than others to adopt best practices regarding the independence of the bodies enforcing competition law, the fairness of the investigative procedure, and the accountability of the competition regime as well as to take action against antitrust infringement. Nevertheless, such tentative interpretation of simple correlations would need to be further investigated and should thus be interpreted with a lot of caution (Table 6).

Further empirical work is needed to interpret these results and investigate the link between the indicators and economic outcomes. Future empirical work could explore the interactions between the CLP indicator and other policy indicators. In particular, the interactions with the PMR indicators should be investigated as these two indicators assess policy areas that contribute to growth in a complementary manner. The effectiveness of the competition regimes might have a bigger impact on growth in jurisdictions or sectors where regulation of product market is more conducive to competition (because in strictly regulated sectors, product market regulation might directly determine the competition level). Conversely, in countries where product market regulation is restrictive, an effective competition regime could partly mitigate the negative impact of a strict regulation on economic performance (for instance in sectors where a significant share of the activity is state-controlled). Clustering analysis could be carried out to identify groups of

countries with comparable policy settings, i.e. characterised by a specific combination of policy instruments. This analysis could include the PMR indicators in order to assess the complementarity of product market regulation and competition law and policy.

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Annex 1. Detailed Presentation of the CLP Indicators

This annex presents in more detail the two sets of CLP indicators. As mentioned in the main text, the first (more aggregated) set includes four indicators and the second (more disaggregated) set includes 12 indicators (presented in Table 20).[41] The same database, scoring, and aggregation method are used to construct these indicators. All indicators are measured as the simple average of the data points that belong to them. The scoring system is detailed below starting with the more disaggregated set of indicators.

Presentation of the More Disaggregated Set of Indicators (Set 2)

Competences

A competition regime is weaker if some firms are exempted from the provisions of the competition law. The indicator on competences is the simple average of two components: (1) exemptions for firms located outside the jurisdiction and (2) exemptions for publicly-controlled firms (Table 7). Those jurisdictions that apply their competition law to foreign firms are scored 0 and those that do not are scored 6. If the competition law fully applies to publicly-controlled firms the jurisdiction is scored 0 and if publicly-control firms are totally exempted from competition law, the jurisdiction is scored 6. When the exemptions of publicly-controlled firms are limited to some sectors and/or to some antitrust infringement, the jurisdiction is scored 3.

[41] For EU Member States, Norway, and Iceland, the indicators reflect both national and EU competition law and policy. For purpose of comparison, the indicators reflecting only the national competition regime of these countries are also presented in Table 21.

Table 7 Scoring of the questions on competences

Question	Score
Does the competition law apply also to firms located outside your jurisdiction whose behaviour directly affects competition and/or consumers in domestic markets? (Q1.1)	Yes = 0 No = 6
In your jurisdiction, are state-controlled firms exempt from the application of competition law when conducting commercial activities in competition with private firms? (Q1.2)	Yes = 6 Yes, but only in some sectors or with respect to some antitrust infringements = 3 No = 0

Table 8 Scoring of the questions on powers to investigate

Question	Score
Can your competition agency compel (or ask a court to compel) firms investigated for a possible antitrust infringement to provide information? (Q3.1)	Yes = 0 No = 6
Can your competition agency compel (or ask a court to compel) third parties to provide information to help an investigation on an antitrust infringement? (Q3.2)	Yes = 0 No = 6
Can your competition agency perform unannounced inspections/searches in the premises of firms investigated for a possible antitrust infringement aimed at gathering evidence (with or without a warrant/court authorisation)? (Q3.3)	Yes = 0 No = 6
If yes, has your competition agency performed unannounced inspections in the premises of firms investigated for a possible antitrust infringement at least once in the last five years? (Q3.4)	Yes = 0 No = 6 Not applicable = 6
Can your competition agency compel (or ask a court to compel) merging firms to provide information to help it assess the merger? (Q3.5)	Yes = 0 No = 6
Can your competition agency compel (or ask a court to compel) third parties to provide information to help it assess the merger? (Q3.6)	Yes = 0 No = 6

Powers to Investigate

The range of investigative powers available to the institutions that enforce competition law influences their ability to protect competition. This indicator is an average of six observations assessing whether it is possible to obtain information by compelling firms and third parties to cooperate, as well as by performing unannounced inspections (Table 8). If the competition agency or courts can compel firms and third parties to provide information to help with an investigation on an antitrust infringement or a merger, the jurisdiction is scored 0 (6 otherwise). If unannounced inspections are possible, the jurisdiction is scored 0 (6 otherwise). A *de facto* question asks whether at least one unannounced inspection has been performed in the past 5 years (if yes, the jurisdiction is scored 0, if not it is scored 6).

Powers to Sanction and Remedy

For an effective competition regime it is also important that the institutions enforcing competition law have sufficient powers to punish or remedy behaviours and mergers that restrict or distort competition. This indicator is an average of ten questions dealing with the powers to take action against anticompetitive behaviours and mergers (Table 9). The actions covered by the indicator include imposing sanctions and remedies for antitrust infringements, blocking or remedying anti-competitive mergers, limiting the cost of the procedure by shortening the length of the investigative process and reducing the damages that such behaviours can cause by imposing interim measures. A jurisdiction is scored 0 if these actions are possible and 6 otherwise.[42] One *de facto* question is also included: a jurisdiction is scored 0 if the agency or courts have imposed sanctions on firms that have hindered an investigation at least once over the past 10 years.

Private Enforcement

The ability of a competition regime to deter anticompetitive behaviours is strengthened by the possibility for the damaged parties to receive financial compensation through private litigation. If private actions (started by firms, individuals, or groups of consumer directly affected by the antitrust infringement) are not authorised, the jurisdiction is scored 6. The score is 3 if they are allowed for some antitrust infringements, 0 otherwise (Table 10).

Horizontal Agreements and Vertical Agreements

Provisions covering horizontal and vertical agreements are assessed by two separate indicators, computed as the simple average of respectively seven and four observations (Tables 11 and 12). A jurisdiction is scored 0 if horizontal/vertical agreements are prohibited. Competition regimes that carry out economic analysis of the effects of horizontal and vertical agreements and consider any efficiency they may cause are scored 0 (6 otherwise). Two *de facto* questions, which aim at measuring the enforcement of the competition law, are also included. If action has been taken against vertical or horizontal agreements at least once over the past 5 years, the jurisdiction is scored 0 (6 otherwise). A well-designed leniency programme is a key instrument for destabilising cartels. If a leniency programme exists and if it has generated at least one application over the last 5 years the jurisdiction is scored 0 (and 6 otherwise).

[42] In some jurisdictions, remedies, cease and desist order, commitments, and interim measures usually do not apply to hard-core agreement. In such cases, the jurisdiction should be scored 0.

Table 9 Scoring of the questions on powers to sanction and remedy

Question	Score
Can your competition agency impose (or ask a court to impose) remedies or a cease and desist order on firms that have committed an antitrust infringement? (Q4.1)	Yes, for all antitrust infringements = 0 Yes, but only for some antitrust infringements = 0 No = 6
If yes, can your competition agency impose (or ask a court to impose) sanctions on firms that do not comply with remedies imposed on them with respect to an antitrust infringement they have committed? (Q4.2)	Yes = 0 No = 6 Not applicable = 6
Can your competition agency impose (or ask a court to impose) sanctions on firms that have committed an antitrust infringement? (Q4.3)	Yes, for all antitrust infringements = 0 Yes, but only for some antitrust infringements = 0 No = 6
Can your competition agency (or a court) accept or impose remedies on firms in order to clear a merger? (Q4.4)	Yes = 0 No = 6
Can your competition agency impose (or ask a court to impose) sanctions on a firm that hinders an investigation on an alleged antitrust infringement? (Q4.5)	Yes = 0 No = 6
If yes, have sanctions been imposed on a firm and/or individuals for hindering an investigation on an antitrust infringement at least once in the last ten years? (Q4.6)	Yes = 0 No = 6 Not applicable = 6
Can your competition agency impose (or ask a court to impose) sanctions on firms and/or individuals that do not comply with a decision concerning a merger? (Q4.7)	Yes = 0 No = 6
Can your competition agency impose (or ask a court to impose) interim measures while performing an investigation of an alleged antitrust infringement because there is a concern that this may lead to irreversible damages?(Q4.8)	Yes, for all antitrust infringements = 0 Yes, but only for some antitrust infringements = 0 No = 6
Can your competition agency (or a court) settle voluntarily with the parties investigated for an alleged antitrust infringement and thus close the investigation?(Q4.9)	Yes, for all antitrust infringements = 0 Yes, but only for some antitrust infringements = 0 No = 6
Can your competition agency (or a court) clear a merger that raises anticompetitive concerns by negotiating/accepting remedies that address these concerns at an early stage and thus avoid performing a more in-depth investigation? (Q4.10)	Yes = 0 No = 6

Merger Control Regime

The indicator on merger control is based on three questions (Table 13). It assesses whether an economic analysis is performed to determine when to clear or block a merger and whether efficiencies are taken into account in the assessment of the merger. If an economic analysis is performed, if efficiencies are taken into account,

Table 10 Scoring of the questions on private enforcement

Question	Score
Can individuals bring a legal action to seek damages from firms that have committed an antitrust infringement? (Q12.1)	Yes = 0 Yes, but only for some antitrust infringements = 3 No = 6
Can firms bring a legal action to seek damages from firms that have committed an antitrust infringement? (Q12.2)	Yes = 0 Yes, but only for some antitrust infringements = 3 No = 6
Can a group of consumers (either collectively or through a consumer association) bring a legal action to seek damages from firms that have committed an antitrust infringement? (Q12.3)	Yes = 0 Yes, but only for some antitrust infringements = 3 No = 6

Table 11 Scoring of the questions on horizontal agreements

Question	Score
Are anticompetitive horizontal agreements (including cartels) prohibited in your jurisdiction? (Q6.1)	Yes = 0 No = 6
Does the decision-maker conduct an economic analysis of the competitive effects of horizontal agreements when investigating them? (Q6.2)	Yes = 0 Yes, but not in the case of cartels = 0 No = 6 Not applicable = 6
When investigating an allegedly anticompetitive horizontal agreement can the decision-maker consider any efficiency this may generate? (Q6.3)	Yes = 0 Yes, but not in the case of cartels = 0 No = 6 Not applicable = 6
Have sanctions and/or remedies been imposed on at least one cartel in your jurisdiction in the last five years? (Q6.4)	Yes = 0 No = 6 Not applicable = 6
Have sanctions and/or remedies been imposed on at least one anticompetitive agreement that is not a cartel in your jurisdiction in the last five years (Q6.5)?	Yes = 0 No = 6 Not applicable = 6
Does your jurisdiction have a leniency/immunity programme for cartel participants (firms and/or individuals)? (Q6.6)	Yes = 0 No = 6 Not applicable = 6
If yes, has the leniency/immunity programme generated at least one application in the last five years? (Q6.7)	Yes = 0 No = 6 Not applicable = 6

the jurisdiction is scored 0 (6 otherwise). Also the jurisdiction is scored 0 if at least one merger has been blocked or cleared it with remedies over the past 5 years.

Table 12 Scoring of the questions on vertical agreements

Question	Score
Are anticompetitive vertical agreements prohibited in your jurisdiction? (Q7.1)	Yes = 0 No = 6
Does the decision-maker conduct an economic analysis of the competitive effects of vertical agreements when investigating them? (Q7.2)	Yes = 0 Yes, but not in the case of hard-core vertical agreements = 0 No = 6 Not applicable = 6
When investigating an allegedly anticompetitive vertical agreement can the decision-maker consider any efficiencies this may generate? (Q7.3)	Yes = 0 Yes, but not in the case of hard core vertical agreements = 0 No = 6 Not applicable = 6
Have sanctions and/or remedies been imposed on at least one anticompetitive vertical agreement in your jurisdiction in the last five years? (Q7.4)	Yes = 0 No = 6 Not applicable = 6

Table 13 Scoring of the questions on mergers

Question	Score
Does the decision-maker conduct an economic analysis of the competitive effects of mergers when investigating them? (Q5.1)	Yes = 0 No = 6
When assessing a merger can the decision-maker consider whether the merger is likely to generate efficiencies? (Q5.2)	Yes = 0 No = 6
Has the decision-maker blocked or cleared with remedies at least one merger in the last five years? (Q5.3)	Yes = 0 No = 6

Exclusionary Conducts

The indicator on exclusionary conducts is based on five questions (Table 14). Exclusionary conducts can be defined as business practices by a dominant firm that result in effective access of actual or potential competitors to supplies or markets being hampered or eliminated. For instance, practices that might strengthen or establish entry barriers, predatory pricing, tying and bundling, refusal to supply and rebates may be exclusionary. If exclusionary behaviours by dominant firms are prohibited, if sanctions or remedies have been imposed on a firm for this motive at least once over the past 5 years, the jurisdiction is scored 0 (6 otherwise). Jurisdictions are also assessed on whether an economic analysis is performed and on whether efficiencies are taken into account in the assessment of the exclusionary conduct (they are scored 0 if yes and 6 otherwise).

Table 14 Scoring of the questions on exclusionary conducts

Question	Score
Are exclusionary conducts by dominant firms and/or by firms with substantial market power prohibited in your jurisdiction? (Q.8.1)	Yes = 0 No = 6
Does the decision-maker take non-market-share factors (such as conditions of entry, ability of smaller firms to expand, and ability of customers to switch to smaller rivals) into account when determining dominance? (Q8.2)	Yes = 0 No = 6 Not applicable = 6
Does the decision-maker conduct an economic analysis of the competitive effects of exclusionary conducts when investigating them? (Q8.3)	Yes = 0 No = 6 Not applicable = 6
When investigating an allegedly exclusionary conduct can the decision-maker consider any efficiency this may generate? (Q8.4)	Yes = 0 No = 6 Not applicable = 6
Has the decision-maker in your jurisdiction imposed sanctions and/or remedies on at least one firm for exclusionary conduct over the past five years? (Q8.5)	Yes = 0 No = 6 Not applicable = 6

Independence

The overall score on this indicator is the simple average of six *de facto* components assessing whether the government has influenced the activities and decisions of the institutions that enforce competition law over the past 5 years (Table 15). A jurisdiction is scored 6 if the government has given binding directions: on the opening or closure of an investigation, on the remedies imposed for an antitrust infringements, on the market studies to be undertaken, or if it has overridden at least one decision regarding the clearance or the prohibition of a merger at least once over the past 5 years (0 otherwise). [43]

Accountability

Four questions are related to the accountability of institutions enforcing the competition law (Table 16). They assess how much information on competition enforcement activities is made available to the public and whether all decisions can be subject to judicial review. The score is 0 if the agency publishes a report on its activities, if all decisions that ascertain the existence of an anticompetitive behaviours and that block or remedy mergers are published and if all antitrust decisions can be appealed. The jurisdiction is scored 6 if there is no report on the activities of the agency and if decisions are not published and cannot be appealed. If only some decisions on anticompetitive behaviours and mergers are published and not all antitrust decisions can be appealed, the score is 3.

[43] In the case of the UK this includes the possibility of blocking a referral from the Office of Fair Trading to the Competition Commission for a more in-depth investigation.

Table 15 Scoring of the questions on independence

Question	Score
Have the government/ministers given binding directions to the competition agency on whether it should open an investigation on an alleged antitrust infringement at least once in the last five years? (Q2.1)	Yes = 6 No, because the agency has to examine all the complaints it receives = 0 No = 0
Have the government/ministers given binding directions to the decision-maker in your jurisdiction on whether it should close an investigation on an alleged antitrust infringement at least once in the last five years? (Q2.2)	Yes = 6 No = 0
Have the government/ministers given binding directions to the competition agency on whether it should impose/not impose (or ask a court to impose/not impose) specific remedies when closing an investigation on an alleged antitrust infringement at least once in the last five years? (Q2.3)	Yes = 6 No = 0
Have the government/ministers given binding directions to the competition agency (or other public bodies) on whether it should not undertake a market/ sector study at least once in the last five years? (Q2.4)	Yes = 6 No = 0
Have the government/ministers overturned a decision concerning the clearance of a merger at least once in the last five years? (Q2.5)	Yes, fully overturned = 6 Yes, but only as regards remedies imposed = 3 No = 0
Have the government/ministers overturned a decision concerning the prohibition of a merger or the referral of a merger for a phase 2 investigation at least once in the last five years? (Q2.6)	Yes = 6 No = 0

Table 16 Scoring of the questions on accountability

Question	Score
Does your competition agency regularly publish a report on its activities? (Q10.1)	Yes = 0 No = 6
Are decisions that ascertain the existence of an antitrust infringement published by the relevant decision-maker? (Q10.2)	Yes = 0 Yes, but not all = 3 No = 6
Are decisions that block a merger or clear a merger with remedies published by the relevant decision-maker? (Q10.3)	Yes = 0 Yes, but not all = 3 No = 6
Can decisions on antitrust infringements and mergers (whether taken by a competition agency or a court) be subject to judicial review with respect to their substance? (Q10.4)	Yes = 0 No = 6

Procedural Fairness

This indicator assesses whether parties under investigation have access to information on the procedures and have the possibility to present arguments for their defence. It is the simple average of ten observations (Table 17). If the agency publishes guidelines on procedures to help businesses and legal advice in understanding how the competition law is enforced, the jurisdiction is scored 0 (6 otherwise). Guidelines are defined as explanatory documents that help business, their legal advisers and the public to understand how the competition law will be applied. They should be separated from the law, comprehensive, and easily accessible by interested parties. For EU Member States, since the European Commission has published its own guidelines, the following rule applies: if the national competition authorities do not publish their own guidelines but rely on guidelines published by the EU Commission, the national authorities are scored 0 only if they have explicitly adopted the EU guidelines or if the law explicitly says that the authorities will interpret competition law in accordance with the principles of the European Commission. If the parties have the right to consult the agency to have information on the procedures and to be heard by the decision-making in defence of their case, the jurisdiction is scored 0 (6 otherwise).

Table 17 Scoring of the questions on procedural fairness

Question	Score
Does your competition agency provide the party/parties under investigation for an antitrust infringement with opportunities to consult with your competition agency with regard to significant legal, factual or procedural issues during the course of the investigation? (Q11.1)	Yes = 0 No = 6
Do parties have the right to be heard and present evidence before the imposition of any sanctions or remedies for having committed an antitrust infringement? (Q11.2)	Yes = 0 No = 6
Does your competition agency provide the parties under investigation for a merger with opportunities to consult with your competition agency with regard to significant legal, factual or procedural issues during the course of the investigation? (Q11.3)	Yes = 0 No = 6
Do parties have the right to be heard and present evidence before a decision on a merger is reached? (Q11.4)	Yes = 0 No = 6
Does your competition agency publish procedural guidelines or public documents explaining its investigative procedures? (Q11.5)	Yes = 0 No = 6
Does your competition agency publish guidelines that explain how abuses of dominance are assessed? (Q11.6)	Yes = 0 No = 6
Does your competition agency publish guidelines that explain how horizontal agreements are assessed? (Q11.7)	Yes = 0 No = 6
Does your competition agency publish guidelines that explain how vertical agreements are assessed? (Q11.8)	Yes = 0 No = 6
Does your competition agency publish guidelines that explain how mergers are assessed? (Q11.9)	Yes = 0 No = 6
Are there published administrative guidelines that explain how monetary sanctions for antitrust infringements are set by your competition agency, or recommended by it to the court? (Q11.10)	Yes = 0 No = 6

Competition Advocacy

A competition regime can promote a pro-competitive environment also by allowing its competition agency (or another body) to advocate competition. The 'advocacy' indicator is constructed by taking the average across seven questions (Table 18). If the competition agency or another institution can advocate competition at the central and local levels, the jurisdiction is scored 0 (6 otherwise). If new regulations that may have an impact on competition are assessed to determine whether this effect is likely and find ways to reduce it, the jurisdiction is scored 0; if only some of these regulations are assessed, it is scored 3, otherwise it is scored 6. A score of 0 is attributed if market studies can be performed and if they can include recommendations on how to improve competition (6 otherwise). If the government is obliged to respond to the recommendation with reasoned opinions, the jurisdiction is scored 0. If the government is not obliged to respond to the recommendations but usually does so, the jurisdiction is scored 3. The score is 6 if the government does not respond.

Table 18 Scoring of the questions on advocacy

Question	Score
Does your competition agency (or another public body) advocate competition at the central government level? (Q9.1)	Yes = 0 No = 6
Does your competition agency (or another public body) advocate competition at local or regional government levels? (Q9.2)	Yes = 0 No = 6
Are new public policies that may have implications for competition subject to a competition assessment in your jurisdiction? (Q9.3)	Yes = 0 Yes, but not all of them = 3 No = 6 Not applicable = 6
Can market/sector studies be performed in your jurisdiction? (Q9.4)	Yes = 0 No = 6 Not applicable = 6
If yes, has at least one market/sector study been performed in your jurisdiction in the last five years? (Q9.5)	Yes = 0 No = 6 Not applicable = 6
If a market/sector study identifies an obstacle or a restriction to competition caused by an existing public policy, can the study include an opinion/recommendation to the government to remove or reduce such an obstacle or restriction? (Q9.6)	Yes = 0 No = 6 Not applicable = 6
If a market/sector study includes an opinion/recommendation to the government concerning an obstacle or restriction to competition caused by an existing public policy, is the government required to publicly respond to this opinion/recommendation? (Q9.7)	Yes = 0 No, but it usually responds = 3 No = 6 Not applicable = 6

Presentation of the More Aggregated Set of Indicators (Set 1)

In the first set of indicators, information is relatively more aggregated and the four indicators cover more general features of the competition policy compared to indicators in the second set but the scoring system is the same.

Scope of Action

This indicator relates to the scope of action that enforcing bodies have in investigating, punishing and remedying anticompetitive behaviours and mergers. It is computed as the simple average of the same questions used in the indicators on ‘competences’, ‘powers to investigate’, ‘powers to sanction and remedy’ and ‘private enforcement’ from the second set.

Policy on Anticompetitive Behaviours

This indicator assesses whether anticompetitive behaviours and anticompetitive mergers are prohibited, and blocked or punished, as well as how they are assessed. It is based on questions included in the indicators ‘horizontal agreements’, ‘vertical agreements’, ‘exclusionary conducts’ and ‘mergers’ in the second set.

Probity of Investigation

The probity of investigation is another important feature for effective competition regimes as it guarantees the soundness and fairness of the investigations. The indicator is constructed as the average of the observations contained in the indicators on ‘independence’, ‘accountability’ and ‘procedural fairness’.

Advocacy

This indicator is the same as the indicator in the second set.

Scoring of Questions That Are Not Applicable

Egypt and Luxembourg do not have a merger control regime and thus some of the questions relative to mergers cannot be answered by these jurisdictions. The treatment of these missing answers has been different depending on what each indicator is intended to measure (Table 19). When the questions refer to the power to sanction and remedy anticompetitive mergers, the missing answer is scored 6. This is because the related indicators are intended to capture the powers of the

institutions and not having a merger control regime is by definition a limitation of these powers. By contrast, no score is attributed to the missing answers relating to independence, procedural fairness, and accountability, because these indicators aim at assessing the enforcement of existing policies, hence if there is no merger control regime, its enforcement cannot be evaluated. These missing values are ignored when computing the indicators (i.e. the average is calculated over the available data points, adjusting the weights accordingly) (Tables 20 and 21).

Table 19 Treatment of jurisdictions without merger control regime

Independence	
Have the government/ministers overturned a decision concerning the clearance of a merger at least once in the last five years? (Q2.10)	
Have the government/ministers overturned a decision concerning the prohibition of a merger at least once in the last five years? (Q2.12)	
Powers to investigate	
Can your competition agency compel (or ask a court to compel) merging firms to provide information to help it assess the merger? (Q3.5)	6
Can your competition agency compel (or ask a court to compel) third parties to provide information to help it assess the merger? (Q3.6)	6
Powers to sanction/remedy	
Can your competition agency, or a court, accept or impose remedies on firms in order to clear a merger? (Q4.4)	6
Can your competition agency impose, or ask a court to impose, sanctions on firms and/or individuals that do not comply with a decision concerning a merger? (Q4.7)	6
Can your competition agency, or a court, clear a merger that raises anticompetitive concerns by negotiating/accepting remedies that address these concerns at an early stage and thus avoid to perform a more in-depth investigation? (Q4.10)	6
Mergers	
Does the decision-maker conduct an economic analysis of the competitive effects of mergers when investigating them? (Q5.1)	6
When assessing a merger can the decision-maker consider whether the merger is likely to generate efficiencies? (Q5.2)	6
Has the decision-maker blocked or cleared with remedies at least one merger in the last five years? (Q5.3)	6
Accountability	
Are decisions that block a merger or clear a merger with remedies published by the relevant decision-maker? (Q10.3)	
Procedural fairness	
Does your competition agency provide the parties under investigation for a merger with opportunities to consult with your competition agency with regard to significant legal, factual or procedural issues during the course of the investigation? (Q11.3)	
Do parties have the right to be heard and present evidence before a decision on a merger is reached? (Q11.4)	
Does your competition agency publish guidelines that explain how mergers are assessed? (Q11.9)	

Note: This table presents how the questions related to mergers are scored for countries which do not have a merger control regime. A dot means that no score is attributed

Table 20 CLP indicators—set 2. 0 to 6 from the most to the least effective competition regime

	Competences	Powers to investigate	Powers to sanction remedy	Private enforcement	Horizontal agreements	Vertical agreements	Mergers	Exclusionary conducts	Independence	Accountability	Procedural fairness	Advocacy
Australia	0.00	0.00	0.60	0.00	0.00	0.00	0.00	0.00	0.00	0.75	0.00	0.43
Austria	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.75	1.50	0.86
Belgium	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.64
Brazil	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.60	1.29
Bulgaria	0.00	0.00	0.00	0.00	0.43	0.00	1.00	0.00	0.00	0.00	0.00	0.86
Canada	0.00	0.00	0.00	3.00	0.00	3.00	0.00	0.00	0.00	0.00	1.20	1.71
Chile	0.00	0.00	0.60	1.00	0.00	1.50	0.00	0.00	0.00	0.00	2.40	1.71
Colombia	0.00	0.00	0.00	0.00	0.00	1.50	0.00	0.00	0.00	0.00	2.40	1.71
Czech Republic	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.43
Denmark	0.00	0.00	0.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21
Egypt	0.00	2.00	3.00	2.00	2.57	0.00	6.00	1.20	0.00	0.00	5.14	1.71
Estonia	0.00	0.00	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.80	0.64
Finland	0.00	0.00	0.30	1.00	0.43	0.00	0.00	0.00	0.00	0.00	0.30	0.64
France	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.64
Germany	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.00	0.30	0.86
Greece	0.00	0.00	0.30	0.00	0.43	0.00	0.00	0.00	0.00	0.00	0.00	0.64
Hungary	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.60	0.50	0.00	0.90	0.64
Iceland	0.00	0.00	0.15	0.00	0.21	0.00	0.50	0.00	0.00	0.00	0.30	1.61
India	0.00	1.00	1.20	0.00	0.86	1.50	2.00	0.00	0.00	0.00	0.60	1.29
Indonesia	3.00	2.00	1.80	0.00	1.71	0.00	2.00	0.00	0.00	0.00	0.00	1.71
Ireland	0.00	0.00	0.30	1.00	0.43	0.00	0.00	0.60	0.00	0.00	0.30	0.43
Israel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.20	0.00	0.75	1.80	4.29
Italy	0.00	0.00	0.30	0.00	0.00	0.75	0.00	0.00	0.00	0.00	0.00	0.64
Japan	0.00	0.00	1.20	0.00	1.71	1.50	0.00	2.40	0.00	0.00	0.00	0.86
Korea	0.00	0.00	0.60	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.43

Latvia	0.00	0.00	0.30	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.50	0.64
Lithuania	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.90	0.86
Luxembourg	0.00	1.50	0.90	1.00	0.00	0.75	3.00	0.00	0.00	0.00	1.20	1.71
Malta	0.00	0.50	0.30	0.00	1.29	0.00	1.00	0.00	0.00	0.00	0.30	1.07
Mexico	0.00	0.00	0.00	0.00	0.86	0.00	0.00	0.00	0.00	0.00	0.60	1.29
Netherlands	0.00	0.00	0.30	1.00	0.00	0.75	0.00	0.60	0.00	0.75	0.00	0.64
New Zealand	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.43
Norway	0.00	0.00	0.75	0.00	0.21	0.75	0.50	0.60	0.00	0.00	0.90	0.75
Peru	0.00	0.00	0.60	0.00	0.00	0.00	2.00	0.00	0.00	0.00	3.60	0.86
Poland	0.00	0.00	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.90	0.64
Portugal	0.00	0.00	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.86
Romania	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.30	0.64
Russia	0.00	0.00	0.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.60	0.00
Slovakia	0.00	0.00	0.00	0.00	0.43	0.75	0.00	0.00	0.00	0.00	0.90	1.07
Slovenia	0.00	0.00	0.60	0.00	0.00	0.75	0.00	0.00	0.00	0.00	1.80	0.64
South Africa	0.00	1.00	1.80	0.00	0.86	0.00	0.00	0.00	0.00	0.00	3.00	0.86
Spain	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.00	0.00	0.43
Sweden	0.00	0.00	0.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.20	0.86
Switzerland	0.00	0.00	0.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.40	0.43
Turkey	0.00	0.00	0.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.86
Ukraine	0.00	0.00	0.00	2.00	1.71	0.00	0.00	1.20	0.00	3.00	2.40	0.43
United Kingdom	0.00	0.50	0.30	0.00	0.00	0.00	0.00	0.00	0.25	0.00	0.00	0.21
United States	1.50	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.50	1.29
OECD	0.04	0.12	0.31	0.38	0.14	0.31	0.12	0.18	0.04	0.09	0.65	0.89

Table 21 National competition laws and policies for EEA countries—set 2. 0 to 6 from most to least effective competition regime

	Competences	Powers to investigate	Powers to sanction remedy	Private enforcement	Horizontal agreements	Vertical agreements	Mergers	Exclusionary conducts	Independence	Accountability	Procedural fairness	Advocacy
Austria	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	1.50	3.00	1.29
Belgium	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.86
Bulgaria	0.00	0.00	0.00	0.00	0.86	0.00	2.00	0.00	0.00	0.00	0.00	1.29
Czech Republic	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.43
Denmark	0.00	0.00	1.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Estonia	0.00	0.00	0.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.60	0.86
Finland	0.00	0.00	0.60	2.00	0.86	0.00	0.00	0.00	0.00	0.00	0.60	0.86
France	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.86
Germany	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.60	1.29
Greece	0.00	0.00	0.60	0.00	0.86	0.00	0.00	0.00	0.00	0.00	0.00	0.86
Hungary	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.20	1.00	0.00	1.80	0.86
Iceland	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.60	1.71
Ireland	0.00	0.00	0.60	2.00	0.86	0.00	0.00	1.20	0.00	0.00	0.60	0.43
Italy	0.00	0.00	0.60	0.00	0.00	1.50	0.00	0.00	0.00	0.00	0.00	0.86
Latvia	0.00	0.00	0.60	2.00	0.00	0.00	0.00	0.00	0.00	0.00	3.00	0.86
Lithuania	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	1.80	1.29
Luxembourg	0.00	3.00	1.80	2.00	0.00	1.50	6.00	0.00	0.00	0.00	3.43	3.00
Malta	0.00	1.00	0.60	0.00	2.57	0.00	2.00	0.00	0.00	0.00	0.60	1.71
Norway	0.00	0.00	0.60	2.00	0.00	1.50	0.00	1.20	0.00	1.50	0.00	0.86
Netherlands	0.00	0.00	1.20	0.00	0.00	1.50	0.00	1.20	0.00	0.00	1.80	0.00
Poland	0.00	0.00	0.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.80	0.86
Portugal	0.00	0.00	0.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.29
Romania	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.60	0.86
Slovakia	0.00	0.00	0.00	0.00	0.86	1.50	0.00	0.00	0.00	0.00	1.80	1.71
Slovenia	0.00	0.00	1.20	0.00	0.00	1.50	0.00	0.00	0.00	0.00	3.60	0.86

Spain	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.00	0.00	0.43
Sweden	0.00	0.00	1.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.40	1.29
United Kingdom	0.00	1.00	0.60	0.00	0.00	0.00	0.00	0.00	0.50	0.00	0.00	0.00

Annex 2. Factor Analysis

This section provides some details on the factor analysis used in Sect. 3 of the main chapter to test the sensitivity of the CLP indicators to the choice of equal weights for aggregation. Factor analysis allows identifying the contribution of each component of the regulatory framework to the overall variance of the data (each component being captured by one question in the questionnaire). The contributions can be used as weights to compute the indicators, meaning that the largest weights are assigned to those questions that have the largest variation across countries. This technique was used by Nicoletti et al. (1999) to construct the first set of PMR indicators.

The factor analysis is applied to the four more aggregated indicators, i.e. 'scope of action', 'policy on anticompetitive behaviours', 'probity of investigation', and 'advocacy'. Determining the contribution of each question to the variance of the data—and thus the weight of each question in the indicator—involves the following three steps:

- The first step consists in extracting so-called factors from the data using principal component analysis. This is done by regrouping questions that are highly correlated and thus redundant in orthogonal linear combinations, the factors. The analysis provides as many factors as questions. Each factor is a different linear combination of all questions and is defined by a set of coefficients ('loadings') that measure the correlation between the questions and the factor. Each factor explains a certain share of the variance of the data. Only the factors that explain a relatively large share of the variance are retained in the analysis for reasons of concision. The Kaiser criterion is used to select the factors that are retained (in our case, this is roughly equivalent to selecting the factors that jointly explain 80 % of the variance).
- The second step consists of the rotation of factors.[44] The rotation is a statistical technique which modifies the factors to allow for a better interpretation of the results. It limits the number of factors with which each question is highly correlated, so that a selected question can be assigned more easily to a unique factor.
- The third step consists in computing the indicators.
  - *First*, the factors are constructed as a weighted average of the observations. Each question is weighted according to its contribution to the variance explained by the factor. This is measured by the squared loading (i.e. the variance of the question explained by the factor) normalised by the total variance explained by the factor.
  - *Second*, the factors are aggregated to obtain the indicator. Each factor is weighted according to the proportion of the variance it explains in the total variance of the data.

The use of factor analysis can be illustrated with example of the indicator of scope of action. This indicator includes 21 questions, including 5 for which all

[44] This is done using the varimax rotation technique, which preserves the orthogonality between the factors.

jurisdictions have the same scores. The variance of the observations for these five questions is null and they are thus dropped from the analysis. As a result, the factor analysis is applied to 16 questions and computes 16 factors. Five factors with an eigenvalue larger than unity (Kaiser criterion) and jointly accounting for 75 % of the total variance are retained (Table 22).

Rotated loadings (i.e. correlation coefficients between the factors and the questions after rotation) are estimated for the five selected factors (Table 23). The

Table 22 Factor extraction for the indicator of scope of action

Factor	Eigenvalue	Difference	Proportion	Cumulative
Factor1	4.42	1.41	0.28	0.28
Factor2	3.01	0.96	0.19	0.46
Factor3	2.05	0.76	0.13	0.59
Factor4	1.29	0.12	0.08	0.67
Factor5	1.17	0.17	0.07	0.75
Factor6	0.998	0.15	0.06	0.81
Factor7	0.85	0.10	0.05	0.86
...	0.74	0.26	0.05	0.91
Factor15	0.48	0.07	0.03	0.94
Factor16	0.41	0.03	0.03	0.97

Note: obtained with the principle component method

Table 23 Loadings and weights obtained for the indicator of scope of action

	Factor 1		Factor 2	...	Factor 5	
Questions	Factor loadings[a]	Weight of questions in the factor[b]	Factor loadings[a]	Weight of questions in the factor[b]	Factor loadings[a]	Weight of questions in the factor[b]
Q1.1	−0.04	0.00	0.93	0.29	−0.11	0.01
Q 1.2	0.02	0.00	0.15	0.01	0.88	0.59
Q 3.3	−0.03	0.00	0.91	0.28	0.30	0.07
Q 3.4	0.04	0.00	0.63	0.13	0.37	0.11
Q 3.5	0.96	0.21	−0.03	0.00	0.04	0.00
⋮	⋮	⋮	⋮	⋮	⋮	⋮
Q 12.2	−0.02	0.00	−0.01	0.00	−0.01	0.00
Q 12.3	0.48	0.05	−0.12	0.00	−0.13	0.01
Eigenvalue of the factors[a]		4.32		2.97		1.30
Weight of factors in the indicator[c]		0.36		0.25		0.11

[a]Obtained after rotation

[b]Contribution of the questions to the variance explained by the factors, measured as the squared factor loading normalised by the variance explained by the factor (the eigenvalue)

[c]Contribution of the factor to the total variance explained by the five factors measured as the ratio between the variance explained by the factor and the sum of the variance of the five factors selected

contribution of each question to the variance explained by each factor is measured as the associated squared loading normalised by the variance explained by the factor. These weights are used to compute the factors (as the weighted sum of the observations). The indicator is finally obtained by aggregating the factors weighted by their contribution to the total variance. The contribution of each factor to the total variance is the proportion of the total variance (the sum of the eigenvalues) explained by the factor (the eigenvalue).

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Cartel Damages to the Economy: An Assessment for Developing Countries

Marc Ivaldi, Frédéric Jenny, and Aleksandra Khimich

Abstract The competition policy implementation and enforcement, including cartel deterrence and detection, require substantial investments. Therefore, it is important to understand to which extent these investments are compensated in terms of prevented damages to consumers. Answer to this question is especially important for developing countries for which decision to create or reinforce an antitrust authority largely depends on associated costs, while the sufficient and robust quantitative evaluation of potential benefits is still missing. The present study aims at providing the missing evidence by assessing the aggregate economic harm caused by cartels in developing countries. We find that economic damage of cartels already detected in developing countries is substantial—in terms of affected sales related to GDP the maximal rate reaches up to 6.38 %, while excess profits resulting from unjustified price overcharges reach up to 1 % when related to GDP. Furthermore, if one wants to take into account cartels that were not detected, the total damage appears at least four times larger.

Keywords Hard-core cartel • Developing countries • Cartel damages • Antitrust • Cartel deterrence • Price overcharge

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1 Introduction

Detecting and castigating cartels come first on the agenda of anti-trust authorities in developed countries because of their potential harm to consumers' welfare and the economy as a whole. Cartels are considered as damaging *per se* as colluding firms have strong incentives to overcharge customers for products or services, without adapting the quality, or to block the entry of new rivals. From a sample of international cartels operating on primary products markets during the last 20 years, Connor (2011a) draws a conclusion that cartels' prices have been at least 25 % higher than their competitive benchmark.

As implementation of the antitrust enforcement requires substantial investments, it can be questioned to which extent those expenditures are compensated in terms of prevented consumers' damages. Especially this is relevant for developing competition authorities that often experience tough budget constraints, but often struggle to find the supportive evidence that could advocate their efforts—the research on this question in developing countries is scarce and has mainly followed a qualitative approach. Among the few relevant studies, e.g. Jenny (2006), Connor (2011a) and Levenstein et al. (2003), only the latter offers a relatively comprehensive quantitative assessment of the aggregate economic impact of cartels' agreements. Based on international trade flows data and a list of 42 detected international cartels prosecuted in the United States (U.S.) and the European Union (EU) in 1990s and operating on developing markets, authors estimated that 3.4–8.4 % of imports to developing countries were affected by cartel agreements—the amount equivalent to 0.6–1.7 % of the GDP in respective developing countries. Authors suggested that the actual impact is potentially more significant due to hidden nature of cartels and various methodological problems that did not allow taking all the observations into account.

Present study takes into account both international and local cartels that were prosecuted in more than 20 developing countries from 1995 to 2013 and measures the aggregated cartel excess profits resulting from price overcharges. It, therefore, provides a better understanding of the actual damage suffered by consumers in developing countries. Competition authorities in developing countries may have a practical interest in the respective results for the advocacy of their efforts.

The chapter will stick to the following outline.

Section 2 comprises a description of the data mining process and a discussion over the descriptive statistics of the collected sample of cartels. We also present our original methodology that was developed to estimate the price overcharges resulting from cartel agreements and applied on some cases from our database. Being quite simple and intuitive, this methodology can be implemented with a very limited set of data. Competition authorities may wish to take advantage of the proposed methodology for their own cartel investigations as it will reduce the data required to estimate the damages. Overall, our sample of cartels does not bring any strong evidence to the widespread idea that cartels' impact on prices in developing

countries is more significant than in developed ones. We show, however, that this impact is at least of a similar scale, which calls for adequate antitrust measures.

In Sect. 3 we focus on several indicators aggregated on a country level. Firstly, as in Levenstein et al. (2003), we calculate aggregate sales affected by collusive practices. Secondly, and more innovatively, we calculate aggregated cartels' excess profits that result from unjustified price overcharges. Both measures are then related to GDP to take into account the different scales of considered economies. We supplement the discussion with a simplified cost-benefit-like analysis of the anti-trust enforcement by relating aggregated cartels' excess profits to the budget of the corresponding competition authority. We find that in terms of affected sales related to the GDP the rate reaches up to 6.38 %. The direct harm to consumers in terms of cartels' excess profits related to GDP is also significant, reaching almost 1 %. In majority of considered countries excessive profits significantly exceed competition authority budget expenses aimed at preventing them.

Our estimates reflect the minimal bound for the economic harm caused by cartels. One of the major reasons is that quantitative information on detected cartels in developing countries is very limited, but also because a potentially large number of cartels remain undetected. In Sect. 4 we assess the extent to which our aggregated estimates of harm are underestimated due to the hidden nature of cartels. Precisely, we adopt the methodology proposed in Combe et al. (2008) to estimate the annual probability of a cartel to be uncovered. We find that at least three out of four existing cartels remain undetected, implying that the actual damage is at least four times larger than suggested by our estimations.

Finally we conclude and discuss several policy implications of our results.

2 Collected Data: Cartels' Profile in Developing Countries

2.1 Data Collection Process

Given the complexity of possible reasons for collusive behavior among firms and consequent welfare effects, we only focus on so-called 'hard core' cartels, i.e. when cartel participants aim at increasing their profits by the means of collective price or market share fixing. These agreements between firms are assumed to be harmful for consumers *per se* and, therefore, are illegal in the majority of antitrust jurisdictions. We, therefore, do not include in the database buyers' cartels, collective predatory pricing cases or collusive agreements that were given an exemption by competition authorities.[1]

[1] Collusive behavior could be granted an exemption by the competition authority if it is shown to be beneficial for consumers or to be necessary for firms' survival in given economic conditions. This was, for instance, the case of the mixed concrete industry cartel in South Korea in 2009.

Our analysis is based on the original dataset containing information on 249 major ‘hard-core’ cartels that were prosecuted in more than 20 developing countries from 1995 to 2013. In Appendix 1 we provide a reduced version of this dataset containing the list of countries, identified cartels and their respective period of existence. We restrict our attention to the chosen period because many of developing countries have established their competition authorities only recently, if at all; hence no or very poor data could be collected for earlier years. Nevertheless, we find the period sufficiently long to obtain a representative sample.

The list of countries chosen to participate in the study was created according to whether the country is officially classified as developing and whether its competition authority (1) exists, (2) is active, and (3) has sufficient experience in terms of cartel detection. [2] This selection process excluded many of the developing countries from consideration. However, they can still profit of the current study to advocate the introduction of the antitrust law or its enforcement.

For every defined ‘hard core’ cartel, we aimed at collecting quite substantial descriptive data, including:

(a) *Relevant market(s)*. When a cartel operated on several markets, we considered those as separate cases whenever the available data allowed doing so;
(b) *Number of colluding firms*;
(c) *Cartel duration*. When no exact dates but only year of creation or breakdown of a cartel was known, we assumed that cartel was active during the whole year from January to December, and a similar assumption was adopted for cases with known months only;
(d) *Cartel’s sales*. We define cartel’s sales as revenues of all colluding firms during the cartel duration period and on the relevant market only;
(e) *Applied penalties*. Collected data on penalties include all applied fines (both for companies and responsible executives) as well as finalized settlements; and
(f) *Estimated price overcharges*. Given the absolute lack of data on losses in output or welfare, we have chosen price overcharge as a measure of the economic harm on a cartel level.

In some cases inputs were provided in different currencies. In these cases cartel’s sales were converted by using average exchange rates corresponding to the period of cartel’s operations, while for penalties we used the exchange rate that corresponds to the period when the final decision on the case was made.

To perform the “cost-benefit” analysis we also collected data on budgets of competition authorities.

The collected pieces of data were obtained from numerous sources such as competition authorities’ websites, companies’ annual reports, reports of international organizations such as OECD, UNCTAD, etc. A significant piece of

[2] We have used the list of developing countries from the International Monetary Fund’s World Economic Outlook Report, April 2010.

information came from the existing database on international cartels.[3] However, our sample would not be so rich without cooperation with local competition authorities.[4] For this purpose, they were asked to fill out a special questionnaire. (See Appendix 2.) In addition to the mentioned above target data this questionnaire requests for additional inputs required by our methodology that estimates the price overcharges. These include prices, market shares and sales of colluding companies at least for one period of cartel existence. All the other cartel-specific information requested in the questionnaire is not mandatory to implement the methodology, but helps to better calibrate market parameters and, eventually, to improve the estimation results. We explain the methodology in more detail and report obtained estimates later in the section.

Our database makes a substantial contribution in summarizing and, most importantly, enriching the existing knowledge on price overcharges caused by cartels. It comprises not only international cartels [as, for instance, in Levenstein et al. (2003)], but also cartels formed locally. Cartels' industrial profile in our sample is similar to the one described extensively by Jenny (2006), therefore we do not go deeper in this aspect but instead focus on the quantitative assessment of cartels' activities.

2.2 Descriptive Statistics of the Sample

Table 1 provides some descriptive statistics of the collected sample of cartels.

In our sample, the median number of colluding firms is equal to 5 while median duration of a cartel is 27 months.[5] Analogous calculations for a sample of cartels in developed economies [see Connor (2011b)] indicate similar results for the number of cartel participants but, surprisingly, a higher level of median cartel duration—around 50 months in the North America and 70 months in the EU. These results may seem to be in conflict with the popular opinion that in developing countries collusion is sustainable for longer periods because of stronger market imperfections and weaker antitrust enforcements. However, they are in line with Motta (2004) who demonstrates that on unstable but growing markets, which developing markets are, cartel life can be shorter than on stable markets as deviations from the collusive agreement can be more attractive.

[3] "Private International Cartels" database by John M. Connor, Purdue University, Indiana, USA (March 2009).

[4] We wish to thank for a fruitful cooperation competition authorities from Brazil, Chile, Colombia, Indonesia, Peru, South Africa, Russia, Mexico, Ukraine, Pakistan, Zambia and South Korea and Mauritius, as well as UNCTAD RPP initiative coordinators.

[5] Median values are more convenient to consider because the data are skewed and contain a few outliers with number of cartel participants more than 200 and duration of more than 150 months that renders mean values uninformative.

Table 1 Descriptive statistics of the collected sample of cartels

Characteristic	#obs.	Mean	Median	St. dev.	Min	Max
Duration (months)	185	46	27	50	1	420
Number of cartel members	200	15	5	37	2	300
Price overcharge (%)	83	23.1	20.0	14.6	2.4	75.0
Ratio Penalties/Excess profits (%)	72	51.8	19.0	118.2	0.0	950.5

Notes: We measure price overcharges with respect to cartel prices. Whether both minimal and maximal bounds for the price overcharge were known, we used the average value between the two

We do not provide descriptive statistics for the absolute values of cartels' sales and penalties because considered countries, their economies and, eventually, cartels operations are very different in terms of scale. Instead, we find it important to report descriptive statistics of some relative measures, such as ratio between penalties and excess profits, as well as price overcharges ratio that we measure with respect to the cartel price. We calculate cartel's excess profits as the extra margin resulting from sales at unreasonably higher prices multiplied by cartel sales in terms of volumes.[6]

As Table 2 shows, the median price overcharge rate in our sample (20 %) is of the same range as the one estimated for the EU countries (19.5–22.48 %) and is only slightly higher than 16.7–19 % estimated for the U.S. and Canada.

We also observe that the ratio between penalties and excess profits in our sample has quite extreme ends—it varies from 0 to 950 %. The lower end can be explained by the fact that not all of the detected cartels were subject to a fine. The reason for the latter is that, depending on jurisdiction, penalties can be calculated as percentage of the total sales of cartel members instead of sales on the relevant market only. As Fig. 1 illustrates, the average for developing countries ratio between penalties and excess profits (19 %) remains very low compared to the U.S. level (57 %), while it is just slightly below the EU level (26 %).

Cartel stability depends on its ability to prevent deviation by firms, while the benefits of deviation depend on the fines to be imposed in case of detection. Remarkably, on average neither developing nor developed competition authorities recuperate excess profits gained by cartel members.[7] According to Hammond (2005) and Connor (2011a) such a situation should be characterized as 'under-punishment' because optimal deterrence of cartels formation requires penalties to be higher than extra profits resulted from collusive arrangements. However, Allain et al. (2011) argued that the majority of the fines imposed by the European Commission can nevertheless be considered as 'optimal'. The authors' understanding of the optimal deterrence relies on the idea that, for a given probability of

[6] We understand that in some cases this can result in a slightly overestimated estimate of excess profits as output effect is not taken into account. Output effect refers to either reduction in sold quantities of the good due to the overall hike in market prices in presence of a cartel, or deliberate limitation of quantities by cartel members in order to increase prices.

[7] We calculate the penalty-excess profits ratio without taking into account the money depreciation, which would render the values even lower.

Table 2 Comparison of cartel price overcharges from existing studies, %

Country/group	# obs.	Mean	Median
Developing countries (our sample), 1990–2013	83	23.1	20.0
Developing countries (Connor 2010), 2000–2009	33	n/a	n/a
China	2	17.42	17.42
Egypt	4	20.26	19.61
India	1	16.67	16.67
Korea	22	24.01	14.89
Mexico	1	15.25	15.25
Pakistan	1	42.53	42.53
Turkey	2	53.49	53.49
EU (Connor 2011b), 1990–2010	105	n/a	19.5
EU (Connor 2010), 1990–2009	11	28.16	22.48
US (Connor 2011b), 1990–2010	97	n/a	19
US and Canada (Connor 2010), 1990–2009	29	39.61	16.67

Notes: Estimates from Connor (2010) were originally provided with respect to a 'but-for' prices, i.e. prices that would be observed absent the cartel. These were recalculated with respect to the cartel price to be comparable with the other data in the table

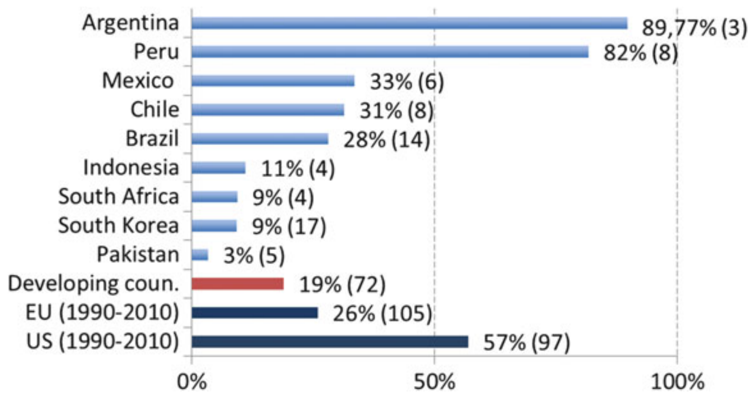

Fig. 1 Country comparison of average penalty-excess profits ratios, %. Notes: In *brackets* we provide numbers of cartel cases used to calculate each ratio. The *chart* provides country-level data only when number of observations is more than 2. Data for the EU and the U.S. are obtained from Connor (2011b)

detection, the fine should be high enough to wipe out any *expected* profit from the infringement, even if eventual ratio between fine and *realized* excessive profits is well below one.

The optimality of a penalty rule that does not require a 100 % recuperation of the excess cartel profits can be also justified by the following intuition. On one hand, competition authorities can expect that a more severe penalty rule results in a stronger deterrence effect by preventing the formation of cartels or making it more risky for existing collusion to continue. On the other hand, a too high penalty

can undermine the ability of the convicted firm's to be an efficient market player which goes against the initial goal of restitution of fair competition. If cartel was operating on the market for many years, it might be impossible for the firms to pay back all the extra profits that they have obtained by overcharging.

The present study does not aim at assessing whether penalty rules in developing countries are optimal or not, nor does it claim that they should follow the example of developed antitrust jurisdictions. What we want to highlight here is that factors that define the optimal antitrust deterrence policy are quite numerous, starting from the very definition of the optimality. Therefore, the effective penalty rule indeed can (and, most probably, should) be country-specific.

2.3 Estimation of Price Overcharges

2.3.1 Description of the Methodology

In our study data on price overcharges constitute a departure point towards the measure of the aggregated economic harm induced by cartelization. We acknowledge that in the context of developing countries estimations of price overcharges appear to be very scarce. One of the reasons is that this kind of estimations is usually demanding in terms of time and expertise that represent a serious constraint for a young competition authority. Besides, to condemn a cartel authorities rely mostly on the evidence of coordination (such as phone calls, meeting notes etc.) rather than the economic one (e.g. parallel pricing or constant market shares, etc.). To address this issue and estimate some of the missing price overcharges, we have developed an original methodology that is simple enough to be implemented in a context of limited data, while having a solid economic basis.

The methodology should be applied on a case-by-case basis. It proceeds as following. First, based on the collected cartel data we perform the calibration of the supply and demand functions' parameters that are specific to the relevant market. If cartel operates on several markets calibration should ideally be performed for each of them separately, given that collected data allow doing so. Having the calibrated demand and supply functions at hand, we then proceed with the simulation of hypothetical (counterfactual) competitive equilibrium that would have taken place on the market absent cartelization. Finally, by comparing realized and counterfactual (competitive) states we estimate the effect of each particular cartel in terms of differences in prices, volumes or even consumers' welfare. Below we explain each of these steps in more detail.

To perform the calibration of market parameters, we consider a model that describes the observed equilibrium outcomes (e.g. prices and volumes) on the differentiated product market, where firms compete in prices. Differentiating product characteristics, e.g. quality, do not depend on prices or volumes and are assumed to be fixed.

Precisely, we assume that market demand is derived from a general class of discrete choice models of consumer behavior. LOGIT specification that we have chosen is simple and flexible enough to obtain the desirable structure of the demand function. We assume that there are N potential consumers on the relevant market who can buy only one unit of the product from one of J firms forming the cartel. Each consumer can also choose the so called "outside option" that represents a substitute offered by firms not participating in the cartel or a decision of the consumer not to buy at all. We denote the "outside option" with index "0".

The utility of consumer i buying product j is defined as $U_{ij} = \delta_j - \alpha p_j + \upsilon_{ij}$, where $\delta_j, j = \overline{1, J}$ are parameters of product differentiation (e.g. quality or post-sales services) that are product-specific and p_j is the price of product j . α is the marginal utility of money common for all products and consumers—it reflects the sensitivity of consumers to the price relative to how they value quality. Higher α would mean that consumers put a higher weight to the price than the quality characteristic of the product while taking their decisions. υ_{ij} is the consumer i's idiosyncratic utility component that is specific to product j. This term is assumed to be identically and independently distributed across consumers and products.

Consumer i chooses product j if it maximizes her expected utility, such that $U_{ij} > U_{ij'} \forall j' \neq j$. According to Berry (1994), demand for product j can, therefore, be represented by the following function:

$$\left(s_j(p)\right) = \ln(s_0(p)) + \delta_j - \alpha p_j \tag{1}$$

where s_j is a market share of the firm j, s_0 is the share of the outside option and $p = (p_1, p_2, \ldots p_J)$ is the price vector, or eventually by:

$$S_j(p) = \frac{\exp\left(\delta_j - \alpha p_j\right)}{1 + \sum_{i=1}^{J} \exp(\delta_i - \alpha p_i)}, \forall j = \overline{1, J} \tag{2}$$

where the utility of the outside option is normalized to zero ($U_{0i} = 0, \forall i = \overline{1, N}$)

Because the size of the market is fixed to N, market shares can be easily interpreted in terms of sold quantities and vice versa.

In such framework, profit of each firm j is defined by the function $\pi_j(p) = \left(p_j - c_j\right) * s_j(p) * N$, where c_j are marginal costs that are assumed to be constant.

We employ several hypotheses that simplify the model in order to calibrate the unknown demand and supply functions' parameters. We first assume that cartel participants choose prices that maximize the joint profit of the cartel. Second, we assume that cartel participants agree to fix their gross margins to a certain value that is constant for all firms, such that $\left(p_j - c_j\right) = const, \forall j = \overline{1, j}$. Under these assumptions, from the cartel's joint profit maximization problem it is easy to obtain the following equilibrium condition for the cartelized market:

$$\left(p_j - c_j\right) = {}^{1}\!/_{\alpha s_0}, \forall j = \overline{1, j} \tag{3}$$

System of equations [Eqs. (1) and (3)] fully describes the cartelized market equilibrium $\left(p_j^{cartel}, s_j^{cartel}\right), \forall j = \overline{1, J}$. Cartel's prices are those observed on the market during the period of cartelization. However, that market shares that are employed in the model (s_j^{cartel}) are not the same as those observed (denoted as $\overline{s}_j^{cartel}$). The latter ones stand for the market shares within the cartel, while the former take into account the presence of the outside option, such that $\overline{s}_j^{cartel} = \frac{s_j^{cartel}}{(1-s_0)}$ and $\sum_{j=1}^{J} \overline{s}_j^{cartel} = 1$.

System of equations [Eqs. (1) and (3)] has, therefore, 2J equations and 2J + 2 unknown parameters (s_0, α, δ_j and $c_j, j = \overline{1, J}$). To be able to solve this system we set some inputs exogenously. First, we set the average cartel margin $AM = \sum_{j=1}^{J} \overline{s}_j^{cartel} \frac{\left(p_j^{cartel} - c_j\right)}{p_j^{cartel}}$. Note, that this is equivalent to fixing the level of gross individual cartel margins $\left(p_j^{cartel} - c_j\right), \forall j = \overline{1, J}$.[8] The second input that we set exogenously is the market share of the "outside option" s_0.

Cartel participants' gross margins could be extracted from companies' annual reports, even if often only approximately due to complexities associated with calculation of marginal costs. Estimation of the market share of the outside option appears more problematic. There is no standard procedure to define the potential market size, and methodologies may differ significantly depending on the product and market considered. However, independently on the methodology that is adopted, the sum of all market shares, including the one of the outside option, must be always equal to one, i.e. $\sum_{j=1}^{J} s_j^{cartel} + s_0 = 1$.

Having set exogenously margins and the share of the outside option we can calculate parameter α from Eq. (3):

[8] Recall that margin constant for all cartel participants is one of the basic assumptions of the methodology. Keeping this in mind, when market shares and prices are known, it is easy to recover average cartel margin from the gross individual margins, and vice versa: $AM = \sum_{j=1}^{J} \overline{S}_j^{cartel} \frac{\left(p_j^{cartel} - c_j\right)}{p_j^{cartel}} = \underset{cons\tan t\, for\, all\, j}{\left(p_j^{cartel} - c_j\right)} \sum_{j=1}^{J} \frac{\overline{s}_j^{cartel}}{p_j^{cartel}}$

$$\alpha = \frac{1}{s_0\left(p_j^{cartel} - c_j\right.} = \frac{\sum_{j=1}^{J} \frac{\overline{s}_j^{cartel}}{p_j^{cartel}}}{AM^* s_0} \tag{4}$$

In the list of inputs that are set exogenously one can choose to replace cartel margins or the share of the outside option with marginal costs, if these are known. In this case Eq. (4) remains valid and further steps of the methodology are not affected.

By substituting all the known and calculated variables in Eq. (1) we then are able to calculate the parameters of differentiation δ_j.

While choosing values of exogenous parameters, one needs to make sure that obtained values of marginal costs and parameter of sensitivity to the price α are non-negative.[9] There are no sign restrictions to the values of δ_j.

Note that the chosen demand function [Eqs. (1) or (2)] allows calculating the set of own- and cross-price elasticities [Eqs. (5) and (6) correspondingly]:

$$\varepsilon_{jj} = \alpha p_j^{cartel}\left(1 - s_j^{cartel}\right), \forall j = \overline{1, J} \tag{5}$$

$$\varepsilon_{jj} = \alpha s_j^{cartel} p_i^{cartel}, \forall j, \overline{1, J}, i \neq j \tag{6}$$

Obtained estimates for demand price elasticities can be compared against the existing estimates from other studies, relevant for the market in question. This can serve as additional cross-validation of the relevancy of chosen values for exogenous inputs.

At the end of the calibration procedure all missing demand and supply parameters $\left(\alpha, \delta_j\, and\, c_j, \forall j = \overline{1, J}\right)$ are recovered. They are assumed to remain the same whether the market is cartelized or not. In what follows we explain in more detail the second step of our methodology—simulation of the counterfactual (competitive) state of the market.

In the absence of cartelization each firm would set a price to maximize its profits, taking into account own marginal costs and expected pricing strategy of competitors. A standard solution for each firm's profit maximization problem would be:

$$p_j - c_j = \frac{1}{\alpha\left(1 - s_j\right)}, \forall j = \overline{1, J} \tag{7}$$

Note that demand equation [Eq. (2)] remains unchanged.

As a solution of the system of equations that describes the competitive market [Eqs. (2) and (7)] we obtain counterfactual (competitive) prices $p_j^c, j = \overline{1, J}$ and corresponding market shares $s_j^c, j = \overline{1, J}$. By comparing observed and

[9] Marginal costs are calculated from margins, either average for the cartel or firm-specific ones.

counterfactual prices we can calculate price overcharge for every cartel member as well as for the cartel on average:

$$\Delta P\% = \sum_{j=1}^{J} \bar{s}_j^{cartel} \frac{\left(p_j^{cartel} - p_j^c\right)}{p_j^{cartel}} \cdot 100 \tag{8}$$

Formula in Eq. (8) gives a price overcharge estimate in percentage, but it can easily be transformed into excessive profits in money terms by multiplying firm specific price overcharges on corresponding cartel member's revenues.

The chosen demand function that we adopt allows as well calculating the consumers' welfare in terms of consumers' surplus (Anderson et al. 1992):

$$CS = \frac{1}{\alpha} \ln\left(1 + \sum_{j=1}^{J} \exp\left(\delta_j - \alpha p_j\right)\right) \tag{9}$$

Consumer's welfare losses due to price overcharge can, therefore, be calculated as following:

$$Welfare\,losses(\%) = \frac{\left(\ln\left(1 + \exp\sum_{j=1}^{J}\left(\delta_j - \alpha p_j^c\right)\right) - \ln\left(1 + \sum_{j=1}^{J}\exp\left(\delta_j - \alpha p_j^{cartel}\right)\right)\right)}{\ln\left(1 + \exp\sum_{j=1}^{J}\left(\delta_j - \alpha p_j^c\right)\right)} .100 \tag{10}$$

An evident advantage of our methodology is that it requires very limited data to be implemented, i.e. prices and market shares of colluding companies observed for at least one point in time during the cartel's operation. On the other hand, the methodology is based on a relatively simple economic model and adopts a few assumptions that induce certain limitations. We discuss them below.

First, the demand function is based on a simple LOGIT model, which is quite flexible but has a specific property of Independence of Irrelevant Alternatives. In a nutshell, this property transforms in a particular consumers' behavior pattern: facing a price increase consumers would switch to the product with the maximal market share, but not the one with the closest quality characteristics. Indeed, we should acknowledge that this may not be a true behavioral pattern in reality.

On top of this, depending on the market, calibrated demand and supply parameters can be very sensitive to the level of inputs that are set exogenously. Considering reasonable ranges for these inputs rather than exact values shall help in assessing the robustness of obtained calibration outcomes. Additional market expertise, when available, could also help to narrow down the range of calibrated

Table 3 Estimates of price overcharges and output losses obtained with the use of the developed methodology

Industry (country)	Period of existence	Min Δp %	Max Δp %	Min Δq %[a]	Max Δq %
Civil airlines (Brazil)	Jan'99–Mar'03	3.20 %	33.90 %	10.00 %	24.2 %
Crushed rock (Brazil)	Dec'99–Jun'03	3.40 %	11.25 %	15.69 %	25.80 %
Security guard services (Brazil)	1990–2003	4.80 %	27.84 %	14.93 %	23.15 %
Industrial gas (Brazil)	1998–Mar'04	4.12 %	29.96 %	5.00 %	22.77 %
Steel bars (Brazil)	1998–Nov'1999	5.49 %	37.84 %	10.99 %	27.81 %
Steel (Brazil)	1994–Dec'99	13.55 %	40.13 %	5.00 %	29.22 %
Medical gases (Chile)	2001–2004	37.50 %	49.40 %	2.00 %	14.93 %
Petroleum products (Chile)	Feb'01–Sep'02	4.57 %	9.90 %	10.43 %	23.35 %
Construction materials (Chile)	20 Oct'06	47.78 %	83.48 %	7.24 %	22.95 %
Petroleum products II (Chile)	Mar'08–Dec'08	1.78 %	11.13 %	9.63 %	18.99 %
Cement (Egypt)	Jan'03–Dec'06	28.20 %	39.3 %	5.00 %	10.00 %
Average for the category		14.04 %	34.01 %	8.68 %	21.94 %
Average		24.02 %		15.41 %	
Median		18.6 %		16.9 %	

Price overcharge is measured with respect to the cartelized price, while losses in the output with respect to the counterfactual (competitive) state
[a]Minimal and maximal estimated output losses can appear rounded. This is a result of employing rounded values for exogenous inputs

market parameters and, eventually, obtain more precise estimations of price overcharge and consumers' welfare losses.

2.3.2 Application of the Methodology on Selected Cartel Cases

It is unfortunate to acknowledge that competition authorities in developing countries often do not possess even the minimal economic data required to employ the methodology. Or, even if they do, it is often considered as confidential. Due to this reason, it was possible to apply the methodology only in 11 cartel cases. Results of these estimations are provided in Table 3. In Appendix 3 we illustrate application of the proposed methodology on the price-fixing cartel between civil airlines in Brazil.

Obtained average and median price overcharge rate of 24.02 % and 18.6 % correspondingly are of the same magnitude as for the rest of the sample (23.1 % and 20 % correspondingly, see Table 1). We acknowledge, however, that the difference between the estimated maximal and minimal bounds of price overcharges and output losses is often large. A competition authority that wants to implement the proposed methodology could obtain a greater precision provided it uses the best information to calibrate the input parameters.

Analysis of aggregated cartels impact in the next section includes these additional estimations.

3 Aggregated Cartels' Effects

As we illustrate in the previous section, the descriptive statistics of the collected data demonstrate that the anticompetitive impact in terms of price overcharges is at least similar to that in developed countries, which calls for adequate antitrust measures. Young competition authorities, that often lack resources to efficiently fight against collusive practices are having hard times lobbing for a greater budget and, therefore, are constantly looking for strong and motivating evidence of the benefits that their existence brings. We believe that the required evidence could be provided by looking at the aggregate measures of the cartelization harm that we provide in this section. The approach that we use consists in summing up the obtained cartel case-specific impact estimates in money terms and assessing their significance on the macro-economic level.

Precisely, in our analysis we focus on three aggregate indicators. First, inspired by Levenstein et al. (2003), we find it appropriate to consider aggregated sales that were affected by collusive behavior, i.e. total revenues received by cartel members. More innovatively, we also assess the direct aggregate cartel damage to consumers in terms of excess profits. Both measures are summed up for all cartels and related to the GDP of each particular country. We supplement the discussion with a sort of "cost-benefit" analysis of the antitrust enforcement by relating the aggregated excess profits to the budget of the corresponding competition authority.

In order to obtain more comprehensive aggregated estimates we first fill the remaining information gaps in by applying an additional treatment to the originally collected data.

First, for those countries where competition authority sets maximal penalty as percentage of cartel's sales (for instance, Brazil, South Korea, Ukraine, South Africa, etc.), we approximate the missing cartel sales as the respective penalty in money terms divided by the maximal penalty rate.[10] Note that this approach provides an estimate of the minimal value of cartel's sales. The penalty in those cases is set based on the sales recorded in the year preceding the one where the court decision on the case was made. Therefore, the approximated cartel sales need to be further multiplied by cartel duration in years.

Second, when price overcharge was unknown and it was not possible to employ the proposed methodology to estimate it, we roughly approximated the excess cartel's excess profits by multiplying the sample median overcharge rate and cartel sales. In case cartel sales were missing, we assumed the cartel's excess profits as equal to applied penalties. From Table 1, we recall that applied penalties do not on average compensate for the excess profits gained by cartel members; therefore this

[10] For example, if a cartel was fined for US$100 and the maximal penalty rate is 10 % of cartel's sales, then minimal bound for cartel's sales can be estimated as 100/0.1 = US$1000. Because percentage penalty rule is sometimes applied to company's total sales, we have employed, where needed and where possible, a coefficient that corresponds to the share of sales on the relevant market in total company sales.

approximation provides a minimal level of cartel's excess profits. Knowing the minimal level of cartel's excess profits allowed estimating the missing cartel sales by applying the median price overcharge rate.

Finally, to make the nominal values, such as sales, excess profits, penalties and competition authorities' budgets comparable among different years, we apply relevant country-specific denominators to take into account the money depreciation.

The above data treatment was applied for cartels in countries with relatively sufficient data—namely for Brazil, Chile, Colombia, Indonesia, South Africa, Mexico, Pakistan, Peru, Russia, South Korea, Ukraine and Zambia. The sufficiency criterion is basically the availability of quantified impacts of cartels that represent a significant part of all detected cases in the country, except for Zambia, whose only quantified cartel had a tremendous economic impact.

For these countries in Table 4 we provide the breakdown of recorded cartel cases indicating the number of those for with the impact was quantified. Information in brackets refers to the number of cases for which corresponding missing inputs were approximated by means of the treatment discussed just above. We employ the term 'allocated' for those cartels when we were able to associate sales and excess profits with a period of cartel's activity, i.e. when at least cartel's beginning or breakdown year was known.

For these 12 countries we calculated the three selected indicators—aggregated excess profits and affected sales, both related to GDP, as well as aggregate excess profits related to the budget of the relevant competition authority.

Looking at the year-to-year dynamics of these indicators would be misleading because both ends of each considered period have a high risk of not being representative. This can be the case either because of a low activity of the competition authority in the beginning or because the end of the period is often characterized by multiple ongoing cartel investigations that do not make a part of our study. Therefore, the three indicators were calculated as average for the considered period. However, because of the same above reasons even averaged estimates of the harm can be biased. Therefore, we find it important to report as well maximal values of each indicator together with the year for which it was calculated. Table 5 summarizes obtained results.

Our results confirm that cartels' impact in developing economies can indeed be substantial. In terms of affected sales related to GDP it varies among countries from 0.01 to 3.74 % on average for the considered periods, while its maximal value reaches up to 6.38 % for South Africa in 2002. Remarkably, calculations for Zambia are based on only one cartel for which data are available (fertilizers, 2007–2012), but even taking this into consideration the impact is not negligible—0.24 % of GDP in terms of affected sales. Direct harm to consumers in terms of aggregated cartels' excess profits is also significant, with maximal rates reaching almost 1 % in terms of GDP for South Korea in 2004 and South Africa in 2002.

We also find that aggregated cartel excess profits exceed the competition authorities' budgets on average 76 times and can reach up to 1232 times (see the last two

Table 4 Availability of quantified impacts of detected cartels

Country and considered period	Number of cartels recorded	Number of cartels with data on sales	Number of cartels with data on overcharges	Number of 'allocated' cartels
Brazil (1995–2005)	18	17(1)	17(3)	17
Chile (2001–2009)	17	16(6)	16(7)	16
Colombia (1997–2012)	18	17(17)	17(17)	17
Indonesia (2000–2009)	12	8(0)	8(1)	7
Mexico (2002–2011)	17	17(9)	17 (11)	17
Pakistan (2003–2011)	14	14(6)	14(9)	14
Peru (1995–2009)	11	10(2)	10(2)	10
Russia (2005–2013)	15	11(10)	11(11)	11
South Africa (2000–2009)	37	23(7)	23(18)	23
South Korea (1998–2006)	26	26(0)	26(8)	26
Ukraine (2003–2012)	7	7(6)	7(7)	3
Zambia (2007–2012)	7	1(0)	1(0)	1

columns in Table 5).[11] Data on budgets that we have collected comprise expenses for all activities of a given competition authority, including merger investigations that are traditionally highly demanding in terms of resources. Therefore, the cartel-specific ratio can turn out significantly higher.

[11] Note that a high level of excess cartel profits related to the competition authority budget does not necessarily witness for the efficiency of the antitrust enforcement. Firstly, a low level of the ratio in question can result from a high efficiency of the competition authority if the latter focuses rather on cartel deterrence (education through mass media or higher penalties, etc.) than cartel detection. Low number of detections or lower excess profits can simply reflect the fact that there exist fewer cartels or that they are weaker. Second reason is that competition authorities can 'free ride' on the experience of the other ones. By 'free riding' we mean a situation when a cartel case already went through an examination in one of the competition authorities, and the others use this fact to trigger its own investigation or even use the already collected evidence. Therefore a competition authority can win the case without investing too much. As the collected sample demonstrates, 'free riding' can indeed take in place - the same cartels are often found in a large number of (often neighboring) countries. For example, this is the case of industrial gas distribution cartels in Latin America or cement cartels in Africa. Although, 'free riding' can potentially be considered as a sort of efficiency as it is a way of optimizing the available resources.

Table 5 Aggregated indicators of the economic harm caused by cartelization

Country	Aggregated excess profits/ GDP (%)		Affected sales/GDP (%)		Aggregated excess profits/CA Budget	
	Average	Max (year)	Average	Max (year)	Average	Max (year)
Brazil (1995–2005)	0.21 %	0.43 % (1999)	0.89 %	1.86 % (1999)	308	1232 (1998)
Chile (2001–2009)	0.06 %	0.23 % (2008)	0.92 %	2.63 % (2008)	23	91 (2008)
Colombia (1997–2012)	0.001 %	0.002 % (2011)	0.01 %	0.01 % (2011)	7	36 (2006)
Indonesia (2000–2009)	0.04 %	0.09 % (2006)	0.50 %	1.14 % (2006)	29	58 (2004)
Mexico (2002–2011)	0.01 %	0.02 % (2011)	0.05 %	0.11 % (2011)	7	19 (2011)
Pakistan (2003–2011)	0.22 %	0.56 % (2009)	1.08 %	2.59 % (2009)	245	518 (2008)
Peru (1995–2009)	0.002 %	0.007 % (2002)	0.01 %	0.023 % (2002)	6.44	25 (2004)
Russia (2005–2013)	0.05 %	0.12 % (2012)	0.24 %	0.67 % (2012)	0.58	1.45 (2008)
South Africa (2000–2009)	0.49 %	0.81 % (2002)	3.74 %	6.38 % (2002)	124	214 (2005)
South Korea (1998–2006)	0.53 %	0.77 % (2004)	3.00 %	4.38 % (2004)	144	214 (2004)
Ukraine (2003–2012)	0.03 %	0.03 % (2011)	0.15 %	0.16 % (2011)	0.84	0.88 (2011)
Zambia (2007–2012)	0.07 %	0.09 % (2007)	0.18 %	0.24 % (2007)	11	27 (2007)
Average for the considered period	0.14 %		0.9 %		76	

CA Competition Authority

Our estimates can be considered as a very minimal bound for the economic harm caused by collusive infringements in developing countries. Firstly, not all of the detected cartels were taken into account. Even though some competition authorities agreed to cooperate, we have to acknowledge that the list of prosecuted 'hard core' cartels for every country is still not complete, nor were all the required data obtained for each of the recorded cases. Out of 249 defined cases only 83 have data on price overcharges and 114 on cartel's sales. As Table 4 illustrates, many of recorded cases were excluded from calculations of the aggregate effects on the basis of missing data. Secondly, and perhaps most importantly, some of the existing cartels remained uncovered. To assess how far (or how close) we are from understanding the real scale of the damage caused by cartelization, in the next section we estimate the maximal bound for the deterrence rate, i.e., the annual probability of a

cartel to be detected. To our knowledge this is the first attempt to do so on a sample of cartels detected in developing countries.

4 Estimation of the Deterrence Rate

To estimate the deterrence rate we have adopted the approach proposed in Combe et al. (2008). We did not modify their methodology, therefore only a brief description of the main idea and results of its application on our database will be provided. In a nutshell, Combe et al. (2008) consider a Markovian process with two elements that are related to the cartel birth and death, the latter being associated with its detection. Cartels inter-arrival time and duration between their birth and detection—are both seen as random variables distributed exponentially and independently across cartels.[12] Their model allows estimating the instantaneous probability of cartel detection through the maximum likelihood estimation method. Because the working database by construction contains only cartels that were detected, the estimated probability is *conditional on that the cartel will be eventually detected, and*, therefore, represents the *maximal* bound of the global instantaneous probability of cartel detection.

The maximal annual probability of cartel detection estimated on our sample equals to 24 %. It is significantly higher than the upper bound of the same probability estimated by Combe et al. (2008) for the EU cartels prosecuted from 1969 to 2007 (12.9–13.3 %). This finding apparently seems to witness for a more efficient antitrust enforcement in developing countries.[13] A lower deterrence rate estimated for the EU can be explained by inclusion into consideration of earlier years with a weaker antitrust enforcement. An additional explanation can be also offered. As can be seen from our sample of cartels, international corporations often enter collusive agreements in several, often neighboring developing countries. Apart of the famous vitamins cartel, our sample includes, for instance, medical gas distribution cartels, prosecuted in Argentina, Brazil, Chile, Colombia and Mexico in late 1990s–early 2000s, or cement cartels that took place over the last 30 years in South Africa, Argentina, Egypt, Korea, Mexico and other developing countries. Evidence

[12] Because the exact duration of cartel from our database is often not known (for example, the year only was reported, but not the month or date) we take the maximal duration for each of the cartels during the known months/years. To see whether our data fit model assumption of independency and exponential distribution we performed the same testing as in Bryant and Eckard (1991). Corresponding estimation results and graphs are available upon request.

[13] Estimates for the EU are taken from Combe et al (2008) and cover cartels prosecuted from 1969 to 2007. The maximal bound for the annual deterrence rate of 13–17 % was estimated with a similar methodology for a set of U.S. cartels (see Bryant and Eckard 1991). However these result should not be compared with the one from our study as situation in the antitrust enforcement has significantly changed since the period that was considered by authors (from 1961 to 1988).

provided by other countries may serve as a trigger for local investigations and can facilitate the cartel detection, increasing, therefore, the deterrence rate.

A maximal deterrence rate of 24 % basically means that *at least* three out of four existing cartels remain uncovered. It, therefore, suggests that the actual economic harm caused by 'hard core' cartels in developing countries exceeds our estimations from the previous section at least fourfold.

5 Conclusions and Policy Implications

The competition policy implementation and enforcement, including cartel deterrence and detection, require substantial investments. Therefore, it is important to measure to which extent these investments are compensated in terms of prevented damages to consumers. Especially this is relevant for developing competition authorities that often experience tough budget constraints.

To provide the required evidence we have collected an original dataset that contains information on 249 major 'hard core' cartels that were prosecuted in more than 20 developing countries from 1995 to 2013. Descriptive statistics of our dataset of cartels do not bring any strong evidence to the widespread idea that developing countries are exposed to a higher cartel price overcharges than the developed ones. However, we do show that price overcharges are at least similar, which calls for adequate antitrust measures. We also show that the aggregated economic impact can be substantial. In terms of affected sales related to GDP the maximal rate reaches up to 6.38 % (South Africa in 2002). The actual damage in terms of cartels' excess profits is also significant, with maximal rates reaching almost 1 % of GDP (South Korea in 2004 and South Africa in 2002).

Study of Boyer and Kotchoni (2014) demonstrates on the sample from Connor (2010) that data on price overcharges obtained from different methodologies, sources and contexts are asymmetric and heterogeneous, and therefore, are subject to a significant estimation bias. Non-biased estimates are, in fact, lower than simple medians calculated from the raw data. For example, bias correction reduces median price overcharge for the EU countries from 22.48 to 14.04 % and from 16.67 to 13.58 % for the U.S. and Canada.[14] Ideally, our own sample would require similar corrections to be made. We, nevertheless, insist that our aggregate damage estimates reflect the very minimal bound. This is so because of at least six reasons.

First, present study only takes into consideration cartel cases that are already closed. It, therefore, does not take into account cases that were still under investigation when the study was held.

[14] Estimates from Boyer and Kotchoni (2014) were originally provided with respect to a 'but-for' prices, therefore they were recalculated with respect to the cartel price to be comparable with the other estimates in the paper.

Second reason is that data on convicted cartels that are used to quantify their economic effects are very poor. This is so because to condemn a cartel competition authorities rely mostly on the evidence of coordination activities rather than the economic one. Coupled with confidentiality issues, this reason resulted in elimination of multiple recorded cases from calculation of aggregate economic harm.

Third, our study does not take into account output effects. Collusive practices harm consumers not only in terms of inflationary effects, but also because they limit consumption. Our analysis demonstrates that, on average, a cartel decreases the production level by about 15 % on the concerned market (see Table 3). Taking into account these output effects would provide more accuracy for our estimations. Even though our methodology allows calculating the losses in consumers' surplus that measure cartels impact in terms of both prices and in quantities, its application was limited to only a few cartel cases with sufficient data.

On top of this, our estimates do not take into account neither price umbrella effects among non-cartel members,[15] nor possible degradation in quality resulting from reduced competition among cartel members.[16]

Fifth reason is that many of the cartelized industries produce intermediary goods, such as, for instant, cement or gas. Therefore the consequent price overcharge may proliferate further on other economic sectors, increasing the final impact manifold. By employing the country level input-output matrixes and corresponding industry pass-through rates together with estimated cartel excess profits one would be able to (1) assess the potential impact of those proliferations, and (2) define a set of industries that have the highest damaging potential and therefore deserve a special attention from the competition authority. We find it as a very promising area for further research.

The final, but probably the most important reason for our estimates to reflect only the minimal bound of the harm, is the hidden nature of cartels. As we estimate the maximal annual probability of uncovering an existing cartel to be around 24 %, we suggest that the actual economic damage resulting from collusive practices in developing countries is at least four times bigger than suggested by our estimations.

We have also demonstrated that even this minimal estimated economic harm significantly exceeds the expenditures to maintain the functionality of the relevant antitrust body in the majority of considered countries. This may be seen as a sought-for evidence for the competition authorities who wish to justify the requirement for an additional budget to improve the cartel deterrence and detection.

More than that, developing competition authorities may wish to take advantage of the proposed methodology for their own cartel investigations as it will reduce the data required to estimate the economic damages. The efficiency of the penalty rule can be then assessed by comparing the imposed fines with cartels' excess profits.

[15] Cartels can potentially cause a price umbrella effect as remaining firms could have more incentives to charge higher prices facing a price increase from cartel members.

[16] Even though our model does not allow the quality characteristics to change, the degradations in quality can still appear as colluding firms may have less incentive to maintain it.

Actual penalty—excess profits rates could be compared against relevant benchmarks that are considered by the competition authority as optimal.

The last, but not the least, the created cartels database may be seen as a reference list containing industries that are potentially vulnerable to collusive behavior. Cartel members sometimes enter into collusive agreements in multiple, often neighboring, economies. Therefore, evidence from other countries can (and should) be employed by competition authorities in local investigations. This should encourage countries to create a worldwide platform that would allow sharing and maintaining the common cartel database.

Appendix 1: Major 'Hard Core' Cartels Prosecuted in Selected Developing Countries (1995–2013)

Argentina		**Brazil (cont.)**	
Portland cement	1981–1999	Maritime hose	Jun'99–May'07
Medical gases	n/a–1997	Crushed rocks	Dec'99–Jun'03
Healthcare services	n/a	Security guard services	1990–2003
Liquid petroleum gas (S.C. Bariloche)	Jan'98–Dec'98	Hermetic compressors	2001–2009
Sand (Parana city)	Jun'99–Jul'01	Industrial gas	1998–Mar'04
Liquid oxygen	Jan'97–Dec'01	Air cargo	Jul'03–Jul'05
Cable TV (Santa Fe city)	Oct'97–Dec'01	Transportation	Oct'97–Jan'01
Cable TV (football transmissions)	Jan'96–Dec'98	Steel bars	1998–Nov'99
Brazil		Construction materials (sand)	1998–Apr'03
Civil airlines	Jan'99–Mar'03	Steel	1994–Dec'99
Retail fuel dealers (Goiania)	Apr'99–May'02	Blood products	Jan'03–Dec'03
Retail fuel dealers (Florianopolis)	1999–2002	Toy manufacturers (imports from China)	2006–2009
Retail fuel dealers (Belo Horizonte)	1999–2002	**Chile**	
Retail fuel dealers (Recife)	Apr'99–Feb'02	Petroleum products	Feb'01–Sep'02
Generic drugs	Jul'99–Oct'99	Medical gases (oxygen)	2001–2004

(continued)

Chile (cont.)		**Colombia (cont.)**	
Medical insurance plans	2002–2004	Milk processing	n/a–2008
Medical services	May'05–May'06	Health services	Mar/09–Nov'11
Construction materials (asphalt)	20 Oct'06 (bid rigging)	Oxygen supply	May'05–Mar'11
Public transportation (bus)	2006	Road paving	Aug'10–Jan'12
Public transportation (bus)	Nov'07–May'08	Sugar cane remuneration rates	Feb'10–Aug'11
Petroleum products	Mar'08–Dec'08	Cars' techno-mechanical and gas review	Mar'10–Oct'11
Vehicles and spare parts	11 Aug'06 (bid rigging)	Cars' techno-mechanical and gas review	Mar'10–Dec'11
Publishing services	Mar'08–Apr'08	Feed ration service for prisons	May'11–Sept'12
Pharmaceutical industry (distribution)	Dec'07–Apr'08	Cars' techno-mechanical and gas review	Apr'10–Mar'12
Public transportation	Oct'06–Nov'07	TV advertising market	Apr'10–Apr'11
Radio transmission	2007	**Egypt**	
Tourism (agent services)	2008	Construction (Egypt Wastewater Plant)	Jun'88–Sept'96
Public transportation (maritime)	2009	Cement	Jan'03–Dec'06
Public transportation (bus)	Feb'07–Mar'09	**El Salvador**	
Flat Panel TV	n/a	Petroleum products	n/a–2007
Colombia		**Indonesia**	
Cement	Feb'06–Jan'10	Mobile phone services	Mar'03–Nov'05
Mobile phone services	Apr'99–Aug'07	SMS	Jan'04–Apr'08
Green onions	Feb'07–Jan'09	School books	Jan'99–Dec'00
Pasteurized milk	Jan'97–n/a	Cement	n/a–Dec'09
Green paddy rice	Jan'04–Nov'06	Airlines	Jan'06–Dec'09
Chocolate and cocoa products	Oct'06–Oct'09	Pharmaceuticals	n/a
Private security services	Feb'11–Sep'12	Poultry (day old chicken)	Jan'00–Dec'00
Services of grade systematization (Bogotá District schools)	Jun'08–Dec'09	Sea cargo (Jakarta-Pontianak)	Jun'02–Oct'03

(continued)

Indonesia (cont.)		**South Korea (cont.)**	
Sea cargo (Surabaya-Makassar)	Jan'03–Sep'03	Trunked radio system devices	Dec'03–Feb'06
Public transportation (city bus)	Sep'01–Oct'03	Petrochemicals	Sep'00–Jun'05
Salt Trade (North Sumatra)	Jan'05–Dec'05	Copy paper imports	Jan'01–Feb'04
Sea Cargo (Sorong Seaport)	Mar'00–Nov'08	Soft drink bottling	Feb'08–Feb'09
Kazakhstan		Gas (LPG)	Jan'03–Dec'09
Petroleum products (brokers)	2002–2005	Elevators and escalators	Apr'96–Apr'06
South Korea		Toilet roll manufacturing	Mar'97–Jan'98
Batteries manufacturing (auto)	Jun'03–Sep'04	Coffee	Jul'97–Jan'98
Beer	Feb'98–May'99	**Kenya**	
Cement	Jan'02–Mar'03	Coffee producers	n/a
Construction machinery (excavators)	May'01–Nov'04	Fertilizers I	n/a–2003
Forklifts manufacturing	Dec'99–Nov'04	Beer (production)	n/a–2004
Petroleum products (military, wholesale)	1998–2000	Soft drinks	n/a–2004
Telecom services (local, land line)	Jun'03–May'05	Transportation	n/a
Telecom services (long-distance, land line)	Jun'03–May'05	Mechanical engineers services	n/a
Telecom services (international, landline)	Jun'03–May'05	Insurance (transportation sector)	n/a–2002
Broadband Internet service	Jun'03–May'05	Petroleum (retail)	n/a–2004
Detergent manufacturing	1998–2006	Fertilizers II	n/a–2011
Telecommunications (mobile services) I	Jun'04–May'06	Tea growers	n/a–2004
Telecommunications (mobile services) II	Jan'00–Jul'06	Sugar	n/a–2004
Gasoline and diesel (refining)	Apr'04–Jun'04	Port Customs Department auctions	n/a
Industrial motors	1998–2006	**Malawi**	
Polyethylene (low density)	Apr'94–Apr'05	Cotton farmers	n/a
Polypropylene (high density polyethylene)	Apr'94–Apr'05	Tea growers	n/a
Movie tickets	Mar'07–Jul'07	Tobacco growers	n/a

(continued)

Malawi (cont.)		**Pakistan (cont.)**	
Bakeries	n/a	Cement	Mar'08–Aug'09
Beer	n/a	Gas (LPG)	n/a–2009
Petroleum sector	n/a	Jute mills	2003–Jan'11
Mauritius		High and low tension pre-stressed concrete poles	Aug'09–May'11
Travel agency	2010	Poultry and egg industry	2007–Aug'10
Mexico		Newspapers	Apr'08–Apr'09
Gas (liquid propane)	Jan'96–Feb'96	Vessels handling(ships)	2001–Mar'11
Chemicals (film development)	Jan'98–Dec'00	Port construction	May'09–Jul'10
Poultry	Mar'10–Mar'10	Ghee and cooking oil	Dec'08–Jun'11
Boiled corn and corn tortillas	Mar'11–Jul'12	Accounting services	Apr'07–Jan'13
Corn mass and tortillas	May'10–Aug'12	LDI operators	Sep'11–Apr'13
Transportation (touristic sector)	Jul'09–Mar'12	GCC approved medical centers	Jan'11–Jun'12
Anesthesiology (services)	May'03–May'09	Banking services (1-Link Guarantee Ltd)	Sep'11–Jun'12
Auto transportation (cargo) I	Jan'10–Sep'11	**Peru**	
Maritime public transportation	Jun'08–Jun'12	Urban public transportation 1	Aug'08–Oct'08
Auto transportation (cargo) II	Sept'08–Jun'10	Urban public transportation 2	Aug'08–Oct'08
Healthcare (medical drugs)	2003–2005	Public notaries	n/a
Consulting services (real estate)	Jul'03–Apr'09	Dock work	Sep'08–May'09
Restricted TV signal	Oct'02–Dec'08	Insurance 1	Dec'01–Apr'02
Food vouchers	Aug'05–Sept'05	Insurance 2	Oct'00–Jan'03
Consulting services (real estate) II	May'03–Jul'09	Poultry	May'95–Jul'96
Railway transportation (cargo)	Nov'05–Jun'09	Wheat flour	Mar'95–Jul'95
Cable and cable products	Feb'06–Mar'07	Heaters/boilers etc. manufacturing	Oct'95–Mar'96
Pakistan		Oxygen distribution (healthcare)	Jan'99–Jun'04
Bank interest rates	Nov/07–Apr'08	Freight transport	Nov'04–May'09

(continued)

Russia		**South Africa (cont.)**	
Fuel (gasoline and jet)	Apr'08–Jul'08	Cement I	1996–2009
Laptop computer operating systems	n/a	Plastic pipes	1998–2009
Fuel (gasoline, Krasnodarki krai)	Jan'05–Jul'05	Concrete, precast pipes, culverts, manholes, & sleepers	1973–2007
Fuel (gasoline, Rostov-on-Don)	n/a–2005	Fishing	n/a–2009
Airlines (flights between Nizhnevartovsk and Moscow)	n/a–Dec'05	Cement II	Jan'04–Jun'09
Railway transportation (Kemerovo)	Oct'11–Dec'12	Construction	n/a–2009
Soda cartel	2005–2012	Steel distribution	n/a–2008
Polyvinylchloride cartel	2005–2009	Steel (re-bars, rods & sections)	n/a–2008
Pharmaceutical cartel	2008–2009	Steel (wire, wire products)	2001–2008
Fish cartel (Norway)	Aug'11–Dec'12	Crushed rock	n/a–2008
Pollock cartel	Apr'06–Dec'12	Bricks	n/a–2008
Fish cartel (Vietnam)	Jun'08–Sept'13	Steel (tinplate)	Apr'09–Oct'09
Salt cartel	May'10–May'13	Steel (mining roof bolts)	2002–2009
Sausage cartel	Jun'09–Dec'09	Flour milling	2009–Mar'10
Military uniform supply	2010–Jun'12	Bitumen	2000–2009
South Africa		Poultry	2005–2009
Fertilizers (phosphoric acid)	Jan'03–Dec'07	Polypropylene plastic	1994–2009
Airlines (fuel surcharge)	May'04–Mar'05	Sugar	2000–n/a
Airlines (So. Africa-Frankfurt routes)	Jan'99–Dec'02	Taxi	n/a
Milk (farm and retail)	n/a–Jul'06	Auto dealers	2005–n/a
Bread and flour	1994–2007	Healthcare fees	2002–2007
Pharmaceuticals (wholesale distribution)	1998–2007	Pharmaceuticals	n/a–2002
Tire manufacturing	1998–2007	Motor vehicle manufacturers/importers	n/a–2006
Metal (scrap)	Jan'98–Jul'07	Freight forwarding	n/a–2007
Steel (flat)	1999–Jun'08	Energy/switchgear	n/a–2008

(continued)

South Africa (cont.)		**Zambia**	
Fertilizer (nitrogen)	2004–2006	Pipes, culverts, man-holes and pre-stressed concrete sleepers	n/a
Steel (reinforcing mesh)	2001–2008	Oil marketing	2001–2002
Soda ashes (imports)	1999–2008	Fertilizer	2007–2013
Tanzania		Grain procurement and marketing (maize-meal)	Mar'04–Jun'04
Beer	n/a	Public transport	n/a
Pipes, culverts, manholes and pre-stressed concrete sleepers	n/a–2009	Poultry	1998–1999
Petroleum sector	n/a–2000	Panel Beating Services	Sep'11–Dec'11
Turkey		**Zimbabwe**	
Daily newspapers	n/a	Bakeries	n/a
Traffic lights	n/a		
Public transportation (buses)	n/a		
Poultry	n/a		
Bakeries	n/a		
Beer	n/a		
Soft drink	n/a		
Maritime transport service	n/a–2004		
Mechanical engineers	n/a		
Insurance	n/a–2003		
Telecommunications	n/a–2002		
Architects' and Engineers' services	n/a–2002		
Yeast	n/a		
Cement	n/a		
Cement (Aegean region)	n/a–2004		
Accumulators	n/a		
Ukraine			
Acquisition of raw timber auctions (furniture)	2011		
Sale of poultry meat	n/a		
Sale of sugar	n/a		
Sale of alcohol	n/a		
Sale of buckwheat	n/a		
Individual insurance markets	2003		
Market of services on sale of arrested property state	2004		

Appendix 2: Questionnaire

First Part. General Questions

1. Please, provide the annual budget of the competition policy enforcement unit during the period 1995–2013 (in local currency);

Second Part. Identification of Cartels

1. Please, provide a list of major "hard core" cartels for the period 1995–2013;
2. For each identified cartel, provide information on:

(a) Relevant market (product, geography, etc.);
(b) Names of cartel members;
(c) Period of existence of the cartel (beginning/termination);
(d) Date of discovery of the cartel;
(e) Date of entry of each company in the cartel coalition, if available;
(f) Fines applied, if any (in local currency);
(g) Price overcharge by cartel members, if available (percentage with respect to the cartel price or money terms in local currency)

Third Part. Economic Data on Each Cartel Identified in the Second Section of the Questionnaire

1. At least for one period (month/year) of cartel existence indicate the **market share/volume sold** and **price** (in local currency) of the product/ products for each colluding company;
2. If possible, give an estimation of the average margin for the cartel = (price-marginal costs)/price;
3. Please, provide, whether available, the estimate of the volume of the relevant market (in local currency), if not:
4. According to the good that is analyzed, please provide an estimation of the total market share of the non-cartel members on the relative market;

Appendix 3: Example of the Calibration and Estimation Procedure (Brazil)

Four national airlines, namely Varig, TAM, Transbrasil and VASP, were convicted in collusive price-fixing behavior on the civil air transportation market between Rio de Janeiro (airport Santos Dumont) and San Paolo (airport Congonhas) during the year of 1999. We do not go into details concerning the evidence that the Brazilian competition authority employed to convict a cartel but will rather focus on the estimation of the economic harm to consumers caused by this anticompetitive practice.

Table 6 provides the collected data regarding the observed one-way ticket prices charged by cartel members, as well as their observed market shares based on number of tickets sold. These are the minimal data that are sufficient to implement our methodology and recover the price overcharges.

We recognize that it would be more correct to separate leisure and business segments of the demand for air travel, which would obviously have different sensitivities to price (parameter α), however available data did not permit us to do so. Given that the share of business segment on the relevant market reaches up to 70 %, we believe that recovered market parameters will correspond mostly to this demand category.

As the developed methodology implies, to perform calibration of supply and demand parameters we need to set the share of the outside alternative (s_o) and average cartel margin exogenously. We use additional data on the case to set the admissible ranges for these parameters.

Considered airports are the only ones situated close to the city centers of Rio de Janeiro and Sao Paulo, which makes them especially relevant for business passengers. In addition, there are no convenient substitutes, such as sufficiently fast trains or buses. Airlines that formed the cartel performed nearly 100 % of the flights between the mentioned airports at the time. Therefore, one can assume that share of the outside alternative for the business segment cannot be too big. However, presence of the leisure segment and other airports serving the same origin and destination cities suggests that s_0 cannot be too low either. We arbitrary choose the admissible range for the share of the outside option as $s_0 \in [10\,\%, 50\,\%]$.

As for the second exogenous parameter—average cartel margin, we first make use of the results of Betancor and Nombela (2001), who demonstrate that marginal costs of American and European airlines are at least equal and at most twice higher than their average costs. We assume further that Brazilian airlines' cost structure is not much different from that in Europe and the U.S. Having extracted average costs from the annual reports of the colluding companies, we get 40 % as a maximal value for the average margin (when marginal costs are equal to average costs). Given that airlines' activities on the relevant market include also those non-cartelized (e.g. on board sales), we assume that possible margin on the cartelized market could potentially have an upper bound above 40 %. After a final check with sign

Table 6 Input data (as of July 1999)

Airline	Observed market share (%)	Average price of a one way ticket, in Reals[a]
VARIG	46.6	129.32
TAM	41.5	124.90
Transbrasil	6.5	106.85
VASP	5.4	108.03

Source: Conselho Administrativo de Defesa Econômica (the competition authority of Brazil)
[a]Real—Brazilian national currency

constraints for marginal costs and price sensitivity parameter α, we define a permitted range for the average cartel margin as [10 %, 45 %].

When one changes level of external parameters, then calibrated market parameters also change. Along with the minimal and maximal bounds for exogenous parameters, considering some intermediary values might be also reasonable if an analyst has an idea about their most probable values inside the chosen interval. In Table 7 we provide calibrated price sensitivity α depending on the average cartel margin and share of the outside option: for minimal, maximal and some intermediary values of external parameters. These dependencies are monotonic. We also report corresponding calibrated values of $\delta_j, j = \overline{1, J}$ in Table 8.

We observe that calibrated parameter α and $\delta_j, j = \overline{1, J}$ decrease when the share of the outside option increases, margins being fixed. This dependence follows directly from Eqs. (1) and (4) in the main part of the chapter and can be explained as following. Lower α indicates that preferences of consumers are mostly driven by the quality rather than prices. Lower δ_j, therefore, results in a higher number of consumers who preferred the outside option as its' utility is normalized and remains fixed. α also decreases with higher cartel's margin—when consumers are less sensitive to the price, cartel members have more incentives to charge a higher price.

For the set of calibrated market parameters we further perform the simulation of the counterfactual (competitive) state.[17] Tables 9 and 10 report the average for the cartel price overcharge rates [Eq. (8) in the main part of the chapter], and consumers' welfare losses [Eq. (10) in the main part of the chapter] estimated for a given combination of values of exogenous parameters.

Variations of the obtained estimations of price overcharges and welfare losses according to the level of external parameters are intuitive. On one hand, when cartel margin is being fixed, a high share of the outside option informs the analyst about a high elasticity of demand. In these conditions, the ability of colluding firms' to increase their prices is rather limited. Accordingly, welfare losses are also les significant. On another hand, keeping the share of the outside option fixed, higher desired cartel margin naturally transforms into a higher price increase when

[17] We solve the system of non-linear equations implied by proposed methodology with the use of SAS routines and procedures.

Table 7 Calibrated price sensitivity parameter (α)

		Average cartel margin			
		10 %	20 %	35 %	45 %
Share of the outside option (S_0)	10 %	0.80	0.40	0.23	0.18
	20 %	0.40	0.20	0.11	0.09
	35 %	0.23	0.11	0.07	0.05
	50 %	0.16	0.08	0.05	0.04

Source: Simulations

Table 8 Calibrated parameters of differentiation (δ_j)

	Average cartel margin/s_0			
Airline	10 %/10 %	45 %/10 %	10 %/50 %	45 %/50 %
VARIG	105.22	24.42	20.02	3.86
TAM	101.66	23.62	19.19	3.58
Transbrasil	85.30	18.54	14.43	1.08
VASP	86.06	18.56	14.44	0.94

Source: Simulations

Table 9 Estimated price overcharge rate (average for the cartel)

		Average cartel margin			
		10 %	20 %	35 %	45 %
Share of the outside option (S0)	10 %	7.3 %	14.7 %	26.2 %	33.9 %
	20 %	4.5 %	9.2 %	13.6 %	21.8 %
	35 %	4.8 %	8.7 %	18.2 %	20.8 %
	50 %	3.2 %	6.5 %	14.2 %	18.9 %

Source: Simulations

Table 10 Estimated consumers' welfare losses, %

		Average cartel margin			
		10 %	20 %	35 %	45 %
Share of the outside option (S0)	10 %	78.6 %	78.6 %	78.6 %	78.6 %
	20 %	66.1 %	66.1 %	65.8 %	66.2 %
	35 %	50.4 %	48.0 %	52.8 %	49.5 %
	50 %	35.0 %	35.2 %	41.2 %	42.2 %

Source: Simulations

compared to a competitive state of the market. Though, no definite conclusion can be made concerning the relative change in consumers' welfare.[18]

We acknowledge that variations of the estimates in Tables 9 and 10 are quite large. Price overcharge varies from 3.2 to 33.9 %, while the welfare losses estimates range from 42.2 to 78.6 %. A greater precision can be gained provided that more precise inputs concerning the relevant market are at hands.

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[18] Increase in cartel's margin decreases calibrated values of marginal costs (cartel prices are given), and also decreases calibrated price sensitivity α [see Eq. (3)]. Left-hand side of Eq. (1) remains constant, therefore, to compensate the decrease in α, δ_j should decrease too. In competitive state we cannot predict whether $\left(\delta_j - \alpha p_j^c\right)$ will increase or decrease for every product, because all three parameters have lower values. Equation (1) indicates that if market shares in competitive state will be relatively higher with respect to the share of the outside option, then welfare level will be also higher, and vice versa.

Public Enforcement of Antitrust Law in China: Perspective of Procedural Fairness

Dr. Zhisong Deng

Abstract Entering into the 7th year of the Anti-Monopoly Law in force, the enforcement by China's antitrust authorities has moved up a gear. Looking at several significant antitrust investigations and reviews, questioning and criticism on the Chinese antitrust public enforcement procedures are put forward, because it seems to the public, especially to people outside China, those China's powerful state central bodies have a fearsome reputation. In this chapter, detailed explanation will be presented in terms of the procedures and regulations regarding the antitrust public enforcement in China. It is worthy of attention that, the antitrust public enforcement is part of administrative enforcement in China. This means that the procedure of Chinese antitrust public enforcement has to comply with the current system of Chinese administrative laws, so it is unlikely to be completely aligned with procedures that seem to be universally applied in western jurisdictions. That said, the current procedural system is not yet perfection, and there is room for improvement. On account for procedural fairness, some suggestions for optimizing the procedures of the Chinese antitrust public enforcement under the current legal system of China are put forward in this chapter.

Keywords Chinese antitrust law • Antitrust public enforcement • Procedural fairness

1 Introduction

The Chinese antitrust authorities are probing into a broad range of sectors and the focus of investigations is expanding from the traditional areas of interest to new frontiers such as the abuse of standard essential patent (SEP). In the past years, the Chinese authorities showed a greater tendency to initiate investigations in response to the complaints they received, which seems to have increased the possibility of

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multinational companies' behavior being found as the breach of the Anti-Monopoly Law (AML) in China.

Although the Chinese antitrust authorities are sometimes criticized by the international community for targeting foreign companies in order to protect Chinese domestic counterparts, the authorities do not show an intention of avoiding carrying out investigations against international companies in 2015. It is also worthy of mention that, top leaders gave speeches in international forums, clarifying the situation that the Chinese antitrust authorities do not discriminate against foreign companies. For example, recently, Xi Jinping, the President of the People's Republic of China, denied the questioning that China's recent monopoly penalties on a few international corporations was a signal of a rise in protectionism at the 2015 Boao Forum. Li Keqiang, the Premier of the State Council of the People's Republic of China, said at the Summer Davos Forum in September of 2014 that the recent antitrust probes had not targeted specific firms or industries.

China's increased level of antitrust law enforcement activities and the high-profile media coverage of its antitrust investigations have prompted growing attention and concern from the international community. It is suggested that procedural fairness has been the focus of concern. Despite of the questioning and criticism, it can be argued that the Chinese authorities have been exercising their enforcement powers strictly pursuant to the current Chinese laws and regulations. However, this does not mean that Chinese authorities have grounds for complacency, because the procedure of antitrust enforcement is not perfect and there are several measures that can be taken to improve the Chinese antitrust enforcement procedure.

2 Criticism and Controversy about Chinese Antitrust Public Enforcement

Compared to 100 years' history of developments of antitrust law of its western counterparts, China's AML is still in its childhood. It can be understood that the antitrust enforcement in China cannot be flawless, and indeed, the Chinese antitrust authorities are subject to criticism since the AML formally came into force. Generally, the National Development and Reform Commission (NDRC) is considered as proactive in performing its duty in antitrust investigation, and the State Administration for Industry and Commerce (SAIC) is relatively low profile while the Ministry of Commerce is regarded as cautious in its enforcement practice.

For the past a few years, the Chinese antitrust authorities have significantly accelerated the pace of public enforcement, along with which numerous criticism and different views have been put forward, especially in terms of procedures. The white heat of the public's questioning, probably culminated in the investigation against Qualcomm, which was launched in November 2013 and concluded in February 2015.

According to a report entitled *Competition Policy and Enforcement in China* issued by from the US-China Business Council (USCBC), foreign companies have well-founded concerns in terms of how the antitrust investigations are conducted and decided in China, including fair treatment and non-discrimination, lack of due process and regulatory transparency, lengthy time periods for merger reviews, role of non-competitive factors in competition enforcement, determination of remedies and fines as well as broad definition of monopoly agreements.

Foreign complaints range from worries that foreign firms are being unfairly targeted to concerns over the use of strong-arm tactics by Chinese regulators.

Apart from the USCBC, the European Union Chamber of Commerce in China (EU Chamber) also expressed its concerns "The problem with the recent cases is that they are so in-transparent that it leaves a lot of speculation about the possible intention" (as reported by Michael Martina).

In addition, Michael Martina also reported "unlike the US and Europe, which tend to release hundreds of pages of detailed rulings in antitrust disputes, China typically only announces its findings in a brief document, one or two pages long". This also leads to the poor transparency that the EU Chamber questioned about.

It is clear from the comments touched on above, that the lack of transparency in the process of the antitrust enforcement and the procedural matters have drawn most of public attention, and whether discrimination and protectionism take place is another significant concern. On the other hand, realizing China is becoming one of the most important antitrust jurisdictions in the world, the international community is expecting the Chinese authorities to introduce greater transparency, better-designed procedures, the best practice of due process and more rights of defense guaranteed for companies involved in investigations. In fact, such attention reflects the greater role that China has in the world economy and in the antitrust public enforcement area. The attention also makes the level of fairness in procedures increasingly important.

3 Antitrust Public Enforcement under Chinese Legal Framework

3.1 Administrative Enforcement

In China, antitrust public enforcement is one of various types of administrative enforcement, which means that antitrust public enforcement has to be carried out not only pursuant to the AML, but also pursuant to related administrative laws and regulations.

Under the current framework of the administrative laws, in China there are Administrative Penalty Law, Administrative Permission Law, Administrative Reconsideration Law, Administrative Litigation Law, etc. Currently, it is believed that a law specifically on administrative procedures, i.e. Administrative Procedures

Law, which will back up the best practice of due process in China, is in the process of drafting. A news report from Guoping Luo revealed this.

Since the Chinese antitrust authorities have to exercise their powers in accordance with the AML as well as the laws set forth above, it is thus a basic principle that the regulations and rules formulated by the authorities have to be consistent with those administrative laws, even if this will result in the difference from some regulations in other jurisdictions. This means that the Chinese antitrust public enforcement practice is unlikely to be aligned to that in other jurisdictions, including the US and the EU completely.

3.2 Tripartite System of Enforcement

It is generally known that the antitrust public enforcement powers in China are shared by three different government agencies, namely MOFCOM, NDRC, and SAIC. MOFCOM, through its Anti-monopoly Bureau, is responsible for reviewing M&A transactions and other types of proposed business concentrations. It may approve these transactions, with or without conditions, or reject the transactions. NDRC, through its Price Supervision and Inspection and Anti-monopoly Bureau, manages enforcement against price-related conduct by companies, including price-related aspects of monopoly agreements, and abuse of market dominance to set or control prices. SAIC, through its Anti-monopoly and Anti-unfair Competition Enforcement Bureau, is in charge of investigating non-price-related monopolistic conducts, including monopoly agreements and abuse of market dominance.

Angela Huyue Zhang commented that this tripartite system of the administrative enforcement will also lead to many potential conflicts between NDRC and SAIC, who share enforcement responsibilities in the areas of restrictive agreements and abuse of market dominance, given that it is always hard to distinguish between price-related conducts and non-price related conducts.

Meanwhile, some academic experts and antitrust practitioners have held the view that having three parallel antitrust enforcement authorities will not only be inefficient but may also cause conflicts and friction, leading to fragmented, incoherent or even inconsistent decisions.

Although the tripartite system is operating with some modest benefits, one of which is that it creates competition in the enforcement and can increase output and improve the quality of the products the authorities are intended to supply. The decentralization of the enforcement has resulted in more serious problems, such as the inconsistency and potential duplication of enforcement efforts. For foreign companies, who do not have a sound understanding of the Chinese administrative structure, they are likely to be confused by the set-up of the enforcement regime.

3.3 Legal Framework for Procedures of Public Enforcement

One of the questions that are put forward in terms of the investigation against Qualcomm is that the sanction order was not published in its complete version nor published immediately on the day the decision was made. This makes the public suspect that, transparency, which is valued in the best practice of due process, is ignored, to some extents, in the Chinese antitrust public enforcement.

However, it can be argued that NDRC did in a way in accordance with the AML and other related laws and regulations, and the lack of the application of due process is not true.

According to Article 41 and Article 44 of the AML:

> Article 41 The authority for enforcement of the Anti-monopoly Law and its staff members are obligated to keep confidential the commercial secrets they come to have access to in the course of law enforcement.
>
> Article 44 Where after investigation into and verification of the suspected monopolistic conduct, the authority for enforcement of the Anti-monopoly Law concludes that it constitutes a monopolistic conduct, the said authority shall make a decision on how to deal with it in accordance with law and **may** make the matter known to the public.

NDRC chose not to release the decision about the investigation against Qualcomm in full for the sake of assuming its obligation to keep commercial secrets of Qualcomm in confidential. Also, the word "may" is used in the Article 44, which suggests that it is not obligatory for NDRC to make its decision public.

Despite the fact that this practice has provoked the public's questioning towards the NDRC, the way NDRC is performing is nearly flawless under the current laws.

In fact, Chinese laws and regulations have established almost well-planned procedures of the antitrust enforcement, which can also guarantee the rights of defense of the entities under investigations as well as guaranteeing the procedural fairness in the enforcement.

Apart from the general rules set forth in the administrative laws, NDRC and SAIC also formulated specific rules to regulate the enforcement they carry out. For example, the *Rules on the Hearing and Review of Price-Related Administrative Punishment Cases*, promulgated by NDRC and took effect in 2014, stipulates various types of NDRC's handling opinions, among which the Advance Notice of Administrative Punishment is worthy of attention:

> Article 11 The handling opinions issued after the hearing of a Case shall be any of the following types:
>
> (1) Where there are indeed illegalities subject to administrative punishments, opinions on meting out administrative punishments shall be put forward, and the person in charge of the relevant competent price department or the authorized person in charge of the price supervision and inspection agency shall be requested to issue the Advance Notice of Administrative Punishment;
>
> . . .
>
> Article 12 After a competent price department has issued the Advance Notice of Administrative Punishments to the parties concerned, if the facts, grounds or evidence provided by the parties concerned during statement, defense or public hearing are

substantiated, the said department shall adopt the opinions of the parties concerned, and may, where necessary, hear the Case again and re-issue handling opinions.

4 The Procedures of Public Enforcement Comply with Chinese Law

It is argued in the previous part that the investigation into Qualcomm, together with the investigations into the automotive sector and milk powder producers that provoked the public's concerns about the poor transparency and the lack of the best practice of due process, NDRC exercised its power and made decisions strictly in accordance with the procedures as set by the AML and other related regulations.

As an experienced antitrust lawyer who participated in many the investigations, I would say that the Chinese authority had strictly followed the procedures rules as set by the current Chinese laws/regulations. Accordingly, one cannot argue that the Chinese authority did not follow the Chinese law for the investigation procedures, but only argue that the Chinese authority did not follow the best practices in western jurisdictions for the investigation procedures.

Take NDRC as an example, investigation procedures of the antitrust public enforcement in China stipulated by the AML and related laws and regulations is as follows:

4.1 Verification of Report

The enforcement authorities shall begin their investigation upon the receipt of reports that include the relevant facts and evidence in written form. The reports must be verified by the authorities according to Article 38 of the AML. After the verification, the authorities shall decide whether further investigation is needed.

Any organization and individual have the right to report. For example, one can report to NDRC by sending his materials to an email account. But according to the Administrative Penalty Law,[1] in the circumstances where an illegal act is not discovered within 2 years of its implementation, administrative penalty shall no longer be imposed. If the timing of the report is not within 2 years, the enforcement authority will not take any action.

However, not all the reports will lead to investigation. The enforcement authorities will choose to handle the ones that were complained the most and have a significant impact on the public.

[1] See Article 29 of the Administrative Penalty Law.

4.2 Investigation Measures

After the verification of report, the enforcement authority will narrow its investigation scope to a specific industry or even a specific company. To dig out the truth, it is entitled five investigation measures[2] according to the AML.

1. Enter the business premises of the interested parties who are under investigation or any other relevant place to investigate. This has also been referred to as Dawn Raid. During the Dawn Raid, the enforcement agency has the right to enter the business premises of suspected undertakings to conduct investigations without prior notice. The enforcement agency can also go to such premises with prior notice. It is the discretion of the enforcement agency to choose which method to be used.
2. Inquire the interested parties who are under investigation, interested parties, or other relevant entities or individuals, and request them to disclose relevant information. There are also two ways to conduct the investigation. One is to talk with such parties during the Dawn Raid at the business premises of the suspected undertaking. The other is to request the undertakings to visit office of the enforcement agency.
3. Review and duplicate the relevant business documents, agreements, accounting books, business correspondences, electronic data, files, or documentations of the interested parties who are under investigation, interested parties, or other relevant entities or individuals. This investigation method can, too, be conducted in two ways. One is to review and duplicate the materials at the business premises of suspected undertakings. The other is to review and duplicate materials provided by the suspected undertakings to the enforcement agency.
4. Seize and detain the relevant evidence. The enforcement agency is obliged to keep the evidence safe and confidential.[3]
5. Inquire about the bank accounts of the interested parties who are under investigation. This method is to facilitate the enforcement agency to get to know the cash flow of the suspected undertaking which may imply the details or evidence of the monopoly conducts.

Besides, each of the five investigation methods mentioned above shall be taken subject to the approval by principal officials of the antitrust enforcement authorities, and such approval shall be issued in written form. [4]

[2] See Article 39 of the AML.

[3] See Article 41 of the AML.

[4] See Article 39 of the AML.

4.3 Number of Officials and Record

During the investigations that carried out in the five methods set forth before, the following two rules are stipulated to guarantee the procedural fairness[5]:

1. Number of Enforcement Officials

   When the antitrust enforcement authorities are investigating an alleged monopolistic conduct, at least two officials shall be present for the investigation. The officials shall present their enforcement badges at the beginning of the investigation.
2. Record

   When an inquiry or investigation is carried out, a record in written form of the inquiry or investigation shall be produced and signed by the investigated party.

4.4 Confidentiality

The obligation that the antitrust enforcement authorities shall keep confidential the commercial secrets to which they have access during the investigation was explained previously in Sect. 3.

4.5 Right of Making Defenses

The undertakings under the investigation and the interested parties shall have the right to make defenses.[6] The enforcement authorities shall verify the facts, justifications and evidence presented by the said undertakings or interested parties.

The right of making defenses is very important in terms of determining the responsible party and the appropriate penalty regarding the investigation. The right shall be guaranteed throughout the entire investigation procedure.

4.6 Verification and Publication

When the investigation is closed and the involved parties have fully stated their opinions, the enforcement authority in charge shall make a decision on how to deal with the monopolistic conduct, and may publicize its decision.[7] Here, the

[5] See Article 40 of the AML.

[6] See Article 43 of the AML.

[7] See Article 44 of the AML.

enforcement agency have the right to choose whether to publicize its decision or not according to the law.

And as explained previously in Sect. 3, it is not obligatory for the antitrust authorities to make its decision public.

4.7 Suspension and Termination

Once the investigation begins, it can be suspended or terminated if certain conditions have been fulfilled:

As for suspension, if the interested parties under investigation promise (with concrete measures) to eliminate the effects of the conduct through the use of concrete measures within the time limit accepted by the Chinese antitrust authorities, the Chinese antitrust authorities may decide to suspend the investigation. [8] To make the agency decide to suspend the investigation, the interested parties shall use his statement right to fully exchange opinions with the enforcement agency. Once the promise is made by the undertaking and accepted by the agency, such promise shall be recorded in the decision of the enforcement agency.

As for termination, if the interested parties implement the promise, the Chinese antitrust authorities may decide to terminate the investigation. However, under the three following circumstances, the Chinese antitrust authorities shall resume the investigation[9]: the interested parties fails to implement its promise; significant changes have taken place to the circumstance on which the decision of suspending the investigation was made; or the decision on suspending the investigation was made on the basis of incomplete or inaccurate information submitted by the interested parties.

4.8 Juridical Remedy

If the interested parties is alleged with abuse of dominant market position or monopoly agreement, it may apply for an administrative reconsideration or lodge an administrative lawsuit according to law.[10]

[8] See Article 45 of the AML.

[9] See Article 45 of the AML.

[10] See Article 53 of the AML.

5 Improvement Expected in the Future

The Chinese antitrust public enforcement is still immature and experiencing further challenges for development. In order to establish a more effective, transparent and fair public enforcement regime, it is necessary to draw upon experience of the EU and the US, and make necessary adjustment to the current investigation procedures. However, such adjustment should be done through revisions of the current Chinese law/regulations that stipulate the procedures of antitrust public enforcement. As related as above, in addition to the AML, these laws/regulations also include Administrative Penalty Law, Administrative Permission Law, Administrative Reconsideration Law, Administrative Litigation Law, and the upcoming Administrative Procedures Law.

In fact, NDRC and SAIC have demonstrated their willingness to increase the procedural fairness of their enforcement efforts. For example, several regulations and guides (see Table 1) were released in succession.

However, the implementation of new procedural regulations does not surely lead to a higher level of procedural fairness. The following significant changes, from an experienced antitrust lawyer's perspective, will contribute to the accomplishment of procedural fairness in Chinese antitrust public enforcement:

5.1 A Unified Antitrust Enforcement Authority

As explained previously, the current tripartite system of the antitrust enforcement has not only caused the confusion among companies, but also acted as the culprit of

Table 1 Legislation of Chinese authority since 2008 when China's Anti-Monopoly Law took effects. They are public available government documents. The English translation is from Dentons China Antitrust Team

Authority	Names	Effective year
NDRC	Several Provisions on Regulating the Price-related Administrative Penalty Power	2014
	Rules on the Hearing and Review of Price-related Administrative Punishment Cases	2014
	Provisions on Evidence for Administrative Penalty for Price-related Violations	2013
	Provisions on the Procedures for Price-related Administrative Penalties	2013
	Provisions on the Administrative Procedures for Law Enforcement Against Price Fixing	2011
SAIC	Provisions on the Procedures for Industry and Commerce Authorities to Investigate and Sanction Monopoly Agreements and Abuse of Dominant Market Position	2009
	Provisions on the Procedures for Industry and Commerce Authorities to Prohibit Excluding or Restricting Competition by Abusing Administrative Powers	2009

inconsistency of decision-making. It is therefore necessary to establish a unified authority to take the full responsibility of all aspects in terms of the Chinese antitrust public enforcement.

5.2 Greater Transparency

The United Nations Economic and Social Commission for Asia and the Pacific provides a complete and detailed definition of transparency in its manual regarding good governance: firstly, decisions taken and their enforcement are conducted in a manner that follows rules and regulations; secondly, information is freely available and directly accessible to those who will be affected by such decisions and their enforcement, and thirdly, enough information is provided and that it is provided in easily understandable forms and media. Accordingly, in antitrust area, a transparent enforcement procedure requires (1) decisions or judgments made by administrative enforcers must be based on antitrust law and regulations publicly available; (2) the enforcement of the law must follow the procedural rules; and (3) information related on enforcement should be freely available and directly accessible to the parties concerned and third parties whose interests stand to be affected by enforcement; as well as (4) enough information on enforcement should be provided in easily understandable forms and media to the public. As commented by Friedl Weiss and Silke Steiner, this definition includes the openness of the decision-making and enforcement processes as well as access to and distribution of information.

5.3 More Defense from Investigated Entities to Be Heard

The AML and some regulations stipulate that the entities under investigations have the obligation of cooperating with the authorities, and the entities' cooperative attitudes will be valued when the authorities make decisions or issue sanction orders.

For example, in accordance with the AML:

> Article 42 The undertakings under investigation, the interested parties or other relevant units or individuals shall cooperate with the authority for enforcement of the Anti-monopoly Law in performing their duties in accordance with law, and they shall not refuse to submit to or hinder the investigation conducted by the authority for enforcement of the Anti-monopoly Law.

In practice, the rights to defense of the investigated entities cannot be easily realized because the defense may be regarded as a signal of uncooperative attitudes, thus reducing the possibility of a mitigated punishment, a consequence that the investigated entities do not want.

The rights to defense need to be respected throughout the process of investigations especially when sanctions may be imposed. Therefore it is necessary to set boundaries between exercising the rights of defense and refusing to cooperate with the authorities, and to allow more defense from the entities under investigations.

5.4 More Open Attitude to Evidence from the Investigated Companies, Including Economic Analysis

The Chinese antitrust authorities are generally considered as dominant in investigations and the companies investigated may find it difficult to be treated equally, and the evidence from the investigated parties may be undervalued. It is suggested that it will help improve the Chinese antitrust enforcement if the Chinese antitrust authorities are more open to the evidences provided by the investigated companies, especially if investigators will pay more attention to economic analysis.

For better applying the AML to keep the order of market and maintain the sufficient competitiveness, economic analysis is necessary to be introduced for evaluating the economic factors in the decision-making process. The current antitrust laws in China also encourage the introduction of economic analysis. For example, Article 13 of the *Working Rules for the Anti-Monopoly Committee of the State Council* provides the legal basis of introducing economic analysis in dealing with antitrust issues:

> **Article 13** For scientific consultation on significant issues, the Anti-Monopoly Committee shall organize consulting panels consisted of **experts in law and economics** and other concerned persons. Members of the consulting panel shall be recommended by a member agency of the committee. It shall be the duty of the committee to prescribe the specific method to select and appoint members of the consulting panel.

On the global level, the role of the modern economic analysis in competition policies in Europe and the US has been vital in both the antitrust enforcement and the antitrust proceedings. The use of economic analysis is useful when working closely and on a consistent basis with other jurisdictions. In other words, reliance on economics, rather than other policy considerations, is likely to reduce conflicts between jurisdictions. This is important when investigating international companies and when taking into account that the globalization of the antitrust public enforcement is an irreversible trend.

5.5 A More Standardized Procedure for "Dawn Raid"

In 2014, SAIC and NDRC raided the Chinese offices of Mercedes-Benz and Microsoft that were suspected of monopolistic conducts. The unannounced inspections shocked many international companies doing business in China. As the

Chinese antitrust enforcement is experiencing an upward trend, dawn raids in the antitrust enforcement may increase.

Although the AML and some related regulations provide the legal basis for the antitrust authorities to conduct on-the-spot inspection by entering into the business premises or other relevant places of the investigated undertakings, formal protections for undertakings are absent under the AML, and the rights to defense of the companies under investigations are extremely limited.

Because of lacking the recognition of a notion of legal privilege, there are not many standards adopted by NDRC or SAIC as to the scope or type of evidence that could be collected in a dawn raid—and similarly no limitations on interviews with individual employees.

It nevertheless remains important that companies active in China should have in place a rigorous protocol that ensures compliance with the investigation, but also protects, so far as possible, their rights under Chinese law.

6 Conclusion

As China is becoming one of the most important antitrust jurisdictions in the world, the international community is paying more attention to Chinese antitrust public enforcement. Meanwhile, the public, particularly people from western countries, put forward their concerns about China's antitrust public enforcement, e.g., they suspect that transparency and the best practices of due process are ignored in China.

However, from the perspective of an experienced Chinese lawyer, the antitrust investigations were all carried out strictly in accordance with Chinese laws. It is worthy of attention that, the antitrust public enforcement is part of administrative enforcement in China. This means that the procedure of Chinese antitrust public enforcement has to comply with the current system of Chinese administrative laws, so it is unlikely to be completely aligned with procedures that seem to be universally applied in western jurisdictions. This may be the reason for the worldwide misunderstanding of the Chinese antitrust public enforcement.

It is understandable that the antitrust public enforcement practice in China is not flawless, especially when taking into consideration that the AML is new and the Chinese antitrust authorities have not accumulated enough experience to deal with all kinds of antitrust issues in China. We have realized the significance of establishing better-planned procedures of antitrust enforcement, and it is believed that the authorities are in their process of improvement. Several measures are proposed in this chapter such as establishing a unified antitrust enforcement authority, introducing more transparency, allowing more evidence and defense from the investigated parties, and standardizing the procedures of "dawn raid". From an experienced antitrust lawyer's perspective, these measures will help guarantee a higher level of procedural fairness in China's antitrust public enforcement.

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Antitrust and Compulsory Licensing in BRICS and Developing Countries

Rafael Pinho de Morais

Abstract Compulsory licensing is a powerful tool for broadening access to inventions protected by intellectual property rights without the rights owner consent, and is highly disciplined by International Law and individual countries legislation. Although compatible with the WTO rules, compulsory licensing has rarely been used despite being an available competition policy instrument (i.e. antitrust remedy) in most jurisdictions. It can in particular be a powerful policy tool—as concerns pharmaceuticals—to address the well-known health burden held by the population in the poorer nations.

While compulsory licensing unambiguously improves access to (existent) health treatments and to protected technologies in general, its impact on profits and innovation rates is a more controversial issue. The economic literature has minimized the arguments against the use of the instrument, but competition policy has been too shy in using such a powerful tool, in particular in BRICS and other developing countries.

This chapter overviews the lag between the possible and the actual use of compulsory licensing as an antitrust sanction and of mandatory licensing as a condition for merger approval, in particular in the BRICS and other developing countries.

Keywords Compulsory Licensing • Antitrust • Competition Policy • BRICS • Pharmaceuticals

JEL classification L4 • L41 • O34 • I18

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1 Introduction

This policy-oriented chapter analyses the legislation on and the actual use of compulsory licenses as a competition policy instrument. It focuses in particular in the BRICS and other developing countries, where the potential welfare gains are amplified.

It is well-known that barriers to access to existing innovation in poor countries go well beyond intellectual property rights (IPRs) barriers, including distribution channels deficiencies, badly designed price regulation, lack of products adapted to local realities and excess of corruption, among many others. It is on the other hand also undeniable that IPRs are sometimes a crucial barrier to technology access by BRICS and other developing countries.

Most IPRs exist for incentivizing innovation at the same time as information disclosure by innovators, who in the case of patents, industrial designs and topographies of integrated circuits have to file detailed information when applying for a grant. IPRs trade off thus static efficiency for dynamic efficiency, i.e. some deadweight loss is allowed in the short run for the sake of incentivizing the generation of more and better goods in the future.

IPRs are thus a natural and necessary barrier to competition, granting exclusivity to the inventor for a limited period of time. This competitive advantage granted by the IPR should not be obtained nor explored in an anticompetitive way, which includes the presentation of fraudulent information or unlawful conduct when applying for it as well as the use or enforcement of the IPRs in a way to distort competition. This involves the monopolization of the market for the product *per se* but also the market for technology licensing and the market of the R&D efforts aimed at innovation.

Compulsory licensing for anticompetitive conduct and mandatory licensing as a merger condition are thus about shortening the period of exclusivity and improving access of potential competitors to a protected technology or product. It therefore has the potential of increasing competition, which should lower prices and improve quality, to the benefit of consumers. Its potential is huge but actual use is rare, in particular in the BRICS and other developing countries.

Although IPRs barriers to access exist in different sectors of economic activity, they are more striking in the pharmaceutical area, where innovation is concentrated in developed countries while patients are spread around the globe and developing countries hold a significantly underserved population.[1] As endorsed by Reichman (2009), compulsory and mandatory licensing in antitrust should complement—and not substitute—the use of other TRIPs flexibilities, such as the ones aimed in particular at addressing the health problems in poor countries: compulsory licensing based on public interest or for government non-commercial use and the Doha

[1] Although throughout this chapter we seem to focus on medicines, the claims are the same for all sectors. It is just more striking when speaking of the pharmaceutical market and access to drugs.

paragraph 6 waiver allowing compulsory licensing for exportation to countries lacking manufacturing capacity.

This chapter is thus in line with the joint effort of WHO, WIPO, WTO (2013), their first ever joint publication, whose focus was on "advancing medical and health technologies ('innovation') and ensuring they reach the people who need them ('accessibility')". Their publication targets "particularly developing countries—who face an increasing demand to act, when governments want to increase access to effective treatments while containing costs". Competition policy has definitely an important role to play in this.

This chapter is organized as follows. Section 2 presents the literature review on international compulsory licensing as well as the international legal framework for its use. Section 3 overviews the actual use of this instrument, focusing in particular in the BRICS and other developing countries. Section 4 presents the state of the art in BRICS, while Sect. 5 overviews a few concerns on the use of compulsory licenses by BRICS and other developing countries. Section 6 concludes this chapter.

2 International Intellectual Property Protection

The enforcement of intellectual property rights (IPRs)—blocking access by third parties to inventions—creates economic incentives to invest in Research and Development (R&D). As concerns pharmaceutical innovation, the patent system interacts with the regulation of drug prices for creating those incentives, as the price charged by a patent holder with market power might be constrained by some imposed price cap.

In the BRICS, other developing and in least-developed countries, regulation is not that effective in ensuring access to existing treatments, in particular because companies can withdraw a product from the market or at least threaten to do so, as modelled by Grossman and Lai (2008). The usual lack of public distribution of medicines - which could centralize procurement in developing countries, ensuring demand at the same time as leading to an increase in bargaining power in price negotiations - is also behind the high prices of medicines in poor countries. There is plenty of evidence that in many cases the same drug can cost less in a developed country than in a poor country, where buying it is usually out-of-the-pocket expense.

The 1994 World Trade Organization (WTO) Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPs) has harmonized the length of patent protection and imposed patent protection for pharmaceuticals across member countries. TRIPs recognizes, however, that the restrictions imposed by the IPRs system on access to (patented) drugs must be somehow reasonable, not creating situations where entire populations are denied access to known therapies. Therefore, TRIPs allows for sovereign decisions and flexibilities, as the choice of IPRs exhaustion regime (i.e. if parallel trade is allowed or not) and safeguards, exceptions and mechanisms to protect essential public health interests. The strongest of these so-called "TRIPs flexibilities" is surely the possibility of allowing production

and sales of a patented medicine without the authorization of the patent owner: compulsory licensing.[2] Our focus is on compulsory licensing as a competition policy instrument, in particular in the BRICS and other developing countries.

This chapter focuses on this compulsory licensing raising an international conflict of interest: one country licensing valid IPRs on products invented by foreign firms. Conditions for such licensing are stated in article 31 of the WTO TRIPS Agreement, whose goal is to ensure the interests of patent owners and national governments are balanced. However, concepts like "national emergency or other circumstances of extreme urgency" are quite vague and not even required "in cases of public non-commercial use" (art. 31, b). This in theory leaves a huge margin of manoeuvre for any member State in issuing compulsory licenses, as far as "any such use shall be authorized predominantly for the supply of the domestic market of the Member authorizing such use" (art. 31, f), a requirement made more flexible since 2003.

This refers to paragraph 6 of the Doha Declaration on the TRIPs Agreement and Public Health, agreed to at a historic 30th August 2003 decision. Such temporary waiver was made a permanent amendment to the TRIPS Agreement on 6 December 2005. In such "system", any country is allowed to issue compulsory licenses and produce essential medicines for exportation to countries unable to produce the medicines themselves. Also, any country with "insufficient or no manufacturing capacity in the pharmaceutical sector for the product(s) in question" can be an "eligible importing member". If a country wishes to use the system as an importer, it has to notify the TRIPS Council—unless it is a least-developed country, in which case no such notification is even needed.[3]

International compulsory licensing holds crucial implications to national public health worldwide and a huge importance in the international arena—being at the centre of the debates at the Ministerial discussions in Doha (2001) and Cancun (2003).[4]

The economic modelling literature on compulsory licensing is quite scarce. Tandon (1982) reviews the classic tradeoff between patents and monopoly rents leading to deadweight loss and studies the use of compulsory licensing as a way to reduce that (static) inefficiency. His focus, though, is on the choice of an optimal royalty rate for a compulsorily licensed drug, trading off "the negative incentives effects of licensing with the positive consumer price effects". He does that, though, on a national environment.

Grossman and Lai (2008) study that innovation tradeoff in an international context, adding parallel trade to the picture, which is the possibility of importation

[2] Throughout this chapter, by compulsory licensing we mean any of the possibilities for non-authorized use (article 31 of the TRIPs Agreement) focused on public health: national emergency, public non-commercial use or *stricto sensu* compulsory license for on-patent generic production.

[3] WTO (2014) reviews the procedures and overviews the issues in spreading the use of the system.

[4] See for example Alavi (2008).

by a high-price country of drugs under patent protection sold at a lower price elsewhere—which is possible under an international exhaustion IPRs regime. Their paper challenged the orthodox view that parallel trade in pharmaceuticals undermines intellectual property rights and dulls the incentives for investment in this research-intensive industry. In their paper, profits, innovation and welfare in the developed world all increase if parallel trade is allowed, at the expense of welfare in the South.

Morais (2015) challenges both the orthodox wisdom and the generality of their results, by introducing international compulsory licensing as a policy instrument for the South. It is shown that forbidding parallel trade can be overall optimal, as it can save the costs of issuing compulsory licenses while keeping innovation unchanged. Moreover it shows that compulsory licensing is not used at equilibrium if it is a credible threat constraining price decisions by pharmaceutical firms and exhaustion regimes choices by rich countries. Compulsory licensing thus is an important instrument for the BRICS and other developing countries in pushing policy changes in rich countries and pricing policies by laboratories, both in the sense of increasing access to treatments. The present chapter claims there is no reason for competition policy to play no role in this, by being used when it should be used.

Chien (2003) empirically challenges the common wisdom that the use of compulsory licenses undermines the incentives to R&D and consequently the rates of innovation. Although based on too small a data set, that paper suggests that "compulsory licenses need not result in a decline in innovation and that this policy option for increasing access to medicines deserves greater exploration." This chapter follows such track.

3 Compulsory Licensing at Work

In the present chapter, we focus explicitly on the on-patent essential products and the compulsory licensing of usually northern innovations by southern governments, having in mind though that TRIPS implies no discrimination between national and foreign firms. Nonetheless in general firms in the innovative North invent products which are essential in principle for both the rich North and the poor South. During patent validity, the patent owner has some market power in the relevant market of its new product. In order to recoup its R&D investments, it charges a high price, frequently affordable only to wealthy consumers and/or governments.

Compulsory licensing is the possibility of allowing production and sales—or public use—of a patented product without the authorization of the patent owner during patent validity.[5] As already presented by Reik (1946), compulsory licensing

[5] Compulsory licensing is only relevant during patent validity. After patent expiry, production of generic versions can be authorized, a much simpler, cheaper and less controversial procedure. For an analysis of regulation in the off-patent pharmaceutical market, check Morais (2006).

is not only justifiable in the case of non-working (i.e. if the patent holder does not produce the good), but should take place whenever “the immediate need of the nation outweighs the absolute right of the patentee to exclude all others from in any way utilizing the patented invention throughout the lifetime of the patent”. It should be added to the list the use as an antitrust remedy.

Another paragraph from Reik (1946) also deserves being cited here:

> The existence of the public interest has generally been affirmed if the domestic demand for a patented article was not being met to an adequate extent. However, it is held that this applies only to cases in which a serious need of the public had remained unfulfilled; there is, consequently, no legitimate claim to compulsory license in cases concerned with fancy articles, such as finery, jewelry, toys and the like.

This chapter analyzes essential medicines, patents, technologies, data or data structure and the like, claiming compulsory and mandatory licensing are more in line with the public interest than the usual imposition of fines and other punishments or conditions to merge.

3.1 Developed Countries

Compulsory licensing has been a legal policy instrument commonly used for decades by developed economies domestically, including the USA, aiming at spreading knowledge and boosting innovation. It featured already a British law reforming the patent system in the late nineteenth century, and first appeared in a US legal text in 1910. In Canada, patent legislation authorizes the compulsory licensing of medicines since 1923, and such instrument was intensively employed from 1923 to 1993, favouring the development of an internal market of generic drugs in Canada. In 1993, however, under pressure from the United States during the NAFTA negotiations, this instrument was excluded from Canadian law.

In recent years, it has been used by rich countries to overcome IP barriers in new high technology medical treatments based upon biotechnology and gene therapies. It has sometimes also been used by competition authorities, in particular in the USA and Italy.

In all those situations, rich countries’ governments are the target of vivid lobbies from pharmaceutical firms. The limit case was not even a molecule for a drug but labs’ pressure against Myriad’s monopoly over all use of breast cancer genes, including in R&D and for expensive testing, obtained in 1997. Another example could be Roche’s push on the German government to issue a compulsory license of patents on “Blood screening HIV probe” held by Chiron, which resulted in a (voluntary) licensing agreement obtained in May 2001 under Roche’s explicit commitment to stop attempting to obtain a compulsory license.

When it comes to public health needs and national emergency in rich economies, the most striking case was the anthrax scare in fall 2001. The argument for using the instrument was that the sudden need of a large enough stockpile of ciprofloxacin

(Cipro) to treat ten million people was far greater than the patent-owner Bayer's stock and timely production capacity, although Bayer consistently rejected such claim. In the end, the U.S. government reached a deal for buying Cipro from Bayer at half price. Only the threat of using compulsory licensing was enough—which was great news for a U.S. administration that had an eye on the upcoming WTO negotiations in Doha.

Somehow contradictorily, when it comes to the international arena, most large pharmaceutical companies and their home countries oppose compulsory licensing of medicines, in particular in poor countries, in spite of widespread concerns over the breadth of access to medicines. They believe poor countries will abuse the compulsory licensing system, this will lower returns from research and development (R&D) and undermine the labs' ability to charge high prices in the more developed countries. There is plenty of evidence that much political pressure and lobby activity are involved, including in the negotiation of trade agreements, as warns Médecins Sans Frontières (2004).

3.2 Developing Countries and Least-Developed Countries

Compulsory licensing in WTO TRIPs represents a possibility for a government to ensure that its population has access to essential products at affordable prices, medicines in particular. It has not been much used, which should not be taken as an indication of its inefficacy: the simple availability of the instrument has in many occasions shown extremely efficient as a bargaining device for developing countries in obtaining large discounts from big labs. This happened for example in Brazil's negotiations of anti-HIV/AIDS drugs: the threat of compulsory license gave rise to expressive discounts in March 2001 (Merck agreed to cut the Brazilian prices of Indinavir and Efavirenz by 65 and 59 %), August 2001 (Roche agreed on an additional discount of 40 % on Nelfinavir, sold under the brand name Viracept), September 2003 (further reductions were obtained in five ARVs: Nelfinavir, Lopinavir, Efavirenz, Tenofovir and Atazanavir) and June 2005 (Brazil and Abbott reached a compromise on the price of Kaletra, although such deal is highly criticized by specialists).

In some occasions, however, the threat has not sufficed (or been credible enough) and developing and least-developed countries have issued compulsory licenses. For example, the anti-HIV/AIDS medicine Efavirenz was the object of compulsory licensing by Thailand in 2006 and Brazil in 2007, which was followed by other threats and deals. In South Africa the same drug was voluntarily licensed by Merck for the local production of a generic version.

In January 2007, the Thai Ministry of Public Health issued compulsory licenses for the lopinavir–ritonavir protease inhibitors combination marketed by Abbott Laboratories under the brand Kaletra, and for clopidogrel (Plavix, Bristol-Myers Squibb and Sanofi-Aventis), an antiplatelet agent used for prevention of cardiovascular events.

A different approach was taken in India, where Steinbrook (2007) states Gilead has granted 11 companies the rights to produce generic versions of tenofovir and distribute them to 95 low-income countries. These licenses were issued for free, but if the company makes generic tenofovir and sells it, Gilead is to receive a 5 % royalty on sales.

As concerns least-developed countries, Mozambique, Cameroon and Zambia issued compulsory licenses on specific drugs to be locally produced, while Ghana, Eritrea and Zimbabwe used general statements on essential drugs with the purpose of importation.

Figure 1 summarizes the actual use of compulsory licensing in the first decade of this century.

The presence of the USA and Canada on the list is remarkable, of course, as is the fact that these and some other listed cases ended up in discounts and not effective compulsory licenses. The absence of China is remarkable too. According though to KEI (2007), China's only activity by then as concerns compulsory licensing was: "In 2005, China used the threat to a compulsory license to obtain voluntary licenses to manufacture generic Tamiflu".

Beall and Kuhn (2012) point out the spike between 2003 and 2005 could be related to the Doha Declaration, to the global ARV advocacy, or to both. Worth pointing out too is the decrease after 2005 and concentration in upper middle-income countries, due to "production and distribution capacity to carry out CLs", but which "may also have the weight within the political economic system to withstand political pressure and threats of retaliatory action".

Year(s)	Nation	National Income Group	Disease	Disease Group	Total Products	Outcome
2001 (2007)	Brazil	UMIC	HIV/AIDS	HIV/AIDS	2	CL/discount
2001	Brazil	UMIC	HIV/AIDS	HIV/AIDS	1	Discount
2001	Canada	HIC	Anthrax	CD	1	Discount
2001–2003	South Africa	UMIC	HIV/AIDS	HIV/AIDS	8	VL/discount/none
2001	United States	HIC	Anthrax	CD	1	Discount
2002	Egypt	LIC	Erectile dysfunction	NCD	1	CL
2003–2004	Malaysia	UMIC	HIV/AIDS	HIV/AIDS	3	CL
2003, 2007	Brazil	UMIC	HIV/AIDS	HIV/AIDS	1	Discount
2003	Zimbabwe	LIC	HIV/AIDS	HIV/AIDS	All	CL
2004	Mozambique	LDC	HIV/AIDS	HIV/AIDS	3	CL
2004	Zambia	LDC	HIV/AIDS	HIV/AIDS	3	CL
2005–2006	Argentina	UMIC	Pandemic flu	CD	1	VL
2005–2007	Brazil	UMIC	HIV/AIDS	HIV/AIDS	1	Discount
2005–2009	Brazil	UMIC	HIV/AIDS	HIV/AIDS	1	Discount
2005	Ghana	LIC	HIV/AIDS	HIV/AIDS	All	CL
2005	Indonesia	LIC	HIV/AIDS	HIV/AIDS	2	CL
2005	Taiwan	HIC	Pandemic flu	CD	1	VL
2006–2007	India	LIC	Cancer	NCD	1	None
2006 (2010)	Thailand	UMIC	HIV/AIDS	HIV/AIDS	1	CL
2007	Rwanda	LDC	HIV/AIDS	HIV/AIDS	1	CL
2007 (2010)	Thailand	UMIC	HIV/AIDS, CVD	HIV/AIDS, NCD	2	CL
2007–2008	Thailand	UMIC	Cancer	NCD	1	Discount
2007–2008	Thailand	UMIC	Cancer	NCD	3	CL
2010	Ecuador	UMIC	HIV/AIDS	HIV/AIDS	1	CL

Fig. 1 The actual use of compulsory licenses in the TRIPs era. Source: Beall and Kuhn (2012)

As seen from the figure, Thailand has been the most active country in issuing compulsory licenses for public health concerns: for HIV/AIDS in 2006, for the blood thinner clopidogrel bisulfate (Plavix) and the AIDS medication lopinavir/ritonavir (Kaletra) in January 2007, followed by cancer medicines in 2007 and 2008.

It is also remarkable the "none" outcome for India on the list. According to WTO (2015), India's first and only compulsory license was issued in March 2012 on a patented stage-three liver and kidney cancer medicine called sorafenib, sold by Bayer & Co. under the trademark NEXAVAR®. The Controller General of Patents, Designs and Trade Marks issued a compulsory license to Natco Pharma Ltd., an Indian generic firm, arguing the patented invention was not available to the public at a reasonable price and that the patented invention had not been worked in the territory of India, as required by the law. The compulsory licence was issued with 6 % royalty to be paid to the patent owner. Upon appeal, the Intellectual Property Appellate Board of India upheld the Controller's decision in March 2013, although it increased the royalty owed to 7 % without changing either the decision to grant a compulsory licence or any other conditions of this licence. WTO (2015) claims India has not issued any other compulsory licence since, even though three more applications for such licences have been received by the Controller General of Patents, Designs and Trademarks since then: Genetech's breast cancer drug HERCPETIN®, BMS's breast cancer drug IXEMPRA®, and BMS's leukemia drug SPRYCEL®. The request against BMS was denied not on the merit but on the absence of an essential prerequisite, according to the Controller General: sufficient effort to obtain a voluntary license first.

In general, the "adequate remuneration" to the patent holder required by the TRIPs Agreement (article 31, h) in case of compulsory licensing is not a relevant burden on the issuing country, who basically has total freedom in setting its terms. In other words, the licensing decision is not constrained by the level of such remuneration. In most cases of international compulsory licensing, stated royalties have ranged from 0.5 to 4 % of the sales value. Bearing in mind that this sales value usually ranges between 1/10 and 1/50 of the original drug price, this compensation is absolutely insignificant for a big lab holding the patent. Evidence on this is that in many cases the patent holder simply does not claim its rights for those remunerations, as in the compulsory licenses on two triple combination of AIDS drugs in Malaysia (4 % not claimed on still quite high sales prices, in some cases over a hundred dollars per patient per month) and Indonesia (0.5 % on ARVs Nevirapine for 7 years and Lamivudine for 8 years not claimed).

Figure 2 compiles information on all compulsory licenses issues for the treatment of HIV/AIDS, which is the focus of WHO (2014).

The BRICS countries are not that innovative countries which can get access to comparable quality drug imitations at a low cost if a compulsory license is issued. BRICS and a few other developing countries holding drug manufacturing facilities,

TableA3.2 Compulsory licences for ARV drugs

Year	Issuing jurisdiction	Type	Income group	Sourcing	Royalty %	INN(s)
2003	Malaysia	GU	UMIC	Import	4%	DDI; ZDV; ZDV/3TC
2003	Zimbabwe	CL	LIC	Import/Local production	NA	HIV-related medicines
2004	Mozambique	CL	LIC	Local production	2%	3TC + d4T + NVP
2004	Zambia	CL	LMIC	Local production	2.5% max	3TC + d4T + NVP
2004	Indonesia	GU	LMIC	Local production	0.5%	3TC; NVP
2005	Ghana	GU	LMIC	Import	NA	HIV-related medicines
2006	Thailand	GU	UMIC	Import/Local production	0.5%	EFV
2007	Thailand	GU	UMIC	Import/Local production	0.5%	LPV/r
2007	Indonesia	GU	LMIC	Mainly Local production	0.5%	EFV
2007	Brazil	GU	UMIC	Import/Local production	1.5%	EFV
2007	Canada	CL'	HIC	Export'	2%	3TC + ZDV + NVP
2010	Ecuador	GU	UMIC	Import	0.42% of US pice	RTV
2012	Indonesia	GU	LMIC	Local production	0.5%	ABC; DDL; EFV; LPV/r; TDF; TDF + FTC; TDF + FTC + EFV
2012	Ecuador	GU	UMIC	Local production	5% of US pice"	ABC/3TC

Fig. 2 AIDS/HIV drugs compulsory licenses. Source: WHO (2014)

like Thailand in particular. Those are middle-income countries commonly hosting an ill population in spite of having know-how for producing the needed medicines, as people do not have access to essential (patented) drugs at affordable prices.[6,7]

However, the analysis applies naturally to least-developed economies incapable of manufacturing the needed drugs, since the implementation of the TRIPs "paragraph 6 system". This means that since 2003 a least-developed country can acquire patented medicines at affordable prices even if it does not have the needed facilities for producing copies. For this, it will import (at a low price) from a laboratory located abroad, possibly in a developed country.

Although by September 2015, the paragraph 6 system has only been used once,[8] we believe this instrument could be increasingly used—especially once least-developed countries will have to implement drug patent protection, a deadline which has been postponed several times and is now end 2015. In any case, only

[6] Patents are definitely not the only reason behind the non-access in poor countries: distributional channels deficiencies and corruption being commonly cited. These motivated Stavropolou and Valletti (2015) to explicitly endogenize coverage of the southern population when modeling compulsory licensing. Our focus though is on patent barriers—or cost-based availability limitations—and we further assume that the patent documents perfectly describe the production procedure, in such a way that reverse engineering costs (and lags), once the compulsory license is issued, are negligible.

[7] Beall and Kuhn (2012) created a database of compulsory licensing use ranging from the WTO and TRIPs creation in 1995 to mid 2011. They found 24 compulsory licenses issued in 17 countries (see Fig. 1), almost all for HIV/Aids drugs and almost all in upper-middle-income countries. Most took place between 2003 and 2005—showing actually a decreasing trend from 2006 on.

[8] Rwanda filed submission IP/N/9/RWA/1 dated 19 July 2007, concerning the importation of 260,000 packs of TriAvir—a fixed-dose combination product against Aids, whose original patent belongs to GlaxoSmithKline—to be manufactured in Canada for exportation to Rwanda by Apotex Inc., the then largest Canadian drug firm. According to WHO, WIPO, WTO (2013) "it took three years before the shipments in question proceeded", which took place in September 2008, according to the Indian government statement in WTO (2014).

the existence of such mechanism and the potential threat of using it is enough for the purposes of this chapter. The non-use of the available instrument can hide an evidence of price decrease as a consequence of the availability of the instrument, as claimed in Kommerskollegium (2008), Morais (2015) and by the Swiss statement in WTO (2014).[9]

4 Compulsory Licensing as a Competition Instrument in BRICS Countries

It is well known the wide roster of anticompetitive practices associated with obtaining and using IPRs, ranging from refusal to deal or to license to harder to characterize sham litigation related to IPRs. The WTO TRIPs Agreement dedicates its Part II Section 8 specifically to the "Control of Anti-competitive Practices in Contractual Licenses", stating clearly that "Members agree that some licensing practices or conditions pertaining to intellectual property rights which restrain competition may have adverse effects on trade and may impede the transfer and dissemination of technology". Further down, TRIPs cites as examples "exclusive grantback conditions, conditions preventing challenges to validity and coercive package licensing".

Those provisions are much in line with the USA IP and Antitrust guideline dating from as far as 1995. All BRICS and most other developing countries have patent legislation establishing the possibility of compulsory licensing for non-use and competition acts where IPRs and compulsory licensing play an important role in the legal text.

The practice in the BRICS and other developing countries, however, has up to these days lagged behind the knowledge the Competition community has constructed on the interface of Intellectual Property and Competition and the case law available from developed countries competition authorities.[10]

[9] Kommerskollegium (2008) is a comprehensive study reviewing the adoption process of the paragraph 6 system and the difficulties in having it implemented. The authors agree that the system can be effective without being effectively used, through increasing the bargaining power for obtaining discounts, but claim it is extremely hard to check if it is indeed the case. We all doubt it is.

[10] KEI (2007) review thoroughly the legislation changes around the world as concerns compulsory licensing as well as the threat of use and effective use. The disparity between rich countries and BRICS and other developing countries as concerns use in antitrust is abyssal.

4.1 The Vanguard in South Africa

South Africa is definitely the most advanced country in what concerns the use of compulsory licensing as a punishment for anticompetitive behaviour. As early as 2003 its competition authority issued a historical decision, which made a lot of noise in international media—but not much has been done since then.

South Africa introduced a controversial law allowing compulsory licensing of patented pharmaceuticals in 1997, which gave rise to a lot of litigation by pharmaceutical firms and associations. Litigation ceased under the commitment by the government to redraft the law making it compliant with the TRIPs Agreement.

In September 2002, the NGO Treatment Action Campaign (TAC) filed a complaint to the Competition Commission against GlaxoSmithKline (GSK) and Boehringer Ingelheim (BI). Twelve other parties joined the complaint, which charged GSK and BI with excessive pricing in respect of ritonavir, lamivudine, ritonavir+lamivudine and nevirapine.

In October 2003, the Competition Commission issued a statement saying the firms had contravened the Competition Act of 1998, being found to have abused their dominant positions in their respective anti-retroviral (ARV) markets. The following restrictive practices have been pinpointed: denial of access to a competitor to an essential facility; excessive pricing; engagement in an exclusionary act.

Shortly after, settlements were reached with the two firms and included voluntary licenses of broad scope to many licensees who would pay low royalties (no more than 5 % of the net sales of the relevant ARVs) and be able to sell in the public and private sectors in the country as well as export the ARVs to sub-Saharan African countries.

History tells that this 2003 decision came as a result of unsuccessful initiatives by several NGOs to convince the Health Authorities in South Africa to issue compulsory licenses to essential AIDS medicines. And it was a point out of the curve.

4.2 China, the Late Comer

While compulsory licensing provisions appeared in the first Chinese Patent law of 1984, it was not clear if it could be used against anti-competitive conduct. It remained so until the Measure for Implementation issued in 2001 for the 2000 revised IP law.

The Chinese Anti Monopoly Law was enacted in 2007 and the 2008 Patent Law stipulates explicitly in its article 48 that compulsory licensing of IP shall be imposed to remedy certain kinds of anti-competitive conduct.

However, it was only late 2011 that China's State Intellectual Property Office (the "SIPO") issued draft amendments to the "Measures for Compulsory Patent Licensing", shedding some light on the procedure for issuance of compulsory

patent licenses for antitrust violations and the respective roles of the Chinese patent administration and Chinese antitrust authorities. Still, authors claim there are many doubts still, and no case law was found.

4.3 Russia, a Mystery

On one hand, there is not much information available on Russia. On the other hand, Russia is the only BRICS country who responded the questionnaire sent by WIPO specifically on compulsory licensing provisions for anticompetitive practices. WIPO (2011) says Russia had by that time no specific provision on the topic but the Civil Code of the Russian Federation in its articles 1362 and 1423 had provisions on compulsory licensing.

The cases potentially giving rise to compulsory licensing in Russia in those provisions are: non-exploitation of IP right(s) for a period of time indicated in the national law(s); if a patented invention cannot be exploited without infringing an invention patented with a better priority (earlier patent) (dependency of patents); necessity to supply market with propagating material (plant varieties) and to provide licenses as are necessary to supply them, or if exploitation of a plant variety cannot be done without infringing dominant plant variety protection or a patent. The Russian authorities also responded that compulsory licensing was to be determined by judicial authorities, without providing further details.

According to WIPO (2011), Russia belongs to the group which “did not clearly answer if IP rights conferred a market power per se, but from their Answers the assumption can be made that those countries would not deem IP rights to have such an effect”. Moreover when asked about the objectives of compulsory licenses (granted to address anti-competitive practices), Russia did not tick any of the four proposed (and thoroughly explained) reasons: to prevent, to control, to correct (or remedy), to repress. Russia did not answer the question on other sanctions (alternative or complementary) besides compulsory licenses applicable to anti-competitive uses of IP rights, or the one on the appropriateness of compulsory licenses to enforce antitrust law to address anti-competitive uses of IP rights. Russia did not report any case, and it is thus doubtful that Russia has ever used this instrument.

4.4 India’s Efforts

India’s Patent Act of 1970—which is still valid—already dealt with compulsory licensing in Chapter XVI and had specific provisions on the procedure to apply to a compulsory license, in its section 87(1). It, however, excluded medicines from IPRs protection. India pushed the introduction of patent protection to pharmaceuticals to the limit of the transition period authorized in TRIPs, which was 2005. It allowed

the country to develop a substantial pharmaceutical industry, which turned from generic manufaturers to innovative firms, Rambaxy being the most cited example, holding these days hundreds of patents granted by the USPTO. Its generic producers are still responsible for at least half of the generic drugs importation in the world. Up to 2005 thus there was no reason for a compulsory license in India as concerns medicines, as there were no patents.

Since then, India has not dealt with compulsory licensing in the antitrust arena. The cases involving compulsory licensing are held by the Controller General of Patents, Designs and Trade Marks and can be appealed to the Intellectual Property Appellate Board of India. As mentioned in a previous section only one such licensing has been issued.

In the BMS cases, an anticompetitive claim based on section 61 and sub-section (5) of section 3 of the 2002 Indian Competition Act was raised and remained unanswered—possibly because the cases were dismissed due to lack of sufficient effort to obtain a voluntary license.

4.5 Brazil's Awakening

Although Brazilian Competition Authority CADE has recently celebrated 50 years, the true era of Competition Policy enforcement started with enactment of 1994 Competition Law. This legal text already explicitly listed compulsory licensing of patents in its roster of sanctions to anticompetitive behaviour, "to be recommended to the competent public body", meaning the Brazilian PTO.

The 2011 Law 12529, which replaced Law 8884/94 as Brazilian Competition Act introduced a series of changes and improvements to the competition enforcement system. As concerns compulsory licensing it extended the explicit sanction beyond only patents, to include "compulsory licensing of intellectual property right owned by the offender" but made it also explicit that it should be so only "when the offense is related to the use of such right". One could criticize this last reduction of scope to the use of a supposedly valid right. It could at least include the possibility of the offense being related to the granting of the right, or use of invalid right, as was the case for example in the famous US 1984 Handgards case or EU 2005 Astra Zeneca case.

In any case, this discussion is unfruitful as to the best of our knowledge there has never been a compulsory license of any sort imposed by the Brazilian Competition Authority on an anticompetitive behaviour. What has happened in a few cases was the suspension on the use of brands or even mandatory sales of brands as a merger remedy, and even mandatory licensing of patents. It should be mentioned that this possibility of mandatory suspension or mandatory sales or even mandatory licensing was not explicit in the 1994 law and the 2011 law wrongly mentions compulsory licensing as a merger remedy, when it should say mandatory.

The most famous suspension cases were of the strong toothpaste brand Kolynos when Colgate bought it in 1993 and the suspension of famous brand Perdigão in a

few of the many relevant markets involved and for varied time spans when it bought Sadia in 2011. The first mandatory sale to the best of our knowledge was when Sanofi-Aventis decided to buy in 2009 the then largest generic manufacturer in Brazil called Medley. Where there was horizontal concern there was no valid patent but robust market shares due to strong brands by both merging parties; CADE did condition approval on the sale of strong brands and the parties accepted it.

At virtually the same time in 2009/2010 Merck bought worldwide the whole of Schering-Plough. CADE found competition concerns in the two therapeutical classes encompassing patented medicines sold under the names Zetia, Ezetrol, Zetsim and Vytorin. Through the commitments signed by the parties, Ezetrol and Zetsim should be at a first stage distributed exclusively by a third party who then would get the voluntary license. CADE did so arguably in order to ensure there would be effective entry, which is not sure when only the mandatory licensing takes place.

5 Concerns

This section presents some concerns to be had by BRICS and other developing countries when deciding on the use of compulsory licenses.

5.1 Neglected Diseases

As clearly stated by Danzon and Towse (2003) in their Introduction, developing countries face basically two problems in what concerns public health: first, guaranteeing access to drugs in diseases affecting both developed and developing countries; second, provide the necessary incentives for R&D on diseases affecting mainly or exclusively the poor countries.

In the first group, we can include all drugs usually available in North but for which southern consumers commonly lack access, such as antibiotics, anticancer and HIV-AIDS drugs. In the second group, there are all neglected diseases that harm particularly the BRICS and other developing countries and for which existent treatment is not very efficient (whenever there is one), the most striking examples being dengue, malaria, tuberculosis, sleeping sickness and leishmaniasis.[11]

International NGOs sometimes advocate in favour of compulsory licensing on the existent (although not very efficient) treatment for some neglected diseases. For example, the Third World Network (James Love, on Compulsory Licensing, published in 2004) advocates: “By declaring a public health emergency for

[11] MSF, Red Cross and WHO websites have plenty of information on neglected diseases. For example: http://www.who.int/neglected_diseases/diseases/en/

HIV/AIDS, tuberculosis, malaria or other illnesses, a government could give general authorization for the competitive sector to supply particular types of drugs, . . .”. As for the Médecins Sans Frontières (MSF), their website mentions: “To address the issue of abandoned drugs, MSF is calling on companies and governments to find solutions to bring unprofitable but medically necessary drugs back into production. MSF is also supporting developing countries in codifying into law the ‘safeguards’ that are allowed under international trade rules in order to protect access to medicines.” Although not explicitly, such text leaves the doubt about if compulsory licensing should be an instrument for dealing with those “abandoned drugs” (for neglected diseases).

Contrasting such idea, Morais (2015) has a result claiming that “drugs on neglected diseases should not be the object of compulsory license (including for government non-commercial use).”[12] This would be so in the best interest of the developing world. For neglected diseases, the relevant market incentivizing pharmaceutical R&D is the one in the BRICS and other developing countries. Therefore, these countries should be highly concerned about generating incentives to R&D for those diseases—as free-riding on North is nonsensical. BRICS and other developing countries would actually benefit from credibly committing not to issue compulsory licenses on drugs for neglected diseases.[13]

5.2 *Trade Diversion*

Another concern is trade diversion, i.e. having a drug available cheaply at a BRICS or other developing country being shipped to a higher-priced market, usually a developed country—as this has the potential of undermining the incentives for innovation.

Stavropoulou and Valletti (2015) assume the drugs produced under compulsory licensing could be re-imported and therefore the “paragraph 6 system” supposedly undermines the labs’ capacity to price differentiate across markets. Our understanding is that the system allows a more developed country to issue a compulsory license exclusively to export (to a developing or least-developed country), keeping its domestic prices for that drug unaffected. The same way, the use of compulsory

[12] It also claims that: “Exception should be made for truly unexpected emergencies—but this is so no matter if it is for a neglected disease or not, or developed or developing country, as allowed by TRIPs. By this we mean the cases in which any country (developed or not) could reasonably issue a compulsory license, such as the USA during the 2001 Anthrax crisis. These emergency exceptions should be punctual, motivated and short in both time and geographic extent, in a way not to undermine incentives to innovation.”

[13] Other mechanisms than the patent system can potentially be even better in generating private incentives for R&D on neglected diseases, such as patent buy-outs or prizes (tournaments), or the public funding of such R&D, but all these are beyond the scope of this chapter, which focuses on the patent system, the most used mechanism for generating those R&D incentives in our time.

or mandatory licensing by a BRICS country can have its impacts within its borders. The only requirement for this is to adopt efficient measures to avoid (trade) diversion.

Kyle (2009) points out that "empirical evidence of the effect of EU integration on price dispersion is mixed". Throughout her paper, she emphasizes that pharmaceutical firms can use other "non-price strategic responses" to avoid parallel trade and thus price uniformization if the North adopts an international exhaustion IPRs regime. These measures include vertically integrating in distribution or signing distribution contracts directly with retailers, bypassing distributors. It also includes adjusting the portfolio of products available in the South and the North, by launching different versions and even withdrawing products. As parallel trade only occurs for identical products (same chemical, dosage for and strength), these portfolio tailoring raise the repackaging costs for parallel traders—sometimes up to infinity!—at the same time as it raises concerns of safety, lowering the willingness to pay for reimported drugs which are then perceived as not homogeneous to domestically produced drugs. The WTO website, citing a 2003 General Council Chairperson's statement,[14] lists a couple of initiatives by particular laboratories in a sort of anti-diversion best practices guidelines. Before citing real world examples, it says: "Companies have often used special labelling, colouring, shaping, sizing, etc. to differentiate products supplied through donor or discounted pricing programmes from products supplied to other markets."

A reduced diversion of drugs originally for southern patients to markets in developed countries is in line with our analysis. It increases the possibilities of price discrimination between the developed North and the developing South, and thus the scope for the use of compulsory licensing within developing countries' borders.

6 Conclusion

This chapter aimed at reviewing the international compulsory licensing potential and practice within competition policy in developing countries, BRICS in particular. The evidence shows that there is very little experience in those countries in this aspect.

We overview the use of any compulsory licensing in the BRICS and other developing countries, which virtually has only included licences issued by health authorities for essential medicines. The 2003 Competition decision in South Africa seems a lonely outlier.

The main claim is that much more could and should be done, especially as concerns the potential of competition authority to intervene, in a complementary manner to the health authorities. The potential of using antitrust compulsory

[14] https://www.wto.org/english/tratop_e/trips_e/gc_stat_30aug03_e.htm (accessed 09/10/2015).

licensing to punish anticompetitive behaviour and mandatory licensing for merger approval is tremendous, and legal in all BRICS and compatible with the WTO rules.

Two main concerns emerge in case compulsory licensing—of any sort—becomes a more frequent policy instrument in the BRICS and other developing countries. Trade diversion should be avoided and compulsory licensing should never involve drugs for neglected diseases.

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Procurement Procedures and Bid-Rigging in Brazil

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Abstract Law 8,883/93, the so-called "procurement law", includes the main provisions related to the purchases of the Brazilian government. Some key changes to this legislation have been introduced since 2002, altering the whole format of the auctions for the sake of government procurement. Our goal in this article is to assess the impact of the new rules of procurement on bid-rigging and steering of contracts. On the one hand, the transition from a first-price sealed bid auction to an (English) open bid auction facilitated cartels. On the other hand, electronic auctions introduced a welcome bidder anonymity, which had the opposite effect. The article also comments on the impact of some other new rules on the possibility of bid-rigging in Brazilian government procurement like the introduction of the possibility for post-auction negotiation on prices and the change in the time for checking bidder eligibility.

Keywords Bid-rigging • Procurement law in Brazil • Auctions • Cartel

JEL L41 • K21 • K42

1 Introduction

Law No. 8,883/93, also referred to as the "procurement law," prescribes the key rules governing public procurements in Brazil. A frequent criticism of the law is that it unduly constrains the range of action available to public officials and often increases, instead of reducing, the attendant costs to government.

In response, over the past decade the government has introduced significant changes to the law, modifying the procurement format through the introduction of onsite reverse bidding procedures (Law No. 10,520/2002) and electronic reverse bidding procedures (Decree No. 5,450/2005), while providing more flexibility to the process, even if only selectively (2014 FIFA World Cup, 2016 Summer

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Olympics, Growth Acceleration Program—PAC, and other public works), pursuant to Law No. 12,462/2011, through which the Differentiated Procurement Regime (Regime Diferenciado de Contratação—RDC) was enacted.

The general consensus in the economic theory of cartel formation in procurement procedures, referred to as bid-rigging, is that the rules of the process, in particular the type of procedure used, oral or sealed bids, have a significant impact on cartel activity.

Despite the strict controls provided for in law to prevent all forms of fraud, there is a widespread view that procurement procedures in Brazil are subject to cartel arrangements or bid-rigging and steering of contracts by the public administrator. Notice that steering of contracts can be a substitute or a complement to a cartel. In the famous case of Petrobras[1] cartel, the action of corrupt officers of the state-owned company was considered key to organize collusion.

Our objective in this article is to examine Brazil's procurement system from the enactment of Law No. 8,666/93 through the introduction of onsite reverse bidding procedures and, more recently, the RDC, specifically with respect to their effect on the predisposition of actors to cartel formation. The key question of the study is to what extent the evolution of the rules governing procurement procedures in Brazil has facilitated or hindered cartel formation.

Our focus is on the procedures employed for the procurement of goods and services by the Brazilian public administration, although a portion of the study applies as well to the procurement of public works and the award of concession contracts.

The section below synthesizes the economic theory underlying cartel formation in bidding procedures. Section 3 examines the modality of bidding procedures adopted in Brazil based on economic theory. Section 4 offers some concluding observations.

2 Basic Economic Theory of Cartels

While cartels are possible under any bidding modality, certain modalities are more susceptible to collusion than others. Much of the incentive to defect from participation in the cartel is contingent on the extent to which the information on this defection permits or prevents a timely response by players participating in the cartel agreement and punishment of the uncooperative agent. The more the procurement procedure allows cooperating players to immediately detect and punish defections from cartel conduct, the more the cartel's operation will be facilitated.

The most vulnerable auction mechanism is oral bidding. In the case of government procurements, players enter decreasing bids until reaching a level at which

[1] Se the report of the Brazilian competition Agency, CADE on the case, http://www.cade.gov.br/upload/HC%20Vers%C3%A3o_P%C3%BAblica.pdf

only one player is willing to continue participating. This modality's higher susceptibility to cartel activity is rooted in the fact that players are able to observe each other's bids simultaneously, giving them time to cover proposals that deviate from the amounts agreed within a given cartel. Any attempt to defect from the cartel can be detected and "punished" immediately within the same procurement procedure: if a bidder who is not "supposed" to win submits a bid that deviates from the amount agreed, the bidder that is "supposed" to win may immediately respond by submitting an even lower bid. As all participants know that any attempt to defect from the agreement will subject the defector to immediate retaliation, they will have more incentive to cooperate in the cartel.

In the case of sealed bids, however, the temptation to defect is far higher, as the competitor that is "supposed to win" will not have time to react to potential deviations from those competitors that are "not supposed to win." As such, an uncooperative player may end up winning a procurement process for a slightly lower price than the winning proposal. The higher the bidder's expected return, the greater the temptation to defect will be. As Klemperer (2004) states "*a first-price sealed bid is usually much more robust to collusion: bidders cannot 'exchange views' through their bids, or observe opponent's bids until after the auction is over, or punish defection from any agreement during the course of the auction, or easily deter entry*."

In addition, first-price sealed bids attract more new players than oral bids. This is due to the fact that sealed bids provide less efficient agents with the opportunity to win the bidding procedure, as the submission of only one bid deprives the most efficient players of a second opportunity to react and best the winning bid, a circumstance not possible in oral bids. The mere fact that entry is facilitated introduces an additional obstacle to cartels through the first-price sealed bid system.

In sum, oral bids are more susceptible to cartel formation than first-price sealed bids.

An important remark made by Weishaar (2013) is important to our analysis. Auction design is only capable of preventing "in-auction collusion". When collusion works for multiple auctions, the repeated interactions of players make the incentive to cheat on a single competitive bidding less appealing to everyone. However, as long as the "object" in this single competitive bidding gets larger, the incentive to cheat gets more relevant and auction design matters.

In the section below, we examine the procurement modalities employed in Brazil and the predisposition to cartel formation based on the specific type of auction employed.

3 Procurement Modalities in Brazil and Bid-Rigging

3.1 Modalities Under Law No. 8,666/93

The five procurement modalities in Brazil, pursuant to article 22 of Law No. 8,666/93 are: (1) competitive bid; (2) request for proposals; (3) invitation to bid; (4) contest bid; and (5) auction.[2]

The contest bid is specific to the selection of works for award consideration, while the last category refers to the sale, not the procurement, of goods and services. As such, the focus of this analysis on the procurement of goods and services is restricted to the first three modalities. All of these involve first-price sealed bids, suggesting that the probability of cartel formation is the same among the three modalities and lower than in the decreasing oral bidding format.

The relevant question is whether the three procurement modalities share an intrinsic trait which would predispose one of these modalities to cartel formation more than the others.

In our view, they do not. None of the three restricts the number of participating bidders. Each modality is linked to a specific procurement and acquisition amount: up to R$ 80,000 for invitations to bid, up to R$ 650,000 for requests for proposals, and above R$ 650,000 for competitive bids.

Pursuant to article 22, paragraph 1, of Law No. 8,666/93, "Competitive bid" is "*the procurement modality between any interested parties that meet, in the preliminary eligibility stage, the minimum mandatory required qualifications set forth in the public notice for execution of the procurement object*."

For its part, the "Request for proposals" described in article 22, paragraph 2, is "*the procurement modality between duly registered interested parties or those that meet all the conditions required for purposes of registration no later than the third day prior to the date of receipt of the bid proposals, in accordance with the mandatory qualifications*." The difference between competitive bidding and requests for proposals involves the latter's requirement that parties register with the public body. As registration is not a hard step, and may be accomplished, in fact, through registration with another public body, it does not constitute a relevant barrier to entry that could contribute to sustaining a cartel.

The "invitation to bid" modality is used for more basic procurement procedures and is considered a more restrictive format, to the extent it is limited to three participating companies. However, other companies in addition to those "invited" to bid may participate, insofar as "*a copy of the bid notice shall be displayed in an appropriate location and extended to all companies eligible to perform the corresponding specialized activity that express an interest in taking part at least 24 hours prior to the submission of bid proposals*" (article 22, paragraph 3, of Law No. 8,666/93). In other words, while the "invitation to bid" modality makes life

[2] From the point of view of economic theory, all modalities are auctions, which should not be mistaken for this specific modality, as defined by law.

easier for those entities invited to participate, to the extent these are not required to seek out the information on the bid notice, which is sent directly to them, it does not limit the number of potential participants.

In the case of the Petrobras cartel, on the other hand, the lenient indicate an abuse on the use of the "invitation to bid" modality. Petrobras adopted a simplified procedure for its own purchases, to avoid the allegedly excessive bureaucracy of Law 8.666/93. This procedure is established in Decree n° 2.745/1998,[3] a special ruling for Petrobras procurement. The main difference with Law 8.666/93 is that clause 5.6 of this Decree does not oblige Petrobras to display the bid notice. This means that, in practice, only the three invited bidders were aware of the procurement procedure, facilitating steering. So, lack of transparency about the procurement was what helped Petrobras cartel, not the "invitation to bid" modality as it is in Law 8.666/93. We really don't know why not obliging transparency of the bid notice in the Petrobras special ruling was so important to get a more simplified procedure.

The key element examined for our purposes and one shared by the three modalities prescribed under Law No. 8,666/93 centers on the fact that all three formats are based on a first-price sealed bidding procedure, which is less susceptible to cartel formation.

3.2 Onsite Reverse Bidding Procedures

In 2002, Law No. 10,520/2002 was passed. The new statute introduced the reverse bidding modality (or the onsite reverse bidding procedure), a two-stage bidding mechanism. The first stage consists of a first-price sealed bid in which bidders submit sealed envelopes with a price proposal, similar to the three modalities under Law 8,666/93 described above.

In the second stage, an open reverse bidding procedure is held in which only a portion of the bidders in the first stage participate. The agents participating in the second stage include the lowest bidder and those submitting proposals up to ten per cent (10 %) above the lowest bid (article 4, subsection VIII, of Law No. 10,520/2002). In the event at least three bids within 10 % of the lowest proposal are not entered, the parties submitting the lowest bids, up to a maximum of three bidders, may take part in the second stage and put forth successive, decreasing oral bids (article 4, subsection IX). Those bidders that qualify for the second stage enter new bids, starting from the lowest price proposal offered in the first stage.

The second stage decreasing oral bidding procedure provides greater opportunity for cartel formation. However, the onsite bid includes an initial stage involving a first-price sealed bid, which hinders cartel activities. The first stage of the procedure may already have led to defections, undermining the mutual trust of

[3] http://www.planalto.gov.br/ccivil_03/decreto/D2745.htm

bidders in the second stage. Nonetheless, for those participants "remaining" after the first stage, there are incentives to enter into collusion in the second stage. If there are only a small number of bidders in the first stage, say two or three, the initial stage is rendered redundant, as all participants will automatically "qualify" for the second stage, irrespective of what they do in the first stage. The proposal submitted in the first stage would not carry any "costs" relating to the risk of disqualification. The actual competition would only occur in the second stage that is particularly vulnerable to cartels.

Another achievement of the onsite reverse bidding procedure involves the inversion of the procurement stage. Under Law No. 8,666/93, all bidders must be declared eligible prior to the auction. However, pursuant to article 4, subsection XII, of Law No. 10,520/2002, only the bid winner's eligibility is certified, reducing procurement procedure's operating costs for the State and respective bidders alike. According to Rezende (2011), when bidder eligibility is verified prior to the procurement procedure "*all bidders have a potential interest in eliminating their competitors from the process through challenges to the respective eligibility documents. This can lead to a veritable torrent of appeals challenging each bidder's eligibility to participate. By inverting the bidding stage, this possibility is largely mitigated, to the extent that once the lowest bidder is revealed any appeals will be directed against that bidder exclusively, sparing the Administration and bidders time and resources*." In the case of cartels, attempts to challenge other bidders will be solely aimed at entities not party to the collusive arrangement.

In fact, lower costs to bidders reduce barriers to entry, enabling a larger number of competitors, which, in and of itself, hinders cartel formation. In addition, according to Ceccato (2012), inversion of the bid stages contributes to diminishing the possibility of cartel formation "*to the extent an expedited procedure, the first stage of which is generally concluded on the same day, virtually precludes the capture of agents during the bidding process*." In other words, because cartels represent a complex method of collective action with substantial margin for free-rider behavior, as per the classic conception expounded by Mancur Olson (1965), all measures that contribute to accelerating the procurement procedure will serve to reduce the time available for organizing cartel arrangements, thus impeding their formation.

However, Ceccato (2012) also shows that the inversion of stages opens the door to cartel conduct when it is associated to a mechanism introduced in the onsite reverse bidding procedure aimed at reducing the number of participants in the sealed bid stage down to just three in the open bidding stage.

Take the following example. Three companies (including shell companies created solely for the purpose of fronting as bidders and submitting fictitious proposals) could hypothetically collude to block a fourth bidder with the potential to win the second-stage bidding procedure, resulting in a higher cost to the public administration. For example, if the three players engaging in collusion entered bids of $100, $105, and $109, while the fourth independent firm put forth a bid of $111, the latter participant would be out of the second stage. Suppose the three bidders did not enter proposals in the second stage. If the two participants that entered the $100

and $105 bids were found to lack the required eligibility documents, the three colluding bidders will have succeeded in excluding the fourth company not party to the cartel, while the company offering $109 would win the contest without competition in the second stage. The actions undertaken by the first two companies were aimed exclusively at disqualifying the fourth independent participant. If this firm had entered the second round of bidding, the likelihood of competition would have been considerably higher. As such, the solution to this circumstance would be to order that the second stage of the bidding procedure be repeated every time the winning bidder is disqualified, a step which could offer an important legal precedent.

Another problem with inverting the bidding stages is that rejecting the eligibility of a bidder entering the lowest bid is always more difficult after the fact than before. This approach carries the risk of increasing the participation of "intrepid" bidders driven by opportunism that would clearly have been declared ineligible had they been subject to review prior to submitting the winning bid.[4] The pressure exerted *ex-post* by the losing bidders to perform an appropriate verification of eligibility could serve to mitigate this outcome substantially.[5]

One of the innovative features of the onsite reverse bidding procedure, as provided in article 4, subsection XI, of Law No. 10,520/2002, is that the auctioneer may undertake efforts to negotiate additional price reductions with the winning bidder upon conclusion of the open bidding stage. This provides the auctioneer with a reasonable degree of discretion, by allowing for a decision on the extent of the additional price reduction that should be sought beyond the amount contained in the winning proposal.

Note that the auctioneer has latitude to rig the outcome if the necessary signs can be imparted to the bidders that either a more hard line or a softer negotiating stance will be adopted, depending on the specific bid winner. Rigging the procedure in this way can serve as a substitute or as a complement to the cartel. It acts as a substitute when the auctioneer's cooptation of a bidder renders the collective action of the cartel unnecessary. By contrast, acts as a complement when the auctioneer is incorporated in the process of allocating procurement procedures among the cartel members.

Let us assume that the steering of contracts serves as a complement to a bid-rigging conduct. What would be the influence of this negotiation *a posteriori* on the likelihood of cartel formation?

First, it is important to underline that in the absence of any preference for this or that bidder by the auctioneer and if the distribution of expectations among the bidders is reasonably homogenous with respect to the extent to which the auctioneer will force acceptance of a lower price, and presuming the auctioneer has access to the reserve prices of the participating bidders, the post auction negotiations will

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[4] Assuming the calls for technical and financial eligibility are sufficient to eliminate opportunists, which is not the case.

[5] Article 4, subsection XVIII.

have no effect on determining the bid winner. The only possible impact would be on the final price.

Let us suppose there are two participating bidders, A and B, with average costs or reserve prices to provide the good or service in question for $9 and $6, respectively. In the absence of post-auction negotiations, the likelihood in a decreasing open bid is that A stops submitting proposals at $9 and B, the more efficient bidder, wins the procurement procedure with an offer slightly below A's cutoff of "$9 – e." As "e" can be as close to 0 as we want, B's final offer, for all intents and purposes, will be equal to $9. Thus, the contract would be awarded to B for $9. Because the auctioneer knows the reserve price of the bidder, he knows that the price cannot be reduced below $6. In this light, the auctioneer and the final bidder will negotiate a final price somewhere between $9 and $6.

Another possibility is that the auctioneer does not have knowledge of the reserve prices and issues an exogenous percentage for the *ex-post* mandatory price reduction. Let us consider how the behavior of bidders is affected when an additional negotiation is added in which both bidders expect a 10 % price reduction on the last proposal entered by whichever of the two parties wins the bid. We assume here that the auctioneer undertakes to make a "take it or leave it" offer, whereby if the winning bidder refuses to accept the price reduction a new auction is held.

Bidder A will be willing to offer a maximum of $10, which it knows the auctioneer will renegotiate until reaching the intended 10 % reduction, namely $9, which is the bidder's reserve price. For its part, bidder B will also adjust its maximum bid upward, from $6 to $6.66, such that following the respective renegotiation and application of the 10 % cut, resulting in a total of $6, corresponding to the bidder's reserve price. In this context, the winning bidder would be B, which will increase its proposal from $9 to $10, a total the auctioneer will renegotiate down to $9, precisely the same amount as that secured in the scenario with no additional post-auction negotiations. Therefore, the assumptions above would indicate that post-auction negotiation does not alter the bid winner or the winning bid price.

Let us now turn to the steering of contracts with or without bid-rigging scenario in which the auctioneer has a preference for one of the bidders. To make the scenario more interesting, assume the bidder's preference is for the less efficient bidder A. Suppose bidder A expects the auctioneer to renegotiate a 10 % reduction on its final price offer, while bidder B, who we will designate B′, expects the auctioneer to renegotiate a 50 % cut over its final proposal. In other words, the preference centers on the rigor of the auctioneer's renegotiating position vis-à-vis B′ compared to A. The difference between 50 and 10 % will be the measure of the steering of contracts.

In this light, the maximum bid B is willing to submit in the face of a 50 % renegotiation of the final proposal corresponds to double its reserve price, or $12. Although the minimum bid A is willing to enter remains $10 (with a view to reaching $9), the bid amount now needed to defeat B would be smaller than $12. In this case, subsequent renegotiation by the auctioneer with its preferred bidder A will reduce the final amount by 10 % (of $12 equals $1.2) or $10.8. In other words,

Table 1 Behavior of the bidders in the oral bid when there is the possibility for negotiations following the bidding stage

Bidder	Average cost or reserve price	Percentage of price renegotiation by auctioneer	Maximum bid proposal bidder is willing to enter	Equilibrium bid	Final price of winning bidder
A	9	10 %	10	10 (for B) and 12 – e (for B′)	10.8 (when playing with B′)
B	6	10 %	6.66	10	9
B′	6	50 %	12	12	

in the event of a preference for one of the two bidders, the final equilibrium price will climb from $9 to $10.8. Table 1 offers a summary of the figures provided.

In sum the prospect of a post auction renegotiation can increase, instead of decreasing, the price paid by the government in the event of steering (in this case steering to the least efficient "A"). Cartels can also be facilitated since the auctioneer can guarantee more easily that the player who is not supposed to win does not win indeed.

While the onsite reverse bidding and its two-stage format were considered a step forward at the time, it is not clear to what extent they have facilitated cartels in public procurement procedures. At the same time, the possibility of post-auction negotiations have made bid-rigging easier and, in those cases in which the practice has served as a complement to cartels, actually facilitated these arrangements.

3.3 Electronic Reverse Bidding Procedures

In 2005, a new modality referred to as "electronic reverse bidding" was enacted through Decree No. 5,450/2005. Its principal feature involves the submission of bids at a distance using electronic platforms, thus reducing the attendant costs to many bidders, while lowering entry barriers and, as such, the space available to cartels.

Article 4 of the Decree mandates the reverse bidding modality for public procurements of goods and services, with preference given to electronic bidding procedures. Paragraph 1 of the same article provides that reverse bidding will not be employed in electronic procedures only if the impossibility of using this format is demonstrated and duly justified by the jurisdictional authority. As such, electronic bidding has become the most prevalent procurement method in Brazil.

The two stages of the electronic reverse bidding procedure operate in a manner similar to those of the onsite reverse bidding procedure: in the first stage, each bidder enters a sealed proposal with the respective price offer in the electronic system (COMPRASNET). After the proposals have been opened by the auctioneer,

the second stage of the auction, consisting of decreasing oral bids, is initiated. The fundamental difference in relation to onsite bidding is that the second stage of the electronic reverse bidding procedure does not restrict participation to those bidders within 10 % of the lowest bid in the first stage, as is the case in the onsite format, but rather allows for the submission of any and all proposals. Clearly, this reduces the incentive to enter real bids in the first stage. In fact, it could be said that the electronic reverse bidding procedure works, in reality, as a decreasing oral bidding procedure. That is, only the second stage has any actual relevance to the auction, given that bidders run no risk of elimination if they submit an excessively high price proposal in the first stage.

In addition to the irrelevance of the first stage, another major difference in regard to the onsite bidding procedure is provided in article 24, paragraph 5, of Decree No. 5,450/2005, whereby bidders are continuously informed of the lowest bid submission, yet the identity of the lowest bidder is not revealed until the bidding stage is concluded. In fact, not even the auctioneer announcing the price proposals knows the identity of the bidders in the first and second stages alike, significantly reducing the ability to engage in steering of contracts and/or bid-rigging.

Because the procedure does not involve an onsite bidding process, anonymity is afforded, with a significant impact on the likelihood of cartel formation. The very fact that there is no way of knowing which participant is betraying the cartel or even if the lowest bidder is part of the cartel constitutes a destabilizing element for the cartel agreement. A bidder that is part of the cartel but starts to defect from the original agreement may pass unnoticed and free of retaliation. Indeed, a defecting bidder may only be identified and potentially subject to "punishment" in subsequent procurement procedures if it in fact wins the bid and, by virtue of this fact, is "discovered." Marshall and Marx (2010) note the importance of the information held by bidders during the auction for cartels: "*As a general rule, the more information the auctioneer conveys about bidder identities, the bids submitted, and auction outcomes, the easier it is for a ring to be effective in its work of suppressing rivalry among members*."

Klemperer (2008) argues that anonymous bids in auctions has the same effect as an absence of information on other players in ordinary markets: "*Just as in "ordinary" markets, keeping bids secret makes it harder for bidders to coordinate their activities and makes defection from a collusive agreement harder to observe and therefore more attractive. So secrecy fights collusion between bidders*."

Anonymity also makes it difficult for bidders to communicate among themselves through the bid submission in the case of multiple procurement objects.[6]

Another interesting feature of the electronic reverse bidding procedure is that the time for conclusion of the second stage is randomly set by an independent system not under the control of the auctioneer, ensuring, as such, that defections from cartel agreements shall not always be subject to immediate response and punishment in

[6] In addition to anonymity, Klemperer (2008) recommends that float values be prohibited and that minimum increases be determined for each bid, so as to hinder communication via bids.

the same procurement procedure. If more aggressive bids are entered and the agent that "should win" does not have time to "punish" the defection, the defecting player will win the auction before the player that "should win" is able to react. This increases the uncertainty of bidders in a cartel agreement regarding possible defections, thus destabilizing the cartel as a whole.

In sum, the "electronic reverse bidding procedure" has mitigated a significant constraint of the onsite reverse bidding procedure to cartel conduct by rendering the initial sealed bid stage irrelevant. However, by introducing anonymity into the bidding process, the electronic reverse bidding procedure has made identifying defectors more difficult, thereby destabilizing cartels.

The net effect of the "electronic reverse bidding procedure" on the propensity to cartelize is theoretically unclear. There is a widespread view in the public sector that electronic reverse bidding procedures have hindered cartel formation in procurement procedures throughout Brazil. An unambiguous approach, however, would be to preserve the relevance of the first stage by restricting the number of bidders that qualify for the second bidding stage.

3.4 Differentiated Procurement Regime

More recently, the Brazilian government enacted Law No. 12,462/2011, which introduced the Differentiated Procurement Regime (Regime Diferenciado de Contratação—RDC), for the purpose of conferring greater flexibility on the procurement rules governing the FIFA 2014 World Cup, the 2016 Summer Olympics, the federal government's Growth Acceleration Program (Programa de Aceleração do Crescimento—PAC), projects undertaken within the framework of the Unified Health System (Sistema Único de Saúde—SUS) and the Public Education System. While a large part of these procurement procedures involve public works, the RDC also applies to the procurement of goods and services for the related events and activities.

Although Law No. 8,666/93 provides for allocation of the procurement object among bidders, it requires that each component be assigned exclusively to a specific bidder (article 23, paragraphs 1 and 2). Article 11 of Law No. 12,462/2011 of the RDC allows more than one company to be awarded a contract for delivery of the same service, where the procurement object can be executed concurrently and simultaneously, thereby facilitating the distribution of gains within cartels in the same procurement procedure. Making the RDC more flexible facilitates compensation mechanisms that permit the operation of cartels in procurement procedures. At the same time, however, this greater flexibility can also serve as an efficient mechanism when players do not have enough scale to supply all demand.

The RDC also offers the auction more flexibility in deciding whether to hold an open or sealed bidding procedure, or apply a combination of these, similar to the two-stage onsite and electronic reverse bidding procedures. Assuming the auctioneer is honest, this added flexibility makes it possible to design the auction so as to

effectively respond to the key challenged faced. For example, open auctions are recommended in cases of the winner's curse problem. However, if the primary issue is cartel activity a predominantly sealed bid auction is preferable. In the case of two-stage auctions, such as onsite or electronic reverse bidding procedures, reestablishing the relevance of the first stage of the sealed auction could serve as an effective measure to counter cartel activity. In sum, the flexibility to choose the auction type could contribute to preventing cartels. However, as with any discretion conferred on the auctioneer, this flexibility can also be exploited for the purpose of steering of contracts and/or bid-rigging.

While Law No. 8,666/93 restricts employment of the best technical proposal criterion (even in combination with the "lowest price" criterion) for the procurement of "*services of a predominantly intellectual nature*,"[7] the RDC significantly expands the possibility of applying this criterion. The greater subjectivity of "best technical proposal" criterion increases the range of opportunities for steering of contracts and/or bid-rigging, as noted by Rezende (2011).

By the same token, more frequent use of the best technical proposal allows for the incorporation of a larger array of quality factors in connection with the respective good or service subject to the procurement procedure, and can serve to bring the logic of government procurements more into line with the experience of individuals who purchase goods and services for personal use and invariably base their decisions on a cost-benefit analysis of those goods or services, not simply their price. Currently, qualitative criteria can only be included in procurement procedures through a description of the minimum required characteristics. Incorporating technical factors as a criterion could encourage bidders to offer better innovations for the proposed solutions. Ultimately, boosting the potential weight given to "technical" criteria in public procurements presents a clear trade-off: an increase in the price and space available for steering of contracts and/or bid-rigging, on the one hand, and the possibility of more effectively incorporating quality variables in the government's consumption decisions, on the other.

The RDC introduces an entirely new criterion, namely "highest financial return" (article 18, V). Pursuant to article 23, the "highest financial return criterion" is "*used exclusively for the execution of efficiency contracts, and the proposals are considered with a view to selecting the offer that provides the highest cost savings to the public administration through contract execution*." In addition, article 23, paragraph 1, provides that the efficiency contract compensates the contractor for the percentage of cost savings generated.

Rezende (2011) notes the difficulty in evaluating how to apply this type of contract, suggesting that "*they could facilitate misappropriation and fraud of public funds*." Indeed, a criteria such as highest financial return seems to confer ample

[7] Pursuant to article 46 of Law No. Lei 8,666/93 "*services of a predominantly intellectual nature, in particular the project development, calculations, inspections, oversight, management, and engineering consulting in general and, especially, the development of preliminary technical studies and basic and executive project designs*."

discretion on the auctioneer to calibrate the rule for determining the bid winner. The gains from this innovation are not clear.

There is always a "reserve price" in the Brazilian procurement and any bid beyond this value is not considered. Article 6 of Law No. 12,462/2011 provides that the reserve price will only be made public after the procurement procedure. The objective of the government is to prevent price hikes and cartel formation, as described by Rezende (2011).

Indeed, "reserve prices" and mainly "secret reserve prices" are usually considered positive to prevent bid-rigging. As argued by Weishaar (2013):

> The setting of reserve prices complicates collusion for four reasons. First, if bidders know that a (secret) reserve price has been set, they may be willing to increase their bids more rapidly. This, in turn, may undermine a bidder's propensity to form tacit agreements. Second, agreeing upon demand reduction strategies will be more difficult in the presence of a reserve price. Third, if the reserve value is announced to be present but kept secret, it will be more complicated for a cartel to determine its bidding strategy and to estimate its profit from collusion. Fourth, as McAfee and McMillan show, a change in the reserve price can have an impact on ex post cartel profits and could make cartel members worse off than they would have been had they behaved non-cooperatively.

On the other hand, Weishaar (2013) also argue that "setting a reserve value may deter potential bidders and that the future value of unsold objects may be reduced". At the same time, the author, quoting Bulow and Klemperer, state that "*an additional (serious) bidder will more positively influence competition and revenues than the introduction of an optimal reserve price*". So, the net effect of a secret reserve price may not be always positive.

We could also think on the relationship of the impact of the disclosure of reserve prices on bidder's expectation. Disclosure of a reserve price could in fact serve to merge the expectations of agents in regard to the contract amount. Note, however, that this does not mean that disclosure will always lead to an upward convergence in the expected price, generally the trend in cartel formation scenarios. Disclosure influences bids to the extent this disclosed maximum price fall below or above bidder expectations. If the maximum disclosed price is below expectations, their disclosure could drive the ensuing bids lower, a factor dependent on how realistic the government's estimates are perceived to be. If the estimates are deemed realistic, disclosure could have the effect of reducing prices, not increasing them.

The opposite occurs in the case of government estimates above the market's perception, a situation that would appear to provide the government with reason not to disclose the RDC. In this case, disclosure of the government's estimate could spur tacit collusion or facilitation of explicit collusion.

Ultimately, in sufficiently competitive auctions with a reasonable and homogenous degree of information between the market and the government, disclosure of the reserve price will not make much of a difference.

The RDC provides the auctioneer with the opportunity to negotiate a better price for the public administration after the bidding stage just like the previous two modalities. However, on this point, the law suggests greater flexibility for the auctioneer in negotiating with bidders other than the winning bidder. Article

4, subsection XVI, of Law No. 10,520/2002 on onsite reverse bidding procedures authorizes the auctioneer to negotiate with other bidders "*if the offer is not acceptable or the bidder fails to meet the applicable eligibility requirements*". For its part, article 26, sole paragraph, of Law No. 12,462 of 2011, on the RDC, provides that "*negotiations may be entered into with the remaining bidders, based on the initial order of classification, where the price submitted by the first-place bidder, including following negotiations, is disqualified by virtue of exceeding the price estimate*."

As the winner of the bid stage does not have precise knowledge of the price estimate, the bidder can be disqualified by an auctioneer interested in rigging the procurement procedure, depending on the outcomes of the respective negotiations.

However, no problem will arise if the auctioneer is unable to "alter" the estimate *ex-post* and, further, is forced to "disclose the estimate" and put forth a "take it or leave it offer" to the winner. The winner will accept the proposal if its reserve price is higher than the price estimate and officially win the procurement procedure following subsequent negotiations. However, the possibility of steering of contracts and/or bid-rigging will increase if the auctioneer is able to alter the estimate *ex-post* or cannot be forced to put forth a "take it or leave it offer." As such, the OECD (2009) recommends that the budget estimate be deposited with another public authority, which in Brazil's case could be the Brazilian Federal Court of Accounts (Tribunal de Contas da União—TCU) or the Brazilian Office of the Comptroller-General (Controladoria Geral da União—CGU).

To better understand this point, let us consider bidders A and B in Table 1 with their respective reserve prices of $9 and $6. Assume an initial estimated price of $14 and an "agreement for steering" between bidder A and the auctioneer. Suppose A bids $20 and B wins with a bid of $19. B wins the bid stage and enters into negotiations with the auctioneer. Naturally, B will strive to maintain its price as close as possible to its $19 bid. The auctioneer may prematurely suspend the negotiation, claiming, strategically, that B, in the auctioneer's view, will not go below $16. The auctioneer then enters into negotiations with A, which has inside knowledge of the $14 price estimate, due to its "partnership" with the auctioneer, and, as such, quickly arrives at the target figure. If conclusion of the procedure by the auctioneer were contingent on a "take it or leave it" offer of $14, B would accept lowering its proposal to the established price.

If the auctioneer could alter the estimated price, steering is even simpler. He could simply establish the amount of $5 for B and $14 for A, making it even easier to rig the bid for A.

In the end, post-auction negotiations based on confidential budget estimates make steering of contracts and/or bid-rigging even easier. Introducing a mechanism such as "take it or leave it" and deposit of the budget estimate with an independent public authority could serve as effective instruments to prevent this scenario.

Ultimately, it is not clear if the greater flexibility provided in the RDC has contributed to reducing the risk of bid-rigging or steering of contracts.

4 Conclusion

Cartels in procurement procedures are a common and familiar phenomenon in international experience. In Brazil the Secretariat of Economic Law (Secretaria de Direito Econômico—SDE/MJ), a component body of the Ministry of Justice, prepared a primer in 2008 on cartels in procurement procedures with tangible guidelines for public administrators. The primer was based on the accurate premise that this is a promising area for advocacy on behalf of competition in the framework of a broader educational effort among public officials on how cartels operate.

There is a general perception of widespread fraud in procurement procedures in Brazil. A substantial portion is directly associated to steering of contracts, not necessarily to cartel formation. Clearly, pure steering of contracts is a simpler matter, as the problem involves fewer parties than the daunting specter of collective action by cartels. It is important to assess if the steering of contracts in the specific case at hand is a complement to or a substitute for bid-rigging.

In the case of Petrobras cartel, the complementarity of steering to bid-rigging was very strong. This is very connected to the fact that this cartel was tightly associated to corruption of politicians and even the funding of a set of political party campaigns. As long as the start-up of the cartel coincided with the appointment of two corrupt (and well connected politically) directors of Petrobras in 2003/2004, it is even possible that the cartel arrangement was created as a means to implement a corrupt scheme. The primary goal was raising funds for political campaigns, not to achieve higher profits per se.

The recent trend in procurement mechanisms in Brazil has evolved from the first-price sealed bidding format provided for in the "competitive bidding," "invitation to bid," and "request for proposal" modalities to the onsite reverse bidding procedure (2002) and, subsequently, the electronic reverse bidding procedure (2005), both of which consist of two-stage auctions composed of an initial sealed bid and a second open bidding process. The RDC, the most recent modality, has been applied to specific large-scale events, such as the 2014 FIFA World Cup and the 2016 Summer Olympics, although the method raises questions in regard to the risks of bid-rigging and steering of contracts.

The migration of models based on sealed bids to models founded on two stage reverse bidding procedures in which the open bidding stage is the most relevant may have, contrary to initial expectations, expanded, instead of reduced, the predisposition to cartel formation in public procurement procedures. The absence of limits on the number of bidders who move on from the first stage to the second stage in electronic reverse bidding procedures, in contrast to what occurs in onsite reverse bidding procedures, has rendered the first stage redundant in practice, further stimulating collusion.

On the other hand, the anonymity of bidders in electronic reverse bidding procedures represents a significant advance in the effort to prevent cartels. It is our view that incorporating a relevant initial sealed bid stage in the electronic

reverse bidding procedure would offer an important contribution to ensuring the net effect of this procurement modality was the prevention of cartel formation.

There is a need for further quantitative studies of the net impact of these changes on the predisposition to cartel formation in Brazil. The evidence most often cited by the government consists of comparative analyses between price quotes (or searches) prior to procurement procedures and final price bids submitted in procurement procedures, a method we view as wholly inappropriate given the tendency to overestimate price quotes.

A change introduced by the onsite reverse bidding procedure which could have significant repercussions on the dynamic of auctions involves the auctioneer's authority to negotiate the prices paid following conclusion of the bid stage. The discretion provided through this mechanism could offer ample opportunity for steering of contracts and/or bid-rigging. It is not clear that the added flexibility incorporated in the applicable procurement legislation is desirable.

We believe the single most consequential innovation introduced by the RDC involves the auctioneer's discretion to choose the type of procedure employed, including greater latitude in applying the "best technical proposal" criterion in place of the "lowest price" criterion. This can contribute to a more effective design of the specific procurement procedure in response to the most pressing challenge identified. What is not clear is if auctioneers in the public sector have any awareness of the critical choices before them.

Indeed, if the risk of steering of contracts (with or without bid-rigging) is prevalent, providing greater flexibility could have an unintended effect. Instead of designing a well-balanced auction to prevent the problem of cartel formation, the result could be a large number of public administrators doing just the opposite.

This, to our mind, is a core component of the basic trade-off underlying Brazil's procurement law. On the one hand, there is widespread agreement that Law 8,666/93 is excessively bureaucratic, hampering the efforts of well-intentioned public officials to execute good procurements for the government. On the other hand, an explicit and more restrictive prescription of the steps which may be adopted tends to reduce the capacity for steering of contracts by corrupt public officials and/or bid-rigging. Incorporating greater flexibility in the RDC could offer an ideal opportunity for testing this trade-off in the Brazilian context.

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The Nature and Use of Economic Evidence in Competition Enforcement (with Special Emphasis to the Case of South Africa)

Tembinkosi Bonakele

Abstract There is a move towards economic based decision making by competition authorities. This chapter discusses the nature and use of economic evidence in BRICS member countries, with a particular focus on South Africa. BRICS represents countries with similar economic features characterised by, among other things, emerging economies, high concentration levels, high barriers to entry and have experienced or are experiencing transition in their economies. They also face social challenges. Their experience in the use of economic evidence has a lot of similarities but also lessons for each other and the rest of the world, especially developing countries.

Keywords Economic evidence • BRICS • Economic expertise • Emerging markets • Dominance

1 Introduction

The issue of how to handle economic evidence has long been a topic of much debate in the jurisdictions with more matured competition regulation. Under the leadership of the US, and now the European Union, there is a widespread move towards effects based rather than structure based approach to competition regulation.[1] This approach relies more on economic evidence. With the emergence of the group comprising of Brazil, Russia, India, China and South Africa, commonly referred to as BRICS, as important jurisdictions for competition enforcement, there is a need to

[1] Gifford D and Kudrle R (2015), The Atlantic Divide in Antitrust—An Examination of US and EU Competition Policy, *World Competition Law and Economics Review,* University of Chicago Press, pp. 468–469; Faull J and Nikpay A (2014), *The EU Law of Competition*, Oxford University Press; Petit N (2009), From Formalism to Effects? The Commission's Communication on Enforcement Priorities in Applying Article 82, *World Competition and Economics Review*, Oxford University Press.

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understand the use of economic evidence in these jurisdictions. The South African current competition regime is just over 15 years old, and has some instructive lessons for the use of economic evidence, which are particularly relevant in emerging markets. Emerging markets have fairly peculiar challenges in this area. They often have limited access to the skills required to undertake complicated economic analysis, especially use of advance tools such as based on econometrics or complicated mathematical models. Generally, the concentration of industrial economists is in top universities in developed countries.

The second important issue is that the economic structure in emerging economies tends to be highly concentrated in the key sectors of the economy. The dominant firms are largely state owned or privatised monopolies. In the case of South Africa at least, there is also an issue of geographic distance from major industrial and commercial centres, which raises barriers to entry.[2] What then is the nature of economic evidence required to respond to these challenges? There is also the often hidden issue of the social implications of competition policy on areas such as employment, poverty and inequality. There is still limited research in this area in BRICS jurisdictions. The aim of this chapter is to discuss the South African approach to the use and nature of economic evidence, thereby contribute to a better understanding of how one of the BRICS countries responds to these issues.

This chapter is structured as follows. Section 2 provides a general overview on use of economic evidence and the role of economists in competition law proceedings globally. Section 3 focuses on the use of economic evidence in BRICS countries. In Sect. 4, I describe the institutional structure of competition authorities in South Africa as a prelude to Sect. 5, which discusses the South African experience in the use of economic evidence. Section 6 concludes the chapter.

2 General Overview on the Use of Economics in Competition Regulation?

The strong link between economics and law is one feature that renders competition law a unique subset of legal practice. Lianos (2012) succinctly captures the relationship between law and economics in the enforcement of competition[3]:

> More than in any other field of law, except perhaps the related area of public utilities law, competition law is intrinsically linked with the discipline of economics, as this is shown by the frequent references to economic concepts and methodology of competition authorities, the case law of the courts and the expanding soft law relating to the interpretation of the competition law statutes. A common feature of this transformation of competition law is the

[2] Ten years of enforcement by South African Competition authorities: Unleashing Rivalry (1999–2009).

[3] Lianos, I, (2012), The emergence of forensic economics in competition law: foundations for a sociological analysis, UCL Centre for Law, Economics and Society, CLES Working Paper Series 5/2012.

> emphasis put on a, mostly synchronic, analysis of the welfare effects of the specific commercial practice on consumers or more broadly economic efficiency. This is the main thrust of the "more economic" "effects-based approach" that has gained momentum in the US before being transposed to European competition law and more recently to new competition law jurisdictions, such as China, India etc.

Kovacic and Shapiro (2000), in explaining the link between economics and law in antitrust, note that the consciously evolutionary nature of the law implies the need to adjust doctrine in light of experience and new learning. It is in this context that economic thinking and economists are able to play a role in translating economic concepts and discourse into operational principles that judges can apply.[4]

It is generally accepted that the use of economics and economic evidence is an integral part of competition law proceedings. According to Friedman (1987), the economic analysis of law involves three distinct but related actions. The first relates to the use of economics to predict the effect of legal rules. The second involves the use of economics to determine what legal rules are economically efficient, so as to be able to recommend what the legal rules ought to be. The third relates to the use of economics to predict what the legal rules will be.[5]

The European Commission ("EC") notes that economics provides a framework to assess the operation of and the competitive interactions in each market under consideration and thus allows for the formulation of the possible effects of the conduct under review, whether a merger, an agreement between firms, or single firm conduct.[6] Such economic evidence also provides tools to identify the direction and magnitude of these effects empirically, where appropriate.

To put it succinctly, economics provides the framework for (1) understanding how markets function; (2) formulating credible theories of harm; and (3) applying the relevant evidence to the theory(ies) in order to better understand the likely effects of the conduct under review.[7] Economics also provides important insights into market structures, business practices and incentives, and the probable effects of those business practices.

The economic tools available for such analyses range from simple price comparisons and correlation analyses to natural experiments and to more complex merger simulation models.[8] The type and sophistication of economic analyses to be conducted depends on the data available, the features of the market, the economic issues under consideration and any timing or resource constraints facing the competition authority.

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[4] Kovacic, W.E. and Shapiro, C. (2000), Antitrust Policy: A Century of Economic and Legal Thinking, *Journal of Economic Perspectives*, Vol 14(1), pp. 43–60.

[5] Friedman D, *The New Palgrave Dictionary of Economics* (1987), vol. 3, pp. 144.

[6] DG COMPETITION, *Best practices for the submission of economic evidence and data collection in cases concerning the application of articles 101 and 102 tfeu and in merger cases*, available at http://ec.europa.eu/competition/consultations/2010_best_practices/best_practice_submissions.pdf, accessed on 30 December 2015.

[7] *Ibid.*

[8] International Competition Network (2013), The Role of Economists and Economic Evidence in Merger Analysis, pp. 3.

It is worth noting at the outset that economic evidence must be congruent and consistent with other pieces of quantitative and qualitative evidence.

Internationally, the use of economics and economic evidence in competition matters has long been exercised. Gavil (2007) notes that in precedent setting cases such as *GE/Honeywell*,[9] *AirTours*[10] and *Tetra Laval*,[11] the courts have made it clear that the decisions of the EC must be based on sound economic reasoning and substantial economic evidence.[12]

The foregoing notwithstanding, given the resource limitations ordinarily faced by competition authorities in general, the determination of the specific evidentiary needs of each case, taking into account the limits of economic evidence, must be considered on a case by case basis. Gavil (2007) sets out a four step approach in determining the foregoing. In this regard, the author states the following:

- Is the additional economic evidence reasonably available?
- If so, at what cost?
- How much additional economic certainty will it provide?
- Does the increased certainty of outcome justify the increased cost?

Lastly, the consideration of the role of economists in competition cases must also take into account the specific functions that economists can perform in such matters. Veljanovski (2009) sets out the role of economists in competition enforcement as follows[13]:

- As an adviser developing a case theory, advising on strategy, and marshalling analysis and evidence to be used by Counsel;
- Defining terms and providing basic economic analysis to the judge;
- Providing expert testimony in court as to liability;
- Providing empirical analysis;
- The calculation of damages; and
- Expert testimony in appeals of regulatory decisions and competition agency decisions.

[9] Justice Department Requires Divestitures in Merger Between General Electric and Honeywell, at http://www.justice.gov/atr/public/pressreleases/2001/8140.htm and NYU Stern: "The Failed Merger of GE-Honeywell Merger" at http://luiscabral.net/economics/teaching/gehon.pdf. Washington Post, June 19, 2001.

[10] Case No *IV/M.1524*—Airtours/First Choice at http://ec.europa.eu/competition/mergers/cases/decisions/m1524_en.pdf.

[11] *Case No COMP/M.2416—TETRA LAVAL/SIDEL at http://ec.europa.eu/competition/mergers/cases/decisions/m2416_62_en.pdf.*

[12] Gavil, A.I. (2007), The challenges of economic proof in a decentralized and privatized European Competition policy system: lessons from the American experience, *Journal of Competition Law and Economics*, 4(1), pp. 177–206.

[13] Veljanovski, C, (2009), Economists in Court—A comparative assessment of procedures and experience in Australia and England & Wales from an economist's perspective, Paper presented to 7th Annual University of South Australia Trade Practices Workshop, 16-17 October 2009, Adelaide.

The discussion below sets out a brief overview of the use of economic evidence in selected advanced economies. The key message emanating from the preceding discussion demonstrates that the use of economics and economic evidence in competition proceedings is an internationally accepted best practice.

United States

The economics arm of the Antitrust Division of the Department of Justice ("DoJ") is the Economic Analysis Group ("EAG") which is made up of, *inter alia*, 50 economists.[14] The EAG's primary role is to provide economic support in cases, from investigations to litigation in the courts. Its counter-part, the Federal Trade Commission's ("FTC") Bureau of Economics (the "Bureau") has about 80 PhD economists.[15] They are primarily responsible for providing support to the bureaus for competition and consumer protection and are involved in cases both at the investigation and litigation stages. The Bureau is functionally independent from the FTC and can provide its own opinion to the Commissioners if it cannot reach consensus with staff. Both agencies make use of their internal economic staff to serve as expert witnesses in cases, but they also frequently retain outside economists to prepare and serve as expert witnesses in cases that are likely to go to trial. In general, the use of economics in US antitrust cases is well established, and courts regularly grapple with economics.

United Kingdom[16]

The UK Competition and Markets Authority has 15 economists in its Office of the Chief Economic Advisor, six of whom are PhDs ("CMA"). The CMA is still new, but indications are that it is committed to the growing reliance of economic evidence in their cases. Its predecessor, the United Kingdom Office of Fair Trade ("OFT") used its internal economists and external independent economic experts to review submissions received from parties but not to present cases before courts as witnesses.[17]

European Union[18]

The EC has about 30 PhD industrial economists situated in the Office of the Chief Economist. The role of the Chief Economist office has significantly been enhanced following a spate of criticisms on the EU's decisions' lack of economic rigor. Economists are involved in the investigation as well as litigation of cases. Now the EU routinely undertakes sophisticated economic and econometric analysis in the investigation and litigation of its cases. Some of the key cases in the EU include the *Impala* judgment (overturning the Court of First Instance decision on the *Sony/BMG* merger), where the European Court of Justice endorsed the economic model

[14] Global Competition Law Review (2016), The Handbook of Competition Economics, pp. 163.

[15] Global Competition Law Review (2016), The Handbook of Competition Economics, pp. 165.

[16] Global Competition Law Review (2016), The Handbook of Competition Economics, pp. 157.

[17] The OFT is a decision-making body and not a prosecuting authority. Before it takes decisions, it considers submissions from parties involved in cases before it.

[18] Global Competition Law Review (2016), The Handbook of Competition Economics, pp. 45.

of tacit coordination and thus effectively compelled the EC to go beyond a checklist approach and develop a coherent narrative on how coordination would operate in cases. Similarly, the *TomTom/Tele Atlas* merger introduced the use of econometric estimates of downstream elasticities and industry data on prices, margins and sales to assess whether the sufficiency of downstream sales to compensate for the lost sales upstream if the acquiring form engaged in input foreclosure through raising its rivals' costs. In the *Unilever/SaraLee* merger, the EC employed a nested logit demand system along with standard supply-side assumptions (i.e. static Bertrand competition) to simulate the price effects of the merger.

Canada[19]

While, like in all other jurisdictions the Canadian competition authority has economists working as investigators in its various branches, it has a specific Economic Policy Branch housing its economic specialists that support other branches with investigations, with about six PhDs in industrial economics.

External economic experts are used to provide evidence to assist in preparing for contested cases. The Competition Bureau appoints external economic experts in cases where it appears likely that there could be material competition issues that require specific expertise or evidence to be led in court.[20] Given that the appointed external economic experts are independent of the Bureau, it is believed that they are likely to be perceived as credible and impartial witnesses by courts. Furthermore, these independent economic experts do not get too involved in other aspects of the case.

3 The Use of Economic Evidence in BRICS

Recent case developments in BRICS jurisdictions indicate a move, of varying degrees, towards an appreciation of the contribution of economic evidence in competition enforcement. The discussion below provides a high-level review of the manner in which competition authorities in BRICS member countries incorporate economic expertise in their institutions as well as cases. The discussion also highlights a few cases, some of these are considered landmark cases, where economic evidence played a pivotal role in the decision making process.

China

The OECD states that China's merger control practice has adopted globally accepted rules and the function of economic analysis in cases is increasingly becoming important.[21] It is noteworthy that the incorporation of economic evidence

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[19] Global Competition Law Review (2016), The Handbook of Competition Economics, pp. 26.

[20] Global Competition Review (2015), The Handbook on Competition Economics, available at http://globalcompetitionreview.com/handbooks/65/handbook-competition-economics-2015/

[21] OECD. Policy Roundtables; Economic Evidence in Merger Analysis, 2011, Available at http://www.oecd.org/daf/competition/EconomicEvidenceInMergerAnalysis2011.pdf, accessed on 06 January 2016.

in competition processes in China, and the enforcement of competition policy in its entirety, is taking place against the backdrop of a socio-economic context that is strongly underpinned by socialist economic ideology. In this regard, China's Anti-Monopoly Law ("AML") has wide-ranging objectives which, *inter alia*, include *safeguarding the interests of consumers and social public interest, [and] promoting the healthy development of the socialist market economy*.[22]

The OECD further notes that the Anti-Monopoly Bureau (AMB), which is found within the Ministry of Commerce ("MOFCOM") places a lot of emphasis on the use of economic analysis. The AMB has an economics division whose primary role is to provide economic support for investigations. The economists in this division take part throughout the course of the investigation. Before a case is filed, the economists are required to examine the notification materials and provide their expert opinion on issues that require clarity, with a primary focus on market definition and competition analysis.[23]

Fung et al. (2015), citing the judgment by the Supreme People's Court of China (the "SPC") in the 2014 *Qihoo 360 vs. Tencent* case, notes the importance of economic evidence before the Chinese courts in AML cases.[24] The *Qihoo 360 vs. Tencent* case was the first matter, under the AML, to go to the SPC and the authors note that the SPC adopted an effects-based economic framework in ruling on a complex abuse of dominance dispute. Similarly, in 2013, the Shanghai Higher People's Court ruled, in the *Rainbow vs. Johnson & Johnson* case,[25] that it is necessary to demonstrate that Resale Price Maintenance would lead to a significant adverse effect on competition in order for it to be found to be anti-competitive.

India

The Competition Act, 2002 no.12 of 2003, (the "Indian Competition Act"), which established a new competition regime in India, came into effect after the Monopolies and Restrictive Trade Practices Act, 1969 was repealed.[26] Gouri (2015) states that this reforms were as a result of, *inter alia*, several debates around competition economics preceded by court judgements on the significance of employing the 'rule of reason' approach in deciding on anti-trust cases.[27] The Competition Commission of India ("CCI") comprises a number of divisions, one of which is the Economics

[22] See Article 1, Chapter 1 of AML, available in English at: http://english.mofcom.gov.cn/aarticle/policyrelease/announcement/200712/20071205277972.html, accessed 30 December 2015.

[23] OECD. Policy Roundtables; Economic Evidence in Merger Analysis, 2011.

[24] Fung, S.S, Yu, Y, and Ridyard, D (2015), The Use of Economics in the Anti-Monopoly Law of China, *Journal of European Competition Law and Practice*, Vol 6(4), pp. 268–274.

[25] *See e.g.*, Shanghai High People's Court, *Bangrui Yonghe Technology Trading Co., Ltd. vs. Johnson & Johnson(Shanghai) Medical Equipment Co., Ltd. and Johnson & Johnson Medical(China) Ltd*., August 1, 2013, [2012] Hu Gao Min San (Zhi) Zhong Zi No. *6*, pp. 37–38.

[26] Competition Law and Policy Development in BRICS Countries; BRICS Newsletter, Vol. 1, April 2015.

[27] Gouri, G. (2015), *Economic evidence in competition law enforcement in India*, available at http://www.cresse.info/uploadfiles/2015_pl2_p2.pdf, accessed on 04/01/2016.

Division. The Economics Division provides economic expertise in relation to cases and research output of the CCI. [28] In recent years, the CCI has conducted a number of studies, all of which were aimed at ensuring that there is a cohesive and systematic integration of economic analysis into the enforcement of the Indian Competition Act.[29]

Some of the key cases which turned on economic evidence include the *Sun and Ranbaxy* merger[30] where the SNNIP test was employed to define markets in a complex transaction between two major pharmaceutical firms with both a local and international presence. In its recent order, the CCI dismissed an abuse of dominance complaint against a real estate development company, M/s DFL Universal Limited ("DFL").[31] In this case, the CCI considered economic evidence for purposes of delineating the relevant market and assessing whether DFL held a dominant position in the relevant market. Gouri (2015) makes reference to the predatory pricing *National Stock Exchange* case and notes that it was a landmark ruling made by the Competition Appellate Tribunal of India which gave a boost to the need for economic evidence in competition cases and subdued the obsessive emphasis on *legalese*.[32] The author notes that the case raised a number of critical questions relating to unilateral effects, the prevalence of competitive constraints and consumer benefits and/or harm in the context of network markets.

Gouri (2015) shows that economic evidence has been used effectively in competition cases in India. To mention a few, *Prints India vs. Springer (Majority Order)*; *Kapoor Glass vs. Schott (Minority Order)*[33] as also *Transitions India (Majority Order)*,[34] *Hiranandani (Minority Order)* or even the minority order of NSE were located in an economic conceptual framework that analysed harm, the competitive constraints on a dominant firm in the relevant market and in defining the market. However, the author also finds that, there is some hesitancy with the use of economic evidence, such as in the Minority orders.[35] The author notes that economic evidence is skirted with reference to case law irrespective of whether

[28] Competition Law and Policy Development in BRICS Countries; BRICS Newsletter, Vol. 1, April 2015.

[29] Annual Report 2013–14; Competition Commission of India, available at http://www.cci.gov.in/sites/default/files/annual%20reports/ar2014.pdf, accessed on 05 January 2016.

[30] Notice C2014/05/170 Order under Section 31(7) in the Combination Notice filed by Sun Pharmaceutical Industries Limitedand Ranbaxy Laboratories Limited.

[31] Shri Shyam Vir Singh vs. M/s DLF Universal Limited (Case No. 24 of 2014).

[32] Case No. 13/2009, *MCX Stock Exchange Limited vs. National Stock Exchange of India Limited and Others*.

[33] Kapoor Glass Private Limited vs. Schott Glass India Private Limited (Case No. 2/2010) Order dated 29/03/2012.

[34] GKB Hi Tech Lenses Private Limited vs. Transitions Optical India Private Limited, (Case NO 1/2010) Order dated 16/5/2012.

[35] Gouri (2015) notes that "*clear cut majority Orders are rare. A majority also has minority Orders*".

the case law applies to market conditions of an earlier period or of economic theory that has been overtaken.

Brazil

Under the new competition law in Brazil, CADE comprises three principal bodies, all of which work together within one agency: (1) the Administrative Tribunal, which is the decision-making body in charge of rendering final and binding administrative decisions on merger notifications that are not cleared by the Superintendent general; (2) the Superintendent General, which conducts investigations of anticompetitive practices, clears merger notifications, and renders nonbinding opinions on merger notifications that it believes should be cleared without conditions; and (3) the Department of Economic Studies ("DES"), which renders nonbinding economic opinions and studies.[36]

The DES is headed by a Chief Economist, "*which is responsible for the preparation of economic studies and opinions, ex officio or at the request of the Plenary, the President, the Reporting Commissioner or the General Superintendent, updating and ensuring the technical and scientific accuracy of the decisions made by the body*" (Law No 12.529, 5(17).[37] It is noteworthy that the DES only relies on internal economists and does not use external economic consultants.

The OECD (2011) states that CADE has undertaken many improvements towards improving its economic expertise in merger control, including the focus on the process of structuring the DES. Some of the key steps taken in this regard, *inter* alia, include the creation of a working group on economic methods (GTME) to study and disseminate economic analysis methods among its staff. GCR (2016) notes that CADE's performance has is now aligned with those of other jurisdictions in terms of quality and speed.[38] Currently, CADE employs 23 economists, ten of whom work in the DES. At least five of CADE's economists hold PhDs in industrial economics.

Some of the cases in which economic evidence played a key role, *inter alia*, include the *Nestlé/Garoto*, *MatteLeão/Coca Cola*, and *Sanofi-Aventis/Medley* mergers where economic data and econometric studies were used to define relevant markets through demand studies; and the *Vale do Rio Doce*, *Ipiranga/Petrobras cases* which relied on price cointegration studies for geographic market delineation. The OECD (2011) further notes the use of econometric evidence and simulation models, in the *Nestlé/Garoto* merger, to determine the required efficiencies to compensate for the likely price increases arising from the merger. Similarly, in the *MatteLeão/Coca Cola* diversion ratios and substitution patterns were inferred from demand system elasticities estimates in order to demonstrate the likely unilateral effects that could arise as a result of the merger. In the "*Cartel das*

[36] Global Competition Law Review (2016), The Handbook of Competition Economics, pp. 24.

[37] Brazilian Law No 12.529 2011, section v, article 17.

[38] Global Competition Law Review (2016), The Handbook of Competition Economics, pp. 19.

Britas" case, econometric evidence was used to demonstrate that price trends changed during the cartel.

Russia

The Administrative Regulation of the FAS Russia provides for the decisions of the FAS Russia to be based upon analysis of the competition condition on a relevant market, before the transaction takes place, as well as upon the data of the prospective analysis of the market with impact of the transaction in question taken into consideration.[39] The OECD (2011) notes that when assessing the likely competitive effects of a transaction and/or conduct; the economists from the FAS Russia (Analytical Department), as well as external economists, where applicable, are involved.

Avdasheva et al. (2015) provide a review of the application of economic evidence in the enforcement of competition law in Russia.[40] The authors find that although economic evidence has been used in competition cases in Russia, the amount of such evidence per case, over time, at least has not increased and some indicators strictly decrease. For instance, the authors show that, "*in 2008 only in a small fraction of Proper Antitrust Decisions ("PADs") (8%), quantitative assessment of any important variable is discussed. This ratio increases to 22% in 2010 but then goes back to 8% in 2012. Share of cases where strategic interaction in the market is discussed is 23% among PADs in 2008, but 11% in 2012. Causality between anticompetitive actions and harm is discussed in 8% of cases in 2008 but only in 3% of cases in 2012*."[41]

Furthermore, Avdasheva et al. (2015) argue that there is no stable trend in respect of discussing mandatory or voluntary economic evidence under judicial review; pointing out that "*Both, the FAS and plaintiffs in 2012 applied specialized expertise before commercial courts less frequently than in 2010. This evidence contradicts the expectation that increase of penalties results in a growing amount of economic analysis applied and disputed in the infringement decisions*."

Overall, the authors find that the use of economic evidence in competition cases in Russia provides a mixed picture in that given the large amount of cases prosecuted; the amount of economic evidence produced is also significant. However, the authors also note that the quality of such evidence on a case by case basis does not appear to increase over time. One of the key considerations raised by the authors relates to the institutional environment in which the law is applied. In this regard,

[39] OECD. Economic Evidence in Merger Analysis. Policy Roundtables series DAF/COMP(2011)23, 11. Available at http://www.oecd.org/daf/competition/EconomicEvidenceInMergerAnalysis2011.pdf, accessed on 06 January 2016.

[40] Avdasheva, S., Katsoulacos, Y., Golovanova, S., and Tsytsulina, D. (2015), *Economic Evidence in Competition Enforcement: the Russian case*. CRESSE, 2015, BRICS Policy session, available at http://www.cresse.info/uploadfiles/2015_pl2_p1.pdf, accessed on 04 January 2016.

[41] In distinguishing between PADs and non-proper antitrust decisions ("NPADs"), the authors note that "*The border between PADs and NPADs is the presence/absence of specific competition considerations in assessing the violation of the law on 'protection of competition'*."

the authors argue that judicial review is the second important driver of economic analysis and that economic analysis becomes less attractive if it does not result in decreasing the probability of reversal by judges. As such, the authors point to the importance of the appreciation, by the judicial system, of economics and economic evidence in the enforcement of competition.

4 Institutional Structure of Competition Authorities in South Africa

The Competition Act sets up three independent competition regulatory authorities, namely the Competition Commission ("the Commission"), the Competition Tribunal ("the Tribunal") and the Competition Appeal Court ("the CAC"). The Commission is the investigative and prosecutorial body, the Tribunal is the adjudicative body and serves as the court of first instance, and the CAC handles appeals from the Tribunal. On mergers the Commission does all the investigations and analysis, but has decision making powers only in respect of mergers that are categorised as small or intermediate size according to thresholds determined by the Government. On large mergers the Commission must, after an investigation, make a recommendation to the Tribunal. The Commission also undertakes market inquiries and advocacy functions.

The Commission's investigators have a legal and economics background. It also has an economics division constituted by about 25 economists headed by the Chief Economists. The economics division serves both as advisor to the Commission in its decision making as well as support to the investigation divisions on complex matters. In this regard, it provides both checks and balances or quality assurance, while also being a technical advisor of first resort on complex matters. The economists of the division also provide expert opinion and testimony to the Tribunal on complex matters. The Commission's latest strategy is to have its economists providing expert testimony before the Tribunal in most cases, but currently most of this work is outsourced to external economic consultancy firms, both local and international. However, as it will be apparent later, the Commission's internal economists have testified in some of the major cases before the Tribunal.

The Tribunal has four full-time members and five part-time members constituted by lawyers and economists. Every case is heard and adjudicated by any three panel members from the pool. At least one of these panel members is required to have legal training and experience. Otherwise panels are constituted taking into account the skills required to adjudicate the case. A major consideration underlying the decision to utilise an administrative tribunal as the decision-making body in competition law (as opposed to a civil court) was the ability to appoint economists to the adjudicative body.

At the apex of the system is the CAC, which hears appeals from the Tribunal. The CAC judges are drawn from the higher court regular judges and seat as a panel

of three to hear appeals and reviews. These judges are expected to evaluate extensive and complex economic evidence on the record. Because competition cases are few and far in-between, competition matters constitute a very small case load of these judges. Furthermore, with the exception of the court's Judge President, the rest of the other judges keep being changed with each case, giving the court very limited consistency and continuity.

5 The Incorporation of Economists and Economic Evidence in South Africa

In complex cases, the Commission constitutes a team during the investigation phase which includes internal economists. The economists will be part of the investigation and report writing, focusing on the economics in the case, including developing a theory of harm. After the referral of the case to the Tribunal, part of the pre-trial processes include the filing of expert reports by the Commission and the Respondents, and, if applicable, third party intervenors. Although there is a pre-hearing convened by the presiding member before the actual hearing, no narrowing of economic issues usually takes place before the actual hearing, and the parties usually have no limitations in presenting their evidence and challenging each other's evidence through supplementary expert reports and cross examination. Although the Commission can use its economists to present economic evidence before the Tribunal, it often appoints independent external economic experts to present the economic evidence, as do the respondents.

The South African system is widely held in high regard, and South Africa ranks higher than most developing countries, inclusive of BRICS, on competition regulation in many surveys.[42] Part of this is due to the independence and effectiveness of the institutions as well the presence of a highly competent bar. However, the single most important influencer of the South African due process relates to the rules of fairness that flow from both common law and the constitution.[43] The constitution is particularly important as it overrides any other law, including common law that is not consistent with it.[44]

There are however areas of concern or at least controversy with the South African system, namely delays in getting cases reaching finality, the costs, and the seemingly inability to reign in dominant firms. For its part, the CAC has complained about the lack of assistance from litigants, especially the experts, despite the overly long Tribunal hearings and record. It has been critical of the

[42] For example, see Global Competition Review, Rating Enforcement 2015, available at http://globalcompetitionreview.com/rating-enforcement, accessed on 06 January 2016.

[43] See Schwikkard P & Van der Merwe, *Principles of Evidence* (3rd Ed).

[44] Section 2 of the Constitution of the Republic of South Africa Act 108 of 1996 states that "[the] constitution is the supreme law of the Republic; law or conduct inconsistent with it is invalid. . ."

Tribunal's approach to hearings as lacking focus defeating the purpose of having a speciality Tribunal with inquisitorial powers. According to the CAC, the lack of control by the Tribunal leads to experts overreaching and giving opinions on areas beyond their competence and qualification.

5.1 Delays and Costs

Contested abuses of dominance cases in South Africa have taken between 8 and 10 years to get resolved. The main reason of the delays is excessive interlocutory applications. Parties can delay the hearings on the merits by raising issues around the scope the Commission's or Tribunal's powers, access to the record, etc. Many of these objections lead to appeals which add an extra ordinary amount of time to the process. Complicating matters further is that challenges as to legality of the authorities action can be litigated outside the competition court system, leading to forum shopping and a potential for conflicting judicial decisions.

The South African system of hearing evidence is potentially the most lucrative for counsel and experts in the world. This is because of the cat blanch they have in adducing and challenging evidence, courtesy of the failure of the pre-trial processes to narrow issues and the reluctance to control proceedings by the Tribunal. The South African Tribunal is also too liberal in allowing third party intervenors, often granting them rights to fully participate in mergers they object to. The practical effect is that almost every party and third party intervenor would have lawyers and experts at the Tribunal. Although there is sometimes a division of labour on the focus of interveners encouraged by the Tribunal, the effect of this is that the merging parties are often facing a number of objectors against it. This tilts the balance of proceedings in favour of parties who have little interest in the merger other than preventing the creation of a more powerful competitor. What is surprising is the preference of the Tribunal to hear from these objectors with vested interest over the Commission during hearings, often limiting the Commission's participation.

5.2 Reigning in Dominant Firms

South Africa has a highly concentrated economy, with very high barriers to entry. This is because sanctions during apartheid prevented South African firms from growing globally, and instead grew internally through concentration and diversification. These firms and their remnants continue to dominate the South African economy. There is also a legacy of former state owned monopolies, which were privatized without being broken up, thereby creating private monopolies who

control key inputs required by firms operating downstream.[45] The South African system has not managed to develop in a way that addresses these problems. In the Sasol case,[46] for an example, the CAC concluded that the fact that the firm accused of dominating the market acquired its position through state largesse, and not through risk taking and innovation, is irrelevant for assessing excessive pricing. There is also an unresolved policy approach to price discrimination and excessive pricing, while some of the dominance violations do not attract fines for first time offenders. The result is that, even though effects from abuse of dominance can be observed, competition enforcement often cannot reign in unilateral conduct.

5.3 Overreaching

In its ruling in *South African Airways and Comair*,[47] the CAC remarked that some of the evidence adduced by economic experts in proceedings before the Tribunal is overreaching and irrelevant. The court warned against experts providing the Tribunal with the benefit of their views on legal issues and the proper interpretation of the wording of the Competition Act which, in the court's view, should be undertaken by the Tribunal and the CAC. The court further noted that the admission of such evidence by the Tribunal, coupled with lack of definition of issues in dispute, leads to lengthy and costly proceedings and voluminous records that make it even more difficult to read than is usually the case to conduct appellate proceedings.

In order to address these concerns, the CAC proposes that the 'hot tub' method of hearing economic expert evidence be used in proceedings before the Tribunal. This approach has its origins in the Australian Competition Tribunal[48] and involves the following process: economists first submit written reports and then submitted their final views after the oral evidence of non-opinion/factual witnesses has been led. Thereafter there is an oral debate where economists present their evidence and comment on the views of other economists' views, and the 'seminar' concludes with questions from Counsel and/or the Tribunal. This approach also allows experts to meet and determine issues of common cause between them and disputed issues. Once issues have been narrowed down, proceedings before the Tribunal can be confined to that which is in dispute.

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[45] Ten years of enforcement by South African Competition authorities: Unleashing Rivalry (1999–2009).

[46] *South African Airways (Pty) Ltd vs. Comair Ltd and Another* 2012 (1) SA 20 (CAC).

[47] *South African Airways (Pty) Ltd vs. Comair Ltd and Another* 2012 (1) SA 20 (CAC).

[48] Veljanovski (2009) states that the technique was further developed by Lockhart J and then via him introduced to the Federal Court by amendment to its rules in 1998 (Federal Court Rules, Order 34A, rule 3(2)).

In the recent excessive pricing case[49] against Sasol Chemical Industries Limited ("Sasol") (the "SCI case") the CAC reiterated its concern about economic experts commenting on non-economic issues. The CAC decried the over-reach of economic experts in competition proceedings (both at the Tribunal and CAC), urging the Tribunal to ensure that such experts are only limited to providing evidence exclusively on economic issues. The court also warned that an expert in a defined area is not necessarily an expert in another defined area and emphasized that points of legal interpretation should be left to the Tribunal, the CAC and 'extremely qualified lawyers' who represent the parties.

This approach can be contrasted with the approach other courts have taken in competition law matters. The *Bookmakers' Afternoon Greyhound Services* case in England and Wales is instructive in this regard:

> Some of the matters discussed by the economists, in particular by Dr Niels and Dr Bishop, went beyond the normal scope of expert evidence, as I understand it. Those two witnesses did not confine themselves to matters of micro economics on which they could give admissible opinion evidence for the assistance of the court. They also summarised their understanding of the legal principles which fell to be applied and then offered their conclusions as to the result of applying those legal principles to this case. . .Whilst I found their reports helpful to me when I came to consider the legal principles and their application in this case, the fact remains that such topics are not matters for expert evidence but, if anything, they are submissions as to what the law is and how it ought to be applied.
>
> In the course of the trial, I did seek assistance from the parties as to which parts of the evidence were truly admissible expert evidence on matters of micro economics and which went beyond the proper bounds of expert evidence. None of the parties attempted to distinguish between what was admissible and what was not. The parties dealt with the evidence which could be relied upon by the court. Nonetheless, in considering my judgment I have attempted to distinguish in my own mind between what is evidence (where my decision must be whether I do or do not accept that evidence) and what are contentions as to the law (which I can consider as submissions and which I may or may not find helpful).[50]

The difficulty confronting the courts in South Africa is that they emanate from a tradition where experts are strictly confined to providing an expert opinion on a narrow area of their expertise. In competition law the nexus between competition law and economics makes it difficult to always have a clear delineation between the two. The practitioners also develop experience and expertise in both areas and need this multi-disciplinary in approach to be successful. For instance, while defining markets may be an issue of economics, one has to apply rules of evidence to determine admissibility and weight of evidence required to define markets. So economists might as well opine on why certain evidence has to be kept outside in

[49] *Sasol Chemical Industries Limited vs. Competition Commission* (131/CAC/Jun14). This case was in relation to allegations that Sasol Chemical Industries contravened section 8(a) of the Competition Act by charging excessive prices for propylene and polypropylene to its local customers in line with import parity pricing. See Commission press release, 12 August 2010 Commission refers and settles collusion case in the polymers market. Available at http://www.compcom.co.za/wp-content/uploads/2014/09/Safripol-media-release.pdf

[50] *Bookmakers' Afternoon Greyhound Services and others vs. Amalgamated Racing Ltd and others* [2008] EWHC 1978 (Ch); [2009] UKCLR 547, ChD.

order to define the market properly. A pragmatic approach is for the courts to recognize the interdisciplinary nature of this area and weave economic opinions and legal submission in a manner similar to the approach in *Bookmarkers*.

5.4 Impartiality of Economic Experts

In the SCI case, the CAC also called into question the Commission's practice of using its internal staff as expert witnesses in proceedings before the Tribunal.[51] In support of this criticism, the CAC quoted Lord Woolf in his Interim Access to Justice Report (Interim Report to the Lord Chancellor on the Civil Justice System) in England and in Wales (1995) where he had this to say about expert evidence:

> Most of the problems with expert evidence arise because the expert is initially recruited as part of the team which investigates and advances a party's contentions and then has to change roles and seek to provide the independent expert evidence which the court is entitled to expect. As Lord Wilberforce in The Ikarian Reefer (1993) 2 Lloyds Reports 68) stated: It is necessary that expert evidence presented to the court should be and should be seen to be the independent product of the expert uninfluenced as to form or content by the exigencies of litigation. "In many cases the expert, instead of playing the role identified by Lord Wilberforce has become . . . a very effective weapon in the party's arsenal of tactics.[52]

The court again in addressing this matter misses the context and evolution of competition cases, and goes against the grain. In modern litigation, experts are at the service of their clients, and get paid to advocate their case. In the *Walmart*[53] merger in South Africa the court directed the experts of the opposing sides to make joint submissions on some specific areas identified by the court, complaining that it did not have sufficient evidence to decide the case. Instead, the experts submitted two mutually destructive reports, both strongly argued but failing to assist the court on the true effects of the merger. A recommended approach is to recognise this fact, and if the court really needs an impartial mind, it must appoint its own expert.

One trusts that the court's approach does not get interpreted to mean that the Commission may not utilise its own economists for advice during the investigation and decisions as well as expert witnesses. That would impose unimaginable costs to the Commission. In any event, one can't treat the Commission's internal expert the same as a private litigant's expert. The Commission is a public body that litigates in the public interest. The criticism also ignores the fact that the appointment of external economic experts does not offer sufficient guarantees of impartiality. As

[51] In this case, the Commission used its former Chief Economist as its economic expert.

[52] The CAC also refers to the following in support of this argument: *Impala vs. Commission* [2006] ECR II; Eric Barbier De La Serre, Anne-Lise Sibony, 'Expert evidence before the EC courts' (2008) 45 Common Market Law Review, Issue 4, pp. 941–985; D.T. Zeffertt and A.P. Paizes, The South African Law of Evidence (2nd ed.) (Butterworths, 2009).

[53] *The Minister of Economic Development & Others vs. The Competition Tribunal & Others* (101/CAC/Jun11).

Posner (1999) argues, "*expert witnesses paid by the respective parties [independent experts] are bound to be partisans ("hired guns") rather than being disinterested, and hence presumptively truthful, or at least honest, witnesses*." Posner (1999) also provides three compelling reasons why the concern with partisan economic evidence should not be of so great a concern.

First, the author notes that expert economic witnesses, unlike other non-expert witnesses, are generally repeat witnesses in competition proceedings and therefore reputation effects, insofar as it relates to honesty and competence, are an important consideration for them. As such, although the incentive to be sympathetic to their client or competition authority's case (driven by the hope to be re-hired in the future) may exist, the reputational risk is expected to provide a relatively strong countervailing force that will discipline the behaviour of the economic witnesses. Second, Posner (1999) argues that an expert witness that has a record of academic publication is more likely to be "kept honest" by the fact that any repudiation of their academic work in order to advance biased economic evidence is unlikely to withstand scrutiny under cross examination. Third, expert evidence is required to meet the methodological standards in the expert's field in order to be admissible. This, according to Posner (1999), makes it easier for decision-makers to review whether the economic evidence before them meets the expected standard and can thus be considered as part of the body of evidence in that particular case.

6 Conclusion

The CAC has now issued the following guidelines for experts who present economic evidence before the Tribunal[54]:

- Expert evidence presented to the Court should be, and should be seen to be, the independent product of the expert uninfluenced as to form or content by the exigencies of litigation.
- An expert witness should provide independent assistance to the court by way of objective unbiased opinion in relation to matters within his expertise.
- An expert witness should state the facts or assumption upon which his opinion is based. He should not omit to consider material facts which could detract from his concluded opinion.
- An expert witness should make it clear when a particular quotation or issue falls outside his expertise.
- If an expert's opinion is not properly researched because he considers that insufficient data is available, then this must be stated with an indication that the opinion is no more than a provisional one.

[54] *Sasol Chemical Industries Limited vs. Competition Commission* (131/CAC/Jun14), par. 181.

While these guidelines reflect the state of the law in South Africa today, they may not address the rapidly growing and dynamic area of competition enforcement. While one should be careful not to disregard them, it is submitted that a plausible approach is for the courts to allow the evolution of this interdisciplinary area with some flexibility, only intervening in areas where there is abuse of process, clear prejudice to the other litigant or compromises adjudication. We ought not to apply archaic rules in the modern world blindly. This approach also needs courts to defer more to the lower bodies and not be too quick to intervene. This approach is more consistent with Kovacic and Shapiro's (2000) approach that recognizes the consciously evolutionary nature of the law, so that the courts can adjust doctrine in light of experience and new learning.

Courts should not ignore calls from the likes of Veljanovski's (2009) to allow economists play a more meaningful role in court proceedings by being permitted to offer an interpretation of the relevant law. Judges would then decide whether or not to accept such interpretation. This approach is particularly important in young jurisdictions such as South Africa where jurisprudence is still at a developmental stage. The approach may also assist decision makers and judges to reach economically coherent decisions.

Practically, the importance of economics to competition matters necessitates a multi-pronged response by all stakeholders; institutional response in terms of which competition authorities need to build internal economic capacity in order to provide economic advice for case and policy developments. Competition authorities must develop expertise to perform economic analysis and present expert economic testimony in court proceedings.

This implies that successful competition law enforcement also requires an adequate infrastructure framework. Judges trained in economic analysis or with an appreciation of the economic aspects of the law are an essential component to the framework. As such, it is important that assistance, whether in the form of formal or informal training in economic analysis and, more broadly, training in methods for managing expert witnesses and economic evidence, is provided to judges who deal with competition law cases.

Furthermore, university-based academics are also an important component of the infrastructure framework referred to above. It is irrefutable that academics focused on research, scholarship, and teaching antitrust law and economics can serve a number of important functions that can promote the "culture of competition", especially in developing jurisdictions such as South Africa. Academics trained in industrial organisation can provide the human capital necessary for competition authorities.

In conclusion, it is encouraging South African authorities fully embrace economic evidence, even though there may be some differences of approach. What is required is for the judiciary to be more deliberate in creating precedent and allow for an orderly evolution. It is also important for the Commission to enhance its economic expertise, and the Tribunal to control its proceedings more efficiently.

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Economic Analysis in Antitrust: The Case of Brazil

Eduardo Pontual Ribeiro

Abstract We review the Brazilian experience on the use of economic analysis in antitrust practice. Economic theory provides a sound foundation for working with Constitutional principles that back Antitrust law. This allows economic theory and analysis to play a central role in interpreting evidence in cases. Merger analysis extensively uses economic arguments for rulings in Brazil, with practice following closely international guidelines and standards. Economic analysis is also widely used in abuse of dominance/ monopolization (conduct) cases, but its scope is often limited by *per se* interpretations. We argue that this state of affairs is influenced by a perception of few robust economic results on agreements or collective dominance/ monopolization; more explicit law statements on conduct than in merger analysis; higher risk of judicial challenge of decisions (compared to mergers) and relatively limited expertise. Particularly in a developing country, echoing previous authors, economic analysis can achieve a more prominent role if it is able to provide guidelines for investigation and differentiation between pro-competitive and anti-competitive effects of business practices.

Keywords Economic analysis • Brazil • Mergers • Monopolization

1 Introduction

Developing countries, including Brazil, are relatively young at enforcing competition law. The Brazilian antitrust law (Law 8884/2011) appeared in 1994 in its market oriented, merger control and abuse of dominance (European Union term) / monopolization (US term) / conduct (Brazilian term) analysis form. It places

This chapter draws from the experience as former Deputy Chief Economist, Chief Economist and Commissioner at CADE/Brazil. The opinions stated do not represent the official view of CADE and UFRJ.

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competition analysis under administrative law enforcement praxis. Twenty years since its inception there has been already a law change to align competition law enforcement structure and principles to argued best practices, such as pre-notification, improving its effectiveness (Law 12529/2011). Over that period, economic analysis gained a more relevant role. It became central to the interpretation of the Competition Law statements and increased its dialogue with legal aspects. This chapter aims to discuss the current state of economic analysis in antitrust in Brazil from the two main antitrust areas perspectives: merger control and conduct enforcement. We document and argue for reasons behind the markedly different role and influence of economic analysis in these antitrust activities.

A differing role and practice of economic analysis in conduct and merger cases may come as a surprise, at first. Economic analysis is central to antitrust. Economics provide social fundamentals, as well as an analytical framework for antitrust policy. Developing countries are no different in the principles for analysis but may differ in the stages of market development and some dimensions of analysis, such as the role of other objectives (e.g., employment levels in South Africa; see Bonakele (2014)). Nevertheless economic analysis is central at the very least because competition law rulings deal with economic agents and decisions and acts.

Merger case rulings are explicitly founded on economic analysis. In 2001 the competition law enforcement structure in Brazil (SBDC, using the Brazilian acronym) published a "Horizontal Guide" for merger analysis, under the name of "Economic Analysis Guide to Horizontal Mergers" (SEAE/SDE 2001).

Economic practice evolved over time in some key elements: the use of econometrics for market definition; simultaneous instead of a sequential analysis of entry and rivalry; market experience based analysis for differentiated products (brand role, consumer substitution patterns); simulation of detection-punishment analysis on coordinated effects; minority shareholdings effects analysis. Non economist practitioners regard economic reasoning and arguments as essential and use it in their analysis of merger case. In this sense, economic analysis has been a success story.

On the contrary, economic analysis of anticompetitive business agreements and abusive practices is still in an earlier development phase. While, in principle, economic analysis of practices such as RPM, exclusivity and foreclosure would be required to the mandated rule of reason perspective evaluation of the case, this is less common. Often, plaintiffs single hand the burden of proving efficiencies. In cartel cases, given the view that economic evidence is believed to create indicia only, but not actual proof, hard evidence is required for conviction. In individual firm conduct cases analysis is often per se, that is, the main pillar for conviction is proving the actual existence of the conduct. This seems to be the case in India as well (Gouri 2015).

Compared to other developing countries the Brazilian experience may differ, but is nevertheless relevant. The Brazilian experience may be distinct in the sense that the privatization and market liberalization process of the 1990s and early 2000s did provide the dismantling of state enterprise monopolies and price controls of specific products, but for a few basic industries, such as oil refining. Privatization often

included breaking up conglomerates and opening markets for competition. Earlier discussions of competition policy and regulatory challenges and privatization (as in Cowie and Mattos 1999 and Oliveira and Fujiwara 2005, e.g.) take second place currently. The surge in the services and retail sectors in the economy (see, e.g., Baer 2008) reinforces this trend. In general, these sectors are less concentrated and least subjected to former state control or lacked a superdominant state enterprise. Together with the work of regulatory agencies particularly in telecommunications and health care, these developments diluted the likelihood of abusive practices complaints of former state enterprises and monopolies.

The next section of the chapter explores the Brazilian experience in using economic analysis for merger control. We provide an interpretation of the Brazilian experience documented over time in reports by OECD (2014, 2015) and others. The following section turns to the role of economic methods in contributing to decision making in conduct cases (cartels and practices). The last section summarizes the main points and provides concluding comments.

2 Merger Cases

Economic analysis plays the lead role in competition law merger cases. The nature of antitrust policy in market structure control is of a prospective nature, where economic theory provides sound, or agreed upon as written in a law, predictions of the effects of concentration on economic outcomes. In other words, given that the Competition law provides the link between structure, competition levels and loss of competition for antitrust policy to act, economic theory arguments are used to generate proofs in administrative cases. Cristofaro (2015), a leading competition lawyer, in its legal review of Brazilian antitrust decisions quite clearly states that

> It is also not possible to compare positive and negative effects of a merger without knowledge of economics. (p. 378)

Brazilian law states that a merger can be blocked as an administrative ruling if it leads to a 'significant loss of competition in the relevant market', or if it induces the 'creation or enhancement of a dominant position' or generates 'dominance of a relevant market' (Law 12529/2011, art. 88 §5). The same Act declares that a dominant position is presumed when a firm or a group of firms 'is able to alter market conditions unilaterally or coordinately' or when it controls 20 % or more of a relevant market (with possible higher thresholds under experience by CADE).[1]

This can be argued as a significant change from the previous law (8884/1994) that stated that a merger could be blocked if it reduced competition in the relevant market or generated market dominance. The previous law associated market dominance to a fixed 20 % threshold even if firms with this market share level were not

[1] Author's free translation of the legal code.

able to impose market prices. The 1994 law, contrary to the 2011 law, did not explain what a significant reduction in competition meant. That generated significant legal arguments, to the point that some experts arguing on the arbitrariness of a 'significant' reduction in competition (Cowie and Mattos 1999). While the level of 'significant' reduction is still bitterly debated by experts, the new law objectively pointed to an empirical, non-market share, evaluation of dominance, namely, that a firm is able to alter market conditions.

Under the previous law, but also under the new Competition legal code, economic analysis came to the rescue. The relationship between structure and loss of competition is mediated by the possibility (necessary) and likelihood (sufficient) condition that allows and induce firms to exploit merger created dominance. While market dominance may be a precondition to a significant reduction in competition, as measured objectively by holding a market share above the 20 % threshold (according to a strict interpretation of the competition code) whether a merger would actually imply such significant reduction is not immediate. Since 2001, the Horizontal Guide to Economic Analysis of Merger Cases provides the evidence-proof link to evaluate likelihood of actual merger dominance effects.

The Brazilian Horizontal Guide was much influenced by the 1992 US Horizontal Guidelines. The Brazilian guide recommends the hypothetical monopolist methodology for relevant market definition. It recommends the use of market shares to measure dominance and the possibility of a significant loss of competition following a merger. It uses a *sequential* analysis insofar that if entry if deemed sufficient, likely and timely, no rivalry analysis is required. Coordinated effects methods are considered for homogeneous markets only, with reliance on historical cartelization arguments. The Guide also defines a number of concepts such as economies of scale and sales opportunities.

Over the years, antitrust practice evolved significantly in a number of dimensions. First, merger analysis currently does not strictly follow the sequential analysis of entry and rivalry. Most cases now provide a collection of both entry and rivalry evidence to access the likelihood of anticompetitive (both unilateral or coordinated) effects (Pires-Alves & Leandro, 2014).

Actual implementation of the SSNIP test uses critical loss analysis for geographical delimitation of basic input (homogeneous goods) markets, such as plastics inputs (PVC, PP, etc…). For example, in a recent Braskem-Solvay merger (DEE 2014), a central issue was whether a domestic market would be an appropriate geographical market definition. Given the inherent limitation of price correlation analysis (even in a cointegration analysis context), see, e.g., Davis and Garcés (2009), the authority chose to estimate a residual demand elasticity for the domestic producers and compare it to a critical elasticity. The results pointed overwhelmingly to a domestic market where local producers were shielded from international competition due to trade restrictions (tariffs, transportation costs and antidumping measures). Additional empirical evidence, combining simple descriptive graphical analysis of domestic and international prices and econometric evidence contributed significantly to give credence to the domestic market hypothesis. Further case

analysis showed that the two-to-monopoly case would not be impaired by foreign competition and the merger was blocked (see also OECD 2015).[2]

Entry analysis relied heavily on simple comparisons between market growth and entrant minimum scale comparisons (with data obtained directly from market inquires) to gauge entry likelihood and on pitting incumbent capacity constraints against market growth to check for entry sufficiency. Currently, where appropriate an actual analysis of entry history and performance of entrants is mostly often used to check for entry effectiveness. This may make a significant difference. For example, in the long distance telephone service there are over twenty operators, some of them very young, suggesting entry is likely and timely. Yet, in any local market the same four operators hold nearly 95 % of the market since 2007 (Teleco data) with no actual competitive effect from entrants. In other words, the method described in the Horizontal Guide for entry analysis lends itself to homogeneous products, but was impractical and/or not reasonable for services (where capacity is not a strategic variable or not well defined) or differentiated products. Thus, more recently market share history, particularly of entrants, have been extensively used, e.g. in pharmaceutical cases.

Rivalry analysis has evolved also. Earlier evidence relied on concentration ratios, idle capacity and direct competitors interviews about market rivalry. More recent studies have used more data intensive methods, such as econometric evidence, the analysis of diversion ratios, event studies (e.g. Gomes and Ribeiro 2015) as well a historical perspective of market share changes. DEE (2014) provides an interesting example. Unscheduled production stop events were used to infer closeness of substitution between producers, following the well-known Ineos-Kerling case at DG-COMP.

An explicit treatment of differentiated goods markets with specific market evidence also surfaced. Market evaluation of brand role, consumer switching and diversion ratio are currently used, influenced by the 2004 European and the 2010 US Guidelines. These were central to the Sadia-Perdigão merger, the two larger processed meat producers in the country.

New merger case topics with intense economic analysis include minority shareholdings and coordinated effects. The CSN-Usiminas case (see e.g., Pereira Neto et al. 2015) dealt with a hostile, market float acquisition of about 17 % of shares of Usiminas by CSN, its main competitor in the flat steel market (the firms together held about 75 % market share). An earlier injunction by CADE suspended all CSN voting rights at Usiminas. In the final decision the suspension of voting rights was deemed insufficient and actual evidence, from detailed econometric analysis of coordinated effects in a detection-punishment framework, led to the decision of a divestiture of an undisclosed amount of shares to reduce the CSN stake at Usiminas.

[2] Even in cases where prices and margins are not used to delimit relevant market, data intensive methods have been used, e.g., to delimit catchment areas in Higher Education Institutions, with data sets of hundreds of thousand consumers (Teodorovicz et al. 2014).

Very large cases (where market data is available) use econometrics extensively either to help market definition, calculate UPP/GUPPI indicators, carry out merger simulation and suggest the effect of efficiencies, as well as estimating residual demand and considering coordinated effects tacit collusion incentives through simulation. The Sadia Perdigão merger (08012.004423/2009-18) can be seen as a landmark in its broad use of econometric evidence. It included an impressive 18 studies from the merger parties' experts, as well as views from challengers (Mr. Oetker). It was the first case to see the use of UPP/GUPPI price increase indicators over 2010–2011. It included about fifteen relevant markets of processed food (frozen pizza, hamburgers, sausages, ham and others). Most product markets were delimited using demand estimation and critical loss analysis. See OECD (2014) and OECD (2015).

A central issue that influenced the use of economic analysis on merger cases was the role of such empirical evidence on fact building. Similar to the description of a successful antitrust empirical analysis in Kwoka (2013), often (and certainly in the above Sadia/Perdigão merger) high level econometrics was accompanied by simple graphs. For example, the conclusion that one of the merging parties faced closer competition from the other merging party and little rivalry from other competitors came from simultaneous evidence. UPP and diversion ratios did lead to that conclusion. But in addition (or mainly), simple market share time series graphs suggested that the market shares of the parties involved in the merger were not significantly affected by market share gains of other competitors or even entrants. Merging parties also used different brands to posit themselves in the market (using so called "combat" brands). Last but not least Critical Loss analysis results for market definition were compared to (often conflicting) information from market competitors.

The reliance on economic analysis provides an advantage when dealing more modern economy/technology cases, i.e., cases that deal with network effects, platforms (including credit cards) and two-sided markets (e.g. Experian/Serasa—SPC credit bureau case).

The sheer number of studies presented by merging parties in many cases as well as those conducted by the authority led to the publication of guidelines for the presentation of expert opinions with particular emphasis on empirical studies in May 2012 (CADE 2012). The Guidelines advises on expert opinion information required when filing such a report focusing on clarity, objectivity and transparency.

In short, economic analysis in merger cases evolved significantly since the inception the antitrust law in 1994. It would be safe to claim that the empirical techniques reviewed in ICN (2013) are common practice either to the agency as well as to practitioners. While it does not mean that the techniques are used in every case, they have been used extensively in large cases, where data availability is more likely. Such use of empirical analysis (formal, econometric, or informal, descriptive) is now commonplace and not surprising to merging parties.

A final comment on merger analysis may provide relevant for conduct case analysis. Efficiencies are stated in the older and new competition Acts as reason to clear a merger that generates a significant reduction in competition. Nevertheless,

from a review of past merger cases, those mergers with a significant market concentration that end up cleared are almost always approved due to the absence of a significant reduction in competition, not because of efficiencies. Efficiencies are seldom evaluated and when they are, they are rarely if ever considered. In general, parties cannot prove, in the authority view, that the presented efficiencies are merger specific, that they are certain and that they will be passed on to prices. There are no guidelines by the authority or case history to measure them appropriately. There is clearly room for improvement in the measurement and discussion of merger specific efficiencies.

3 Abuse of Dominance, Monopolization and Cartel Cases

Economic analysis should also be central in abuse of dominance, monopolization and cartel cases. Economic theory provides guidance on the possibility that a given business practice generates net welfare losses. Economics also allows one to conclude on which circumstances such welfare losses are likely. These net welfare losses are translated by the existing legal text providing, in principle, a generally operational competition law on conducts.

Put in other way, economic theory is a sound basis for evaluating the actual positive and negative competitive effects of many business practices. Economic theory provides guidance on the welfare effects, either in a neoclassical welfare sense (producer and consumer surplus) or in any other welfare function dictated by institutions in the country (e.g., innovation). The legal text provides support for state action against these practices, based on Constitutional principles on which state action is allowed on market economies, in a legal balancing of constitutional principles of free enterprise and private property and general wellbeing and fundamental rights protection.

Yet, there is a belief, gathered from reviewing abusive practices cases ruled on by CADE, that economic analysis plays a secondary role in such cases, in contrast to merger cases. Markedly so in horizontal agreement (cartel) cases, i.e., the ‘parallelism plus’ doctrine, but also in abuse of dominance / monopolization cases. We explore this puzzle, with suggestions for other developing countries, starting with a description of the competition law policy on conducts in Brazil.

Brazilian law frames unlawful business practices under a significant reduction of competition violation. Competition and free enterprise are Constitutional collective rights. In detail, it forbids business practices (art. 36) that aim to (i) limit or reduce free enterprise and market competition; (ii) increases profits arbitrarily; and (iii) creates or abuses on a dominant position in a relevant market. As in other jurisdictions, deliberate intent (in legal terms) or proof of actual negative economic effects is not required for administrative conviction (art. 36).[3]

[3] But these may be relevant when deciding on fines totals (art. 45).

The 12.529 Law goes on to provide a long nineteen item list of business practices that can generate such events listed above. They range from naked cartel ("agree on or manipulate prices or quantities in agreement with a competitor") to "promotion of uniform business practices across competitors", resale price fixing, "below cost pricing", tying and others.[4] We call into attention that the antitrust law does mention that the unlawfulness of such practices is proven when a business practice has the actual potential to reduce competition or create or abuse on a dominant position. But the wording is such that the legal code provides a direct link between business practice and competitive harm, i.e., it suggests that proving a business practice suffices to declare it unlawful given the law stated consequences of the business practice.

This suggests a *rule of reason* analysis (using code law language). The law points to the unlawfulness characterization of any of the above practices, when it allows one to abuse its dominant position. One could argue that this is the closest the code comes to provide a filter for conviction, namely, that a dominant position is pre-requisite for conduct evaluation. But the law itself does not objectively state safe harbors.

A clear exception to a rule of reason analysis is a cartel, or an agreement between horizontal competitors not to compete. No efficiencies are perceived following the economic literature (e.g., Motta 2004). In addition, following a rational analysis that it would not be advantageous for firms to collude if there were no benefits from it, and that firms collude so to obtain a dominant position in a market, then no characterization of a dominant position is required and actual proof of the agreement suffices for conviction. This is seen as a *per se* violation (Botelho and Santos 2015, e.g.). Market dominance would be seen as a fine leverage factor, not required for conviction itself.

The wording of the law and its implied abusive practice case analysis is in sharp contrast to merger analysis. In mergers, the characterization of a significant reduction in competition and abuse of a dominant position from a merger does not follow just by proving dominance. As seen in the previous section, merger analysis is keen to show that there are specific market conditions (entry/rivalry) as well legal code explicitly stated possible merger efficiencies that render a possible *use* of dominant position unlikely. No such wording is present in abusive practices unlawfulness evaluation. An anticompetitive conduct deals with the *abuse* of a dominant position to a firm's benefit, not just the use of a dominant position. It is certainly hard to make this distinction. Despite this difficulty, and given the legal requirements for decision making, Botelho and Santos (2015) highlight this point, concluding that there should be "material rules" for decision making on conducts in the Law. These "rules" would provide the ability to distinguish between the use and abuse of a dominant position.

[4] Law 12529/2011, the 'new' antitrust law has a marked difference from Law 8884/1994, namely, 'excessive prices' is not listed explicitly as a anticompetitive practice.

Inevitably, abusive conduct cases often bring a markedly different interpretation of the law between accusers and defendants. If a firm has a dominant position, prosecutors or accusers will often believe that the law is clear in its wording: a business practice listed in the law by a dominant firm is abusive, hence unlawful. The defense almost always argues that a dominant position may create the possibility of an abuse of such position. But the dominant position in itself would not generate a clear likelihood of negative effects. Intent should be required for conviction and the argument would say that, unless proven otherwise, normal business acts are not a hell bent strategy to obliterate competition. On the contrary such practice is indistinguishable from legal pursuit of profits (free enterprise). Again, the issue becomes marred on the legal aspects of *abuse*.

Even if one is challenged by the distinction between use and abuse of a dominant position when evaluating business conducts, economic theory still retains its prominent role in analysis. Actually, economic theory grounds the interpretation of an abusive practice by a dominant firm as a conduct that reduces economic welfare. It provides an escape from the *use*/*abuse* mire. Welfare reduction can be linked to the (Brazilian) Constitutional principle of economic order and the benefits of free enterprise, providing a valid interpretation of Competition Law. Economics allows one to move away from adjectives and work with substantives.

A net welfare analysis of conducts highlights that there may be positive and negative effects of a given conduct, opening the debate on efficiencies associated with business practices. Such efficiencies are not farfetched. In general, economic models suggest that business practices are implemented with both sides agreeing on the matter (e.g., Motta 2004). In other words, a logical analysis is keen to point out that firms propose and accept exclusive contracts, resale price maintenance agreements, most favorable nation clauses only if beneficial to both firms, with respect to an arm's length, linear price, market relationship. This common incentive benefit compatibility points that societal gains are possible with such conducts.

It is the possibility that many types of antitrust law listed business practices do generate welfare gains that recommend, as mentioned, the legal approach of "rule-of-reason": a weighting of competition reduction and welfare gains from the business practice.[5] This has been the practice in Brazil (see examples of cases below and, e.g. Gonçalves 2015 or Botelho and Santos 2015). Again, economics provides a guide for competition law policy and practice.

This weighting of competition reduction and welfare gains is certainly no easy task, particularly for a staff with general training on an antitrust agency. To make matters more difficult for decision making, models for the same phenomena but with different assumptions may generate non-unique predictions. From outside the economic profession, this conditional analysis, based on simplifying assumptions that are natural to modelling, are seen to generate more 'uncertainty' than

[5] Even though theory is keen to show that this bilateral surplus creation may come at the cost of third parties. See Motta (2004) and the discussion of exclusive dealing, e.g.

'certainty' in conduct cases that in merger cases.[6] The non-robustness of model conclusions may hinder translating indicia into proofs. In a legal perspective, proof in a case may be seen as a logical, unique, conclusion based on facts (e.g., Baker and Bresnahan 2008; Geradin and Pereira-Neto 2012). Non-robustness is an easy defensive claim to shield from conviction, maybe exasperating prosecutors. The promise of economic analysis to act as a beacon in conduct cases is fogged by a perceived 'anything goes' conflicting direction results. As an unintended consequence, the authority may shy away from a thorough economic analysis and restrict itself to legal principles of proof of conduct and intent as analytical framework.

From the point of view of prosecutors/accusers, to make matters worse, in a rule of reason approach, it may appear that an evaluation of the actual effects of the conduct are *required* for conviction. In non-technical terms, to be beyond reasonable doubt that such a conduct is anticompetitive. While proof of business acts are de minimis in abusive practices cases, proving economic effects can be notoriously hard. There are many reasons to that: difficulties in dating events, absence of market data systematically collected by plaintiffs or third parties, with little incentives to disclosure and an often weak identifying method based the available economic theory. This last point is highlighted by e.g., Polo (2010).

Such a feeble light, and the contrast of a brighter, clearer glare from legal proof of conduct in strict terms and its associated stated unlawfulness in competition Law (at least in Brazil), this may be one of the reasons authorities thus turn to *per object* decisions,[7] again, grounded on economic theory or legal arguments. Geradin and Pereira-Neto (2012) argue that 'low standards of proof' are used.

As mentioned, potentially unlawful business conducts are written in the Competition law. There is the interpretation that is discards the likelihood that positive net welfare effects arise from such business practice under firm dominance. The *per se/per object* argument is quite strong for convictions as there is a sharp shift in the null hypothesis of the authority: such practice is anticompetitive, as stated in law, unless there is overwhelming evidence on the contrary.[8] When there is the perception that economic theory cannot uniquely sign the welfare effect of such practice, it is viewed as insufficient to overturn cases, once conduct is proven.

Last, but not least, there may be an additional reason for an antitrust Authority (and parties legal counselors) practice of lessening the role of economic analysis in noncartel abusive practices cases: judiciary review. In Brazil, as in other

[6] This has been argued by some commentators as a reason to the rise and fall of merger simulation (or suggestions for a less exaggerated role), as in OECD (2011).

[7] Per object convictions are seen as a conviction where the conduct itself is proven and a weighting on possible positive and negative benefits ex-ante points to net negative effects. Actual proof of the negative effect would not be required for conviction as mentioned above. This differs from per se conviction in Brazilian law where the conduct in the latter case would not have possible positive benefits to begin with. I thank Carolina Saito and Ricardo Botelho for clarifying on this issue, but the final interpretation is my own.

[8] Comissioner Verissimo first used the null hypothesis illustration in the SKF case (Gonçalves 2015).

jurisdictions, administrative decisions can be challenged in courts. In case of monopolization and abuse of dominance case, CADE's decision may be nulled not on merit, but on procedural grounds. In case of cartels, plaintiffs may seek both to overturn conviction with a plea to post evaluation of sentence contradictions and on procedural grounds. Judiciary review of antitrust decisions is ruled by judges from non-specialized Federal Courts. The same judge may handle civil, criminal and administrative cases. Federal courts judge over criminal cartel cases and over the review of administrative (Antitrust authority) decisions on cartels.

While merger cases clearly require a solid economics background to begin with, and are decided on economic inference of future effects, abusive practices and cartels proofs are based on past facts. In addition, cartels and abusive practices are presented in Antitrust law in Brazil under the same article. This creates a sharp contrast between merger and abusive practices judiciary review, as well as an allegedly similarity between cartels and abusive practices. The judiciary, given this perspective, believes in a larger role of actually evaluating the competitive harm proposed in a case by the antitrust agency in its administrative decision. In jurisdictions where judges do not receive training nor there are specialized competition courts, judges may feel more comfortable in interpreting the administrative law in cartel using the same standards and decision making tools as in a crime, but also in abuse of dominance / monopolization cases. Skillful plaintiff lawyers would induce the same reasoning form judges, as it elevates the standards of proofs to conviction, introducing arguments of intent and negative economic effect measurement.

As mentioned before, competition law wording states that dominant firm mergers may be approves unless there is a significant lessening of competition and no efficiencies are present to compensate it. This is a clear technical economic analysis requirement for mergers, not present in conduct cases. In a risk assessment, the authority would give much effort to following due legal process and focusing on proving conducts with little emphasis on the possibility that efficiencies may be significant. The more emphasis on a subtle balance of anticompetitive or pro-competitive effects of the same business practice, the more judges may feel compelled to raise standards of proof for conviction.

Developing countries, with a shortage of skilled human resources and short histories with complex market economies are more prone to the above imbalance that developed countries. A simple argument to defend this view would be the historical development of antitrust practice in the US. Over a half a century, most analysis shifted from *per se* arguments to *rule of reason* based on modern economics (see e.g., Sokol 2014; an early opinion change is described in his own words in Stigler 1988). Developing countries would still need to muddle through this learning curve.

In order for economic analysis to play a more central role in conduct analysis an additional effort from economists is required. In order to aid both accusatory and defending parties, it must go beyond providing theoretical results or econometric testable hypotheses. It is of uttermost urgency that economist organize theoretical results in a guideline structure that both advices evidence gathering and allows one

to differentiate the likelihood of efficiencies with respect to welfare losses. This idea is not new and can be seen, e.g. in Polo (2010). Legal practitioners seek guidance on what evidence could point to certain conducts' likelihood of negative effects or point to positive effects, creating the sought after "material proof".

A recent non-quantitative example of this effort may be seen in complementary papers at Antitrust, the ABA publication discussing Most Favored Nation clauses. Salop and Scott-Morton (2013) and Smith (2013) go to great lengths to provide a feasible methodology that points to the relevant evidence on structures, practices and history of business practices that allows one to differentiate net pro-competitive MFN clauses from net anticompetitive, and thus, illegal, MFN practices.

Regarding the actual practice and convictions in the Brazilian experience, there are a few clear patterns over time and across cases. Readers could use Geradin and Pereira-Neto (2012), Castro (2014) or Botelho and Santos (2015) and Gonçalves (2015).

Early, "abusive price" cases were often brought to case, maybe echoing former price control experience.[9] But these cases were often dismissed for lack of evidence.[10] Cartel complaints were quite frequent but often based on price parallelism only. An impressive number of cases were dismissed on grounds of insufficient proofs. CADE (2014) surveyed cases from 1996 and 2013 and concluded that 130 cases out of 160 were dismissed in earlier stages. This changed when Public Prosecutors spread across the country started using court authorized wiretaps for criminal cases. Such evidence was latter sent to the antitrust authority and proved an essential body of proof for antitrust law conviction. All 15 convictions (of the actual 30 cases thoroughly investigated) were based on such evidence.

Currently, cartel cases are solidly grounded on material proof. CADE and antitrust authorities have been successful at obtaining dawn raids permissions from courts and have developed the skills to digest the massive documental material gathered in these raids. Together with a reputable leniency program (Martinez 2015) the number of cartel convictions has increased. Economic evidence provides a background for the material proof but is certainly not indispensable for conviction.

Earlier conduct cases (vertical agreements, resale price maintenance and others) were few and often dismissed under lack of evidence. A few reasons behind this state of affairs taking from interviews from officials. First, difficulties in gathering evidence from parties (search warrants are rare in these cases). Second, between firm disputes creating noise on the conduct measurement. Case handlers must

[9] When one lives under price controls for many years a general mistrust of market forces is the norm. Cartelists in wiretaps are often longing for the 'good old days' of regulated prices, where firms were more 'loyal' to each other and did not 'unfairly compete' using lower prices. More than once, a business union filed a suit at CADE against an associated firm that was not following 'industry price setting principles'. See a list of bizarre cartels in Basile and Marchesini (2014).

[10] Santacruz (1998) an economist and CADE Comissioner in the 1990s associated abusive price conduct as dried codfish head. There is no fish without a head, but one never sees a dried codfish with its head on in stores.

evaluate whether the case is a quarrel between firms or a clear exclusionary practice in antitrust sense. Third, most cases involved long debates and a search for analytical methodologies. This has improved, in the sense that some translation effort from theory to methodology has been made, but some commentators view that jurisprudence is erratic (Gonçalves 2015 and Botelho and Santos 2015, e.g.). Often these cases are ruled on simple majorities with more than three commissioners (out of seven) expressing their analytical views. Many of those cases took from 3 to 8 years (VU-M case) for a ruling.

Important issues have been tackled such as two sided markets (Visanet and Clube dos 13—football TV rights); resale price maintenance (SKF case); intellectual property rights (Anfape—spare automobile parts); exclusive dealing/foreclosure (AmBev/To Contigo—cold beverage POS incentive programs). A detailed analysis of each of these cases would fall outside the scope of this chapter.

4 Concluding Comments

Wide use of economic evidence on merger analysis is a common state of affairs competition policy praxis in developing countries, taken from the experience of Brazil. Over the 20 years since the enacting of modern antitrust law, complex merger cases decisions are founded on economic evidence and analysis, including econometrics. The authority and the antitrust community rapidly explored the learning economies, and leapfrogged barriers with staff interaction with international authorities and use of economic PhDs as advisors, consultants and staff. Data issues are also becoming less of a matter, given information technology use in many countries such as Brazil.

Economic theory conclusions used on horizontal merger cases are seen as more robust and well developed. When economic theory provides advances (minority shareholdings, two sided markets mergers), the bridge to antitrust practice seems relatively short. Or at least there are incentives to adoption by the authority.

The role of economic analysis in conduct cases is in sharp contrast. It was argued that scissor blades of more subtle (some say conflicting) economic results and legal incentives not to adopt, provide an uphill road for economic tools in conduct cases. Rule of reason analysis have steeper learning curves because of judicialization and because of supposed lack of 'certainty' in evaluating likely pro-competitive and anticompetitive effects of conducts. This brings to the front the chance of a non-economic analysis by a general judge. In this scenario an antitrust authority may feel more at ease to provide rulings on case characteristics such as dominance and proof of actual conduct only, as the law wording in Brazil seems much more explicit in describing unlawful practices than on merger evaluation.

As discussed for developed countries, a more prominent role for economic analysis in conduct cases in developing countries will require a *translation effort* by economists from 'economese' model based analysis (hypothesis-results) to pro-competitive/anti-competitive effects identification guidelines of business

practices. This may be more relevant for competition policy implementation in developing countries than the actual structural differences between developed and developing economies in many cases.

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Economic Evidence in Competition Law Enforcement in India

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Abstract This chapter seeks to understand the apprehension and reluctance in the use of economic evidence observed in the enforcement of the competition law in India. Incorporation of economic theory and sophistication of data interpretation are now considered critical for defining the market and of consumer harm in mature competition jurisdiction. Reluctance for economic evidence is an apprehension emanating from the belief that economic analysis is oriented to efficiency criteria rather than of equity consequently fails to capture the idiosyncrasies of an emerging market. Taken from a total welfare viewpoint or a rigorous consumer welfare angle decisions based on economic evidence may have been different. A precipitous analysis of competition in some of the illustrations runs the risk of distorting competition and market functioning.

Keywords Evidence • Efficiency • Competition • Welfare

The use of economic evidence in decisions by anti-trust or competition authorities has come a long way from simple economic analysis to 'theoretical arguments' as evidence earning the status of 'revolution in the economics of competition'.[1] The shift from 'per se' to 'rule of reason' and to a more economic approach is also testimony to the maturing of competition law and its enforcement. Young competition authorities such as the Competition Commission of India (CCI or Commission) are reluctant to accept the importance of economic evidence especially of theoretical proofs and integrate the arguments into their decisions. The emphasis is more on legal frameworks and administrative procedures. The reluctance based on

[1] Kuhn, Kai-Uwe (2013) 'Good Economics in Administrative proceedings: Three Challenge's' Concurrences, Competition Law Journal, No. 3. Daniel Sokol notes a similar trend in the early years of the European Commission and observes a change towards economic evidence in recent years comparing the difference in approach between the U.S. Department of Justice and the European Commission, Daniel Sokol & Roger D. Blair, 'Welfare Standards in U.S. and E.U. Anti-Trust Enforcement', Fordham Law Review, vol. 81, pp. 2497–2541.

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experience primarily stems from an apprehension that economic theories of competition and of markets may perhaps fail to capture the idiosyncrasies of an emerging market more so on issues pertaining to equity and welfare dimensions, in a replay of the role of the state and of the market in economic activities. The process of maturing however has to be hastened as the luxury of time that matured competition authorities of developed world could afford is not available for "Emerging Market Economies" like India. Market dynamics of a globalized world where dominance is the trend but not necessarily abuse; where the nature of competition has changed and where discerning competitive constraints are important. In this framework economic evidence of theory to data interpretation has gained prominence. Economic theory also facilitates a robust understanding of consumer harm critical to the decisions of the Commission.

The decision to replace the earlier structuralist market regulation 'Monopolies and Restrictive Trade Practices Act' with the present Competition Act in 2002 (hereinafter referred to as the Act) was the consequence of several debates on the economics of competition preceded by court judgments on the importance of adopting a 'rule of reason' approach in deciding on anti-trust cases.[2] The ruling of Competition Appellate Tribunal (COMPAT)[3] gave a fillip for the place of economic evidence and in subduing the obsessive emphasis on legalese. A later decision of COMPAT on a more complex issue of platforms and network economics (Appeal No. 15 of 2011, National Stock Exchange of India v Competition Commission of India and Another, August 2014)[4] suggests that new frontiers of market economics is still to be fully appreciated and it falls on economists to communicate with lawyers and others.

In this chapter we have looked at the use and extent of economic analysis in some complex and high profile cases of 'abuse of dominance' and mergers to the question posed: Would the decision have been different if guided by economic evidence? In answering the question an attempt is made to understand the underlying reluctance of the Commission with regard to economics of competition and market functioning.

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[2] *Tata Engineering & Locomotive Co. Ltd., Bombay v. Registrar of the Restrictive Trade Agreement, New Delhi* ((1977)2 SCC 55), the Supreme Court held that the "*rule of reason*" is to be applied in evaluating certain types of agreements relating to restrictive trade practices and in the subsequent *Mahindra & Mahindra v. Union of India* ((1979)2SCC529) decision referred to various US antitrust judgments. These judgments were taken as landmark decisions to the run up to the Competition Act. The Competition Act 2002 was enacted over a decade after economic liberalization policies were initiated. The emphasis of these policies was on market orientation and an open economy.

[3] Decision of the Competition Appellate Tribunal (COMPAT) Schott Glass India Pvt. Ltd., v Competition Commission of India (Appeal No. 91 of 2012, 2 April 2014). The Appellant Tribunal is the first tier of reference after the Commission. The COMPAT Order has been challenged before the Supreme Court.

[4] National Stock Exchange of India Limited v Competition Commission of India and Another (Appeal No. 15 of 2011, August 2014).

1 Part I: Enforcement Decisions of the Commission

If, there is a hierarchy of anti-trust cases in terms of priority and weight to rigorous economic analysis, unilateral cases ex-post i.e. abuse of dominance, vertical agreements and ex-ante i.e. mergers rank higher than horizontal agreements (cartels).[5] Economic evidence no doubt is important for proving cartels but the '*plus factor*' of an agreement or '*meeting of minds*' outweighs considerations of economic evidence.

The structure of analysis and sequence in a case before the Commission is enacted *qua* the provisions of the Competition Act, 2002. For merger and acquisitions the first step is in defining the market; then arriving at market share to establish the scope of unilateral conduct and lastly assessing unilateral effects.[6] The structure is reversed in the case of anti-trust violations of competition law. The first step is a quick assessment of harm or anti-competitive outcomes as discerned by the complainant arising out of dominance. The next step is in defining the market and then to market share of the enterprise against whom claims have been filed. A legal reading of Section (4) and Section 19(4) permits a 'per se' decision minimizing need for economic evidence. There is more scope legally, for economic reasoning in Section 3 (4) with Section 19(3) pertaining to vertical agreements and Section 5 & 6 with Section 20(4) on mergers and acquisitions.[7]

1.1 Economics in Mergers

Regulations of the Commission pertaining to mergers mandate the use of economic analysis. Firms seeking approval of mergers by the Commission are required to file all relevant data and economic analysis as regards market structure, number of participants and in more complex cases estimate the market share of the merging firm to establish there are no unilateral effects that can restrain clearance from the Commission. Provision for seeking further information is also there.

In the early years of merger clearance market definition was mainly market share in terms of numbers and percentages based on market information.[8] The use of

[5] Sec. 3(3) deals with Horizontal Agreements; Sec. 3(4) with vertical agreements; Sec.4 is on Abuse of Dominance; Sec. 5 & 6 are for Mergers and Acquisitions (Combinations) under the Competition Act, 2002.

[6] Horizontal Merger Guidelines of U.S. Department of Justice is the reference manual.

[7] Competition Act, 2002, See Section 19(3) and 20(4). Sec. 19(4) relating to abuse of dominance lists out factors that determine dominance. Sub-clause (g); (h) is open to different interpretations. Section 19(3) outlines the factors when an '*agreement*' under Section 3 has an appreciable adverse effect on competition (AAEC) and Section 20(4) on factors to be considered for merger clearances.

[8] Merger cases for clearance from the Commission was after notification of the relevant sections (5 & 6) only in 2011 i.e. full two years after the Act became operational in May 2009. Complex cases are those which go into Form II with strong possibility of raising anti-competitive outcomes and therefore require more data and market analysis.

SNNIP test was not applied even in the high profile merger between two giant pharmaceutical firms, Sun and Ranbaxy (Notice C2014/05/170). The methodology of defining the relevant market in terms of molecules was considered appropriate in this case. Prior to the Sun-Ranbaxy deal the Jet-Ethihad (Notice C-2013/05/1220) airlines merger assessed market share on the basis of point-to-point competition outlining the geographical map of the two merging airlines and its competitors. Mention must also be made of the carving of a sub-market in the acquisition of shares of United Spirits Limited by Diageo (Notice C2012/1297) in premium whisky niche in the IFML (Indian Made Foreign Liquor) market. The Indian market for whisky while highly competitive is divided by licence restrictions issued by state governments.

Unilateral effects have been systematically assessed in consonance with Horizontal Merger Guidelines of the U.S. Department of Justice. The possibility of entry barriers post-merger has seen the Commission resorting to structural and behavioural remedies for ensuring competitive market functioning. It is too early to comment on outcomes of mergers even where remedial measures have been suggested.

1.2 Economics in Abuse of Dominance

Use of economic evidence in Section 4 and Section 3(4) is subdued unlike in merger cases. Anti-competitive claims in three markets are discussed, selected as the market structures are complex representing the new genre of business and economic evidence is important for defining the market and for determining consumer harm.

1.2.1 Markets Redefined: The Case of Aftermarkets

The construct of an 'aftermarket' has been the subject of intense debate and economic analysis ever since the famous Kodak case in the U.S.[9] it however, remains a topical subject for competition authorities. As a market construct the aftermarket has all the trimmings of a market of dominance and consumer harm.

An individual's complaint on the availability of genuine spares and their price in the car market in India raised concerns on the anti-competitive effects in a highly competitive car market. A sentiment publicly articulated in the presence of a vibrant alternate spares market catering to the requirements of independent but unauthorized repair shops or service garages. The information filed saw the relevant market divided into two markets—primary market for cars and the aftermarket

[9] See Shapiro Carl, (1995), 'Aftermarkets and Consumer Welfare: Making Sense of Kodak', *Antitrust Law Journal*, Vol. 63, pp. 483–511

separate from the primary market. A third market for servicing was also suggested.[10]

The primary market in India is highly competitive with at least 14 car manufactures. Culpability as per the Order was in the separate 'aftermarket' and as stated in the Order[11](Case No, 3/2011, Shamsher Kataria v Honda Siel and Ors., dated 25/8/2015) refers to markets for complementary goods and services such as spare parts , maintenance, upgrades and replacement parts that a consumer requires after purchase of the car. The definition of a market in accordance of Section 2(t) of the Act suggests that each spare part, tool, manuals etc. will constitute a separate market for each car model.[12] Aggregated as a set of all required spares and tools the Order took recourse to the concept of 'cluster aftermarket' distinct and separate from the primary car market.[13] The evidence for defining the aftermarket case was predicted on European Union's '*Notice on the Definition of the Relevant Market*' and the U.S. Supreme Court judgment in Brown Shoe v United States (1962).[14] The 'systems market' definition put forward by the car manufacturers where car parts are part of the primary market was considered unsustainable in India as the Indian consumer: (1) is not in the know the costs of spare parts to do a whole life costing; (2) cars in India once bought are only sold after a minimum of 10 years; (3) there are

[10] Case No. 3/2011, Shamsher Kataria v Honda /Siel car and Ors. (dated 25/8/14). In India the servicing market consists of authorized service stations of the respective car maker and the local garages and service stations. Spare parts again are sold in authorized service stations and in retails dealer showrooms. Several spare parts are copied and manufactured and sold in spare part shops all over.

[11] Order refers to the Orders of CCI and will be so unless the Order pertains to another competition authority. A distinction is drawn between the majority Order and the minority Order if there are two Orders.

[12] Section 2(t) of the Act defines the: " relevant product market" means a market comprising all those products or services which are regarded as interchangeable or substitutable by the consumer, by reason of characteristics of the products or services, their prices and intended use;

[13] The argument of OEMs that on the basis of substitutability in line with Section 2(t) would result in thousands of separate relevant markets, "The Commission is of the view that such submissions of the OEMs are misleading and erroneous. This is because markets where several goods are jointly demanded and supplied are referred to as cluster markets. Cluster markets are characterized by transaction complementarities between various components of a bundle of products or services. The relevant unit with respect to market definition is the bundle of goods or services that is demanded by consumers and supplied by the producers and not the individual units of such bundle although such units may not be interchangeable or substitutable with each other. In this context, the concept of substitutability or exchangeability applies to the bundle rather than to its separate components where a bundle of products or services serves as a first candidate market. Thus, the fact that bundles of goods or services are demanded and supplied in a market does not affect the basic principle of market definition, i.e., interchangeability or substitutability between competing products." (Op. cit. Order Case No 3/2011).

[14] EC Quoting from the U.S. Supreme Court judgment on life cycle costs in the Eastman Kodak case. The 'Auto Parts' case is the Commission's 'Kodak' case.

switching costs involved in changing of models; and (4) preference for local service garages on account of logistics and servicing charges.[15]

Dominance is axiomatic in a market so defined. Each car manufacturer or Original Equipment Manufacturer (OEM) is but dominant in the spares and tools market. The modular design for cars as in several goods including T.Vs, fridges has seen the emergence of sub-contracting of parts as a viable cost cutting option. Car manufacturers or Original Equipment Manufacturers (OEM) secure parts of cars from Original Equipment Suppliers (OES) under exclusive contracts with OEM design and specification under protection of copyrights. A limited amount of parts are sold in the open market for repairs and maintenance and consumers are generally encouraged to service their cars at authorized service centers and to use only branded spare parts. The list of abuses was long covering vertical agreements (Sections 3 (4)) and of foreclosure (Section 4).

The Commission opined that these acts of OEMs restricted competition and denied consumers the choice of selecting service centers of their choice. Limiting the number of service centers OEMs leveraged their dominance in the aftermarket. Moreover the OEMs charged high prices for the spare parts possible in a monopolistic market while restrictive trade arrangements between OEMs, OESs and overseas suppliers sustained the prevailing high prices of parts.

The relationship between an enterprise in the primary market with its suppliers in the downstream market would under the present definition automatically qualifies as vertical agreements for inclusion under Section 3(4) of the Act. Agreements of OEM's with OES's was found to be anti-competitive under Section 3(4) as it restricted and even prohibited the external sale of spare parts by OES's.

The decision of the Commission on abuse of dominance in the aftermarket has raised several issues including the sanctity of international copyrights. Conceptualizing aftermarket as a separate market at variance with economic theory and of business processing that grew on sub-contracts needs exploration. As per Section 2 (t) of the act on the basis of 'substitutability and interchangeability' the relevant market is carved out on the basis of demand of a product that includes all the substitutes. A distinction is drawn between the demand for substitutes and the demand for complements. In the case of spare parts and services the demand is derived from the demand in the primary market i.e. demand for cars. This makes the auto spare markets and services and qualifies them as complements rather than substitutes and makes them part of the primary market. In response to the Kodak case economists have looked at the relationship between the primary and the secondary market in terms of profit maximization under joint costs for arriving at the price of the car and of spare parts. The Order in defining the market for auto-

[15] The premised economic evidence was with reference to consumer response to energy products in the U.S. This no doubt is a progressive move towards using economics but changing consumer profile with a growing young and mobile crowd whose life style and patterns are more in keeping with the developed countries discussed in the earlier Transition India case was not taken into account.

parts and on substitutability is administrative and procedural rather than based on economic.

In India the spares and service garage markets are highly vibrant with several spare parts copied and locally produced and easily available in the market. Each city can boast of a minimum 3–4 to service garages in a locality in the city. Can this market for spares outside the OEM-OES nexus qualify as an aftermarket or is it merely the 'grey' market. In fact, for the 'grey market' to provide the competitive constraint to the defined aftermarket raises the larger question of whether it is a competition issue or of certification of the products and registration of services centers outside the ambit of competition law in the realm of rules and regulations of registration by transport authorities.

The theory of harm as opined in the Order raises concerns as regards identification of the consumer. Is the consumer the car buyer or is the consumer the small repair shops? Which consumer has been harmed or which consumer gains more so when viewed from the long run perspective further emphasizes the importance of economic analysis.

1.2.2 Stock Exchanges, Platforms and Networks

Economics of platforms and of network economies have underscored the tendency for the market to sustain one or two large players in the field drawing attention instead to the prevalence of competitive constraints. Too big to leave unregulated invariably prompts pre-emptive intervention by anti-trust authorities and have seen several claims of anti-competitive practices more commonly to enterprises on the internet. In this case the 'abuse' was with respect to dominance by a stock exchange a separate category in the platform network markets.

Exposure to the complexity of platforms and network economics was among the early cases of the Commission relating to stock exchanges (Case No 13/2009, MCX-Stock Exchange v National Stock Exchange & Ors). The complaint pertained to predatory pricing invoking Section 4(2)(a)(i)[16] and of leveraging under Section 4 (2)(e)[17] in the currency derivative market (CD) by the National Stock Exchange (NSE). The complainant MCX-SX is a subsidiary of MCX a commodity-market

[16] **Section 4**. [(1) No enterprise or group] shall abuse its dominant position.] (2) There shall be an abuse of dominant position 4[under sub-section (1), if an enterprise or a group].—(a) directly or indirectly, imposes unfair or discriminatory—

(i) condition in purchase or sale of goods or service; or

(ii) price in purchase or sale (including predatory price) of goods or service.

Explanation.— For the purposes of this clause, the unfair or discriminatory condition in purchase or sale of goods predatory price) or service referred to in sub-clause (ii) shall not include such discriminatory condition or which may be adopted to meet the competition;

(b) "predatory price" means the sale of goods or provision of services, at a. price which is below the cost, as may be determined by regulations, of production of the goods or provision of services, with a view to reduce competition or eliminate the competitors.

[17] Section 4(2) (e) uses its dominant position in one relevant market to enter into, or protect, other relevant market.

exchange unlike NSE which is a stock market exchange. Both NSE and MCX are new entrants to the CD market. The CD market can be a stand-alone market as in the case of MCX or it can be another vertical of the stock exchange as in the case of NSE. Exchanges and the permissible activities are by license of the central bank, the Reserve Bank of India (RBI).

NSE is the largest stock exchange in India in terms of volumes of transaction and value of trades at the aggregate on the exchange. Trades cover all permitted stocks (bonds and equity) and derivatives. In the CD market the share of trades was divided among the three stock exchanges. In fact the complainant MCX-Stock Exchange had a slight edge in the CD segment. Allegations of predatory pricing by NSE was premised on count of waiving the transaction fees (zero transaction fee) for trades in CD. MCX-SX claim rested on its inability to levy a zero fee for its single segment stock exchange, i.e., the CD segment, leading to significant losses further prompting the allegation of leveraging by NSE to enter and monopolise the CD market.

There was a difference of opinion among the Commission Members. The relevant market in the majority Order was defined as "*the stock exchange services in respect of the CD segment in India*". The minority Order differed slightly in treating the stock exchange as a platform and CD segment a vertical on the platform.[18] And, in this difference, the analysis of abuse between the two Orders varied.

The dominance of NSE, in the majority Order of *MCX-SX v. NSE*, was not based on NSE's market shares in the CD segment rather, it premised on the dominant position of NSE in stock-market services derived from the Explanation of "*dominant position*" provided under Section 4, supported by an assessment of the factors set out in Section 19(4) of the Act.[19] MCX-SX in fact had a slightly higher market share in the CD segment than the other two stock exchanges.

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[18] The stock exchange services consist of several products which are not substitutable (Section 2 (h)). Currency derivative the product in question cannot be said to be interchangeable or substitutable with the other instruments traded on a stock exchange, namely equity, debt instruments.

[19] Explanation(a) to Section 4 of the Act:

For the purposes of this section, the expression —

(a) "dominant position" means a position of strength, enjoyed by an enterprise, in the relevant market, in India, which enables it to—

(i) operate independently of competitive forces prevailing in the relevant market; or

(ii) affect its competitors or consumers or the relevant market in its favour."

The Commission has held in *MCX Stock Exchange Ltd. &Ors. v. National Stock Exchange of India Ltd. &Ors*., (Case No.13/2009), as follows:

"*In terms of explanation (a) of Section 4 of the Competition Act, 'the position of strength' is not some objective attribute that can be measured along a prescribed mathematical index or equation. Rather, it has to be a rational consideration of relevant facts, holistic interpretation of (at times) seemingly unconnected statistics or information and application of several aspects of the Indian economy. What has to be seen is whether a particular player in a relevant market has clear comparative advantages in terms of financial resources, technical capabilities, brand value, historical legacy etc. to be able to do things which would affect its competitors who, in turn, would be unable to do or would find it extremely difficult to do so on a sustained basis. The reason is that such an enterprise can force its competitors into taking a certain position in the market which would make the market and consumers respond or react in a certain manner which is beneficial to the dominant enterprise but detrimental to the competitors*."

The decision of anti-competitive practices premised on zero transaction costs as '*unfair price*' and not on predatory pricing. The rationale of zero pricing in platforms seeking to provide consumers (traders) the benefits of network economies was not considered in the majority Order purely on account of reluctance to appreciate the nuances of network economics. Financial markets require depth to attract trades as consumers gain from instruments of different lengths of contract and varying discount rates. Zero transaction costs was the method adopted by NSE to create depth in the newly launched CD market. The argument carried no weight in the majority Order. Zero transaction costs as an introductory offer it surmised if extended beyond a period would lead to foreclosure of competition in the CD market as the other CD exchanges would have to exit the market despite the complainant having a larger share of the currency derivate trades. The perception of competition was on numbers.[20] The views of the consumer was not sought. The allegation of leveraging was a natural corollary to the given theory of competition.

The minority Order stayed with the economics of platforms and of network economics. The order found no violation of the law.

The challenge for competition authorities in platforms where network economies are to be realized to the benefit of consumers lies in ensuring prevalence of competitive constraints than of penalizing zero transaction costs. It is for competitors to innovate with alternate pricing mechanism and not seek the support of the competition authority.[21] Counterfactual evidence with respect to stock exchanges in India and in other countries points to restricted number of exchanges was not taken into consideration by the Order.

Defining the market becomes important for a critical appreciation of competition in stock exchanges. The Order failed to appreciate the significance of platforms and two-sided market. Pricing schemes in these markets permit innovative mechanisms with the flexibility of recovery of costs from one side of the market. Is the stock exchange a platform for all services or is it a platform for several verticals where currency derivative is one vertical as are other verticals such as equity, debt, foreign exchange derivate etc. Are stock exchanges feasible and viable when they have multiple verticals or is a vertical viable with multiple products and instruments of exchange? How to define consumer harm in the presence of network economies?

1.2.3 Virtual Markets and Platforms

In defining virtual markets the two dimensions namely, product market and geography come sharply into prominence. The relevant market under the Act is split into the product market and the geographic market. Geographic market is usually

[20] In India the attempt to introduce Over the Counter OTC's as against the prevailing Bombay Stock Exchange and NSE met with little success. The counterfactual of single stock exchanges or two exchanges as happened in India or on stock exchanges in other countries was not analyzed.

[21] The habit which I call as 'firing from the shoulders of the Commission'.

complimentary to product market (Section 2(t)) and in mapping the geographic market (Section2(s)) logistic of transport and transition costs on consumer demand are considered.

The first case for the Commission of internet-based markets brought to the forefront the difficulty of drawing market boundaries within the confines of political boundaries of a nation state raising the issue: whose jurisdiction?[22] *Prints India v. Springer* (Case No. 16/2010, *Prints India v. Springer India Private Limited & Ors.*) a case of dominance in the publishing business of in-house journals was Commission's introduction to defining the relevant geographic market on the internet. The allegation of Prints India a bricks and mortar publishing house pertained to unfair practices indulged by Springer an international publishing firm in the Scientific, Technology and Medicine (STM) journal segment in India. Publishing is now an online business and each business house is an online platform that seamlessly connects authors and readers world-wide. It also facilitates peer reviews, archival facility and most important a wider reach of readers world-over drawing attention to mapping the geographic market. The geographic market was left undefined in this particular case to be resolved with better understanding of enterprises on the internet.

Several cases of dominance on the internet are under investigation with the Commission. Clarity as regards the relevant market and dominance is yet to emerge. Recent decisions in the e-commerce segment have defined the relevant market as consisting of both brick and mortar and virtual markets departing from the approach taken in the Printwell v Springer case.[23] Certain aspects of Google's activities in India are also under investigation, including practices related to its advertising platform.[24] There are several issues with regard to virtual markets primarily arising out of defining the market (product and geographic) when consumers pay no price. Assessing dominance in virtual markets is difficult as they are part of the high tech industrial sector and market boundaries are not clear.

Technology sectors are characterized by intense and rapid innovation, assessing dominance solely through "market" shares can be misleading. Superficially market shares may appear high, but market shares are dependent on clear market boundaries and with technology sectors, and in particular with the internet, market

[22] Juridically the Competition Act is applicable only to markets that fall within India. In the case of virtual markets as consumers have access world over the issue of jurisdictional claims have not yet been resolved. Even in financial markets such as Bitcoin there is no clarity under whose jurisdiction is the market regulated. The aspect of geographical markets was again raised in Case No. 6 of 2014, Vishal Gupta v Google Inc., in a divided prima facie opinion.

[23] (Case No. 17/2014), Ashish Ahuja v. Snapdeal.com through Mr. Kunal Bahl, CEO &Ors., (Case No. 61/2014) M/s Jasper Infotech Private Limited v. M/s Kaff Appliances (India) Private Ltd., (Case No 80/2014), Mohit Manglani v. Flipkart India Private Limited & Ors., The market definition was premised on the prevalence of competitive constraints offered by brick and mortar companies.

[24] (Case No. 30/2012), Consumer Unity Trust v Google Inc., and Google India Private Ltd, (Case No.7 of 2012), Consim Info Private Limited v Google Inc. and Google India Private Limited,(Case No. 6 of 2014), Vishal Gupta v Google Inc.,

boundaries often cannot be well defined. Both the products and services available over the internet and consumer usage and expectation of them is evolving rapidly. As such, both market boundaries and market shares can be transient in many technology sectors.[25] For competition authorities like the CCI facing the challenge of antitrust enforcement in the technology sector, it is important to examine the actual competitive constraints on a firm with an apparently high market share and consider the actual market conditions in which it operates, including the barriers to entry and expansion, the ease of switching and potential competitive threats for emerging technologies.[26]

The underlying understanding is that dominant companies have the potential to distort competition need relooking. Recent debates questioning the need for establishing dominance and to rather look at abuse while still inconclusive make it imperative for a competition commission to go beyond the black letter of law.[27]

[25] See, for example, the decision of the European Commission in the Microsoft/Skype merger. In that case the European Commission found that usage shares of 80–90 % would not give the combined entity market power. The European Commission stated in its clearance decision that in the relevant services, such shares "are not the best proxy to evaluate the market power of providers" (Case COMP/M.6281, Microsoft/Skype, Commission decision of 7 October 2011, paragraph 99). The European Commission's decision was upheld on appeal to the General Court (see Case T-79/12 Cisco Systems v. Commission, judgment of the General Court delivered 11 December 2013). In particular, the General Court found that "the consumer communications sector is a recent and fast-growing sector which is characterized by short innovation cycles in which large market shares may turn out to be ephemeral. In such a dynamic context, high market shares are not necessarily indicative of market power and, therefore, of lasting damage to competition" (paragraph 69).Similarly, in its clearance of the Facebook/WhatsApp merger, the European Commission found that in innovation-driven technology markets "high market shares are not necessarily indicative of market power" (Case COMP/M.7217, Facebook/WhatsApp, Commission decision of October 3, 2014, paragraph 99).It is notable that even under the EU regime these progressive economics-focused decisions relate to mergers, rather than antitrust enforcement.

[26] The German Competition Commission in their recent guidelines on competition in the digital age have as per reports raised this issue with reference to the emerging digital market where intervention could suppress competition and the possibility of new entrepreneurs spawned by the internet. See, *German Monopolies Commission Publishes its Report on Digital Markets*, Covington and Burlington LLP.

[27] The Qihoo/Tencent Case in China and Naver case in South Korea present interesting insights into how legalese are more comfortable with a structured approach as outlined in their respective Acts. Two young scholars Yong Lim and Yunyu Shen brought to my attention the dynamics of interactions between law and economics in their paper, "*A Tale of Two Courts: Handling* Market Definition in Abuse of Dominance Cases under Market Share-Based Statutory Power Presumptions in China and Korea", CPI Antitrust Chronicle, February 2015.

2 Part II: Consumer Welfare Versus Total Welfare

The limited use of economic evidence raises the basic premise of the extent of acceptability of economics in enforcement of competition law. The analysis of the previous two sections point towards limited acceptability with marginally more economic analysis in the case of mergers than in anti-trust cases. My own understanding is that the hesitant approach towards economics on account of continuing apprehension of market functioning and of the role of state and of market in resource allocation reflects in the ambivalent approach of anti-trust enforcements decisions.

There is more clarity in the use of economic tools in mergers with a singular focus in a well-structured filing. The initial cases of mergers were simple and straightforward the emphasis more on control of the firm by a group or entity on account of restructuring post liberalization. Later merger clearances saw the application of economic tools of (Moving Annual Total) MAT, HHI for assessment of unilateral effects premised on already derived substitutability. Complexities of assessing the innovative capability of dominant firm (Section 20(4)(k)); or contributions to economic development (Section 20(4)(l)) are issues the Commission has yet to confront. The approach is technocratic. The goal is singular not disturbed by concerns of consumer welfare and total welfare. Perhaps, the scope provided for restructuring and remedial measures in-built for clearing the merger acts as an antidote dissuading further investigations. There is always scope for filing a case under Section 4 in the event of possible abuse in the future notwithstanding that a case can be registered if such abuse is noticed within the stipulated grace period of a year.

Decisions of anti-trust cases as we saw proceeds on a different trajectory. Causality between consumer harm and market definition tends to subdue the use of economic evidence. But as the illustrations show there is inconsistency in the use of economic evidence. Prints India v Springer was a majority Order that used economic evidence. In the MCX v/NSE the minority Order was located in an economic conceptual framework of platforms and network economics, while the majority Order stayed in the framework of traditional economics. The car aftermarket decision again a majority Order was not supported by economic evidence of sub-contracting under modular designs. Similar trends of hesitancy and apprehension in the use of economic evidence can be observed from several Orders of the Commission.[28] Economic evidence is skirted. Reference instead is to case law irrespective of whether the case law applies to market conditions of an earlier period or of economic theory that has been overtaken by innovative market

[28] Economic evidence have been effectively used to mention Kapoor Glass v Schott (Minority Order) Kapoor Glass., op.cit. Transitions India (Majority Order), Case No. 61/2014, Ramakant Kini v Dr. L.H.Hiranandani Hospitals (Minority Order).

functioning.[29] A more critiqued approach to consumer harm in these decisions with a nuanced and layered use of economic analysis may reveal that consumer benefits may not really be as apparent as suggested in the first instance. Or is the hesitancy a concern that consumer welfare may not capture total welfare for a country where larger policy issue need addressing in the transition from a state regulated economy to market oriented. I am inclined to believe apprehension of economics is the apprehension of markets and especially with the changing paradigm of platforms, networks and virtual markets.[30] If not so explicitly the reluctance towards economic evidence from interactions suggest the following:

1. Can economic evidence capture the multi-dimensions of consumer harm;
2. Whether economic evidence of efficiency, technological innovation, quality appropriate with its emphasis on efficiency than on equity dimensions;
3. Is complete emphasis on economic analysis and market rationale appropriate at this stage of economic development?

At the outset, let us take a look at the rationale and ‘economic approach’ to Competition Law and philosophy of the Commission as is ingrained in the preamble to the Competition Act, 2002 and enshrined as duties under Section 18. The preamble refers to economic concepts of ‘*practices that have adverse effect on competition*’; ‘*promote and sustain competition in markets*’; ‘*protect the interests of consumers*’ and ‘*to promote and sustain competition*’. As a legal document the Act has left interpretation of key concepts to the Commission and it is in the interpretation of these concepts that economic evidence is critical. Competition is not defined in the Act and neither is appreciable adverse effect on competition which raises the fundamental question on how to define competition. Is competition in terms of numbers as traditionally defined or is it in terms of the prevalence of competitive constraints that new business paradigm suggest? In defining competition in terms of numbers as observed runs the risk of equating competition with competitors as a result may end in protecting the inefficient companies as authorities enforce the law to protect the numbers. Ignoring competitiveness associated with ‘contestability’, ‘free entry’; and innovative capability may instead result in consumer harm. The fallacy of numbers and nature of competitors at any one time can be observed in phrases such as “freezing” of the set of rivals or to protect the “small” from the “big”, under the rhetoric of ensuring “fairness” or creating a “level playing field”. At a time when high tech industries have come into prominence changing the rules of business and of market functioning defining the relevant market in such business environment is the challenge to a competition authority perforce easier with resort to use of economic evidence.

[29] References to case laws of European Union or of Department of Justice in lieu of economic evidence can best be a supplementary. Selection of economic articles have also not been discerning.

[30] The possibility of divergence between consumer welfare and total welfare and the administrator’s inclination to intervene is seen in undue market activism of young competition authorities.

Secondly, identification of the appropriate consumer (s) is important for it is from the initial assessment of consumer harm the Commission defines the relevant market.[31] As observed in the automotive aftermarket the Order affords interpretation for inclusion of a wide category of consumers. The reference is to an amorphous 'consumer' the 'common man' an overhang of the political and social rhetoric of the earlier mistrust of the market on social and equity concerns. Consequently consumer welfare or producers welfare are in general terms and self-defeating with reference to the intended objective.

Lastly, the larger context of '*keeping in view the economic development of the country*' there is always the risk of a return to protection and promoting infant industries a possibility where virtual markets are concerned.

Reading of the preamble must be seen in the context of liberalization policies initiated in the 1990s. These policies saw the emergence of market structures as an outcome of government directions rather than of market forces. Boundaries between competition law and competition policy and between competition enforcement and other instruments of government policy tend to get blurred. The commitment to competition and markets, has never been fully enunciated.

Historical review of the US Anti-trust Act displays a greater degree of comfort of anti-trust authorities with the idiosyncrasies of the market. In fact, the need to maintain faith in markets is strongly expressed as against intervention by anti-trust authorities.[32] The European Commission is much more multi-dimensional and concerns of strengthening the common market and of domestic producers tend to shift the focus from competition. These larger concerns of equity as against that of efficiency is often cited as appropriate to countries such as India.[33] Individual countries in Europe may adopt a different approach closer to the U.S as in Germany the Act against Restraints of Competition is considered as the "constitution of the free market economy". Yet, acceptance of the parallel revolution in economics into the competition law of these countries is still work in progress and not fully integrated.[34] Guidelines issued by these Commissions differ on some fundamental

[31] To quote from the Order pertaining to the automotive aftermarket case; "the determination of the relevant market is not an end by itself but is a means to analyze the position of strength enjoyed by an enterprise in such a market, as per the provisions of explanation (a) to Section 4 of the Act, to determine if such an enterprise is in a dominant position in such a relevant market. Therefore, the task of the Commission is to identify that relevant market where the dominance of the enterprise is being felt".

[32] Alan Greenspan is said to have commented that interventions of anti-trust act against innovations is ultimately to the detriment of consumers.

[33] "We are closer to the EU competition law" as explained by the Chairman of Competition Commission of India in a recent interview to The Economic Times (13th November)

[34] I refer to the emerging debates on whether the Law in these countries have to be modified.

concepts such as defining dominance on the basis of market share or the use of the term ‘effective competition’.[35]

3 Conclusions

Use of economic evidence in enforcement decisions in India is a mixed bag approach. Merger clearances are on economic tools of dominance and relevant market with remedial measures to rectify possible unilateral effects. It is however too early to comment on outcomes of mergers even where remedial measures have been suggested. In cases of enforcement involving dominance there is a divide between decisions based on economic logic and decisions based on legalese with reference to case laws. This diversity is appropriately captured in the presumed dichotomy between consumer welfare and total welfare. In a purely market oriented economy the dichotomy is not as obvious as political freedom is matched with economic freedom.

Comfort of law and discomfort with economics will change over time. But of significance is to design and use economic tools that can effectively combine economic welfare with total welfare in a rigorous theory of consumer harm. Effective use of consumer surveys, national data on income distribution, consumption patterns can link decision to the larger canvas of the economy. In the cases that have been cited competition and larger macro issues of employment are closely connected. Taken from a total welfare viewpoint a rigorous consumer welfare angle the decisions may have been different. A precipitous analysis of competition in some of the illustrations runs the risk of distorting competition and market functioning.

Fast changing market dynamics reflected in emerging economic literature of competition requires competition authorities to be at the cutting edge for comprehending change. As economists from BRIC countries and with similarity of historical experiences perhaps the time has come to develop a set of guidelines which use tools of modern micro economics interlinked with macro concerns.

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Models of Monopoly in the Quarter-Century Development of Russian Competition Policy: Understanding Competition Analysis in the Abuse of Dominance Investigations

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Abstract The article explains an approach to the economic analysis in antitrust enforcement in Russia during 25 years of development. Based on adoption of European-style competition rules it is worth seeing how the industrial organization and competition economic models are applied during transition from socialist to market economy. The most specific feature, among the standards of enforcement, is the prevalence of enforcement against unilateral exploitative conduct of a large company that is not directly related to the restrictions of competition. Not only harm but individual harm is central and often sufficient evidence of competition legislation violation. Both the intellectual and technological legacies of transition, industrial structure of the economy and supportive institutions explain the unique application of theoretical models as a background for the actions of Russian antitrust authority.

Keywords Competition enforcement • Abuse of dominance • Exclusion • Exploitation • Russia

1 Introduction

In 2015, the Federal Antitrust Service (FAS) celebrates the 25-year anniversary of the adoption of the Russian Federation's first antitrust law and the establishment of an authority. Competition protection by the FAS has substantially advanced for the last quarter of a century. Today, the FAS is among the world's largest competition authorities with vast responsibilities in different areas of competition policy, which expand constantly. One step further has been done by State Duma (Russian

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Parliament) in summer 2015 by subordinating responsibility for tariff regulation to FAS from the Federal Tariff Service. The reorganization of tariff regulation reflects the belief in superiority of antitrust authority performing that task in addition to other responsibilities.

Simultaneously, the enforcement of Russian antitrust law ‘On protection of competition’ is very specific. The European provisions are blueprint for Russian competition legislation. The content of central articles in competition law is nearly a precise translation of the relevant rules of the Treaty of Rome. Article 10 of the law prohibits the abuse of a dominant position in the same way as article 102 of the Treaty on the Functioning of the European Union (TFEU), whereas articles 11 prohibits horizontal and vertical agreements and concerted practice, as art. 101 TFEU does. There are however major differences in the implementation.

First of all, according to the Rating Enforcement, Global Competition Review, FAS investigates more cases on abuse of dominance than all other competition authorities in the world together. In 2013 alone, 2635 investigations were opened, and 2212 investigations were cleared. The scale of enforcement is very large.

Second, the enforcement structure is skewed, in a four time proportion, towards investigations and decisions on the abuse of dominance in contrast to agreements. A ban on exploitative abuses, which is a specific feature of European competition rules (Vickers 2008), is applied very often in Russia. In the predominant part of decisions on art. 10 harm to the consumers or counterparties is sufficient evidence of law violation. Moreover, enforcement against an abuse of dominance tends to substitute relevant analysis of horizontal and vertical agreements. For example, the competition authority treats coordination among large sellers as an abuse of collective dominance in the form of excessive prices (Avdasheva et al 2012).

In general, Russian competition policy considers the antitrust enforcement to work as a tool preventing effects of exploitative conduct of dominant company. Furthermore the most important enforcement targets are not related to competition restrictions.

The peculiarity of enforcement, as well as demand of enforcement on economic analysis, deserves explanation. One basic factor is that competition law was imported or ‘transplanted’ to post-Soviet Russia within the package of liberalization reforms. Import of institutions often results in unexpected outcomes, mainly because it presumes the introduction of not only a new system of rules but also supportive enforcements that might be quite difficult or even impossible (North 1990). Human history provides many examples of failed attempts to import specific institution. Moreover, institution may be substantially transformed during the process of import (North et al. 2009). Russian competition legislation is an example. This chapter attempts to explain the specific path of transformation of provisions on abuse of dominance and anti-competitive agreements in the Russian antitrust.

The success of legal transplants depends on whether they are receptive (Berkowitz et al. 2003). A transplant is receptive when the importing country is able to fill the general legal framework taking into account domestic environment and developing effective domestic enforcement institutions. The question that

deserves an answer is comparative contribution of the demand for enforcement, on the one hand, and supportive institutions, on the other, in the explanation of legal rules evolution. This chapter also attempts to fulfill this task.

Analyzing different explanations of demand for antitrust enforcement and the underlying economic concepts, I distinguish three groups of factors. The first group comprises factors that are specific for Russia as an economy in transition, with the legacy of resource allocation under central planning and a difficult transition period. The second group consists of factors that are specific for Russia as a BRICS member and therefore as a large economy with a relatively high level of industrialization; economy that participates in the international division of labor with low-processed raw materials. The third group comprises factors that are country-specific in different dimensions, including the underlying administrative legislation and public policy organization.

This chapter is organized in the following way. Section 2 is devoted to different groups of factors that affect the understanding of the objectives and instruments of antitrust enforcement against the abuse of dominance and anticompetitive coordination. Section 3 summarizes the effects of specific economic and institutional environment on the standards of economic evidence under the enforcement against abuse of dominance and coordination. Section 4 contains examples of the groups of investigations and decisions, which have been affected by specific approaches to competition analysis during the last 25 years. Section 5 compares the conventional application of economic theory (particularly as implications of industrial organization, transaction cost economics and law and economics) with an application of economic theory in Russian antitrust enforcement. Section 6 provides a conclusion.

2 Economic and Institutional Environment of Antitrust Enforcement Development in Russia

2.1 Concept of Welfare Losses Due to Monopoly vs. Welfare Losses Due to Restrictions of Competition

Antitrust enforcement in Russia has historically faced several types of challenges. The first group of challenges is common for young competition jurisdictions that have imported legal rules originally developed within another institutional environment, and especially for transition countries in which competition legislation developed in conjunction with a radical transformation of economic system in the transition from a planned to market economy.

In a transition country, the introduction of competition as a policy target extends far beyond the relatively limited scope of responsibilities of antitrust agencies. Although this problem has been understood from the very beginning, Russian antitrust authority has been criticized for its passive role in competition promotion aimed to remove *monopolism* as an impediment to economic recovery and growth

(see, for example, Yakovlev 1994). The concepts of monopoly and welfare losses caused by monopolies were highly demanded by the government and society.

Simultaneously, from the initial years of competition enforcement, a stark difference between the understanding of the goals of antitrust enforcement begins to develop, mainly because in transitional Russia, in contrast to developed market economies, there was no clear distinction between the few monopolized sectors in which companies are regulated ex ante and other competitive sectors in which competition requires only protection from potential restrictions. As a result, an exploitative monopoly was considered to be a main enforcement target in contrast to restrictions of competition. Almost all market participants faced problems, which were perceived as an exploitative conduct of the only supplier of necessary resources, or the rudiment of an old regulatory system.

There are several outcomes of the simple fact that antitrust enforcement emerged prior to market competition development. The first is the initial orientation on the deterrence of the exploitative conduct of dominant company in contrast to the restriction of competition that survived to date. The second is the very wide scope of competition authority responsibilities, which reflect specific demands of competition promotion during the initial years of liberalization. Only one example is the presence in the competition law banning the restriction of competition by executive authorities. Despite the unusual setting, antitrust legislation in this respect can be effective as an instrument to achieve the second-best option in specific circumstances (Reynolds 2004). There is evidence that restrictions imposed on competition by regional governments became an important problem not only for Russia but also for other countries in transition. Competition policy in People's Republic of China now faces the same challenge. Both countries have strong traditions of political and executive authority that have served as important elements in transaction governance in the economic system. The phenomenon of an administrative monopoly in both China and Russia cannot be reduced to a 'pure' regional protectionism (despite its importance), 'pure' favoritism (despite the fact that favoritism also occurs), or 'pure' adaptation problem (despite the fact that slow and imperfect adaptation is likely the most important factor) (Owen et al. 2008; Wu and Liu 2012; Wei 2013).

Antitrust authority gradually became responsible for a substantial number of policies that are related, even indirectly, to the objectives of competition promotion. At some stage, it is inevitable that widening the scope of competition policy erodes conventional understanding of antitrust enforcement objectives.

2.2 Hold-Ups in Bilateral Relationships Based on Specific Investments as Exploitative Conduct of Dominant Company

Among the BRICS countries, Russia is the only country with an industrial structure that was heavily affected by the privatization of state-owned enterprises in mature industries. Legal persons became the units of privatization. Subsequently, after the privatization buyer and supplier of the intermediate product often confront each other as only one potential supplier and only one potential buyer without outside options. This very narrow specialization resolves the paradox described by the analysis of industrial concentration (Brown et al. 1993), in which monopoly is a large problem when concentration indexes are not too high in Russia.

Transaction cost economics (Williamson 1979) analyzes this type of relationship in the framework of the choice of a transaction governance model. If investments are specific, to prevent hold-up, specific contractual precautions are necessary, which range from long-term contracts to vertical integration. Within a central planning system, administrative decisions together with communist party disciplinary tools provide contract enforcement under pre-determined conditions and make specific contract precautions unnecessary. Liberalization eliminated a central planner and relevant enforcement system; however, parties, which are locked in specific transactions, were unable to undertake contract precautions *ex post* after specific investments were made. In this setting, contractual practices demonstrate many types of inefficiencies described by new institutional economics (Williamson 1971, 1979; Klein et al. 1978; Grossman and Hart 1986; Hart and Moore 1990), including post-contractual opportunism, hold-up, and conflicts among counterparties.

In the mid-1990s, Blanchard and Kremer (Blanchard and Kremer 1997) explained the effect on the elimination of the mechanism of contract enforcement among enterprises (called disorganization) in several transition countries on the decline of industrial output. For the development of competition legislation, it was important that parties identified failures of contracts as an effect of the abuse of dominant position on the market, considering a bilateral relationship as a market for antitrust purposes. These interpretations also occur in developed competition jurisdiction (Joskow 2002). In Russian antitrust litigations, the ex-post opportunism of the parties locked in bilateral transaction is systematically considered as an abuse of dominance. Thus, the neoclassical concept of monopoly and welfare losses from the monopolistic decisions replaces the institutional analysis of transaction cost, post-contractual opportunism and the impact of uncertainty and shocks on the performance of the parties.

2.3 *Price Discrimination in Export-Oriented Industries as a Policy Issue*

Together with other BRICS countries in the international division of labor, Russia obtains important comparative advantages in upstream capital-intensive industries (Hanson 2012), which are dominated by large suppliers. Russia simultaneously has a relatively large domestic manufacturing sector that depends on upstream suppliers. Many domestic commodity markets, including aluminum, cold-rolled grain steel or potassium chloride, are dominated by only one supplier, who can easily increase profit by third-degree price discrimination (Pursell and Snape 1973). Disorganization in the value chains as a result of the elimination of contract enforcement (Blanchard and Kremer 1997) makes domestic demand smaller and less elastic, which therefore increases optimal input prices. The ratio of domestic prices to the prices of export contracts steadily increased following liberalization (Table 1).

For domestic manufacturing, a rapid increase in the input prices following liberalization is among the important obstacles for competitiveness, and this issue remains crucial because of the large scale of the downstream manufacturing sector in the economy. The issue is again perceived as a result of market power abuse and increases the demand for specific competition policy, which the government attempted to achieve via the application of antitrust enforcement instruments.

Among the other BRICS countries, buyers of steel in South Africa faced the same problem. Higher prices for domestic downstream industries weaken their global competitiveness and produce suggestions for remedies directed toward the dominant sellers, which were exactly the actions employed under similar conditions by the Russian FAS (Roberts 2012).

Table 1 Ratio of domestic to export contract prices for selected exported commodities, 1999 and 2009

Selected exported commodities	1999	2009
Motor gasoline	0.68	1.01
Ammonia	0.97	2.73
Chemical fertilizers	0.76	1.31
Nitrogen fertilizers	1.29	2.51
Complex fertilizers	1.09	1.86
Synthetic rubber	0.83	1.21
Cellulose	1.00	1.15
Cast iron	0.92	1.12
Rolled ferrous metals	0.71	1.13
Copper	0.85	1.04
Aluminum	1.11	1.21

Source: Golovanova (2010)

2.4 Distinction Between Competition Policy and Other Policies

In Russia, antitrust enforcement is often expected to substitute other rules and regulations, which are aimed at regulation, competition promotion or restructuring. Two areas of policy should be discussed, including sector-specific regulation in deregulated industries and industrial policies, which leaves many others unattended, such as competition promotion in public procurement.

Antitrust and sector-specific regulation in network industries In Russia, the need for a sector policy for the network industry is reflected in the on-going reforms aimed at deregulation. Different models have been implemented for different network industries, and the scope of price deregulation is different as well. Reforms in the electricity sector are the most advanced, whereas tariff regulation for wholesale suppliers have been abandoned. However, even in the electricity sector, tariff regulation for households remain in place. Conditions of access to local grids (including tariffs and access procedures) are also regulated. In other network industries, the reforms are less advanced. In the gas and railway industries, the tariffs for final customers, including industrial and household, remain regulated. Access to networks is provided through the framework of a third party access model that can be exposed to abuse by the dominant incumbent, which retains incentives to prevent entry.

Even under full vertical separation (for Russia, in electricity), access to networks may be an issue that requires specific regulation. This is even truer in the third party access model, which is applied in gas or freight rail transportation. Internationally recognized best practices require a specialized authority that is responsible for resolving access issues and conflicts that arise regarding access. However, there is no industry-specific independent regulator in any of Russia's deregulated industries. Tariffs for access are set by responsible agency; however, the obligation to monitor compliance with access procedures is assigned to the competition authority. A substantial part of the recent conflicts regarding access conditions have been resolved by actions against exploitative abuse.

Antitrust and industrial policy Deep structural imbalances in the Russian economy have created a demand for industrial policy. However, during the last quarter century, Russia's industrial policy has remained relatively weak and inconsistent. One reason is its ideological nature: industrial policy is considered to be in conflict with the goal of building market institutions. Attempts to institutionalize and develop an industrial policy obtain little support. Simultaneously, competition policy often applies decisions aimed at protecting particular target groups to support economic growth. Examples include the support of domestic food suppliers vis-à-vis large retail chains and non-authorized auto dealers vis-à-vis authorized auto dealers.

A situation in which the allocation of power and responsibilities among different legislative laws and authorities is far from ideal is not specific to Russia. For example, many analyses of China's competition laws note the non-trivial division of power among the legal rules and idiosyncratic norms regarding competition issues on the one hand and the complexity of competition enforcement objectives on the other hand. Competition authorities in all BRICS countries eventually make decisions that are not only guided by competition promotion considerations but broader policy targets as well (Heimler and Mehta 2014). Regarding the standards of economic analysis, the important outcome is that the application of antitrust enforcement to support entrants vis-à-vis incumbents in deregulated industries or a target group under industrial policy relies on the concept of the exploitative conduct of a large supplier, which simultaneously contributes to the transformation of the concept of abuse of dominance.

2.5 Limited Resources and Powers of Antitrust Authorities

Together with other transition countries, Russian competition authority has been heavily constrained in terms of human capital (Gal 2010). The FAS, which is organized as a network of regional subdivisions, has faced a shortage of trained personnel from the beginning of transition period and up to now. In addition to the constraints in human resources, the FAS faces the problem of limited investigatory power. During the initial 15 years of competition enforcement history, the FAS had no power to organize downraids. The competition authority recently obtained a right to conduct secret investigations, but only in conjunction with the authorities responsible for criminal investigations.

Technically, at first glance, the limitations on the ability to collect the evidence on conduct explain the demand for alternative legal instruments to deter coordination, as well as increasing importance of the model of monopoly, in which structural indicators constitute direct evidence available for analysis. To enforce art. 11 (on anti-competitive agreements), to date, the competition authority primarily uses the concept of 'concerted practice', in which substantial indirect evidence useful to detect cartels (Harrington 2008) comprises as good substitute of direct evidence. Simultaneously, a substantial part of the violations that are expected to be deterred as coordination are actually investigated as an abuse of collective dominance.

2.6 Limited Discretion of the Antitrust Authority

The discretion of executive authorities in Russia is legally constrained. Among other powers, the authorities have the power to inspect compliance with legal requirements on their own initiative or on the basis of complaints received. Administrative legislation and regulation attach substantial importance to responding to

complaints. A special law, 'On the procedure of considering complaints of citizens of the Russian Federation' (2006), requires an authority to consider every complaint and either open an investigation or provide a justified refusal within 30 days. These requirements are expected to increase the accountability of public servants. It is assumed that in the absence of strict regulations, they have strong incentives for shirking or rent-seeking. Authorities and public servants are responsible for both decision-making delays and unjustified refusals to open investigation on the complaint.

The importance of complaints as a reason to investigate the practice affects case selection in at least two ways (Avdasheva and Kryuchkova 2015). Incentives to file a complaint increase when individual harm imposed by the practice in question is high because of the absence of a collective action problem. Due to the liability of competition authority to react to complaints, the structure of investigations across alleged violation types reflects the issues that the complaints address. Because of this reason, complaints are more often addressed to the exploitative conduct of a dominant company than to coordination, and among the different types of abuse, abuse of dominance are more often exploitative compared with exclusionary abuses. The typical target of a complaint is not related to the restrictions of competition.

2.7 Standards of Damage Verification and Assessment

The enforcement of both administrative and civil laws in Russia exhibits very weak standards in the verification and assessment of damages imposed on parties. Legal studies of post-Soviet courts stress the low level of compensation for damages as an important problem (see, for example, Hendley 2014) that impedes deterrence. However, there is another side of the coin. In addition to the low level of compensation for damages, and especially for moral damages, as well as the unclear difference between compensation for damages and compensation for moral damages, the causal links between the actions of an offender and the harm of a victim are established using relatively weak standards in Russian legal practice (Maggs et al. 2015). The prevailing legal approach to this issue is to replace fault-based liability with strict liability. First, it was implemented in consumer protection law (Reich 1996); however, it was subsequently extended to other fields of Russian civil law (Brüggemeier 2011). This tradition also strongly affects administrative law: executive authorities can make conclusions regarding harm using very rough evidence. The importance of complaints as the drivers of investigations reinforces this peculiarity of damage verification: in many examples, the statement of the alleged victim is sufficient for an administrative decision. Enforcement against exploitative conduct of a large seller implicitly shares the concept of the strict liability of the dominant market participant for damage that is allegedly imposed on every counterparty. This extends a step further from the European concept of dominant position as a basis for the special responsibilities of the dominant company (Larouche and Schinkel 2013), which are derived from ordo-liberal

tradition. Compared with art. 102 TFEU, the enforcement of art. 10 of the law 'On protection of competition' tends to use the concept of the strict liability of the dominant seller for any harm imposed on every individual counterparty, with a rough interpretation of the casual links among dominance, the behavior of the dominant company and the harm imposed.

3 Influence of the Economic and Institutional Environment on the Standards of Economic Analysis in Antitrust Enforcement

The economic and institutional environment of transplantation of antitrust legislation explains specific features of the standards in the enforcement and economic evidence in investigation and resolution of cases. As a result of historical circumstances, the *exploitative conduct of a dominant seller* in contrast to the *restriction of competition* became the most important target of antitrust enforcement. Economic analysis in the Russian competition enforcement develops primarily around investigations and decisions regarding the exploitative abuse of dominance and predominately around the issue of harm.

Agreements and concerted practices vs. abuse of dominance The specific path of economic analysis development in competition enforcement in Russia does not seriously affect the standards of investigations and infringement decisions in collusion cases. Competition authorities decide on price-fixing and market-sharing using hard evidence. Investigations regarding this type of cases suffer from limited competence and resources for the collection of proofs through detective actions and downraid inspections, but approach to investigate does not differ.

In contrast, the enforcement against concerted practice took a specific path. Using a ban on concerted practice competition, the authorities attempted to compensate for the lack of investigatory power by deciding on a tacit collusion using only indirect evidence. The most important evidence comprised the evidence of price parallelism and the structure of the markets in which the concerted practice was suspected. The outcomes of many successful appeals indicated that Russian courts considered evidence in favor of a tacit collusion insufficient for conviction even if only one alternative explanation for price parallelism remained. The arguments of Russian judges did not substantially differ from the opinions of their European colleagues (Motta 2000; Overd 2002; Nicholson and Cardell 2003). In 2011, the FAS suggested to correct legal definition of concerted practice in order to avoid numerous false convictions in administrative decisions. The changes introduce two additional attributes of concerted practice. One criterion is the threshold market share, and another criterion is the public announcement of future actions by one of participants in concerted practice. The most interesting part of the story is that the standards of proof of infringement other than abuse of dominance were

complemented by a pure structural indicator, which was borrowed from an investigation of the behavior of the dominant company.

Distributive efficiency vs. competition protection and allocative efficiency Competition authority often recognizes its mission in terms of 'weak party protection' in contrast to competition protection and promotion. Special attention to the distributive effects of Russian competition policies can be explained not only by ideology (which is clearly important). At the early stage of transition in many sectors, emerging monopolies imposed substantial harm on customers. In specific circumstances, the harm is persistent. In the early 1990s, the government considered a main task of competition policy to be easing the losses of citizens and domestic businesses from hold-up and contractual inefficiencies in the value chains. As export volume and domestic prices of exported goods increased, additional margins for domestic manufacturing became an important enforcement target. During the second half of the last quarter century, the enforcement of access rules to support newcomers in network industries became essential. The common features of three examples are that they all address the dominant seller, who is assumed to exploit market power to redistribute welfare in his favor. However, at least two of three targets (hold-ups and third-price discrimination) have little in common with protection of competition.

One immediate implication for competition investigations is higher importance of evidence on damage in comparison to evidence on competition restrictions. The outcome comprises not only the fact that the number of abuse of dominance cases in the Russian competition enforcement is higher than the number of investigations on agreements or not only the evidence that the abuse of dominance case investigations on exploitative violations prevail over the investigations regarding exclusionary conduct. One step further is that practice, which is conventionally considered in the framework of agreements, in Russia is investigated as the behavior of a dominant supplier. This is true, for example, regarding selective distribution (see examples in Sect. 4.4): it is considered as an alleged violation not because of the impact on competition but because of the harm to distributors that do not satisfy the qualification requirements. Finally, relatively recently, in 2011, all violations of the law 'On protection of competition' were divided into infringements that restrict competition and infringements that do not restrict competition. Legislators recognized that a substantial part of the alleged violation of *competition* law does not affect competition in contrast to the distribution of welfare.

Individual harm vs. welfare losses It is not only harm that is important as an evidence of violation but also *individual* harm in contrast to reduction of consumer surplus. Several features of development contribute to this type of harm assessment. Under hold-ups and contractual disputes, when only one buyer (seller) represents the market demand (supply), individual harm comprises the core complaint. A trend to replace fault-based liability by strict liability reinforces the importance of individual harm as a ground for legal actions. Things become complicated in some areas of application of anti-abuse provisions because evidence of individual

harm is justified by the objectives of competition protection. Consider, for example, the refusal to grant access to network infrastructure under deregulation. Remedies and penalties are applied not because welfare losses from the exclusion of one new competitor are high enough but for the reason that the prevention of entry of one competitor incumbent can credibly commit to prevent the entry of all newcomers. However, harm to a newcomer in the form of refusal to grant access is immediate evidence of a competition law (or sector-specific regulation) violation. Because these three types of cases constitute a substantial part of anti-abuse enforcement, the principle of the sufficiency of individual harm to prove infringement became common.

There are two side effects of the importance of individual harm. One effect is an underdeveloped effect-based analysis. Although art. 13 of the law ‘On protection of competition’ clearly states that for a substantial number of violations, an effect-based approach should be applied, the instances of application are rare. The second effect is the absence of a minimum level of harm sufficient for public intervention, which partially explains the substantial number of investigations and infringement decisions.

Evidence regarding structure and harm vs. evidence regarding competition The history of Russian competition law explains why evidence regarding structure and evidence regarding harm appeared to be in the center of the investigations and decisions against the abuse of dominance. As previously discussed, an understanding of monopoly as a structural characteristic as a target for antitrust enforcement increases the importance of evidence regarding market boundaries, market shares and entry barriers. Under the investigation of hold-ups in bilateral relationships and third-degree price discrimination, market structure is most important to explain the content of the practice in question and the effects of the practice. The importance of individual harm as a proof of competition law violation makes this evidence highly relevant. In addition, evidence regarding harm justifies the application of competition rules to substitute alternative policy tools in the resolution of issues that extend beyond the traditional understanding of competition policy issues.

Static vs. dynamic market analysis Historically, the most important targets of competition enforcement after liberalization have been persistent monopolies. This is true for participants in stable bilateral relationships, as well as large suppliers in export-oriented industries because of the unattractiveness of entry or high entry cost. This is also true for regional regulated suppliers of electricity, gas, and heat, which have become the third important target of anti-abuse of dominance enforcement. The irrelevance of the analysis of entry conditions in the largest component of cases contributes to the impression of the general irrelevance of a dynamic analysis of competition.

4 Economic Analysis in the Typical Investigations of the Abuse of Dominance in Russia

This section presents case examples in which investigations and decisions are heavily affected by a specific environment and simultaneously reflect a specific tradition of the analysis of competition. It is not easy to select typical groups of cases to indicate the specific path of economic analysis in the enforcement against abuse of dominance from more than 10,000 decisions only after the introduction of turnover penalties in 2007. The selection criteria are as follows: the amount of trade affected, the importance of the socio-economic effects of the practice in question, and primarily, the influence of a specific environment on the economic analysis approach. For every group, an explanation of the approach to use economic evidence plays a central role.

4.1 Abuse of Dominance in Bilateral Relationships

One might suppose that during the quarter century following liberalization and 20 years after privatization restructuring, domestic companies overcame structural distortions inherited from socialism. This is not always the case. Until recently, relatively large companies have been involved in bilateral disputes, which in transaction cost economics are consider to be conflicts regarding the terms of use of specific investments. Disputes and conflicts of this type often substantially affect the economic performance not only of a specific company but also of the long value chain and regions where the companies are located. The role of public policy in the resolution of these issues is not completely clear. They cannot be left unresolved because of substantial negative effects. However, they appear as contractual disputes between private parties where only one supplier (or one buyer) is in place. Even in developed competition jurisdictions, competition agencies and courts may tend to consider these issues as antitrust (see Joskow 2002 for a discussion of the roots and consequences of this approach). Not surprisingly, Russian competition authorities use this approach more often.

4.1.1 Basel-Cement-Pykalevo Case (2008–2009)

Pikalyovo is a small one-factory town located 200 km east of St. Petersburg with 20,000 inhabitants; it has only one production complex that was built in the late 1950s. The technology of production is idiosyncratic: a colloidal solution for further chemical production and belite sludge for further cement production appear as by-products of nepheline ore recycling to produce alumina. The refinement of nepheline ore to produce alumina is in the center of the technological chain. In 2008, the owner of the nepheline recycling facility, *Basel-Cement-Pykalevo*, a

subsidiary of *RUSAL* (the largest global aluminum producer), reported that the facility in *Pikalyovo* is among the least efficient within the company and decided to close the plant. Thus, the independent producers of cement and soda ash were also faced with the necessity of closing their factories. Massive layoffs and protests began in the city. The actions of *Pykalevo* town citizens became likely the most serious public outrage because of purely economic reasons in modern Russia.

This hot issue of economic policy was resolved using antitrust enforcement. In 2009, *Basel-Cement-Pykalevo* was found to be violating the ban on the abuse of dominance in the markets for belite sludge and colloidal solution in the form of unjustified limitations of production in the market of by-products. The company was fined; remedies were implemented to prevent the unexpected termination of production, and investments in the restructuring of the facilities along the value chain were applied. The definition of markets may appear too narrow; however, it reflects the limited substitutability of inputs for the buyers of resources. An infringement decision relies on two components of evidence: a market structure with 100 % share of suppliers (as well as buyers) and the harm imposed on the buyers of input by suppliers, which is measured by lost revenues.

4.1.2 Achinsk Aluminium Case (2009)

Achinsk Aluminum, a subsidiary of *RUSAL*, is a largest refining facility of alumina in Russia. Historically, *V-Sibpromtrans* company privatized access railroad to a plant. Plant itself and tracks belong to different companies. In 2008, *V-Sibpromtrans* also provided rail freight services to supply alumina ore. In 2008, *RUSAL* attempted to negotiate lower transportation rates, and after the refusal, it switched to another transportation operator. Using access to railway tracks as a bottleneck, *V-Sibpromtrans* began to detain cars with ore. In turn, the new rail freight operator asked *Russian Railways* (the parent company at that moment) to detain the cars of *V-Sibpromtrans* wherever *Russian Railways* could locate them. Both parties submitted complaints to the FAS: *RUSAL* complained about the refusal to provide access, and its counterparty complained about the low monopolistic price (as a type of unfair price) by *RUSAL* and accepted by another rail operator. In 2009, the Krasnoayrsk regional subdivision of the FAS issued an infringement decision against *RUSAL* for its unfair low price (low monopolistic price). The main evidence in the case was the monopsony market structure and harm of freight railway operator as lost revenues. Market was narrowly defined as a market of freight rail transportation of ore for *Achinsk Aluminum*. The market definition appears disputable, and during the infringement decision appeal, the parties argued that this delineation is inappropriate. One potential explanation of the FAS approach is the fact that conflict is not about the abuse of dominance under conventional understanding, but involves contractual disputes between closely interdependent parties (factory and access railroads).

4.1.3 Uralkali: Bereznikovsky Soda Case (2015)

The facilities of the *Uralkali* company and *Bereznikovsky soda* plant in the town of *Berezniki* are other examples of interrelated technologies divided to different legal individuals following privatization. For more than 50 years, the production of soda ash in the *Bereznikovsky soda* plant has used brine that emerges as a by-product of sylvinite ore mining in one of the facilities of *Uralkali*. After an accident at the mine that occurred in 2006, *Uralkali* became unable to supply brine directly from the mine. The price of brine for *Bereznikovsky soda* substantially increased. The dispute between companies attracted the attention of the regional and federal governments because of the severe effects for *Bereznikovsky soda*, which had impacts on employment and incomes in a very sensitive region. In 2014, the FAS Central Office took the case to investigate an alleged abuse of dominance by *Uralkali*.

These three cases do not limit the number of disputes between large producers, which were investigated and resolved under antitrust legislation, using the provision of abuse of dominance. These cases all have several important features in common. First, all cases are legacies of investment decisions made under a completely different economic system. In this sense, these cases are specific for a transition economic system and exhibit the losses from *disorganization* (Blanchard and Kremer 1997). Second, all conflicts provide severe negative economic and social effects, and one cannot exclude that there are reasons for public intervention in these types of cases. Without discussing why competition legislation was applied in these cases, it is important to stress the features of economic analysis that supports the decisions. These features include a narrow antitrust market definition, static analysis of dominance, qualification of abuse of dominance as a purely exploitative conduct, and measurement of the buyer's or supplier's harm by lost revenues. After Russian competition authorities analyzed several hundreds of cases of this type and judicial review did not annul the previous decisions, this approach has become widespread not only in specific types of cases but also for other investigations regarding the abuse of dominance.

4.2 Abuse of Dominance by Large Suppliers in Export-Oriented Industries

The third-degree price discrimination of the large upstream exporters, i.e., higher prices in the domestic market, remains one of the challenges for international competitiveness of Russian manufacturing. In motor fuel markets, it is also the general issue of economic policy that oil exporting countries resolve in different ways (Cheon et al. 2013). In contrast to the examples previously mentioned, this group of cases is specific for Russia not as a transition economy but as an economy with a large manufacturing sector with relatively weak competitiveness, in which

every additional detrimental effect, such as a high input price, is crucial. Economic analysis in this type of investigation is concentrated around the evidence regarding one-sided rigidity of domestic prices towards world commodity prices: high elasticity when world commodity prices increase and low elasticity when world prices decrease.

4.2.1 'Big Four' Oil Companies Case (2008–2011)

The most high-profile investigation regarding the abuse of dominance, which resulted in the largest penalties in the history of Russian antitrust enforcement, is the case against the 'Big Four' oil companies, including *LUKOil*, *Rosneft*, *TNK-BP* and *Gazprom neft* (Avdasheva et al 2012). There were several investigations of the oil sector practices. Two types of infringement decisions were an unfair (high monopolistic) price and limiting the supply in the domestic market. To qualify the position of suppliers as dominant, the FAS applied a collective dominance concept. The definition of collective dominance in Russian law uses the criteria of a high and stable concentration of the market, high entry barriers, market transparency, and low price elasticity. Together, these criteria are considered to be a sufficient evidence on a high level of interdependence of market participants, which enables the presumption of a tacit collusion among them and considers every deviation from the hypothetical competitive outcome an abuse of dominance.

There were three groups of evidence applied in the investigations of the oil companies. First, there is evidence regarding the market structure, including the product market definition, size and stability of market shares, indicators of market transparency, entry barriers, and, to a lesser extent, low price elasticity. Second, there is evidence regarding the asymmetric elasticity of the domestic price of motor fuel on the world price of oil. Third, there is evidence regarding the proportionality of the increase in cost (calculated as the variable accounting cost) and the increase in price. For the investigation of supply limitations on the domestic market, the evidence was concentrated on the casual relationship between the allocation of total amount of motor fuel produced between the domestic market and export and the price dynamics in the domestic market. No competition concerns were discussed.

4.2.2 Novolipetsky Metallurgical Plant Case (2011–2014)

The *Novolipetsky metallurgical plant* is among the largest steel producers worldwide, not only in Russia. In the domestic market for cold rolled grain steel, it accounts for approximately 100 % market share. The largest part of cold rolled grain steel is exported. In 2012, an investigation against the *Novolipetsky metallurgical plant* resulted in an infringement decision regarding the high monopolistic price of steel in the domestic market. The evidence in the case mainly comprised the disparity between export and domestic prices, as well as the disparity between the production costs and domestic price. The competition authority did not

specifically analyze the harm on the domestic manufacturing sector. It was presumed that an increased (up to two times higher) input price undermines the competitiveness of the Russian manufactures, which use this specific type of steel.

Again, the two cited examples do not exhaust a long list of investigations against large Russian exporters. The FAS undertook many similar investigations under merger approval (including mergers of the previously discussed companies—*Novolipetsky metallurgical plant* (2006), *RUSAL* (2007), *Rosneft* (2013), and many other companies). These cases are specific for economic analysis. First, the most important consideration is not competition but the alleged exploitative conduct. Second, there is no doubt that the issue is important for domestic economic policy. Third, in most cases, there is little doubt that companies are dominant in domestic markets.

The most sensitive component in economic analysis is the level of prices in the domestic market and the welfare effects of pricing policy. There is no good method to prove an excessive or high monopolistic price in any competition jurisdiction (Motta and de Streel 2007). However, welfare effects of third-degree price discrimination in cases of higher prices in a domestic *vis-à-vis* export market should be negative, unless price discrimination is the only way to cover the substantial fixed cost of the supplier. Conventional wisdom in modern Industrial Organization is that third-degree price discrimination decreases total welfare if it does not prevent market closure. It is especially welfare-detrimental when we only consider the domestic market. Again, it is not clear that this issue is for antitrust enforcement; however, it is definitely an issue for economic policy.

One interesting point is the way to resolve this issue in Russian competition enforcement. The authority has weak arguments to prove excessive (high monopolistic) price using the definition in competition legislation. Among the cited cases, the judicial review specifically cited this point. The infringement decision against the *Novolipetsky metallurgical plant* was finally annulled under judicial review, and there are examples of court disagreements with the infringement decisions against the largest oil companies. To avoid further discussions regarding the issue, competition authority in many markets has replaced *ex post* competition investigations by *ex ante* remedies on domestic price. The content of conduct remedies on prices that Russian competition authority applies is similar to the Ministry of Commerce (MOFCOM), the competition authority of the People's Republic of China, applied under merger clearance.

Investigations against large exporting companies have strengthened specific features of economic analysis in the cases against the abuse of dominance, including the static analysis of market structure, an accent on exploitative conduct in contrast to restrictions of competition, a broad definition of harm, and the specific importance of price as a tool to impose harm on a counterparty.

4.3 Investigation of Abuse of Dominance by Natural Monopolies

A substantial group of investigations and decisions regarding the abuse of dominance in Russian enforcement are cases against natural monopolies. A natural monopoly under Russian law is a special legal status for companies in industries, in which suppliers use networks under regulated tariffs and procedures. Deregulation in these sectors occurs on different stages; however, tariffs and other conditions of service provisions to household customers in most sectors remain regulated. Competition authorities use provisions on the abuse of dominance, among others, to enforce compliance of natural monopolies with the standards of services. As a result, cases against natural monopolies constitute a main part of decisions on art. 10. Following the introduction of turnover penalties, the share of investigations against natural monopolies of all abuse of dominance cases, according to the FAS statistics, increased from approximately 40 % in 2008 to 70 % in 2014. During this period, the number of infringement decisions under art. 10 increased from 862 to 1948. Thus, more than 90 % of the increase in abuse of dominance infringements during these 6 years were an outcome of actions against natural monopolies.

Investigations against natural monopolies may be divided into two large groups: investigations regarding the refusal to provide access to network facilities, and investigations regarding non-compliance with the standards of final service provision. In the *LCAP* dataset,[1] approximately 54 % of appealed infringement decisions regarding the abuse of dominance during 2008–2012 represent decisions on non-compliance with the standards of service provision to the final customers, and approximately 8 % comprise decisions on refusal to provide network access to a competitor. Therefore, ‘household cases’ quantitatively prevail over ‘access to network’ cases.

Provisions of art. 10 may be effectively applied to provide fair terms of access even to fully separated network facilities. The most prominent example is the case of *Transneft* (2000), the operator of an oil pipeline that imposed different procedures and requirements for large and small oil suppliers under regulated transportation tariffs. After investigating the case and issuing an infringement decision regarding unfair trading conditions as dissimilar conditions of similar transactions, the Central Office of the competition authority issued a remedy to restore non-discriminatory terms of access. *Transneft* appealed in commercial court and eventually won judicial review; however, the company’s contract provisions were

[1] The LCAP dataset represents a general population of the claims submitted to the first instance commercial courts of the Russian Federation to annul the infringement decision of the Federal Antitrust Service under art. 10 and 11 of the law ‘On competition’ during the period 2008–2012. The claims cover more than 1/3 of all infringement decisions under these articles. The dataset enables the classification of the cases in different ways, including according to the legal status of the company that is found violating the law (natural monopoly or not), as well as according to the content of practice in question.

substantially adjusted in such a way that the small independent oil extracting companies considered the case to be successful.

At the same time, group of 'household' decisions have very little in common with the decisions on antitrust law violation under conventional understanding of antitrust enforcement. They are substantially closer to the enforcement of consumer rights than antitrust enforcement. Both types of cases affect the overall approach for economic analysis and primarily the understanding of harm. Refusal to provide access is definitely anticompetitive. However, in the analysis of different groups of cases, authorities may tend to consider them uniformly through the lens of harm. Even exclusionary actions are often found infringement because of the harm imposed on the counterparty (for example, a potential competitor), not because of evident anticompetitive effects.

Static analysis prevails over dynamic analysis because the market power of natural monopolies emerges firstly as a result of legal restrictions, and under these circumstances, a detailed assessment of entry conditions is excessive to define the dominant position. One important parallel in a typical investigation of natural monopoly practice and an investigation of hold-ups in bilateral relationships (see Sect. 4.1) is the importance of the facilities that connect buyer with supplier. In the investigations of hold-ups, Russian competition authorities tend to consider the dependence of the buyer from the supplier (or supplier from buyer) as a sufficient ground both for monopoly power and strict obligation of the supplier (or buyer) to sign and perform the contract on 'reasonable and non-discriminatory' conditions. Thus, the supplier (buyer) in an interdependent pair of firms is considered to have the same obligation as a natural monopoly. The impression is that the routines of economic analysis in the largest group of investigations become the standards for other cases with similar features.

To conclude, economic analysis in natural monopoly cases supports specific features of economic analysis in other abuse of dominance investigations, such as the importance of individual harm, the prevalence of harm as a proof of violation even if evidence on anticompetitive effects is available, the static analysis of structure, and the identification of dependence with market power.

4.4 Selective Distribution as an Abuse of Dominance: Examples of Pharmaceutical Companies

Investigations of distribution policy are not large or typical for Russian enforcement under art. 10, law 'On protection of competition'. However, they enable the tracking of how an approach that became routine for competition authorities affects the tactic of economic analysis in cases in which competition should be in the center of the investigation.

Selective distribution is typically considered an issue for antitrust enforcement because of the impact on competition (see Buccirossi 2015). Russian competition

authorities analyze selective distribution from another angle. Examples include investigations and decisions against *Novo Nordisk* (2010, 2013), *Teva* (2013) and *Baxter* (2014). All three investigations were initiated by complaints of the distributing company after the supplier refused to sign the distribution agreement. No pharmaceutical company applies a quantitative selective distribution system. In all cases, the immediate reason not to sign the contract was non-compliance of the potential counterparty with due diligence requirements. *Teva* intended to directly supply pharmaceuticals in the domestic market, whereas *Nova Nordisk* and *Baxter* had distribution agreements with several independent distributing companies.

At first glance, these cases should be analyzed using a vertical restraint approach, for example, suspecting that suppliers tend to impose territorial restraints or exclusivity. However, the only fact under analysis was the refusal to sign or renew the contract with a particular partner. Infringement decisions do not discuss anticompetitive effects of refusals. The influence of the organization of distribution on prices is also not discussed. All three companies were found to infringe on art. 10 by unjustified refusal to supply and application of discriminatory contract terms for distributors. Share in the particular market (defined as a proprietary brand name of a drag) and harm of particular distributors (measured by lost profit) comprised the primary evidence presented in the decisions. The logic of the decision was based on the idea that if a supplier is dominant in the market, he/she cannot deny a proposal to buy or sign a distribution agreement discretionary because it may impose harm on a potential counterparty.

Arguments of decisions regarding the abuse of dominance by suppliers of pharmaceuticals appear surprising if they are not compared with the decisions against natural monopolies or parties which abuse dependence of supplier and buyer. A distribution agreement was considered similar to essential networks in regulated industries and the right of the producer to refuse signing a contract was considered a hold-up or abuse of dependence. The protection of one particular distributor was considered an objective of competition enforcement, using exactly the same logic as the protection of interdependent partners in stable bilateral relationships.

5 Losses from Monopoly in the National Model of Abuse of Dominance Enforcement

To complete the comparison between European and Russian approaches to economic analysis in abuse of dominance cases, it is possible to use the example of a microeconomic textbook model. Both traditions use, as a starting point, the model of monopoly pricing that decreases consumer surplus and total welfare. In a typical European textbook of competition economics, a subsequent explanation follows that consumer surplus is a welfare standard but price is not an immediate target for enforcement. This statement corresponds to the fact that enforcement against a pure

exploitative conduct is rarely applied. In contrast, in the framework of Russian competition policy, consumer welfare is an immediate target for enforcement. A substantial number of investigations against excessive (high monopolistic) price is the main indicator of this approach. Next, the goal to protect consumer welfare extends to the performance of counterparties. At the subsequent step because consumer surplus is a clear concept on the blackboard but not easily measurable, the target to protect consumer welfare extends to the target to protect consumer (counterparty) well-being. Because different dimensions of well-being can be protected by intervention towards a dominant company, both the interests of the individual customers and the broad public interests can become targets of particular competition enforcement. There is no specific ideological reasons for the introduction of public interests in competition policy enforcement (and public interests are not discussed in Russian competition law). Without substantial exaggeration, public interests can become a target for protection by competition enforcement with nearly the same probability as the interests of any individual consumer or company.

The monopoly model from an introductory textbook has been accepted in Russian competition policy until recently, with several important exceptions. One exception is the concept of assessment of expected welfare losses to be compared with the cost of public intervention. Even a case in which one specific consumer is harmed may cause an investigation. A second exception is the potential trade-offs between efficiencies and losses from the restrictions of competition. When the distributive effects of practice are analyzed, allocation efficiency considerations are often neglected. Among these considerations, incentives are the most important. Little attention to the impact of practice and prohibitions on incentives is connected with the prevalence of the static analysis of markets and the behaviors of market participants. For example, if assessment of conduct as exploitative leads to intervention that, in turn, causes a price decrease, but simultaneously decreases the incentives to enter the market, the last effect is likely to be ignored. The same is true for the assessment of intervention effects in cases of hold-ups. If the application of anti-abusive provisions towards companies locked in bilateral relationships *ex post* decreases incentives to undertake contractual precautions *ex ante*, the latter effect will be unattended.

In contrast to the static monopoly model, the concept of monopoly power as a tool to exploit a counterparty and redistribute gains in one's own favor and models of entry accommodation and entry prevention are less influential in competition enforcement. Again, one explanation may be the specificity of the market structure and investment climate, with relatively poor incentives to entry and modest entry rates (Estrin and Prevezer 2010). A rare observability of entry leads to limited attention to related models and arguments in competition investigations.

This framework explains why in economic analysis under investigation of the abuse of dominance, static analysis prevails over dynamic analysis, market shares and market concentration are more important than potential competition and entry barriers, different prices in different markets are always considered with suspicion, and evidence of complaints from final customers and data regarding the losses of business partners may be sufficient to make decisions regarding infringement.

6 Conclusion

Economic analysis in the investigation under art. 10 of the Russian law 'On protection of competition' reflects specific tasks that competition enforcement of the country should fulfill. The substantive rules of the European competition legislation on the abuse of dominance were adapted to meet local needs. The approach to economic analysis has been following the enforcement development way, but not otherwise.

At first, losses due to transitional monopoly were perceived as an outcome of the persistent market structure and, to a lesser extent, were associated with the competition restrictions. Provisions on the abuse of dominance consequently became the most demanded field of competition policy. However, competition policy was not sufficiently separated from the tasks, which, in developed market economics, are performed by regulation in limited monopolized sectors. The assessments of market boundaries and market shares are the fastest growing component of economic analysis. For the same reason, losses from exploitative abuse that are not related to restrictions of competition become the main target of antitrust enforcement. In local conditions, the area of European competition policy, which is minor in Europe, became most significant in Russia. Thus, economic evidence in investigations regarding the abuse of dominance shifts from the analysis of competition to the analysis of harm.

Special attention to the harm of firms on adjacent markets is explained by the large-scale hold-ups in the relationships inherited from the administrative system and their large-scale economic effects; by the severe impact of the third-degree price discrimination by upstream exporting companies. This issue is specific for countries with a combination of large upstream exporters and large domestic manufacturing sector that suffers from high prices on inputs. The application of competition policy to resolve this issue is almost accidental in the absence of widely recognized policy receipts.

Historically, anti-abusive provisions have been applied in circumstances when only one buyer or supplier was harmed (hold-ups) or when one partner represented the entire group (entrants who seek access to network facilities). This experience, at least in part, explains why the assessment of individual harm prevails over investigations of the abuse of dominance. In turn, the lack of alternative policy tools explains why competition enforcement was applied to resolve hold-up issues and to provide non-discriminatory access for networks in deregulated industries, or to enforce compliance with the standards of service provision by regulated companies.

In conclusion, the approach to economic analysis in competition enforcement, local needs for economic policy intervention, legal tradition and the interpretation of substantial rules, and selection the targets for enforcement are interrelated. Economic analysis reflects specific features of Russia as transition economy without a clear distinction between monopolized and competitive sectors; an economy with comparative advantages in the products of upstream capital-intensive

industries; and a legal system with a high level of complainant protection but a weak tradition of harm assessment.

Economic analysis reflects the outcome of the legal transplantation of art. 102 TFEU. Transplanted rule revealed to be able to meet domestic demand after substantial transformation. Citizens, firms and government consider the enforcement of anti-abusive provisions to be important for well-being promotion. However, the most receptive provisions appear to be the least applicable and most questionable in European competition policy, namely, enforcement against exploitative abuses.

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Economic Analysis in Competition Law Enforcement in Russia: Empirical Evidence Based on Data of Judicial Reviews

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Abstract Russia is an example of a rapidly changing competition legislation and large-scale enforcement combined with an easy access to judicial review. Simple statistical analysis of the economic evidence applied to competition authority's decisions and the judicial reviews shows the importance of the distinction between mandatory vs. optional tools of economic analysis, the mutual influence of economic analysis and enforcement targets, as well as strong path-dependence in economic analysis application. The slowdown in the use of economic analysis highlights the importance of special efforts to support incentives for analytical work by competition authorities. Encouraging of deeper economic analysis should overcome motivation on making decisions which are not challenged during judicial review. Otherwise, if a deeper economic analysis increases the likelihood of successful annulment of infringement decisions in courts this would discourage attempts of the authority to make additional efforts for its enhancement and improvement.

Keywords Antitrust • Economic analysis • Judicial review • Russia

1 Introduction

The goal of this chapter is to explain trends in the application of economic evidence in the enforcement of competition law in Russia, which is a country with a recently developed competition legislation, but already large-scale enforcement of

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competition law and easy access to prompt judicial review of the infringement decisions. Using a combination of qualitative and quantitative approaches to measure the amount of economic evidence applied, we show the importance of the distinction between *mandatory and optional* tools of economic analysis, the mutual influence of competition legislation and demand for specific analytical tools, and the constraints that a young competition authority faces in applying economic evidence.

The state of affairs in competition analysis in developed jurisdictions has been discussed extensively (see Neven 2006). In-depth analysis not only shows the growing tendency of economic consultancy in antitrust at least until recently, but also confirms that infringement decisions of competition authorities apply concepts of modern Industrial Organization theory properly (Gual and Mas 2011). Researchers and especially working groups in international organizations (like the International Competition Network) pay attention to the development of economic analysis in other countries with relatively young competition enforcement, however studies are based mostly on reports and surveys made by the authorities whose activity they investigate. Analysis of determinants of appealed outcomes is relatively rare [important exceptions for Europe are Carree et al. (2010) and Geradin and Petit (2012)].

Competition authorities in countries without a long tradition of competition enforcement are at an especially strong disadvantage in relation to the application of economic evidence. The problem is not only that authorities cannot provide high quality economic analysis, or cannot hire high-profile experts to do that, or face binding budget constraints. All that is true, but another important issue are incentives (or lack of them) to produce high-quality economic evidence. Not only the competition authority but also experts, market participants and other target groups—citizens in the broad sense—should recognize the return on investments in high standards of economic analysis. Among other referent groups in the continental legal system judges in courts with the power to revise and reverse decisions on antitrust legislation are of special importance. If decisions on annulment are made regardless of the quality of economic analysis provided by the parties, and furthermore decisions that use more complex economic concepts face a decreased probability to be upheld in courts, there is a need to support economic analysis in authorities by special policy measures.

The chapter is structured as follows. Section 2 describes a quarter of a century history of economic analysis in the Russian competition law enforcement, including *mandatory* instruments of competition analysis. Section 3 provides background information for the process of judicial review of competition decisions. Section 4 describes source and design of data on economic evidence using the decisions of Russian commercial courts. Section 5 explains the trends of economic evidence application under judicial review of the decisions of competition authorities. Section 6 discusses the results obtained. Section 7 concludes.

2 Brief Review of Competition Law Enforcement in Russia

The first competition law 'On competition and restriction of the monopolistic activity' was adopted in 1991. Since then the relatively short history of Russian competition policy can be divided into at least two periods with their own tendencies of competition analysis development. A common feature of both periods is the extremely restricted list of instruments to investigate collusions. Recently (in 2010) the Russian competition authority, the Federal Antitrust Service (FAS), was empowered to undertake downraid inspections and the practice of the inspections is still developing. For most of these 25 years antitrust investigations and decisions were concentrated mostly on the abuse of dominance and concerted practice cases.

2.1 Early Period: Before 2006

In the period before 2006[1] the main goal of the Russian competition authority was considered to be the prevention of abuse of structural dominance. The instruments used to achieve this goal were mainly of regulatory nature, including direct and indirect price regulation (Yakovlev 1994). Also, during this period, fines for antitrust law violations were extremely low and unable to achieve any deterrence effects.

In order to specify the objects of enforcement, the competition authority used specific *Registers of the economic entities with shares exceeding 35 % in the relevant market*. The registers were adopted at federal level by the Central Office of competition authority and at regional level by regional subdivisions. These days there are about 250 companies in the federal Register and from several dozens to several hundred companies are in the Registers of regional subdivisions. Since the introduction of the Registers market shares (and therefore market definition) are at the center of the competition enforcement and use of economic evidence in Russia.

The large number of investigations and decisions on the abuse of dominance reinforces the importance of market share and market definition. The share of investigations on abuse of dominance steadily increases in the structure of FAS

[1] An important point to stress here is that the responsibilities of the Russian competition authority throughout the quarter century are extremely broad. FAS is responsible for control and supervision of the enforcement of large number of laws and regulations, including law 'On protection of competition' (2006) that covers enforcement against abuse of dominance (art. 10), anticompetitive agreements (art. 11) and concerted practice (art. 11.1), merger clearance, but also unfair competition, state aid and especially actions of state and municipal authorities, which restrict competition; anti-competitive actions of state authorities, and several other laws (law 'On contracting in public procurement', 'On electricity sector', 'On natural monopolies', 'On advertising', 'On procurement of specific types of legal persons', 'On investments in strategic companies' and recently (Autumn 2015) on a number of laws devoted to tariff regulation).

activity and came up to 94 % in 2014 (3967 out of 4211 according to Annual Report of FAS).

In order to unify enforcement practice across regional subdivisions the Russian competition authority adopted specific guidelines to define relevant markets. Interestingly, the competition authority should apply *Guidelines* in order to decide on the inclusion of undertakings in the Register, as a part of regular activity. The first version of *Guidelines* was introduced in 1996, and then new releases were adopted in 2006 and 2010 (Recent version is the *Guidelines for the analysis of market and assessment of competition, 2010*). All the guidelines strongly rely on the structure-conduct-performance (SCP) approach in assessment of competition. Market shares and entry barriers are in the center of economic analysis presumed. In this context *Guidelines* applied by the Russian FAS are wider in scope than the *Commission notice on the definition of relevant market for the purposes of Community competition law* (1997) and closer to the earlier version (1992) of US DOJ *Horizontal merger guidelines* (with less reference to coordinated effects in contrast to unilateral ones).

The competition authority originally developed *Guidelines* mostly for the qualification of dominance. Later versions of Guidelines were applied also for the assessment of the competitive effects of mergers. Recently the scope of *Guidelines* is extended to anticompetitive agreements and concerted practices. Development of the methods, which *Guidelines* rely on, reflects the disputes on the results of competition analysis, which emerged after the reform of competition law and the introduction of the system of penalties.

When the most-used enforcement tool was regulatory intervention, demand for economic evidence was relatively weak. However these interventions on presumably dominant market participants have not been very widespread since the mid-1990s, when the last elements of indicative price planning for dominant companies were removed.

2.2 New Law 'on Protection of Competition' and the Introduction of Turnover-Based Penalties: From 2006 Up to Now

In 2006–2007 competition legislation and enforcement in Russia were deeply reformed. Two components of the reform were the introduction of the new law '*On protection of competition*' and changes in the system of penalties by introduction of turnover-based penalties (later a fixed cap on the fine for the specific type of violations—violations that have no anti-competitive effects—was established, and this is important for our analysis). Under the new fine system, incentives to appeal infringement decisions increased substantially. Market participants and the legal community began to demand increased standards of evidence in the decisions on competition law violations. During a relatively short time from 2006 the application

of different economic concepts with accompanied tools of analysis developed separately. One group of economic evidence became widespread in competition investigation and litigation. Another group failed to be well understood by legal experts. Norms of this group are excluded from the enforcement practice de-facto or even by the law changes and amendments.

2.3 Legal Standards of Economic Evidence Under Competition Investigations

Competing evidence in the framework of judicial reviews revealed several critical points in the standards of economic evidence in deciding competition cases. Four important examples are the *Guidelines for market assessment*, comparable market analysis, standards of proof for concerted practice and the role of efficiencies. The first two examples illustrate how legal rules influence analytical approaches in competition cases. The third example shows a different tendency: how dissatisfaction with the outcomes of enforcement and underlying economic analysis explains changes in legal definitions of illegal actions. The fourth example illustrates the importance of absence in contrast to presence of mandatory instruments of analysis.

2.3.1 The Guidelines for Market Analysis and Competition Assessment

As mentioned above, the approach of the competition authority to assess market competition and therefore to reach a decision on dominance is reflected in the *Guidelines for market analysis and competition assessment* (recent version of the year 2010). Over time the Guidelines were revised together with the changes in competition law and under the influence of demand from independent review (first of all, judicial) of decisions. In each revision, the *Guidelines* specify technical features of the analysis more precisely. For example, the early versions of the *Guidelines* referred to substitutability as a criterion to delineate market boundaries, but without explaining the approach to do so in detail. The latter versions introduce the SSNIP or hypothetical monopolist test that is expected to be applied using several methods (priority is attributed to surveys of consumers).

The introduction of the collective dominance doctrine into competition law (2006) motivated FAS to supplement the rules of analysis by the criterion of stable market share distribution (as indirect indicator of the absence of workable competition). Recent version explains in detail, for instance, what are substantial changes in market shares (qualification of collective dominance requires changes in market shares to be non-substantial over time), what types of entry barriers one should take into account when assessing competition, how trade flows among regions affect geographical market boundaries etc. Over time the *Guidelines* are becoming more complex, keeping however the SCP approach as the basis for assessing competition.

Close attention of the competition authority and expert community to the content of the *Guidelines* is due to the fact that its use for a large part of competition cases is mandatory. One needs to rely on the *Guidelines* to qualify the position of an undertaking as dominant in the market, if the undertaking has no legal status of natural monopoly and is not listed in the *Register of the undertakings with market share exceeding 35 %*. One new legislative initiative in competition law implies the mandatory application of the Guidelines not only in abuse of dominance but also in agreement (both horizontal and vertical) cases.

2.3.2 Comparable Markets in Excessive Price Assessments

Another approach that was almost directly induced by the law is comparable market analysis (introduced in Russian law 'On protection of competition' in 2009). Provisions on excessive price (high monopolistic price, in terms of Russian competition legislation) are applied in relatively high number of decisions. In the new law 'On protection of competition', excessive price is defined in two ways: as a price that exceeds the price in comparable competitive markets and as a price that exceeds some reasonable sum of cost and profits. The law considers the first test as the basic one, and the second test should be applied only if no comparable market is found for price assessment. However, many Russian experts have criticized the approach of the Russian antitrust authority in relation to the comparable market test (see Shastitko and Golovanova 2015, in Russian) and the limitations of this approach have been certainly addressed in the economic literature for a long time.

2.3.3 Standards of Proof for Concerted Practices

For decisions on concerted practices (historically defined in the Russian law as something close to the concept of tacit collusion) analysis of market structure can provide some information whether market participants have incentives to collude but do not allow the authority to decide that tacit collusion has been in place or not. To make decision on concerted practice the Central Office and subdivisions of FAS have applied different approaches and standards of proof. Many of them were shown to be unconvincing to commercial courts. For instance, from 355 decisions on concerted practice, which were appealed in commercial courts within the period 2008–2012, 42 % did not come into force because of the decisions of first instance and higher courts, and this ratio is almost one third higher than the ratio of reversed decisions for all other claims.

Dissatisfaction of courts with the results of FAS analysis reveals a challenge that can be approached in different ways. First, in 2010 the liability for concerted practices was decriminalized, and one reason was exactly the relatively low reliability of competition authority decisions. Second, at the end of 2011 the definition of concerted practice in the law 'On protection of competition' was changed in a

way that increases standards of proof (connected with market transparency). In short, under the new definition the test for concerted practices becomes more demanding. It includes the 'public announcement' of future strategies that is beyond the conventional business practice in the industry. In this way the competition authority looks for something like 'hard evidence of coordination'. Third, the number of investigations and infringement decisions on concerted practices decreased dramatically: according to the FAS annual report, from 23 in 2012 to only 2 in 2013 and 4 in 2014 (only 5 years ago several dozen infringement decisions were appealed in commercial courts annually).

2.3.4 Efficiencies in the Russian Competition Enforcement

Efficiencies is an example of economic evidence that is almost never used because of the absence of mandatory application guidelines. Article 13 of the law 'On protection of competition' includes efficiency considerations, which can be considered when judging certain practices. However there is little evidence of efficiency defense in competition analysis, in spite of the fact that there is a long list of practices that are considered illegal only on an effect-based basis. In the rare examples where there were attempts to take into account efficiencies (Shastitko et al. 2014) the competition authority and other parties faced difficulties to reveal, describe and quantify efficiency gains. In contrast to relevant market delineation and competition assessment, no guidelines support the analysis of efficiencies. As a result, neither officers in the authority nor companies resort to efficiencies-related arguments under investigations and judicial reviews.

3 The Judicial Review of Competition Decisions in Russia: Introductory Notes

Judicial review became an important component of the competition law enforcement after the introduction of turnover-based penalties. At the same time the procedural rules of challenging the decisions of administrative authorities support incentives to appeal the infringement decisions.

Hearings in commercial courts provide adversarial procedures with clear definition of the infringement that a company has to challenge. Rules of investigation and making decisions in FAS on the other hand, follow an administrative procedure that does not provide incentives for companies to present evidence in front of the competition authority. When FAS appoints the commission for investigation of potentially anti-competitive practices, alleged infringement is not specified yet. From the order to initiate proceedings to the decision on infringement the type of infringement and therefore type of supporting evidence are not known for the company precisely. In contrast, appealing the infringement decision of FAS in

commercial court plaintiff can appeal against a definite decision (type of alleged infringement is known perfectly).

In addition, access to judicial review is relatively easy in Russia. Case filing fee is negligible (2000 RUR or approximately 30–50 euro recently). There are no restrictions on representation (company can represent its interest with the in-house lawyer, and representatives in the court hearing need not even have legal education or bar association membership). Commercial courts[2] are motivated to have no backlog and make decisions within a short time period. This is true not only for commercial courts of the first instance but also for appellate and cassation instances, and also for the Supreme Commercial Court.[3]

These circumstances motivate companies to appeal the infringement decisions for different reasons. Companies can claim to be innocent and that FAS is making false convictions, they can seek to decrease the amount of fine or revise remedial requirements, and finally they can seek to delay the FAS decision coming into force. There are about 1/3 of infringement decisions of FAS, which are submitted for judicial reviews annually. Outcomes of judicial reviews can be an important indicator of the quality of FAS decisions, and also can be a driver for changes in the guidelines for the competition analysis, and also in legal rules and standards of enforcement.

4 Statistical Analysis of Economic Evidence Based on Data of Judicial Review

4.1 Data and Research Approach

We use a unique dataset of the claims to commercial courts to annul the infringement decisions of the competition authorities from 2008 to 2012, which represents more than one-third of all the FAS decisions (collected by the Laboratory of competition and antitrust policy, Institute of Industrial and Market Studies, Higher School of Economics, *LCAP* dataset hereafter). The sample covers all the decisions made by commercial courts in the Russian Federation on appealed infringement decisions on article 10 and article 11 of law On protection of competition. Since one

[2] Russian courts are under reform that aims to merge the commercial court system (that is responsible among other things for resolving disputes with governmental bodies) and the regular court (courts of general jurisdiction) system. Commercial courts still handle the appeals of the decisions of antitrust authorities.

[3] Normally appeals against the decision of a public authority can be subsequently considered by three courts: commercial court of the first instance, commercial appellate court and commercial cessation court. The highest (in the nearest past it was Supreme Commercial Court, and now this is Supreme Court) has discretion to handle or not to handle specific case for supervision. The Highest Court cannot revise the decision itself but it has an option to send it back to the court of the first instance.

third of decisions made by the FAS are appealed (the rate of appeal is close to that in European Union, see Carree et al. 2010), the coverage of our dataset exceeds one-third of all the infringement decisions and half of the infringement decisions on agreements (horizontal and vertical) and concerted practice.

To describe and explain the essential features of the standards of proof of competition investigations, we combine qualitative and quantitative analyses. We use decisions of commercial courts of the first instance as observations, and attribute to these observations quantitative characteristics, including the following:

- Type of alleged violations (abuse of dominance or agreements and concerted practice, articles 10 and 11 of the Law on competition, respectively)
- Features of the alleged violator (specifically whether the alleged violator has the legal status of a natural monopoly)
- Indicators of the court decisions (whether the court of first instance satisfies or refuses the appeal, whether the parties appeal to a higher court, whether the higher court reverses the decision of the first instance)
- Duration of the litigation
- Qualitative features of the alleged violation

A number of useful distinctions can be made in relation to these features:

One concerns the ‘functional’ features of a violation. For example, we indicate separately non-compliance with the rules on the final service provision by natural monopolies, non-compliance with the rules on interconnection of competing networks, access to the network by vertically disintegrated competitors, and conflicts between operators of local networks and their sub-subscribers. A second distinction concerns cases where restriction of competition represents the main evidence of law violation and cases where the harm imposed is independent and the main evidence of a presumed violation. In cases where the harm imposed is the primary evidence of violation, we also divide these into cases where the harm is sufficiently large in contrast to the cases in which there is harm to only a very small group (one physical or legal person in extremis);

- Indicators of the type of evidence that has been applied to prove a law violation. Specifically, we consider application of the *Guidelines* for market analysis and competition assessment, developed and legally approved by the FAS, the calculation of the market share of alleged violators, specialized expertise provided by the parties under litigations.
- We calculate an indicator of judge’s experience. Judge experience is measured as the number of cases decided in which the Russian competition authority (FAS) was involved. Moreover we construct an indicator of FAS subdivision experience as the number of cases decided in the region and an indicator of infringer’s recidivism as the number of antitrust cases against the company in the past.

We consider the qualitative nature of the data as an important advantage. One weakness is the inability to access the quality and coherence of economic evidence presented by the parties. We can only mention whether the judge takes specific

evidence into account when making decision. In addition to quality, deepness and complexity, we also cannot assess the cost of the evidence that the parties have to pay.

At the same time we think that given that the full set of documents which accompany FAS decisions is unavailable, the advantages of the data on appealed decisions outweigh any weaknesses. An important advantage of the data is that it allows us to track the impact of FAS analysis on the 'survival' of the authority's decisions—that is, on the probability that decisions are upheld.[4]

4.2 'Proper Antitrust' and 'Non-proper Antitrust' Decisions

An important specific feature of the Russian competition enforcement is the application of competition law provisions against actions with no prominent anti-competitive effects (see Avdasheva et al. 2015). Heterogeneity of the sample with respect to the anti-competitive effects and relevant evidence motivates us to divide all observations into 'proper antitrust' (PA) and 'not proper antitrust' (NPA) groups. The last group includes cases where no evidence of competition restriction exists and all the hearings are concentrated on the harm imposed. There are three main types of 'not proper antitrust' cases in our sample:

- Cases initiated against natural monopolies due to some harm imposed on counterparty are considered as NPA if the harm is imposed on a small group of final customers and/or there is no sign that the harm is intentional and was caused by anticompetitive behavior. In cases of this type the alleged violation may be a technical mistake in a contract term, or a sign of a low quality of service. There are also several cases where the alleged violation represents contract terms implied by the current law to discipline consumers in planning demand.
- Conflicts on interconnections with sub-subscribers (when one organization connects to a network through a device located at the premises owned by another organization) are sometimes considered by the antitrust authority as antitrust cases on abuse of dominance in the form of a restriction of access to a network, by charging excessive prices, etc. The dominant position of the accused organization is usually reached by a narrow definition of the market. Thus, it appears that the essential facilities doctrine is applied to non-antitrust cases (NPAs).

[4] Another possible limitation of our dataset is that we codify the data on economic evidence on the basis of the text of the court decision. If economic analysis is presented but parties in the litigation do not discuss it, the court has option not to include the relevant data in its decision. In other words we observe 'the economic evidence discussed' but not 'total amount of economic evidence produced'. However we do not consider that this difference creates large errors, because competing parties in the process have strong incentives to reveal the strongest results in their favor and the weakest results in favor of their opponents.

- As NPA we also consider cases where harm is used as an independent proof of violation (without any evidence concerning actions that restrict competition). The discretionary definition and vague evidence of harm are not specific for cases against owners of local networks or natural monopolies. They are present in more than ¾ of the appeals submitted.

The distinction between 'proper antitrust' and 'non-proper antitrust' cases does not imply that we make any judgment about the welfare effects of antitrust enforcement or about the reasons of the antitrust authority to investigate a specific case. The border between proper antitrust decisions (PADs hereafter) and non-proper antitrust decisions (NPADs respectively) is the presence/absence of specific competition considerations in assessing the violation of the law 'On protection of competition'. Division between PAD and NPAD is specified in Russian competition legislation. They are different in terms of the system of penalties applied (turnover-based penalties for PAD but not for NPAD since 2010). However there is no difference in the procedure of analysis presumed by the law.

4.3 Sample Structure

Concerning the structure of the sample according to the type of infringement, the FAS investigates more abuse of dominance cases than all other competition authorities in the world. Abuse of dominance cases represent more than 80 % of cases for the whole period. The largest share of cases considered by commercial courts involve alleged violations by natural monopolies.[5] Decisions of the FAS are 'cheap' in terms of the resources used: the average duration of an investigation is only 3 months (it is almost ten times longer for cases in the European Commission) and the average time for litigation process in system of commercial courts is 9–10 months from the submission of claim to final decision (Table 1).

Share of claims to annulment which are satisfied (at least partially) decreases over time from about 50 to 30 %. The percentage of decisions of courts of first instance appealed is more than 80 % and this number is increasing over time. However courts of higher instances reverse decisions of first instance court in 44 % of cases in 2008 and only in 17 % of the cases in 2012.

Judges in the commercial courts of first instance have substantial experience in deciding the cases where competition authority is involved. The average number of those cases per judge who decides *proper antitrust cases only* (the specificity of this group is explained in the next subsection) is 14 in 2008 and it reaches 73 in 2012 (in contrast to the judges in US courts, where a similar indicator is distributed near zero, see Baye and Wright 2011).

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[5] The Russian law 'On natural monopolies' includes a list of activities with the relevant legal status.

Table 1 Claims for the annulment of competition authorities' infringement decisions: 2008–2012

	2008	2009	2010	2011	2012
Infringement decisions					
Infringement decisions made by the FAS[a]	1045	1731	1979	2625	3216
– On abuse of dominance (art. 10)	862	1438	1539	2310	3029
– On horizontal or vertical agreements, concerted practice (art. 11)	183	293	440	315	187
Claims for the annulment of FAS decisions					
Claims for the annulment of FAS decisions submitted in commercial courts of the first instance (% of the number of decisions in parentheses):	337 (31.96)	648 (37.09)	962 (48.05)	1129 (43.01)	626 (19.47)
Including					
– Not proper antitrust (% of the number of claims in parentheses)	262 (78.44)	485 (75.55)	716 (75.29)	1018 (90.17)	564 (90.10)
– Proper antitrust (% of the number of claims in parentheses)	72 (21.56)	157 (24.45)	235 (24.71)	111 (9.83)	62 (9.90)
Decisions of the commercial courts					
Infringement decisions annulled (completely or partially) in the courts of the first instance (%)	51.50	42.38	41.32	35.87	33.87
Appeals of the decisions of the courts of the first instance (%)	73.05	78.97	84.54	83.97	82.75
Decisions of the court of the first instance, reversed by the higher court, from all the appealed decisions (%)	40.57	21.30	19.53	18.88	17.37
Share of FAS decisions finally annulled (%)	46.41	43.15	39.96	37.56	36.42
Average time final decision takes (in months, mean, standard deviation in parentheses)	9.49 (6.42)	9.96 (6.03)	9.80 (6.15)	10.56 (6.28)	10.31 (5.60)

[a]Source: *LCAP* database, data of the Federal Antitrust Service RF

Judges make decisions on appeal cases on the basis of procedural as well as substantive correctness of the analysis by FAS. In the overwhelming majority of cases (more precisely, 84 %), when reversing the decisions of the competition authority the judge refers to the incompleteness and/or incorrectness of the economic analysis performed by FAS.

5 Economic Evidence Discussed Under Judicial Review: 2008–2012

In the section we provide quantitative overview of the economic evidence applied in the total population of infringement decisions which were submitted for judicial review during the period 2008–2012. As indicated above, 2008 is the first year, when Russian commercial courts of the first instance revise the decisions made at

the same time under the recent version of the law 'On protection of competition' and under the recent version of the Code on administrative violations that introduces turnover penalties for violations of articles 10 (abuse of dominance) and 11 (anticompetitive agreements). Before 2008, under fixed and relatively low monetary penalties for violations the incentives to claim for annulment of infringement decision were substantially lower. Respectively, incentives to discuss evidence presented by competition authority and present counter-evidence increase since that date.

We present overall trends in the amount of economic evidence that parties present before the court and compare the amount of 'mandatory' economic evidence that is presented in order to comply to the legal rules with the amount of 'voluntary' economic evidence that is not required by legal rules. We show how the evidence presented in the case varies with the experience of judges and subdivisions of FAS, which make a decision. Also, we compare the outcomes of the judicial review of decisions depending on whether a particular type of economic evidence is presented in the decision or not.

5.1 General Trends in the Amount of Economic Evidence Presented in the Courts' Decisions After Tightening of Sanctions

Difficult measurement issues arise in the quantitative assessment of economic evidence. Ideal indicators would measure how economic evidence fits the objective of the analysis in the particular case. In the absence of relevant indicators of the quality of economic evidence under competition investigation and court hearings we consider several quantitative indicators for the approximate assessment of how frequently parties in the litigation use particular types of evidence, including data, method of presentation, reference to the analysis in relevant cases which were decided before, reference to theoretical modelling or empirical observations. All four indicators are constructed in a similar way. Every type of evidence (or approach to the analysis, or channel of presentation of economic evidence) is described by a binary variable indicating whether the type of evidence is applied ('1') or not applied ('0') in the case. Four economic evidence indicators are constructed:

1. *Economic evidence indicator* (EE) is constructed using four binary variables: comparison with other markets and/or the same market in other periods applied; at least qualitative assessment of harm induced by anti-competitive behavior; reference to theoretical model by either party (FAS or company); reference to econometric model suggested by either party.
2. *Composite effects-based indicator* uses 13 binary variables, including comparison with other markets and/or the same market in other periods applied in the analysis; at least qualitative assessment of harm induced by anti-competitive

behavior; reference to theoretical model by either party (company or FAS); reference to econometric estimation by either party; reference to the expert report(s) to FAS; reference to the expert report(s) to the plaintiff (company); specialized expertise submitted to court by company; expertise ordered by the court; participation of expert(s) in the hearings in the form of oral statement; reference to the expert report(s) to the plaintiff; specialized expertise submitted by company; third party participation in the evidence collection, participation of third party in hearings in person; the fact, that judge takes the third party's arguments into consideration; discussion of justification of the practice provided by the company to FAS.

3. *Composite effects-based indicator—restricted* (CEB-2) is constructed as weighted average of ten binary variables, including comparison to other markets and/or the same market in other periods applied; at least qualitative assessment of harm induced by anti-competitive behavior; reference to theoretical model by either party; reference to econometric estimation suggested by either party; reference to the export report(s) to FAS; reference to the expert report(s) to the plaintiff; specialized expertise submitted by company; expertise ordered by the court; participation of expert(s) in hearing in the form of oral statement; discussion of justifications of the practice provided by the company to FAS.
4. *Mandatory evidence indicator* (*ME*) is constructed as a weighted average of only two variables—application of *Guidelines for market analysis and competition assessment*, and estimation of market share by FAS.

Every indicator can take values from 0 to 1. The higher the indicator value is the greater the use of economic evidence in judicial review is. Values of the indicators can be interpreted at least in two ways: in any particular case, they show how close the parties are to use all available methods and sources of economic evidence; for the population of cases they show the share of cases, where parties use all the relevant opportunities.

Table 2 provides information on the trends in the value of indicators. Three observations are important. First, the amount of economic evidence applied in reaching infringement decisions seems to be very small. Second, there is no systematic statistically significant difference between the amount of economic evidence discussed under review of PADs and NPADs. This means that competition authorities and judges exert a similar level of efforts to decide proper antitrust and non-proper antitrust cases, making no distinctions between them. Finally, there is no increasing trend in the amount of evidence applied. Moreover, values of CEB-1 and ME are evidently decreasing for PADs over time.

The non-increasing demand for economic evidence needs an explanation. One can expect, on the contrary, an increasing importance of economic evidence over time. First, learning-by-doing effect should work and standards of evidence should grow in the relatively young competition jurisdiction. Second, high penalties for antitrust violations increase incentives to appeal infringement decisions, and therefore demand for evidence, and counter-evidence presentations.

Table 2 Indicators of the amount of economic evidence under judicial review of infringement decisions: 2008–2012

	2008		2009		2010		2011		2012	
	PADs	NPADs	PADs	NPADs	PADs	NPADs	PADs	NPADs	PADs	NPADs
EE	0.02	0.01	0.09	0.01	0.03	0.01	0.08	0.01	0.04	0.01
CEB-1	0.17	0.19	0.19	0.18	0.14	0.14	0.16	0.17	0.14	0.13
CEB-2	0.05	0.08	0.09	0.08	0.04	0.04	0.08	0.06	0.04	0.02
ME	0.21	0.06	0.20	0.13	0.17	0.18	0.18	0.14	0.13	0.13

Source: own calculation using LCAP database

Table 3 Mandatory and voluntary economic evidence in PADs and NPADs: 2008–2012, %

	Mandatory evidence (prescribed by law)											Voluntary evidence (PADs only)			
	Guidelines					Market share calculation			At least one indicator of concentration (*)			Strategic interaction among market participant is discussed		Mechanism of restriction of competition is discussed	
	PADs			NPADs		PADs		NPADs	PADs		NPADs				
	10*	11*	R*	10*	R*	10*	11*	10*	10*	11*	10*	10*	11*	10*	11*
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
2008	66.67	44.19	25.00	39.13	7.04	55.56	0.00	26.09	77.78	53.49	52.17	22.22	34.88	66.67	79.07
2009	64.29	34.48	40.00	45.24	10.60	28.57	4.31	22.62	71.43	37.07	63.10	28.57	32.76	57.14	86.21
2010	45.83	22.45	25.00	40.26	9.25	41.67	11.22	46.75	66.67	32.65	57.14	12.50	22.45	58.33	62.24
2011	66.67	66.67	33.33	22.74	12.45	33.33	33.33	18.91	83.33	83.33	47.03	16.67	16.67	100.00	100.00
2012	33.33	11.76	60.00	33.33	17.71	33.33	5.88	16.58	44.44	23.53	51.32	11.11	17.65	55.56	52.94

Source: own calculation using LCAP database

Notes:

10*—Abuse of dominance (art. 10) without natural monopolies and sub-subscriber cases

11*—Agreements and concerted practices (art. 11) without tender cases

R*—Alleged violator is included in Register of companies with market share more than 35 %

(*)—Position of Natural Monopoly or Register or Guidelines on market analysis and competition assessment

5.2 Mandatory vs. Voluntary Economic Evidence

Mandatory (based on the *Guidelines*, market share) economic evidence or at least evidence prescribed by the law (e.g. comparative analysis) is the type of evidence mostly discussed in the court decisions. The interesting result is that over time analytical instruments mandatory for one type of decisions spread over another type (Table 3). For instance, *Guidelines* that are elaborated specially for the abuse of dominance investigations and are mandatory for them (if the company is not in the Register and has no legal status of natural monopoly) are extensively applied in the discussions of decisions on agreements and concerted practice. The same becomes true over time for comparative analysis of the markets, which is legally prescribed for revealing excessive prices.

This result confirms the important impact of mandatory types of economic analysis on the development of enforcement. Because of learning-by-doing effect under large scale of enforcement judges and legal experts in companies and consulting firms understand requirements of the *Guidelines* and opportunities they provide better. For plaintiffs it becomes easier to persuade judges of incorrectness of FAS decision referring to the mandatory type of evidence.

An important ambiguous effect of the use of mandatory evidence on competition enforcement is that the legal requirements are applied to all cases—not only to PADs. As a result, in the subsample of NPADs on abuse of dominance, alleged non-compliance of FAS analysis with the requirements of the *Guidelines* is discussed not much less than in PADs. We note that these legal requirements for NPADs impose definitely excessive burden on the authority that has to apply complex and costly competition analysis to achieve the goals of intervention in the cases, which have nothing in common with competition restrictions.

A specific feature of the mandatory requirements to the analysis in the cases under articles 10 and 11 is that it is almost completely of structural nature. As a result, data on market structure is discussed under judicial review very often. This is true not only for abuse of dominance (art. 10) but also for agreements and concerted practices (art. 11). Under review of PADs frequency of discussion on structural indicators (see columns 2, 3 7, 8, 10 and 11, Table 3) is comparable with the frequency of discussion on the main issue—mechanisms of restriction of competition (see columns 15 and 16)—and dominates over, for instance, frequency of discussion on the strategic interaction between competitors in the market (see columns 13 and 14).

Importance of mandatory structural evidence leads to seemingly strange interrelations between alleged infringements and frequency of the discussions on economic evidence. Judicial review of NPADs is more evidence-intensive than that of the PADs decisions under art. 11. The explanation is connected with the fact that investigations under article 10 imply application of some mandatory evidence (first of all, *Guidelines on market analysis and competition assessment*). Both PADs and NPADs under article 10 apply the *Guidelines* and discuss relevant economic evidence, including concentration and entry barriers. This shows that the impact

of mandatory requirements for economic evidence on the standards of investigation depends on the precision of accuracy of choice of an enforcement target. Frequent discussion on the factors of market dominance, including issues of market boundaries, concentration and entry barriers normally should improve standards of evidence. This could not be the case when discussion of concentration is isolated from the analysis of competition, as it happens under judicial review of NPADs.

5.3 Economic Evidence and Experience of the Parties Under Judicial Review

Large scale competition law enforcement contributes to the promotion of experience of the parties in litigation. Competition authorities learn to prepare decisions of high quality, which are either not appealed or not annulled by judges. Judges learn standards of analysis and proof presentation under competition litigation. Companies which seek to annul infringement decisions also learn to collect and present the evidence that challenges conclusions of competition authority.

Experience of parties under review of competition decisions increases quickly from 2008. In 2008 an average judge who considers a case on violation of articles 10 or 11 of the law 'On protection of competition' had already decided 15 cases where competition authority was one of the parties.[6] In the following years the number of decided cases increases to 25, 45, 71 and 86 in 2009, 2010, 2011 and 2012 respectively. The average number of litigations on the appeals against decisions made in cases where regional subdivisions of FAS participated submitted for review up to the date of a particular case also increases rapidly: from 6 in 2008 to 96 in 2012. There is a large variation in the level of experience in judicial review. For instance, in 2012 the number of antitrust litigations for judges varies from 1 to 436 cases, and experience of regional antitrust authorities varies from 3 to 277 decisions.

In order to explain the trends in the amount of economic evidence presented under judicial review we compare quantitative indicators of evidence not only by years but also by the experience of parties in litigation (Table 4). Dividing competition authorities and judges between "relatively experienced" and "relatively inexperienced" groups we take the median value of cases decided before the particular claim: 33 cases for competition authorities and 37 cases for judges. The division of companies is made on the basis of whether the entity submitted any (at least one) claim to annul an infringement decision before or not.

Comparison of the decisions by 'relatively unexperienced' and 'relatively experienced' competition authority reviewed by 'relatively unexperienced' and 'relatively experienced' judges shows that amount of economic evidence presented in

[6] Data of judge experience are not limited to the cases in *LCAP* database. They are reported by the data of commercial court decisions and capture overall experience of a particular judge.

Table 4 Experience of the parties in the judicial review and use of economic evidence: 2008–2012, %

	Indeces of economic evidence								Indicators of market structure						Conduct indicators	
	EE index		CEB-1 index		CEB-2 index		ME		Guidelines		Market share		At least one indicator of concentration		Strategic interaction (PADs only)	Restrictions of competition (PADs only)
	PADs	NPADs	PADs	NPADs	PADs	NPADs	PADs	NPADs	PADs	NPADs	PADs	NPADs	PADs	NPADs		
FAS regional subdivisions																
Appeals to CCFI ≤ 33	0.06*	0.01**	0.16	0.16**	0.07*	0.06***	0.20**	0.14	30.17***	15.38	9.98	13.80	47.45*	73.95***	22.87***	77.37
Appeals to CCFI > 33	0.04*	0.01**	0.16	0.15**	0.05*	0.04***	0.14**	0.13	17.55***	14.63	11.43	12.37	35.51*	69.40***	14.29***	75.92
Judges in CCFI courts																
Litigations with FAS ≤ 37	0.05	0.01	0.16*	0.15	0.07*	0.06***	0.19	0.13	26.07	14.44	11.28	12.94	45.36*	74.07***	21.30	78.95
Litigations with FAS > 37	0.05	0.01	0.15*	0.15	0.05*	0.05***	0.17	0.14	24.51	15.49	9.34	13.16	39.30*	69.35***	17.12	73.54
Companies																
Companies submitting claim for review ≤ 1	0.06**	0.01	0.16	0.15	0.06***	0.06***	0.18	0.16***	25.68	18.07**	10.65	15.92*	37.58***	61.69***	17.12***	78.71*
Companies submitting claim for review > 1	0.04**	0.01	0.15	0.15	0.05***	0.05***	0.18	0.10***	24.86	10.83**	10.17	9.20*	57.63***	85.90***	26.55***	71.75*

Source: own calculation using LCAP database

*, **, *** difference between the evidence in the cases with ‘unexperienced’ and ‘experienced’ parties is statistically significant at a 10, 5, 1 % level respectively (Kruskal-Wallis test for indexes of economic evidence, χ^2 test for the indicators of particular types of economic evidence)

antitrust cases decreases rather than increases with the experience. For every indicator of evidence, including cumulative indices and particular types of evidence, any statistically significant difference is in favor of 'less experienced' authorities and 'less experienced' judges. For companies the picture is more complex: under review of decisions against a company that has already been accused at least once (because it definitely submitted at least one claim for review of an infringement decision) some indicators of evidence are higher. For instance, the share of litigation with a company-recidivist where at least one indicator of concentration is discussed is 20 percentage points higher for PADs and 14 percentage points higher for NPADs. The share of litigation where strategic interaction is discussed is 9 percentage points higher if the company already has had an experience of claims for annulment.

The impact of the alleged violator's experience on the amount of economic evidence may seem ambiguous. It is not clear if more evidence is discussed at the initiative of the claimant (company), or due to the fact that this violation is not the first one, and the competition authority collects more evidence against these companies. However results on the relation between the experience of competition authority and/or judges and the amount of economic evidence are even more explicit than historical trends (Tables 2 and 3). It is not the case that more decisions made by less experienced competition authorities are submitted for judicial review. The case is that infringement decisions made by more experienced authorities are supported by less economic evidence. In order to suggest an explanation for this result in the next section we compare the amount of economic evidence across reviews with different outcomes.

5.4 Economic Evidence and the Outcome of Judicial Review

Competition authority's incentives can be an important explanation of the non-increasing amount of economic evidence in infringement decisions. Russian competition authorities, and especially regional subdivisions, are strictly motivated to make sustainable infringement decisions, which companies do not appeal, or courts do not reverse under judicial review.

Influence of economic evidence on the probability of reversal of decision is not simple. On the one hand, proper economic evidence helps to avoid wrongful conviction under investigation and decreases the incentives to appeal decision and probability of reversal by commercial courts. On the other hand, modern economic analysis often does not provide indisputable implications for competition restrictions and extent of harm in any particular case (Neven 2006; Connor 2008; Schinkel 2008). Indeed, when complexity of economic analysis increases, the probability of successful challenging the decision can also increase. If the second effect dominates, incentives of competition authority is firstly to reallocate efforts from the decisions that require complex but disputable analysis towards decisions

that require more simple but at the same time less disputable analysis, and secondly to decrease the complexity of economic evidence in any particular case.

To discover how the evidence presented influences the outcome of judicial review we compare the ratio of annulment of infringement decisions for the sub-group of investigations where parties discuss (and do not discuss respectively) economic evidence before the judge in the court (Table 5). We consider several indicators of return from economic evidence, which influence the probability of infringement decision to be finally annulled. They are annulment ratio, ratios of appeals on the decisions of first instance commercial court by company and FAS respectively, and ratios of reversals of the first instance commercial court decisions by higher courts by appeals of the parties. Decision of the first instance commercial court depends not only on the correctness of the economic analysis performed but also on the coincidence of the standards of evidence as competition authorities, on the one hand, and judges, on the other hand, understand them. Under relatively young competition enforcement experience of judges can affect their perception of standards of evidence substantially. To track this effect, we divide all the decisions made by first instance commercial courts by the experience of judges who make a decision. Line of division between 'unexperienced' and 'experienced' judges is tracked along the median number of competition cases, which were decided by the judge up to the date of the decision on a particular case.

To track the impact of economic evidence we compare the outcomes of the cases where two types of economic evidence were discussed before judge, one is of structural nature (Guidelines for market analysis and competition assessment), and one is of conduct nature (strategic interaction of market participants, including competitors, buyers, entrants and incumbents etc.). For the application of the Guidelines outcomes of review of both PADs and NPADs are compared. Indicator of 'discussion of strategic interaction' is used for PADs only. Data in Table 5 shows that:

- For both proper and non-proper antitrust decisions discussion on the *Guidelines* in the court of first instance increases the probability of infringement decision to be annulled. The difference is 5–8 percentage points both for the decisions of 'less experienced' and 'more experienced' judges.
- For the decisions made by 'less experienced' judges the positive effect of the discussion of the *Guidelines* on the probability of reversals increases from the decision of the court of first instance to the decision of higher court. Difference between the ratios of satisfied claims by the appeals of companies is 6–9 percentage points higher for the cases where the *Guidelines* are discussed. In turn, the ratio of satisfied claims by the appeals of FAS is 10–20 percentage point lower in the cases with more evidence presented according to the *Guidelines*.
- Discussion of strategic interaction among market participants has similar effect on the probability that infringement decision is reversed, but this effect is statistically significant only for the decisions of higher courts, and surprisingly for the decisions, which are made by 'more experienced' judges.

Table 5 Economic evidence presentation under judicial review (2008–2012) and decisions of commercial courts

	Guidelines application is discussed in the text of decision of first instance commercial court						Strategic interaction among market participants is discussed in the decision of courts of the first instance (for PADs only)	
	PADs		NPADs		Total			
	Applied	Not applied	Applied	Not applied	Applied	Not applied	Discussed	Not discussed
1	2	3	4	5	6	7	8	9
Ratio of annulments of infringement decisions in the decisions of first instance commercial courts (FICCs)								
Judge's expertise < 37 cases	40.38	41.44	40.91*	34.28*	40.74*	35.59*	36.47	42.44
Judge's expertise ≥ 37 cases	46.03	41.15	33.96	29.13	36.28**	30.54**	34.09	44.08
Ratio of appeals of companies on FICC's decision by company								
Judge's expertise < 37 cases	87.10	78.36	76.15	80.98	79.69	80.54	94.44***	76.54***
Judge's expertise ≥ 37 cases	76.47	81.42	92.00***	84.05***	89.47**	83.79**	79.31	80.51
Ratio of appeals of companies on FICC's decision by FAS								
Judge's expertise < 37 cases	88.10	80.99	84.44	82.06	85.61	81.83	83.87	82.58
Judge's expertise ≥ 37 cases	79.31	77.22	84.44	79.57	83.19	79.20	93.33	75.27
Ratio of reversals of FICC decision by higher court in favor of company								
Judge's expertise < 37 cases	29.63	27.82	28.28**	18.88**	28.76**	20.31**	29.41	27.94
Judge's expertise ≥ 37 cases	26.92	16.30	22.98***	12.57***	23.53***	12.93***	39.13***	13.68***
Ratio of reversals of FICC decision by higher court in favor of FAS								
Judge's expertise < 37 cases	37.84	30.61	11.84***	31.69***	20.35**	31.47**	30.77	33.03
Judge's expertise ≥ 37 cases	17.39	14.75	25.00	24.18	23.23	22.73	14.29	15.71

Notes: Statistical significance of difference between cases where particular evidence is applied or not according to χ^2 statistics; * difference at 10 % level, ** at 5 % level, *** at 1 % level

The data suggest an explanation for the non-increasing standards of economic evidence. In terms of the sustainability of infringement decisions the second effect of economic evidence dominates: economics makes decisions more disputable. Thus, taking incentives of Russian competition authority into account, extra economic evidence does not help them to achieve high performance scores. On the contrary, it helps alleged infringers to challenge the decision. By the way, impact of economic evidence on the outcome of judicial review explains the increasing amount of evidence provided by companies the company with some experience of litigation.

6 Discussion: Allocation of Scarce Resources by the Competition Authority

Statistical analysis allows one to understand the role of economic evidence in Russian competition law enforcement. First, we find that the amount of economic evidence that is discussed in front of judges in the commercial courts of the first instance is not small by absolute magnitude. Economic analysis however seems to be poor when calculated per case. While caution needs to be exercised, due to the relatively short period under examination, we reveal the tendency for a decrease of the main indicators of economic evidence per case over time.

Second, since to a large extent the initiative to produce more economic evidence belongs to FAS, the non-increasing trend in the use of economic analysis should be explained by taking the incentives and constraints of the competition authority under consideration. Being motivated not only to do their best in terms of investigations but also to make infringement decisions with higher probability to come into legal force, competition authorities have lower incentives to expand economic analysis to be presented under judicial review.

Third, we find the role of mandatory instruments of analysis to be important for applications of economic evidence but ambiguous. On the one hand, mandatory instruments (*Guidelines for economic analysis*) became an anchor for economic analysis development. On the other, they strongly affect the direction of further development. In the Russian competition legislation leading role of the *Guidelines* reinforces the overwhelming importance of the SCP approach. Another important feature of the *Guidelines* application is that they are mandatory for both ‘proper antitrust’ and ‘non-proper antitrust’ decisions on abuse of dominance. This rule makes the cost of economic evidence provision excessive in the cases where competition analysis cannot contribute to the correctness of a decision.

Fourth, we find that in the structure of competition enforcement investigations and decisions that do not require economic analysis (because they are NPADs) become dominant over time. Projecting the structure of LCAP sample to the structure of FAS enforcement statistics we see that the number of decisions on articles 10 and 11, which do not require proper competition analysis, exceeds the

number of decisions, which require economic evidence by about 5–6 times. It seems that this ratio tends to increase.

7 Brief Concluding Remarks

The assessment of the use of economic evidence in the investigations of the Russian competition authority is mixed. On the one hand, considering the extremely large scale of enforcement, the amount of economic evidence produced is also large. On the other hand, the data do not confirm expectations that evidence per case and quality of economic evidence applied increase over time.

Generally, if the reputation of the authority positively depends on the ability of infringement decisions to survive judicial review, and at the same time an increase in economic evidence does not support the rate of non-reversed decisions, incentives to apply complex but optional economic analysis decreases. To put it otherwise, the more the performance indicators of the authority depend on the rate of non-annulment, and the more problematic the decisions, which require economic evidence are, the lower the incentives of the authority to apply economic evidence are. An important consideration here is also the experience of judges who consider antitrust cases. Unawareness of judges in the standards of economic analysis can have a direct impact on slowing down the growth in gathering and processing data by the competition authority.

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The Incorporation of the Public Interest in the Assessment of Prohibited Conduct: A Juggling Act?

Ziyanda Buthelezi and Yongama Njisane

If I am not for myself, then who is for me?
And if I am not for others, then who am I?
And if not now, when?

Abstract The South African Competition Act no 89 of 1998, like many of its counterparts in the BRICS countries and other developing economies, incorporates traditional competition law principles with public interest considerations. It is common cause that the South African competition authorities are required to take into account public interest factors during the assessment of proposed mergers and acquisitions as well as exemption applications. However, it is not clear to what extent (if at all) the competition authorities are obliged to take into account public interest factors during the assessment of prohibited conduct. This chapter seeks to determine whether the South African competition authorities ought to consider public interest factors in the evaluation of prohibited conduct. The chapter briefly evaluates the meaning of the public interest and its interplay with competition law/policy and reviews the political and economic context which resulted in the incorporation of the public interest in the South African Act. The chapter also briefly looks at the incorporation of the public interest in the competition legislation of a number of other jurisdictions like the UK, USA and our African counterparts. The chapter also briefly discusses examples of South African abuse of dominance cases where the public interest was (directly and indirectly) taken into account. The chapter concludes by setting out lessons learnt.

Keywords Public interest • Prohibited conduct • BRICS • Dominance • Economic efficiency • State support • Price discrimination • Excessive pricing

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1 A Brief Overview: The Theory of Public Interest and Its Interface with Competition Law and Policy

Hillel, in one of his most famous quotes,[1] captures, although indirectly, the inherent friction that exists between competition policy/law, which is largely driven by economic efficiency as the ultimate objective, and the public interest, which is motivated by political and socio-economic considerations as well as 'altruistic' communal motives. Of course, although approaching this goal from different vantage points, both the public interest and competition policy/law ultimately seek to improve and maximise consumer welfare.

Economic and legal literature shows that the concept of public interest is ambiguous and its definition varies from country to country and also depends on the intended application. What is clear however is that the concept of the public interest is informed by political and socio-economic imperatives. Leslie (2012) states that the definitions of public interest abound and may reflect one's political viewpoints and pure economic considerations such as access to affordable, quality goods and services.[2] Leslie (2012) also characterises competition law as a type of public interest law. Lewis (2012) supports this idea and states that competition law could arguably be viewed as a public interest law using both political and/or economic arguments. This viewpoint is not new in economic literature.

One of the earlier analyses of the origins of competition law was conducted by Bork (1966)[3] in which the author argued that the legislative intent for the passing of the Sherman Act was premised on consumer protection. Indeed, Posner (2001) has also argued that well into the twentieth century, American antitrust legislation was motivated by populist concerns about income distribution and the survival of small business. DiLorenzo (1985) and Boudreaux and DiLorenzo (1993) argue that the origins of competition policy and law are not only limited to public interest but also incorporate private interests.[4] This view has also been espoused by the United States Supreme Court ("Supreme Court"), which stated that "*Antitrust laws in general, and the Sherman Act in particular, are the Magna Carta of free enterprise. They are as important to the preservation of economic freedom and our free-enterprise system as the Bill of Rights is to the protection of our fundamental personal freedoms. And the freedom guaranteed each and every business, no matter how small, is the freedom to compete—to assert with vigor, imagination, devotion, and ingenuity whatever economic muscle it can muster*."[5]

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[1] Hillel, Me, Myself and I: Ethics of the Fathers 1:14.

[2] Leslie, C.R., (2012), Antitrust Law as Public Interest Law, *UC Irvine Law Review*, vol 2, pp 885–909.

[3] Bork, R., (1966), Legislative Intent and the Policy of the Sherman Act, *Journal of Law and Economics*, (October), pp 15–56.

[4] See DiLorenzo, T.J., (1985), The Origins of Antitrust: An Interest-Group Perspective, *International Review of Law and Economics*, vol 5(6), pp 73–90 and Boudreaux, D.J., and DiLorenzo, T.J., (1993), The Protectionist Roots of Antitrust, *The Review of Austrian Economics*, vol 6(2), pp 81–96.

[5] United States vs. TOPCO Associates, Inc., 405 U.S. 596 (92 S.Ct. 1126, 31 L.Ed.2d 515).

Implicit in this recognition of the public importance of competition policy and law by the Supreme Court is also what appears to be an acknowledgement that economic efficiency, arising from vigorous competition, is in the public interest. Posner (2001) also argues that economic efficiency is the sole goal of competition law.[6] Leslie (2012) concurs and regards competitive outcomes such as the reduction of prices of goods and services, increasing quality and innovation and the resulting improvements in consumer welfare as being in the public interest. UNCTAD (2011) takes a slightly different approach and views competition law and policy, altogether, as part of a suite of economic development policies available to countries, particularly developing countries. Argument is made that prohibited conduct has an impact on the development and growth of economies given that such behaviour may restrict competition and deteriorate consumer welfare through creating or entrenching existing barriers to entry, higher prices, all of which lead to efficiency and innovation concerns.[7] Implicit in this view is the recognition that competition law and policy in these countries is likely to capture other developmental policy objectives which are generally viewed as being in the public interest.[8] UNCTAD (2008), however, cautions that economic efficiency concerns must be weighed against public interest concerns in the best way possible given that '*it may be difficult to coordinate between the government's objective of promoting public interest and competition authority's objective of promoting efficient markets*'.[9]

Posner (1969), in his study of the role of the Federal Trade Commission ("FTC") in promoting the public interest, found that the FTC was significantly lacking. In his assessment, Posner (1969) employed a model of competition law pork barrel in which he emphasised that each member of the United States Congress ("Congress") is obligated to protect and advance the interests of the constituency that he or she represents. The model of the competition law pork barrel is based on a standardised characterisation of how a geographically based representative democratic system operates in practice.[10] As a result, because the power to control the FTC is unevenly distributed among members of Congress, there's a real chance that some of the more powerful members of the Congressional subcommittees may exercise a great

[6] Posner, R.A., (2001), Antitrust Law, *University of Chicago Press*, Chicago, United States of America, Part Four, Chapter 9.

[7] United Nations Conference on Trade and Development ("UNCTAD"), The effects of anti-competitive business practices on developing countries and their development prospects, Hassan Qaqaya and George Lipimile, co-eds, United Nations, New York and Geneva, 2008.

[8] UNCTAD, The importance of coherence between competition policies and government policies, note by the UNCTAD secretariat presented at the Eleventh session of the Intergovernmental Group of Experts on Competition Law and Policy, Geneva, on 19–21 July 2011.

[9] Ibid.

[10] To describe this system, Faith et al. (1982) state that "*In effect, a geographically based system confronts the legislator with a high payoff from representing local interests in the national legislature by trading votes with other legislators to finance numerous local benefits at the expense of taxpayer-consumers in general and with a correspondingly low payoff from voting in terms of cost-benefit analysis, economic efficiency, or the "national interest."* "

deal of power that may serve the interests of their jurisdictions, which interests may be unimportant from a national standpoint. Posner (1969) concluded that FTC investigations are seldom in the public interest and are instituted "*at the behest of corporations, trade associations and trade unions whose motivation is at best to shift the costs of their private litigation to the taxpayer and at worse to harass competitors*".[11]

Faith et al. (1982),[12] building on the work of Posner (1969), assessed the case-bringing activity of the FTC with the aim of determining whether there is any bias in the results of the competition law pork barrel process, in favour of firms that operate in the jurisdictions of members of Congressional committees that have important budgetary and oversight powers over the FTC. In this regard, the authors examined the FTC's case-bringing activity in the period 1961–1979, split into two relevant periods. The first period, 1961–1969 was based on the time period assessed by Posner (1969) which served as the basis for his findings. The second period, 1970–1979, represented a period in which it was claimed that the FTC underwent a series of reforms that improved its record for the promotion of the public interest.[13] Faith et al. find that congressional committee members who have important oversight and budgetary powers over the FTC can deflect its decisions in favour of firms in their jurisdictions, thus supporting Posner's (1969) findings. Further, the authors find that the pork barrel relationship between Congress and the FTC became stronger in the second 'reform' period, leading the authors to conclude that the FTC was not acting in the public interest even during this secondary period.

There is however, an opposing view as regarding the role of public interest in competition policy. Reksulak (2010) states that "*the "public interest theory" of antitrust policy is on a retreating path—and that is squarely in the public's interest*."[14] The author draws from a number of scholarly articles such as Young and Shughart's (2010) to assess the extent to which the actual effects emanating from the application of competition policy diverge from the purported public interest goals of competition policy. While acknowledging the existence of anti-competitive conduct which results in negative total welfare consequences, the author suggests "*caution with respect to possible remedies, which can be subject to political interference, susceptible to the sway of well-organized interest groups, impacted by activist interpretations of law by the courts and misdirected by the whims of bureaucratic agencies*." Voigt (2006) proposes that the manner in which the "unintended" consequences of the application of antitrust, which as shown above have been argued to be based on the public interest, is to apply what he

[11] Posner, R., (1969), The Federal Trade Commission, *University of Chicago Law Review*, Vol 37 (47), pp 47–89.

[12] Faith, R.L., Leavens, D.L., and Tollison, R.D., (1982), Antitrust Pork Barrel, *Journal of Law and Economics*, vol 25(2), pp 329–342.

[13] Katzmann, R.A., (1980), Regulatory Bureaucracy: The Federal Trade Commission and Antitrust Policy, *The MIT Press*, Cambridge Massachusetts, pp 181–187.

[14] Reksulak, M., (2010), Antitrust Public Choice(s), *Public Choice*, vol 142(3/4), Essays in Honor of Robert D. Tollison (March, 2010), pp 423–428.

terms “robust antitrust policy”. In this regard, the author argues that a combination of economic reasoning, resource consciousness and explicit recognition of the “general consequences on welfare” should be the driving force behind the application of antitrust law and policy.[15] Eminent scholars such as Frederic Jenny, although acknowledging the controversy surrounding the incorporation of the public interest in competition enforcement, note that “competition laws are rooted in national realities,” and therefore public interest clauses in merger control may be unavoidable for the foreseeable future.[16]

Although the genesis of competition policy and law is said to be founded on the public interest, as argued above, it is notable that the public interest referred to is primarily based on the ideals of economic efficiency and general economic welfare. The South African experience however differs from this approach, as will be discussed in greater detail below and explicitly incorporates socio-economic factors such as employment, the economic integration of historically marginalised sectors of society, among others, in addition to the pure competition test that is based on economic efficiency. The incorporation of such unambiguous political and socio-economic considerations during the assessment of prohibited conduct such as the abuse of dominance, for example, and how such conduct negatively impacts on the public interest is a question that has not yet been explored. This chapter seeks to explore whether such public interest considerations can and should be considered in the assessment of prohibited anti-competitive conduct.

We now turn to the South African experience on public interest considerations and the relationship with competition law and policy.

2 Public Interest in the South African Context

South Africa’s political history and economic background had a significant bearing on the crafting of the current competition law and policy regime.[17] The South African Competition Act no 89 of 1998 (as amended) (the “Act”) was drafted during a sensitive and impassioned time in South Africa. It was drafted shortly after the African National Congress (the “ANC”) was elected into government during South Africa’s first democratic elections. During this time, the ANC-led government was faced with the mammoth task of re-shaping the South African economy

[15] Voigt, S., (2006), Robust political economy: The case of antitrust, *Review of Austrian Economics*, vol 19(2-3), pp 203–215.

[16] See “Public interest clauses may be a necessary evil, says OECD head”, available at http://globalcompetitionreview.com/news/article/38187/public-interest-clauses-may-necessary-evil-says-oecd-head/, accessed on 23 November 2015.

[17] Staples, J., and Masamba, M., (2012), Fourteen years later: An assessment of the realisation of the objectives of the Competition Act 89 of 1998, paper presented at the 6th Annual Competition Commission, Competition Tribunal and Mandela Institute Conference on Competition Law, Economics and Policy in South Africa, Johannesburg, South Africa, pp 4.

into one that would be accepted by the international community. Further, there was the incalculable task of including the black majority into the formal economy after centuries of marginalization due to repressive laws. In confronting the above mentioned issues and in attempting to change the face of apartheid South Africa, many policy instruments were drafted with the aim of restoring a society divided along racial and economic lines. One such policy instrument was the current competition law and policy.

Competition policy and law had to work in unison with other government industrial policy instruments to achieve the objectives outlined above.[18] In this regard, it was necessary that the Act be crafted in a manner that allowed it to perform the traditional functions of promoting and maintaining competition while making provision for the special needs of a developing state. It was apparent that in dealing with the legacy of the economic distortions of the past, a unique approach to competition law and policy was necessary in South Africa.[19] The plan was not only to adopt a law that followed international norms and practices, but also one that would curb the continued domination of the economy by a minority, within the white minority population group, and to promote greater efficiency in the private sector.[20] As it so happened, the applicable law of the day was already ripe for review and overhaul. A study conducted revealed that the competition law of 1979 was deficient, lacking adequate powers and proper political context. It did not deal with vertical or conglomerate combinations or ownership concentration, and it lacked both pre-merger notification and meaningful post-merger power of control. Its prohibitions against anti-competitive conduct were also weak.[21]

Balancing equity interests against traditional competition law principles was most likely not an easy feat due to the many divergent interests and views that were involved, such as those of big business and the trade unions representing organized labour.[22] Each of these interest groups needed the assurance that their concerns would be sufficiently addressed in the impending legislation. Big business argued that there is an obvious tension between the objectives of traditional competition law/policy principles and public interest considerations. It was argued that public interest considerations should be excluded from the Act on the grounds that they are politically loaded and arbitrary and there are other appropriate platforms available,

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[18] Proposed Guidelines for Competition Policy—A framework for Competition, Competitiveness and Development, Department of Trade and Industry, Pretoria (1997), paras 1.2.3, 1.3.3.1, 1.4.2 and 1.4.3, pp 4–5. See also paras 2.2.7 and 2.4.4, pp 7–8.

[19] Ibid, para 1.4.4, pp 5.

[20] Organisation for Economic Co-Operation and Development ("**OECD**"), *The Objectives of Competition Law and Policy, Global Forum on Competition,* (2003), pp 15. See also Proposed Guidelines for Competition Policy—A framework for Competition, Competitiveness and Development, Department of Trade and Industry, Pretoria (1997), para 1.1.1, pp 3.

[21] Organisation for Economic Co-Operation and Development ("**OECD**"), *The Objectives of Competition Law and Policy, Global Forum on Competition,* (2003), pp 17.

[22] Lewis, D, (2012), Thieves at the dinner table: Enforcing the Competition Act: A Personal Account, Jacarana Media, Johannesburg, South Africa, pp 37.

such as the labour courts.[23] On the other hand, those speaking for organized labour were alive to the possibility of mergers and take-overs resulting in job losses in the name of efficiencies and the idea of legislation that could curb this was attractive.[24]

However, despite arguments against an Act that would try to balance two seemingly irreconcilable interests, the government (through the Department of Trade and Industry) was convinced that traditional competition law objectives and the needs of a developing state were not at war and with a proper alignment of policy, the two actually complement each other.[25] It was believed that competition policy could successfully control private enterprise in the public interest.[26] Such sentiments are illustrated by the following phrase extracted from the Proposed Guidelines:

> The competition policy proposed here accepts the logic of free and active competition in markets, the importance of property rights, the need for greater economic efficiency, the objective of ensuring optimal allocation of resources, the principle of transparency, the need for greater international competitiveness, and the facilitation of entry into markets—all within a developmental context that consciously attempts to correct structural imbalances and past economic injustices[27].

After much interaction between business, labour, the government and others, today,[28] the Act incorporates features which reflect the unique challenges facing South Africa's economic development. As a result, the concept of the public interest is woven into and features prominently in various parts of the Act. For example, the preamble of the Act recognises the injustices of the South African political history and in this regard the Act states that its objectives include, *inter alia*, providing all South Africans with equal opportunity to participate in the economy and regulating the transfer of economic ownership in keeping with the public interest. Further, the Act aims to promote and maintain competition in order to, *inter alia*, promote employment and advance the social and economic welfare of all South Africans; to enable small and medium sized enterprises ("SME") to participate in the economy; and to promote a wider ownership spread, particularly in relation to historically disadvantaged persons. In other words, it permits and, in certain cases, requires consideration of equity issues such as empowerment, employment and the impact on SME's.[29] Consequently, competition law performs

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[23] Ibid, pp 39.

[24] Ibid, pp 37.

[25] Proposed Guidelines for Competition Policy—A framework for Competition, Competitiveness and Development, Department of Trade and Industry, Pretoria (1997), paras 1.3.2 and 1.3.3, pp 4. See also OECD, *The Objectives of Competition Law and Policy,* Global Forum on Competition (2013), pp 17.

[26] Ibid, pp 15.

[27] Proposed Guidelines for Competition Policy—A framework for Competition, Competitiveness and Development, Department of Trade and Industry, Pretoria (1997), para 2.4.12, pp 8.

[28] Lewis, D, (2012), Thieves at the dinner table: Enforcing the Competition Act: A Personal Account, Jacarana Media, Johannesburg, South Africa, pp 34.

[29] Hartzenberg T, Competition Policy review, TRALAC at pg 9.

a dual role in South Africa—in addition to stimulating competition and achieving market efficiency, it also aims to be an instrument of economic transformation and address the historical economic structure and encourage broad-based economic growth.[30]

Against the context of South Africa's political and economic history,[31] what exactly is meant by public interest factors and how did these factors finally find expression in the Act? One need only look to the preamble and other parts of the Act in which themes of equity and justice run like a common golden thread. For example, the preamble refers to the political background and motivations for the Act, including policies of equity, distribution and efficiency.[32] It also states that the Act seeks to address past practice of apartheid, which led to excessive concentration of ownership and control, inadequate restraints on anti-competitive trade practices, and unjust restrictions on full and fair participation in the economy. Elsewhere in the preamble, it is stated that a competitive environment which balances the interests of all stakeholders and is focused on development will benefit all South Africans.[33] SME development as well as black economic empowerment received special attention in the Act because of the previous structure of the South African economy. The high levels of concentration that existed in many industries were considered to be barriers to entry especially for smaller enterprises.[34] Further, promoting a broader spread of ownership; especially among historically disadvantaged persons, reflected concerns about the skewed distribution of income and wealth in South Africa. A more even spread of ownership was deemed to be important to ensure longer-term balanced and sustainable development.[35]

Further, the provisions dealing with merger control provide a closed list of public interest factors to be considered when evaluating proposed mergers and acquisitions.[36] In addition to the orthodox substantial lessening of competition test, the Authorities must also consider the following[37]:

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[30] Staples J & Masamba M (2012) Fourteen years later: An assessment of the realisation of the objectives of the Competition Act 89 of 1998, pg 5.

[31] OECD, *The Objectives of Competition Law and Policy,* Global Forum on Competition (2003), pp 19.

[32] Competition Act no 89 of 1998, pp 2.

[33] Ibid.

[34] Hartzenberg, T, *Competition Policy review*, TRALAC Trade Law Centre, pp 12. See also OECD, *The Objectives of Competition Law and Policy,* Global Forum on Competition (2003), para 3.8.2, pp 16.

[35] Hartzenberg, T, *Competition Policy review*, TRALAC Trade Law Centre, pp 12.

[36] As previously indicated, the concept of public interest is partially carried through to the prohibited practices provisions of the Act as well in so far as it relates to the exemption of otherwise anticompetitive conduct.

[37] Competition Act no 89 of 1998, section 12A (3) (a–d).

- The effect that the merger will have on a particular industrial sector or region;
- Effect on employment;
- The ability of small businesses ("SMEs"), or those controlled by historically disadvantaged persons, to become competitive; and
- The ability of local industries to compete internationally.[38]

The Act aside, continuous policy development in South Africa in subsequent years has seen the public interest continue to be a prominent actor. For example, public interest factors have found expression through the Competition Commission's ("Commission") approach to sector prioritization. A few years ago, a policy decision was adopted to prioritize certain sectors of the economy such as food and agro-processing in order to ensure maximum impact to the benefit of the consumer. According to this prioritization framework, the Commission directs resources towards particular cases and complaints based on three criteria: the potential impact of the conduct on low-income consumers; alignment with the government's broader economic policy objectives; and the likelihood of the conduct being anti-competitive.[39] A review of the prioritisation policies of competition authorities by the United Nations Conference on Trade and Development shows that the South African authority is not unique in this respect (see footnote 45).

Public interest considerations have also found expression in market inquiries, for example the ongoing health-care inquiry includes in its statement of issues a number of theories of harm as well as an assessment of the effect on public interest issues including employment, the impact on small and medium-sized enterprises and the spread of ownership in the economy.

The Authorities are recognised as being independent of the government of the day and therefore free of any political interference. In any event, this is also an express requirement of the Act.[40] However, the Ministerial involvement in the appointment of the collective leadership of the Authorities potentially allows scope for closer appreciation of the broader government policy imperatives. It would be expected that there has to be 'a meeting of the minds' between government and the Authorities, at least, at a policy level. This, in a way, can be likened to the competition law pork barrel model discussed above.

Given the background discussed above, it is common cause that the South African competition authorities are required to take into account public interest factors during the assessment of proposed mergers and acquisitions. The consideration of the public interest factors is also incorporated into the assessment of exemption applications as one of the grounds for exempting otherwise anticompetitive conduct from the application of the Act. This is specifically confined to a situation where anticompetitive conduct promotes the ability of SME's or firms controlled or owned by historically disadvantaged persons, to become competitive.

[38] Ibid.

[39] Accessed at www.compcom.co.za/priority-sectors.

[40] Competition Act no 89 of 1998, Chapter 4, Part A, sections 20, 22 and 23; and Part B, section 26.

The predicament we find ourselves in is that the South African competition authorities have developed sizeable jurisprudence on the balancing act that must take place between the public interest factors and orthodox economic tests only in relation to merger control and to a limited degree, exemption applications. Given the Act's silence on the incorporation of the public interest factors in assessing prohibited conduct, there is very limited guiding jurisprudence and no guiding policy regarding the consideration of same in such proceedings.

An analysis of South Africa's abuse of dominance jurisprudence reveals that public interest factors have featured prominently in some cases, especially where former state-owned entities are involved. We turn to discuss a few of these cases below.

2.1 Nationwide Poles vs. Sasol

The case was brought by Nationwide Poles CC ("Nationwide") against Sasol Oil Limited ("Sasol"). Nationwide was a small producer of treated wooden poles in the Eastern Cape. Nationwide obtained wooden poles from sawmills and treated these poles with a preservative or a wax-additive called creosote. Nationwide's major customers were vineyards in the adjacent Western Cape Province. Sasol, using the tar by-product from its synthetic fuel production process, produced a range of products; including creosote. The owner of Nationwide, Mr Foot, initially lodged a complaint of collusion and price discrimination with the Commission. The Commission found insufficient evidence of a contravention and issued a notice of non-referral; Mr Foot then approached the Tribunal directly.

Nationwide alleged that Sasol charged it a higher price than its most important competitor in the downstream production of treated wooden poles. It was not disputed that Sasol's price schedule did allow for discounts based on historical volumes purchased. The larger creosote customers received the most preferred prices and this resulted in a 3–4 % cost differential, which the respondent argued was not substantial. Nationwide alleged that Sasol's pricing policy with respect to creosote amounted to prohibited price discrimination in contravention of Section 9 of the Act.

In evaluating the alleged conduct, the Tribunal found that Sasol was indeed dominant in the market for the provision of creosote. The Tribunal further held that Sasol, in setting the price of its creosote, behaved to an appreciable extent independently of its competitors, customers or suppliers.

In its assessment, the Tribunal noted that the price discrimination provisions of the Act had been intentionally afforded a separate place in the Act, apart from section 8 which generally deals with the abuse of dominance. The Tribunal put forward that the different treatment of price discrimination and its prohibition reflects the legislature's concern with maintaining accessible, competitively structured markets which would accommodate new entrants and enable them to compete effectively against larger and well-established incumbents. It was stated that in the

absence of a level playing field or in the presence of price discrimination, SMEs may find it difficult to enter new markets and even more difficult to thrive and to compete effectively on the merits. The Tribunal found that the legislators concern with the development of small business is reflected through one of the stated purposes of the Act being to ensure the equitable treatment of SMEs. The Tribunal also referred to the explanatory memorandum to the Act which set out the intention of the legislature as being, *inter alia*, to support SMEs through the instruments and principles of the Act.

Giving reference to the preamble and purposes of the Act into an assessment of price discrimination, the Tribunal argued that "*although incorporating considerations of equity into competition analysis, which may be anathema to a competition law approach that insists on a pure consumer welfare standard that it is generally referenced by a reduction in output or an increase in price, the utilization of a fairness standard is not alien to the Act and practice. The Tribunal further argued that the mere fact that equity considerations sit uncomfortably in competition economics orthodoxy is no warrant for ignoring the intention by the legislature that such equity considerations play a role in the decisions of the Authorities.*"

The Tribunal thus found Sasol guilty of contravening Section 9 of the Competition Act.

Sasol then lodged an appeal against the decision of the Tribunal. Sasol concentrated its argument on the manner in which the Tribunal sought to interpret section 9 (1) of the Act. Sasol argued that the Tribunal had erred in finding that the appellant's volume based discount pricing was likely to substantially prevent or lessen competition. Sasol argued that the Tribunal should have found that there was no such likelihood. Ultimately, the Competition Appeal Court ("CAC") found in favour of Sasol on the grounds that Nationwide had not presented sufficient evidence that Sasol's conduct was likely to substantially prevent or lessen competition in the relevant market. The CAC averred that while Nationwide had established harm to its business, it had failed to demonstrate market-wide impact or harm due to Sasol' behaviour.

In respect of the public interest approach adopted by the Tribunal, the CAC seemed to acknowledge that the protection of SMEs is indeed an integral part of the Act. In support of this the CAC quoted the remarks of the chair of the Korean Competition Advisory Board, Kyu-UcK Lee: "*In a developing economy where, incipiently, economic power is not fairly distributed, competition policy must play the dual role of raising the power, within reasonable bounds, of underprivileged economic agents to become viable participants in the process of competition on the one hand, and of establishing the rules of fair and free competition on the other. If these two objectives are not met, unfettered competition will simply help a handful of privileged big firms to monopolize domestic markets that are used and protected through import restrictions. This will give rise to public dissatisfaction since the game itself has is not been played in a socially acceptable, fair manner*".

However, the CAC found that there was no basis for the Tribunal to extend the objective of protecting SMEs, as it appears in the preamble and objectives of the Act, into the inclusion and construction of Section 9.

2.2 Mittal Steel South Africa Limited and Others vs Harmony Gold Mining Company Limited and Another

The Tribunal, in the excessive pricing case involving ArcelorMittal, considered the role of state support on the competitive landscape in the steel market in South Africa and tied this (in conjunction with ArcelorMittal's pricing conduct) to the impact on downstream manufacturing markets.[41] In this regard, the Tribunal indicated that when a firm has been the recipient of state support, the state is "*entitled to take an active interest*" in the pricing behaviour of such firms, that "*the risks for competition are substantially different*" for such firms and that, where relevant, these firms have an obligation to price their products in a manner that supports the consumers of the intermediate products that they produce. In this regard, the Tribunal appeared to consider that it would be in the public interest for the pricing behaviour of recipients of state support to be aligned to the national developmental imperatives.

2.3 Competition Commission vs Sasol Chemical Industries Limited

More recently, the Tribunal reaffirmed this approach in the excessive pricing case against Sasol Chemical Industries ("Sasol").[42] Notwithstanding the fact that Sasol has been privatised for many years, the Tribunal considered and placed emphasis on the state support historically afforded to Sasol in its measurement of the reasonableness of the difference between the price charged and the economic value of purified propylene and polypropylene. In this regard, the nature of the state support received by Sasol included legislative and regulatory interventions which were aimed at ensuring the sustainability and profitability of Sasol. The Tribunal found that Sasol's dominance was attained and sustained as a consequence of such state support and not as a result of risk taking and innovation and that this conferred on Sasol a cost advantage that made it one of the lowest cost producers of feedstock propylene in the world, which ultimately made Sasol a low-cost producer of purified propylene and polypropylene. Notwithstanding Sasol's argument that the state support, in monetary terms, had been repaid to the state, the Tribunal was of the view that, due to the considerable and prolonged nature of the state support received, such state support could not only be expressed in monetary terms given that it has had the effect of creating Sasol's dominance which endured into the markets considered in the case.

We return to the lessons learnt from these cases later in the chapter.

[41] *Mittal Steel South Africa Limited and Others vs Harmony Gold Mining Company Limited and Another*, case no: 70/CAC/APR07.

[42] *Competition Commission vs Sasol Chemical Industries Limited*, case no: 48/CR/Aug10.

3 Public Interest in Other Jurisdictions

Smith and Swan (2014), in their assessment of the public interest provisions in various jurisdictions, note that while public interest factors are considered and provided for in many jurisdictions, particularly in Africa, there are a variety of different formulations, and the scope given to the 'public interest' varies substantially.[43] A brief summation of their findings, interspersed with our findings, is set out below.

In 2003, the Organisation for Economic Co-operation of Development (OECD) distributed a questionnaire to the competition authorities of a number of jurisdictions. The questionnaire addressed a number of issues, including competition law and public interest objectives. Notably, of the 35 respondents, 23 jurisdictions had as their objectives of domestic competition law, not only traditional competition objectives of efficiency and consumer welfare, but also public interest objectives.

Historically, the United Kingdom ("UK") competition authorities had a 'public interest' test from 1948 to 1998 which included a number of varying factors such as the protection of employment and exports, which, according to Scott (2009) allowed 'fairly unconstrained political discretion'.[44] Hay (1997) states that the then Fair Trade Act gave discretion to the UK competition authorities to decide on what they would take into consideration in determining the public interest, which essentially broadened the scope of such considerations beyond the promotion of competition.[45] Scott (2009) states that as of 2002, the only stipulated public interest consideration in the UK related to the protection of national security.

In Spain, Spanish competition act recognizes that any prohibited conduct that is to the detriment of free competition is regarded as being against the public interest.[46] In this instance, the Spanish competition authorities view traditional economic principles in competition law and the expected competitive outcomes as representing the public interest. In the assessment of the national Energy Agreement, the Netherlands competition authority illustrated its position that a competition assessment might need to be balanced against public interest considerations such as environmental protection. UNCTAD (2002)[47] provides a survey of the

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[43] Smith, P., and Swan, A., (2014), Africa: Public Interest Factors in Competition Decisions, *Global Competition Review, The African and Middle Eastern Antitrust Review 2014,* accessed at http://globalcompetitionreview.com/reviews/59/sections/204/chapters/2304/africa-public-interest-factors-competition-decisions/.

[44] Scott, A., (2009), The Evolution of Competition Law and Policy in the United Kingdom, *London School of Economics Law, Society and Economy Working Papers* 9/2009.

[45] Donald Hay (1997) "Country studies: the United Kingdom", in Graham, E.M., Richardson, JD., et al., (1997), *Global Competition Policy*, Institute for International Economics, Washington DC, pp 199–234.

[46] Competition Act 15/2007 of 3rd July, (Official State Gazette No. 159, of 4th July 2007).

[47] UNCTAD, (authored by Khemani, S) (2002), Application of Competition Law: Exemptions and Exceptions, United Nations, New York and Geneva.

objectives of competition policy in various jurisdictions and notes that in the European Union priority is given to economic or market integration.

Smith and Swan (2014) note that the United States competition regime has conferred competition law immunity on small businesses in some instances. Citing Posner (2001),[48] the authors note that there appears to be no public interest provisions in the Sherman Act or the Clayton Act, with the exception that the Small Business Act, which '*confers antitrust immunity on joint actions undertaken by small business firms in response to a request by the President pursuant to a voluntary agreement or program approved by the President to further the objectives of the Small Business Act, if found by the President to be in the public interest as contributing to the national defense*.' It is also interesting to note that although the United States competition regime does not generally review exploitative pricing, it is only permissible under those circumstances, according to Dolmans (2005), where there is a clear public interest in lowering consumer prices and there is no other remedy or an expectation of new entry.[49]

According to Oxenham (2012), Botswana, Malawi, Namibia, Swaziland and Zambia are some of the jurisdictions in Africa that include some form of public interest consideration as part of their competition regulation.[50] However, the provisions in respect of public interest in these jurisdictions are mainly associated with the assessment of merger activity and do not extend to prohibited conduct or exemptions. It is noteworthy, however, that in Botswana, while public interest is also cited as a potential basis for interim relief in the context of investigations into potential abuses of dominance or anti-competitive agreements, no specific factors are mentioned.[51]

In Zambia, Smith and Swan (2014) note that the scope of potential factors for consideration is essentially unlimited, including not only employment, exports, and international competitiveness, but also 'socioeconomic factors as may be appropriate; and any other factor that bears upon the public interest.' In this regard, the authors note that 'the public interest' is also cited as a potential basis for interim measures in merger control, prohibited agreements and abuse of dominance investigations, although no specific factors are mentioned.[52] Similarly, in Kenya, public interest factors, including maintaining or promoting exports, 'promoting stability', or even 'obtaining a benefit for the public', can be used to justify an exemption for

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[48] Posner, R.A., (2001), *Antitrust Law*, University of Chicago Press, Chicago, United States of America.

[49] Dolmans, M., (2005), *The concept of abuse under article 82 EC profit sacrifice or proportionality test? US law and EU law compared*, Paper presented at the second annual conference of the College of Europe, Bruges, Global Competition Law Centre, Brussels, on 16–17 June 2005.

[50] Oxenham, J, (2012), 'Balancing public interest merger considerations before sub-Saharan African competition jurisdictions with the quest for multi-jurisdictional merger control certainty', *US–China Law Review*, vol. 9, pp 211.

[51] Botswana Competition Act (2009), section 46.

[52] Competition and Consumer Protection Act (No. 24 of 2010), section 62 (B).

otherwise anti-competitive agreements. Further, Smith and Swan (2014) note that while public interest factors can also be cited as a potential basis for interim relief in the context of investigations into restrictive agreements and restrictive trade practices involving trade associations, no specific factors are mentioned.[53]

Smith and Swan (2014) note that in Malawi, public interest factors are considered in respect of the evaluation of potential abuses of dominance or anti-competitive agreements, except for certain hard-core price fixing and unilateral conduct.[54] In Gambia, the authors note that public interest factors only have a limited role as a list of potentially offsetting factors in the event that an anti-competitive agreement, abuse, or merger has been found. The only factor that would not fall within a standard competition assessment is ‘enhancing the effectiveness of the Government’s programme for the development of the economy of the Gambia’.[55]

We note that in Mauritius, there is no public interest test alongside the competition test for mergers and no public interest test for deciding on cartel or abuse of dominance matters (see footnote 27).

3.1 Members of the BRICS Economic Group

China’s most recent Antimonopoly Law came into effect in August 2008. The Antimonopoly Law was premised on four goals which, *inter alia*, included “*safeguarding fair market competition; improving economic efficiency; protecting the interests of consumers and public interests; and promoting the healthy development of the socialist market economy*.”[56] It also appears that the Chinese competition authorities also consider public interest in the assessment of prohibited conduct in so far as it impacts on case selection and/or priority sectors. In this regard, Wang et al. (2012) note that many of the prohibited conduct investigations by the National Development and Reform Commission, including cartel investigations, appear to focus on products in which there is a substantial public interest, such as salt, foods, telecoms, and inputs for popular medicines.[57]

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[53] Competition Act, 2010, section 37.

[54] Malawi Competition and Fair Trading Act, section 44. The authors note that outright prohibitions are captured under sections 33(3), 41(1) and 43(1).

[55] Competition Act, 2007, section 35(3), and specifically section 35(4)(d) and section 52(3)(b).

[56] Organisation for Economic Co-operation and Development Country Studies, (2008), China—The Challenges of Transition for Competition Law and Policy, available at http://www.oecd-ilibrary.org/governance/oecd-reviews-of-regulatory-reform-china-2009/the-challenges-of-transition-for-competition-law-and-policy_9789264059429-5-en, accessed on 22 November 2015.

[57] Wang, P., Zhang, Y., and Evrard, S., (2012), Chinese Enforcement Against Abuses of Dominance Ramps Up, *Competition Policy International Antitrust Column*, vol 1(3).

The Indian Monopolies and Restrictive Trade Practices Commission (MRTPC) have also been known to take into account public interest factors during the assessment of restrictive trade practices. Evidence of this is the case of *Alkali Manufacturers Association of India vs. American Natural Soda Ash Corporation, 1998* (see also the case of *All India Float Glass Manufacturers Association vs. PT Mulia Industries, Jakarta and others, 2000 CTJ 252 (MRTP)*) involving the combined importing of soda ash into India by a number of American soda ash producers. The complainants alleged that the respondents were engaged in a cartel, a restrictive practice in terms of the Indian Act. Although not ultimately pursued, it was also alleged that the pricing of the respondent was predatory in nature. In finding for the complainant, the MRTPC found that the possible closure of Indian soda ash firms and the resulting unemployment of their workers occasioned by the alleged conduct would be considered as part of the public interest. Stating that the case raised important questions of consumer and public interest, the MRTPC allowed the American soda ash producers to import individually, however not as a cartel. The American soda ash producers appealed to the Indian Supreme Court, which overturned the MRTPC decision.

The practice of competition law in Brazil has revealed that the authorities are chiefly concerned with traditional competition law objectives based on orthodox economic tests, and not with those as relating to the public interest. Unlike South African counterparts where public interest is explicitly in various provisions of the Act, the public interest considerations in the Brazilian Act are not listed explicitly, but rather reference is made to general principles in the Brazilian Constitution. Examples of factors listed in the constitution which are of a public interest nature include conservation of the environment, employment and the protection of SME's. By and large, the Brazilian competition authorities are largely unconcerned with the advancement of public interest goals.

4 Conclusion

It is clear that the concept of public interest takes on varied formulations depending on the socio-economic and political imperatives of each country. We observe that there tends to be a natural friction between the consideration of public interest factors and the economic, efficiency-driven principles that underlie competition policy and law. Practically, in most jurisdictions, including in South Africa, public interest factors are typically only explicitly incorporated in the merger control provisions.

However, in South Africa, we have also seen that in certain limited circumstances, public interest considerations are taken into account when evaluating prohibited conduct, in particular allegations of abuse of dominance involving state-owned entities. The cases discussed above illustrate that although not specifically set out in the provisions of the Act dealing with prohibited conduct, the Authorities are already incorporating public interest factors, albeit indirectly,

during the assessment of prohibited conduct. It is clear from the findings in the cases that the Tribunal is acutely aware of the strong interplay between competition law/policy and the public interest expressed as the industrial development policy objectives of South Africa. The industrial development policy objectives are important to the development of the economy, for example through encouraging economic activity in a particular region, providing access to products or services that the market would not ordinarily provide or countering decline(s) in designated industries and the promotion and protection of SME's.

In considering the public interest in the cases discussed, we find that the Authorities have unintentionally ventured into the role of price regulator. In particular see the Mittal and Sasol judgments. In these cases, the Tribunal seemed to suggest that there is an expectation that former state-owned entities (Mittal, Sasol and Telkom) ought to price in a manner that is conscious of the country's economic developmental imperatives, with no further guidance as to how this should be interpreted or achieved. This raises key questions, for example, should the Authorities be directly engaging in price regulation when adjudicating upon allegations of anti-competitive behavior? The foray into 'price regulation', by the Authorities in respect of these entities also raises the question of the role of such entities, post privatisation. Are these entities, even though now privatised still considered to be public utilities who are ordinarily subjected to regulation?

We argue that there is a place for the incorporation of public interest considerations during the assessment of prohibited conduct. The original drafters of the South African Act were correct in ensuring that we do not simply follow the legislation of the more developed jurisdictions. Our Act needed to take into account the peculiar developmental context we found ourselves in and be fit for purpose. Further, we argue that anti-competitive conduct can harm the public interest insofar as employment losses and the exit of small and medium sized enterprises, particularly those owned and/or controlled by historically disadvantaged persons.

However, the balancing act that must subsequently take place in enforcing the Act is not without its challenges. Balancing the competing objectives of the public interest and pure economic efficiency concerns may present problems in relation to the design of remedies and in relation to compliance by firms and monitoring of same by the Authorities. This is largely related to demonstrating the nexus between the identified harm to the public interest and the conduct under investigation. This is unlike mergers which, by virtue of their forward-looking nature, allow for the isolation of the merger-specific effect on the public interest. Given that the assessment of prohibited conduct is generally historical, thus allowing a number of other market dynamics (such as demand contractions, introduction of new technologies, etc.) to enter the debate, it may be difficult to isolate the specific effect on the public interest.

The delicate balancing act that must take place during adjudication also poses the risk that the Authorities could potentially go beyond their mandate in an attempt to attend to problems that would be best addressed in other fora. Given the varied and broad nature of public interest considerations, we caution that there needs to be sufficient safeguards against the abuse of these provisions and that public interest

considerations should be considered only exceptionally, and should be seen within the context of the competitive assessment. UNCTAD (2008) also cautions that economic efficiency concerns must be weighed against public interest concerns in the best way possible given that '*it may be difficult to coordinate between the government's objective of promoting public interest and competition authority's objective of promoting efficient markets*'.

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Estimating the Benefits of Anti-cartel Interventions: The Case of the South African Cement Cartel

Hariprasad Govinda, Junior Khumalo, and Siphamandla Mkhwanazi

Abstract Several cross-country studies reveal that there are significant gains from competition law enforcement for both developed and developing countries and the results are robust especially from combating cartels. In this article, we estimate the direct financial benefits to consumers, by deriving estimates of the impact of the Competition Commission's (Commission's) intervention following the uncovering of the South African cement cartel. To do this, we estimate the avoided price (overcharge) as a result of the uncovering of the cartel and the avoided duration in years (the avoided duration is the estimated expected future duration of a cartel, using case specific information). Econometric estimation having accounted for cost and demand shifters shows that overcharges were between 7.5 and 9.7 % during the cartel period compared to post-intervention period. Hence calculated total savings to the South African consumers due to Commission's intervention between 2010 and 2013 calendar year are approximately in the range of R4.5 to R5.8 Billion (US $424.5–US$547.1 Million). Moreover, had the Commission been successful in its first intervention of 2000 dawn raids, the total savings to the South African consumers would have been approximately in the range of R14.9–R19.3 Billion (US $1.4–US$1.8 Billion) between 2000 and 2013. Apart from these financial benefits, we find that the market has generally become more competitive, as evidenced by firms penetrating into regions (provinces) that they were previously not active in.

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1 Introduction

It is not the existence of competition laws, but their effective enforcement, that matters most for economic performance. Cross-country studies reveal that antitrust enforcement has a significant positive effect on economic growth in both developed and developing countries. A recent literature review conducted by the World Bank provides evidence that there are significant gains from combating cartels for developing countries (Kitzmuller and Licetti 2012). In developing countries de facto independence of the competition authority as reflected in the autonomy of its decisions and an emphasis on promoting competition play a crucial part in driving total factor productivity growth.[1] (Voigt 2009)

In a study of 42 countries, Kee and Hoekman (2007) found that in industries where competition laws were actively enforced, enforcement increased the number of domestic firms by 7.2 %. Buccirossi et al. (2013) looked at the relationship between productivity growth and the overall quality of institutional and enforcement policies as measured by a competition policy index. A 20 % increase on the index scale results in total factor productivity growth of 1 %.

Addressing cartel behaviour is a critical area of competition law enforcement. In developing countries cartels have been associated with price increases of 10–45 % (Levenstein et al. 2003). Besides increasing the cost of goods and services to do business, cartels are associated with low labour productivity and low incentives to innovate (Evenett et al. 2001). Levenstein and Suslow (2004) showed that price increases due to international cartels range from 10 to 100 % especially when developing countries imports come from cartelised industries. Tough cartel enforcement is an effective tool for reducing the adverse effects of anticompetitive behaviour (Symeonidis 2008). Moreover, evidence suggests that international cartels target countries without cartel enforcement (Clarke and Evenett 2002). Evenett et al. (2001) analysing a sample of 40 international cartels in the 1990s, found price drops on the order of 20–40 % after cartels were broken up.

Investigating the effects of removing anticompetitive restrictions in East and Southern Africa, Jayne and Argwings-Kodhek (1997) found that eliminating controls on prices and private trade in maize accounted for US$10.1 million of consumer savings a year in Kenya. The reforms also increased the availability of whole maize, which had previously been restricted by regulation. Analysis showed that the

[1] Voigt (2009) estimates that for a developing country, de facto independence of the competition authority will translate into a 17 percentage point reduction in the productivity gap with the United States.

market share of whole maize rose from 8 to about 49 % in Zimbabwe and from about 10 to 35 % in Kenya within several years after the reforms were implemented. In Togo, Akiyama et al. (2001) found that eliminating monopolistic commodity boards for coffee increased growers' share of the value received per unit of exports from less than 30 to 80 %. Also in Mexico, Urzua (2009) estimated that market power exerted by companies on key goods imposed welfare losses on poor households 20 % higher than those on the highest-income households. Arnold (2005) estimates a 30 % reduction in the logistics costs on the Bangkok-Vientiane route after the bursting of the Thai truckers' cartel in the Lao People Democratic Republic.

In Kenya, evidence suggests a large potential gain from eliminating business associations' self-regulations that allow for price coordination and increase the cost of doing business. Estimates indicate savings of nearly $18 million per year in the insurance markets due to the elimination of price agreements (Martinez Licetti 2013). In Turkey, conservative estimates indicate that reducing regulatory and competition constraints on professional and transport services would result in benefits of at least $557 million to the economy per year (Licetti 2013).

A joint study between the World Bank Group and the Competition Authority of Kenya reveals that overcharges due to anticompetitive cartel behaviour have a relatively larger impact on the poorest households. Simulations for the Kenyan sugar and maize market indicate the country's poorest households suffer a relative welfare loss about two times higher than the one felt by the richest. Rural households are even more affected by anticompetitive overcharges than urban households when changes in consumption behaviour in reaction to price increases are taken into account (Licetti 2013).

In Zambia, the discovery of a duopolistic cartel in fertilizer has highlighted the importance of effective cartel detection for other government bodies. Estimates suggest to have cost Zambians over $20 million during the time the two companies supplied fertilizer to the Zambian government. This type of fertilizer—key input for farmers' agricultural crops—was distributed through government procurement contracts. Public procurement and government officials are now willing to work together with the Zambian Competition Commission in order to prevent bid rigging behaviour (Licetti 2013).

In this article, we estimate the direct financial benefits to consumers, by deriving estimates of the impact of the Commission's intervention following the uncovering of the South African cement cartel. To do this, we estimate the avoided price (overcharge) as a result of the uncovering of the cartel and the avoided duration in years (the avoided duration is the estimated expected future duration of a cartel, using case specific information). We estimate the annual impact on consumers by multiplying the sales of the affected goods by the price increase caused by agreement. We then estimate consumer savings by aggregating annual impact over the number of years we believe the cartel may have remained operational, but for the Commission's intervention.

The South African cement cartel involved price fixing and market allocation through the allocation of market shares and territories by the main cement producers (Pretoria Portland Cement Company Limited ("PPC"), Lafarge, AfriSam

and NPC-Cimpor). The cartel members had devised ways of continuing to coordinate their behaviour after the Government disbanded an officially sanctioned cartel in 1996. Before 1996, the cartel had been exempt from competition legislation. In anticipation of the disbandment of the cartel in 1996, cement producers agreed in 1995 that each producer would continue to hold a market share they enjoyed during the official cartel period.

After conducting a scoping study in the markets for construction and infrastructure inputs, the Commission initiated an investigation into the cement industry in June 2008. Subsequently, PPC, the largest cement producer in South Africa, applied for leniency around August 2009 and agreed to fully cooperate with the Commission by providing information on the cement cartel. Importantly, PPC also agreed to stop sharing detailed sales information through the industry association (Cement and Concrete Institute or "C&CI"), an important instrument that had been used by the cartel to sustain its operations.

The Commission concluded settlement agreements with AfriSam in November 2011 and Lafarge in March 2012. The two firms also confirmed the existence of the cartel and its modus operandi. The two firms paid settlement fines of approximately R125 million and R149 million, respectively. As part of the settlements, the Commission ruled that the C&CI could only release sales data on a national basis, rather than the regional specific product data that it had historically released. Also, rather than monthly statistics, cementations sales could only be released on a quarterly figure with a 3-month delay.

It is against this background that we estimate the actual price overcharge during the cartel, which we then use to estimate the financial impact of the Commission's intervention. The rest of the chapter is structured as follows: Sect. 2 gives a theoretical background of cartels and estimation of counterfactual price. We then give a modus operandi of the South African cartel in Sect. 3, and a brief overview of the international experience in cement cartels. In Sect. 4 we compare non-pricing dynamics pre and post cartel. We then calculate the avoided price, and quantify the financial benefit to consumers as a result of intervention in Sect. 5. Section 6 then concludes.

2 Theoretical Background on Cartels

This section examines economic literature on factors that facilitate cartel stability and also literature on the estimation of cartel overcharges.

2.1 Stability of Cartels

Economic theory indicates that individuals and companies will be motivated to engage in cartel conduct if their expected gain in terms of larger profits is higher than the costs associated with the probability of detection and punishment. Companies engage in such conduct to maximise their joint profits. Industries where

collusion is likely are those that are characterised by high entry barriers, high market concentration, homogeneity of product, inelastic demand, the small size of buyers, frequent transactions, short information lags, stable demand, cost symmetry and multimarket contact. In order for a cartel to succeed, participants need to overcome some challenges. First, cartel members need to select and coordinate their behaviour on mutually consistent and collusive strategies. Second, they need to monitor the behaviour of members to detect and deter defections from these collusive strategies. Third, they need to prevent entry (or expansion) by non-cartel firms (Levenstein and Suslow 2006). Failure to overcome these challenges results in bargaining problems, entry and opportunistic behaviour.

Bargaining problems arise when firms fail to reach a mutually beneficial agreement. These problems may also arise during the operation of the cartel and require renegotiation of the cartel agreement. Levenstein and Suslow (2006) reviewed 19 case studies and found entry and bargaining power to be the two most common causes of cartel failure. They argue that bargaining problems decline overtime as the cartel develops. They further argue that the likelihood of entry increases overtime as outsiders have more opportunity to respond to high cartel prices.

Opportunistic behaviour arises when an individual cartel member has an incentive to deviate from the agreement to gain higher individual profits at the expense of lower joint profits. Such behaviour has been found to account for between one third and one half of cartel breakdowns (Eckbo 1976 and Griffin 1989, as cited in Levenstein and Suslow 2006: 75–76). The risk of opportunistic behaviour creates a need for an effective mechanism to monitor the behaviour of cartel members to detect any deviations from the agreement. The cartel also needs to design an effective mechanism to punish members who are found to have deviated from the cartel agreement.

There are various strategies that cartels have employed to deal with the challenges of opportunistic behaviour and entry, particularly in economic environments where some of the facilitating factors are found to be weak. Cartel members can use collective predation (colloquially known as a price war) to fight cheating and new entry (Morton 1997). The threat of a price war itself, if credible, may be self-fulfilling. The creation of excess capacity can be used as an entry deterrence mechanism and to lend credibility to punishment threats, thereby stabilise collusive agreements (Lübbers 2009).

In some cartels, such as the Lysine cartel, a new entrant was accommodated and became a member of the cartel (Connor 1997). Others have a compensation mechanism to punish defectors. For instance, in the German coal cartel, severe fines were imposed on members that produced in excess of their allocated quota (Lübbers 2009). Others use vertical exclusion to prevent entry by non-members and also cheating by members (Levenstein and Suslow 2006).

Cartels also invest in monitoring mechanisms such as industry trade associations. Industry associations usually engage in the collection and dissemination of information, which may be used to facilitate collusion. This deters cheating and allows cartels to avoid costly price wars. Between a quarter and a half of the cartels in US cross-section studies report the involvement of trade associations in cartel organisation (Levenstein and Suslow 2006).

2.2 Estimating Cartel Overcharge

2.2.1 Theoretical Framework

Brander and Ross (2006) provide an overview of the economic issues that arise when estimating damages in price fixing cases. The paper also discusses in detail various methods to estimate damages. Cartel overcharge is the difference between the observed collusive price charged and revenue earned during the cartel period and what would have been charged in the same period in the absence of the unlawful conduct. Thus, calculating the overcharge often involves comparing the price actually paid by buyers during the anticompetitive period ("cartel period") to estimates of the price that would have prevailed in the absence of such conduct but where conditions are otherwise the same (the "reference price" or the "counterfactual" or "but-for" condition). Following Harrington (2004) and Brander and Ross (2006), for a given cartel period t, this can be expressed mathematically as:

$$\left[P_c(t) - P_{bf}(t)\right] D\left(P_c(t)\right) \tag{1}$$

Where: P_c (t) is the observed (collusive) price, D (P_c (t)) is the number of units sold, and P_{bf} (t) is the "counterfactual" price; that is, the price that would have been charged but for collusion. P_c (t) – P_{bf} (t) is referred to as the "overcharge". Thus, two crucial elements to the calculation of an overcharge are identifying the periods during which firms were colluding and estimating the counterfactual price.

It should be noted, however, that this analogy does not (and is not intended to) take into account the additional effect of the cartel such as the deadweight losses associated with the artificially elevated prices. For example, the effect of the higher sales that would have been sold if prices had been at the lower, competitive level is not included (Khumalo et al. 2012). The price paid by buyers and the volume of output are observable. However, the counterfactual price is not observed but needs to be estimated.

2.2.2 Empirical Approach: During-and-After Method

In this study, during-and-after approach is used. The choice of this approach is informed by the data at our disposal, being time series and due to the fact that there is no credible comparator to allow for the use of difference-in-difference approach. As such, we characterise the before-and-after approach in more detail.

In essence, the during-and-after approach compares the price during the cartel period with the price in the same market before and/or after the cartel period. There are two ways of doing this. One is simply comparing the price averages between these periods. Alternatively, the price overcharge can be estimated by multivariate models that take into account relevant control variables. The ability to measure the overcharge accurately depends upon how reliably and precisely the analysis can

distinguish the collusive effect on prices from other influences that are unrelated to the anticompetitive conduct (Nieberding 2006). Thus, the attractive feature of multivariate models is that they allow for the inclusion of other determinants of price in the cartel and non-cartel periods, such as seasonal effects, technological effects or structural changes.

Multivariate comparison of the cartel period with the non-cartel period can be implemented by two distinct approaches: the dummy variable ("DV") approach and the forecasting approach. The dummy variable approach introduces an indicator variable for the cartel period and takes value 1 during the cartel period and 0 otherwise. The coefficient parameter of this variable is thus the cartel overcharge. The forecasting approach involves predicting the price during the cartel period on the basis of the prices in the non-cartel period given the structural changes in the market.

The principal difference between the DV approach and the forecasting approach is that the former uses data for the entire time period as the estimation sample whilst a forecasting model uses data only from the benchmark period (which can be before or after the cartel period). There are several important assumptions that are implicitly being made when one approach is selected over the other. For instance, in using the forecasting approach, one assumes that the same relationship among price and the independent variables that exists in the benchmark period also holds in the cartel period. However, if this relationship does appreciably change during these two periods, the forecast model may not reliably predict counterfactual prices vis-à-vis an approach that accounts for this. Under the DV approach, one also must maintain the assumption that the same relationship between price and the independent variables exists in the benchmark and cartel period. If the influence of supply and demand factors affects equilibrium price differently in these two periods, then the DV approach may not reliably measure overcharges vis-à-vis an approach that accounts for such a change (Nieberding 2006).

The "before-and-after" method has certain key advantages that explain its frequent application in overcharge estimations. First, data requirements are limited to time series of the cartelized product. Second, the economic concept behind the approach is quite straightforward, thereby easing its application in court proceedings. Third, an estimation of the overcharge is technically relatively easy to implement and therefore suitable for implementation in a relatively short time window for the analysis. Fourth, it is not necessary to make any assumptions on industry conduct absent the cartel (Hüschelrath et al. 2013).

However, a trade-off is that the performance of this approach rests on the degree to which the period before or after the cartel provides a good approximation of the competitive price in the long-run equilibrium (Hüschelrath et al. 2013). One reason why this might not be the case is the possible persistence of cartel prices after the cartel has been uncovered. This is referred to as the transition period, in which prices continue to follow the cartel period price trend. One of the factors that may explain the occurrence of the transition period is residual collusion. Firms may no longer be meeting formally to discuss price fixing and output allocation strategies, but they may have developed shared understanding regarding each other's

businesses in ways that facilitate tacit collusion. Also, information sharing arrangements that continue after the uncovering of a cartel may also explain the persistence of collusive outcomes (Harrington 2004). In this case, the counterfactual price would be above the competitive level and the cartel overcharge would be under estimated. On the other hand, it is possible to overestimate the cartel overcharge if former cartel members reduce prices below the competitive level due to either price war that may emanate after the cartel (Connor 2008) or to calm down angry customers (Connick 2010 as cited in Hüschelrath et al. 2013). Therefore, ignoring the transition period from the cartel period to non-cartel period would likely lead to biased estimates of the price overcharge of the cartel.

2.3 Some Empirical Evidence

Empirical evidence suggests that cartel overcharges vary depending on duration, legal environment, organisational characteristics of the cartel and to a lesser extent, method of overcharge calculation (Connor and Bolotova 2005). Studies have generally found cartel mark-ups or overcharges to vary around a 15–25 % range of the cartel price. For instance, Posner (2001) reviewed overcharges for 12 cases and found a median overcharge of 28 %. Similarly, Werden (2003) reviewed 13 studies and arrived at a median of 15 %. A study by the OECD (Organisation for Economic Cooperation and Development) surveyed cartel cases of its members and found a median overcharge of 13–16 % (OECD 2002). Connor and Lande (2008) from a data set of 200 cartel studies, found a median overcharge of 20 %.

For the South African flour cartel, Mncube (2014) provides an overcharge estimation by using comparator based methods. He finds that the overcharges to independent bakeries range from 7 to 42 %. He also shows that the cartel profits were approximately two times higher during the cartel than the price war period or the post collusion period. In one of the impact assessment conducted by the Commission, in the precast concrete products market, Khumalo et al. (2012) estimate the cartel overcharge to be in the range of 16.5–28 % for the Gauteng region and 51–57 % for the KwaZulu-Natal region.

3 Modus Operandi of the Cement Cartel

A precondition of an economic assessment of a cartel is the understanding of the industry, market dynamics and the cartel agreement/s. To this end, this section deliberates on the characteristics of the South African cement industry, a background of the history of cartel conduct in this market as well as characterisation of the Commission's investigation of the industry.

3.1 Background of the South African Cement Cartel

An official, and legal, cement cartel operated in South Africa from the 1940s until its disbandment in 1996. It involved the four primary producers of cement; PPC, Afrisam, Lafarge and NPC-Cimpor. During that period, the cement cartel was exempted from competition regulation. The cement manufacturers, regulated by the South African Cement Producers Association ("SACPA"), agreed that each firm's market share would be proportional to their production capacities. Initially, the country was divided into the Southern Region and the Northern Region, with the former being the territory of PPC as the only producer with plants in the Western Cape and the latter shared between all producers. Whilst the KwaZulu-Natal province was shared between all producers, it was a special case where NPC-Cimpor, then jointly and equally owned by the other three producers, had exclusive reign in the territory. Accordingly, the KwaZulu-Natal volumes would effectively be shared equally between the three independent primary producers of cement, albeit indirectly through NPC-Cimpor.

A company known as Cement Distributors (South Africa) (Pty) Ltd ("CDSA") was formed and took responsibility for all cement sales and distribution and the balancing of the cartel members' interests. All producers had to market their product through the CDSA, which covered all of the Northern Regions of the country. In the Southern Region, where only PPC operated, a company called Cape Sales performed a similar role as CDSA.

Pricing of cement was done using a model called the Twycross pricing model that optimised rail transport. This model used Lafarge's Lichtenburg plant as the base pricing point of which all sales in the CDSA market area were priced by adding the transport costs from the Twycross pricing model. Indeed, it was this very function that was notionally the raison d'etre for the cartel: optimising the rail transport of cement so as to minimise the distribution cost. At the end of each accounting period, there was a system of quota balancing in accordance with the agreed market shares. As such the legal cartel was both a market allocation agreement as well as a price fixing agreement: market allocation because it set a rule to allocate fixed market shares within a territory; and, price fixing because it set a rule on delivered prices to customers.

Ultimately, the cartel was given until 1996 to disband and each producer to operate independently. Operating independently not only meant that each producer would set prices independently, but that they would also market and distribute their product independently. In anticipation of the disbandment of the cartel in 1996, cement producers had agreed in 1995 that each producer would continue to hold a market share they had enjoyed during the official cartel period. However, this did not happen, as immediately after the cartel was disbanded a brief price war ensued lasting until 1998 when all the cement producers (showing poor financial performance as a result) held a 2-day meeting in the town of Port Shepstone in the KwaZulu-Natal province to attempt to bring the market back to stability.

This 1998 meeting culminated in agreements on:

- Market shares in line with those under the legal cartel for the SACU (Southern African Customs Union) market, being South Africa, Lesotho, Botswana, Namibia and Swaziland, although often referred to by the cement companies as the 'national' market;
- Market shares for each company per province, which provincial market shares added up to the previous 'national' cartel market shares;
- The pricing parameters for different types of cement;
- The scaling back of marketing and distribution activities, with agreed closure of certain depots in certain regions; and,
- Cartel members not offering special discounts on higher quality cement.

In order to police the agreement and deal with the cartel problem of cheating, the cement producers devised an elaborate scheme of sharing detailed sales information through the industry association (known as the Cement and Concrete Institute or "C&CI"). The information sharing saw individual firms submitting their monthly sales figures to the association's auditors along the following lines; by geographic region, packaging and transport type, end user (customer type), product characteristics and imports. There was also a cross category of geographic area and end use, other categories for cement only and for extenders only. The data was then aggregated by the auditors, before being disseminated to the cement producers by the association.

Given the high concentration level of the cement industry, firms could use the aggregated data received from the association to monitor their own market share. If there were any changes (above or below a particular target), a firm could discern from the data exactly where the changes came from. Therefore targeted punishment or volume shedding could be undertaken without causing a price war or in any way destabilising the market.

As indicated, the Commission granted PPC immunity from prosecution under its corporate leniency policy in 2009. As a condition to this immunity, the Commission required that the company stop submitting data to the association in late 2009. As PPC is by far the biggest cement producer in South Africa, this effectively meant halting the information exchange given the proportion of PPC data. The information exchange regime was undoubtedly the single most important tool of the cement cartel and therefore the Commission expected that without it, the cartelists would find it difficult to monitor compliance with the cartel arrangement. Logically, the cartel would breakdown as a result of the reduced transparency in the market, thus bring about more volatility and competition on price.

Prior to the 2008 investigation, the Commission had an earlier investigation under-which it conducted raids on the premises of PPC and Slagment as early as 2000. PPC and Slagment challenged the raid successfully resulting in the return of the raided documents. It is probable that these documents contained details of the 1998 agreement, and therefore it is likely that the cartel could have been uncovered then but for the legal challenge.

In the following subsections we describe the market allocation, price fixing and information exchange arrangements of the cartel.

3.1.1 Price Fixing

An agreement on market shares effectively reduces price competition as it enables any firm to identify where there is competitive discounting, as this is a manifest in loss of market share. However, the cement cartel members also saw it fit to fix prices in the market. Before the Port Shepstone agreement in 1998, a decentralised pricing system was in place where discounting at regional level was common practice. At the meeting there was an agreement on certain pricing parameters and that the cement producers would not offer discounts on higher quality cement.[2] Price increases took place twice yearly, in January and June. The amount by which prices were to increase every 6 months still had to be determined and continuous forums facilitated this determination.

The initial meetings took place in 1998, 1999 and 2000 to discuss pricing (as well as market shares). The cement producers then maintained contact on a bilateral basis after these main meetings. These bilateral interactions typically took place around the time of price increases, where representatives from each of the players would seek to find out what the others were likely to do in relation to pending price adjustments. This price-monitoring was also amplified by a nodal pricing strategy adopted by PPC and Lafarge, and followed by others, from 2001 onwards. Prices were determined at executive level for ‘nodes’, which were geographic regions or zones of supply. Thus towns in any given node would pay the same price irrespective of distance from the plant. The Commission’s investigation revealed that during the period 2000–2008 cement producers increased the price of cement by roughly similar percentages.

3.1.2 Information Shared Through the Industry Association, C&CI

The information exchanged through the industry association facilitated the collusive agreements between the cement producers. The C&CI operated in such a manner that all its members submitted highly disaggregated information on output, which it combined and then supplied to all members monthly in an aggregated form.

Sales volumes in the different provinces (and sub-provinces and countries) were concentrated among a few or even a single producer. This meant that cement firms who were present within a region could calculate the residual by subtracting their own volumes from the total received from the C&CI. Where there were two firms present, this then equated to data that is disaggregated to the firm level. This gave firms the ability to identify quickly when rival firms, had increased their market share.

The information also included data on volumes per end use sector, per province which allowed firms to determine in which customer groupings rival firms had

[2] Competition Commission referral report, case number 2008JUN3769.

increased their market share. This made it easier for firms to monitor rivals' deviations from the agreement. For example, if PPC observed that its market share in the Eastern Cape dropped, PPC would not only know that it was because AfriSam increased market share, but PPC could also identify the sector into which AfriSam increased its market share. If it was for example in the mining sector, then PPC could quickly find out if it was because AfriSam won the market share by some competitive action (cheating on an agreement) or perhaps a long term customer of AfriSam required volumes greater than what they would ordinarily purchase.

3.2 International Experiences

Table 4 (see Annexure) gives a summary of international experience with cement cartels. Apart from usual market allocation, price fixing and information exchange, we have come across other distinct types of cartel formation as seen from the experiences of Mexico, Taiwan and Australia. In Mexico, it was basically cartelists blocked customers from importing cement from Russia; in Taiwan, it was an agreement to set up a joint venture to acquire the silo of harbour in order to prevent the international cement groups from establishing domestic marketing channels and also negotiated the retreat of some enterprises from the market whenever there were oversupply; and in Australia, cartelists behaved like a monopoly and prevented a competitor from entering the market by obtaining direct access (purchase agreement) to a source of fly-ash in South East Queensland.

Another interesting observation from the international experience concerns the recently conducted raids in Pakistan into cement cartel recidivists. This highlights the possibility of re-formation of cartels post-intervention and weak deterrence effects of penalties/intervention itself. It has also been observed that cartel breakdowns induce mergers. A study by Hüschelrath and Smuda (2013) investigates the impact of cartel breakdowns on merger activity between 2000 and 2011 with a detailed data set of worldwide merger activity. They find that the average number of all merger transactions increase by up to 51 % when comparing the 3 years before the cartel breakdowns with the 3 years afterwards; for the subset of horizontal mergers, merger activity is found to increase even more—by up to 83 %—after the cartel breakdowns.

4 Pre and Post-cartel Behaviour

The Commission alleged that the four producers had a geographical market sharing arrangement, through which they had divided South Africa into territories. The KwaZulu-Natal Province was divided into northern KwaZulu-Natal where all four producers were present, and the southern KwaZulu-Natal which was NPC-Cimpor's exclusive territory. Following from the legal cartel, the Eastern

Table 1 The geographic spread of cement producers in terms of market shares during cartel and post-intervention period (2012) by region

Region	Active players and approximate market shares							
	PPC		AfriSam		Lafarge		NPC-Cimpor	
	Cartel period	Post-intervention	Cartel period	Post-intervention	Cartel period	Post-intervention	Cartel period	Post-intervention
Western Cape	100 %	x		x		x		x
Eastern Cape	90 %	x[a]	10 %	x[a]		x[a]	(Negligible)	x[a]
Border/Transkei	10 %		90 %				(Negligible)	
Northern Cape	25 %	x	75 %	x	(Negligible)	x		x
North West	40 %	x	30 %	x	30 %	x		x
Limpopo	40 %	x	25 %	x	35 %	x		x
Gauteng	35 %	x	35 %	x	30 %	x		x
Mpumalanga	45 %	x	35 %	x	20 %	x	(Negligible)	x
Northern KZN	25 %	x[b]	20 %	x[b]	40 %	x[b]	15 %	x[b]
Southern KZN	10 %		(Negligible)		(Negligible)		90 %	
Free State	15 %	x	60 %	x	25 %	x	(Negligible)	x

Source: *Commission report, case number 2008JUN3769 and* Own calculations from data collected during the merger investigation
[a]Now includes both Eastern Cape & Border/Transkei
[b]Now includes both Northern & Southern KZN. Post intervention market share figures are confidential

Cape Province was divided into the separate "Border and Transkei" region which was mostly Afrisam's territory and the "Eastern Cape" region which was PPC's territory. The Western Cape Province belonged to PPC and the Northern Cape was split between PPC and AfriSam. The remaining regions (North West, Limpopo, Gauteng, Mpumalanga, and Free State) had the three producers (PPC, AfriSam and Lafarge) (see Table 1).

In addition, the neighbouring countries were split as follows; Lesotho, Namibia and Swaziland were allocated to AfriSam. Further, PPC confirmed that it was allocated the Botswana market.

Table 1 illustrates the market structure pre- and post-intervention, in different regions.

Western Cape
Pre intervention, Western Cape was solely allocated to PPC, that is, PPC had 100 % market share. Post intervention, it is noted that Afrisam has penetrated into the market. Afrisam's market share is likely to increase in the future as it is understood that Afrisam is in the process of constructing a depot to service the Western Cape.

Eastern Cape
Previously, this region was divided into two regions, the Eastern Cape and Transkei and allocated to PPC and Afrisam, with NPC having negligible sales. The post cartel data aggregates volumes from these sub-regions, and therefore cannot make a convincing comparison. However, since these two regions were allocated to two companies, it is possible to assess entry. In 2012, it is apparent that NPC has more than negligible market share and Lafarge has also entered the fray. Overall, while we cannot make a compelling conclusion, there is an increased competition in that region, on the basis that there are more firms competing in the region.

Northern Cape
This region was split 75 and 25 % between Afrisam and PPC. In 2012, however, it is evident that Lafarge had entered into the market and eaten significantly into the market shares of these two firms.

North West
During the cartel, the firms agreed to split the market shares 40 % to PPC and 30 % each to Afrisam and Lafarge. By 2012, the market looked more competitive, with both PPC and Lafarge eating into Afrisam's market share.

Limpopo
Pre intervention, the market was allocated such that PPC had 40 %, Afrisam 25 % and Lafarge 35 %. By 2012, the picture had changed and it seems that PPC and Lafarge are eating into Afrisam's market share in this region, implying increased level of competition.

Gauteng
Gauteng was equally split between PPC and Afrisam controlling 35 % market share each, and Lafarge controlling 30 %. By 2012, both Afrisam and Lafarge had lost market shares to PPC.

Mpumalanga
According to the cartel arrangement, PPC had been allocated 45 % market share, and Afrisam and Lafarge had 35 % and 20 % respectively. By 2012, Lafarge had significantly eaten into PPC's market shares.

KwaZulu Natal
Pre intervention, cement companies divided the province according to Southern and Northern KwaZulu Natal. The common notion was that NPC is the main supplier in the greater KwaZulu Natal region, followed by Lafarge, PPC and Afrisam. The post intervention data is not disaggregated according to the Southern and Northern region, but submitted as one KwaZulu Natal figure. Thus, it is not possible to compare like for like.

Free State
The cartel arrangement had allocated Afrisam 60 %, and PPC and Lafarge controlling 15 % and 25 % market shares respectively. NPC had negligible market share in the region. Post cartel, Afrisam is still dominant however, has lost market shares marginally. NPC's sales are still negligible in Free State.

Recently, Sephaku cement announced its entry in the South African market in 2013 but started producing cement in 2014. Nigeria's largest cement manufacturer, Dangote Cement has a 64 % controlling stake in Sephaku. Sephaku cement owns two cements plants, Aganang plant situated in the North West as well as the Delmas plant situated in Gauteng. Sephaku, at present, supplies customers mainly in the Inland region as well as the coastal region such as the KZN that was previously exclusively demarcated to NPC-Cimcor.

The Jidong Development Group, one of China's largest cement manufacturers has announced its entry into the South African market through the establishment of Mamba Cement Company ("Mamba") which is expected to commence production in 2016. Mamba's cement plant will be located in the Limpopo province near an established limestone deposit in Northam and it is estimated to produce around 1 million tons of cement per annum.

5 Estimation of the Cartel Overcharge

Estimating the avoided price invariably involves comparing the outcomes in a world in which there is a cartel to those where there is no cartel. This involves constructing a counterfactual price and comparing it to the observed price. Holding everything constant, the difference between the two is attributable to the intervention. There are various methods to estimate 'counterfactual' prices and each differ with respect to their conceptual complexity and underlying assumptions. In this case, we used the during-and-after approach which basically compares the price during the cartel period with the price in the same market after the cartel period.

To do this, we develop a model of cement price during and after the cartel, using a multivariate econometric model that takes into account relevant control variables. These control variables include a set of determinants of the price in the cartel and

non-cartel periods such as cost of production, raw materials that go into the production process of cement and variables that account for demand.[3]

In simple terms, the model estimates the cement price at time t as a function of the price of coal, limestone, iron ore, energy, oil and construction. The cost shifters are selected based on the inputs that go into the production process of cement. The price index of construction, which measures the construction activity in the economy, is used as an instrument for the demand of cement. Thus, in this model, cement price is determined by cost and demand shifters, which resonates with the real world. In order to estimate the effect of the cartel, we include the dummy variable in the regression equation, which takes a value of '1' during the cartel period and a '0' otherwise. The corresponding coefficient captures the difference of the price between the cartel period and the non-cartel period.[4] It is noted that the accuracy of the estimation, depends on how well the model can explain the observed variation in actual prices in the market.

Econometric Model

$$P_t^{Cement} = \beta_0 + \beta_1 D^C + \beta_2 P_t^{Coal} + \beta_3 P_t^{LS} + \beta_4 P_t^{IO} + \beta_5 P_t^{E} + \beta_6 P_{t-3}^{Oil} + \beta_7 P_{t-4}^{Const} + \varepsilon_t \quad (2)$$

Where,

P_t^{Cement} = Ex-work price indices in period t of South African 42.5N Cement in bulk sales category[5]
D^C = Dummy variable taking value 1 for cartel period and 0 otherwise[6]
P_t^{Coal} = Price indices of Coal in period t for South Africa
P_t^{LS} = Price indices of Limestone in period t for South Africa
P_t^{IO} = Price indices of Iron ore in period t for South Africa
P_t^{E} = Price indices of Energy in period t for South Africa
P_{t-3}^{Oil} = Price indices of Oil in period $t-3$ for South Africa[7]

[3] Refer Brander and Ross (2006) for detailed discussion on methods of damage estimation and data challenges.

[4] We found no evidence of the existence of a transition period, as the transition period dummies proved to be statistically insignificant.

[5] Ex-work price of 42.5N in bulk sales of PPC, Lafarge and NPC are averaged to represent South African cement prices in the OPC bulk sales category. Considering January 2008 price as base, rest of the period data are converted to price indices of cement. Similarly, price indices of all the independent variables are also converted to January 2008 constant prices for regression purposes.

[6] The Competition Commission, South Africa investigated the cement cartel and levied heavy penalties on the cartelists in the year 2009. Specifically, the Commission's intervention took place on November 2009 and hence we allow the cartel dummy variable to take value 1 for the pre-November 2009 period and 0 otherwise.

[7] Lag of 3 months are allowed to adjust the industry response to exchange rate and availability of oil for domestic consumption.

P_{t-4}^{Const} = Price indices of Construction in period t – 4 for South Africa[8]
ε_t = Error term

The cement price index at time t is modelled as a function of the price indices of coal, limestone, iron ore, energy, oil and construction. These variables are selected based on the inputs that go into the production process of cement in South Africa. The price index of construction is used as a proxy to demand for cement. Using construction as an independent variable solves the problem of endogeneity between price of cement and demand for cement. From an econometric perspective, having included the construction variable in the regression equation avoids the possible biased coefficients and erroneous estimates of the impact of cement demand on cement prices. In order to estimate the effect of the cartel, we include the dummy variable D^C in the regression equation. The corresponding coefficient shows the difference of the price index between the cartel period and the non-cartel period and ε_t is the error term. Table 2 shows the results of simple OLS regression based on data from January 2008 to December 2012.

Data Description and Data Source

Variable	Source	Description
Cement Price index[a]	Cement Producers	Ex-work price indices in period t of South African 42.5N Cement in bulk sales category
Coal Price	Statssa	PI924101-PPI for selected materials: Coal, Large nuts—grade B (Index 2012 = 100)
Limestone and Shale	Statssa	P-0152: PPI for selected materials: Aggregated crushed stone (Index 2012 = 100)
Iron Ore	Index Mundi (the Steel Index via IMF)	Iron Ore Monthly Price—US Dollars per Dry Metric Ton
Energy	SARB	KBP7139N-Producer prices of domestic output: Electricity, water, steam and gas (PPI)
Oil	SARB	Brent crude oil price in US Dollar
Construction GDP	SARB	Gross Value Added at basic prices of construction (contractors) (GDP), constant 2005 prices

[a]Note that the independent variables considered in the model are national figures and hence it was necessary for us to convert actual cement prices to cement price index to represent South Africa. Though the cartel was regional in nature, a region-wise econometric estimation could have been biased as the independent variables are national and no region was operated by all the 4 firms in any point in time effectively

Table 2 shows the estimation results for the case of the natural logarithm of the respective variables. Except coal and constant term, all the other independent variables are statistically significant. It is evident from the table that the price difference between the cartel period and the non-cartel period (i.e., the price

[8] Lag of 4 months are allowed to adjust industry response to twice a year price revision by the cement companies. Lag of 6 months could have been appropriate however, construction data are quarterly and hence lags of 4, 5 and 6 could have had same impact on the dependent variable.

Table 2 Overcharge estimation—Eq. (2)

Variables	Coefficient	t	Sig
Constant	0.570	0.43	
D^C	0.072	2.63	***
Coal	0.016	0.23	
Limestone	−0.468	−2.15	**
Iron Ore	0.070	2.07	**
Energy	0.241	2.92	***
Oil	−0.103	−3.45	***
Construction	1.134	3.54	***
No. of observation	**56**		
F(7, 48)	**28.99**		***
R-Sq	**0.80**		
Adj R-Sq	**0.78**		

Note: *, **, *** are 10 %, 5 %, 1 % statistical significance respectively

overcharge) is exp(0.072) − 1 = 7.5 % which is statistically significant at 1 %. If we assume an average cement price of R1000 (US$94.34) per ton, the price overcharge can be calculated to be R75 (US$7.07) per ton. The regression results show that a 1 % increase in the price of iron ore leads to a 0.07 % increase in the price of cement with a statistical significance of 5 %. For the energy price index, we find that a price increase of 1 % leads to an increase of the cement price of 0.24 % with a statistical significance of 1 %. Surprisingly, Limestone and oil, though are statistically significant at 5 % and 1 % respectively, are negatively related to cement price indices showing some amount of inconsistency in the data. Interestingly, we find construction variable is positive and statistically significant at 1 % indicating a 1 % increase in construction leading to 1.13 % increase in the price of cement. This is not surprising given the high construction work during National Games in South Africa. Overall, the model fit is good with Adjusted R-sq of 0.78.

Extension of Econometric Method: 2SLS

The estimation period coincides with the global financial meltdown, whose effects were witnessed between July 2008 and May 2009. Evidently, cost shifters, particularly oil prices, might suffer from exogenous shock. In an attempt to purge this effect, we extended our Eq. (1) to account for financial crisis by creating a dummy for global financial crisis and instrumenting this dummy to oil price indices. For this purpose, we use the following econometric model and perform 2SLS. Table 3 shows the results of 2SLS regression based on data from January 2008 to December 2012.

$$P_t^{Cement} = \beta_0 + \beta_1 D^C + \beta_2 P_t^{Coal} + \beta_3 P_t^{LS} + \beta_4 P_t^{IO} + \beta_5 P_t^{E} + \beta_6 IVD^{FC} + \beta_7 P_{t-4}^{Const} + \varepsilon_t \tag{3}$$

Where,

Table 3 Overcharge estimation—Eq. (3) (2SLS)

Variables	Coefficient	t	Sig
Constant	−2.760	−0.71	
D^C	0.093	2.54	***
Coal	0.084	0.80	
Limestone	−0.142	−0.34	
Iron Ore	0.100	2.08	**
Energy	0.034	0.14	
IV D^{FC}	0.005	0.04	
Construction	1.521	2.82	***
No. of observation	**56**		
Wald Chi-sq (7)	**174.97**		***
R-Sq	**0.75**		

Note: *, **, *** are 10 %, 5 %, 1 % statistical significance respectively
We also tested for multicollinearity by conducting Variance Inflation Factor (VIF) test. Mean VIF calculated for all the independent variables considered is 9.10 which is below rule of thumb of 10. Note that VIF of 9.10 can also emerge for simple reason that all the raw material price indices are moving in the same direction and despite the fact that each of these variables are independently constructed indices. However, when VIF reaches these threshold values researchers often attempt to reduce the collinearity by eliminating one or more variables from their analysis; using Ridge Regression to analyse their data; or combining two or more independent variables into a single index. These techniques for curing problems associated with multicollinearity can create problems more serious than those they solve. Because of this, there is a need for these rules of thumb threshold values of the VIF (and tolerance) to be evaluated in the context of several other factors that influence the variance of regression coefficients

P_t^{Cement} = Ex-work price indices in period t of South African 42.5N Cement in bulk sales category
D^C = Dummy variable taking value 1 for cartel period and 0 otherwise
P_t^{Coal} = Price indices of Coal in period t for South Africa
P_t^{LS} = Price indices of Limestone in period t for South Africa
P_t^{IO} = Price indices of Iron ore in period t for South Africa
P_t^{E} = Price indices of Energy in period t for South Africa
$IV\,D^{FC}$ = Price indices of Oil instrumented by Global Financial Crisis dummy taking value 1 for crisis period and 0 otherwise
P_{t-4}^{Const} = Price indices of Construction in period t − 4 for South Africa
ε_t = Error term

The cartel dummy is statistically significant at 1 %, and so is the demand variable. Iron ore is significant at 5 %. All other cost shifters do not appear to be statistically different. Despite this, goodness of fit does not suffer much as R-sq is

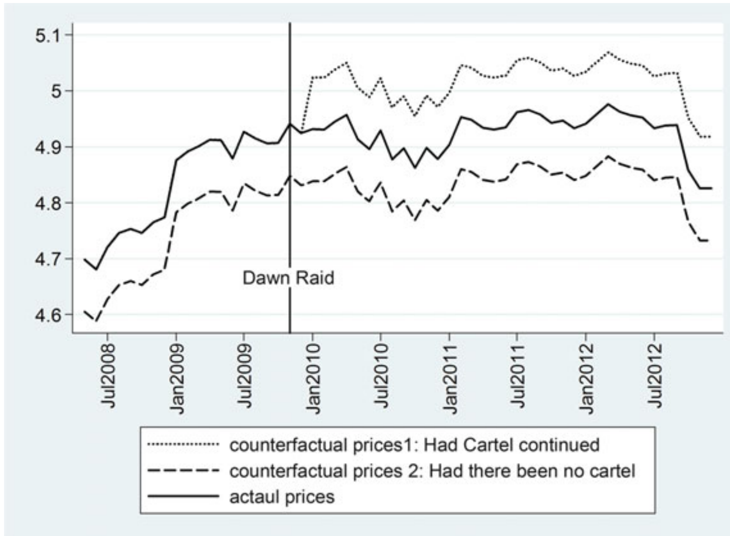

Fig. 1 Estimated counterfactual cement price index

still 0.75. Using these estimates, the price difference between the cartel period and the non-cartel period is now 9.7 % (exp(0.093) – 1) which is statistically significant at 1 %. The overcharge is calculated to be R97 (US$9.15) per ton if we assume the average cement price to be R1000 (US$94.34) per ton.

Comparison of Actual Outcomes with Counterfactuals

As it was evident from 2SLS regression estimates that the price difference between the cartel period and the non-cartel period was 9.7 % which was statistically significant at 1 %. This indicates that prices were 9.7 % higher during the cartel period. At this stage, we can simulate two scenarios using estimated cartel overcharge.[9] We simulate a scenario where the cartel continued and a scenario where there were no cartel in the South African cement cartel (Fig. 1).

Using these parameters, the estimated total savings to the South African consumers due to Commission's intervention are approximately in the range of R1.1–R1.4 billion (US$103.8–US$132.07 Million) per annum. Hence calculated total savings to the South African consumers due to Commission's intervention starting from 2010 to 2013 calendar year are approximately in the range of R4.5 to R5.8

[9] Note that this is based on the assumption of "other things constant" for simulation exercise. The simulated counterfactual scenarios are based on estimated cartel dummy and hence it only captures the parametric shift in the curve that exactly equals cartel overcharge. However, forecasting as a technique can be used to simulate both parametric shift and slope of the overcharge which this study has not considered due to insufficient data points post-intervention.

Billion[10] (US$424.5–US$547.1 Million). Moreover, had the Commission been successful in its first intervention of early 2000 dawn raids, the total savings to the SA consumers could have been approximately in the range of R14.9–R19.3 Billion (US$1.4–US$1.8 Billion) between 2000 and 2013.

6 Conclusion

The study aimed at assessing the impact of the Commission's intervention in the cement cartel. We focused on consumer saving. In doing this, we constructed an econometric model to estimate the avoided price (cartel overcharge), as a result of the Commission's intervention.

Estimating the avoided price invariably involves comparing the outcomes in a world in which there is a cartel to those where there is no cartel. This involves constructing a counterfactual price and comparing it to the observed price. Holding everything constant, the difference between the two is attributable to the intervention. There are various methods to estimate 'counterfactual' prices and each differ with respect to their conceptual complexity and underlying assumptions. In this case, we used the 'during and after' approach which basically compares the price during the cartel period with the price in the same market after the cartel period.

Econometric estimation having accounted for cost and demand shifters shows that overcharges were between 7.5 and 9.7 % during the cartel period compared to post-intervention period. Note, however, where hard core anti-competitive practices involve, for example, price-fixing and market sharing, recent academic evidence by Connor (2008) supports a median overcharge of between 17 and 30 %. Hence, our estimates are very conservative and if we were to go by Connor's (2008) median overcharge or Competition Tribunals' standard of 15 % overcharge, total savings to SA consumers will arguably be more than what is estimated. We find that the total savings to the South African consumers due to Commission's intervention between 2010 and 2013 calendar year are approximately in the range of R4.5–R5.8 Billion (US $424.5–US$547.1 Million). Moreover, had the Commission been successful in its first intervention of 2000 dawn raids, the total savings to the South African consumers would have been approximately in the range of R14.9–R19.3 Billion (US$1.4–US$1.8 Billion) between 2000 and 2013. Apart from these financial benefits, we find that the market has generally become more competitive, as evidenced by firms penetrating into regions (provinces) that they were previously not active in.

Disclaimer The views expressed herein are of the authors' and not purported to reflect those of the Competition Commission, South Africa.

[10] In order to estimate total savings post-intervention since 2010–2013, we assume that the total sales in quantity to be same as 2005 calendar year level. This captures the intervention effect of reduced sales observed post-intervention in the retail segment. Actual data corresponds to total quantity sold in the year 2012 in the retail segment has dropped to 2005 level data. We assume that total sales in wholesale also would have dropped to 2005 level sales.

Annexure

Table 4 Summary of international experience in cement cartels

Country/agency	Participants	Cartel form	Complaint/ initiation	Period of cartel	Agency's intervention	Penalty	Outcome
Egypt Egyptian Competition Authority (ECA)	9 players	Price fixing Direct agreement on market share allocation in terms of capacity	Request from Minister of Trade & Industry	2002–2005	2006[a]	10 Million Egyptian pounds Each	The average sales price overcharge were 33 % given that the average production costs had increased by 10 % during 2003–2004. In 2006, average sales prices increased by 14 % notwithstanding a decrease in production costs by 3 %
Poland Office of Competition & Consumer Protection (UOKiK)	7 Players	Price fixing Information exchange Market share agreement Minimum resale price	Leniency	1998–2009	Investigation period 2006–2009	Lafarge—0 % Górażdże Cement—5 % Others—98 Million (EUR)	Others appealed the decision at Court of Competition & Consumer Protection (SOKiK)—Fines reduced to 81 Million EUR

Germany Burnderskartellamt (FCO)	6 Players	Market allocation Quota agreement	Leniency	1990–2002	Initial search—July 2002 Further Search—January 2003	Total of 660 Million Euro	Cartel overcharge of 10–15 % of average price per ton German court slashed those fines to nearly 330 million €, citing problems with the data used to set the fines
Pakistan Competition Commission of Pakistan (CCP)[b]	All Pakistan cement manufacturers association	Marketing agreement: to fix price-production-supply	Suo-moto	1992 1998 8th May 2003	2009	6.3 billion rupees ($76.6 million)	January 2012, CCP raids suspected cartel recidivists
India Competition Commission of India (CCI)	11 Players + cement manufacturers association	Price fixing Market allocation Information exchange	Complainant: Builder's Association of India	2000–2010	2012	60 billion rupees (836 million €)	Cartel overcharge of up to 40 % All have appealed the decision at Competition Appellate Tribunal
China State Administration for Industry commerce (SAIC)	16 players	Direct agreement to divide sales market Rules on penalties for non-compliance	Leniency	–	2011	RMB 200,000 ($30,000; 22,000 €)	11 of 16 players received immunity for cooperating with investigation

(continued)

Table 4 (continued)

Country/agency	Participants	Cartel form	Complaint/ initiation	Period of cartel	Agency's intervention	Penalty	Outcome
Brazil Council for Economic Defense (Cade)	6 Players	Price fixing	Leniency	1986–2007	23 January 2014	Brazil's Votorantim Cimentos would be fined US $657 m and Switzerland's Holcim would receive a penalty of US$214 m. Itabira Agro Industrial would be fined US $173 m, Cimpor Cimentos would receive a penalty of US$126 m and InterCement, a subsidiary of Camargo Correêa group, would be fined US$102 m. In addition, Itambe would receive a fine of US $37.1 m	Votorantim Cimentos will be compelled to divest 35 % of its assets that represent 11Mt/ year of cement capacity, equivalent to 15 % of the cement demand in Brazil. Holcim is required to sell 22 % of its assets. Itabira will be required to sell 22 % of its assets. Cimpor faces a sale of 25 % of its assets. InterCement will be required to sell 25 % of its assets. Itambé will not have to sell any assets, as the company operates just one cement plant

Mexico Federal Competition commission (CFC)	Cemex + Comercio para el Desarrollo Mexicano (CDM), which had been formed by local entrepreneurs and several foreign partners	A group of customers that was blocked from importing cement from Russia in 2004	Complainant: A group of customers	2004	Feb 2012	US$800,000	Cemex to appeal the dicision.
Taiwan The Fair Trade Commission (TFTC)	21 Players (11 manufacturers and 10 cement silo holders/distributors)	Agreement to set up a joint venture to acquire the silo of harbor in order to prevent the international cement groups from establishing domestic marketing channels. Negotiated the retreat of some enterprises from the market Price fixing Market allocation	Complained by downstream manufacturers and industry associations of raising jointly the list prices of their products since 2001	1997–2005	Dec 15 2005 After forming international cement cartel in East-Asia countries, they had reached an agreement or arrived at an understanding that the oversupply of cement in that area would be exported to America, Middle East and Africa, rather than to cut down its home market price to compete with one another. It is worth observing the continuous hiking of cement price due to the	210 million New Taiwan Dollars (NTD) (US$6.3 million)	In order to build a competitive cement market at home and abroad, the FTC appealed that competition authorities in each country and international organizations concerned should scrutinize the emerging problems of international cement cartel and co-operate with each other to crack down on these illegal infringements Chinese Taipei earnestly emphasized again that it

(continued)

Table 4 (continued)

Country/agency	Participants	Cartel form	Complaint/initiation	Period of cartel	Agency's intervention	Penalty	Outcome
					international cement cartel designed to allocate trading markets and profits in that area		would be glad to share its information on international cartels and would work together with those countries willing to cooperate
Australia Australian Competition and Consumer Commission (ACCC)	7 Players	Preventing a competitor from entering the market by obtaining direct access (purchase agreement) to a source of fly-ash[c] in South East Queensland	–	2002–2006	28 February 2014 Date of Judgement by Federal Court of Australia	The matter will return to the Federal Court later in the year for a hearing to determine the appropriate relief, including penalties, in respect of the breaches of the Act found by the Court, on a date yet to be determined	The matter will return to the Federal Court later in the year for a hearing to determine the appropriate relief, including penalties, in respect of the breaches of the Act found by the Court, on a date yet to be determined

[a]The ECA limited the study to the period between May 2005, which is the date when the Egyptian Competition Law on the Protection of Competition and the Prohibition of Monopolistic Practices officially came to force, and July 2006 when the report was referred to them from the minister requesting the study. However, they took the period between 2002 and 2005 and the period after the referral of the request as indicatory periods

[b]The companies repeatedly insisted on meeting all at once with the commission instead of dealing with the agency one-on-one, which it described as "symptomatic of how the cartel members watch . . . over each other's shoulders to ensure no one falls out of line," according to the commission

[c]Fly-ash is a by-product of burning black coal at power stations, and can be used as a cheap partial substitute for cement in ready-mix concrete

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A History of Collusion: The Persistence of Cartels in South Africa

Liberty Mncube and Sunél Grimbeek

Abstract This chapter discusses the persistence of cartels in South Africa. In 1996, South Africa's first democratic administration took significant steps to liberalize many of the formerly price regulated markets. Deregulation and liberalisation led to the break-up of regulated cartels. We argue in this chapter that liberalisation may have inadvertently, by increasing competition in formerly protected markets, have increased the incentives for firms to participate in cartels.

Keywords History of collusion • Liberalisation of regulated markets • Firm incentives

1 Introduction

South Africa's Competition Act, like the competition laws of many other jurisdictions, prohibits *per se* horizontal agreements such as price fixing, market division, and collusive tendering. However, unlike other countries, the prohibition on cartels is balanced by a scheme for exemptions that incorporates public interest considerations. An exemption may be for a particular agreement or practice or for a general category of them. Grounds for exemption include maintenance or promotion of exports, promotion of small businesses or firms controlled by historically disadvantaged persons to become competitive, changing capacity to stop decline in an industry, and the "economic stability" of an industry.

To some extent protectionist policies of the past explain the persistence of cartels in South Africa. They created a culture of collusion which continued when the regulatory regime changed. Harrington (2015) rightly observes that, "*a country that, until recently, allowed firms to collude (that is, it was either lawful or was tolerated in the sense of not being prosecuted) or even encouraged firms to collude (in association with industrial policy), it is not difficult to imagine that managers may not perceive collusion as particularly unethical or harmful while still*

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recognizing that it is now unlawful (and thus engaging in acts of deception to prevent its detection)."

In what follows, we briefly discuss competition cases in South Africa in which firms chose to replace competition with collusion following deregulation. Sections 2 and 3 discuss several cartel cases in which collusion was preceded by state supported cartels. Section 4 concludes.

2 Collusion in Agricultural Products

2.1 History of Regulation

Up until the 1990s the marketing of agricultural products in South Africa was extensively regulated by the state through the Marketing Act of 1937 (consolidated in the Marketing Act of 1968). Institutions mandated to implement the legislation included the Land and Agricultural Bank as well as Control Boards for every individual agricultural product (Kirsten and Van Zyl 1996). Fixed price schemes and the agricultural co-operatives were generally appointed as agents of the relevant boards. The co-operatives functioned as regional monopolies. Under these schemes, farmers were paid a fixed price at delivery to the co-operative, regardless of where the delivery was made. This resulted in substantial cross-subsidisation from farmers proximate to the market to farmers situated further away from the market (Vink and Kirsten 2000). The system was also meant to ensure the stability of agricultural prices as well as the reduction of marketing margins between producers and consumers.

The first democratic government initiated a complete transformation of the industry with the introduction of the Marketing of Agricultural Products Act of 1996. The Marketing of Agricultural Products Act dramatically changed agricultural marketing, moving away from statutory intervention and geared towards liberalisation to promote market efficiency and competitiveness. Changes included the closure of the boards, a conversion from quantitative trade restrictions to tariffs and gradual reductions in the tariffs themselves. It also aimed to address socio-economic factors such as the increased participation of previously disadvantaged individuals in agriculture, to promote equitable access to markets by emerging black producers and speed up the process of land reform in the country. Under liberalisation most of the cooperatives, at the heart of the regulatory system, converted to private companies.

2.2 The Flour Industry

Wheat cultivation is one of the oldest agricultural activities in South Africa.[1] Import duties on wheat and flour were first imposed in 1826.[2] The import duty on wheat was suspended because of a local crop failure between February 1920 and June 1921. Between 1921 and 1926, a dumping duty was imposed on Australian wheat. The dumping duty was superseded in 1926 by a tariff increase.

The control of imports and the high protective tariffs were instrumental in maintaining the local price level, but prices were constantly under pressure to fall because of over-supply in the market. In light of this, co-operative groups attempted to regulate supply and carry over surpluses for use in years of shortages.[3] Importantly the powerful lobbying efforts of co-operative groups led to the creation of the Wheat Board in 1935.[4] The Wheat Board was essentially empowered, to regulate the flow of wheat to the market by paying storage compensation in respect of wheat stored by co-operative groups and farmers.[5]

The Marketing Act of 1937 introduced the Wheat Control Scheme giving the Wheat Board the sole right to sell wheat. In addition, the Marketing Act empowered the Wheat Board to fix prices from producer to consumer and to rationalise the milling and baking industries, subject to ministerial approval.[6]

The Wheat Board was the main intermediary between the farm gate and the processing level of wheat products. Marketing of wheat was regulated through a single channel marketing system administered by the Wheat Board.

The Wheat Board was the sole buyer and seller of wheat at predetermined prices. The Wheat Board also controlled imports and exports of wheat and wheat flour. Millers were obliged to take up all locally produced wheat for milling. Fixed price schemes and the agricultural co-operatives were generally appointed as agents of

[1] See Section 7 Committee Evaluating the Deregulation Process: the wheat to bread value chain report, 1999. National Agricultural Marketing Council.

[2] The increasing population of settlers coupled with the discovery of the diamond and gold fields, led to significant growth in wheat production in South Africa. In addition, the development of railways, in conjunction with reduced freight charges, resulted in wheat cultivation being restricted to areas where natural conditions were most suitable, while shortages were imported from overseas.

[3] The costs and risks attached to these efforts were borne by the co-operative producers.

[4] Under Section 19 of Act No 58 of 1935.

[5] During the first two years of its existence the Wheat Board had a difficult task as a bumper crop was reaped in 1935/36 and there was a surplus on hand in 1936/37. By utilising its levy revenue on wheat milled in the country and with the aid of Government, the Wheat Board succeeded in preventing a price collapse, although a decline in prices did take place. Wheat growing was the most profitable branch of farming during the depression years.

[6] Co-operatives and other agents were engaged at a commission, to receive, grade and finance the wheat, and store and deliver it to millers on the instruction of the Wheat Board. The apartheid Government used to protectionist policies to support favoured firms. See also Groenewald (1964). In September 1949, the Wheat Control Scheme became the Winter Cereal Scheme with control extended to include barley, oats and rye.

the relevant boards. The co-operatives functioned as regional monopolies. Under these schemes, farmers were paid a fixed price on delivery to the co-operative. This resulted in substantial cross-subsidisation from farmers proximate to the market to farmers situated further away from the market. The system was meant to reduce regional differences and ensure the stability of agricultural prices.

The Wheat Board ceased regulating the prices and marketing of products derived from the processing of winter cereals in 1991, although it continued regulating the production price of wheat. The bread subsidy was also abolished in 1991, while value added tax on white bread was introduced. In 1996, the Wheat Board was closed down and with the abolishment of the single channel marketing system and import control (1997), tariffs became the only protection against imports of wheat and wheat flour.

Private meetings and telephone contacts between the flour producers began in 1999 and carried on until March 2007.[7] Instead of competing, the flour producers replaced the regulated cartel with private agreements. The cartel involved the following firms, Tiger Brands, Pioneer Foods, Premier, Foodcorp and Godrich Flour Mills. The cartel fixed selling prices as well as the implementation dates of such prices and allocated markets.

Cheating on the cartel agreement was part of the collusive equilibrium. Flour producers have similar overhead costs and hence, it was very easy for the firms to lose market share and customers when they increased their prices especially following an increase in the price of raw material. Some firms would delay on the increase in price and therefore attract customers of those firms that had already increased their prices. These cheating episodes led to discussions between firms and co-ordination of price increases in an effort to “stabilise” the market. The firms understood that co-ordination was necessary for them to avoid losing customers and market share.

The cartel’s internal enforcement mechanism was such that when deviations became visible, the cartel members first communicated before reverting to a price war. The cartel members only met when there was some instability in the market.

The cartel meetings were held at regional and national levels. Cartel meetings took place at different locations in the different provinces. For example, in some provinces, the meetings were better known as “church meetings”. Indeed, the price fixing meetings were held in church halls and were, quite astonishingly, often preceded by a prayer. In other provinces, the firms organised themselves into regional forums and the meetings were not only structured in the sense that the meeting dates were agreed upon in advance, the meetings were chaired by different people.

[7] See Commission press release, 13 December 2012 Competition Commission settles milling case with Foodcorp. Available at http://www.compcom.co.za/assets/Uploads/AttachedFiles/MyDocuments/Commission-settles-milling-case-with-Foodcorp-.pdf

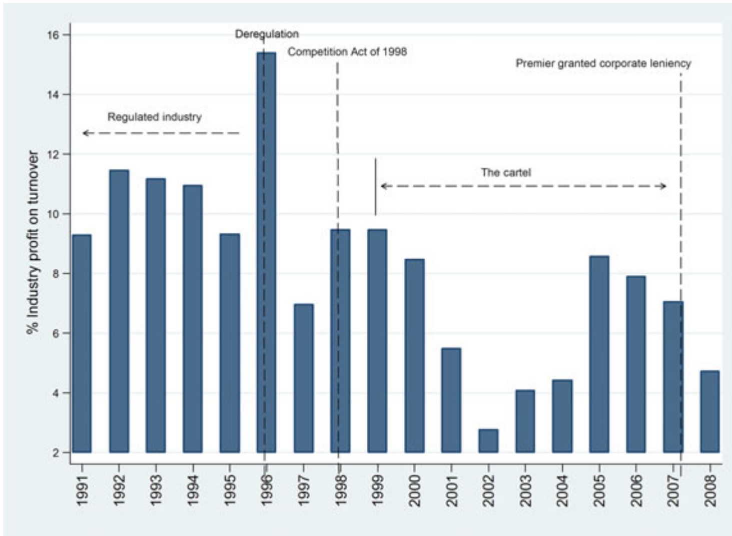

Fig. 1 Percentage industry profits on turnover before tax and interest (reproduced from Mncube 2014)

Figure 1 shows the average percentage industry profits before, during and after the cartel. The average percentage profits on turnover are before tax and interest.[8] Notice that there is a drop in profits by more than half following deregulation in 1996. This may have been one motivation why the industry fearing liberalisation decided to continue with regulation, albeit private regulation, in order to restore industry profits. A price war in 2002 could explain the drastic drop in average industry profits.

2.3 *The Bread Industry*

The bread industry was regulated in South Africa up until 1991. This involved an establishment of a quota system, product specifications such as weight, height and width per loaf prescribed, setting prices, setting volumes and determining distribution areas for each producer. Regular meetings took place between bread producers largely, through an industry association, the Chamber of Baking (Chamber) to whom all of the bakers belonged.

[8] Figure 1 uses average EBITDA (earnings before interest, taxes, depreciation, and amortization) margins, more precisely accounting profits. Accounting profits, however, do not correspond to economic profit and consequently may be misleading in the evaluation of the firms' ability to raise price above marginal cost. See Bork and Sidak (2013).

With deregulation, the legislative impediment to competition was removed. However, bread producers continued with their interaction with regard to common issues. The Chamber also continued as a forum for sharing information on the industry where issues such as deliveries of wheat, quality of wheat, unscrupulous bakers and security concerns were discussed freely and legitimately.

In December 2006, the Competition Commission (Commission) received information of an alleged bread cartel. The same firms involved in the flour cartel were also involved in the bread and maize meal cartels. The list price was usually the opening gambit in a private series of negotiations over the size of the discount that would be extended to customers. But it was not enough to agree the increase of the list price, the list price had to be accompanied by an agreement not to undermine the increase via a process of confidential discounting. The timing of the increase was also important.

When Premier Foods applied for corporate leniency in the bread cartel, it also indicated that the cartel extended to the milling industry.[9] Premier Foods was granted conditional immunity from prosecution in March 2007. Tiger Brands corroborated Premier Foods' allegations and entered into a consent agreement with the Commission in November 2007. Tiger Brands co-operated with the Commission in its investigation and was granted conditional immunity.[10] In January 2009, the Tribunal confirmed a consent agreement between the Commission and Foodcorp regarding Foodcorp's involvement in the bread cartel.[11] In February 2010, after contested proceedings, the Tribunal found that Pioneer Foods had been involved in a conspiracy to fix the prices of bread as well as market allocation.[12]

[9] On 14 March 2007, the Commission initiated a complaint against Tiger Brands, Pioneer Foods, Foodcorp and Godrich Milling in respect of alleged collusive activities in the wheat milling industry.

[10] The Tribunal imposed a fine of R98 million on Tiger Brands for its role in the bread cartel. This represented about 5.7% of its turnover from baking for the financial year 2006. See Commission press statement, 12 November 2007, Tiger Brands admits to participation in bread and milling cartels and settles with Competition Commission. Available at: http://www.compcom.co.za/2007-media-releases/

[11] The Tribunal imposed a fine of R45 million on Foodcorp. This represents 6.7% of its turnover for baking operations for the financial year 2006. See Commission press release, 5 January 2009, Competition Commission settles with Foodcorp. Available at: http://www.compcom.co.za/assets/Uploads/AttachedFiles/MyDocuments/5-Jan-09-CC-Settles-with-Foodcorp.pdf

[12] The Tribunal ruled that Pioneer Foods had engaged in fixing the price of bread products in the Western Cape province and nationally and imposed a fine of R196 million. See Competition Commission vs. Pioneer Foods (Pty) Ltd (15/CR/Feb07, 50/CR/May08), Available at http://www.saflii.org/za/cases/ZACT/2010/9.html.

2.4 The Dairy Industry

Prior to deregulation, the South African agricultural products sector was highly regulated and the dairy industry is no exception. Minimum price regulation for certain dairy products had been in force since 1930. This was achieved through various milk and dairy control boards. With deregulation in 1996, this system was abolished.

In June 2004, the Commission received information alleging the existence of cartel fixing the price of fresh milk. The Commission initiated a investigation into the dairy industry and found evidence of price fixing for raw and processed milk by the following milk processors Clover, Parmalat, Nestlé, Ladismith Cheese, Milkwood Dairy, Woodlands Dairy and Lancewood.[13] In particular, the Commission's findings included that:

(i) Clover, Parmalat, Ladismith, Woodlands, Lancewood and Nestlé exchanged sensitive information on procurement prices of raw milk. Exchange of pricing information enabled competitors to coordinate their pricing strategies to fix the purchase price of raw milk.
(ii) Clover and Woodlands reached an agreement regarding the selling price of UHT (long life) milk ultimately;
(iii) Woodlands and Milkwood agreed to fix the selling price of UHT milk and allocated geographic areas in which they would not compete in selling UHT milk; and
(iv) Clover, Woodlands and Parmalat co-ordinated the removal of surplus milk from the market.

Clover applied for leniency with the Commission with regards to its part in the collusive conduct. Lancewood admitted to collusive conduct and entered into a settlement agreement with the Commission.[14] However, the Commission was eventually forced to withdraw its case against Clover, Nestlé, Parmalat and Ladismith Cheese in April 2011 after a Supreme Court of Appeal ruling in September 2010 which upheld Woodlands Dairy's and Milkwood Dairy's objections to the Commission's initiation and investigation. The Supreme Court of Appeal ruled that the Commission's initiation of an investigation into anti-competitive conduct in the milk industry was unlawful because it did not specify

[13] See Competition Tribunal Case Nr 103/CR/Dec06. The case was referred by the Commission to the Tribunal for determination on 7 December 2006 against eight milk processors after the investigation commenced in February 2005. Available at http://www.compcom.co.za/2006-media-releases/.

[14] In January 2009 the Commission negotiated a settlement agreement with one of the respondents in the dairy investigation, Lancewood (Pty) Ltd. Lancewood admitted that it was involved in price information exchanges as alleged by the Commission. The company paid an administrative penalty in the sum of R100,000 and agreed to cooperate fully with the Commission in its prosecution of the remaining respondents. Available at http://www.compcom.co.za/2009-media-releases/.

allegations faced by each firm and was not based on a reasonable suspicion that all firms in the industry were engaged in such conduct.[15]

3 Collusion in the Cement Industry

Dating back to the 1940s, cement producers in South Africa were granted exemptions, in terms of legislation then in force, to conduct the manufacture and distribution of cement under a lawful cartel. The price fixing agreement was entered into in 1956 and the market sharing agreement in 1971. Although price fixing and market sharing agreements were prohibited in 1986, the cement producers were granted an exemption in 1988, as provided by the Maintenance and Promotion of Competition Act.[16]

A set of institutional arrangements was put in place to manage the activities of the lawful cartel.[17] The lawful cartel included an agreement on market shares largely based on each cement producer's original production capacity; an agreement to divide South Africa into two main regions (the Northern Region and the Southern Region)[18];; and a unitary pricing model known as the Twycross pricing model. In terms of this pricing model the Lafarge factory in Lichtenburg was used to determine a base price. Actual prices to customers were derived from the base price plus the cost of rail to the customer.

The Competition Board, the predecessor to the Commission, withdrew the exemption in 1995. In view of the fact that the cement producers had operated under the auspices of a lawful cartel for decades, they were afforded a grace period until the end of September 1996 to terminate the lawful cartel arrangements.

The lawful cartel was ultimately given a grace period, which ended in September 1996, to unwind the legal cartel arrangements. Cement producers took advantage of this grace to meet with one another in various fora and industry associations in order to discuss how the cement production market would operate in the aftermath of the lawful cartel.

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[15] In April 2011 the Commission withdrew the case against the milk processors following the Supreme Court of Appeal's ruling in September 2010. The Appeal Court ruled that the Commission's initiation of an investigation into anticompetitive conduct in the milk industry was unlawful because it did not specify allegations faced by each firm and was not based on a reasonable suspicion that all firms in the industry were engaged in such conduct. Available at http://www.compcom.co.za/2011-media-releases/.

[16] See Leach (1994).

[17] These institutional arrangements included the Cape Sales (Pty) Ltd (Cape Sales), Cement Distributors South Africa (Pty) Ltd (CDSA) jointly owned by the cement producers and the South African Cement Producers Association (SACPA).

[18] Cement producers sold and distributed cement through the CDSA in the Northern Region and Cape Sales in the Southern Region. At the end of each accounting period there was a system of quota balancing to distribute proceeds of cement sales.

In May 1995, there were various multilateral discussions among cement producers which culminated in an agreement among the cement producers to allocate market shares (the 1995 agreement). Broadly, the cement producers agreed to target market shares as follows: Pretoria Portland Cement (PPC) was allocated a market share of 42–43 %; Afrisam South Africa (Pty) Ltd (Afrisam) was allocated a market share of 35–36 %; and Lafarge Industries South Africa (Lafarge) was allocated a market share of 22–23 %.

Notwithstanding the 1995 agreement, PPC gained market share in excess of its agreed market share resulting in retaliation by other cement producers. Consequently, a price war ensued among the cement producers in the period between 1996 and 1998.

As a result of the price war, the cement producers agreed to bring back “stability” to the market (the 1998 agreement). The 1998 agreement included a market share allocation in line with the market share allocation under the legal cartel for the SACU market, being all of South Africa, Lesotho, Botswana, Namibia and Swaziland; the market share allocation for each producer per province; the pricing parameters for different types of cement. Afrisam, PPC and Lafarge met regularly in the period between 1999 and 2002 to discuss the implementation of the agreement.

In June 2008, the Commission initiated an investigation against the cement producers alleging that PPC, Lafarge, Afrisam and NPC-Cimpor had entered into restrictive horizontal agreements. In pursuance of its investigation the Commission raided the premises of the four cement producers in June 2009. Subsequently, PPC applied for leniency and confirmed the existence of a cartel among the four cement producers.

However, this was not the first raid the Commission had instituted on cement producers. The first raid was in 1999, following a suspicion of cartel activity in the cement market. This raid was successfully challenged by PPC on legal grounds, which resulted in the Commission having to return all seized documents.

In November 2011, Afrisam admitted that it had entered into collusive agreements with PPC, Lafarge and NPC-Cimpor to divide markets and indirectly fix the price of cement.[19] Lafarge has also admitted that it entered into agreements and arrangements with PPC and Afrisam that extended to NPC-Cimpor to divide the market through allocation of market shares and indirectly fix the price of cement.[20]

[19] Tribunal Consent Order, CC vs Lafarge Ltd, Case No.: 93/CR/Nov11.

[20] Tribunal Consent Order, CC vs Lafarge Ltd, Case No.: 23/CR/Mar12.

4 Conclusion

South Africa's corporate leniency policy (CLP) came into force in February 2004 and was modified in 2008.[21] Before the adoption of the CLP in February 2004, few cartels were investigated and prosecuted under the Competition Act.[22] In our view, the uncovering of the bread, flour, maize meal, milk and cement cartels through the CLP demonstrates that the CLP has proved a formidable tool for cartel detection.[23]

South Africa's historic economic policies, of among others, state ownership, protection, and import substitution, differed from what is often found in transition and developing countries. In particular, these policies were coupled with strong property rights and well-developed market institutions. In 1994, the first democratic administration took significant steps to liberalize many of the formerly price regulated markets. Significant industry restructuring (such as the liberalisation) led to the break-up of regulated cartels. But liberalisation alone, without vigorous anti-cartel enforcement, may give rise to increasing cartel activity rather than competition. In our view, liberalisation may have inadvertently, by increasing competition in formerly protected markets, increased the incentives for firms to participate in cartels.

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[21] Leniency programmes grant complete or partial exemption from prosecution for firms that collaborate with the competition authorities. A leniency policy was first introduced in the US in 1978 and reformed in 1993. In the European Union, the leniency programme was introduced in 1996 and modified in 2002.

[22] Perhaps this was because of the intrinsically secret nature of cartels which renders both their detection and investigation difficult.

[23] The CLP provides for a cartel member to receive immunity from prosecution before the Tribunal and from administrative fines in return for disclosing all relevant information and documents relating to the cartel activity. Only one member of a cartel may be granted immunity. As a result, the CLP creates a race to the door by rewarding the first member of the cartel to provide evidence on the cartel. The CLP does not make provision for granting partial immunity to second or third applicants, or for determining an applicable reduction in the fine.

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Application of Hypothetical Monopoly Test (SSNIP) to the Brazilian Market of Ready-Made Meals and the Role of the Department of Economic Studies

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Abstract This chapter presents empirical evidence resulted from the application of Hypothetical Monopoly Test—SSNIP to the Brazilian market of readymade meals by the Department of Economic Studies of the Brazilian Competition Authority (CADE). The firm-level data was taken, and the SSNIP test was applied to analyze if the relevant market of the merging companies—*JBS*/*Seara* and *Massa Leve* limited to products of the *standard* category, while products of the main agent of the market—*BRF*/*Sadia*—would be in a different niche or category called *premium*. It was observed that the hypothesis of a separated market for *standard* and *premium* readymade meals is practically null. The proposed merger between *JBS*/*Seara* and *Massa Leve* might create a stronger competitor to diminish the dominance of the market by *BRF*/*Sadia*. The operation was approved with no restrictions by CADE in 2014 and has marked a period of increased use of new economic methodologies in CADES's decision. This chapter also describes the history of the establishment of a specific Department of Economics in CADE's new structure.

Keywords Relevant market • Monopolist test • Competition policy • Department of Economic Studies

JEL F12 • F16 • J31

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1 Introduction

In December 2013, *JBS/Seara*, the biggest producer of bovine meat in the world, announced the acquisition of the Brazilian company *Massa Leve*, following its strategy to expand its presence within the refrigerated and frozen food market. At the acquisition date, *Massa Leve* was the largest player of refrigerated food and the third leading company in the frozen food market in Brazil, in which the main leader is *BRF/Sadia*.

This chapter presents empirical evidence resulted from the application of Hypothetical Monopoly Test—SSNIP—to the Brazilian market of readymade meals by the Department of Economic Studies (DEE) of the Brazilian Competition Authority (CADE). Firm-level data was taken from the involved parties, and the SSNIP test was applied to analyze if the relevant market of the merging companies—*JBS/Seara* and *Massa Leve* limited to products of the *standard* category, while products of the main agent of the market—*BRF/Sadia*—would be in a different niche or category called *premium*.

The SSNIP test consists in defining the smallest geographic area or the smallest group of products that would be profitable for a supposed monopolist to obtain profit from a small, but significant and non-transitory, increase in prices, *ceteris paribus*. An increase in prices would affect the return of a company in two ways: (1) it would increase the profit margin, having a positive effect per unit sold; (2) it would also decrease the demand of the company, having a negative effect in profit by reducing the number of units sold.

Through this exercise we concluded that the risk of the merger between *Seara* and *Massa Leve* being harmful to the consumer was statistically low. In May 2014, the operation was approved with no restriction by CADE and has marked a period of an increased use of new economic methodologies in CADE's decision since the establishment of a specific Department of Economics in CADE's new structure.

So this chapter is organized in the following sections: Sect. 2 describes the history of the use of economic tools by CADE, leading to the creation of an specific department; Sect. 3 makes a brief presentation of the readymade meals market and why we had to focus the analysis on lasagna and readymade sandwich; Sect. 4 describes the data used in the analysis and in the regression; Sect. 5 presents the methodology; Sect. 6 brings the results. We conclude with final remarks.

2 The Department of Economic Studies of CADE

The consolidation of the antitrust authority in Brazil over the last decades follows the gradual construction of a national culture regarding the importance of rules pertaining to a competitive environment. Accordingly, the evolution of the Administrative Council for Economic Defense—CADE, formalized by Law n° 8.884/1994 and, subsequently, by Law n° 12.529/2011, has been legitimized by its

preventive, repressive and educative action vis-à-vis the market. Thus, it is possible to say that the antitrust path in the country has been guided both by knowledge accumulation on the rules for competitors and the analytical refinement devoted to the cases.

Antitrust is situated in an area that is, intrinsically, interdisciplinary; situated on the frontier of Law and Economics, which sails through agitated seas of antagonism between the almost "canonical" legal thinking/knowledge and the pragmatism of applied economic techniques. Traditionally in Brazil, antitrust law/competition policy was associated with a type of decision that, in most cases, avoided quantitative-theoretical techniques. In light of this, unlike expert opinions presented in the United States and the European Union, the studies in Brazilian market were prepared by consulting firms linked to the interested parties. As such, CADE, with its final opinion, would limit itself to corroborate or not those studies.

It is noticeable in the old structure the substantial fragility in the analysis, particularly because the authority relied on a reduced number of economists. In fact, there were professionals working at the Secretariat of Economic Monitoring—SEAE, tied to the Ministry of Finance, and at the Secretariat of Economic Law—SDE, tied to the Ministry of Justice, both of which engaged with competition policy studies.

The necessity of improving sophistication in the economic analysis has motivated a group of civil servants to organize the Technical Group on Economic Quantitative Methodology—GTE/CADE, established in April 2009. Later in September of the same year, by Resolution 53/2009, the DEE began his administrative transition (2009–2012) to obtain a formal configuration in the autarchy.

In 2012, The Brazilian System for Protection of Competition—SBDC was reformulated through the publication of the Law n° 12.529/11, creating a new structure of CADE. The Department of Economic Studies was officially created within this new structure and was instituted as one of CADE's organs, together with the General Superintendence and the Administrative Tribunal.

On this new design, DEE has autonomy and has two main areas of action: (1) to advise the General-Superintendence and the Administrative Tribunal of Economic Defense in the instruction and analysis of administrative procedures that deal with mergers and anticompetitive conducts; (2) to elaborate studies that guarantee CADE's decision to be based on the newly scientifical and technical knowledge.

As forth, in 2012 and 2013, DEE role in CADE was devoted to advise the Tribunal on its technical decisions and, in more complex cases, to help the General-Superintendence regarding merger analysis and conduct investigations. The absence of a body of personnel devoted to competition economics pushed away the use of more technical analysis. Despite of that, DEE contributed to the publishment of Resolution n° 4, May 2012, which addresses the "Recommendations for Technical Opinions presented to CADE". This resolution is similar to the North-American document known as the "Daubert Discipline" due to the establishment of evaluation guidelines. In addition DEE has participated continuously in the evaluation of some mergers, such as OI/Brasil Telecom (telecommunications

Table 1 Evolution of activities of the DEE (2009–2014[a])

	2009	2010	2011	2013	2014
Internal Training Activities	3	2	0	3	0
Technical Note/Reports[b]	2	11	19	1	30
Administrative Proceedings	0	2	3	0	15
Acts of Concentration	2	8	16	1	12
Others	0	1	0	0	3
Events organization/Participation	4	8	2	5	17
Publications	1	1	0	1	4
Others	2	4	5	4	3
Total	**12**	**26**	**26**	**14**	**54**

Source: Annual Reports DEE (2009-10-11-13-14). Own elaboration, 2015
[a]We did not gain access to the annual report for the year 2012
[b]The figures for 2013 were not obtained because the annual report this year did not allocate the technical notes issued by DEE

market); Braskem/Quattor (market of thermoplastic resins), Cobb/Hendrix (market of bird genetics) and Sanofi/Medley (market of medicines).

In 2014, with an increased personnel including public servants, interns and internal consultants, DEE started using econometric modelling to analyze the possible effects of mergers in cases declared complex (which requires an extension in time) by the General Superintendence. At the same time, the Department increased its participation in the analysis of the likelihood of anticompetitive conduct in the fuel retail market (gasoline, ethanol, diesel, LPG, etc.), private plans and health care, higher education, petrochemicals (PVC, polystyrene, etc.), industrialized foods, steel industry, cement and automotive products. Nowadays, the Department counts with a Chief Economist and a Deputy Chief Economist leading a group of eight technical personal staff. It also counts with a partnership with United Nations Development Programme—UNDP, which keeps consultants working to some of the department's research project, such as competition indicators, econometric modelling of demand equations and cartel damages.

Table 1 shows the evolution of DEE activities in the period between 2009 and 2014. One can note not only a growing share of the Department's participation in the trial of merger and administrative proceedings (through technical notes and reports) but also an increase in CADE's connection to an external academic environment through participation in events and publications.

3 Applying the Hypothetical Monopoly Test: Market Description

JBS and *Massa Leve* work in a great range of markets in the food sector. According to them, the merger would cause a horizontal overlap in four markets: (1) ready meals; (2) snacks; (3) frozen pizzas; and (4) cheese bread. There would also be a

Table 2 Horizontal and vertical juxtaposition

	JBS	Massa Leve
Cheese Bread	X	X
Ready meals	X	X
Snacks	X	X
Frozen pizzas	X	X
In natura bovine	X	
In natura pork	X	
In natura poultry	X	

Source: CADE

strengthening of *JBS* vertical relationship in the production of fresh beef, beef, pork and poultry, with processed markets in *Massa Leve* using such meat (ready meals, ready snacks and frozen pizza). On the other hand, the operation would also be an entry for *JBS* in the market of fresh pasta and garlic bread. Table 2 lists the products offered by each party prior to the merger and identifies the horizontal and vertical relationships.

The companies included in the relevant market for ready meals the following products: lasagna, pancakes, ravioli, canelones and other types of pasta. CADE agreed with this definition since they could not compete with other types of fresh pasta (as they require preparation) neither with frozen pizzas. The Superintendence of CADE questioned, however, if the products could be divided in different markets, since it was observed a difference in prices offered by each competing firm. *Aurora S.A.* and *Pif Paf* are the other competitors of JBS and Massa Leve, and the market leader is BRF, which offers the brands Sadia, Perdigão and Batavo with different frozen ready meals in the market.

4 Data

The data requested from the five companies described above was about five readymade products market in the length of 6 years (2008–2013). Part of the data—such as price, quantity and production capacity was available on a monthly frequency, while the other part—like costs related to the production process and profits—were only available annually.

After a preliminary analysis, we concluded that it was not possible to apply the Hypothetical Monopoly Test to all products and companies because *Aurora S.A*, for instance, did not produce any of the considered products and acted more as a reseller. Secondly, other data obtained for products such as *escondidinho* and pepperoni pizza had very few data due to the fact that they have been only recently commercialized. Finally, given the similarity of data between lasagna bolognese and four cheese lasagna, the work only considers first one as the results could be similar and extended to the other. Average prices for each competing company in these products are available in Figs. 1 and 2.

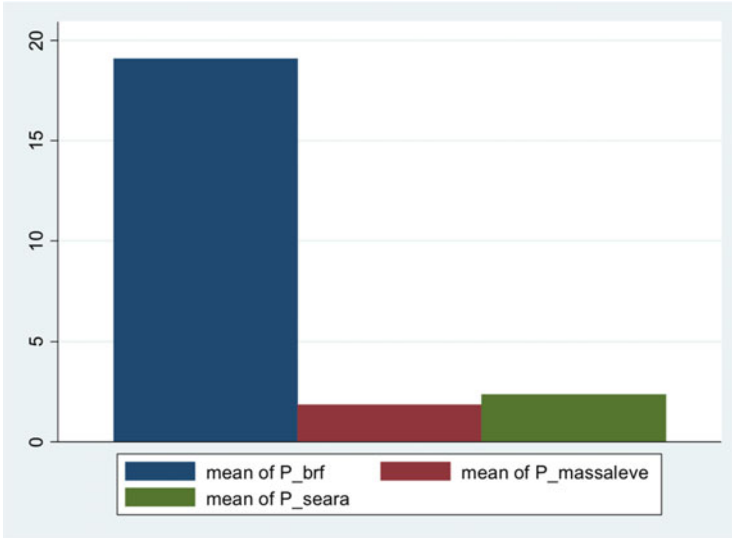

Fig. 1 Average price of burger (by company). Elaboration: DEE/Cade. Average monthly price from 2008 to 2013

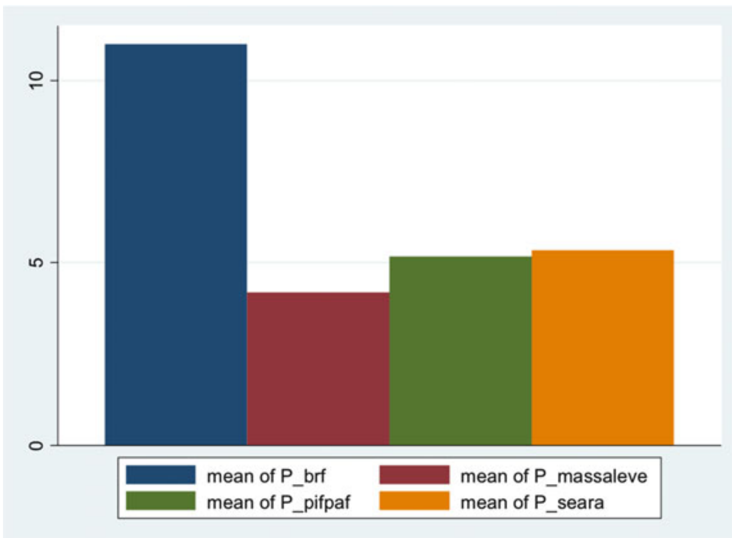

Fig. 2 Average price for lasagna (by company). Elaboration: DEE/Cade. Average monthly price from 2008 to 2013

In addition, other information was used, such as: the Economic Activity Index of Brazilian Central Bank—IBC-BR, which is proxy for the Brazilian GDP; the Consumer Price Index—IPCA, in order to transform nominal prices into real prices,

collected in the website of The Institute for Applied Economic Research—IPEA; the prices of wheat flour, bovine meat and tomatoes, collected at the Producer Price Index—IPA, from *Fundação Getúlio Vargas*—FGV, to be used as control variables on the estimation of residual demand.

5 Methodology

This section explains the procedure taken to test the relevant market of lasagna bolognese and readymade sandwich. As the priority is establishing whether the products of *Massa Leve* and *Seara* belong to different markets, it was first supposed that the relevant market includes only these companies.

If this hypothesis is rejected, then the brand *Pif-Paf* is also be included in the relevant market. This way, it is being tested if the relevant market includes only products classified as standard. Later, it is assumed that the relevant market includes *Seara*, *Massa Leve* and *BRF*/*Sadia*. In this case, it would be tested if the relevant market would include only products labeled as premium.

If both these hypothesis are rejected, it is assumed that the relevant marked includes all four companies, *BRF*/*Sadia*, *Seara*, *Massa Leve* and *Pif-Paf*. In other words, the relevant market would be the whole lasagna markets with available data.

Our strategy was to put together all the relevant variables, such as price, quantity, and cost to each of the relevant markets assumed above, and estimate a residual demand. In this way, we compare the elasticity-price of demand estimated with the critical elasticity calculated to the market being analyzed. This critical elasticity depends on the Small But Significant and Non-Transitory Increase in Price—SSNIP assumed, and also depends on the price-cost margin.

The SSNIP test has two steps. First, it evaluates the effects of a price increase on the return of a hypothetical monopolist, calculating the critical loss or the maximum decrease in the quantity sold that would still be profitable if the hypothetical monopolist increased the price of the product. The second step consists in evaluating which would be the real loss in sales, given the increase in price. In this regard, we estimated the residual demand and the elasticity-price of demand for both products.

The SSNIP test adopts some assumptions for its accomplishment, related to the shape of the demand function (linear, log-linear, isoelastic, among others), the definition of profit margin, more specifically, of the function of marginal cost; and the possibility of the hypothetical monopolist be able to re-optimize his strategy after the price increase.

In general, the first estimation of the test takes into consideration the most conservative hypothesis of the relevant market, expanding it as far as the result of the quantitative analysis suggest that the relevant market would be bigger than the one considered at first. In the present case, it is adopted as initial hypothesis that the relevant market of each product is composed just by the trademarks of the merger

companies: *Seara* and *Massa Leve*, against the alternative hypothesis that it considers the market larger than these two trademarks.

After establishing the hypothesis, the SSNIP test is used. Considering the price increase in percentage defined as $t = \Delta p/p$; and $|\varepsilon|$ as the price elasticity of demand. Then, t*$|\varepsilon|$ is the effective loss, or real, of sales given a specific period of time, t. On the other hand, if $|\varepsilon_{crit}|$ is the critical price elasticity of demand in module, then t* $|\varepsilon_{crit}|$ is the critical loss for each t. Therefore:

- If t*$|\varepsilon|$ >= t*$|\varepsilon_{crit}|$, the real loss is larger or equal to the critical loss. This way, the hypothetical monopolist would not be able to take advantage of any market power because an increase in prices would result in a decrease in demand, large enough to make this strategy non-profitable. According to the definition, this result would indicate that the relevant market is bigger in size than the one considered before.
- Otherwise, the real loss is smaller than the critical loss. An increase of t% in price would result in an increase in the hypothetical monopolist profit, because the loss in sales would not be enough to balance the increase in prices. According to the definition, this result would indicate that the relevant market is the one previously assumed to the application of the SSNIP test.

In case evidences are found that the products do not belong to the same market as *BRF/Sadia* then Seara's acquisition of *Massa Leve* could have resulted in a great market power in relation to readymade meals. Otherwise, if *Seara* and *Massa Leve* products compete with *BRF/Sadia* the possible existence of market power is almost dismissed given *BRF/Sadia* leader position in the market.

5.1 Calculating the Loss and Critical Elasticity

This section explains how to calculate the loss and the critical elasticity using the information on prices and costs held by the complaining companies, so these two can be later compared to the real elasticity-price, estimated by a residual demand function.

The concept of critical loss refers to the maximum reduction of the quantity sold that a hypothetical monopolist would be willing to have to sustain a profitable increase of prices. Table 3 shows the equations proposed by Werden (2003) to calculate the critical loss to different hypothesis of the demand function and the answer of the firm. In this table, "t" is the SSNIP, and "m" is the price-cost margin of the producers being analyzed.

The price-cost margin is calculated with the following formula:

$$m = \frac{(P - MgC)}{P} \tag{1}$$

Where

Table 3 Critical loss calculation

Demand curve	Demand curve	Breakeven
Linear	$\frac{t}{m+2t}$	$\frac{t}{m+t}$
Isoelástic	$1-(1+t)^{\frac{-1-t}{m+t}}$	$\frac{t}{m+t}$

Source: Werden (1998)

Table 4 Critical elasticities of demand for market delineation

Demand curve	Profit maximization	Break-even
Linear	$\frac{t}{m+2t}$	$\frac{t}{m+t}$
Isoelastic	$1-(1+t)^{\frac{-1-t}{m+t}}$	$\frac{t}{m+t}$

Source: Werden (1998)

P = price sold to the retail distributor.
MgC = proxy of the effective marginal cost, calculated by the total cost related to the production of the product being analyzed.

This margin is conceptually the same as the Lerner Index. This index goes from 0 (perfectly competitive firm) to 1 (maximum market power firm). It is also possible that this margin is negative, if the company has a price lower than the marginal cost, indicating also perfect competition. However, this condition cannot hold in the long-term.

The critical elasticity can be defined as the maximum elasticity-price that a hypothetical monopolist would still be able to profit if he increased his prices by 5 %, for example. For a linear demand, the critical elasticity is exactly equal to the critical loss divided by the SSNIP (t), as shown on Table 4.

If the effective elasticity in the estimated demand function is lower than the critical elasticity, then the relevant market is defined, since there are no substitute products that can effectively limit the market power of the hypothetical monopolist. However, if the estimated value for the elasticity-price is higher than the critical elasticity, the geographic region or the amount of candidates to relevant market must be expanded, because there are still substitute products able to discipline the raise in hypothetical prices.

The econometric method used to estimate the residual demand follows the standard literature on the topic, which suggests that the estimation should be through the Two-Stage Least Squares (2SLS) using multiple instrumental variables. The residual demand equation to one or more F firms is:

$$lnQv_i^F = \alpha_{0,i}^F + \alpha_{1,l}^F lnP_i^F + \sum_{k=1} y_{k,i}^F X_{k,i}^F + \varepsilon_i^F \tag{2}$$

In which Qv is the quantity sold of the product i, P is the price sold to the retail distributor, and Xk are the control variables, such as the IBC-Br index; trends; quadratic trend; and production costs proxies mutual to the industry analyzed. Among these variables, it is included, to estimate the residual demand of the lasagna, the price index of wheat flour, beef and tomatoes from the IPA-OG. For

the readymade sandwich, it is included the price index of wheat flour and beef from the IPA-OG.

As tools to the firms residual demand equation, the following firms' variables are used: total costs related to the production the good i; costs related to packaging; costs with transportation; costs with ingredients; and/or gaps in. Note that not necessarily all tools were used to estimate the demand of a specific firm. For each firm, there were chosen tools that had an appropriate specification of (1) being correlated with the endogenous variables; and (2) not being correlated with the error.

6 Results

6.1 Market for Lasagna, Type Bolognese

Table 5 shows the critical elasticity calculated for lasagna bolognese, assuming a SSNIP of 5 %. It is shown the elasticity for each one of the relevant markets and for each of the four hypotheses pointed by Werden (2003). This table also reports the average price sold to the distributors, the average production cost and the margin, calculated by the Eq. (1).

The price-cost margin calculated in all the scenarios was about 37 % in cases (a) and (b), and approximately 50 % in cases (c) and (d). High price-cost margins increase the probability of a rejection of the supposed relevant market, because the critical elasticity is inversely proportional to the margins.

Using the price sold to the distributor to calculate the margin, there is the possibility that the taxes paid by the firms are being considered in this price, or possible discounts are being disregarded. As it will be shown later, even if this margin is overestimated by 25 %, the general result will not be affected.

Table 6 shows the estimation results of each of the relevant markets considered. The column (a) shows the residual demand of the market of lasagna bolognese by *Seara* and *Massa Leve*. Column (b) shows the market by *Seara*, *Massa Leve* and *Pif-Paf*. Column (c) represents the market by *Seara*, *Massa Leve*, and *BRF/Sadia*, while column (d) includes all four companies in the market.

As it was previously pointed, the first analysis of the SSNIP was of a more limited market, but still interesting to be studied. This market includes only *Seara* and *Massa Leve*. The DEE estimated an elasticity-price demand of about −3 for this market, being the highest in scale compared to the others markets analyzed in Table 4. A hypothetical monopolist in this market would not be able to run a SSNIP of 5 %. This way, the hypothesis that *Seara* and *Massa Leve* represent a relevant market is rejected over the hypothesis that the market is bigger.

The result above remains even when the price-cost margin of the production of lasagna is around 30 %. Considering this margin, the critical elasticities are around −3, which is very close to the price-elasticity of demand estimated. Finally, even if

Table 5 Critical elasticity

(a)—Seara + Massa Leve			(b)—Seara + Massa Leve + Pif-Paf		
	Maximum profit	Breakeven		Maximum profit	Breakeven
Linear	−2.11	−2.36	Linear	−2.12	−2.38
Isoelastic	−2.48	−2.57	Isoelastic	−2.50	−2.59
(c)—Seara + Massa Leve + BRF/Sadia			(d)—Seara + Massa Leve + Pif-Paf + BRF/Sadia		
	Maximum Profit	Breakeven		Maximum Profit	Breakeven
Linear	−1.67	−1.82	Linear	−1.64	−1.79
Isoelastic	−1.91	−1.95	Isoelastic	−1.88	−1.92

Table 6 Estimation of the residual demand by supposed relevant market

	(a)	(b)	(c)	(d)
Variables	lnQv	lnQv	lnQv	lnQv
lnP	−2.984**	−2.104**	−1.226**	−1.278*
	(1.334)	(0.876)	(0.495)	(0.723)
IBC-Br (t − 1)	−0.032***	−0.014**	−0.010**	−0.007*
	(0.010)	(0.007)	(0.005)	(0.004)
Constant	17.842***	15.512***	16.982***	17.104***
	(2.724)	(1.916)	(1.215)	(1.737)
Dummies for Year	Yes	Yes	Yes	Yes
Dummies for Month	Yes	Yes	Yes	Yes
Industry Costs	Yes	Yes	Yes	Yes
Number of observations	70	69	69	71
Sub-identification Test (p-value)	0.000	0.000	0.000	0.000
Sargan (p-value)	0.113	0.047	0.216	0.238

the margin is lower than 30 %, the statistical tests do not reject that the critical and estimated elasticities are equivalent. Therefore, even if the DEE is overestimating the margins, calculated based on data required from companies, the conclusion of the previous paragraph is maintained with a significantly lower margin.

The next step is to expand the supposed relevant market and use the HMT. In Column (b), the market is expanded when *Pif-Paf* is included. Meanwhile, in column (c), instead of including *Pif-paf*, the firm *Sadia* is incorporated. In both cases, the estimated price-elasticity of demand is lower in comparison to the critical elasticity in Table 4. This result means that it would be possible to find a SSNIP of 5 % in these markets, rejecting the hypothesis of a larger relevant market.

Even if there is an overestimation of margins and, therefore, an underestimation of critical elasticities, the result of columns (b) and (d) do not change. Indeed, the margins should be significantly higher (higher than 80 %) to say that the market is larger than the others supposed in columns (b) and (d).

6.2 Market for Ready Made Sandwich

In Table 7, we show the critical elasticities calculated to readymade sandwich, assuming a SSNIP of 5 %. It is presented the elasticities for each supposed relevant market and for each of the hypothesis mentioned by Werden (2003). Table 5 also presents the margin, calculated by the analysis of the average price sold to the retail distributors, average costs of a unit of sandwich, as requested in Eq. (1).

Table 8 shows the results of estimations for each of the markets considered. Column (a) presents the residual demand for readymade sandwich, offered by *Seara*, *Massa Leve* and *BRF/Sadia*. *Pif-Paf*, unlike the previous section, does not produce or commercialize readymade sandwiches, staying out of the analysis.

Column (a) reports a greater elasticity between *Seara* and *Massa Leve*, even higher than the critical elasticities shown in Table 5. This result ratifies the observation that the market for readymade sandwiches is larger than the one composed only by the others two trademarks. When *Sadia* is included in the market analysis, the price-elasticity of demand is lower in comparison to the critical elasticities. In this case, the hypothesis that the relevant market is composed by *Seara*, *Massa Leve* and *Sadia* cannot be rejected.

Such as in the case of the product lasagna bolognese, it is possible that we have overestimated the price-cost margin and, as a consequence, accepted that the

Table 7 Critical elasticities calculated

(a)—Seara + Massa Leve			(c)—Seara + Massa Leve + BRF/Sadia		
	Maximum profit	Breakeven		Maximum profit	Breakeven
Linear	2.93	3.43	Linear	1.71	1.87
Isoelastic	3.60	3.85	Isoelastic	1.96	2.01
Margin	24.16 %		Margin	48.51 %	

Table 8 Estimation of residual demand by supposed relevant market

	(a)	(c)
Variables	lnQv	lnQv
lnP	−5.051***	−1.489***
	(0.896)	(0.166)
IBC-Br (t − 1)	0.005	0.016*
	(0.020)	(0.008)
Constant	14.903***	13.678***
	(1.884)	(0.815)
Dummies for Year	Yes	Yes
Dummies for Months	Yes	Yes
Industry Costs	Yes	Yes
Number of observations	64	69
Sub-Identification Test (p-value)	0.004	0.001
Sargan (p-value)	0.143	0.091

market is larger than it is in reality. However, given the high estimated price-elasticity in column (a), it would be necessary a lower margin than the one previously found (24 %) to accept the hypothesis that *Seara* and *Massa Leve* trademarks are a separate relevant market.

7 Final Remarks

We observed that on both analyzed products—lasagna bolognese and readymade sandwich—the relevant market seems to incorporate more trademarks than just *Seara* and *Massa Leve*. There are some strong evidences of the substitution between applicants' products and *BRF*/*Sadia* products, considering that this last is the leader in both markets. This concludes that the risk of the merger between *Seara* and *Massa Leve* being harmful to the consumer is statistically low based on the econometric exercises.

It should be emphasized that the results and conclusion of this exercise are robust to the most restrictive hypothesis in relation to the price-cost margin of the trademarks that operate on the market. Indeed, the DEE continues to support the hypothesis that the market for lasagna bolognese is larger than the one for "Seara" and "Massa Leve", even if the operation float was reduced at almost ¼ to 30 % for both companies. Moreover, if the margin was lower than 30 %, it would not be possible to reject, in statistical terms, the conclusion above.

The operation was concluded with no restrictions by Cade in May 2014, closing a deal of R$260 million (approximately US$100 million). The exercise above helped the Superintendence to analyze and approve the case within 5 months. It marks a period of an increased use of new economic methodologies in CADES's decision since the establishment of a specific Department of Economics in CADE's new structure.

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