Law and Economic Development

Behavioral and Moral Foundations of a Changing World

Edited by
Kaushik Basu
Ajit Mishra

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CHAPTER 1

Introduction

Kaushik Basu and Ajit Mishra

In recent decades and especially in the last few years, we have witnessed several dramatic changes in the global economy. The rise of artificial intelligence, digital technology, and mega platforms that collect data and facilitate trade is changing the landscape of economics. Rapid globalization since the end of World War II, with a pick-up in pace over the last three to four decades, has created new challenges for law and regulation since increasingly contentious conflicts arise, which span multiple countries and legal jurisdictions. With new technology and globalization, the demand for traditional labor has been declining, creating new societal tensions and political polarization. Digital technology is giving rise to massive economies of scale. As is well known, in such situations antitrust laws are not the most effective tools for protecting consumers, workers,

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and small retail suppliers. To break up a corporation into many small firms imply we may lose the advantage of size. That would amount to the proverbial throwing away of the baby with the bathwater.

These challenges are forcing us to think outside of the box in drafting laws and regulations to make sure that markets function effectively and equitably across buyers, sellers, and traders, in this new world that no one fully understands. It is arguable that the challenges we face today are, in some ways, comparable to what policymakers and economists faced during the Industrial Revolution, when policymakers had to draft new laws for factories, labor, and even taxes to make sure that the technological revolution that was occurring then did not upset the applecart of society, and conferred benefits reasonably equitably across various players.

The challenge was big because, it has to be remembered, no one fully understood what the Industrial Revolution was doing to markets and human welfare. The wisdom and ideas of Adam Smith, David Ricardo, Augustin Cournot, Stanley Jevons, Leon Walras, and other economists that are taken for granted today were taking shape amidst the Industrial Revolution. As these original thinkers, alongside prominent philosophers and mathematicians, like David Hume and Marquis de Condorcet, were grappling to model and explain the world, policymakers and lawyers were trying to draft laws to deal with the changing landscape of economy and society.

Today, we live in a similar moment for the disciplines of economics, politics, and law, as we are, simultaneously, trying to understand how markets and the economy are functioning as technology is shifting the ground beneath our feet, and, at the same time, we are trying to draft laws and regulations to make sure that our economy, society, and polity remain on an even keel.

The collection of papers in this volume arose from an ambitious roundtable that was planned as a major stocktaking of law and economics in the context of developing and emerging economies navigating this new world, with changing technology, new global linkages made possible by digital technology and the COVID-19 pandemic thrown into the brew. It was an unusual roundtable that brought some of the leading researchers in the field of law and economics and some corporate leaders and thinkers to the same table, to dissect and analyze what was happening around us in the world and also to speculate about the kinds of policy we would need to design and implement.

All these changes are giving rise to new problems such as the need for new kinds of property rights pertaining to big data and also new ways to protect private information pertaining to individuals. We have to contend with drawing lines around what is acceptable in terms of hate speech on social media, thereby raising difficult questions about the meaning of free speech. We have to prepare for the possibility of deglobalization, the concomitant promotion of strident national interests, and the use of power by mega-firms on a gigantic scale. The need for well-defined suitable (property) rights may be a new concern in the context of big data, but many of the tensions between private and public domains are common to several other problems such as corruption, rent-seeking, and nepotism.

In many developing (as well as developed) countries, public funds (property) are often siphoned off for private use, or public office is used to advance private gains and elected officials promote private interests to the detriment of public cause. The standard law and economics approach has focused on the deterrence of these practices through a system of monitoring and sanctions. But these seemed to have become less ineffective, as human interactions get more complex, and new routes of digital communication evolve.

Several chapters in this volume dwell on different aspects of these deviant behaviors. Alongside these global developments, the discipline of law and economics is also undergoing profound changes, making us rethink some of the founding assumptions of the subject. The traditional approach to law and economics, exemplified by the enforcement models of Gary Becker and others, served an important role in getting the ball rolling. However, it is now becoming increasingly evident that it left several, vital questions unanswered. There were also conceptual flaws in the foundations of traditional law and economics that emerged out of the work of Becker and others of the Chicago school. Behavioral economics and modern approaches based on game theory have begun shedding light on these flaws and giving us tools to rectify them. Some of the essays in this volume seek to examine how various moral and psychological factors can be incorporated into the discipline of law and economics to make it more effective and appropriate for our contemporary world.

In addition to corruption, the old problems of poor health care and weak rule of law persist in many developing countries and emerging economies, where many people lead precarious lives. The arrival and

consequent devastation caused by the COVID-19 pandemic made these questions salient.

As if the challenges created by the advance of digital technology were not enough, over the last three years we had to contend with the COVID-19 pandemic. For one, this has greatly speeded up the usage of new technology. Usually, when new technologies emerge, one saving grace for policymakers is that it takes time for the use of this technology to seep into society. The COVID-19 technology changed this by throwing us into the deep-end of the pool. Human beings have learned how to give lectures, hold meetings, and share knowledge without having to go to office and without traveling across the world to meet in-person with collaborators, all by using Zoom, Webex, and other digital conferencing technologies. What, under normal circumstance, would have taken decades for us to learn to use, we have mastered in the last two or three years. This has caused policymakers to run and catch up in terms of creating new regulations. The academic idea of 'learning-by-doing' on which economists earlier wrote abstract mathematical models has suddenly come into play in reality in ways we could not have anticipated, thanks to the pandemic.

The pandemic has also raised its own questions concerning the sharing of vital goods, like vaccines, and concerning the mega profits made by some corporations at the time of crisis, thereby drawing our attention to the need to balance incentives with equity.

The aim of this book is to bring some of the best researchers engaged in these fields of study to take on this full range of contemporary challenges, dissecting them and suggesting policies. We are aware that these are not matters that will be solved in a hurry, but we are also aware that these are urgent matters, and we do not have the luxury to postpone the quest. The book is meant to be a contribution toward that.

…

What does data as property mean? Who should own the rights and what does the ownership of rights entail? Hans-Bernd Schäfer and Ram Singh (Chapter 2) argue that the existing legal forms applicable to the big data and tech platforms are not conducive to harnessing the potential of big data to promote social welfare. The traditional frameworks of property, intellectual property, the contract, and competition law are not fully suited to provide a reasonable legal framework for this new industry.

The problems with property rights over social media data stem from the fact that raw anonymized data of individuals of a non-personal nature should be widely shared, but processing of such data, where relevant, would need protection to create the right kind of incentives. Ideally, big data should be a global common of anonymized raw data, which the subjects of information transfer against a consideration, and these data should be provided in an easily accessible format. The present legal status, which grants the controllers of the (almost raw) data *de facto* property rights, gives rise to market power, cements monopoly positions, and impedes downstream information markets and the generation of valuable new datasets for public use, for instance on public health or the status of the environment. However, the above arguments in favor of open raw data do not apply to the processed and derived datasets, which have been created by combining several large sets of personal data and raw data on people or things.

Property rights and the legal institutional structure shape the power relations in the wider society. Luis F. López-Calva and Kimberly Bolch (Chapter 3) examine the use of the concept of power in economics. While the evidence of power playing a role is all around us, from the power of political leaders, to that of the corporate honcho, economics as a discipline long lived in denial of its importance. Power is difficult to model and give formal shape to. So, to deny its existence seemed to be the easier course to take, and that is what mainstream neoclassical economics did for a long time. Fortunately, this is changing.

While discussions on the meaning of power—political, economic, and social—go back to Hobbes, Hume, and Havel, recent advances in modern economic theory and game theory have given it a more formal shape. The authors of this chapter argue that some of the policy ineffectiveness can be due to a failure, by the policy makers, to understand and appreciate the underlying power structure. Likewise, some of the solutions to common agency problems lie in the suitable distribution of power. For example, incentive problems in many agency settings can be solved by the suitable allocation of control rights (Grossman-Hart, Williamson). In an interesting exercise, Lopez-Calva and Bolch turn the lens inward to see how the profession of economics has been affected by its own power structure. It has been noted that gender, racial, or even geographical representation within the discipline of economics has been far from ideal. Coupled with this is the dominance of research on the so-called hard questions which are often precise but non-exploratory. These factors have tilted the power

balance in certain ways, and it has possibly led to the neglect of certain areas of research.

S. Subramanian gives examples of this power wielded by economists as a group and within economics by certain groups. The overriding concern with efficiency, even where the focus should have been fairness, as in the case of tort, seems to have been imported into the law and economics tradition. Likewise, the refusal to treat 'distribution' as anything other than returns to a factor of production, despite significant flaws in such an approach, is another example of power within economics. Going beyond the relational approach to power where A has power over B, he draws attention to the notion of power where one's own self is concerned. This raises a whole new set of issues such as capability and self-control.

The next three chapters deal with the issue of compliance in various contexts. An old question that has been a major topic among legal scholars is: why do people obey the law? Ajit Mishra and Andrew Samuel (Chapter 4) use developments in decision theory to approach this question while paying attention to psychology and moral philosophy. In deciding whether to follow the law, our morals and identity play a role and we often have to battle between temptation and self-control. Using a two-step decision process, they show how individuals may use the first stage to pre-commit to a low temptation path. This is achieved by the first stage choice of a menu of actions that do not contain the high temptation options such as bribery, dishonest behavior, and many other criminal acts.

Using this model of decision-making with conflicting preferences, they illustrate the dilemma that individuals face and possible resolutions to this dilemma in various applications. This way of approaching compliance introduces another dimension to enforcement policy where the regulator can facilitate the commitment process by enabling more crime-free options, than simply using monitoring and sanctions for criminal activities.

John Dougherty, in his discussion, draws attention to the parallel theme of the creation of moral wiggle rooms where individuals create enough space to be able to justify their actions from an ethical viewpoint.

The next chapter by Amrita Dhillon and Antonio Nicolò (Chapter 5) examines the role of behavioral and moral factors in the context of corruption. This is an important topic because corruption is such a pervasive problem in so many countries. It stalls economic progress, corrodes societies, and damages the fabric of life. The last three decades

have seen a large volume of research on trying to explain the prevalence and the ubiquitous nature of corruption on the one hand and developing anti-corruption strategies on the other. As mentioned earlier, the dominant approach has been to follow the traditional models of enforcement, in trying to deter corruption. A corrupt official faces some form of monitoring (internal or external) and subsequent (monitoring) sanctions, whereas honest behavior can potentially fetch rewards. Suitable mechanisms would specify these so that the net expected benefit of a corrupt act for the official is not positive.

These can be viewed as factors affecting the extrinsic motivation of individuals. However, as the authors point out in their survey of the recent literature, several behavioral factors also affect the decision to be corrupt. An individual's decision to engage in corrupt activities will also depend on intrinsic motivation which is shaped by the presence of both prescriptive and descriptive norms. In all societies, corruption (bribery) has a strong moral connotation—captured by prescriptive norms of what constitutes acceptable behavior. Interestingly, attitude toward corruption will also depend on descriptive norms—how other individuals in the community behave. The interplay of extrinsic and intrinsic motivating factors is not straightforward, as is illustrated by the simple case of the impact of a wage increase for public officials. A rise in wages is supposed to wean away potentially corrupt individuals from corrupt acts as it strengthens the external incentives to be honest, but at the same time it can crowd out the intrinsic motivation for being honest. Also, intrinsically honest individuals may not find it attractive to self-select themselves into these jobs.

The chapter has a rich collection of theoretical as well as empirical observations from the emerging experimental literature. They have used a unifying framework of decision-making in the context of corruption incorporating monetary and non-monetary, extrinsic and intrinsic motivations. Pengfei Zang presents a succinct summary of the key findings and points toward two further research questions. While we can identify prescriptive and descriptive norms, their origin is still unclear. Likewise, corruption being multi-faceted, it is natural that anti-corruption strategies also tend to be a collection of various mechanisms and their relative contribution is difficult to ascertain.

Edward H. Stiglitz (Chapter 6) looks at the impact of reason-giving on rent-seeking activities, using a simple theoretical construct and quasi-experimental data in the context of U.S. federal procurement.

Rent-seeking, as introduced by Tullock, refers to the process of individuals/firms undertaking (socially unproductive) investments to influence decision-making by elected officials in their favor. These investments can range from outright bribery to campaign contributions. Rent-seeking is discouraged when elected officials' discretion is reduced or their decision-making is less responsive to influence. The latter route is through which reason-giving may be effective. Reason-giving is the practice of giving reasons for a particular decision, such as the award of a contract, made by a government official. The reasons are often scrutinized by third parties such as senior officials, affected businesses, and the wider public (activists). In the legal context, reason-giving by lower court judges is used for examination by the superior/appeals court.

Vikas Kumar, in his discussion, draws attention to the twin issue of how costly is reason-giving likely to be and whether it is effectively used by third parties or not. He uses the Indian context to examine whether such reforms can be an effective tool for fighting corruption and favoritism.

The next three chapters are more focused on policies in three different areas and their impacts. Like big data, another global public good is public health, and the recent pandemic has made it abundantly clear. With increasing global connection, a very modern problem is the rapid spread of pandemics, such as what happened over the last two years. Along with that comes the important question of preparedness for pandemics and global conventions concerning vaccine distribution and more generally basic healthcare across the world. The COVID-19 pandemic exposed how poorly the global market for healthcare goods functions. There were regions with more vaccines; then, they knew what to do with, even while some regions were completely starved of this vital good. The pandemic also raised questions about the trade-off between mega profits and the incentive to do research and produce new drugs and vaccines. Do we have to starve segments of the world population of vital drugs to create the incentive for these to be produced in the first place? Is there no better way to navigate this dualism?

Niccole Hassoun (Chapter 7) makes a strong case for treating public health as a global public good, every individual, irrespective of the place of birth or residence, should have legally secured access to essential medicines and vaccines. While many would limit the public goods nature to nationalist boundaries, she argues that no ethical basis exists for such regional/geographical confinement. She points out this can be achieved through countries signing up to a Global Agreement for Development

and Equitable Distribution of Vaccines and Essential Medicines. Failure to do so would lead to a global tragedy of some sort. In some cases, actions by the developed richer nations have made the problem worse, the prime example being the stocking up of vaccines by some richer nations while vaccination rates in the poorest countries languish. An interesting feature of her proposal is the use of rewards for pharmaceutical companies based on the health impact of their products. The current system of incentives based on patents and voluntary market participation does not solve the problem of inequity in access to vaccines and medicines.

Indrani Gupta, in her discussion, points out that while the global public goods nature is universally accepted, there is no clear mechanism to achieve the desired outcomes. The global agreement will fail to deliver if some key players choose to remain outside. Rather, she argues for poorer nations to strengthen their own health systems and augment domestic production.

Cheryl Xiaoning Long (Chapter 8) examines another aspect of globalization amidst differential treatment of corporate cases by countries/regions in terms of domestic laws and standards. The rise of giant corporations operating across several jurisdictions gives rise to practical problems from the fact that corporations can choose where to file their case, giving rise to new strategic opportunities for the courts. As she points out, in the context of protection of intellectual property, countries can follow different legal standards and yet not be in transgression of the rule of law. Sovereign countries can have different laws and policies to promote national interests and as a result different attitudes toward intellectual property (IP). For example, it is seen that because of these differences, patent holders prefer UK courts whereas manufacturers prefer home countries such as China or the US. Likewise, even within a jurisdiction, we may see a differential treatment of litigants. She notes that foreign firms are more likely to be treated with leniency in China, given its policy to promote foreign direct investment.

To what extent law should be used to promote national interests is a difficult question. Jaivir Singh examines the Indian experience in this context and finds that such a policy of discrimination favoring foreign firms may not always be effective. There has also been an (unsuccessful) attempt to extend preferential treatment to foreign investors in the form of fast-track courts. India's problem also seemed to have suffered from dynamic inconsistencies, where after signing bilateral treaties to attract

foreign investment, the government reversed course to protect state interests.

Thanks to the new world of globalization and technology creating increasing returns to scale, big firms and cartels are dominant and their presence is giving rise to strains on traditional antitrust law. Aditya Bhattacharjea and Oindrila De (Chapter 9) look at optimal penalties for cartels and in a novel empirical exercise examine how actual penalties in India fare in relation to the optimal. Even within the traditional enforcement framework, the theory and empirics of the optimal cartel penalty are complex. First, these penalties depend on whether the objective is deterrence or restitution. Second, one must decide whether fines should be based on sales/turnovers or profits and whether they should be actual profits or excess profits relative to the competitive case. Third, the context of collusion also might need to be taken into consideration—in terms of the social costs (i.e. collusion in bidding). Fourth, the duration of collusion also matters in deciding the optimal fine as gains from collusion would depend on the duration. Bhattacharjea and De find that the stipulated fines in India for such collusive practices are high compared to many other countries, but in the actual implementation, the fines tend to be much lighter. Their examination of eighty-odd cases shows that there is a great deal of opacity and inconsistencies in practice.

Haokun Sun draws attention to two other considerations. First, the optimal penalty is going to depend on whether whistleblowing and leniency are also part of the regulatory policy to combat collusion. Second, it is not enough to make collusion/cartel unattractive for a firm, there should be incentives for the firm to stay away from other subversive activities such as bribery and monopolization.

The final chapter (Chapter 10), Legal Challenges for Corporations in twenty-first Century, is an unusual entry for an academic book. But it is there for a reason. It is not a conventional, academic chapter written by one or two authors. Instead, it is based on a panel discussion focused on the role of the private sector in taking on the kinds of challenges in law and economics that the roundtable was, and the book is concerned with. Given the practical importance of the topics dealt with in this roundtable, and the important role that the private firms are playing in our new, digital world, we wanted to bring in leading figures from the private, corporate sectors to bear in on the topics.

As a result, the roundtable featured three corporate heads and known thought leaders (Naushad Forbes, Co-Chairman, Forbes Marshall; Dhruv

Sawhney, Chairman, Triveni Group; Janmejaya Sinha, Chairman, Boston Consulting, India). They were engaged in deliberating on some of the challenges discussed elsewhere in the earlier chapters of this book, along with some of the economists and legal scholars participating in the conference.

The panel considered three broad, related questions. The first is concerned with the regulation of the big corporations, as it is widely felt that the traditional antitrust laws do not seem adequate in ensuring the equitable distribution of benefits among the stakeholders. The second question is related to the issue of rapid globalization, but with non-harmonized and multiple national laws which global firms are compelled to navigate. Finally, the issue of corruption control was discussed, emphasizing the role of norms and non-monetary motivations, and the need to avoid ill-designed laws which harm economic activities.

All these questions have been discussed in different contexts by authors in the preceding chapters, but this chapter offers a different perspective with the corporate leaders, who have had to deal with many of these problems not as academic matter but in their actual work life, being the main contributors. We believe that such dialogue involving academics, policy-makers, and corporate thought leaders can play an important role in the creation of better and more practical solutions to our existing problems.

CHAPTER 2

Property of the Social Media Data

Hans-Bernd Schäfer and Ram Singh

1 Introduction

Today, most human activities involve the use of computers, mobile phones, and online media platforms, such as, Facebook, WhatsApp, Twitter, LinkedIn, and payment media like PayTm and GooglePay. These platforms collect personal data about the users and their activities and non-personal data.

These data accrue as by-products of communication in social media. They also result from the individual browsing history from search engines

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like Google and Yahoo, from using streaming services like YouTube, and from searching and buying goods from E-commerce firms like Amazon, eBay, Tencent, Alibaba, and Baidu.

The large volume of information (data) that gets thus generated is called the 'Big Data'. The online platforms and tech giants harvest, process, and control the personal and non-personal (the internet of things) raw data from their users. Artificial intelligence is used to digitally analyze the information to reveal trends, predict future patterns of interest to businesses, scientific and medical organisations, the state and political parties.

A part of the information collected by the platforms with personal data about the users can only be commercially used with their consent, following data protection norms. Another part can be commercially used without consent if the data become anonymized. The depersonalized data can be used to identify groups of people who have similar tastes, belong to the same income or age group, share the same political views, or live in similar neighborhoods. In addition, the tech giants collect and sell data which are not directly related to individuals, for instance on weather, traffic, or road conditions.

The use of the big data and data-based information is often socially productive in that it improves the allocation of resources and/or increases their productivity given the allocation. Anonymized datasets can be combined to produce additional valuable information for commercial and political advertising, medicine, or scientific research. It is from this perspective that the big data has been described as the 'new oil' and 'multilane expressway' to development, even though neither of these descriptions do justice to the real nature of the big data.

However, the personal data remain a matter of concern. The existing legal forms of property that apply to these data—private property, common property, or free access—cannot guarantee their socially productive use. Our main concern is that the internet firms as controllers of the information—even though only weakly protected by trade secrets in most legal orders—are not legally but factually owners of the data, which creates market power and blocks downstream information markets.

The use of big data is not always productive. Information can be a public good or a public bad. They are public goods, if the use of information improves allocative efficiency (for instance, a dataset on the exact geographical distribution of a disease). They are public bads, if the costly use of information is purely distributive and must then even reduce social

welfare. The more personalized the processed datasets are, the more easily their users can instrumentalize them for such unproductive but costly wealth transfers.

In the paper, we argue that the existing legal forms applicable to the big data and tech platforms are not conducive for harnessing the potential of the big data to promote social welfare. The traditional frameworks of property, intellectual property, the contract, and competition law are not fully suited to provide a reasonable legal framework for this new industry. We suggest a set of guiding principles for the legal and regulatory framework that should apply for the big data and the tech giants.

In Sect. 2, we discuss the current legal and regulatory regimes applicable to the big data. Section 3 is on economic analysis of the big data. It discusses some of the (undesirable) consequences of current usages of the big data. In Sect. 4, we discuss the desirable policy goals in light of the economic analysis in Sect. 3. Section 5 is devoted to discussing the legal and regulatory framework for achieving the desirable policy objectives. Section 6 concludes.

2 Rationales of the Legal Framework for Big Data and Their Inadequacies

2.1 Legal Framework for Big Data

The big data are collected, processed, and stored in different forms. In the stages of this process, different forms of protection apply. At the elemental level, the raw data often comprise of the static personal information like name, date and place of birth, gender, and ethnicity, which do not change over time. Other collected information may well change over time, such as address, political or sexual orientation, income, the tastes and preferences of consumers, their lifestyles, as well as their physical appearance and health condition.

The harvested data are then typically processed further as raw materials for new datasets. Combinations of very large datasets allow the creation of derived datasets, which carry huge value added for their users and are specifically tailored to their needs. With the consent of those to whom the information pertains (the 'subjects of information'), those who have control over the information (the 'data controllers') sell personalized derived datasets to all sorts of actors, such as companies, political

parties, or the government. Anonymized data sets, which cannot reveal the identity of the subjects, can again be combined with other datasets and produce additional valuable information for commercial and political advertising, medicine, or scientific research. For this, a consent of the subjects of information is usually not necessary. The controllers of the raw data are protected only by trade secrets. If the controllers produce a valuable derived dataset, it is usually protected with a copyright. The same applies for firms, which buy raw data from the controllers and create derived datasets.

Further downstream entities are the data processors who process the raw data to design new database products. These entities work on behalf of the data controllers or with their consent to access and process the personal and anonymized data of the users and the other data. Examples include cloud storage companies such as, the Amazon Web Services, Google Cloud, and Microsoft among others. The products and services derived from the raw data are protected with intellectual property rights, mostly the copyright.

In addition to the data collectors and processors, there are entities that are brokers in the big data. They collect information from offline and online sources and then sell. These types of companies are working in a grey area in terms of legality of the way they are collecting and selling data and are more prominent in countries with weak data privacy laws.[1]

As to the ownership of the data, most legal orders, including the EU and the USA, protect the raw data of data controllers by a trade secret. On the face of it, this protection is weak, being not an *erga omnes* right but a contractual right against employees and anyone with whom those secrets might be shared. It prohibits employees from supplying the raw data to third parties or using them when they move to another company or start their own business.[2] The data controllers are therefore in a legal sense neither the owners nor the possessors of the raw data, nor are they protected by copyright. Yet, in combination with effective encryption technology, the trade secret makes them de facto owners.[3]

[1] See What Are Data Brokers? https://clearcode.cc/blog/what-is-data-broker/.

[2] Pistor K (2019) The Code of Capital, pp. 126–127.

[3] Leyens P (2019) Sachenrecht an Daten, in: Florian Faust, Hans-Bernd Schäfer, Ed. Zivilrechtliche und rechtsökonomische Probleme des Internet und der künstlichen Intelligenz, XV. Travemünder Symposium.

Situation in the developing countries is not very different. A proposed legislative related to data protection in India, the Personal Data Protection Bill, 2019, imposes certain obligations on the data controllers, called intermediaries.[4] The law seeks to regulate processing of the big data. A data controller is described as a 'fiduciary' that can decide the means and purpose of processing the personal data, subjected to certain limitations. Collection of the sensitive personal information will require consent of the subject to whom the data relate. The Bill requires that the personal data can be processed only for specific and lawful purposes. The proposed law imposes several obligations on the data fiduciaries, such as security safeguards for personal data through encryption and preventing its misuse, mechanisms for verification of age, and parental consent for processing of 'sensitive' personal data of children. It also requires grievance redressal mechanisms to be provided by the fiduciary to address complaints of individuals. However, a non-government entity cannot access the raw data without consent of the data controller. Overall, the proposed law aims to provide the data collector with the control rights over the raw data.

The newly generated, derived datasets are usually protected by a copyright; this applies in the USA, the EU, India, and many other countries. It also applies to computer programs related to the derived datasets.

2.2 Should the Subjects of Information Have Property Right on "Their Data"?

In parts of the discussion, authors hold that the subjects of information should have a property right on data related to them. We think that this is reasonable as long as such a right serves protecting privacy, but that economic and other rationales for property cannot support a legal protection of the subjects of information, which goes beyond this.

zur ökonomischen Analyse des Rechts (Civilian and Economic Problems of the Internet and of Artificial Intelligence), Tübingen (Mohr Siebeck) 2019, S. 47–78; Schäfer HB (2019) Kommentar, Eigentum an Daten (Comment, Ownership of data). In the same volume, pp. 79–84.

[4] Personal Data Protection Bill, 2019 (India). http://164.100.47.4/BillsTexts/LSBillTexts/Asintroduced/373_2019_LS_Eng.pdf.

2.2.1 *The Labour Theory of Property Cannot Legitimate Property of Data*

The above factual legal development wherein the data controllers have de facto property right over the data has stirred fierce and at times radical criticism, which claims that the subjects of the data should instead have a comprehensive *erga omnes* right.[5] Boyle compared the de facto ownership position of internet firms to the English enclosure movement, which transformed free land or villagers' common land into exclusive property of English aristocrats. The enclosures, a long process that started in the late Middle Ages, were a brutal legal transformation enabled partly by the willful fencing-in of common land and partly by court decisions and acts of parliament. They destroyed the livelihoods and lives of English peasants and sparked countrywide protests and strife. While the aristocrats arguably used the appropriated land more efficiently,[6] there was no compensation for those who were deprived of their rights.

In part of the scholarly discussion on social media, drawing such parallels culminate in the claim to an original property of the subjects of information or, as they are sometimes called, the producers of information, who lost the right to their "own data" to data controllers.[7] Such proposals are grounded either in the Lockean labor theory of property or in data protection rights for the subjects of information, which should be extended to property comparable with *in rem* property of things. The legal consequences of infringement would then be injunction, restitution,

[5] Boyle J (2003) The Second Enclosure Movement and the Construction of the Public Domain, Law and Contemporary Problems 66(1/2), pp. 33–74. See also Pistor K (2019) and Pistor K (2020) Rule by Data: The End of Markets? Law and Contemporary Problems 83(2), 2020, pp. 101–124.

[6] Karl Marx, Das Kapital, Bd. I (1867) Kap. 24: Die sogenannte ursprüngliche Akkumulation (Ausgabe 1974) 741ff. (The Capital, Vol.1, Ch. 24, The so-called original accumulation). Marx described the enclosures as brutal and violent but at the same time developing modern, commercialized agriculture and leading to capitalism in England. North DC, and Thomas RP (1973) The Rise of the Western World: A New Economic History. Bairoch P (1988) Cities and Economic Development: From the Dawn of History to the Present. According to Bairoch, the enclosures played a decisive role for the modernization of agriculture and the increase of agricultural production in England.

[7] Pistor (2019, p. 131). "We are now in danger of losing access to our own data".

damage compensation, and disgorgement of profits. The right should be alienable to become a source of income for the subjects of information.[8]

It is, however, questionable whether the Lockean labor theory of property can lead to property of "one's own data" as a quasi-natural right. The data are generated anyway, often as by-products of other activities like searching, reading, buying, or communicating.[9] A non-consequentialist deontological justification of an exclusive right to unprocessed datasets of personal raw data cannot be based on a labor theory of property.

2.2.2 Data Protection Is Important But Has Limited Scope

A different but related strand of literature relies on data protection to derive a right of the subject of information to the property of personal data. We agree that data protection is important. It derives from a fundamental human rights, including dignity and the spheres of privacy and intimacy. Indeed, questions 'who am I, and where and how do I live?' are secrets worthy of effective legal protection. But protection of personal data does not justify an extension to a comprehensive and unlimited *in rem* right for the subjects of information. Such far-reaching rights, which would extend to any use of data related to individuals, even if anonymized and depersonalized in newly created data sets, cannot be justified on the grounds of data protection alone and must be subjected to an economic or social test of expediency. Property of data based on data protection has a totally different scope compared to property of things. The slogan that is even propagated in scholarly papers, according to which data are the "new oil", is therefore entirely mislead. The owner of oil can prohibit any use of his oil by a third party before the title of ownership is transferred. By contrast, an individual whose personal data are protected is in a different position. He "owns" his data only if they remain personalized and thus relate to his privacy. If they are depersonalized, the rationale of data protection cannot legitimize an ownership right. This limitation makes personal data much less valuable for the subject of information compared to the owner of oil, who can prohibit that anyone changes the substance of his oil.

[8] Marciano A, A Nicita, and GB Ramello (2020) Big Data and Big Techs: Understanding the Value of Information in Platform Capitalism. European Journal of Law and Economics 50, 345–358.

[9] Josef Drexl et al. (2016, p. 2).

It is important to note that the norms of data protection are not rooted in economic efficiency considerations; their purpose is not to facilitate market transactions that move economic resources to more valuable uses. Data protection can support economic purposes, for example when it impedes the transfer of sensitive information which would allow strategic behavior of competitors and contractual partners, potentially moving market outcomes away from the competitive ideal. But this effect is not the essential rationale for data protection.

In view of the above, we find legal and economic merits in a census ruling of the German Federal Constitutional Court rejecting the idea of a comprehensive quasi-natural right to personal data based on the rationale of data protection. The ruling draws a convincing dividing line between the protection of property and the protection of personality. "The individual does not have a right in the sense of an absolute, unrestricted dominion over 'her data'".[10] However, ruling does not preclude the transfer of individualized and therefore protected data in exchange for a consideration either in kind or in money.

Effective data protection is often difficult to achieve because many internet users willingly give up their privacy in return for services. The attitude of individuals whose privacy is legally protected exhibits the "user paradox": As citizens, the protected individuals worry about their privacy; as consumers, they are often carefree. Despite their abstract concerns, they tend to prefer personalized services over their privacy. Also, they expend little effort to find out whether the services are indeed favorable for them (rational apathy).[11] It just does not pay off to acquire and process the required information.

On this count also, we do not favor data protection beyond the individual personal data; the protection should not extend to the protection of depersonalized data contained in derived datasets.

[10] BVerfG 15 December 1983—1 BvR 209/83 u. a., BVerfGE 65, 1, 43 f. (own translation); cf. also Bull HP (2018) Wieviel sind „meine Daten" wert? (How Much Are "My Data" Worth?), Computer und Recht 2018, 425–432.

[11] Schweitzer H (2019) Datenzugang in der Datenökonomie: Eckpfeiler einer neuen Informationsordnung (Data Access in the Data Economy, Cornerstones of a New Data Economy), GRUR 2019, 569, 577).

As to the policymakers, one of the most prominent and benchmark regulations relating to collection and handling of private data is GDPR—General Data Protection Regulation—of the European Union (EU).[12] It clearly defines the rights of subject (user) and responsibilities of data controller and data processor. At the same time, it gives the necessary exemptions to law enforcement and national data protection agencies.

A violation of personal data protection rules triggers administrative sanctions; in the EU, administrative fines of up to €20m and damage awards can be imposed.[13]

The European policymakers are concerned with the internet and platform neutrality also. Accordingly, the draft regulation of the Digital Market Act (2020) of the EU proposes the prohibition of such practices and confers comprehensive search and control rights and the power to impose harsh sanctions by the EU Commission.

3 Economics of Big Data

The big data and the tech platforms have provided a big boost to the efficiency of markets. New products, services, suppliers, and buyers have entered the market in the tech-driven world. For example, Uber, Ola, and the other cab hailing platforms have enabled the car owners to provide part-time transportation services and buyers of this service to use it according to changing demand. Similarly, companies like Airbnb have enabled the homeowners to provide part-time rental service.

The artificial intelligence has reduced search costs for the complementary goods and services. The ideal time to show you an advertisement of a product is when you are searching for a complementary good. This is being done by the combination of big data and artificial services. For example, search for a flight also shows hotels at the destination point. Today, products are being customized to individual tastes/needs.

The big data has increased enforceability of contracts by making a larger set of actions of the other side verifiable. It is easy for the transporters to monitor driving behavior of their drivers. The insurance company can customize insurance contracts to individual attributes. Unlike in the past, post-contractual behavior of the insured is easier to

[12] https://eur-lex.europa.eu/eli/reg/2016/679/oj.

[13] Art. 83 General Data Protection Regulation (EU) 2016/679 (GDPR).

monitor and verify. The result is that previously un-contractible relations have become contractible, resulting in an increase in the allocative efficiency. Moreover, greater numbers of ex-post contingencies have become verifiable, reducing the scope of post-contract disputes and enhancing the social surplus by better sharing of the relevant risks.

Unsurprisingly, the value derived from big data as percentage of the total value added of an economy is increasing over time. Together the big data and AI have expanded the production frontier. Utility of big data increased exponentially with the size, diversity, and multiplicity of the datasets. Unsurprisingly, the big data has been described as a source of 'renewable inputs' and 'combinatorial innovation' (Varian 2000). These attributes of the big data are due to the public good nature of the big data.

A Public good or a public bad? Big data is a source of information. Its use is or can be non-rivalrous, as multiple entities can use the information simultaneously. Moreover, the marginal cost of supplying the information to an additional user is almost negligible. The productive information that improves efficiency of resource allocation is a public good. For instance, health-related research thrives on data sharing from diverse sources since it is highly interdisciplinary in nature. Additionally, the research is mostly conducted in a globalized and collaborative context. In the era of big data, sharing of digital data can and should occur on a global scale. Data sharing is vital because data generators, analysts, and researchers have to work together as a team for purposes of making appropriate use of big data.

However, the big data is not standard public good as encryption technology together with the legal protection of trade secrets enables the data controller to exclude others from benefitting the data. Consequently, data is not shared with the competitors and independent data processors; this acts as a barrier to entry for the downstream firms.

Moreover, the big data-based information can be a 'public bad'. Indeed, the use of big data is not always productive. The more personalized is the dataset, the greater is the ease with which it can be used to instrumentalize the subjects of the data for unproductive wealth transfers. In the case of such transfers, the use of information is not only purely redistributive; indeed, it can even reduce social welfare as resources are spent on generating datasets necessary for achieving the transfers. Here is a list of such distributive exploitation of the data and their undesirable consequences.

- A supplier of goods or services who spends on processing of the big data to estimate individual customers' willingness to pay can set individualized prices and thus skim the consumer surplus. While the redistribution is not inefficient per se, being costly, such third-degree price discrimination to redistribute gains from trade in favor of the seller reduces the social welfare. The victims of such exploitation by personalized pricing are not only the rich but also the poor and elderly, who tend to be less mobile and depend on buying consumer goods where transportation is easiest.
- Online platforms routinely obtain exclusive information about which internet businesses and business ideas are successful. Amazon, for example, knowing the buyers' and sellers' complete browsing history, knows better what made a business idea work than the actual trading parties in question. This knowledge allows the tech giants to either buy successful firms or at time suppress the successful business ideas, thus circumventing the market mechanism. Such practices also distort the market mechanism, in which only the extra profits signal to potential competitors the profitability of a business line. This way, the privileged information collected by social media firms and other online platforms reduces competition and increases market power.
- Private information can cause strategic behavior in pre- or post-contractual relations. If firms share information on their competitors' financial status or capacities, this opens the door to unfair trade practices.
- Internet and platform neutrality is also a serious concern. Platform providers or search engines that market their own products besides those of others have an incentive to bias their ranking algorithms in favor of their own products.

The above-discussed double-sided character of big data-based information is hardly discussed in the debate on property of information.

Market failure in Big Data In view of the above, market failure in big data can arise because of its public good as well as public bad dimensions. As in case of a standard public good, the problem of anti-common arises under fragmented ownership of complementary parts of the good. One source of this problem is the property of the data granted to the subjects of the data. Even at the level of the raw data, the problem of anti-common arises on account of fragmented ownership of complementary

datasets. The joint controllers of a datasets might have a veto position, which can lead to underuse of the data. To overcome this problem, the raw data collected and controlled by social media companies should be made accessible to competitors.

There is no sound reason to provide intellectual property-like protection to the controller and possessors of the raw data because there is no trade-off between the generation of new information and their swift dissemination. The raw data are by-products of general activities undertaken by the tech giants and their users. Generation of the raw data requires no specific incentives. Therefore, anyone who might process them into new and valuable datasets and thereby realize economies of scope should have access to these data. The fact that harvesting and storing of the raw data is costly cannot by itself justify property-like protection of these data. The present legal status, which grants the controllers of the data not de jure but entrenched de facto property, gives rise to market power, cements monopoly positions, and impedes downstream information markets and the generation of valuable new datasets for public use, for instance on public health or the status of the environment.

However, the above arguments in favor of open raw data do not apply to the processed and derived datasets, which have been created by combining several large sets of personal data and raw data on people or things. The processed and derived datasets, generally, generate social surplus by producing new information, products, or services. These new datasets require targeted processing of the raw data to add value. They should therefore be protected by an intellectual property right. The protection of the derived dataset has to trade-off incentives to add value to the raw data against the restricting of access to them. Therefore, intellectual property rights, especially a copyright should protect processed datasets, which contain new information.

In addition to the problem of anti-common, market failure in big data arises on the following counts.

Asymmetric Information Users of the social media do not know much about the nature and benefits from the personal data. Their decision to give consent is guided by mis-perception. For example, the announcement on the new policy of data sharing by WhatsApp made it clear that users have to exit WhatsApp if they do not sign up for the altered terms of data protection. In India, at least, this led to fears that WhatsApp will

now be compulsorily sharing a lot more of users' personal information with its parent company, with a dubious record in protecting the privacy of its users. While such runs on Facebook have happened before among smaller groups of privacy-conscious users, this time millions of Indians have migrated to privacy-focused platforms such as Signal and Telegram.

Market Power and Regulation Data as an input is critical to production lines of downstream competitors. On the one hand, the big data can be critical for competitive edge of a company; on the other hand, mere possession of large amounts of data gives a company a significant competitive edge over other players. Data as a product has no close substitutes. Uniqueness of a dataset depends on its relative size, compared to the other players. As size and diversity of data increase, so does its uniqueness giving market power to the controller of the data. The key determinants of the market power are whether the company/entity is a data collector/controller or a mere processor of the data. For example, Microsoft is controller of its consumer data on its cloud suites of products and services.

The existing intellectual property law and the competition policy are not fully equipped to respond to threats to competition posed by the emergence of big data. There is inherent conflict in the existing legal framework for the protection of data and for the sharing of data. On the one hand, the existing legal regime allows exclusive rights over data, leading to monopoly over data on the secondary market for data and the resultant inefficiencies discussed above. On the other hand, the competition law strives to limit such rights. The rules of both bodies of law are often contradictory. It is difficult for courts to do justice to the conflicts posed by the legal regime and the regulatory institutions. This sometimes leads to court decisions which invite critique.

At times, there can be too much of competition in the market for the data. The social media markets also harbor another potential source of inefficiency, which has been discussed extensively for private radio and TV stations.[14] Operating a platform entails huge fixed costs but virtually no marginal costs. Furthermore, the platforms' services are financed with income from advertising, rather than selling their services for a price. Zero

[14] Anderson SP and J Waldfogel (2015) Preference Externalities in Media Markets, in: SP Anderson, J Waldfogel and D Stromberg (eds.), Handbook of Media Economics, Vol. 1A, North Holland.

marginal costs make a provider a natural monopolist, whose price should in a normal market be publicly regulated, according to economic theory. The users of social media typically do not pay a price; however, there is a quid pro quo: They volunteer their data on their personal choices, their behavior, and their clicking history. This form of financing can cause inefficiencies. To illustrate: Assume that the platform is financed by advertising. The total advertising budget for the market is 11 and the fixed cost of running the platform is 2. Then, the efficient solution would be to have one company provide the service at total costs of 2. But as the service generates income from advertising, the market can sustain five firms, with each receiving 1/5 of the advertising budget. Now, the same service is provided by five social media instead of one, at total costs of 10 instead of 2, and a profit of 1/5 for each. In this setting, competition is wasteful and no longer beneficial. This basic model discounts the possibility that the higher degree of competition might improve quality and increase product differentiation, innovation competition, and expansionary tendencies. The latter do not fully disappear, when financing with advertising removes the race to monopoly in markets with no fixed costs as advantages from large ecosystems of data remain. Here, we cannot delve deeper into this problem but want to highlight that this problem does not seem to be part of the present literature on the regulation of platforms.

It also disregards that huge network effects of the type found in social networks like Facebook might push the market to a monopoly market despite financing by advertising. Network effect might be relatively small for search engines, streaming services, or internet shops. However, as Belleflamme and Peitz show, indirect network effects still exist and can be sizeable, similar to network effects of shopping malls. Sellers prefer a shopping mall that attracts more buyers and buyers prefer a shopping mall that hosts more sellers. The same might hold for platforms hosting internet shops. Also, the learning achievements of algorithms in search machines increase with the number of visitors, another indirect network effect.[15] However, in the discussion on the regulation of social media, the

[15] Belleflamme P and M Peitz (2016) Platforms and network effects, University of Mannheim/Department of Economics, Working Paper Series, Working Paper 16–14, September 2016, p. 1.

insights by Waldfogel and others on the inefficiency of competition, which is generated and stable in markets, which tend to be natural monopolies, appear to have been disregarded entirely, even though they urge us to think much more comprehensively about the regulation of this sector than is the case in the current debate.

4 Public Policy Objectives

In view of the discussion in the previous sections, the big data-related concerns mostly arise on three accounts: privacy of personal data, monopoly over its use, and abuse of dominant position by the data possessor/controller. These concerns call for regulation of data collection, processing, storage, and usage. The privacy is not an efficiency-driven issue but can have serious efficiency implications, especially if the individual users are granted rights over the depersonalized data.

As discussed above, exploitation of big data need not be productive, potentially leading to wasteful or even unfair redistribution. Legal and regulatory reforms are therefore required to curb the abuse and unfair use of data.

The traditional legal conceptualization of property and intellectual property regimes are not adequate for this purpose. Since classical Roman law, the concept of property has covered things but not information. Most things are private goods and exhibit rivalry of consumption. In conjunction with the freedom of contract, granting private goods the legal status of property guarantees that things move to the user who values them most highly, thus increasing their productivity and social value. The traditional intellectual property regime is also not applicable to the raw data, since there is generally no problem incentivizing social media platforms to produce more raw data.[16] As is discussed above, most of the raw data are by-products of the users' online activities. While such activities have been going on for many years now, only relatively recent technological advances have made it possible to extract valuable information from them. Incentivizing such activities yields no productive effect. It is therefore economically wasteful to grant anyone an exclusive right on these raw data. No rationale exists to extend data protection for the

[16] See Kerber W (2016) A New (Intellectual) Property Right for Non-Personal Data? An Economic Analysis, MAGKS Papers on Economics 2016, p. 37.

subjects of information beyond what is necessary for privacy protection, which realizes fundamental constitutional rights and not economic policy targets.

The focus should be on sharing of the anonymized raw data to promote their fair use and support secondary markets for data. Economic analysis also does not support exclusive rights for the controllers of information. On the contrary, economic reasoning demands that raw data be made easily available to anyone who wants to generate valuable new datasets; otherwise, those who control the data can earn unfair and inefficient monopoly profits. Facebook generated revenues of $40.6bn from personalized data in 2017, with net earnings of $15.9bn, which implies return on sales of 39.1%.[17] Others like Amazon reported relatively low profits but were able to increase their market share to achieve a dominant position with a skyrocketing market capitalization.[18]

Depersonalized data sets, which do not reveal the identity of the subjects, can again be combined with other datasets and produce additional valuable information for commercial and political advertising, medicine, or scientific research. This promotes combinatorial research, a hallmark of economic and scientific advances. Informational worth of big data is much more than sum of its constituent sources. Predictive power and the benefits increase exponentially with size and diversity of the data. The use of this newly collected or even created information is often socially productive in the sense that it improves the allocation of resources and/or increases their productivity given the allocation.

Moreover, there is no incentive problems for social media platforms to produce more raw data. Similarly, there is no need to incentivize the uses of the social media and tech platforms as most raw data are generated as by-products of the users' online activities. Therefore, incentivizing such activities will yield no productive effect. On this count also, the current legal protection of the internet companies' raw data is not supported

[17] https://s21.q4cdn.com/399680738/files/doc_news/Facebook-Reports-Fourth-Quarter-and-Full-Year-2017-Results.pdf, in 2020 Facebook had revenues of 109.5 bn $ and earnings of 47 bn $ implying a return on revenues of 42.9%. See https://companiesmarketcap.com/most-profitable-companies/, last visited Nov. 2021.

[18] Khan LM (2017) Amazon's Antitrust Paradox, Yale Law Journal 126, January 2017, 564–907. Market capitalization of Amazon was 1.865 trillion $ on 18 November 2021, making it the fifth most valuable firm worldwide. Amazon's revenues in 2020 were 458 bn § and its earnings were 32,7 bn $, implying a return on revenues of 7,1%. See https://companiesmarketcap.com/most-profitable-companies/, last visited Nov. 2021.

by economic reasoning, except when the dissemination of this information would reveal trade secrets, including business ideas. The currently widespread protection by trade secrets is a legally weak protection, but in combination with effective encryption developed into a strong de facto property.

Moreover, the economic efficiency-based arguments do not support the legal protection of the subjects of raw data beyond what is required for non-economic reasons, i.e., the protection of privacy based on fundamental human rights. Privacy must be legally protected, but it is alienable. It is traded by most users for the benefits of using the tech platforms. Besides, it can be relinquished for a price, as is common practice in print media interviews by popular personalities. Property of personal data is justified not on economic grounds but by the constitutional value of privacy, which the law protects, but only as a default rule, leaving the final decision to the individual.

It needs emphasizing that the personal data, which reveal not only the choices, features, and tastes of individuals but also their identity, are legally not property in the traditional sense. As discussed above, protection of these personal data features is subject to several limitations. However, they imply an injunctive right against everybody who collects, stores, or publishes personal data. The rationale of such rights is not economic efficiency or general welfare but the protection of fundamental human rights. To the extent, the personal data are not inalienable, the individual can give up these rights, for example to an internet platform in exchange for a service. While these rights can also be sold for money, they are more usually exchanged for access to the platform. So far, an explicit market for personal data against a monetary price has not yet developed in the social media.

Internet firms might react to an evolving primary market for personal data by offering very low prices. In reaction, users will prefer being paid with the services of the platform rather than with money. This circumvention could, however, be checked with tax law if tax deductible costs for the transfer of privacy rights in return for access to the service cannot exceed a monetary price paid. Again, it is questionable whether this solution would work as users do not make the effort to find out how much their privacy is worth to them. The costs of information might make a preference for "buying" the service with the transfer of personal data seem rational (rational apathy).

However, there is strong economic rationale to provide property protection to derived data sets which generate socially valuable and productive new information. These new and processed datasets add value to the raw data and should therefore be entitled to intellectual property right protection. Also, the law should open the secondary market for raw data. However, the exploitation of big data need not be productive, potentially leading to wasteful and unfair redistribution. Mandatory legal norms are therefore required to curb the abuse and unfair use of data. Therefore, the tendency for an open data rule would be to remove impediments to innovation, competition, and the swift realization of new business ideas and research projects in the secondary data markets. Ideally, the big data should be a global commons of anonymized raw data protected personal raw data, which the subjects of information transferred against a consideration, these data should be provided in an easily accessible and interoperable format.

5 Legal Framework for Big Data

This section discusses several legal forms and their potential contribution to these policy goals. The readers are reminded that legal scholarship does not discuss legal policy instruments fully ad libitum. The legal order consists of a limited number of legal forms, which developed historically and comprise of a bundle of rules, principles, legal outcomes, and sanctions. These forms are the result of extensive doctrinal work, landmark decisions of Supreme Courts, and statutory norms, which embody the learning of many generations. Existing forms are not easily discarded when new legal problems arise. While this does not preclude the invention of new sui generis rules to cope with new problems, the usual way for legal scholars to look at new problems is to enquire which existing legal forms are best suited to solving them, thus preserving and utilizing the learning of past generations when entering new and unchartered territory.

The legal development to de facto exclusionary property rights for internet firms which harvest, store, and market their users' personal data has been subject to harsh criticism ever since the beginnings of the discussion.[19] In a pioneering paper, James Boyle analyzed this development in the data economy and coined the word "second enclosure",

[19] Boyle (2003).

comparing the development of de facto exclusive rights for the data controllers to the taking of free and common land by the English aristocracy starting in the early Tudor period. We do not fully subscribe to this comparison, especially because economic historians hold that the transformation of common land into exclusionary property boosted agricultural productivity, helped to transform grazing land into plow land, and feed a growing population.[20] Only in England was this process associated with brute force, destroying the livelihoods of many. In other European countries, where the transformation of common land into more exclusionary property was equally necessary, it was achieved more peacefully and even consensually. The "second enclosure" narrative obscures the wide consensus among economic scholars who have dealt with the data problem, according to which the development of a de facto exclusionary right reduces the productivity of data by blocking secondary data markets, excluding startup firms and impeding science. This is in sharp contrast to the economic effects of the enclosure movement in England. The economic consensus further holds that many of the new data, especially those held by social media platforms, should neither enjoy IP protection nor another absolute *erga omnes* right; instead, easy access to the raw data is necessary, provided that the data have been depersonalized or the subjects of information have given up their personal data protection rights.[21]

5.1 Can Antitrust Law Open Markets?

It is widely discussed whether antitrust law rules can induce those who control the data to grant access if they abuse a dominant market position. In the EU, Art. 102 TFEU applies. The Essential Facility doctrine might open the market for competitors who require the data for their own business. Originally introduced in the USA to give companies access to physical networks, the doctrine is now widely discussed and used, including in the EU.[22]

The rules of competition law which prohibit the abuse of dominant market power presuppose that the controllers of the data can use them in principle in accordance with their commercial interests. This does not

[20] Leyens (2019) and Schäfer (2019).

[21] Kerber (2016).

[22] Schweitzer/Haucap/Kerber/Welker (2018), Modernisierung der Missbrauchsaufsicht für marktmächtige Unternehmen (Modernization of abuse control for companies with market power), p. 146.

require property, intellectual property, or even possession in a legal sense, but only a legal entitlement to use these data freely without a duty to share them with others. The legal intervention that might prohibit exclusive use and grant competitors access depends on the controller's dominant market position and its abuse. If for instance the same raw data are harvested by several firms, a dominant position is unlikely to apply. The factual "property right" is already implicitly part of in the daily market practice. The new markets have developed well without statutory exclusive rights "comparable with markets for transmission rights for sporting events".[23] The technical possibilities to protect the datasets together with such transmission rights imply that access to data can be denied to third parties.

Heike Schweitzer argues that the internet giants' dominant position in combination with their advantages over potential competitors in downstream markets and parallel behavior might suffice to open access to their raw data for competitors on the basis of abuse of dominant position. Yet she also points out the difficulties. Market power is not the same as a dominant position, which furthermore requires that the data controllers' exclusive use of the data prevents a subsequent market.[24] Schweitzer argues that the combination of several causes of market power, like network externalities and unprecedented economies of scale, might allow the courts to identify a group of market-dominating firms, possibly leading to a general opening of markets for competitors under the rules of competition law. However, this interpretation would reverse the general legal structure of the control of abuse of dominant position. This norm starts with an exclusionary right, which the law can remove on a case-by-case basis given the abuse of dominant position. A general access to the internet companies' raw data would develop this norm into guaranteeing a right to data access for all firms in subsequent markets. Also, competition authorities would have to set a fair price for the access which covers a reasonable share of the costs of harvesting and storing the raw data. Such a role would almost make them regulatory agencies.

Many scholars doubt whether competition law, being an ex-post approach based on the abuse of dominant position, can secure market access to data. They point to the case-by-case structure of judicial market access decisions under competition law and to the plaintiff's difficulty

[23] See Josef Drexl et al. (2016) on the current debate on exclusive rights and access rights to data at the European level.

[24] Schweitzer (2019, p. 577).

of proving market dominance and abuse. Such proof requires extensive information, not least regarding the plaintiff's own business model and the precise nature of the data required, even though the exact method of constructing a new derived dataset is often not yet known even to the competitor himself. They also point to the lengthy and information-intensive proceedings—10 years in 'Magill', over 14 years in 'Microsoft'.[25] While competition law may be able to provide access to data in exceptional circumstances, it cannot secure the steady flow of data to competitors that would be necessary for removing barriers to entry in subsequent markets or other activities in science, public health, or environmental matters. Mandated access remains necessary[26] even after fully exploiting the possibilities of competition law.

5.2 A Data Commons, How Far Can It Go?

The competition law rules of abuse of dominant position provide a legal form in which the controller of the raw data has an exclusive right but must relinquish it under exceptional conditions. Open access to data, a commons of data, an open data rule, or mandated access would reverse this legal starting point: Generally, everybody can access the harvested raw data. Exceptions might apply for instance if the transfer of data would allow the obtaining party an abuse of a market power or if a platform's sharing of its data would disclose its business model. Yet the tendency for an open data rule would be to remove impediments to innovation, competition, and the swift realization of new business ideas and research projects in the secondary data markets. The ultimate vision would be a global commons of anonymized raw data, provided in an easily accessible and interoperable format. A violation of the individual rights to this common property would trigger a claim to surrender, a damage award, disgorgement of profits, as well as administrative and criminal sanctions.

[25] Josef Drexl et al. (2016, p. 11), and Magill (joined Cases C-241/91 and C-242/91 [1995] ECR I-743), 201/04 [2007] ECR II-3601). The CJEU has formulated case-specific criteria: The petitioner for access needs to prove that the data/information at issue is essential for the appearance of a new product or service, and that there is no other way to create or otherwise obtain it. Furthermore, the CJEU acknowledged that there might be an objective justification for the refusal to grant access.

[26] Crémer J, YA de Montjoye and H Schweitzer (2019) Competition Policy in the Digital Era, Final Report, EU Commission, https://ec.europa.eu/competition/publications/reports/kd0419345enn.pdf, p. 126.

A commons of data need not mean free access to the data—access may carry a price. The OECD (2016) has therefore suggested the term "open data" to denote both free access and guaranteed access for a price. Unlike a data commons, "open data" would not preclude the controllers of the data from receiving an administrative price for harvesting, storing, and depersonalizing the data they are obliged to share.

The discussion on data as a common good has had a huge impact on datasets of governments and public organizations. It has led to transparency and information laws, giving citizens more information rights vis-à-vis state agencies ("Open Government Data"). These rights pertain not only to free access to online datasets but also include duties for public offices to provide information on demand and citizens' rights to inspect files.[27]

The discussion on accessing the data of the large internet companies has, however, moved away both from leaving the problem to competition law and from free access. The main reason is that in the relationship between the data controllers and those who demand access, issues of protecting business ideas and sensitive information arise, which do not exist in the relationship between citizens and the state. An "open data" rule might implicitly burden even listed companies with information requirements that far exceed their reporting duties under corporation law and capital market regulation.

The proposal of the EU Commission for a new regulation, the Digital Market Act (DMA) (2020), which is now in the legislative proceedings, is one example of current legal developments.[28] It defines precisely, which internet platforms are so powerful that they have special duties, and then specifies such duties. The DMA draft bill first singles out those internet firms which may have the power to restrict competition, and which should consequently be regulated. Using precise rules, it defines a company as a "gatekeeper" (Art. 3) when its parent company achieves an annual turnover equal to or above EUR 6.5 billion in the last three financial

[27] Wischmeyer Tand E Herzog (2020) Daten für alle? – Grundrechtliche Rahmenbedingungen für Datenzugangsrechte (Data for All?—The Framework of Constitutional Basic Rights for the Access to Data), NJW 2020, p. 28.

[28] Proposal for a Regulation of the European Parliament and of the Council on Contestable and Fair Markets in the Digital Sector (Digital Markets Act) (2020), https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52020PC0842&from=en.

years, or when the average market capitalization or the equivalent fair market value of the parent company amounted to at least EUR 65 billion in the last financial year, and if the company itself provides a core platform service in at least three Member States. Verifying these precise conditions requires very little information and is therefore a much easier task for courts than ascertaining a "dominant position".

Articles 5 and 6 of the DMA contain detailed obligations of the gatekeeper vis-à-vis the internet users. Violations of these obligations lead to administrative sanctions against the gatekeepers. The obligations include a long list of fairness rules, among which is a prohibition of anti-competitive behavior like tying, bundling, and self-preferencing.

The DMA also imposes data sharing obligations to reduce the gatekeepers' exclusive control. These obligations are, however, limited vis à vis businesses. They relate to data portability of internet users and allow portability of firm-related data if a firm changes internet platforms. They especially entitle users to whom the information pertains to download "their" data but not all raw data. The rationale for this limitation is that an open data rule would allow competitors to access sensitive data of the social media firm, which it can legitimately protect. A panel of experts acknowledged the impossibility of opening all depersonalized data to all users or at least all IT firms. Trade-offs between legitimate policy goals exist. However, the panel rightfully criticized this rule and proposed considering a more comprehensive access to data. The present DMA draft implies that "gatekeepers are still the unique beneficiary of the social value of the insights generated through economies of scale and scope in data aggregation across businesses and end users".[29] However, a comprehensive access to data might allow inference to information that is generally kept from the competition, such as sales, turnover, or other business figures. This "would put the platform's entire business user activity dataset in the public domain".[30]

However, there are better alternatives to both legal solutions. The first one would be comprehensive sharing, though with some degree of masking and aggregation, which reduces the value of the data for third parties but protects legitimate business secrets of the data controllers.

[29] Haucap J, G Parker, G Petropoulos, T Valletti, and M van Alstyne (2021) The EU Digital Markets Act, A Report from a Panel of Economic Experts, pp. 21–22.

[30] Ibid., p. 22.

Another possibility could be in situ rights of the data controllers with access of competitors to the raw data,[31] where the gatekeeper would have to allow other business users to run their own algorithms on the data, which remain on the gatekeeper's server, thus allowing the generation of a new, derived dataset without giving direct access to the gatekeeper's individual data. Given these possibilities, the DMA draft is but a half-hearted step which cannot break up monopoly positions in the secondary market.

All in all, it seems that the reasonable solution to open secondary markets for raw data is not competition law, which presupposes an entitlement of the data controllers to use the data for their commercial interest. Exceptions to this rule require lengthy and information-intensive procedures. It is better to reverse the legal default and have an open data rule for the big internet companies (gatekeepers) as a starting point, and allow exceptions only if the data controllers can show that they have important and overriding business interests.

5.3 Intellectual Property for Processed Datasets—The Legal Status of Algorithms

Most scholars agree that processed datasets, which are derived from raw data on persons or things, should not be in the public domain but be protected by copyright as it is the law in many countries. This implies injunctive rights, damage compensation, and disgorgement of profits in case of infringement. Unlike the harvesting and storing of raw data by online service providers, the production of such datasets is a creative activity associated with risk and costs, implying that a rationale for "open data" does not exist here. In the EU, this copyright protection also extends to computer programs for processing such data.[32]

However, there has been widespread criticism of the continuous expansion of intellectual property, including to cases where the innovation in question is part of a thicket of innovations. The anti-commons problem

[31] In situ data sharing was first proposed by Parker G, and M van Alstyne (2018) Innovation, Openness, and Platform Control. Management Science 64(7), pp. 3015–3032. See also Parker G, G Petropoulos, M van Alstyne (2020) Platforms, Power and Antitrust: A Proposal Towards Efficient Information Sharing, mimeo, 2020.

[32] Directive 2009/24/EC of 23 April 2009 on the legal protection of computer programs.

with multiple veto positions around a potential innovation makes it increasingly questionable whether IP laws contribute much to the process of generating innovations.[33] While important, this general problem of the scope and duration of intellectual property from a social welfare perspective is outside the scope of this paper. In the current discussion on property of data, it is, however, debated whether the algorithms that structure the processed datasets and rank individual pieces of information should also be protected. *De lege lata*, algorithms are not copyright protected. Their legal status is comparable to mathematical theorems, which have always remained in the public domain, like much of basic research.[34] The algorithm is a part of the computer program that is protected by copyright. And yet it is an independent and separable part of that program, consisting of a set of mathematical rules and step-by-step procedures for structuring, filtering, and ranking the data as well as learning by doing. If algorithms were protected by copyright, their authors would be compensated not for their marginal contribution to the value of a specific algorithm, which is often only a small improvement or adaptation of an algorithm pre-existing in the public domain, but for the marginal productivity of the entire algorithm, which may largely consist of publicly-financed and freely available research results. A blanket protection of computer programs, which would include their elements of basic research, cannot be economically justified under these conditions. Such protection would privatize the fruits of tax-funded research, which must remain in the public domain.

5.4 Can Data Protection of the Subjects of Information Be Achieved by Contract Law?

As citizens, individuals place a high value on data and privacy protection. As internet users, they readily relinquish their privacy rights in return for online services. Data protection laws and their consecutive improvements have over time made the decision to transfer one's privacy rights a more explicit one. In the EU, it is for instance no longer possible to waive privacy rights by agreeing to the general terms and conditions of the platform provider. Users must make an explicit decision to transfer

[33] See for example Pistor (2020).

[34] Josef Drexl et al. (2016) and Boyle (2003).

their rights to a data controller, either by single right transactions or as a bundle. Rules for even better user protection are underway.[35] However, notwithstanding these substantial legislative steps against unfair practices, there may still be a bias in favor of transferring the use rights of personal data for commercial purposes.

Data protection laws are public laws enforced by government agencies imposing administrative fines. Some legal scholars and the European Commission have considered whether the transfer of privacy rights in exchange for access to online services constitutes a private contract, whose violation triggers civil sanctions.[36] This would imply an extension of user protection by the rules of contract law, such as unconscionability, unfairness, or the good faith principle. In business to consumer contracts, it would also include the judicial control of General Terms and Conditions.[37] (Some countries, like Germany, have even extended this judicial control to B2B contracts.) The associated legal remedies would then in particular include injunctive rights and damage compensation. This could especially improve data portability for the subjects of information. Whether the present practice of exchanging personal details for access to services meets the requirements for a valid contract is, however, questionable. The transfer of rights is not exclusive—the user can subsequently transfer the same rights to another company. Also, the user can revoke the transfer at any time which is not in line with the general "*pacta sunt servanda*" rule for all contracts. It is furthermore questionable whether the platform provider intends to commit to a legal duty to provide the service, whose violation might entail remedies like warranty claims and damage compensation. A user with an alias name and address might raise warranty claims from the service provider. For these reasons, an expansion of privacy protection by the rules of private contract law remains improbable in this area.

[35] In the EU, this includes especially the two draft bills, the Digital Markets Act (2020) and the Digital Services Act (2020).

[36] Schweitzer (2019).

[37] Cohen N and C Wendehorst (2021) ALI-ELI Principles for a Data Economy—Data Transactions and Data Rights, p. 18.

5.5 *Transferring Personal Data for Money*

Most privacy rights are alienable rights, which can be transferred in return for a consideration in kind or in cash. If users regularly give up privacy rights in return for a service, there is little reason to say they cannot transfer those rights for money, provided that several practical problems can be solved.

A privacy right which can be sold for money causes definitional problems of how to separate data protected personal information from anonymized information, which is still person related. It is difficult to define the conditions under which an individual still owns or co-owns "her data", once they have been anonymized. In the EU, personalized data are those by which an individual is "identified or identifiable".[38] Only derived datasets, which are not personalized in this sense, can be placed in a data commons or be part of an "open data" rule without explicit consent by the subject of information. The legal term "identifiable individual" delineates the difference between protected personalized data and unprotected non-personalized data. However, legal uncertainty arises from the fact that the anonymization of individuals alone is not sufficient for ending the right from data protection.

Assume, for example, that the invoice for a valuable watch reveals the buyer's name, gender, address, age, account number, and address at work. This is clearly personalized information, which can only be transferred with the buyer's consent. Given the wealth of personal information, removing the person's name will probably not suffice for depersonalization, so anyone using the data without permission can be subject to sanctions. Even if, additionally, the address information is reduced to the city and neighborhood, the buyer could perhaps still be identified by the remaining data. Also, it is not enough to depersonalize the end product, i.e., the derived dataset. The process of depersonalization must ensure that third parties cannot access any intermediate datasets that are not yet fully depersonalized.

This legal uncertainty resulting from the unclear delineation of data protected personal versus non-personal and unprotected data entails particularly high economic costs. This causes huge unintended consequences for *erga omnes* rights, much more so than for contractual rights, as research on the economics of property shows. Private property or

[38] Art. 4, General Data Protection Regulation (EU) 2016/679 (GDPR).

similar rights of dominion impose duties on a large and unspecified number of persons. In commercialized societies and globalized markets, such rights should be precisely defined, easily recognizable, and then preferably protected by a simple hands-off rule.[39] The legal term "personalized data" does not meet this requirement. An ill-defined property right of "personal data" for the subjects of information would be impractical and create huge economic losses, impeding a primary market for data. Such a market would require the term "personalized data" to be defined not by a muddy standard but by a precise rule. The EU Commission has shown how this can be done in the case of the Digital Market Act, by replacing the imprecise and information-intensive term "dominant position" from competition law with a precise definition of the "gatekeeper" as the addressees of the law. A "hard" definition of anonymization is difficult but necessary for a commercialized primary market of personal data. It remains a task for the lawmaker to define precise and simple norms. Those norms must protect privacy sufficiently, however, without extending data protection to a comprehensive dominion of the subjects of information over data which are related to them but cannot reveal their identity.

A second problem which impedes transactions between the subjects of information and the controllers of data is the possibility of co-ownership of data which might be generated more than once by several individuals. The co-owners of a datasets might have a veto position, which can create the anti-commons problem and the related underuse of the data.

Transaction costs are a third and huge economic problem. It is hardly imaginable that many transfers of privacy rights from individuals in return for money can be organized as a series of discrete transactions, click by click, so to speak. Intermediaries comparable with performance rights or authors' rights organizations could help overcome this problem.

However, these practical problems aside, giving the subjects of information a property right to their data, a right which is not only marketable but moreover highly valuable for the subjects of information on the primary data markets, is not in line with general welfare considerations. They imply an open data regime or mandated access in the secondary markets for raw data. If the law opened access to the raw data for the controllers' competitors on downstream markets, this would reduce their

[39] Smith HE (2003) The Language of Property: Form, Context, and Audience. Stanford Law Review 55: 1105–1191.

market price and melt away monopoly profits in the secondary market. The subjects of information, who sell their privacy rights on primary markets, would lose too. Granting an exclusive, transferable, and profitable right to the subjects of information is at odds with the benevolent effects of open data, which has increasingly gained support in recent years and accords with general welfare considerations.[40] By contrast, a profitable property of data for the subjects of information would require maintaining the current de facto ownership position of the internet giants, including its negative consequences on downstream markets. The internet giants would only be forced to share some of their monopoly profits with the subjects of information. This would be an inefficient solution showing again that property protection for economic reasons should not be mixed up with privacy protection for constitutional reasons.

6 Conclusion

This paper has analyzed the suitability of several existing legal forms to improve the markets for data in the internet and discussed pending legal reforms. On the primary market for data, the law protects the privacy of the subjects of information. That privacy can be relinquished in exchange for "free" online services or for money. On the secondary market, the de facto property right of the controllers of data gives them monopolistic market power, obstructing downstream data markets.

We have argued that unfair trade practices, which redistribute income without any productive effect, should be curbed by rules of administrative law, whose violation triggers administrative fines and criminal sanctions, and by civil liability resulting from unfair trade practices and the violation of consumer protection laws. A welfare-oriented use of information cannot be achieved by competition law alone, but rather through a combination of different property rights. An alienable *erga omnes* right for the subjects of information should exist on the primary market to protect their privacy, but leave the final decision to give up privacy to the individual subjects of information. This right should not extend to a general dominion over "one's data", which is not derived from the specific rationale of data protection. On the secondary market, the law should impose duties to share raw data and unprocessed data with competitors,

[40] Many of the authors cited in this paper have supported an open data solution for unprocessed raw data.

preferably with an open data rule. This would remove the current de facto property of data controllers. Processed and newly derived datasets should, however, remain protected by copyright law as for them the welfare conditions for granting an intellectual property are met.

Discussion

Ajit Mishra

In this thought-provoking essay, the authors seek to raise some fundamental issues about the features of social media data and tech platforms. They argue that the existing legal forms are not conducive to harnessing the potential of big data to promote social welfare. The traditional frameworks of property, intellectual property, the contract, and competition law are not fully suited to provide a reasonable legal framework for this new industry.

The problems with property rights over social media data stem from the fact that raw anonymized data of individuals of a non-personal nature should be widely shared, but processing of such data, where relevant, would need protection to create the right kind of incentives. Ideally, big data should be a global common of anonymized raw data, which the subjects of information transfer against a consideration, and these data should be provided in an easily accessible format. The present legal status, which grants the controllers of the (almost raw) data de facto property rights, gives rise to market power, cements monopoly positions, and impedes downstream information markets and the generation of valuable new datasets for public use, for instance on public health or the status of the environment. Hence, the challenge is to strike a balance between strengthening incentives and property rights for processed and derived datasets on the one hand, and greater access and use of unprocessed data on the other hand.

When the issue of property rights is raised, it is important to note that there are several layers of agents involved in big data—beginning with the producers of the data to the controllers and processors of data. At present, this issue is receiving a lot of attention, as data of billions of individuals are being utilized for personalized services and advertising by internet platforms, and this is likely to grow substantially over the coming years. As Posner and Weyl (2018) put it succinctly, individuals using the tech platforms of Facebook and Google are like the producers who provide their labor (data) for (mostly) free, akin to a form of

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(techno)feudalism. This has implications for efficiency of this market for data production and processing, and individual privacy.

The authors ask a very interesting question regarding whether the subjects of information have property rights over their own data. To the extent, these data involve privacy concerns; there is little disagreement that some balance has to be sought between privacy concerns and economic as well as scientific benefits to society. Most of these data are generated while individuals are conducting searches or making purchases as consumers, and while individuals value their own privacy, they are happy to 'sell' this information at a very low price or small services (search engines). The authors argue that there is no basis for a quasi-natural right over one's own data, though privacy concerns need to be suitably addressed.

However, effective data protection (for privacy purposes) is difficult as individuals are happy to give consent without realizing the full price or implications. In many cases, individuals are not fully aware of how this private information will be used. Many would hope that as these data gathering becomes more prevalent and platforms or controllers are forced to give notice and obtain consent, individual users will be better informed and will exercise care in choosing to provide information. But this 'notice and choice' or 'notice and consent' approach may not work to provide solution for privacy violation for another reason, due to information externalities. As MacCarthy (2011) points out, in the presence of (negative) information externalities and potential risks of information leakage, individual consents are not effective. This issue of information externalities has been explored recently by several authors to show how individual information will get under-priced and how platforms will always obtain more information than what is socially optimal (Acemoglu et al. 2022; Bergemann and Bonatti 2019; Choi et al. 2019).

The central issue is that data of one individual are not only informative about this individual but also informative about other individuals who are 'similar' in certain aspects. In fact, improvements in data analytics, computation power, and machine learning have made this process of inference about similar individuals less noisy and accurate, especially when data pool is large. This means that individual data are actually social data. In such a context, the notion of individual property rights is not clear.

The 'social data' nature of big data has strong efficiency implications too. The following example adapted from Acemoglu et al. (2022) illustrates the point. Consider an economy with one individual where the

platform's valuation of individual's data is 1 and individual puts a value of v on own data. Ideally, when v is less than 1, platform can obtain the information at some price between v and 1, *leading to mutual benefits*. Now consider two individuals (say, similar v), where one individual's information is a good signal of the other individual's information. This means that the platform, having obtained one individual's information, is already partially informed about the other individual. Hence, the price for the second individual's data will be lower. When the two individuals are not communicating directly or coordinating, in fact both individuals will receive a lower price for their consent to provide data. We can think of a situation where even when v is greater than 1, both individuals sell their information for a price less than 1, as each believes the other to have sold. This is clearly an inefficient outcome.

Common solutions such as more competition among platforms or some form of portability where the subject of data is entitled to obtain data held by the controller and reuse for her benefit do not necessarily address this issue of informational externality. When an individual leaves a platform and joins another platform, portability implies that data held can be removed from the old to the new. This can raise individual's bargaining power to some extent; but the basic under-pricing issue discussed above is not addressed. Portability will have implications for incentives for processing as well.

Information externalities have been more potent due to significant advances in big data analytics which have made it possible to draw more accurate inference about those consumers who had not shared their data based on the data gleaned from those who had shared. Clearly, there is a need for research into the form and nature of regulation to address information externalities in this market for individual data.

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CHAPTER 3

"A Giant Glob of Oily Ambiguity": On the Use of the Concept of Power in Economics

Luis Felipe López-Calva and Kimberly Bolch

1 Introduction

Power is at the core of economic interactions. It is central to influencing how actors bargain over scarce resources, respond to incentives, and make everyday decisions. Despite this, as Lukes (2016, p. 16) notes, "power

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and economics are not often put together as a topic." Indeed, this important concept is rarely made explicit in traditional neoclassical economic models. Power, as a concept, is an underlying element in economic theory, embedded in certain aspects of market interactions, as well as in the making of the rules that regulate them. The non-explicit use of the concept might have deleterious consequences for both analytical rigor and policy conclusions. When economists fail to take power into account, they may be at risk of not fully disentangling the different aspects of a problem that they are modeling. Moreover, this can lead (and has led) to ineffective policy advice that is not fully connected to the real world. John Kenneth Galbraith remarked on this challenge almost fifty years ago. In his 1973 presidential address to the American Economic Association on *Power and the Useful Economist*, he claimed that "in eliding power—in making economics a nonpolitical subject—neoclassical theory…destroys its relation with the real world" (Galbraith, 1973, p.2). By putting aside an essential aspect that determines the outcome policymakers are trying to influence, for example, any recommendation of action could indeed fail to change such outcome.

However, as the field of economics has evolved over the past half century, it has also made great strides in engaging with the concept of power more explicitly—beyond the traditional idea of "market power" when referring to market imperfections. In 1991, Pranab Bardhan wrote the article *On the Concept of Power in Economics*. In it, he surveys the conceptual and empirical advances made at the time—discussing how power has been considered in the context of bargaining games, economic organizations, capitalist authority relations—and discusses both structural and behavioral approaches (Bardhan, 1991). Thirty years later, this chapter seeks to update that review by taking stock of more recent developments in the field. Bringing the microeconomics of power relations among actors into the analysis of economics and economic policymaking is arguably a way to go back to the main concerns of classical thinking in both economics and political philosophy. Here, we highlight advances in both macroeconomics and microeconomics and draw in particular on insights from the subdisciplines of behavioral economics and political economy, among others.

This chapter is organized in three main parts. In the first part, the chapter tackles "the giant glob of oily ambiguity"[1] that is the concept of power, exploring its evolving definition in the context of economics and reflecting on why economists should care about it. It emphasizes the role that inequalities in power ("power asymmetries") play in shaping strategic economic interactions and distorting economic decision-making processes. In the second part, the chapter considers how taking the concept of power seriously can shift the way economists conduct their analyses and frame policy advice. It provides illustrative examples from four different economic "spheres": the household sphere, the societal sphere, the market sphere, and the political sphere. Finally, in the third part, the chapter turns the lens of power inward. It considers how power relations have functioned within the economics profession itself to lead it into a path that made it to fail to take the concept of power seriously enough and contends that economists have a responsibility to do so going forward.

2 Unpacking the Concept of Power in Economics

2.1 What is Power?

As the title of this chapter emphasizes, the concept of power is an admittedly slippery concept. For example, Dowding's (2011) *Encyclopedia of power* includes over 380 distinct entries. For the purposes of this discussion, the authors will limit their focus to the use of the concept of power within the disciplinary context of economics—setting aside the expansive engagement with the concept in other disciplines such as anthropology, political science, sociology, or philosophy. Economics being a positive science, it is important to define power in a way that has concrete practical implications. However, even within economics, there is no singular agreement about what "power" means. Its definition remains very much an evolving one, as debates remain open regarding both theoretical views about what power is and empirical views about how power can be measured or quantified. Depending on the context, these approaches

[1] Dahl uses this expression to refer to lack of definitional clarity surrounding many of the large, abstract, and complex concepts used in political theory—such as "power." He states that: "the writing in our own field has been cluttered for so long with so many *giant globs of oily ambiguity* [emphasis added] like State, Sovereignty, Power, etc." (Dahl, 1957a, p. 1056).

can be vastly different. This is consistent with Robert Dahl's observation in his seminal 1957 paper on *The Concept of Power*, that "…a Thing [such as power] to which people attach many labels with subtly or grossly different meanings in many different cultures and times is probably not a Thing at all but many Things" (Dahl, 1957b, p. 201). Moreover, as Dowding (2012, 2021) argues, these multiplicity of definitions are not necessarily rival; rather, different conceptions may be better suited to different contexts or lines of analytical inquiry.

Within economics, one of the most common definitional approaches relies on an outcome-oriented view of power—emphasizing how relative differences in power between actors matter for shaping the set of outcomes they are able to achieve. These approaches can be summarized mostly succinctly in Bertrand Russell's (1938, p. 23) definition of power simply as "the production of intended effects." He suggests that "A has more power than B, if A achieves many intended effects and B only a few." Emphasizing the role of power differentials in specifically shaping outcomes through behavior, Dahl (1957b, pp. 202–203) revises this definition suggesting that "A has power over B to the extent that he [or she] can get B to do something that B would not otherwise do." Alternatively, Bardhan (1991, p. 274) proposes a more game theoretical variant of this definition, suggesting that "A has power over B if A has the capacity to alter the game (preferences, strategy sets or information sets) in such a way that B's equilibrium outcome changes."

The definition used in this chapter primarily follows Dahl's popularly accepted behavioral definition but includes one additional key element. It contends that "A has power over B to the extent that A can get B to do something that B would not otherwise do" **to produce an outcome that is in the interest of A**. This additional clause brings in two important points, as raised by Harsanyi (1962), which complement Dahl's approach to power: the cost and strength of A's power over B. The former refers to the opportunity cost incurred by A to exercise power over B, while the latter refers to the opportunity cost which B incurs if B were to refuse to take the action that A wants. The opportunity cost for B to ignore A importantly brings into consideration both the principal-agent participation constraint and B's outside options. Although these concepts were originally thought of as quantitative criteria for the measurement of power and thus for their further use in power comparisons, a topic which is beyond the scope of this chapter, they are nevertheless useful to

keep in mind for the rest of our discussion since we can think of them as describing the actual feasibility of a power relation.

Notably, game theory was a critical means through which traditional neoclassical approaches to economics were expanded to allow for the analysis of power. Through the Nash (1950) and Rubenstein (1982) bargaining models, the analysis of power grew within economics—even if it was not explicitly modeled as such. In standard Nash-Rubinstein bargaining models, there are multiple determinants of a game's outcome including impatience, outside options for players, inside bargaining leverage, and actors' commitment capacity. Here, we argue that these aspects have institutional, social, and economic determinants manifested as a power relationship (though it is, of course, not the only relevant feature). Our analysis can be seen in the context of Platteau's (1994a, 1994b) discussion on the institutional preconditions for market economies to operate in terms of the traditional theorems of welfare economics, preconditions that are not explicitly discussed in our economic analysis. One contemporary example of how these power relationships shape strategic interactions is the opaque procurement contracts for coronavirus (COVID-19) vaccines. In comparison with high-income countries which have greater bargaining power, many low- and middle-income countries have had to enter into procurement agreements typified by higher prices and more extensive indemnification clauses (Transparency International, 2021). This game-theoretic approach to power within economics also brings in the important aspect of time: considering how static versus dynamic sequential bargaining may matter for influencing the nature of a power relation. In this context, actors' commitment capacity (given the technologies available to mitigate the risk of contracts breaking down in the future) takes on even greater relevance.

Before moving on to a discussion about where power comes from, it is important to note that the definitional approaches to power discussed here reflect what is known in the literature as "power over"—emphasizing the idea of power as a relational concept and something that is fundamentally wielded over someone else. Another concept of power that is beyond the focus on this chapter, but is nonetheless relevant for a subset of economists, is the idea of "power to." In contrast to "power over," "power to" is a non-relational concept of power that emphasizes an individual's power to achieve to something on his or her own (Pitkin,

1972). Morriss (1987) refers to this as "power-as-ableness." This view is thus more closely linked with economic approaches grounded in Amartya Sen's capabilities approach. In the context of the capabilities approach and the achievement of so-called functionings (beings and doings), one could think of "power to" as the power "to be" or the power "to do." This is consubstantial to the idea of "agency." Accordingly, "empowerment" could be viewed as the expansion of one's such "power to."

2.2 Where Does Power Come from?

In the context of economics, understanding where power comes from is arguably just as important as understanding what power is. While power comes from many different sources, economists tend to focus in particular on the relevance of power as derived from a few key (often visible and quantifiable) sources such as legal or regulatory means (i.e., delegated authority, barriers to entry in the market), technological drivers (i.e., natural monopoly), and control over resources (i.e., control over different types of capital or information). The traditional notion of "economic power" is closely related to this last source of power, as it derives primarily from the ownership of and/or control over assets. While analyses of economic power tend to focus on power derived from financial capital (i.e., the greater influence of wealthy individuals), power can also be derived from a broader range of assets including natural capital, social capital, or physical capital. In this context, property rights are essential in (re)allocating power, with different implications for privately owned versus open access resources.

However, this chapter would like to emphasize that in many cases, power also stems from more "hidden" or intangible sources. This notably includes the power of information and the power of ideas. Given the (often extensive) power of information and ideas, one way that actors can exercise their power is to shape the beliefs of others. Some of the recent behavioral economics literature focuses on behavioral "nudges" to achieve this goal (a notion popularized by Thaler & Sunstein (2009)). While policies that follow this approach may ultimately lead to increases in welfare at the individual or collective level, we cannot ignore the fact that they are also thus explicitly the result of the exercise of (often hidden) forms of power. Following this more Foucauldian interpretation of behavioral nudging, we see that power is in fact at the heart of understanding

why this approach does or does not work to control the behavior of others (Foucault, 2002). Another related but distinct source of hidden power is the way that power is allocated and sustained through social norms (understood broadly as socially accepted ways of behaving). For example, we can think about how social norms about gender roles reshape power relations in the context of bargaining games to promote unequal outcomes for women and men.

2.3 Why Should Economists Care About Power?

While we have discussed what power is and where it comes from, perhaps the more pressing question on the mind of economists is why they should care about it. The short answer is that power distorts markets and it distorts policymaking: two of the most central concerns of the discipline. A principal reason why some economic advice has failed in the real world is because of an underlying analytical failure to take into account the role of power in shaping or breaking down contracts (both formal and informal) among actors. While economists have long accepted the role of information asymmetries in shaping the micro-foundations of these transactions, the authors of this chapter contend that economists must also fundamentally accept the role of power asymmetries. Indeed, we must consider the principal-agent problem as one that arises not only from asymmetric information but also from asymmetric power relations: starting from a situation in which both information and economic resources are unequally distributed, the *principal* (say, the employer or the shareholder of a company) makes the *agent* (the employee or the CEO of a company) act in the principal's interest.

While the concept of power has now become a more fashionable topic among economists, this is a relatively new development. Indeed, the authors of this chapter have often joked that if you brought up the topic of "power" among economists, it was not so long ago that they would likely assume that you were talking about electricity. Moreover, even as the concept of power became a more common theme in economics seminars, its focus has remained somewhat narrow. Notably, analyses of power within economics are often related to concerns of efficiency—emphasizing, for example, the efficiency costs of politically connected firms. However, we now know that the relationship between power and efficiency is, in fact, ambiguous. In some cases, power asymmetries can even maximize efficiency. For example, contracts in which an

agent is the residual claimant of surpluses generated in order to maximize effort (certain kind of sharecropping arrangements). And, conversely, it is possible that the redistribution of power could lead to less efficient outcomes in cases where it breaks down contracts. However, power asymmetries of course do not only interact with efficiency but also with equity. Indeed, the fact that one actor (or, often, a group of actors) has more power than another is at its core a distributional question. The concept of power asymmetries and the concept of inequality (in particular, as manifested in the concentration of monetary or non-monetary resources in the hands of a few) are very closely linked. While not always directly linked to discussions of power, recent work by economists advancing research on and measurement of the concentration of wealth and income at the top marks an important advance in this field. Though more broadly, far more research is needed within economics to understand the joint interactions and tradeoffs between the trio of power, efficiency, and equity. In many cases, the tradeoffs may not be so obvious.

In this context, it is important to think of power asymmetries not only as a problem, but also as a potential solution (what we refer to here as "power-driven solutions"). How could the reallocation of power to different actors work to improve efficiency and/or equity outcomes? Let us discuss again the principal-agent problem and standard models of mechanism design, which emphasize the role of asymmetric information and show how (second-best) efficient solutions can emerge, generating rents to be shared between actors. Yet, this requires unequal access to resources—creating a power-driven solution. Williamson's (1975) discussion of markets versus hierarchies is arguably a case in which introducing a power relationship (hierarchy) solves a commitment problem for firms driven by bounded rationality and opportunism. It is important to note the contrast between power-driven solutions and legal solutions (which may work in parallel but are distinct). While introducing new laws or policies may change actors' outside options or enhance contestability in certain contexts, in some cases rules on paper cannot really change the underlying power asymmetries—and thus may be ultimately ineffective in changing outcomes. In this context, the "form" of rules on paper must instead be analyzed in terms of its capacity to perform the "function" it is intended to play (World Bank, 2017).

3 Applying the Concept of Power in Economics

Having pinned down a bit more clearly what is meant by the concept of power in economics, we now turn our attention to its application. In this section, we explore how taking into account the concept of power can shift economic analysis (both methods and outcomes) as well as the resulting policy advice. It by no means seeks to be comprehensive in its treatment; to the contrary, it seeks to provide a few concrete examples to illustrate this broader point. The section is divided into four subsections that respectively discuss examples from different economic spheres: the household sphere, the societal sphere, the market sphere, and the political sphere.

3.1 The Household Sphere

The question of how households make decisions has long preoccupied economists. However, incorporating the concept of power has shifted the way economists think about and model household decision-making behavior. Historically, a traditional economic model of the household followed Gary Becker's (1965, 1981) unitary model which viewed the household as a single "individual." In this model, all household members are assumed to share common preferences and resources are assumed to be pooled. As criticism of this model grew, alternative "collective" approaches emerged to take into account inequalities in intra-household dynamics (Bourguignon & Chiappori, 1992). In particular, intra-household bargaining models (both cooperative and non-cooperative) considered how household members may have different preferences, different access to resources, and different outside options—ultimately shaping their relative bargaining power to influence household decisions. In particular, understanding how these factors interacted with gender was essential for effectively modeling the household (though this importantly extends to the societal, market, and political arenas as well—as noted by Agarwal [1997]). In this context, taking power asymmetries into account fundamentally shifted the way that economists approached their analysis of the household to better match the realities on the ground.

Not only does this conceptual shift have analytical and methodological implications, but it also has very direct policy implications. As Alderman et al. (1995, p. 1) have noted, "when policymakers neglect patterns of distribution within households, they do so at their peril." Indeed,

how policies target resources differently to different household members (rather than to the household as a single unit) can lead to very different equity and efficiency outcomes—as well as affect the existing distribution of power within the household. One clear example of how this has translated into policy change is the decision of many governments to target conditional cash transfer payments to women (Fiszbein & Schady, 2009). This approach has often been justified based on the notion that mothers are more likely than fathers to spend income in ways that benefit children,[2] that it can promote welfare benefits for the female recipient such as increased control over resources and/or increases in bargaining power within the household, and that it can help to ensure that programs are designed in a way that reduce gender-specific barriers to entry. While targeting programs to women represents a first step in policymakers taking into account how power operates within the household to shape economic decision-making, recent evidence suggests that we likely need to push our understanding (and thus policy approaches) much further still. For example, in their study of the intra-household bargaining effects of asset transfer programs targeted to women in ultra-poor households in Bangladesh, Roy et al. (2015) reveal many of the nuances of how power dynamics interact with gender relations to shape what it means to "own" an asset and how this can differ by the type of asset or specific decision-making domain in question.

3.2 The Societal Sphere

In the context of the societal sphere, incorporating the concept of power has shifted the way economists model social equilibria. For example, traditional economic models tend to focus on the interaction between two actors ("dyadic"). However, models which consider how power operates in networks with three ("triadic") or more actors can shift the way we analyze decision-making behavior within socially connected networks. An excellent illustration, as discussed by Basu (1986), comes from Václav Havel's 1978 political essay on the *Power of the Powerless*. In this essay, Havel explains how in a "post-totalitarian system" it is possible to have a dictatorship with no dictators (Havel, 2018). He argues that people

[2] Note that while some historical studies suggested this to be the case (e.g., Thomas, 1990), more recent evidence on the topic is mixed (see, for example, results from the global systematic review conducted by Bastagli et al. [2016]).

comply with the rules not because they fear punishment from the dictator, but because in not complying they risk being ostracized by society. He cites the example of a greengrocer who complies with the expected convention to display a "Workers of the World, Unite!" sign in his shop window (regardless of his ideological stance) to publicly signal his willingness to obey. In this context, it is inter-personal suspicion that sustains the sub-optimal equilibrium. This reflects the previously discussed importance of beliefs as a key source of power. Indeed, as Basu (2018) has later argued, more than the law itself (which he claims is merely "ink on paper") we are governed by a "republic of beliefs." Or, as Binmore (2020, p. 90) recently put it, "we are bound only by a thousand gossamer threads woven from our own beliefs and opinions."

What types of implications does this have for policy? Thinking about how power works at the societal level in this way reinforces the notion that formal rules are not enough to change outcomes on their own. Critically, we need to think about the function that those rules play and how that interacts with existing power dynamics. For example, the function of coordination. If rules can work to create a "focal point" that coordinates societal beliefs and expectations, they may actually be effective in changing the existing equilibrium (Basu, 2018). Dixit (2018) provides us with the example of how this type of solution worked (with modest success) in the context of the *Addiopizzo* movement to combat the mafia's extortion of local businesses in Palermo, Italy, in the early 2000s. In what is almost an inverse case of Havel's greengrocer anecdote, the movement convinced businesses to display an "Addio Pizzo" (meaning "Goodbye 'Pizzo' [mafia protection money]") sticker to publicly signal their commitment to not paying the Pizzo. In this context, the collective action began to shift expectations toward a non-extortion norm and decreased the likelihood of the mafia retaliating against any individual business for their refusal. As we can see in this case, understanding the source of power and how it is socially sustained in the community fundamentally matters for the effectiveness of the intervention.

3.3 The Market Sphere

The most obvious manifestation of power in economics is the one related to markets, and explicitly labeled as "market power," as the situation where one firm or a group of firms (monopoly/oligopoly; monopsony when it refers to one buyer) can influence the price at which a good or

service is sold, departing from the standard perfect competition model. The two fundamental theorems of welfare economics define, first, that under every simple assumption, the existence of "local non-satiation," every equilibrium is Pareto optimal, in the sense that no individual can be made better off without making another one worse-off. The second fundamental theorem borrows from mathematics the "theorem of the separating hyperplane" to prove that, if preferences and production technology are convex, any equilibrium can be decentralized through a market mechanism. The beauty of those essential results in economics rely on their simplicity: local non-satiation and convexity lead us to a functional "invisible hand" world, whereby individuals who pursue their own interest can reach, through market exchange at a given price vector, an optimal outcome in the Pareto sense. Yet, as Platteau (1994a, 1994b) discusses at length, the institutional aspects required in addition to those simple assumptions, which are of course not explicit, are many and complex. For example, one individual cannot steal the endowment from the other (property rights must be well defined and enforced). Additionally, full information about prices, technology, and preferences must be available to all in the exchange. Clearly, no individual should be able to exercise any type of pressure through non-market mechanisms to influence the conditions of the exchange.

A large share of transactions in the market, depending on the context, takes place under competitive conditions, within a context, however, in which norms and law constrain power: the capacity of actors to influence the conditions of the exchange through non-market mechanisms (even violent threats) must be prevented by law. Law plays in this way one of its key functions which is to be a constraint on power.

There are "natural monopolies" where technology makes it inefficient to have competition (think of network industries or utilities in general where the fixed cost of provision is too high and the demand crosses the variable cost in its declining range). Imperfect mechanisms have been put in place to regulate such monopolies, including public ownership as a second-best solution (Laffont & Tirole, 1993). Market power, however, exists in many markets beyond natural monopolies and that market power is typically the manifestation of power of certain economic groups beyond the market realm. Recently, UNDP (2021) showed evidence of high markups in Europe and Latin America in a wide range of sectors, discussing the weak capacity of antitrust laws to enforce competition because of the "capture" of the sectors by economic groups with political

power. Such manifestation of power, it is also shown, leads to inequality and lower productivity as a societal outcome. Yet, many recommendations by economists continue to be the establishment of antitrust laws and commissions, without incorporating the fact that the power equilibrium must be addressed for the institutions not to fail.

A second example of power manifested in economic transactions relates to the existence of asymmetric information. In a traditional principal-agent model, information and the existence of a resource that one party needs (monetary, for example) become the parameters that determine the power game (and thus the allocation of the surplus in that exchange). Even at the macro-level, classic analysis like Shapiro-Stiglitz (1984) shows how unemployment in equilibrium can solve an efficiency problem by "disciplining" workers, which comes basically by a redistribution of power in the employer-employee relationship.

Why does this matter for policy? As Bardhan (1991) discusses in his classic paper, incorporating power in our understanding of an economic transaction and its outcome must involve a clear identification of the "inside" and "outside" options of the parties involved. If assets are mobile, for example, investors can threaten to leave in a negotiation with governments (which is different, for example, for investments in extractive industries). Mobility of assets and the bargaining game between capital and political power does influence the evolution of democracy and redistribution throughout history (Boix, 2003). The capacity to survive in a war of attrition in wage negotiations between unions and employers is a clear illustration of "inside options," while the market conditions could determine what are the "outside options" for workers if the contract is dissolved.

Policies, in principle, could affect those inside-outside options through legislation, redistribution, or other regulatory or economic instruments. In Brazil, an active minimum wage policy, for example, did result in higher wages being enforced and negligible effect on employment; in a relatively closed-economy like Brazil, with high concentration across sectors, the minimum wage increased the bargaining power of workers, and a certain degree of rent-sharing was induced as a redistribution from capital to labor. Economic advice that does not understand the power dynamics embedded in an economic interaction is likely to be less effective.

3.4 The Political Sphere

Finally, in the context of the political sphere, incorporating the concept of power has shifted the way economists model principal-agent problems between citizens and political leaders. Traditional approaches to this issue rely on a principal-agent model where voters are able to hold politicians accountable through incentives for reelection. Extensions of this approach also consider the relationship between politicians and public officials as well between public officials and frontline service providers. However, if we take power into account, we can think of many ways in which this relationship can start to break down and lead to "government failures" (World Bank, 2016). In some cases, this starts to look more like an inverted principal-agent model. For example, in the context of clientelism where politicians use their power to buy citizens' votes through patronage. In other cases, it may look like a traditional principal-agent model but with different weights for different voters given the heterogeneity of their power as individuals (i.e., elites) or as a group (i.e., organized groups of citizens) (World Bank, 2017). This is reflected, for example, in Gilens and Page's (2014) empirical study on policy influence in the United States which finds that the probability of policy adoption is far higher when aligned with the preferences of economic elites or interest groups than with those of average citizens. This is closely aligned with the previous discussion in this chapter on the links between power and inequality.

While this clearly has policy implications at the national (and subnational) level, it also has important policy implications at the international level when considering the role of external actors such as aid donors. The development community has long struggled with the question of aid effectiveness. Lending and interventions have been measured, monitored, and evaluated extensively. However, as the authors of this chapter have previously noted, what this voluminous and inconclusive literature ultimately points toward is that "aid is neither inherently good nor inherently bad for development; what matters is how aid interacts with the prevailing power relations and affects governance" (World Bank, 2017, p. 26). Thus, it is critical that external actors consider not only the potential efficiency or equity outcomes of advised policies or financial outlays, but that they also fundamentally consider how these interventions may interact with the existing distribution of power to promote their (in)effectiveness. Just like the aforementioned "government failures," we

may think that "development assistance failures" occur when an intervention ends up inadvertently reinforcing a power equilibrium that sustains the poor development outcome that it sought to alter in the first place. Ultimately, this may mean considering alterative policy approaches that may not conform to "first best" solutions based on traditional technical criteria but may in fact be more likely to succeed given the existing power arrangement in a local context. This may also mean considering complementary interventions that work to promote government (and donor) accountability for effectively delivering on those policies, such as increased transparency and publicity of relevant information to citizens (Devarajan & Khemani, 2018)—thereby reshaping the power dynamics within the principal-agent hierarchy.

4 Turning the Lens Inward

While this chapter's primary intent is to discuss how the concept of power has shifted the way we think about economic models and the resulting implications for policy advice, we would be remiss if we did not also turn the lens inward. It is important to remember that the use of the concept of power within mainstream economics was (and is) also shaped by power asymmetries within the discipline itself. In this section, we reflect on how these dynamics manifest within the profession as well as across the broader social sciences.

4.1 Power Within Economics

In more recent years, economists have begun to reckon with how power hierarchies within the discipline have constrained who gets to become an economist—and even among that select group, whose ideas are valued. In terms of diversity within the profession, both women (see, for example, Lundberg & Stearns, 2019) and minority groups (see, for example, Hoover & Washington, 2021) remain greatly underrepresented. Additionally, there is very limited geographic diversity, as economists from the global south remain underrepresented in leading conference presentations, journal publications, citations, and journal editorial boards—including within the subfield of development economics (Amarante et al., 2021; Angus et al., 2021; Fontana et al., 2019; Rodrik, 2021). In addition to being an issue of equity and fairness, research suggests that a lack of diversity in the profession could work against goals of

producing knowledge that is "robust and relevant" (see Bayer & Rouse, 2016 for a review of this literature). This lack of diversity has fostered, for example, blind spots within economics on research topics such as racism and discrimination (issues intricately linked with the concept of power) (Mason et al., 2005). Power hierarchies within economics have limited not only whose ideas are heard but also the types of topics and analytical methods that are rewarded. Publication and professional promotion incentives in the field bias economists toward topics which can be approached with a greater degree of "hardness." In economics, this tends to favor empirical work demonstrating causal identification or theoretical work expressed using mathematical models and results in what Akerlof (2020) refers to as "sins of omission"—whereby very important but less "precise" topics (such as the giant oily glob that is the focus on this chapter) get passed over. Indeed, the so-called tyranny of the top five (referring to the strong career incentives to publish in the top five economic journals) has been shown to narrow the scope of research that many young economists are willing to take on (Heckman & Moktan, 2020). Critically, these dynamics have served to shape how "mainstream" ideas within economics have (and have not) evolved to be engaged with the concept of power, given that it may require approaches that do not fit neatly within the existing reward structure.

4.2 The Power of Economists

As this paper has argued, when economists fail to take into account the concept of power, they risk distancing their methods and their policy advice from the realities of the world. Indeed, as Ozanne (2015, p. 12) notes in his book on *Power and Neoclassical Economics,* the concept of "power is important, because without it economists cannot seriously claim that they fully address the core problem they define their discipline by." The cost of not fully understanding these problems is particularly high for economists, given the relative degree of power that they wield in our society. This power is exerted both directly (through the appointment of economists to many top positions in government agencies, private corporations, and international organizations) and indirectly (through the widespread influence of economic reasoning and tools on policymaking) (Hirschman & Berman, 2014). The influence of economists is particularly stark in contrast to that of other social scientists (Fourcade et al., 2015). For example, empirical evidence from the United States suggests

that compared to other social scientists (such as anthropologists, political scientists, psychologists, sociologists, historians, or demographers), economists are the dominant group of trusted experts for both policymakers (reflected, for example, by their relative number of testimonies before Congress [Maher et al., 2020]) and the general public (reflected, for example, by their relative number of references in New York Times media coverage [Wolfers, 2015]). Almost 100 years ago, John Maynard Keynes made a similar observation. In his *The General Theory of Employment, Interest and Money,* he noted that "the ideas of economists and political philosophers, both when they are right and when they are wrong, are more powerful than is commonly understood. Indeed, the world is ruled by little else" (Keynes, 1936, p. 383). However, as the adage goes, with great power also comes great responsibility. While economics has made great progress in incorporating the concept of power in its approach, the profession has a responsibility to continue furthering these efforts. There have already been too many notorious failures of policy advice based on traditional "power-free" economic models.

5 Conclusion

As this chapter has discussed, while power is a central concept shaping economic problems, it is often overlooked in traditional models. The discipline's lack of engagement with the concept has been a concern of economists for hundreds of years now. Indeed, as Mosca (2018, pp. 1–2) notes in her history of *Power in Economic Thought,* since at least the late 1800s when "Italian marginalist Maffeo Pantaleoni claimed that the perspective of economic theory was 'singularly narrow'… in every decade, various voices from economists belonging to different schools of thought have lamented the lack of the concept of power within economic science and have suggested various ways of introducing it." This chapter sought to contribute to this evolving discussion by providing an updated review on what is meant by the concept of power in economics, articulating why it matters, and showing how its application can shift the way we think about economic problems and advise on policy solutions. In closing, the chapter reflected on how the concept of power has operated within the profession itself to shape the evolution of these ideas thus far, as well as the responsibility that economists hold to push these ideas further in the future. While we have come a long way over the years, there is still a long way to go.

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Discussion

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In what was essentially a spoof on the Kaldorian theory of distribution, James Tobin (1960) wrote: "…the whole theory of distribution will have to be surrendered to the game-theorists." As the old proverb has it, many a true word is spoken in jest…The paper under discussion suggests that a good deal of the concept of power in economics has indeed been surrendered to game theory, or to one or other of its close relatives—bargaining theory, contract theory, implementation theory, the theory of industrial organization, the theory of imperfect markets. All of this, and more, has been dealt with both intensively and extensively in the paper under discussion, so I will not cover the same ground again, save to remark on how comprehensive has been this paper's treatment of its subject. Instead, I shall focus, perhaps idiosyncratically, on two or three aspects of the paper and/or its subject which seem to demand special attention.

In *The Myth of Sisyphus*, Camus (1979) speaks disparagingly of certain philosophical traditions when he says: "they are sterile exercises on great subjects." I get the impression that the authors share some of this disappointment—even if not, perhaps, all of its comprehensively negative judgment—when it comes to an assessment of the treatment of the concept of power in much of "mainstream" (or what may loosely be called "neoclassical") economics. Personally, and if my impression is correct, I am inclined to be sympathetic to the authors' view-point. For instance, in the standard economic theorist's study of "imperfect competition," the dominant interpretation of the deleterious consequences of "natural monopolies" seems to be confined to a concern with "efficiency." It is hard not to see a good deal of sterility in such a restricted vision, not least when it is contrasted with the rich political economy treatment of the subject in a work such as Baran and Sweezy's (1966) *Monopoly Capital*, with its narrative structured around how economic surplus in a capitalist economy governed by monopolies is deployed, with implications for government military spending, unutilized capacity, unemployment, and the maintenance of a reserve army of labor. The overriding and narrow

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concern with efficiency, it may be added, is reflected also in one major component of the literature on law and economics—that pertaining to liability rules in the law of torts: it is hard to see why courts of law should be concerned less with questions of fairness and justice in compensation than with questions of efficiency. That they apparently are would stand testimony to the relative standing of alternative economic view-points vis-à-vis each other: this is an example of the clout wielded by economists of a certain persuasion over others of a different persuasion. I believe the authors of the present paper are right in drawing attention to the asymmetries of power that obtain within the economics profession itself.

A second issue I would like to consider is whether the question of distribution—the source of the Tobin quote at the beginning of this discussion—deserves more elaborate treatment. There was a time when the "capital controversy" was alive and kicking. Many, I think, will agree that in the debates between the marxians and the neoclassicists, as exemplified by Joan Robinson and Paul Samuelson, respectively, what came off worse was the neoclassical theory of distribution in terms of returns according to the marginal productivity of the factors of production. And yet, we have moved on from there, much in a spirit of "business as usual," and as if the outcome of these debates was inconclusive—or worse still, as if these debates did not happen at all! After all, the other side of the coin of Power is Distribution, a subject which surely deserves a place of greater centrality than it has been accorded in much of mainstream theory.

While on the subjects of Power and Distribution, it would be natural to speak also of Inequality. The *measurement* of inequality has been a major subject of enquiry in economics. But here again we discover a curious restriction of concern: many of the axioms of inequality measurement are confined to a setting of *homogeneous* populations, that is to say, populations in which all non-income characteristics of the agents in an economy are held to be identical. The symmetry axiom of inequality measurement (which reappears as the anonymity principle in social choice theory) is what Glenn Loury (2003) refers to as a stark example of "liberal neutrality," and its appeal in the context of homogeneous populations is immediate. But homogeneity is the exception, not the rule! Inequality as a concept acquires salience precisely because populations in the world as we know it are heterogeneous, not homogeneous. This being the case, it is "inter-*group*," rather than "inter-*personal*," inequality which is of the greatest interest from a political economy or from a sociological point of view, and yet it is inter-personal inequality that seems to have received

the most attention in the literature. When we effect a shift from homogeneous to heterogeneous populations, we find that apparently innocuous principles of inequality such as the symmetry and Pigou-Dalton axioms in the context of the former are no longer quite so unproblematic in the context of the latter. This is of some particular relevance for questions of "reverse discrimination" and "affirmative action," and therefore for the subject of Discrimination, which—like its related subject of Inequality—has a common link with the subject of Power. That the ultimate reflection of the concentration of power is *inequality* in the distribution of national income (and indeed of all non-monetary resources as well, not to mention less tangible attributes such as respect and consideration) is a proposition which is finally acquiring a measure of attention that was denied it for a long time in mainstream economics. This is evident in some major works on inequality in the recent past, by economists such as Stiglitz, Atkinson, Piketty, and Milanovic.

Finally, "power," in much of the economics literature as also indeed in the present paper, has been seen primarily as a "relational" construct, as something which obtains in the relationship between two or more economic agents. This is reflected in viewing power in terms of A getting B to do something in A's interest which B left to herself would not do. This is indeed a profoundly important aspect of power. Having said that, there is another aspect of the concept, in which "power" is a matter as it applies to *one's own self*, as defining the autonomy a person enjoys and the control she has over her own life and destiny. Amartya Sen (1985) calls it "capability," a notion which is related to the allied concept of positive freedom, and the ability, as Sen puts it, to achieve certain valued human functionings. This is substantively a matter of *power*. Isaiah Berlin (1969) says: "…what are rights without the power to implement them?" Thomas Paine (1945), in *Rights of Man*, says: "The natural rights which [man] retains are all those in which the power to execute is as perfect in the individual as the right itself." Frank Knight (1982) says: "freedom to perform an act is meaningless unless the subject is in possession of the requisite means of action…and the practical question is one of power rather than formal freedom." So, presumably, what one "can be or do" is determined by the power one has to do this or be that, which in turn is mediated by one's endowments and one's entitlements. There is, in short, an aspect of the notion of power which is very well served by Amartya Sen's theories of both Capability and Entitlement (on the last of which, see Siddiq Osmani, 1995).

The word "power" is open to many interpretations and connotations, and one cannot be expected to cater to them all. As the authors of the paper under discussion say, the word is "a giant glob of oily ambiguity." They deserve our congratulations for having dealt so well with this slippery customer. And if there are one or two things which they feel might be of help to them in this discussion, that would be a nice thing.

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CHAPTER 4

Temptation and Crime

Ajit Mishra and Andrew Samuel

1 Introduction

The decision to follow the law is not always a simple, binary choice between right and wrong. Rather, agents are often conflicted between different sets of values that they may possess. For example, research on whistle-blowing (Greene, 2009) has shown that agents are often conflicted between loyalty to their group and doing the right thing from the perspective of society ("fairness"). The first set of values ("loyalty") would incline them toward staying silent (not blowing the whistle) when they observe wrongdoing in their group. Whereas, the second (fairness), motivates them to blow the whistle. Similarly, studies of corruption have found that bureaucrats have been known to face a conflict between loyalty to their family or kin ("nepotism") and their civic duty to be fair to

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all regardless of family ties (Nolasco et al., 2014). Thus, the action that may be "right" according to one set of values (loyalty) may be "wrong" from the perspective of another set of values that the agent may possess (fairness) (Dungan et al., 2019).

To the extent that criminal choices possess a moral dimension, this thread is also reflected in moral philosophy. Broadly, there are two ways of construing moral choices, the Aristotelian and the Kantian approach. The Aristotelian or Virtue ethics school argues that a moral person will be wholeheartedly predisposed toward making the right choice. In this framework, there is little or no conflict between an agent's different commitments. In contrast, the Kantian approach allows for conflicts arising from various "obligations" and moral choice. In this second approach, moral choices are often the outcome of such conflicting commitments (Sen, 2009).

The Aristotelian approach is in some sense easier to incorporate into economists' standard toolbox of criminal choice models, which draws on Becker's seminal work (Becker, 1968). This framework assumes a one-dimensional set of preferences in which the agent maximizes their preferences over committing a crime or not, subject to the cost of committing the crime. Thus, an agent with a moral commitment will either receive a "warm glow" from remaining honest (which translates into a higher utility for honesty), or a cost (e.g., "guilt") from committing a crime. Thus, it is relatively straightforward to map agents' predispositions toward honesty onto preferences which, in turn, determines choice (Kaplow and Shavell, 2007).

In contrast, the Kantian approach is less straightforward. As has been noted by scholars, the Kantian framework requires that an agent be able to "choose an action that corresponds with his or her moral code over the one that best satisfies his or her preferences" (White, 2006). Thus, fitting this decision-making process into a choice model requires a framework in which decisions are made with multiple commitments—a commitment to one's moral code and the commitment to their personal preferences. And, further choices will need to account for both the temptation (or "weakness of will") and the moral courage or "self control" to resist that temptation. Indeed, within the Kantian view the decision-maker is often considered especially virtuous if they have resisted the temptation,

or more specifically if they resisted temptation and acted rightly despite the cost of resisting temptation.[1]

Aside from these important philosophical considerations, the phenomenon that criminal choices are the outcome of conflicting values, may be especially salient in some parts of the world. Specifically, research has shown that kinship is often stronger in the developing world in comparison to the developed/industrialized world (Alger and Weibull, 2010). These authors site studies which show that familial ties are stronger among Mexicans than among Americans (Keefe et al., 1979). Arguably, such conflicting commitments to different values may be especially important in the developing world where group-based norms, such as loyalty to a tribe, may clash with universally applicable norms, such as one's civic duty. To the extent that choices are the result of being different (potentially conflicting values or preferences), then policies to reduce crime, may not be effective if such multiple preferences are ignored. Thus, understanding the role of conflicting commitments may be especially relevant to the economic analysis of crime in the developing world.

An old question which has been a major topic among legal scholars is: why do people obey the law?.[2] This chapter is a contemporary take on that subject, by giving special attention to the underlying psychology and moral philosophy. In deciding whether or not to follow the law, a person's morals and their identity play a role and they often have to battle between temptation and self-control. That is, they wish to follow the law, but are tempted by other preferences and may succumb to that temptation.[3] Thus, we wish to develop a model in which agents are often conflicted about violating laws or regulations.

To develop such a framework, we build on the model of choice proposed by Gul and Pesendorfer (2001, 2004). In this framework, agents have two sets of preferences: a set of "commitment" and a set of "temptation" preferences represented by $u(.)$ and $v(.)$, respectively. Choosing according to one's commitment preferences constitutes exhibiting self-control. However, self-control is costly and the cost of that

[1] Although it should be noted that some moral philosophers disagree with this view, see Timmermann (2013).

[2] This is, however, different from the deeper question which (Basu, 2015) asks about why any law is followed at all.

[3] It must be pointed out that many of the insights from behavioral economics have been incorporated in law and economics. See Calabresi (2016).

self-control is proportional to the maximizer of her temptation preferences, $v(.)$. Finally, in this framework choices are made in two stages. In the first stage, they choose a menu (i.e., a set consisting of a list of choices or actions) among different menus (or sets), and then a choice within that set.

The idea behind choosing from among several menus is central to this choice framework. The presence of an element within a menu set can be tempting, which introduces self-control costs to an agent who resists that temptation and does not choose that tempting option even though it is available. Thus, an agent may prefer to choose a menu without temptation than one with temptation.

To illustrate this idea within the two-step framework, consider an agent who wishes to be a vegetarian but who still likes meat (burgers). The agent's first-stage choice consists of deciding which restaurant to go to: a vegetarian restaurant or Burger King (where she may also get a salad). After having chosen the restaurant (or equivalently, the menu), she chooses an item from that menu. If the agent were to go to Burger King but choose a salad, the presence of burgers on the menu would impose a "self-control" cost that is proportional to the forgone satisfaction of enjoying the burger according to her temptation preferences; $v(\text{burger})$. Whereas, if she were to have succumbed to temptation, this cost would not be incurred. Knowing that she will face these self-control costs if she goes to Burger King, the agent who would choose a salad at Burger King may instead prefer the vegetarian restaurant. In doing so, she would preempt the temptation present at Burger King and also avoid the self-control costs, while still choosing the same outcome in both places (a salad).

In their work, Gul and Pesendorfer (2001) provide a representation theorem which shows that the utility over a menu $A = \{x, y\}$, in which y maximizes $v(.)$ is given by,

$$U(A) \equiv \{u(x) + \underbrace{v(x)\} - \max_{y \in A}\{v(y)\}}_{\text{self-control costs}}.$$

In the context of our above example, $y \equiv$ burger because it maximizes $v(.)$. Hence, if the agent chooses some $x \neq y$, then the agent would incur a self-control cost equal to $-v(y)$, with total utility $u(x) + v(x) - v(y)$. However, if the agent were to choose $x = y$, then utility would be $u(y) + v(y) - v(y)$, i.e., there would be no self-control costs since the agent

gave in to temptation. Accordingly, an agent who would choose not to succumb to temptation (and choose $x \neq y$) may instead prefer another menu, such as $B = x$ in which there were no tempting options such as y.

An important question to address is whether this model is a reasonable characterization of choice in the presence of temptation. We address this issue in Sect. 2. In it, we also discuss the implications of this model from a philosophical perspective. Section 3 presents the model, and Sect. 4 discusses the policy implications of this framework. The final section concludes.

2 The Moral Psychology of Choice

There are two ways of evaluating the GP framework. One may evaluate it through the lens of normative ethics and determine whether Utilitarianism or Kantianism is better suited to economic decisions. Alternatively, one may evaluate the framework by examining whether it is descriptively valid. In this chapter, we take the second approach because we wish to utilize this framework to describe and understand how people "do" behave rather than how they "ought" to behave. To do so, we first provide some background in "positive" or "behavioral ethics," where we present evidence from behavioral economics, psychology, and neuroscience concerning how individuals make moral choices. We then examine whether the framework we adopt from Gul and Pesendorfer is a reasonable representation of such decisions.[4]

Current research in the behavioral neuroscience of moral choice identifies two sets of findings that are relevant to this discussion (Greene, 2009). First, in contrast to what some researchers had hoped for previously, there is no specific section of the brain that is devoted to moral reasoning. Rather, as these authors note, the whole brain applies "its computational powers to problems that..[are classified] as 'moral'" (Dungan et al., 2019). The second relevant finding is that automatic (emotive) processes in the brain compete with more controlled processes (Kahneman, 2003). This implies that moral choices reflect a type of "dual-process" judgment in which emotional responses work in conjunction with more controlled "calculating" cognitive processes.

[4] For this section, Andrew Samuel is especially grateful for discussions with Dr. Liane Young and post-docs at her behavioral "morality lab" at Boston College.

We illustrate these ideas by discussing research on human behavior in the context of two moral dilemmas: the well-known *trolley problem* (Foot, 2002) and the *whistle blower's dilemma*. There are two versions of the trolley dilemma. In the *switch* version, a person can save five lives threatened by a runaway trolley if they hit a switch that will turn the trolley onto a side track, killing one person. In the *footbridge* version, the only way to save five lives is to push a large person of a footbridge and into the trolley's path. Interestingly, when presented with the *switch* version, most people act in a utilitarian/consequentialist manner; that is, they calculate that it is worth sacrificing the one life for the good of the five. In the *footbridge* version, most people do not.[5]

Deeper analysis of this behavior has been conducted using functional Magnetic Resonance Imaging (fMRI) (Greene et al., 2001). These authors find that the footbridge (and similar dilemmas) elicits a "personal" emotive response, whereas "impersonal" dilemmas (such as the switch version of the problem) elicit greater brain activity in the dorsolateral prefrontal cortex (DLFPC), the area of the brain associated with "cost-benefit" reasoning. Thus, while both regions of the brain are utilized in both scenarios, in the former the emotive region "wins," whereas in the latter the controlled processes "wins out."

Such "dual-process" patterns of behavior are also reflected in studies of whistle-blowers. These studies find that whether an individual chooses to whistle-blow or not depends upon the strength of their sense of loyalty versus their sense of fairness. Loyalty is typically associated with "emotive" mental processes, while fairness is generally associated with controlled calculating cognition. Subjects who measure high on a loyalty scale tend to be less likely to whistle-blow, out of loyalty to their organization, whereas subjects who measure high on scales of fairness tend to be far more likely to whistle-blow. These findings further affirm the dual-process nature of moral decision in which emotive mental processes compete with calculating processes.

[5] In the footbridge case, most would consider pushing the individual as intuitively impermissible as the individual is being used as a means. This contrast comes clearer in the third version, the loop case, where there is a loop in the track of the trolley and by switching it the five people avoid being hit from the front, but can be hit from behind if the lone individual were not be in the way. Most people seem to justify the switch here. See Voorhoeve (2009).

One way to represent such behavior would be to consider two sets of preference orderings, one that is impulsive or emotive and another that conducts "calculative reasoning." In a well-known quote, Sen (1977) states that in the traditional model:

> [a] person is given one preference ordering, and as and when the need arises this is supposed to reflect his interests, represent his welfare, summarize his idea of what should be done, and describe his actual choices and behavior. Can one preference ordering do all these things? A person thus described may be "rational" in the limited sense of revealing no inconsistencies in his choice behavior, but if he has no use for these distinctions between quite different concepts, he must be a bit of a fool. The purely economic man is indeed close to being a social moron. Economic theory has been much preoccupied with this rational fool decked in the glory of his one all-purpose preference ordering. To make room for the different concepts related to his behavior, we need a more elaborate structure. (pp. 335–336, emphasis in original)

What Sen seems to be saying here is that a single preference ordering may not adequately capture the complexities of human choice. Given our evidence from recent behavioral science, such multiple orderings could be especially relevant for choices with a moral dimension.

Sen's well-known critique of the "rational fool" has of course generated a vast literature on "dual self models" (Margolis, 1984; Etzioni, 2010; Elster, 1989).[6] While many of these models are clearly useful, we believe that the GF framework is preferable for at least two reasons. First, it is developed axiomatically, and, consistent with the standard Expected Utility Theories. Second, it is (to our knowledge) the only framework in which individuals make choices over menus (and then make choices within that menu). As we show, focusing on the first-stage "menu" choice can have important policy implications.

3 Model

Consider the following choice space. An agent is faced with several options O_i, $i = 1, 2, ...N$ which are menus containing two choices.[7]

[6] See White (2006) for an excellent review of this literature.

[7] We can consider menus with several criminal choices also. For example, take a menu with three elements: honest choice, low crime, and high crime. It can also be viewed as two menus: one with honest choice and low crime and the other with honest choice and

Every O_i contains a honest choice, whose payoff is normalized to 0, and a criminal choice, whose payoff is b_i. There are sanctions associated with committing a crime, denoted by s_i. For convenience and without loss of generality, we assume that $b_j > b_i$ for any $j > i$. Let x_i represents the choice that an agent makes within each option, so that x_i is chosen from O_i, whereas the action X represents the choice of an option O_i. With slight abuse of notation, let 0 and b_i represent the honest and criminal choices within each option. Accordingly, we may write an option as,

$$O_i = \{0, b_i\}$$

We assume that (a) individuals first choose an option, and then a choice within that action in two stages. That is, they first choose $X = \{O_1, O_2, ...O_N\}$ and then choose an $x_i \subset O_i$. (b) Agents are tempted by crime so that some options may have more (or less) temptation than others.

To capture this decision-making process, we follow Gul and Pesendorfer (2001). Accordingly, let $u(.)$ represent the agent's "commitment preferences," which in this case account fully for the pecuniary costs of crime, including the sanctions s_i. And, let $v(.)$ represent the agent's temptation preferences, which only include only the (gross) benefits of criminal activity. Both these functions will be specified subsequently. Given some $u(.)$ and $v(.)$, an individual chooses an option to maximize,

$$U(O_i) \equiv \{u(.) + v(.) - \max\{v()\}\}. \tag{1}$$

The functions $u(.)$ and $v(.)$ are given by,

$$u(x_i) = \begin{cases} \theta_u(b_i - s_i) \text{ if } x_i = b_i \\ 0 \qquad\qquad \text{if} x_i = 0 \end{cases}.$$

and

$$v(x_i) = \begin{cases} \theta_v b \text{ if} x_i = b_i \\ 0 \quad \text{if } x_i = 0 \end{cases}.$$

high crime. Given that we study choice over menus, this simpler framework yields the same outcome.

We now use the above functional forms for $v(.)$ and $u(.)$ to specify the period 1 utility for the choice of X. The utility from choosing $X = O_i$ can be expressed as,

$$U(O_i) = \max_{x=\{0,b_i\}}\left\{\theta_u(b_i - s_i) + \theta_v b_i - \max_{\{b'\}}\left(\theta_v b'\right)\right\}$$

We now study the second-stage decision of choosing x_i. Because b_i maximizes $v(.)$, the agent must choose between committing a crime which yields a payoff of $\theta_u(b_i - s_i)$, or remaining honest which yields a payoff of $-\theta_v b_i$. Note that the former payoff does not include any temptation costs (because the agent yielded to temptation), whereas the later does. This yields the following result.

Claim 1 *In the second stage an agent commits a crime if,*

$$\theta_u(b_i - s_i) > -\theta_v b_i.$$

Thus, the sanction must be strictly greater than the benefit in order to prevent a crime.

From this result, it immediately follows that if $s_i \leq b_i$, then the agent always chooses to commit a crime for any given O_i. Thus, the standard analysis of sanctions, which suggests that crime can be deterred if the expected sanction is larger than the benefits from crime, does not apply here.

If $s_i > b_i$, then a straightforward calculation shows that the agent acts honestly only if,

$$\theta_u > \theta_v \frac{b_i}{s_i - b_i}.$$

This yields a second insight (concerning marginal deterrence): that if s_i rises too sharply in b_i, then it may be that for lower values of θ_u an individual will choose an honest option when temptation is high, but choose to commit a crime when the temptation is lower. Assuming that s_i does not rise too steeply is equivalent to the following condition:

$$\frac{b_i}{s_i - b_i} < \frac{b_j}{s_j - b_j}$$

for $\forall j > i$.[8]

[8] The expression $\theta_v \frac{b_i}{s_i - b_i}$ identifies a threshold for θ_u above which the agent remains honest. This expression is increasing in b_i as long as s_i does not also rise too rapidly with b_i.

Assuming the previous inequality is satisfied, then there exists

$$\theta_u^*(O_1) < \theta_u^*(O_2),$$

such that an individual is honest (given O_i) only if $\theta_u > \theta_u^*(O_i)$. This captures the intuition that when more lucrative criminal options are available, individuals must possess greater inner strength or commitment to honesty, θ_u, in order to choose honesty. Utilizing these insights yields the following proposition.

Proposition 1 *Consider two options O_1 and O_2 with $b_i < s_i$. The agent's decision to remain honest is identified by the following conditions:*

- If $\theta_u > \theta_u^*(O_2)$, *the agent is honest in both options and chooses the lower option because it has less temptation cost.*
- If $\theta_u \leq \theta_u^*(O_2)$, *then the agent commits a crime if she chooses O_2, but is honest if she chooses O_1. Hence, if*

$$\frac{b_2}{s_2 - b_2} > \theta_u > \frac{b_1}{s_2 - b_2},$$

then the agent chooses O_1 and honesty to O_2 and crime.

Proof The agent chooses O_1 (and honesty) if

$$\theta_u(b_2 - s_2) < -\theta_v b_1.$$

Since we have assumed that $b_2 < s_2$, the previous condition simplifies to,

$$\theta_u > \frac{b_1}{s_2 - b_2}.$$

Hence, if

$$\frac{b_2}{s_2 - b_2} > \theta_u > \frac{b_1}{s_2 - b_2},$$

then the agent chooses O_1 and honesty to O_2 and crime (note the previous chain of inequalities is non-empty).

3.1 *Policy Analysis*

The issue that we wish to investigate is: "does temptation affect enforcement policies?." An earlier paper (Cervellati and Vanin, 2013) showed that it does, especially in a range where the benefits are intermediate so that there is temptation cost in "equilibrium" but not crime. However, importantly their paper did not consider the first-stage choice. Indeed, if a first-stage choice were to be introduced, then agents in this range (who choose to remain honest but bear temptation costs) would actually choose a menu that possesses less temptation. Accordingly, structuring a menu can give a regulator an additional mechanism to deter crime.

In light of this, we examine whether there are conditions under which a regulator will prefer to deter crime at the first stage rather than the second. To do so, we introduce a few further policy parameters. Let c denote the cost of introducing a temptation free menu O_0. Further, let $k(s) = k.s$ denote the cost of sanctioning an agent s in menu O_1. Then, in the absence of 0_0, to completely deter the crime,

$$s_1 \geq \frac{\theta_v + \theta_u}{\theta_u} b_1 \equiv \overline{s} > b_1.$$

At this policy, total costs are $k(\overline{s}) + \theta_v b_1$.

Now consider a policy at $s_1 = b_1$ and a menu choice of O_0 at cost c. This policy completely deters crime at cost,

$$k(b_1) + c.$$

Note that since $k(b_1) < k(\overline{s})$ and there are no temptation costs in this latter policy, it may be more desirable than the former. We summarize this formally in the following proposition.

Proposition 2 *If b_1 or θ_v is sufficiently large, then the regulator prefers to deter crime at the menu choice stage rather than at the crime (within menu) stage.*

Proof The cost of deterrence with a temptation free menu is,

$$k(b_1) + c$$

where as the cost of deterrence without a menu choice is,

$$k(\overline{s}) + \theta_v b_1.$$

Let, $\tilde{\theta} = \frac{\theta_v + \theta_u}{\theta_u} > 1$. Then,

$$kb_1 + c \leq k\tilde{\theta}b_1 + \theta_v b_1,$$

if

$$c \leq k\left(\tilde{\theta} - 1\right)b_1 + \theta_v b_1.$$

Clearly, the right hand side is increasing in θ_v and b_1. Hence, our result.

This proposition identifies a key result. Even if policy makers do not care about temptation costs they may wish to deter crime at the menu stage. Further, when the benefits from crime or temptation costs are large, then deterring crime at the menu stage will be preferred. That is, more harmful crimes should be deterred earlier by altering the menus so that temptation is preemptively avoided. In the next section, we discuss the implications of these results to three areas.

Before we discuss these applications, it must be pointed out that the above model specification can be used to analyze various other kinds of conflicts. In our model, temptation preferences ignore sanctions for criminal choice. In an alternative formulation, tempted individuals could underestimate apprehension probabilities. We could also incorporate moral costs associated with the criminal choice. A committed individual will consider this moral cost, but such costs won't feature in the temptation preferences. This is related to the role of guilt and virtue in influencing individuals' behavior away from harmful activities (Kaplow and Shavell, 2007).

4 Applications

4.1 Morality Laws and Victimless Crimes

Underlying almost all of law and economics is the idea that laws are introduced in order to correct a negative externality, that is, prevent victims. However, for many so-called morality laws, this economic rationale is not clear. Specifically, many jurisdictions often regulate or prohibit monetary transactions for sex, drugs, or gambling completely. However, in other cases, such activities are only permitted in certain areas such as in Red Light districts. This raises a question: what is the economic rationale, if any, for such "morality laws"?

The extant literature in economics concerning such morality laws argues that these laws too can be viewed as correcting a negative externality. If these actions impose a negative psychic externality on society by restricting such actions to certain areas, the psychic externality can be minimized (Curry and Mongrain, 2008). Indeed, by doing so, the negative costs of completely prohibiting such actions (such as making prostitutes victims of human traffickers) can be avoided, while also minimizing their costs or the rest of society who do not wish to view such activities.

Our framework offers a separate rationale for such laws if we assume that some actions are especially tempting. If so, then restricting those activities to certain areas provides individuals with a temptation free menu. Doing so provides two benefits. First, those who possess sufficient self-control to not undertake those actions will no longer experience any self-control cost. Second, those who would be tempted will now avoid those areas completely.

4.2 Neighborhood Choice

The ideas in the previous section lead naturally into broader questions concerning neighborhood choice. Choosing a neighborhood is similar to choosing a menu, some menus being more tempting than others. By choosing a certain neighborhood with fewer temptations, individuals can avoid temptation costs altogether.

This issue concerning neighborhood choice is reflected in crime prevention policies that focus on community engagement rather than enforcement. The City of London that initiated the Violence Reduction Unit (VRU) delivers programs aimed at supporting the youth and keeping them away from the streets and gangs which would tempt them into criminal activities. This and other activities of the Mayor's Office for Policing and Crime (with a 50 million GBP budget) can be viewed as offering the the young Londoners a menu with non-criminal choices in neighborhoods that otherwise offer many temptations for crime.[9] This policy illustrates the result in proposition 2 that crime can be prevented by altering the menu (in stage 1) rather than in stage 2.

[9] https://www.london.gov.uk/press-releases/mayoral/all-of-londons-32-boroughs-will-benefit-from-fund.

4.3 Snitching and Crime

When investigating crimes, police need eyewitnesses to step forward and provide testimony. In the 2000s, there was a gang-driven campaign in the U.S. to prevent crime witnesses from reporting to the police. Eyewitnesses to, and victims of, crime were being forced to choose between loyalty to their community and their civic duty. This sense of loyalty is illustrated in Rapper Cam'ron, response to a question from U.S. television host Anderson Cooper. Mr. Cam'ron was asked if he would "snitch" on a serial killer living next to him. He replied: "I would probably move," rather than inform the police. Importantly, this suggests that in this context temptation avoidance is not always beneficial (to policy makers).

To illustrate the idea that someone would rather move away than snitch, let $U(T)$ represent the utility from staying and $U(\Phi)$ represent the utility from moving. Then,

$$U(T) = \max\{\underbrace{\theta_u(b-s)}_{\text{mum}}, \underbrace{-\theta_v b}_{\text{snitch}}\}$$

Further, let $U(\Phi) = 0$. Then if the police place too much pressure on informants (by raising s so that mum $\succ$ snitch, then conditional on choosing to stay, the potential informants' payoff would be negative. But by leaving, their payoff would be 0. Thus, honest people who could be informants in the event of a crime, will try to "look the other way" when crimes occur.

Such a phenomenon offers a clear policy implication. Suppose the goal of policy is to encourage informants to stay and report (rather than look the other way), then policy makers will need to incentivize informants with carrots rather than sticks, for example, offer informants a payment g such that:

$$g - \theta_v b > \theta_u(b-s)$$

5 Conclusion

This paper identifies a new framework for studying criminal choices, utilizing the GF model of choice. We believe that this framework is a reasonable representation of moral choices in which individuals face multiple competing commitments. Such a framework also more accurately

reflects research concerning the moral psychology of choice (Dungan et al., 2019).

Besides being a more accurate reflection of the way in which moral choices are made, the framework provides important and novel policy recommendations. It shows that deterrence policies can be designed to encourage the right choice at the menu stage, rather than solely focusing on choice at the subsequent stage, which is the Beckerian approach. Indeed, we show that in many cases when enforcement is costly it will be more efficient to prevent crime at the menu stage rather than at the subsequent menu stage for two reasons. First, by preventing crime at the second-stage agents who remain honest must also incur a temptation costs. These costs are avoided if such agents are given a temptation-free menu option in the first stage. However, second, even if the government does not care about such "psychic" temptation costs, the cost of deterring crime will be lower at the first stage because the sanction needed to prevent crime will also be lower $b_1 < \overline{s}$.

We conclude this chapter by offering a few ideas for future work in this area. First, our framework is static; future work should consider temptation and choice within a dynamic context. This could be especially useful in understanding how individuals may choose a path leading to a "life of crime." Second, our framework is decision theoretic and not strategic. Whereas many moral choices involve strategic considerations in which payoffs are interdependent on other agents' choices, such a framework could be applied to areas such as bribery in which both the briber or recipient interact strategically and may be tempted to engage in corruption. Thus, the framework that we provide here is merely the first step in what we consider to be a fruitful area of research.

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Discussion

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In their paper *Temptation and Crime,* Ajit Mishra and Andrew Samuel examine how internal conflict within moral decision-making affects criminal behavior. They utilize a two-stage decision model based on Gul and Pesendorfer's (2001) model of temptation and self-control to determine if people will avoid situations where they may be tempted to commit crimes, and how they behave if they do end up in such situations. They show that people with high enough levels of self-control avoid tempting situations upfront, people with low levels of self-control enter tempting situations and commit crimes if there is a net marginal benefit, and for some intermediate range sanctions and commit-levels can be complements in reducing crime. Finally, they describe three real-world applications of the model and draw some interesting conclusions.

The paper begins by describing the complexity of moral decision-making and discussing the major branches of moral philosophy: virtue ethics, consequentialism, and (Kantian) deontology. The authors argue that the deontology approach leads to a framework that both serves as a good description of real human behavior and allows for fruitful modeling. The approach assumes people have a moral code that identifies moral decisions but are also tempted by other options that lead to selfish, and in this case unlawful, gains. Here, agents have two sets of preferences, commitment (moral) preferences, and temptation preferences. Acting according to commitment preferences requires exhibiting (costly) self-control in the form of "temptation costs" paid to forgo more lucrative options. The model assumes a first stage where agents choose a "menu" of possible options, and the select from the menu in the second stage. This first stage allows agents to avoid situations that may tempt them into unlawful behavior. The authors further justify the model by critiquing "Beckerian" models of crime that ignore internal moral constraints that people face when breaking the law. The authors argue that the moral psychology literature demonstrates that moral concerns do place real

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constraints on behavior and should be incorporated when modeling decisions with moral dimensions. They also argue, citing neuroscience findings (Greene, 2009), Amartya Sen's (1977) famous "rational fools" illustration, and recent studies on corporate whistleblowers (Dungan et al., 2019), that is not sufficient to lump moral preferences in with other personal preferences in a utility function. Rather, real people face various and sometimes conflicting moral commitments that take willpower to uphold.

In the next section, the authors flesh out the implications of the model following Gul and Pesendorfer (2001). They show that the relative size of the benefits and sanctions from crime interact with the agents' commitment levels, occasionally in unexpected ways. For example, when the sanctions for crime increase sharply relative to benefits, agents may be more likely to commit crimes in certain circumstances. In general, they find that policy makers will often find it beneficial to deter crime in the first stage, even if they don't consider the benefits to agents of reducing temptation costs. The authors then describe three model applications: First, they discuss insights related to morality laws, such as those prohibiting monetary transactions for sex, drugs, or gambling. They show such laws may directly benefit people by offering a temptation free menu of choices—reducing both negative behavior and temptation costs. While there are of course many more dimensions to determining the appropriateness of such laws, the study uses behavioral economics insights to describe a clear harm from what are often considered victimless crimes. Second, the authors discuss neighborhood choice as a proxy for selecting choice menus with varying levels of temptations. While more straightforward, it certainly has important implications for crime prevention and educational policy. Third, the authors discuss how their model relates to the question of encouraging reporting crimes and cooperation with law enforcement ("snitching"). In this case, the moral code (not cooperating) runs contrary to the outcomes considered pro-social. The model suggests that rewarding potential informants, rather than sanctioning failures to report, would be much more effective in encouraging informants to stay long enough to observe crimes and report them. Finally, the authors discuss potential directions of future research including explicitly modeling moral costs to committing crimes, considering the strategic interactions between multiple people involved in a crime, and studying moral decisions in a dynamic model across time.

I believe that this paper makes an important contribution to the literature in utilizing a more realistic model of moral decision-making to explore specific applications related to crime. The model sheds light on a deep choice theory consideration in a mathematically succinct way and raises important questions. In particular, how can we best incorporate moral constraints when modeling crime and other ethical decisions and what is lost when these are left out? The authors find that agents occasionally act in ways consistent with Beckerian models of crime, but often do not, justifying the increased modeling complexity. Building on the paper's conclusions, I have a few further connections and possible avenues for future research to highlight.

First, it would be interesting to explore how the first-stage decision of the menu of choices relates to the behavioral economics literature on "moral wiggle room." This literature also posits a two-stage process, where people will often choose to add ambiguity or plausibility deniability to a moral question in the first stage to reduce the moral cost of choosing the selfish option in the second stage (Dana et al., 2007; Larson and Monica Capra, 2009; Momsen and Ohndorf, 2020). Including this first-stage option significantly increased selfish behavior overall. This model, where the first-stage choice to make the moral decision easier leads to more moral behavior overall, appears to be a mirror image of moral wiggle room. I believe a very interesting research question is whether the same agent could choose to both increase moral wiggle room and avoid temptation based on the different contexts, or if the effects are driven by different agents with different commitment levels or moral preferences.

Second, it would be interesting to explore how the levels of commitment required to avoid different crimes may vary based on the perceived moral weight of a crime. For instance, it may require a lower commitment level to forgo stealing from a neighbor or charity than from a large impersonal corporation. This approach may need to stay away from strict deontology to a more consequentialist approach where the model θ_u term could depend on the perceived harms from the crime.

Finally, building on the dynamic model, research idea suggested in the conclusion, I believe applying a virtue ethics framework to this question could be quite fruitful. In the introduction, the authors decide against using a virtue ethics approach, stating that in the system "a moral person will be wholeheartedly predisposed towards making the right choice. In this framework there is little or no conflict between an agents' different commitments." While this is a true description of the goal of virtue ethics,

I believe it omits the more interesting question of how a person reaches this moral state. A virtue ethics model could involve iterative preferences, where each decision provides an immediate payoff while also influencing the next period's preferences. Assuming the agent believed that having more virtuous preferences would lead to greater possibilities of future utility, it could lead to an interesting trade-off determined by the agent's patience and beliefs about virtue. From there, it would be fascinating to explore which modeling assumptions best fit empirical data or to what extent people endogenously choose one moral framework over another, building off the literature on endogenous fairness standards (Cappelen et al., 2007; Gallenstein, 2022).

Overall, I believe the paper uses an interesting theoretical model to make important contributions to the literature on the behavioral economics of crime, and I'm excited about the future research questions the paper raises.

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CHAPTER 5

Moral Costs of Corruption: A Review of the Literature

Amrita Dhillon and Antonio Nicolò

1 Introduction

The early literature on the micro determinants of corruption (broadly interpreted as the use of public office for private gain) was focused on monetary incentives: the carrot of higher wages vs the stick of higher punishment if caught. The classical model (Becker 1968) focuses more on the monetary costs and benefits from crime although there is mention of the psychic benefits from criminal activity. Some of the well known findings from that literature are that deterrence can depend very much on risk preferences—whether changing the probability of catching a

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corrupt act has a greater impact on deterrence of criminal activities relative to increasing the fine if caught. Second, increasing wages theoretically reduces the incentive to be corrupt if the penalty is a probability of being fired. A substantial macro literature on corruption studies the empirical factors that are correlated with higher corruption such as per capita income, religion, historical tradition of British rule, democracy, higher trade integration with the world, etc. These (macro) factors are well summarized in Serra (2006). The factors that are found to be significant in the global sensitivity analysis are economic development (negative), uninterrupted democracy (negative), political instability (positive), share of protestants (negative) and the colonial history (common law is negatively related).

But notice that the word corruption has negative connotations. This is the first hint that behaviour in another context would be perfectly rational is deliberately changed by society into something to be ostracized and prevented. In contrast, profit-making firms are perfectly acceptable even though they may well exploit their "wage slaves". However, an individual worker who tries to use his position to earn over and above the legally stipulated wages is said to be corrupt. This maybe tied to the idea that corruption has externalities and causes harm to others while profit maximizing does not. Similarly, lobbying activity achieves the same purpose as bribery when lobbying is illegal. However, legal lobbying may be just as bad for society in creating unjustified inequalities. The law can be interpreted as a particular set of beliefs about how others will behave consequent on one's actions, indeed even a constitution is just "words on a piece of paper" that receive legitimacy from beliefs (Binmore 2020; Basu, forthcoming). In similar fashion, corruption has always been defined in a way to create guilt and shame. It is a social construct by definition. It is surprising that it has taken a long time for the literature to catch up with whether the nature of the social construct (rather than non-social penalties) is working in helping to reduce "bad" behaviour. This paper reviews some of the emerging literature on the *behavioural* factors that influence the decision to be corrupt. By *behavioural* factors, we mean the social and psychological non-monetary costs from corruption. We address three questions: (1) What are the different behavioural motivations discussed in the literature? (2) What are the interactions between monetary and behavioural motivations? In particular, is there crowding out or crowding in? (3) How do behavioural anticorruption strategies

perform relative to the standard ones? We conclude with some suggested open questions.

It is hard to carry out a study of the motivations for individuals to be corrupt or not without a clear link between individual behaviour and corruption in the data. This is why most of the literature we review is experimental but we also draw on some recent theoretical and empirical literature.

The paper is organised as follows: Sect. 2 provides the framework for the organisation of the papers we reviewed. Section 3 is about the role of descriptive and prescriptive norms in shaping individual attitude towards corruption. Section 4 reviews the literature on the importance of monetary incentives such as wages and enforcement policies—this covers the literature on behavioural features of individuals that are affected by monetary rewards/punishments. Section 5 then looks at literature on non-monetary incentives such as public praise (awards) and behavioural "nudges" to improve compliance. Section 6 discusses the impact of monetary versus non-monetary policies. Finally, Sect. 7 concludes with some open questions.

2 Framework

2.1 *Benchmark Case*

We present first the standard model (Becker and Stigler 1974). A Public Officer (PO) with wages w is offered a bribe. In general, corruption does not involve only bribe-taking but can involve embezzlement (e.g. over invoicing) or helping friends and relatives to get contracts. The assumption is that corruption involves some monetary gain—or involves a future expectation of a monetary gain. We also assume that all POs are exposed to the same opportunities for corruption. The PO is offered a bribe $B > 0$. If she accepts the bribe, she is caught with a probability $p \in (0, \overline{p})$ with $\overline{p} < 1$. There is a penalty P if caught and fired from job.

Therefore the PO is honest if

$$w \geq (1 - p)(w + B) - pP \tag{1}$$

defining a cut-off rule on the wage

$$w \geq \frac{(1 - p)}{p} B - P \equiv w_H^* \tag{2}$$

The efficiency wage depends on B, p, P. Further extensions allow bribes to be endogenous (e.g. Mookherjee and Png 1995) or allow p to be a function of how many others are corrupt (e.g. Ryvkin and Serra 2012). The main results from the standard model are on whether the probability of detection or the level of the fine, and level of the wage relative to bribe matters more in reducing crime. We build on this formulation to add the variety of behavioural elements that have been tested in the recent literature. We assume that all individuals have the same opportunities for corruption in order to focus on the heterogeneity that comes from individual preferences.

Borrowing from Barfort et al. (2019), *Intrinsic Honesty* is defined as the likelihood of being honest when faced with a given opportunity for corruption. If some individuals are more likely to be honest than others in the same exact set of circumstances, then we say those individuals are more intrinsically honest. Observationally, this can be due to many different reasons including honesty being a fundamental trait or prosocial motivation, norms or risk preferences making it more palatable to be honest. How do prosocial motivations affect intrinsic honesty? In our review, we found attribution to norms much more frequently with some vague references to prosocial motivation. Kimbrough and Vostroknutov (2016) provide a unifying explanation based on social norms for observed prosocial behaviour in various laboratory settings. We therefore follow this approach and let the utility function depend directly on norms rather than incorporating prosocial preferences. We formalize these different elements in the formulation below where we let the bribe amount vary continuously. We assume that an individual i is characterized by a pair $t_i = (\alpha_i, \beta_i)$ where β_i is the relative weight of prescriptive vs descriptive norm.[1] α_i denotes the weight on money motivations and $1 - \alpha_i$ is everything else. Individual i chooses action $a_i \in [0, 1]$ (where 0 = Honesty (never cheat) and 1 = Complete Dishonesty (always cheat)). The determinants of intrinsic honesty can be categorized into those where actions are not observed by others (norms which generate moral costs of dishonest behaviour) and those where image concerns are important. The utility

[1] Prescriptive norms are the beliefs that agents have about which actions are appropriate and which are not, in a context independent way. Descriptive norms, on the other hand, provide information about the choices of other players.

function is given by:

$$\begin{aligned} U_i = {} & \alpha_i(-p(a_i)P + (1-p(a_i))(w + M(a_i)) \\ & + (1-\alpha_i)(-(1-\beta_i)(a_i - \overline{a}_{-i})^2 - \beta_i\left(a_i - v\right)^2\Big) \\ & + \gamma_i R\left(\hat{t}_i, \hat{t}_{-i}, \hat{a}_i, \hat{a}_{-i}\right) \end{aligned} \tag{3}$$

where $M(a_i) \in \left[0, \overline{M}\right]$ denotes the monetay gains from being corrupt—we assume that it has a maximum value of $\overline{M}$, while $p(a_i)$ is the probability of being caught, assumed to be increasing in the action a_i; $\overline{a}_{-i}$. denotes the *descriptive* norm, i.e. beliefs about others' actions while v is the *prescriptive* norm, i.e. beliefs about what is appropriate in the community. We include these terms in this particular formulation because the literature suggests that most individuals have a cost from not conforming to norms and distinguishes between the two types of norms.[2] Individuals can be heterogeneous in the extent to which they care about norms. We also want to capture the interactions between monetary and non-monetary motivations which depend on the extent to which individuals are sensitive to their image. For this reason, we introduce the term $R\left(\hat{t}_i, \hat{t}_{-i}, \hat{a}_i, \hat{a}_{-i}\right)$ which models *reputation or image concern* and γ is the weight (concern) individual i assigns to this component. Essentially, $R(\cdot)$ captures second-order beliefs of individual i on how others perceive individual i's type, $t_i = (\alpha_i, \beta_i)$ and behaviour (action a_i). Interestingly, how an individual is perceived by others depend on what is observable. In particular, individual i's reputation in a given country depends on her type and behaviour, but may also depends on her peers' behaviour: e.g. the reputation of a single policeman depends on her motivations and how she behaves, but also on the collective reputation of the members of a police corp in that country. Lepper and Greene (1978) in Chapter 6 observe that "when an individual observes another person engaging in some activity, he infers that the other is intrinsically motivated to engage in that activity to the extent that he does not perceive salient, unambiguous, and sufficient extrinsic contingencies to which to attribute the other's behavior".

[2] Attanasi et al. (2019) have shown in an embezzlement game that 25% of the intermediaries between a donor and a recipient are guilt averse, i.e. their decision to embezzle depends on beliefs about other players' expectations of the motivations of the intermediary (second-order beliefs).

In this spirit, $R(\cdot)$ depends on her actions, the more dishonest an individual is, the lower is her reputation, but it also depends on the level of intrinsic motivation. When extrinsic reasons to be honest are high, because for instance the expected punishment is high, the reputation of being an honest individual will be lower because even individuals with low intrinsic motivation behave honestly. Schulze and Frank (2003) show experimentally that intrinsic motivation drops with greater deterrence. The other main reason to include $R(\cdot)$ is to allow for selection effects. Note that we have used an additive function for simplicity, which circumvents questions of whether monetary and non-monetary incentives are substitutes or complements. Second, norms and reputations suggest that individual actions depend very much on beliefs about others' actions. In any model of corruption based on these elements, we may expect multiple equilibria. We discuss turn to these issues in detail later.

The next section discusses these different factors that affect intrinsic honesty. Since we already discussed the standard model with only extrinsic incentives, below we start with the behavioural determinants of intrinsic honesty.

3 The Determinants of Intrinsic Honesty: Norms

The main questions that scholars have asked are centred on whether norms matter when individuals are facing an opportunity to be corrupt. Norms matter if revealed choices are different when norms change. However, there has been less interest in heterogeneous effects. The methods used vary from experimental ones to cross-country observational studies and surveys.

3.1 How Prescriptive Norms Affect Levels of Intrinsic Honesty

Moral costs arise due to a perceived prescriptive norm that giving and accepting bribes is morally unacceptable and a key aspect of such moral costs is that agents behave morally even when there is no social observability. By their very nature, therefore, moral costs cannot be observed unlike monetary or physical punishments. Lab experiments are uniquely well placed to answer the question of whether moral costs/prescriptive norms matter, using different framings for the same strategic situation. Abbink and Henning-Schmidt (2006) were one of the first to conceptually introduce the idea of studying moral costs using different types

of framing—comparing more explicitly illegal activity ("bribes") vs more neutral language. They did not find any significant differences. However, while they simulated repeated corrupt exchanges involving trust and reciprocity in their experiment, Barr and Serra (2009) design a one-shot petty corruption game where they vary both the framing and the information on harm to third parties. They find that framing has no effect but as the information on the amount of harm generated on others increases, bribes fall. Banerjee (2016) takes this idea further. They ask if corruption, measured as the frequency of demand for bribes, the level of bribe demanded, and the acceptance by bribe givers, is affected by the moral cost.

They design a standard harassment bribery experiment where they vary the monetary and non-monetary anticorruption strategies. In the bribery game, they have a Citizen (C) and a Public Official (PO). C performs a real effort task for which they are entitled to receive a prize which is subject to the discretion of PO. The PO may demand a bribe for giving the prize. C can accept or reject the bribe demand—if she accepts the bribe demand, she gets the prize minus the bribe and the PO gets the bribe, If she rejects, they get their basic (participation) payoffs.

For clarity, we reproduce the figure from their paper to show the bribery harassment game which will be used many times later. Note that in the design demanding a bribe is a weakly dominant strategy for the public official so anticipation of being rejected does not matter. In the Ultimatum Game (UG), the PO and C are re-labelled as participant A and participant B and the entitlement of C to the prize conditional on passing the test is also lost (Fig. 1).

The design is to compare a bribery harassment game[3] with a game that is strategically the same (ultimatum game) but has a different language (neutral)—in the neutral framing, subjects are called participant A and participant B. Another key difference is that while in the harassment game, the public official can refuse a service to which the citizen is entitled, in the ultimatum game, the participant (role of citizen in the harassment game) has no such entitlement. It is the first participant (role of public official in the harassment game), who is entitled to decide how much to share of the proceeds. In a third treatment, they compare

[3] Harassment bribes are bribes paid by citizens to corrupt officers for services that they are legally entitled to receive. The bribery harassment game is a standard way to capture this kind of bribing.

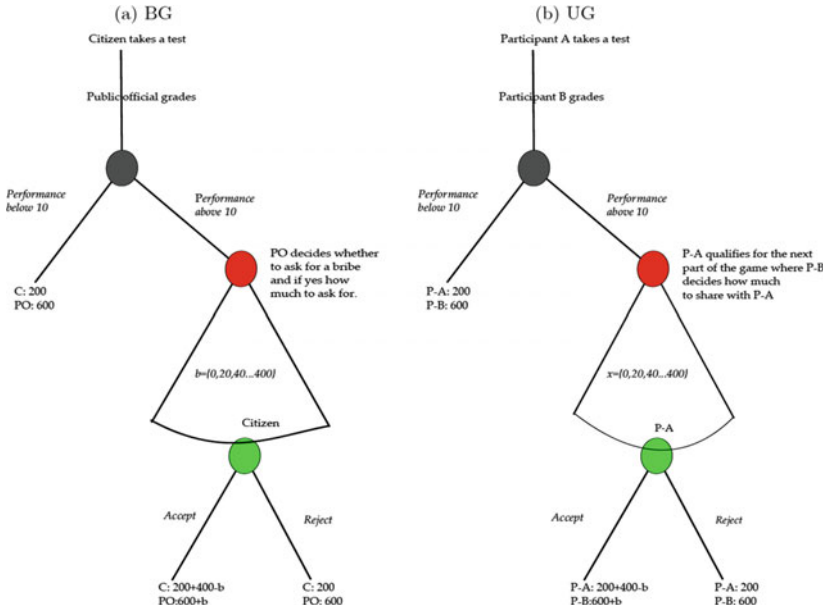

Fig. 1 Harassment Bribery Game (BG) and Ultimatum Game (UG)

the harassment game with the language of bribery to the exact same game framed in neutral language (e.g. re-labelling subjects as participants, "demand for bribe" is labelled as "ask for transfer")—the entitlement of the citizen remains as in the harassment game. This allows them to check for differential effects of the entitlement vs the language. They also elicit prescriptive norms using the Krupka-Weber (Krupka and Weber 2009) coordination game. As mentioned earlier, prescriptive norms are the beliefs that agents have about which actions are appropriate and which are not, in a context-independent way.

Their main result is that there is a lower frequency of demands (bribes), lower magnitudes of bribes demanded and lower acceptance rates by citizens in the harassment game relative to the ultimatum game. They argue that the "entitlement" to a benefit that is being denied by the bribe taker successfully allows the imposition of a moral cost due to norm violation in the framing. The change to a neutral language does not alter the frequency or amount of bribes demanded. Subjects viewed the

same behaviour in the ultimatum game as appropriate but did not find it appropriate in the harassment game. Therefore, they conclude that the appropriate behaviour underlying the norm comes from being refused something one is entitled to. The key question is whether the results are robust to raising the monetary stakes.

Of course this was a one-shot game with only a harassment component while in reality, the bribe takers and bribe givers are in a repeated relationship and there is often collusion in the sense that the bribe giver is trying to get a favour that they are not entitled to. A one-shot game captures a situation where the bribe taker cannot commit to fulfil the implicit bribery contract. When there is no commitment, it has often been argued that there are social preferences such as reciprocity which can ensure informal commitment even in the absence of repeated interaction. Usually bribes are given in anticipation of work done but when there is no repeat interaction, then bribes must be sustained by reciprocity. If there are moral costs to accepting bribes, there are possibly even higher moral costs associated with the distortions that arise as a result of reciprocating the bribe. How salient are these costs and do they deter bribe takers from reciprocating? Gneezy et al. (2018) study this question.

Suppose there is a collusive bribery game, with two workers and a referee. The workers perform some real effort task and referees choose the best of the two to get a prize. If referees were motivated only by greed, then they would not distort their judgement if they got the bribes before the judgement is made. However, if bribes are conditional on judgement, then they would have to distort their judgement to receive the bribe. They have two main treatments. In the first one, they allow referees to keep both bribes regardless of outcomes and in the second one, the bribe is paid conditional on winning. The main findings are that distortions in judgement are caused by bribery. These distortions occur due to greed and not due to reciprocity: in the case where referee gets to keep both bribes, he does not distort his judgement which suggests that there are moral costs of distortion. They also test for the effect of increasing these moral costs by changing the nature of the criteria for successful completion of the task—from subjective to purely objective and one treatment where there is no real effort task at all and therefore no moral costs. They find that as moral costs of distortion increase, the referee responds by lowering distortion while in the treatment where they get to keep both bribes and moral costs are zero, then they do reciprocate the higher bribe. However in other treatments where distortion is involved, and

bribes are unconditional, reciprocity does not play a role. Increasing the moral costs had the effect of reducing the role of reciprocity even further. They provide an external validation of this lab experiment with a field experiment in Meghalaya, India in a market for fruits.

Of course, in reality there are very few settings where there is no repeated interaction or where interactions are anonymous. It suggests that effective anticorruption policy should focus on creating anonymous interactions between public officials and clients; this ensures that no citizen can know for sure if he is facing the same public official and therefore the public official can get away with taking bribes without distorting judgement. However, the system will lead to the evolution of a norm—if public officials are aware that they help in creating a norm where no bribes are offered, they may decide to go ahead and change the allocation. So the key idea relies on single interaction which is not likely to hold in practice.

Drugov et al. (2014) study the role of intermediaries and bribe taking/giving behaviour in an experiment. They find that the presence of an intermediary has the effect of lowering both the uncertainty associated with bribing as well as the moral costs—thus intermediaries lead to significantly higher corruption.

Even if there are moral costs to corruption, norms are persistent. How should policy respond to this problem? The large number of programmes on ethics in business schools suggest that values and preferences are malleable via education. Education works by changing norms in society, but norms are a function of economic incentives too. Hauk and Saez-Marti (2002) motivate their model by describing the case of Hong Kong, a country plagued by corruption. In 1974, they launched an anticorruption drive which initiated higher deterrence in the short run but a change in moral values via public education of children in the long run. Some empirical studies then showed that this experiment was successful as measured by the different perceptions of whether corruption could be tolerated, whether bribing was acceptable, etc., between the age groups that were exposed to the education vs those that were not. They model the intergenerational transmission of norms of honesty/moral values as a function of economic incentives. Agents are purely rational but distinguished by their types: honest vs potentially dishonest. Norms are transmitted intergenerationally via a private costly effort. In any time period, new agents are born who will become active in the next period. New agents receive preferences via education. Each new agent is randomly matched to an active agent who becomes his or her cultural parent.

Parents care about their children and decide to transmit the values that maximize their future well-being. At each time, a principal chooses which of two projects to offer to an agent with private type. Projects are of two types—a large project with higher monetary payoffs to agents but higher scope for corruption and a smaller project with lower payoffs to agents and lower scope for corruption. The principal has a monitoring technology to detect the types with some probability. He can use either a separating strategy where honest types get the more remunerative project and dishonest types get the smaller project or a pooling strategy. In the latter, he always chooses the smaller project which has lower monetary payoffs to agents (and less scope for corruption). If the separating strategy is more likely in future, it incentivizes honest agents to exert higher effort as honesty pays off. However when the proportion of honest agents is sufficiently high, then there may be some free riding in effort by honest agents. Which steady state is arrived at depends on whether the proportion of honest agents is above a critical threshold. They show that making the project more attractive (increasing wages) or making monitoring more efficient all have the effect of moving the economy towards low corruption. The model points to the importance of coordinating expectations to encourage honest parents to put in higher effort.

The main result is that if public education (ethics) is introduced, it has a direct effect on moral values of society via education of children but it has an indirect effect because it acts as a substitute for cultural parents' efforts. However if the effort in public education is large enough, the direct effect dominates. There is a trade-off between how long it takes to converge to low corruption and how much it costs. As in most analyses of multiple equilibria, a temporary change in policy is sufficient to reach the good equilibrium. An interesting aspect of this study is to show that norms and enforcement of laws against corruption are not substitutes but complements. Although they do provide one explanation of where norms come from—they have an exogenously given share of individuals with preference for honesty—it begs the question of why some people have moral costs in the absence of norms. Kimbrough and Vostroknutov (2020) offers an alternative explanation for the evolution of injunctive norms—based on minimizing dissatisfaction in society—a contractarian approach to morality. They show that norms vary with the choice set. Berninghaus et al. (2013) design an experiment with multiple equilibria focusing only on the actions of public officials. When the probability of detection is endogenous, then there are self-reinforcing beliefs on how

many others are corrupt; if many are corrupt, then the chances of being caught are low while if most POs are not corrupt, there is a high chance of detection. This points to a view of norms derived as one of the Nash equilibria. Their main result is to show that beliefs matter more than risk attitudes, and that uncertainty about others' propensity to be corrupt reduces corruption.

3.2 How Descriptive Norms Affect the Level of Intrinsic Honesty

While social psychology uses the words norms to denote beliefs or actions, there may be some confusion about the relationship between norms and culture. The next two papers talk about cultures of corruption but it is very similar to the ideas of descriptive norms discussed earlier.

Fisman and Miguel (2007) uses an objective revealed preference measure of dishonesty—the number of parking violations by UN diplomats from 149 countries in New York city from 1997 to 2005. Since UN diplomats had diplomatic immunity—a privilege that allows them to avoid punishment for parking violations before 2002 when the law was changed, this data allows them to answer the question of how home country culture or norms of corruption affect individual behaviour. In 2002, the law was changed so that the police had the authority to confiscate the diplomatic licence after three violations. They find that in the period before 2002, the unpaid violations were significantly higher among countries who ranked worse on the (perception-based) corruption index. This effect is robust to including various controls such as region fixed effects, country income, government employee salary measures. However post-2002, they find a sharp and immediate (98%) drop in violations. Interestingly, they also find that culture is malleable and converges to the New York city culture of parking violations. Diplomats from low corruption countries increase their violations in the pre-2002 period as their tenure in New York increases. Besides home country norms, other explanations could include non-monetary punishments such as media exposure that affect different countries differentially—such a finding would be consistent with their "tolerance of corruption" explanation but, in any case, they do not find evidence of this. While they cannot answer the question of how enforcement changes norms, this is an important open question.

In a similar vein, Gachter and Schulz (2016) ask how the prevalence of widespread rule violations such as corruption, political fraud, tax evasion

affect the probability that citizens will break rules in a country. Their main hypothesis is that a culture of corruption will lower intrinsic honesty among citizens. They develop an index of "Prevalence of Rule Violations" (PRV) that is done by calculating the principal components of three country-level variables: an an indicator of political rights by Freedom House that measures the democratic quality of a country's political practices; the size of a country's shadow economy as a proxy for tax evasion; and corruption as measured by the World Bank's Control of Corruption Index. They construct PRV for the 159 countries for which data are available from 2003 onwards. They run lab experiments on honesty for subjects who were children in 2003 and therefore could not have influenced PRV, to study the causal influence of societal norms on intrinsic honesty, in 23 diverse countries which matches the distribution of PRV in the larger sample of 159. Their experiment to measure intrinsic honesty is the "die in a cup" task where subjects sitting in cubicles, are told to roll a six-sided die twice in an opaque cup and report the result of the first roll only. The payment is made on the basis of the number reported. Each number corresponds to the payment (1 earns one money unit, etc.) except that 6 earns nothing. Individual honesty cannot be detected but aggregate honesty can. The full honesty (FH) benchmark use equal probabilities of all numbers occurring so that the average claim should be 2.5 units. Full dishonesty (FD) is where the maximum is claimed regardless of actual numbers—5 units. They also create a benchmark for "justified dishonesty" (JD) where participants are assumed to report the bigger of the two numbers they get—just bending the rules rather than being outright dishonest. In this case, the average claim should be 3.5 units. They also derive the CDFs for the three benchmarks and compare with the empirical CDFs for high and low PRV countries. They find that the CDFs for low PRV countries are significantly above the CDF for JD while that for high PRV countries are significantly below JD. They also test how mean claims are compared to the benchmarks and find that PRV and mean claims are strongly correlated. The frequency of high claims is also positively correlated with PRV. Overall, their findings provide support to the idea that people are strongly effected by prevailing norms of honesty.

They cite Tabellini (2008) to argue for a causal link between the quality of institutions and culture on PRV: institutions and culture affect PRV which in turn affects the intrinsic honesty of their subject pools. However the silver lining is that few people are dishonest without some moral cost, given that most dishonesty found is closer to JD than DB.

This study was preceded by a similar one (Barr and Serra 2010) which looks at differential choices on corruption by students in the UK from different home countries. They link student responses to Transparency International's measures of perceived corruption in their home country. They also find that norms change with time spent in the UK.

3.3 Prescriptive vs Descriptive Norms

The obvious question is the link between prescriptive and descriptive norms and which of these turns out to be more important: the role of the β_i in Eq. (3). Prescriptive norms are the beliefs that agents have about which actions are appropriate and which are not, in a context-independent way. Descriptive norms on the other hand provide information about bribes given by other players. Schram et al. (2019) study the role of norms—prescriptive and descriptive in a set of cross-country lab experiments. They use the Gneezy corruption game (Gneezy et al. 2018), discussed earlier and elicit prescriptive norms using the Krupka-Weber coordination game. The main result is that descriptive norms matter while prescriptive norms do not. There is a tendency towards conformism in bribing behaviour. This finding is echoed in Bicchieri and Xiao (2009). Interestingly, they find differences in prescriptive norms between Italy vs the Netherlands and China. In Italy, they find that people think it is appropriate to bribe and as a decision-maker, to be affected by bribes in allocations.

Bicchieri and Xiao (2009) use experimental manipulation of preferences of dictators in dictator games, and find that descriptive norms matter much more than prescriptive norms in driving behaviour. They use a dictator game where they use data selectively from previous experiments in dictator games to provide messages on descriptive norms randomly across the dictator participants in their experiment. Some of the dictators are presented with data showing that a majority of the previous dictators chose to be selfish (treatment Selfish Choice, SC) or believed that a fair split should not be chosen (treatment Selfish Beliefs, SB) while others are presented with data that showed that the majority chose fairly (treatment Fair Choice, FC) and that a majority of dictators believed in a fair split (treatment Fair Beliefs, FB). They also combined the beliefs and choices treatments in SB-FC and FB-SC. The latter is relevant especially given the widespread prevalence of corruption despite the laws and norms around it. In cases where a belief norm is violated by the choice norm,

which one affects behaviour more? When only one piece of information is given, e.g. FC, they find that dictators express normative norms that match the empirical expectation of choices. Moreover both normative and descriptive norms influence behaviour in the same way, subjects do not treat them differently. However in cases of conflict, they find systematic evidence that behaviour is driven by descriptive norms. This may explain why ethical training had little effect on behaviour in Banerjee and Mitra (2018).

One possible explanation is that expectations of punishment via social ostracism or even of legal punishment is affected by how many others are following the norm. This is what Ryvkin and Serra (2012) show with a theoretical model. Ryvkin and Serra (2012) model the role of descriptive norms via incomplete information about the moral costs associated with bribery. Higher uncertainty about others' corruptibility is generally associated with lower corruption (e.g. Herrera and Rodriguez 2007). In their model, Ryvkin and Serra (2012) have a bargaining game between a citizen and a public official. Each of them has costs of corruption which are the sum of intrinsic moral costs (m_i) and extrinsic costs, $1 - x$, where x = fraction of corrupt people in society—the latter captures the chance of being caught or having to face a large punishment—the key point is that the latter depends on the descriptive norms in society, in the sense that the higher the fraction of people that a bribe giver/taker believes to be corrupt the lower are the extrinsic costs, e.g. because they believe that even the enforcement agencies can be bribed. Their key assumption is that corruption by citizen and public officials are strategic complements. Thus, total cost of being corrupt is given by $c_i = m_i + (1 - x)$.

An interesting insight of the model is that interventions such as changing the probability of being caught or the penalty associated with it would not impact corruption—this is because such punishments enter only through the fraction of corrupt people x. If x is perceived to be very high, then such punishments will be perceived to have little effect as even the auditors would be corrupt. The model predicts that policies such as changing levels of discretion, or changing moral costs via ethics training can affect the level of corruption.

4 The Role of Explicit vs Intrinsic Motivations

Dhillon et al. (2017) is one of the few behavioural theory papers on the topic of how wages or other extrinsic incentives interact in bribe taking as well as selection issues. In their model, agents are engaged

in deciding whether to accept bribes or not, based on wages from the job, the probability of being caught taking a bribe, the collective reputation of the job and their own intrinsic honesty. There are three types of agents in the public sector: those who are purely money motivated, or greedy, (G), that is with $\alpha_i = 1$ and $\beta = \gamma_i = 0$ in our equation (3) those who are purely intrinsically motivated (saint) (S), with $\gamma_i = 0$ and β_i large enough such that they never commit a crime, and those (I) who have mixed motivation, they are both money and extrinsically motivated, $\alpha_i > 0$ and $\beta_i > 0$, and also *image* concerned and therefore they have $\gamma_i > 0$ (see Ellingsen and Johannesson 2008). Type I individuals get a direct utility from the collective reputation, $R(\cdot)$ of the public sector. As expected, purely money motivated agents respond to an increase in wages by reducing bribe taking, while purely intrinsically motivated individuals are assumed to have sufficiently high levels of motivation that they never accept bribes. However, the interesting behaviour comes from agents of the third type: they may increase or decrease their bribe taking behaviour when the wage in public sector increases. The collective reputation in the public sector depends on the fraction of each type and on how each type behaves: the higher the fraction of "saints" compared to "money motivated" officers, the higher is the collective reputation, but also the reputation of *being honest* depends on how each type of the agents behaves. A wage increase in the public sector has two effects: on one hand, it changes the incentive to behave honestly of those who are not saints; on the other hand, in the long run, it may have also effect which types of individuals are selected in the public sector. Suppose we are in a situation in which greedy individuals are corrupt. A wage increase provides more incentives to greedy people to behave honestly, and some of them may change their behaviour, but it *lowers* the signalling content of being honest. If the reputation of honest individuals decrease, because they are considered opportunistic greedy agents with positive probability, this may end up decreasing the incentive of individuals who are strongly image concerned to behave honestly.

If the collective reputation is worse than their own level of intrinsic honesty—then they lose utility—the extent to which they care about this loss depends on the weight on image concerns and this ultimately lowers their incentives to behave honestly and increase the probability that they accept a bribe.

The overall effect of a salary increase is therefore not easy to predict, because countervailing forces operate. Moreover, a wage increase relative

to the private sector also has a selection effect, leading to more *G* types entering, which destroys collective reputation—the level of wages determines whether there is strategic complementarity between the actions of *G* types and *R*. types or vice versa. Whether intrinsic motivation is crowded out by monetary compensation depends on collective reputation and indirectly on wages. It is possible to have situations where wages increase but money motivated types reduce corruption while intrinsically motivated types increase corruption. Overall, the analysis suggests that allowing for different types of individuals in the public sector and for individuals motivated by image concerns may lead to counterintuitive effects on corruption when wages increase. The subtle point relies on the modelling of image concerns as the difference between collective reputation for intrinsic honesty and own level of intrinsic honesty. It is this that can cause crowding out of intrinsic honesty when wages increase since it implies pooling with agents who are money motivated and honest (due to high wages).

We now turn to the empirical literature on crowding out.

Van Rijckeghem and Weder (2001) show how corruption is affected by government wages relative to manufacturing wages in a cross-country sample of 31 developing countries over the period 1982–1994. They use measures of corruption based on questions on bribes in country risk assessments by ICRG, a private international investment risk service. They control for the risk of detection, the size of penalties, ethno-linguistic fractionalization, the degree of competitiveness of industry as these have been documented as influencing the level of corruption. They find a statistically significant negative relationship—however they show that wages would have to increase substantially to reduce corruption. An and Kweon (2017) update some of the data for this analysis—using data on government wages relative to manufacturing wages for 43 countries over the years 1999–2008, they show that there is a significant non-negative relationship. However, this is driven by non-OECD countries and countries where wages are low. In order to achieve a reduction in corruption from non-OECD country levels to OECD country levels, however, they estimate that wages need to increase by at least 7 times! When we look at specific instances of government pay raise, a different picture emerges. Mishra et al. (2008) study a pay reform in 1997 India, which raised custom officials' salaries by 80–10%. They find the pay reform had no effect on tariff evasion, leading to the conclusion that officials kept taking bribes at the same rate after receiving their pay increase. Abbink and Serra

(2012) surveys the experimental literature on wages and corruption—the majority of studies find a positive effect of higher wages in deterring corruption. These findings can be explained by the presence of crowding out effects when wages increase by smaller amounts and by the fact that bribes may be effected by wages as well. Crowding out can be driven by individual crowding out effects but can also reflect selection of individuals who are heterogeneous on motivation as shown in Dhillon et al. (2017).

Barfort et al. (2019) study the role of self-selection into public office using a survey experiment approach. They focus on Denmark, one of the least corrupt countries in the world, and provide evidence of positive self-selection of more honest individuals into the public sector. They attribute the findings to the higher prosocial motivation and lower pecuniary motivation of honest individuals. They also find that increasing public sector wages would have a deleterious effect on the composition of potential employees in the public sector.

Conceptually, they assume that there are multiple equilibria. The public sector in Denmark is in the virtuous equilibrium with low corruption and low wages (relative to the private sector) where honest, intrinsically motivated people self-select into public sector and those who are motivated by monetary compensation self-select into the private sector. Their paper shows that the causality runs from individuals who are honest being motivated to join the public sector in Denmark rather than the private sector. This holds true as long as wage difference between public and private sector is negative and sufficiently big to discourage dishonest individuals. Moreover, they show that there is a strong correlation between honesty and prosocial motivation, and there is no significant relationship with ability or risk preferences.

Their methodology is to take a sample of 862 undergraduate students in Law, Economics and Political Science[4] from the University of Copenhagen. Students were randomly chosen from among those enrolled in the university in 2009–2011 and 2013–2014. The survey ran an experiment called the dice-under-cup game (Fischbacher and Follmi-Heusi 2013) used by Hanna and Wang (2017), where dishonesty has been shown to predict a range of dishonest behaviours in the real world and actual fraudulent behaviour by public sector employees (Hanna and Wang 2017). The game consists of guessing the number on a computer-generated

[4] As most of the top public sector employees as well as law firms, finance and lobbying firms come from among these students.

dice before rolling it. Results are displayed only to the subject (as it's a survey) and no one else ever sees the actual number. They are asked to report the number displayed and they win if the guess was correct. Obviously, they can always cheat on the reporting. Respondents play this game at 4 different points in the survey and the empirical distribution of reported numbers is compared to what should be expected with complete randomness and truthful reporting. This generates a measure of dishonesty or cheat rate which is the fraction of time the respondent would have cheated. They construct individual estimated measures of each respondent's cheat rate. Preferences are elicited by asking students to rank their preferred profession out of 8 common professions. They focus on the rank of public administration. They also ask subjects to fill out a Public Service Motivation (PSM) questionnaire. Finally, they were asked to rank preferences between public and private sector given various different wage gaps with a maximum of $3000 in either direction. Other individual measures included a measure of prosocial motivation which was elicited by playing a dictator game where subjects were given a choice of transferring any winnings to their own account or to donations. Ability was measured using high school GPA scores. They also elicited risk preferences using an incentivized measure of risk aversion. Direct measures of job preferences were elicited by asking students to rank the following attributes of jobs: wage level, work hours and other terms of work, importance, entertainment value and job security. Gender information was also taken. Based on their data they find that 14–17% of respondents were always honest while 17–23% cheat more than 98% of the time. They show that preference for public sector predicts lower estimated cheat rates, and this result is robust across different measures of pubic sector preference. Moreover, the result is driven by the highly honest students who have strong preferences for the public sector. They then examine the correlates of honesty and the correlates of public sector motivation. They find no effect of ability, nor risk preferences on either of the two outcomes. However, prosocial motivation vs pecuniary motivation is highly correlated with both cheat rates and public sector preference. Increasing the wage gap in favour of the private sector leads to an increase in the average gap between estimated cheat rates for those preferring the public sector to the private sector.

Their results suggest that high wages are not the reason why Danish public sector employees are less corrupt. Rather they believe that Denmark public sector demonstrates a self-reinforcing equilibrium of low corruption and self-selection of honest individuals into public service.

In contrast, Hanna and Wang (2017) ran a similar experiment in India which is a country known for high corruption in the public sector. Their question is whether candidates who opt to apply for the elite public services cadre in India (the civil service) who are perceived as being high ability individuals, are likely to be more corrupt than average. They do not have information on what the subjects apply for, however, all they have information on is preference for working in the government sector. Hanna and Wang (2017) has a conceptual framework that models the choice between private and public sector jobs based on propensity to be corrupt, prosocial motivation and ability. Public sector wages are fixed, while private sector wages increase in ability. This leads to the result that high ability individuals enter public sector jobs either because they are highly intrinsically motivated or have high propensity for corruption, or public sector wages are very high. The latter can be ruled out in the case of India and the kind of jobs they consider. Therefore they test which of the two factors is important in motivating the pool of subjects they have. They find that it is the potential for corruption rather than prosocial motivation that incentivizes entry into govt. jobs in India and this seems to be true across the ability spectrum.

They carry out two sets of experiments—one on 669 students in 2012 from 7 large universities in Bangalore and the other on a set of nurses from 185 Primary Health Centers (PHCs) in the same state Karnataka in 2013. Their idea is to compare the outcomes from students vs nurses to see whether the lab experiments are measuring outcomes correlated with observed corruption. Thus for the nurses they use the measures of attendance when nurses were actually absent but claimed the wages for the day nevertheless. They run similar experiments on the two subject pools to test propensity to be corrupt—the dice rolling game repeated 42 times provided the main indicator of cheating based on the predicted random distribution vs the empirical distribution. With the students, they also added another cheap talk message game where the person is being cheated by a fellow student (anonymous but from the same room). They added some memory and IQ tests to measure ability and the dictator game (as in Barfort et al. 2019) to measure social preferences. For the nurses, the payment was in candy rather than cash, the IQ tests were less difficult and also overall took less time as they were run in the workplace.

They find a significant proportion of students (and fewer nurses) cheating on the dice roll game. On average, students chose to keep 60% of their endowment instead of donating it to a charity. Only 13% of students

kept less than 20% of the endowment. They did not observe any correlation between the dice task and ability, either for students or nurses. Cheating is however correlated with lower prosocial motivation. Nurses who reported higher scores on the dice roll were more likely to be fraudulently absent from work. A one SD increase in the number reported on the dice roll leads to a decrease in attendance by 3% points (significant at 10% level).

Is dishonesty still predictive of preference for government jobs after interacting the cheating/prosocial motivation outcomes with ability? They do not find any effect either way. Finally, they test whether the big 5 personality tests predict preferences for government jobs (assuming the latter offer more opportunities for corruption, based on the previous analysis). They find that neuroticism and locus of control are the only two that are predictive. Tests on attitudes to corruption fail to correlate with preferences for government and presumably corruption. The main message of the paper is that preference for government jobs is highly correlated with dishonesty in a student population. This result is robust to extension to subjects and measures of corruption in the field that are correlated with the measures of cheating developed in the lab.

Overall, as Dhillon et al. (2017) showed there is ambiguity on the response of corruption to wages: an increase in wages (or in probability of being caught) crowds out intrinsic motivation of existing public sector employees and encourages the entry of dishonest types—both of which head intrinsically honest people to increase corruption. If wages increase sufficiently, then the money motivated individuals reduce corruption while image conscious honest agents may increase corruption. There is inconclusive evidence on the effect of monetary incentives as anticorruption policy. One view that emerges, is that in order to be effective in reducing corruption, the wage increase should be large, but this seems to be at odds with the findings of Barfort et al. (2019). More importantly, the literature has not analysed the dynamics of corruption in the long run. Wage increase may attract more money motivated individuals and this may affect reputation and consequently, the pool of those who are interested in being hired as public officers.

4.1 Selection on Ability and Honesty: Trade-Offs?

There are no studies on the trade-offs between intrinsic honesty/corruption and ability to the best of our knowledge. However,

there have been studies that are indirectly measuring this trade-off. Gagliarducci and Nannicini (2013) study Italian municipal governments from 1993 to 2001. They exploit a regression discontinuity approach that allows them to look at the effect of exogenously higher wages on selection of politicians (using the two-term limit) and performance while in office. They find that higher wages lead both to higher ability (more educated) politicians and also leads to better performance in terms of improving cost efficiency in government. They do not directly test for corruption but if improved cost efficiency is inversely related to corruption, we may infer that higher wages do not have crowding out effects in selection.

Bal Bo et al. (2013) find that higher wages improve selection on competence and intrinsic motivation. They use experimental data from a recruitment drive to hire public sector workers in a regional development programme in Mexico, the RDP, where two different wage rates were advertised randomly. The used measures of prosocial motivation and competence to conclude that applicant pools were better when wages were higher and therefore there was no trade-off. Note that there is a difference between intrinsic honesty and public sector motivation, however the positive correlation has been documented by Barfort et al. (2019) above.

Banuri and Keefer (2016) however find in a lab in the field experiment, that in the case of Indonesia, individuals whose motivation matches that of the organization exert higher real effort. Moreover, higher wages attract less prosocially motivated individuals. In contrast to the India study by Hanna and Wang (2017), they find that the Indonesian Ministry of Finance attracts individuals who exhibit higher levels of prosocial motivation than a comparable sample of general workers. Finally, Maggian et al. (2018) show that the relation between ability and honesty may emerge through the hiring process. They experimentally investigate the role of reciprocity in sustaining the emergence of implicit collusive agreements in hierarchical organizations. They show that when an agent hires, on behalf of the principal, one worker out of two candidates: low ability workers, being less entitled to be selected, are more likely to exert effort in a task that is exclusively beneficial to the agent; as a consequence, agents distort the hiring process in favour of low ability workers.

4.2 *Penalties and Corruption*

In Eq. (3), the expected punishment (P, and $p(a_i)$) may have an effect on intrinsic motivation via image concerns—this is another avenue discussed in the literature.

Akerlof and Dickens (1982) suggest that imposing stiffer penalties may sometimes lead to undermining of individuals' internal justifications for obeying the law. The paper is based on the idea in psychology of "cognitive dissonance" whereby individuals have an internal justification for how much corruption is appropriate. Increasing external punishments may crowd out these internal justifications and lead to perverse outcomes. More recently, in experiments on labour contracting, subjects provided less effort when the contract specified fines for inadequate performance than when it did not (Fehr et al. 2001; Fehr and Gachter 2001).

Abbink et al. (2002) introduced a bribery game experiment where they added a severe penalty, *sudden death* (to both bribe giver and bribe taker) for being caught. They found this to have a significant effect on reducing corruption even when the probability of being caught was low. Banerjee and Mitra (2018) is an experimental study exploring the efficacy of fines (P) for bribes vs increasing the probability of getting caught ($p(a_i)$). They find that increasing the fine has larger impacts on bribe taking and bribe offering behaviour than increasing the probability of detection.

In contrast, Basu et al. (2016) is a theoretical paper showing that when bribes' magnitudes are endogenous, then penalties to deter bribe taking have to be sufficiently large—otherwise it has the effect of increasing bribe size to compensate for higher punishment. They advocate asymmetric penalties but point out that the endogeneity of the bribe amount implies higher bribes when asymmetric punishment (punishing the bribe taker and not the bribe giver) is introduced as in China in 1997. The Chinese reforms did not succeed due to high costs of whistle-blowing.

5 Policy Interventions Using Non-monetary Incentives

Even if the evidence shows that there are moral costs of corruption, or that public sector attracts honest individuals, what are the policy implications? Can non-monetary incentives be used effectively to lower corruption? In our utility function, (3), it is possible to change $R(\cdot)$ by giving some non-financial incentives—e.g. giving awards to individuals

for being honest or shaming someone for corruption? Image conscious agents may then respond by lowering corruption.

Ashraf et al. (2014) investigates the use of non-financial incentives to hairdressers who are motivated to disseminate information on HIV prevention and sell condoms. The non-financial incentives are in the firm of giving "stars" to the best sales people—a thermometer is displayed which can be observed by both customers and peer group. They show that the effects of financial and non-financial incentives interact positively with prosocial motivation, which itself is measured by giving in a dictator game. Thus, in their context, extrinsic incentives are complementary to prosocial motivation. This is not, of course, an intervention to alter the level of corruption but it suggests that such interventions might be more successful than monetary incentives which come with their own adverse selection effects.

Dustan et al. (2018) carry out a randomized control trial to measure the effect of behavioural interventions on bureaucrat performance. They target the Ministry of Education in Peru that uses text messages based on behavioural insights to bureaucrats who are responsible for a school maintenance programme. The idea behind the design is to address limited attention problems by giving reminders.

The duty of the bureaucrats is to transfer funds from the central agency to schools for investments in infrastructure. There is a lot of scope for corruption in the programme and the Ministry was unable to verify the expenditures as many managers did not report the use of the funds and sometimes did not use them at all. Compliance is measured by the extent to which they use the funds and the extent to which they report on use. The treatments are of 5 types: (1) an alert and a link to obtain additional information about maintenance activities. (2) The second group is informed about the amount of the transfer available in their accounts at the National Bank. (3) Civil servants in the third group receive a message with a social norm regarding the level of compliance of other civil servants in their reference group. (4) In the fourth group, get the "shaming" treatment whereby civil servants are informed that their names will appear in a public list if they fail to comply with the rules governing the maintenance activities. (5) Finally, the last group receives a message indicating that they may eventually be audited.

Receiving any message is associated with a reduction of about 20% in the compliance gap (the distance between the current levels of compliance and full compliance) for reporting expenses and 10% for withdrawal

of funds from the National Bank accounts. All behavioural contents seem to be effective, although social norms and auditing threats are the most effective. A follow-up treatment is run where they also consider whether the length of intervention, the frequency of reminders and sending messages about the social benefits of the expenditure make any difference. They find that exposure to the earlier campaign had no effect on the follow-up suggesting that there are no learning effects. For external validity, they also run an experiment on a different set of bureaucrats who do not have tenure. They find the effects of audits to be effective but not that of the norms. This is an interesting finding bearing on studies that look at the effect of wages on corruption in many highly different settings. The treatment does show effects but given that many bureaucrats are faced with multiple pressures and tasks on their time, would showing messages have the same impact if combined for many tasks? Greater governmental transparency is yet another frequent proposal that international organizations advocate. Uganda's news campaign against school fund theft is a celebrated example of the power of transparency to intensify social disapproval (Reinikka and Svensson 2005).

6 Relative Impacts of Monetary vs Non-monetary Incentives

Although this question seems to be the most important one in the field of behavioural interventions to reduce corruption, it is surprisingly difficult to find much work on this topic. Banerjee and Mitra (2018) is one the few papers we found that tries to answer this question. They use the same harassment bribery experiment as Banerjee (2016) where they vary the monetary and non-monetary anticorruption strategies.[5] In one treatment, there is a small chance of audit in which case the bribe taker pays a heavy fine while in the other treatment, he gets audited with a high probability but pays a small fine. In a second experiment, they provide a four-week ethical training which is supposed to change the perceived moral costs of

[5] As discussed earlier, in the bribery game they have a Citizen (C) and a Public Official (PO). C performs a real effort task for which they are entitled to receive a prize which is subject to the discretion of PO. The PO may demand a bribe for giving the prize. C can accept or reject the bribe demand—if she accepts the bribe demand, she gets the prize minus the bribe and the PO gets the bribe; If she rejects, they get their basic (participation) payoffs.

accepting a bribe (for violating the prescriptive norm), and participants then play the bribery game, while in another treatment they have the participants playing in the eighth week after the training. The baseline treatment is without any ethics training. They use a basic decision-making approach where the utility from honest behaviour is given by

$$EU(H) = U(w) \tag{4}$$

and the expected utility of obtaining a bribe is given by

$$EU(C) = p(w - F(b)) + (1 - p)U(w + b) - m(b) \tag{5}$$

where H stands for honesty, C for corruption and w is the wage, b is the bribe amount, $F(b)$ is the penalty when caught taking the bribe, $m(b)$ is the moral cost associated with taking a bribe. Note that moral costs are closer to a prescriptive norm.

They use undergraduate and MBA students based in India to understand the comparative effects of monetary vs non-monetary incentives on bribe taking. They find that first, increasing the fine for corruption has a greater mitigating effect on bribes demanded than increasing the probability of detection (as shown by Becker and Stigler 1974 for risk neutral individuals). The proportion of subjects who demand bribes decreases more in the low probability treatment than the high probability treatment. Moreover, the bribe givers also anticipate higher magnitude of bribe demands, and higher proportions of those who ask for bribes in the high probability of detection/low fines treatment. The ethics training on the other hand has a corruption reducing effect in the short run via lower proportion of subjects demanding bribes and lower acceptance rates by bribe givers, albeit the effect is smaller than that from the low probability of detection/high fine treatment. There is no effect on magnitude of bribes offered/accepted. Moreover, the effects are short-lived. Note that the ethics training involves a different participant pool (MBA students) who were exposed to ethics training. Perhaps, a descriptive norm would have performed better in the long run as has been shown since by many scholars.

Another policy intervention is to improve the selection of individuals on traits like intrinsic honesty or intrinsic motivation which has been linked earlier to honesty. Callen et al. (2015) builds on the idea of selection of intrinsically motivated individuals into public service. They consider the Big Five personality traits and Public Service Motivation

tests as indicators of suitability for bureaucratic jobs in Pakistan's health service. These traits are agreeableness, emotional stability, extroversion, conscientiousness and openness. The PSM measure is argued to capture attributes of individual personality relevant to the desire to provide public service. PSM has six traits: attraction to policymaking, commitment to policymaking, social justice, civic duty, compassion and self-sacrifice. They use absenteeism and collusion with auditors as the outcome variables for doctors and health inspectors (auditors) in the national health service which provides primary care to rural parts of Pakistan. Their main findings are that a one SD increase in the measure of conscientiousness leads to a 5.8% points increase in the probability of being present at work. Health inspectors that score one SD higher on the measure of PSM trait of commitment to policymaking are 5% points less likely to collude with doctors to falsify inspection reports. Inspectors that score one SD better on a proxy measure of tendency to procrastinate are 6% points more likely to complete their assigned inspections within 2 months. They find significant positive correlations between 4 of the 11 personality traits and 2 of the big five traits with doctor attendance. A positive though weaker correlation exists for health inspectors. These personality measures appear to be more important than distance of home of doctor from workplace and work experience in predicting doctor attendance. They use Lasso estimator to show that the most predictive variables for doctor attendance are the big five and PSM indicators.

This evidence suggests that non-cognitive skills are as important as cognitive skills for recruitment to public service. Moreover such skills can be learnt (Kautz et al. 2014). The policy recommendation is therefore to improve selection processes as well as provide opportunities for training.

Ashraf et al. (2015) in contrast looks at whether selection of community health workers in Zambia is affected by making career incentives more salient. They find a large positive effect on selection of more competent workers but not on observables such as prosocial motivation. Most of the gap is not explained by observables suggesting the difficulty of including eligibility criteria.

7 Conclusion

Recently, there has been an emerging interest in the use of non-monetary incentives in anticorruption (see e.g. Abbink and Serra 2012). This chapter was intended to provide a review of selected literature on this

topic. A large part of the literature is experimental due to obvious reasons of not being able to measure corruption objectively in observational studies. However, we do include some theoretical and natural experiment-based studies.

The main conceptual innovation in this literature is to introduce the notion of moral costs from wrong doing as well as non-monetary reputational costs for image conscious individuals. Moral costs arise when actions are unobserved such as when prescriptive or descriptive norms are broken. Image consciousness can vary by individuals but is dependent on the inference based on observable external factors on intrinsic honesty of the agent. In turn, this depends on collective reputation of the job (selection) and the level of extrinsic incentives.

The literature finds evidence that such moral costs exist but may be dominated by sufficiently strong financial incentives. Second, selection is based on collective reputation. They also find evidence of crowding out of intrinsic honesty by increases in the wage—however results differ across countries. Descriptive norms matter more than prescriptive norms and intrinsic honesty is correlated with prosocial preferences (giving in a dictator game). There is also evidence that behavioural interventions such as providing higher status or sending reminder messages help.

While some of the literature connects honesty to social preferences, the relationship between norms and social preferences has not been spelt out except in the theoretical work by Kimbrough and Vostroknutov (2020). While Hauk and Saez-Marti (2002) do investigate theoretically the interaction between economic incentives and the evolution of norms, they do not address the link between social preferences and moral costs. Rather in their setting, norms of honesty are transmitted when the material benefits of being honest are higher in society.

In principle, there may be many social preferences that determine why individual agents are intrinsically honest—e.g. inequity aversion, altruism, but there is little mention of the specific ways in which social preferences affect corruption. We believe that the link between intrinsic honesty, norms and social preferences is an important open question for future work. Echoing Binmore (2020), we believe that laws can be enforced only when they are self-enforcing, in the same way as norms. This may explain why prescriptive norms are not as important as descriptive norms in explaining behaviour. Another more policy relevant question is how to change norms? A recent history-based literature examines such questions, e.g. Giuliano and Nunn (2020). A fruitful direction would be to link these

insights on norms across the different settings in which they have been studied, in order to understand the important question on how norms that accept societal corruption can be changed.

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Discussion

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Corruption is the use of public office for private gains. The study of corruption has always been a central topic in law and economic development. The conventional thinking on curbing corruption follows Becker's approach to crime and punishment, where anticorruption law is viewed as an instrumental device to change the structure of material incentives, and in assuming so, induce the compliance behaviour as an equivalent price change. Despite a critical step in expanding the economic analysis to the non-market behaviour of corruption, the crime and punishment approach, with its sole focus on material costs, overlooks the moral and social aspects of the behaviour. The authors take this question seriously and ask how the recent behavioural and experimental findings can inform us on corruption control. This is an applauded task, as in search of the cures for corruption, we cannot rely upon ill-founded explanations of it.

Recent advances in behavioural economics point to several social and psychological reasons that also make corruption more costly, even though no monetary calculation is involved. The chapter summarizes them under an umbrella definition in the corruption context—intrinsic honesty, contrary to extrinsic motivation. Intrinsic honesty is defined as the likelihood of being honest given an opportunity for corruption. One of the chapter's outstanding contributions is to provide a coherent mathematical framework for thinking about different factors that affect intrinsic honesty. In particular, the authors propose three kinds of determinants in the literature: prescriptive norms, descriptive norms and reputational concerns.

By conducting an extensive survey, the authors find that both descriptive norms and prescriptive norms matter for intrinsic honesty, while descriptive norms matter more. They also show that interventions using non-monetary incentives are effective, although they may be dominated by sufficiently strong financial incentives or may interact in undesirable ways with financial incentives. The relative merits of the two kinds of interventions definitely require further investigation.

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The authors make a compelling case for the relevance of moral costs in understanding the roots of corruption. In what follows, I briefly discuss how this behavioural theme offers a fresh perspective on some of the widely adopted anticorruption interventions, aiming to complement their survey. The set of policy instruments includes higher salaries for public employees, monitoring and enforcement, and greater governmental transparency.

Raising salaries for public officials is on any list of anticorruption strategies. Do higher wages reduce corruption? There is some truth to this view. Earning less than $100 per month (until 2014), police officers in Sierra Leone can barely make ends meet and may have to supplement their paychecks with routine bribes. Singapore, by contrast, offers top officials salaries over a million dollars and runs one of the least corrupt countries in the world. Indeed, Van Rijckeghem and Weder (2001) find a negative correlation between government salaries and corruption. These observations seem to work well with Becker's model. However, when we look at specific instances of government pay raise, a different picture emerges. Mishra et al. (2008) study a pay reform in 1997 India, which raised custom officials' salaries by 80–100%. They find the pay reform had no effect on tariff evasion, leading to the conclusion that officials kept taking bribes at the same rate after receiving their pay increase. Fisman and Golden (2017) report an interview with one retired Indian official, who further claimed that the higher salary of customs officials actually led to a more lavish lifestyle because they no longer feared raising suspicions by overspending on visible forms of luxuries. This can be explained by the "over-justification effect" in the chapter: as monetary return increases, the reputation for choosing the public service changes from proof of social orientation to a signal of gold-seeking. The pay raise in this case altered the incentive for self-selection into the office. It is for-the-money types that find this job more attractive, whereas intrinsically motivated people are deterred from joining.

Monitoring and punishment are known to be successful in deterring crime. On eradicating corruption, the authors cite several studies confirming that auditing and penalties can be effective tools. However, the fundamental problem with public enforcement is, in the words of the Roman poet Juvenal, "who will guard the guards themselves?". In a country where corruption is pervasive, officials designated to monitor bureaucrats and enforce the law may be willing to take bribes themselves to look the other way. This explains the high incidence of corruption

in many developing countries, where functionaries of the state and ordinary citizens collude to evade the law. Installation of prescriptive norms appears to be futile, as seen from the widespread failures of independent anticorruption authorities across the world. In fact, a major reason behind the failures is a lack of commitment of the leading politicians, demonstrating the importance of descriptive norms. One exceptional case is Hong Kong's Independent Commission Against Corruption (ICAC) which transformed a deeply corrupted government into one of the least corrupt today. When culture of corruption becomes a focal point, coordinated change in descriptive norms, is a necessity. The critical question then is how to nudge norms. Two lines of research are very relevant here: the importance of leadership or norm entrepreneur (Basu 2022) and the power of law to create or validate social norms, known as the expressive function of law (McAdams 2015). Both forces are at work in the ICAC story.

Greater governmental transparency is yet another frequent proposal that international organizations advocate. Uganda's news campaign against school fund theft is a celebrated example of the power of transparency to intensify social disapproval (Reinikka and Svensson 2005). However, the inevitable trend of specialized expertise in the modern government poses an uneasy case for morality and corruption. As the regulatory process becomes increasingly complex and technical, it is hard for the citizens and voters to figure out whether a policy decision is made out of expert information or instead of vested interest. As a result, corruption can hide under institutional and organizational practice. Economists have begun to gain insights into this by testing the proposers' behaviour in an ultimatum game with asymmetric information. The typical setup is one where the proposer (bureaucrat) knows the exact amount of money to be divided, and the responder (citizen) only knows the distribution of possible amounts. Limited information complicates the interpretation of self-serving behaviour. Suppose the pie can be large ($24) or small ($12), the responder only observes her share, but the proposer's offer conveys a message about the nexus of the pie and his preference. If the responder is being offered $6, she can have two possible beliefs that are both rational: either the pie is small and the proposer is fair and honest, or the pie is large and the proposer is self-serving. The complexity of the policy issues muddles the evaluation of the bureaucrat's self-serving bias. Moreover, proposers do appear to take advantage of this. Guth et al. (1996) run this experiment, and they find that when the pie is small, only 1/6 of

the proposers offer as much as $6; and when the pie is large, 70% of the proposers offer $6. Appealing to civil servants' reputations faces particular challenges in the technocratic world.

The behavioural insights uncover either unintended consequences of conventional anticorruption efforts or desirable effects of novel interventions. The chapter sets the stage for exciting research agenda on applying behavioural economics to the study of corruption. There are two further directions worth emphasizing here. (a) The literature so far, as synthesized by the authors, leaves open the question of what determines prescriptive and descriptive norms. One important factor is social preference. Interested readers can refer to Ellingsen and Johanneson (2008) for an integrated model of social preference and image concern. Relatedly, there is a deeper question on whether we should interpret the behavioural coefficient as prosociality or susceptibility to norms. In cases where corruption is institutionalized, the two interpretations can be quite different: buying office was both legal and well regarded in late Qing China (!), but was definitely harmful to society. (b) How should we compare different anticorruption initiatives? One implication of the utility function for intrinsic honesty is that different policy instruments may plausibly control different forms of corruption. Embezzlement or bribery from a stranger or a friend are all corrupt behaviours, but they have different degrees of visibility and may be subject to different values and norms. Furthermore, do these interventions undermine or strengthen one another? As Samuel Bowles puts it quite succinctly (2008), "the critical assumption in the conventional approach is not that other-regarding motives are absent but that policies that appeal to economic self-interest do not affect the salience of ethical, altruistic, and other social preferences". Countries' anticorruption efforts usually take a multifaceted approach (as in the case of Hong Kong and Singapore, higher salaries and improved enforcement are likely to be complementary), and that's one of the reasons for observational studies having a hard time teasing out different mechanisms. But experimental methods guided by behavioural insights, as shown by the chapter, can be particularly helpful in testing the effect of targeting a specific aspect of the various moral motivations.

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CHAPTER 6

Reason-Giving and Rent-Seeking

Edward H. Stiglitz

1 Introduction

Political theorists and legal scholars have long regarded the practice of reason-giving as core to democratic and legal enterprises. Democratic theorists, for instance, contend that public reason-giving is essential to the deliberative process through which we form a self-regulating political community. The practice is thought to constrain the set of feasible public actions to those that others in the community regard as legitimate and justifiable and to facilitate learning through public dialog. Voting is merely the culmination of a democratic process characterized at core by deliberation and public reason-giving. Legal scholars, too, have long seen reason-giving as central to the proper functioning of the legal

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process. Although prominent dissenting schools exist, the majority view is that opinion-writing and public reason-giving shape and constrain legal outcomes.

Significant qualitative empirical support for many of these claims may be found in the widespread practice of reason-giving in legal institutions. It is difficult to rationalize the costly practice of reason-giving, in other words, if it did not convey benefits along the lines of those proposed by democratic and legal theorists.[1] Recently, a series of experimental and observational projects have systematically examined the conjecture that reason-giving constrains the actions of public actors. For instance, Stiglitz (2022a) shows in a series of experiments resembling the dictator game that a requirement for reason-giving induces actors to behave in more other-regarding ways. Observationally, Stiglitz (2022b) examines a discontinuity in reason-giving requirements in the federal procurement space, with results sympathetic to those found experimentally.

If it is right that reason-giving constrains decision-making to be more public-regarding, in theory that should carry implications for the incentives of those attempting to influence the relevant decision. A question of central importance is whether requirements for reason-giving inhibit incentives for rent-seeking, a practice that scholars have long thought to cost developing nations substantial fractions of their GDP (e.g., Krueger 1974). Reason-giving may be understood as a mechanism that affects the so-called influence production function in a standard rent-seeking model, rendering influence less responsive to inputs. This plausibly leads to reduced levels of equilibrium investments in rent-seeking.[2]

To examine this possibility, I consider a unique natural experiment in the federal procurement context in the United States. Under the Competition in Contracting Act of 1984, for most federal contracts in the United States, agencies must either compete the award or, if they award it "sole-source" without competition, they must explain why they opted to avoid competition. Congress imposed this requirement

[1] Reason-giving may be desirable on entirely normative grounds, apart from any benefits it conveys to institutional settings. But even if so, the positive puzzle of why so many institutions feature costly practices and norms of reason-giving must be addressed.

[2] One would then want to know what happened to the resources otherwise devoted to rent-seeking. On the optimistic side, they might be invested in innovation; on the pessimistic side, they might be invested in organized crime or political violence. I discuss these caveats in more detail in the conclusion.

to discourage "favoritism" and support the integrity of the procurement process (Senate Report 98-50). This reason-giving requirement, however, until recently did not touch a class of contracts awarded through a Small Business Administration program, the so-called 8(a) program: unlike most contracts, an agency might award an 8(a) contract without competition and not provide an explanation for that course of action. This 8(a) program, which is designed to foster small businesses owned by socially and economically disadvantaged individuals and groups, accounts for roughly 2–3% of federal contract dollars awarded each year, or on the order of 17 billion dollars a year.

Section 811 of the National Defense Authorization Act of 2010 (NDAA) removed this exception for large 8(a) contracts (over $20 million) but left it in place for small contracts (less than $20 million). The Federal Acquisition Regulatory (FAR) Council's implementing regulations went into effect on March 16, 2011.[3] As of the effective date, officials would be required to publicly justify the lack of competition for large 8(a) contracts. The reason-giving requirement, however, did not affect small 8(a) contracts, and officials continued to be able to award contracts without justifying any lack of competition. Elsewhere, I use difference-in-differences and discontinuity designs to show that the reason-giving requirement in the NDAA of 2010 dramatically reduced the incidence of large—but not small—non-competitive, sole-source contracts under the 8(a) program (Stiglitz 2022b).[4]

The question of immediate interest, therefore, is whether the reason-giving requirement imposed on agencies through Section 811 affected the behavior, not only of agency decision-makers, but also of *potential rent-seekers*. Although rent-seekers have a range of tools available to influence decision-makers, from lobbying to revolving doors, campaign contributions represent one commonly studied tool. Contracting officials do not themselves benefit from campaign contributions, but an indirect channel for influence may run through the political overseers who

[3] 76 Fed. Reg. 14559 (March 16, 2011).

[4] In that paper, I also consider the effects of the reasoning reform along other margins. For instance, the reform seems to have reduced the quantity of large contracts awarded by the government and to have changed the composition of the firms that win contracts. As I note in that paper, reason-giving reforms should be understood to involve complex trade-offs, a point I return to in the conclusion of the present paper.

accept and directly benefit from the contributions. Though it is difficult to produce causal estimates of the effect of contributions on awards, a number of papers have discovered highly suggestive patterns relating contribution activity and contract awards (Witko 2011; Bromberg 2014). Here, departing from earlier studies, I do not attempt to study the effect of contributions on awards, but instead the effect of the reason-giving reform on contribution activity. To the extent reason-giving requirements decrease the effectiveness of rent-seekers' inputs, they should in theory input fewer resources.

The findings, in brief, from this study indicate that the reason-giving requirement substantially reduced the contribution activity of potential rent-seekers. In the preferred sample and specification, the reason-giving requirement, for instance, essentially erased the tendency for high-dollar vendors to donate more often to political campaigns. Similarly, though more tentatively, "sophisticated" contribution strategies appear to decrease after the reform, with fewer firms associated with giving to multiple candidates or to the party controlling the House of Representatives. Taken together, this pattern is consistent with the notion that influence became more challenging following the reason-giving reform, decreasing the attractiveness of rent-seeking strategies. This suggests that one relatively low-cost reform to public institutions in developing countries may be to enhance the reason-giving requirements, capacities, and norms in public institutions.[5]

The remainder of this chapter proceeds as follows. The next section discusses the role of reason-giving in our public institutions. I then discuss in detail the institutional setting for this empirical study, followed by a discussion of the data. Next, I present the empirical strategies of the paper and the results from those exercises. My conclusions follow.

2 Institutional Domain and Data

2.1 Reason-Giving and Rent-Seeking in Public Institutions

Most of the research advocating reason-giving can be found in the philosophical or legal domains. Democratic theorists often see it as an indispensable component of the democratic process (Gutmann and Thompson 2009; Sen 1999; Dreze and Sen 2002; Cohen and Sabel

[5] The conclusion includes a fuller discussion of this point.

2006). Legal observers, too, prize the reason-giving capacities of courts and, often, administrative agencies (Schauer 1994) and see reason-giving as core to what makes those institutions distinctively "legal," facilitating concepts such as the rule of law. These literatures, however, tend not to be empirical in nature.

Recently, social scientists have started to consider reason-giving as a practice.[6] A body of research demonstrates that reason-giving induces people to behave in more other-regarding ways and to pay more attention to fiduciary-like responsibilities (e.g., Xiao 2017; Liu and Li 2019; Stiglitz 2022a). In earlier research, I find that imposing a reason-giving requirement on participants in a dictator-like game induces them to give more money to their partner, particularly if they expect a third party to review their reasons (Stiglitz 2022a). Even closer to the present study, I show elsewhere that the reasoning reform in Section 811 substantially decreased likelihood that agencies award contracts without competition (Stiglitz 2022b).

The precise mechanism through which reason-giving might matter is not entirely obvious. At least two broad and non-mutually exclusive theories exist.

First, compelling parties to provide reasons for their actions might induce internal deliberation—to encourage them to consider and take account of the well-being of others. This itself might flow from the simple fact that it takes time to provide reasons, thus slowing down the decision and moving participants off pre-wired commitments to narrow self-interest and toward other values, such as fiduciary-like or other-regarding responsibilities (e.g., Kahneman 2011). Or it might flow from the fact that providing reasons forces participants to consider how the action and explanation will be consumed by an audience (see, e.g., Lerner and Tetlock 1999). As social animals, humans tend to want to be liked by the relevant audiences. Reason-giving may thus socialize the considerations

[6] There is an enormous literature on *communication* in the social sciences (e.g., Milgrom 1981; Grossman 1981; Crawford and Sobel 1982) that bears a relationship to reason-giving. However, the connections between this literature on communication and reason-giving remain under-theorized and explored. For instance, in the typical communication model, one party communicates and the second takes some action of interest. In most reason-giving contexts, the decider and the communicator are the same party, and the question of interest is how and why socializing considerations through reason-giving might influence the decision. Stiglitz (2022c) starts to consider such questions and their relationship to communication games.

active in the minds of decision-makers, again producing more pro-social actions. This perspective incorporates assumptions about the nature of the audience. An audience consisting of the "wrong crowd"—say, a group inclined to rent-seeking—might indeed socialize decision-makers to be anti-social.[7]

Second, and relatedly, compelling parties to provide reasons for their actions might *facilitate* external accountability. That is, reason-giving may enable interactions between the participant and an audience that exposes the decision-maker to possible material sanctions. In the legal context, for instance, the reasons given by lower courts and administrative agencies serve as the foundation for review by higher courts. More generally, the reasons provided by a decision-maker may provide the basis for an audience to form evaluations of her on some dimension of interest—quality, honesty, trustworthiness, etc.—that carry downstream material consequences. Those material consequences may affect decision-making, quite apart from any effects on the internal deliberations of the participant.

Rich in theory, and with deep roots in important literatures, we have very little observational evidence that reason-giving matters. That is in part because it is so common in public institutions. Almost every judicial decision of any importance, for instance, comes with an opinion.[8] And where there is variation in reason-giving, it tends to be endogenous to the importance of the decisions, and the outcomes tend to be difficult to measure or compare across reason-giving conditions. For instance, courts do not generally provide written reasons for every interstitial decision in the course of a case; agencies need only respond to "material" comments in the notice-and-comment process.[9] The procurement context studied in this analysis is exceptionally rare, in that it features an exogenous source of variation in requirements for reason-giving.

[7] In the domain studied here, the reasons eventually become published on a public website, and provide opportunity for would-be competing parties to contest the reasons before third parties, including federal courts.

[8] Illustrating the importance of this norm, the Supreme Court's rising use of the so-called shadow docket is controversial, in part, because these decisions often escape the normal constraints of reason-giving (Baude 2015).

[9] E.g., Portland Cement Ass'n v. Ruckelshaus, 486 F.2d 375, 394 (D.C. Cir. 1973) (noting that "comments must be significant enough to step over a threshold requirement of materiality before any lack of agency response or consideration becomes of concern").

Rent-seeking, on the other hand, is a well-studied phenomenon in the social sciences. Tullock's seminal article on rent-seeking, for example, has been cited over 5,000 times since its 1967 publication (Tullock 1967). Scholars have since examined a wide range of issues related to rent-seeking, from its costs on developing economies (Krueger 1974), to its determinants and institutional and policy strategies designed to discourage the practice (e.g., Congleton 1984; Pecorino 2004; Choi and Storr 2019). This paper may be thought of as an entry in that latter strand of that larger rent-seeking literature.

Potential rent-seekers might seek to influence agency decisions in a number of ways. Even where direct bribery is off the table, they might temp regulators through implicit promises of future employment (e.g., i Vidal et al. 2012), for instance, or even more seemingly benign offerings, such as ideological kinship or informational lobbying (e.g., Bennedsen and Feldmann 2006; Wagner 2009). Campaign contributions represent one commonly studied tool to influence public bodies. Although at least in the United States agency officials cannot accept contributions and do not directly benefit from them, their political overseers do benefit from contributions. A plausible channel of influence runs from the contributor, to the elected representative, to the agency. That is, the elected member benefits from contributions and is motivated by them. The agency benefits from a benevolent political environment and is motivated to maintain harmony with elected representatives. This study focuses on campaign contributions as one prominent tool available to rent-seekers.

The literature on the influence of campaign contributions on public actions in general is large. Most of this literature focuses on the influence of contributions on legislative voting or actions. This is a challenging relationship to study and results from the legislative domain present a mixed picture (e.g., Ansolabehere et al. 2003; Roscoe and Jenkins 2005). A main challenge in this area is that a donor is more likely to give to a politician she already agrees with. Strategic legislative agenda-setting compounds the difficulty, as the main effect of contributions may be to move up or kill legislative items that the donor agrees or disagrees with, respectively, and those agenda-setting effects may not manifest in roll call voting data. A smaller literature on the connection between contributions and contract awards produces more reliable and suggestive patterns (Witko 2011; Bromberg 2014). This space also presents challenges in interpretation. For instance, more sophisticated firms may give more for a variety of reasons apart from rent-seeking and also be more adept at competing

on fair grounds for contracts. Nevertheless, the regularity of the quantitative patterns at least suggests a meaningful relationship between campaign giving and contract awards.

2.2 *Institutional Domain: Public Reasoning and Rent-Seeking*

This study centers on a reform to reason-giving requirements in federal procurement.[10] A 1984 federal statute, the Competition in Contracting Act, or CICA, provides the baseline requirements for most contracts. For most agency contracts, federal law requires officials to either compete the contract—the presumptive course—or provide an explanation for why they did not compete the contract.[11] This "justification and approval" process required agencies to explain why they departed from the norm to compete the award on the basis of a set of statutory criteria.[12] Those justifications must be approved by a third party, the identity of which depends on the value of the contract at issue.[13] This, moreover, is a public process. The explanations that agencies provide must be published to a website, "https://beta.sam.gov/." Fig. 1 shows the first page of a recent justification published by the Department of the Navy; the total length of the justification was about six pages.

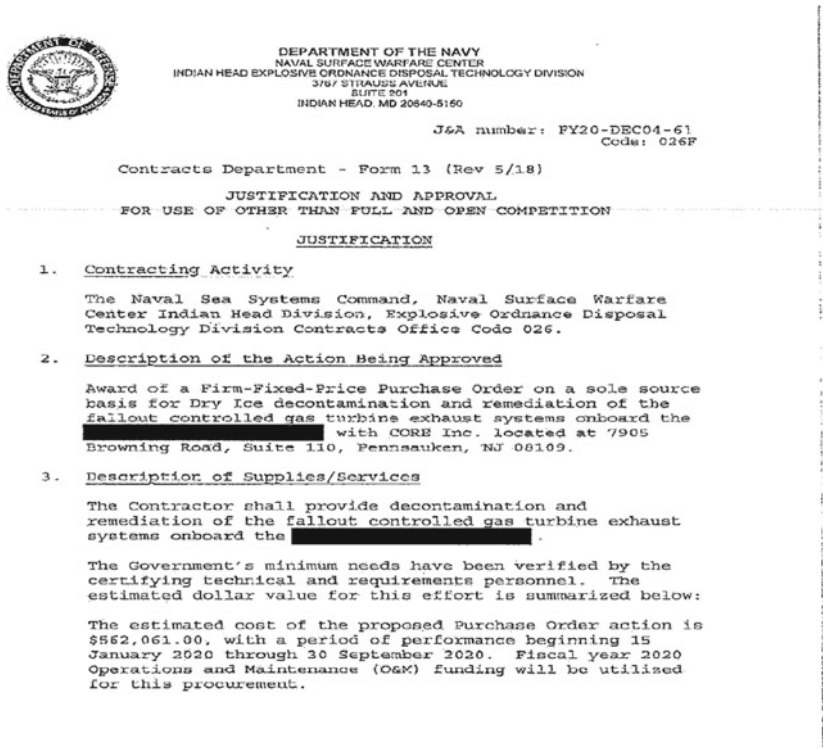
CICA set the baseline for most federal contracting, but important and evolving exceptions exist. In particular, the so-called 8(a) program under

[10] I discuss this institutional reform in greater detail in my related paper, *Empty Reasons*, from which this section borrows.

[11] In principle, this 1984 reform might also be exploited to study rent-seeking, though I am not aware of any such study, and I am also not aware of where to obtain machine-readable historical contracting data reaching to those dates.

[12] The statute calls on the justification to contain: (1) a description of the agency's needs; (2) an identification of the statutory exception to competitive procedures being invoked and the reasons for using that exception; (3) a determination that the costs will be fair and reasonable; (4) a description of the market survey conducted by the agency; (5) a list of the contractors, if any, that expressed interest in the procurement; (6) a statement of the actions that the agency may take to ensure that the relevant statutory exception need not be invoked again. 10 U.S.C. § 2304(f)(3)(A)–(F). The Federal Acquisition Regulation (FAR) later expanded somewhat on these requirements. See FAR 6.303.

[13] 48 C.F.R. § 6.304.



DEPARTMENT OF THE NAVY
NAVAL SURFACE WARFARE CENTER
INDIAN HEAD EXPLOSIVE ORDNANCE DISPOSAL TECHNOLOGY DIVISION
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J&A number: FY20-DEC04-61
Code: 026F

Contracts Department - Form 13 (Rev 5/18)

JUSTIFICATION AND APPROVAL
FOR USE OF OTHER THAN FULL AND OPEN COMPETITION

JUSTIFICATION

1. Contracting Activity

The Naval Sea Systems Command, Naval Surface Warfare Center Indian Head Division, Explosive Ordnance Disposal Technology Division Contracts Office Code 026.

2. Description of the Action Being Approved

Award of a Firm-Fixed-Price Purchase Order on a sole source basis for Dry Ice decontamination and remediation of the fallout controlled gas turbine exhaust systems onboard the [redacted] with CORE Inc. located at 7905 Browning Road, Suite 110, Pennsauken, NJ 08109.

3. Description of Supplies/Services

The Contractor shall provide decontamination and remediation of the fallout controlled gas turbine exhaust systems onboard the [redacted].

The Government's minimum needs have been verified by the certifying technical and requirements personnel. The estimated dollar value for this effort is summarized below:

The estimated cost of the proposed Purchase Order action is $562,061.00, with a period of performance beginning 15 January 2020 through 30 September 2020. Fiscal year 2020 Operations and Maintenance (O&M) funding will be utilized for this procurement.

Fig. 1 Justification example

the Small Business Administration (SBA) were exempt from this reason-giving requirement.[14] Thus, historically, 8(a) contracts almost uniquely were not subjected to public reasoning requirements. This special status for 8(a) contracts, however, changed under Section 811 of the National Defense Authorization Act of 2010 (NDAA). This provision in the NDAA exposed many 8(a) contracts to reasoning requirements very similar to the reasoning requirements of non-8(a) contracts. Yet critically,

[14] The 8(a) program is designed to benefit small businesses owned and controlled by "socially and economically disadvantaged individuals" and groups. P.L. 85-536, § 2(f)(2)(A–C), 72 Stat. 384 (July 18, 1958) (codified at 15 U.S.C. § 631(f)(2)(A–C)). See "Empty Reasons" for additional details on this program.

Section 811 only exposed "large" 8(a) contracts valued at $20 million or more to these requirements. It left smaller contracts—those valued at less than $20 million—without public reasoning requirements.[15] The implementing regulations went into effect on March 16, 2011.[16] These regulations required the agency to justify the lack of competition in a large 8(a) award using a standardized set of criteria, such as the needs of the agency.[17] The justifications would be reviewed by a third party, with higher ranking officials reviewing high award amounts, and published to a website for the public (and other firms). The "audience," therefore, for these justifications includes both a third party within the agency, and the public generally, and would-be aspirants for contracts in particular. This latter group is of particular interest, as would-be competitors for sole-source contracts may take actions that result in the delay or termination of the sole-source award, such as through a bid protest under the U.S. Government Accountability Office.[18] Disappointed would-be competitors can, further, challenge a sole-source contract before the United States Court of Federal Claims, wherein a court will review, among other things, whether "the contracting agency provided a coherent and reasonable explanation of its exercise of discretion."[19]

Table 1 contains a summary of how Section 811 affected the reasoning requirements for different classes of contracts. Notice importantly that the *legal* standards for contracting do not change by virtue of this law—it affected only the reasoning requirements relevant to the contracting actions. Before and after the reform of interest, officials were under the relevant legal standard generally meant to compete contracts going to individuals.[20] What changed, instead, was whether the officials need to

[15] Note that the FAR Council later updated the threshold to account for inflation to $22 million, effective October 1, 2015, 80 Fed. Reg. 38293 (July 2, 2015). I explain the acquisition procedure in more detail in *Empty Reasons*.

[16] 76 Fed. Reg. 14559 (March 16, 2011), later finalized without revision at 77 Fed. Reg. 23369 (April 18, 2012).

[17] See 76 Fed. Reg. 14560 (2011).

[18] For an overview of these procedures, see https://www.gao.gov/legal/bid-protests/reference-materials.

[19] Impresa Construzioni Geom. Domenico Garufi v. United States, 238 F.3d 1324, 1332 (Fed. Cir. 2001).

[20] As noted in the table, this requirement only applied to contracts valued at over $4 million dollars (or $6.5 million dollars for manufacturing contracts). Very small contracts,

Table 1 Summary of legal and reasoning requirements

		Legal standard	*Reasoning requirement*
Pre-§ 811	8(a) individuals	Compete[a]	None
	8(a) tribes	No restriction	None
Post-§ 811	8(a) individuals	Compete[a]	Justify if over $20 million
	8(a) tribes	No restriction	Justify if over $20 million

[a]If value of contract is over $4 million ($6.5 million for manufacturing); unless no reasonable expectation that two or more eligible firms will submit offers. See Dilger (2019) for an overview of the legal standards for various types of entities, including tribal firms

attach a justification to a contracting decision if they award it without competition.

The question of interest is whether this Section 811 reform to reason-giving affected the campaign contribution activity of those seeking contracts. The financing of American elections largely comes from private donors. Donations to campaigns may come from individuals or Political Action Committees (PACs), set up by firms and labor unions to support their political objectives.[21] In 2018, the aggregate cost of congressional elections was about $5.9 billion. The average winner of House seat spent about $2 million dollars, and the average winner of a Senate seat spent almost $16 million dollars (Center for Responsive Politics).[22] These

therefore, were excluded from the competition requirement. There is further an exception to the general requirement that officials compete awards in cases where there was no reasonable expectation that two or more firms would submit offers.

[21] These PACs generally cannot be financed through the treasury of the firm; the PACs must instead be funded by contributions from employees of the firm. Separately, firms and unions may directly finance so-called Super PACs from their treasuries, but these Super PACs may not themselves contribute to candidates directly.

[22] For more details, see https://www.opensecrets.org/elections-overview/election-trends.

dollars, however, come from a very small slice of the American public: on the order of half a percent of Americans contribute to campaigns in levels reportable to the Federal Election Committee.[23]

2.3 Data and Summary Statistics

2.3.1 Data

This analysis requires three primary types of data: contract award data, firm identity data, and contribution data. I discuss the source for each in turn.

Federal procurement data come from the Federal Procurement Data System—Next Generation (FPDS).[24] These data contain an entry for individual federal contacts (and contract-modifications), described by one observer as "the most comprehensive data system available for federal contract awards" (Dilger 2019). I obtain information on all federal contracts awarded within roughly four years on either side of the Section 811 reform (between January 1, 2007 and September 30, 2015).[25]

Previous studies of contributions and procurement have tended to rely on data regarding firm contributions from Political Action Committees (PACs) (e.g., Witko 2011). A virtue of this strategy is that it tightly connects the firm with contribution activity; for that reason, it also makes data processing relatively tractable. A concern with that strategy, however, is that not all firms have PACs, raising questions about which firms select into PAC sponsorship. Moreover, in the small business space of this paper, very few firms have PACs and the strategy is not in any event viable.

Fortunately, the Small Business Administration maintains a Dynamic Small Business Search to facilitate agency contracting, among other

[23] To be reportable, a contribution must be more than $200. For more details on donor demographics, see https://www.opensecrets.org/elections-overview/donor-demographics?cycle=2018. Notice that roughly 12% of Americans self-report as contributing to a campaign in surveys. However, only about 13% of those who claim to donate also claim to give $250 or more. See Hughes (2017) for a summary of self-reported donations from survey data.

[24] The FPDS may be accessed online: https://www.fpds.gov/fpdsng_cms/index.php/en/.

[25] The series ends just before the shift in the reason-giving threshold on October 1, 2015 from $20 to $22 million. Limiting attention to a relatively narrow window increases the likelihood that we can isolate the implications of the reform of interest. I clean the data in a number of ways, for example, by removing entries with negative giving amounts, or exceptionally large contract awards, suggesting FPDS data entry errors.

things. This database reveals a range of useful information about each small business, including its address, certification status under the 8(a) program, industry codes, and a "capabilities narrative."[26] Most important, though, is that it lists the names of the "principals" for each firm. I collect identifying information for all firms in the SBA data set that have or had certification as an 8(a) eligible firm, a total of roughly 30,000 firms.[27] Of these 30,000, roughly 10,000 won a contract at some point in the FPDS series of interest.[28] I consider these roughly 30,000 8(a)-connected firms to constitute the population of *potential* rent-seekers; they constitute the sample in the analysis below.

The last core data element concerns campaign contributions themselves. The Center for Responsive Politics cleans, organizes, and supplements FEC contribution data and makes bulk data sets available to the public.[29] These data contain all reportable contributions from individuals to candidates in House or Senate races.[30] I focus on contributions to congressional candidates in the two elections on either side of the reform, that is, data from the 2008, 2010, 2012, and 2014 elections.[31] This sample contains two presidential election years and two mid-term election years.

With these data in hand, all that remains is to connect the data sets. In particular, the task is to match the FEC data to the 8(a) firms. To do so, I start with the names of the principals associated with each firm in the SBA database. I search for each person listed in the SBA data set in the FEC data, and further restrict matches to those living in the same state as the firm's address, as reported in the SBA database. I then aggregate spending within firms on congressional candidates. The resulting figures

[26] The database may be accessed here: https://web.sba.gov/pro-net/search/dsp_dsbs.cfm. To produce the data for this paper, I crawled the public search and extracted the relevant information.

[27] A small number of firms in the FPDS data set did not have entries in the SBA data set and I exclude those from the analysis.

[28] In analyses available on request, I limit attention to this sub-sample of firms, which largely produces similar results to those reported below.

[29] See https://www.opensecrets.org/.

[30] The FEC requires reporting of contributions of $200 or higher.

[31] Donors may give to other political entities, such as political parties or presidential candidates. I focus on contributions to congressional candidates because they permit a fuller scope of outcomes to examine (e.g., out-of-state candidates).

represent the extent to which firms seek to influence contract awards through contribution activity.

2.3.2 *Summary Statistics*

Altogether, the federal government awards contracts valued at roughly $500 billion per year (Woods 2017). The government aims to direct five percent of all contract dollars to small disadvantaged firms. The 8(a) program studied in this entry is a significant component of that effort, accounting for about half of all dollars going to small disadvantaged firms. Figure 2 shows the number of 8(a) awards and their aggregate value over time.[32] As shown in the figure, the 8(a) program accounts for between 50,000 and 100,000 contacts per year, worth in aggregate between 11 and 17 billion dollars a year.

Elsewhere, I study the effect of the reasoning reform on contracting behavior in detail (Stiglitz 2022b). Here, our interest in the contract data is limited to identifying the firms that might be potential rent-seekers. In particular, we want to identify firms that would be particularly affected by the high-dollar reasoning reform, as discussed below. The reform affected only contracts valued at over $20 million, implying that one would expect the most pronounced differences in rent-seeking behavior in those firms seeking such contracts. Firms that only seek contracts well below the threshold would not in theory be affected by the reasoning reform.[33]

The campaign finance data includes all contributions over $200 from individuals reported to the FEC. In a typical election year, the percentage of Americans who donate enough to enter this database is on the order half of a percentage point.[34] By this standard, the firms in this SBA data contain highly active donors. Over the four election cycles of interest, in fully five percent of firms, at least one of the three listed principals gives to

[32] This summary figure also appears in my companion paper, Stiglitz (2022b).

[33] Of course, firms in the hunt for larger contracts, but not quite there, may also be affected by the reform. However, it is challenging to identify firms that aspire to larger contracts from those content with smaller contracts. The coding choice therefore is self-consciously under-inclusive—it misses some firms that may be affected by the reform. The trade-off is that we are relatively certain that the included firms—i.e., those that received large contracts—would theoretically have their rent-seeking incentives affected by the reform.

[34] See https://www.opensecrets.org/elections-overview/donor-demographics?cycle=2016%20display=G.

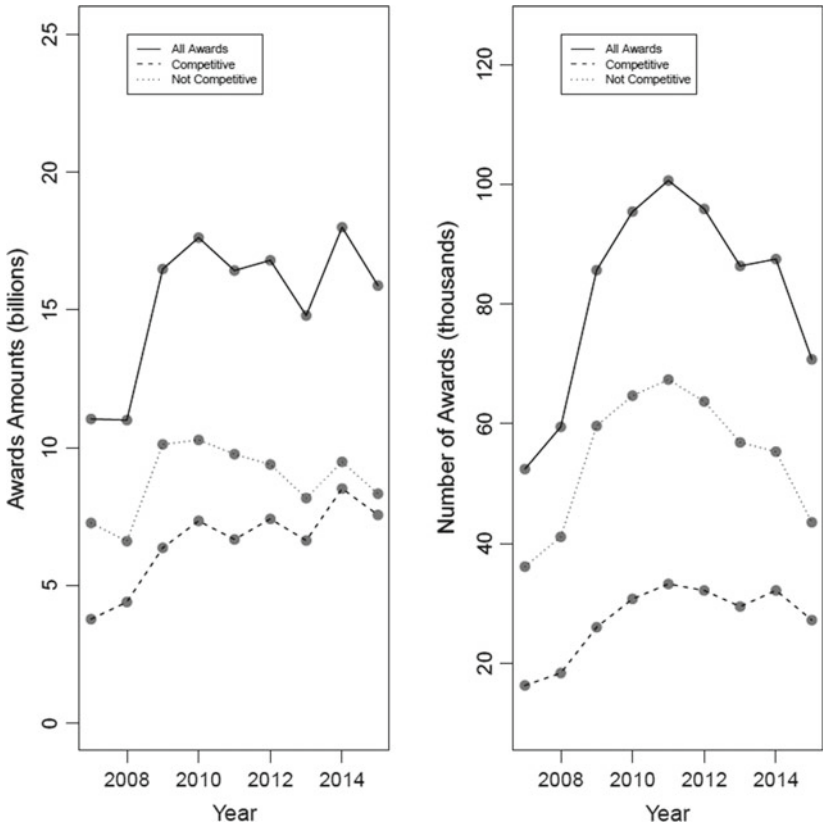

Fig. 2 8(a) Awards: 2008–2014

congressional campaigns.[35] The corresponding number for donations to presidential campaigns is also about five percent. These figures suggest that SBA firm principals contribute to congressional and presidential campaigns roughly five to ten times as often as the average American.[36]

[35] On the order of 70% of firms list only a single principal. A small number of firms list more than three principals, in which case I focus only on the first three named.

[36] Ideally, we would adjust the averages for income and other demographic features, but we do not have those data available for the firm principals.

Focusing on contributions to House candidates,[37] I attempt to assemble a range of outcomes that reveal the scope and sophistication of contribution activity around federal contracting. I consider the following measures as potentially relevant: (1) whether the firms (through their principals) donated any money to a congressional candidate; (2) the total dollars contributed by firm principals to congressional candidates; (3) the total number of contributions made by firm principals to congressional candidates; (4) the total dollar amount of contributions by firm principals to out-of-state congressional candidates; (5) the total dollar amount of contributions by firm principals to congressional candidates belonging to the Democratic party.

The first three measures—total dollars contributed and number of contributions—point toward the scope of rent-seeking activities generally, whereas the subsequent measures point more specifically to sophisticated rent-seeking activity. Out-of-state contributions suggest a contributor who may be targeting a candidate for instrumental (rather than representative) reasons. Likewise, contributions to Democratic candidates are informative, as the party lost control of the House in 2010; a significant drop-off in giving to Democratic candidates in subsequent elections suggests sensitivity in rent-seeking to this loss of power. Jointly, these measures promise some light on the scope and sophistication of the contribution activity in the firms competing for contracts.

Table 2 reports summary statistics for the outcomes of interest. As noted above, roughly five percent of the firm-year observations register a contribution, which is quite high compared to the contribution activity of the population at large. The unconditional mean dollar amount contributed was about $120 (conditional on contributing, the mean contribution was about $2,300, and the median was about $1,000). Also notable is that the firms contribute significantly to candidates outside of their state. This suggests a degree of sophistication in contribution activity that we will examine more closely in the analysis to follow.

[37] House candidates plainly represent only one of several possible windows through which one might assess the relevant dynamics. Aside from Senate candidates, one might further examine donations to parties. One might also examine lobbying expenditures, as reported in Lobbying Disclosure Reports, https://lobbyingdisclosure.house.gov/.

Table 2 House contributions: summary statistics

	Means	*Std. Dev*
Contributed to at least one candidate	0.05	0.22
Total dollars contributed	119.51	1125.76
Number of contributions	0.14	1.06
Dollars contributed to out-of-state candidates	40.53	608.87
Dollars contributed to Democratic candidates	73.54	806.39

3 Empirical Application

The main question of interest is whether rent-seeking activity decreased in the aftermath of the reasoning reform contained in the NDAA of 2011. As an initial pass on this question, consider the following equation:

$$r_{ikt} = \alpha_k + \gamma_s + \rho \,\text{Reasoning}_t + \in_{ikt} \tag{1}$$

where r_{ikt} is some rent-seeking measure for firm i in industry k at time t, α_k is a fixed effect for industry k, γ_s is a fixed effect for state s, and Reasoning_t takes a 1 if the NDAA reform is in place at the time of the election in year t and otherwise takes a 0. Our interest is in ρ, which informs us how rent-seeking activity differed, on average, between the pre- and post-reform periods.

The dependent variable in M1 is an indicator for whether any of the principals contributed to a congressional campaign; in M2 is the log of the dollar amount contributed, plus one; in M3 is the number of candidates that the firm contributed to; in M4 is the log of the dollar amount contributed to out-of-state candidates, plus one; in M5 is the log of the dollar amount contributed to Democratic party candidates, plus one. Standard errors clustered by firm and reported in parentheses. All specifications include fixed effects for the state of the vendor and the two-digit NAICS industry code of the vendor.

The indicators of rent-seeking all decreased during the reform period. As indicated by the ρ coefficient in Table 3, on average, the probability that a firm donates to any candidates decreases by about 1 percentage point in the post-reform period; the total dollar amount of contributions decreases by about 3 percentage points; the total number of candidates that firms give to decreases modestly; the dollar amount to out-of-state

Table 3 Initial estimates: differences in rent-seeking behavior

	M1	*M2*	*M3*	*M4*	*M5*
ρ	−0.01	−0.03	−0.01	−0.03	−0.05
	(0)	(0.01)	(0)	(0)	(0.01)
N	102,467	102,467	102,467	102,479	102,445
R^2	0.01	0.01	0	0	0.01

candidates by about 3 percentage points; the dollar amount to Democratic party members by about 5 percentage points. The scope and sophistication of contribution activity, in sum, appears to decrease in the aftermath of the reasoning reform, though only modestly by most measures.

These averages carry clear limitations. Much changed before and after the reform and the averages might be confounded by these changes. To point to a prominent difference, the Democrats controlled the House at the time of the first two elections—in 2008 and 2010—and the Republicans controlled the House at the time of the second two elections. Likewise, we had unified government in one of the first two elections, and divided government at the time of the second two elections. The ρ coefficient may therefore be confounded if for instance the firms in this population favored unified Democratic control over other possible configurations, driving exuberant contributions in the first period and depressed contributions in the second two elections.

It is possible to make some progress against this concern by considering how the incentives to rent-seek depend on the amount of the contract at issue. Recall that the reasoning reform affected only "large" contracts valued at over $20 million—contracts valued below that amount faced no changes to legal standards or reasoning requirements. This suggests that those contending for small contracts would not experience any changes in their rent-seeking incentives due to the reasoning reform. By contrast, those contending for larger contracts would possibly experience changes in their incentives to rent-seek, as they now must consider how the reasoning requirement affects the returns to rent-seeking.

This suggests a difference in differences design, in which small contracts serve as a control group. To do so, I create an indictor for whether a firm won contracts valued at $20 million or more in that year. This classification is likely under-inclusive, as it is quite possible that firms

that won lesser contracts, or no contract at all, contended for the high-value contracts. Even firms winning no contracts contribute at high rates: on the order of 4.5% of such firms contribute in reportable amounts; and nearly two percent of such firms contribute over $1,000.[38] This suggests rent-seeking activity that the approach adopted in this exercise will miss. This under-inclusiveness is likely to attenuate the estimated effect of the reform on rent-seeking, and in this sense the estimates reported below might be thought of as conservative in nature. But there is no obvious way to identify cleanly firms that win smaller contracts (or no contracts) and aspire to win the larger contracts.

With that caveat in mind, I now estimate,

$$r_{ikt} = \alpha_k + \gamma_s + \psi \text{Large}_{it} + \eta \text{Reasoning}_t + \rho \text{Large}_{it} X \text{Reasoning}_t + \in_{ikt} \quad (2)$$

where Large_i is an indicator for whether firm i won a "large" contract at time t valued at over $20 million. The other variables remain as above. The main assumption in this setup is that the two groups of contracts—small and large contracts—would have followed parallel trends with respect to rent-seeking, were it not for the reasoning reform.[39]

The results from this exercise, reported in Table 4, suggest that the effect of the reasoning reform is concentrated in firms competing for large contracts. To start, note that the main effect of competing for a large contract is consistent with the idea that large contracts encouraged active rent-seeking. The coefficient in M1, for instance, indicates that

[38] Recall that the population contribution figures come closer to half a percentage point. The corresponding figures for firms that do win contracts, of course, run substantially higher: nearly 8% of such firms contribute, and about 3.5% of these firms contribute $1,000 or more.

[39] This assumption cannot be directly tested, but we can examine placebo leads. In results available on request, to the specification above I add such leads for the 2010 election, which occurred prior to the time the relevant implementing regulations went into effect. None of the coefficients on the leads is statistically significant. It should be noted, however, that we only have four time periods in the data—i.e., elections in 2008, 2010, 2012, and 2014—making it hard to test for departures in pre-reform trends. There is further a SUTVA assumption, which in this context would require that the reasoning reform not influence contracts under the statutory threshold. It's possible, for instance, that the reasoning reform influenced internal protocols or culture broadly, affecting both contracts above and below the threshold. One piece of evidence that this assumption is largely maintained is that in Stiglitz (2022b), I find strong evidence of sharply discontinuous contracting behavior around the statutory threshold.

Table 4 Difference-in-differences estimates: differences in rent-seeking behavior

	M1	*M2*	*M3*	*M4*	*M5*
ψ	0.23	1.67	0.78	0.14	1.05
	(0.09)	(0.7)	(0.66)	(0.25)	(0.57)
η	−0.01	−0.03	−0.01	−0.03	−0.05
	(0)	(0.01)	(0)	(0)	(0.01)
ρ	−0.21	−1.54	−0.7	−0.09	−1.01
	(0.09)	(0.65)	(0.53)	(0.26)	(0.58)
N	102,467	102,467	102,467	102,479	102,445
R^2	0.01	0.01	0	0	0.01

firms competing for large contracts were over twenty percentage points more likely to contribute to congressional campaigns relative to firms that won smaller or no contracts. Likewise, such firms are very substantially more likely to contribute high dollar amounts (M2), and more likely to contribute to Democratic party candidates (M5). Coefficients relating to the number of candidates and out-of-state candidates return positive, but do not reach conventional levels of statistical significance. The coefficient on contributions to Democratic candidates is sharply positive, and significant at the 10% level. The dependent variables and fixed effects components of the specifications follow those reported in table 3.

As indicated by the second row of coefficients, the effect of the reasoning reform on firms competing for small contracts is limited. The percentage of such firms competing for small contracts that donating to campaigns decreased modestly, by under one percentage point.[40] Likewise, the contribution amounts decreased by about three percent with respect for small contracts. Coefficients of roughly similar magnitude may be found for the other outcomes of interest.

By contrast, rent-seeking activity seems to have more markedly decreased for large contracts in the aftermath of the reform (ρ). The coefficient on the interaction in the first column, for instance, indicates that there was virtually no rent-seeking premium for firms with large contracts—unlike the pre-reform period, those competing for large contracts behaved very similarly to those competing for small contracts.

[40] This coefficient is highly significant.

This suggests a substantively significant effect of the reform on rent-seeking. In the pre-reform period, firms winning large contracts were almost twenty-five percentage points more likely to contribute to a campaign than other firms. This margin is essentially erased in the post-reform period. Much the same may be said with respect to the total dollar amount that firms contributed: pre-reform, firms competing for large contracts differ markedly from those competing for small contracts; post-reform, such firms differ only marginally from those competing for small contracts. The coefficients relating to the number of candidates firms contributed to—though not statistically significant—qualitatively suggest the same account. The findings with respect to rent-seeking sophistication bear a similar though more tentative conclusion. It appears that high-dollar firms were more sophisticated in rent-seeking in the pre-reform period, giving more to out-of-state candidates and more to the party in power; post-reform, high-dollar firms behave much as small-dollar firms. This may be best understood as a qualitative interpretation, however, as some of the relevant coefficients return with large standard errors.

On the whole, these regressions suggest that rent-seeking activity decreased in the aftermath of the reform, and that the decrease is substantially concentrated among firms competing for large contracts, precisely those contracts affected by the reform. The evidence is strongest for outcomes related to indicators for giving and for total giving amount; it is more tentative when it comes to indicators of rent-seeking sophistication, e.g., the number of candidates and the amount of money flowing to candidates in sensitive positions.

4 Conclusions

Political philosophers and theorists have long contended that reason-giving constitutes a form of accountability that offers benefits over other forms of accountability, such as electoral accountability. However, until recently, the evidence that reason-giving constrains actors to behave in pro-social or other-regarding ways was limited, and what evidence existed tended to be experimental in nature. The reasoning reform introduced by the Section 811 to the SBA program offers a unique opportunity to study the consequences of reason-giving observationally in a consequential policy setting. Elsewhere, I show that this reform substantially affected contracting behavior, such that officials were substantially more likely to compete contracts after the reform (Stiglitz 2022b).

The present analysis suggests that potential rent-seekers responded to the constraints that reason-giving imposed on officials by the Section 811 reform. Potential rent-seekers appear to lobby less aggressively in the aftermath of the reasoning reform, at least as assessed through campaign finance contributions. Notably, these effects appear to concentrate in firms competing for high-value contracts, precisely those contracts affected by the reform. To my knowledge, this is the first evidence that reason-giving requirements not only constrain public officials, but that they affect the broader political-economic environment, plausibly decreasing the incentives to lobby and rent-seek.

In closing I wish to offer thoughts on the limits of this study and on areas of interest for future study. A notable limit in the interpretation of the results is that we can estimate many of the coefficients only imprecisely. This is particularly true for the outcomes related to the sophistication of rent-seeking activity. Although most of the relevant coefficients run in the expected direction, they also tend to be marginal or suggestive in nature. This imprecision may be partially owed to the difficulty of matching firms to campaign finance records. I make considerable efforts to standardize the formatting and presentation of names, but inconsistencies in conventions between the campaign finance records and the SBA firm records make it difficult to merge the two data sets. Failure to properly match names between the two data sets will introduce noise into the analysis and render estimates less precise.

A substantive limit of this analysis is that it examines only the most visible and easily measured form of rent-seeking. As noted above, rent-seeking and lobbying activity might occur through a great many different channels, and campaign contributions do not obviously even represent the most important or salient channel. Lobbying may occur through sponsoring lawmaker junkets,[41] revolving doors, astroturf campaigns, and many other channels, including the strategic delivery of information through lawyers and professional lobbyists. One plausible scenario is that reason-giving requirements operate to enhance the importance of professionals in procedure and reason-giving, notably lawyers familiar with the federal acquisitions process. It is possible that the main consequence of the reason-giving reform was to shift firms' lobbying efforts from campaign contributions to other forms of rent-seeking. It is also possible

[41] See, e.g., https://www.nytimes.com/2014/01/20/us/politics/a-loophole-allows-lawmakers-to-reel-in-trips-and-donations.html.

that any effects reported in this analysis represent transitory effects, as firms grapple with the new regulatory regime; with learning, they may be able to reassert influence through rent-seeking.[42]

This possibility raises a larger limitation of this study. Even supposing that the reason-giving reform reduced rent-seeking, we have little sense of how firms might have changed their behavior along *other* margins of interest. Optimistically, firms might compete on the merits of their bids or on innovation in some relevant capacity instead of competing through rent-seeking. Pessimistically, firms might compete on even more opaque forms of rent-seeking, such as outright bribery, or even the threat of violence. Although the darkest version of that pessimistic vision might seem implausible in the United States, outright bribing does in fact occur,[43] and in many other countries, it is easy to imagine bribery or violence as reasonable alternatives to more benign forms of rent-seeking. We have little sense of how firms might shift their attention and resources; the substitutes on offer and therefore the responses are likely to be highly specific to the institutional domain at issue, but that terrain remains essentially unmapped.

One way to think about the results in this analysis and in Stiglitz (2022b), therefore, is as providing an affirming first step toward reason-giving as a way to regulate public actors and decrease rent-seeking. It is an affirmative first step because it indicates that reason-giving constrains public actions and that it decreases rent-seeking with respect to campaign finance contributions. Yet it is also a first step. It is only a first step for the reasons articulated above. Notably, we have little sense of how private actors interacting with the government might have adapted their behavior to the reform, and it is not clear whether these responses have social harms or benefits.

A final thought and note of caution further relates to the complexity of consequences which may be set off by reason-giving reforms. The companion paper to this analysis shows that the reason-giving reform reduced the quantity of contracts entered into by agencies and further changed the composition of the firms winning those contracts (Stiglitz 2022b). Reason-giving reforms, therefore, likely introduce a complex set

[42] Stiglitz (2022b) discusses this possibility of transitory effects in more detail.

[43] E.g., https://www.sandiegouniontribune.com/sdut-us-jefferson-trial-080509-2009aug05-story.html.

of trade-offs and one's normative position on reasoning depends on how one values the various margins of interest. For instance, if one prioritizes official productivity to the exclusion of other outcomes, such as compliance with statutory criteria, this pattern of results suggests that reason-giving might be viewed dimly.[44] Those who prioritize compliance with statutory objectives outside of productivity, on the other hand, may find much appealing in reason-giving reforms.[45]

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[44] Stiglitz (2022b) addresses this issue explicitly.

[45] That is particularly true if one recognizes the reason-giving reforms as "targetable." The reasoning reform studied in these papers targeted competition in contracting, and on that margin, we see substantial traction—contracts were much more likely to be competed. But in theory, reason-giving reforms directed at other targets such as the diversity of firms winning contracts, hold promise to produce traction on those margins.

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Discussion

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In the United States, affirmative action policies include the promotion of "small businesses owned by socially and economically disadvantaged individuals and groups." The US government intends to "direct five percent of all contract dollars" to such businesses under the Small Business Administration program that is also known as the 8(a) program. The actual disbursement under this program is "roughly 2–3 percent of federal contract dollars awarded each year." A distinctive feature of this program is that "unlike most contracts, an agency might award an 8(a) contract without competition and not provide an explanation for that course of action." A 2010 legislation has, however, "removed this exception for large 8(a) contracts (over $20 million)."

In "Reason-Giving and Rent-Seeking," Edward Stiglitz exploits this "unique natural experiment in the federal procurement context" to test "whether requirements for reason-giving inhibit incentives for rent-seeking." For reasons that are not entirely clear, he restricts the analysis to "all federal contracts awarded within roughly four years on either side of the Section 811 reform (between January 1, 2007 and September 30, 2015)" and excludes the more recent years. His novel exploration suggests that reason-giving is associated with lesser rent-seeking measured in terms of, say, campaign contribution. The impact of reforms on campaign contribution may require further exploration because the estimated size of the effect is small. Further, campaign contributions are the price one pays for a bouquet of ideological and material benefits, but the author does not disentangle ideological and instrumental (economic) determinants of contribution. This comment will focus on the nature of audience and costs of reason-giving, which are essential to understand the context of the problem.

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Audience

Government officials administering the Small Business Administration program are expected to justify their decisions related to contracts above a threshold and believe or fear that other stakeholders may question their justifications published on the official website. Who is the audience? Stiglitz suggests that the "audience... includes both a third party within the agency, and the public generally, and would-be aspirants for contracts in particular."

Stiglitz argues that the fear (or awareness) of audience has a positive effect on one's choice. For instance, "a reason-giving requirement on participants in a dictator-like game induces them to give more money to their partner, particularly if they expect a third party to review their reasons." In such games, players face simple trade-offs.

It is, however, not obvious that in more complex settings, reason-giving will "constrain the set of feasible public actions to those that others in the community regard as legitimate and justifiable." Firstly, some of the key dimensions along which contracts are evaluated may conflict with each other and the resolution of the conflict may depend on extraneous (political) considerations. Secondly, depending on the preferences of vocal sections of the audience, the compulsion to share justifications could socialize wrongly apart from inducing myopic thinking, which can have a long-term effect through path dependence of institutional practices. Thirdly, if officers find out that no one, except their superiors and peers located in a shared institutional context, reads the justifications, rent-seeking will decrease initially after the reforms and then increase.

A better understanding of how the intended audience engages with the justifications is, therefore, important. We can ask a few questions regarding the circulation of justifications. What fraction of reasons are overruled by a third party within the agency? Do officers from different states refer to each other's justifications, i.e., have precedents emerged in the field? What fraction of contract awards is contested in courts and in how many cases have courts nullified awards and penalized officers? Has a case law emerged that lawyers of rival firms and judges can use when an award is challenged? Do politicians and civil society leaders of socially and economically disadvantaged communities refer to the justifications? Does one's community stand in defense when bad justifications come to light? Do bad justifications find mention in legislative debates and news media? Has the judiciary or executive carried out a scrutiny of the overall impact

of the reform? Are there inter-state variations in the extent to which the reforms curbed rent-seeking? Is the intensity of rent-seeking correlated with certain political or economic events? Is there a correlation between the nature of justification and identity of officers?

We may also want to know how reason-giving affects officers. It is likely that the new habits affect small contracts as well even in the absence of explicit norms requiring public justification because the same pool of officers deal with both small and large contracts. Also, in the long run, the requirement to give reasons may change the kind of people who apply for the job, on the one hand, and, on the other, the government may alter the recruitment policy to enhance the representation of disadvantaged communities among the employees of the department that administers the 8(a) program. The later might be needed because it seems the US government has not managed to meet its target of allocating five percent of contract dollars to disadvantaged groups.

Cost of Reason-Giving

The intensity of the aforesaid engagements will decide how the practice of reason-giving under the Small Business Administration program shapes up over time. A better understanding of these engagements will also help us appreciate the context dependence of the reforms and that in turn will help assessing the feasibility of Stiglitz's suggestion "that one relatively *low-cost* reform to public institutions in developing countries may be to enhance the reason-giving requirements, capacities, and norms in public institutions" (emphasis added).[46] However, following Posner (1998) one could argue that such discretionary decision-making may not work in societies with poor institutional capacity. As discussed later, the reason-giving capacity of the Indian bureaucracy has eroded over time.

It is, therefore, important to examine the costs of reforms because Stiglitz admits that it is "difficult to rationalize the costly practice of reason-giving." A few observations are in order in this regard. Firstly, the author briefly discusses the trade-off between "productivity" and "compliance with statutory criteria." We can ask if reason-giving increases processing time and the opportunity cost of reason-giving outweighs the gains. Increase in processing time will decrease the number of contracts

[46] An important part of the context is the type of legal system. The reason-giving requirement may work differently in civil and common law countries.

cleared and that could affect social surplus—some of the things that could have been done are not being done at all. Secondly, reduced rent-seeking through one channel will lead to socially productive investments such as innovations only under certain conditions. As the author himself notes, the saved resources may be redirected to other criminal activities: "in many other countries it is easy to imagine bribery or violence as reasonable alternatives to more benign forms of rent-seeking, such as publicly disclosed campaign contributions." Thirdly, more intense scrutiny could be associated with learning effects for both the government as well as firms. Alternatively, more intense scrutiny may reduce the number of contracts offered and reduce on-the-job learning of socially and economically disadvantaged communities.

In lieu of a conclusion, I would like to draw attention to the direction in which reason-giving has evolved in India to emphasize the importance of the context. In the colonial and early post-colonial India, bureaucrats were fond of adding extensive notes to files and left behind a large, even if poorly organized and inaccessible, archive. In most cases, the notes were not meant for those outside the government. These bureaucrats also left behind memoirs and other writings. The deepening of democracy, spread of literacy, and growing political polarization in the more recent decades, particularly, after the 1970s, have been accompanied by growing reticence of the bureaucracy. In the more recent years, the reticence has degenerated into what can only be described as a deafening silence.[47] The reticence is accompanied by a less careful engagement with evidence and a steep decline in reason-giving even within government organizations.

[47] The democratization of recruitment into the bureaucracy has meant that a larger proportion of officers comes from non-English medium educational backgrounds. However, the acquired social status of these officers requires them to express themselves in English and they avoid writing long notes. The demographic shift is reflected in very poorly drafted laws and press releases and has affected even the Ministry of External Affairs that is supposed to use English as a medium to engage the rest of the world. The deteriorating ability of the Indian bureaucracy to explain itself is also reflected in, say, the steep decline in the availability and quality of descriptive reports and metadata accompanying government statistics (Kumar 2021).

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CHAPTER 7

Pandemic Preparedness and Response: Advancing Research, Development, and Ethical Distribution of New Treatments and Vaccines

Nicole Hassoun

1 Introduction

Everyone should have a legally secured human right to health, which includes the right to access essential medicines and vaccines (Hassoun, 2020c). So adequate pandemic preparedness and response requires putting in place the basic healthcare systems essential for administering them. Moreover, to ensure access to the technologies essential for health and life, policymakers must advance research and development in a way that does not just serve the interests of those in rich countries. This paper explains what equitable access to essential health technologies requires

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in pandemic preparedness and response. It suggests some core provisions for the pandemic accord currently under negotiation through the World Health Assembly to advance equitable research, development, and distribution of essential health technologies.

2 Adequate Pandemic Preparedness and Response

By June 2022, a few years after the coronavirus pandemic began, 6 million people have died globally and some estimates suggest it will cost the world a total of 12.5 trillion dollars through 2024, but in terms of lives lost it is not a major pandemic (LePan, 2020; Ritchie et al., 2021; WHO, 2022b; Shalal, 2022). The 1918 flu cost 50 million lives and AIDS and smallpox pandemics have killed over 25 and 50 million people, respectively (LePan, 2020).

While many people in rich countries do not reflect much on this fact, there are many active pandemics besides COVID-19. Although most people in developed countries can now live productive, long lives with AIDS, due to antiretroviral treatment, the disease still kills more than half a million people annually (Hassoun, 2020b, d; UNAIDS, 2020). Similarly, tuberculosis—the great White Plague that killed at least 1 in 7 people in the US and Europe in the nineteenth century—is still raging in poor countries (CDC, 2016). Or consider malaria, it may have killed half of the people who ever lived and it killed about half a million people in 2019 (Dyer, 2020; Whitfield, 2002).

Moreover, with interruptions to service delivery during the COVID-19 pandemic, many of these diseases may resurge (Hassoun, 2020a). COVID-19 delayed shipments of bed nets to prevent malaria, diverted vaccines to prevent TB, and interfered with treatment access for HIV (Al Jazeera, 2020; CDC, 2020; WHO, 2020). The pandemic has also diverted financing, and interfered with training, staffing, cooperation, surveillance, case reporting, outreach and treatment for many pandemic diseases (Hassoun, 2020a). Many pandemic diseases that are currently confined mostly to developing countries have the potential to resurge even in developed countries. Between 1985 and 1992, when the AIDS pandemic first erupted, for instance, TB incidence increased by 20% in the US (Hassoun, 2020d). And the COVID-19 pandemic has interrupted diagnosis, prevention, and treatment services (such as routine childhood vaccination) in developed countries against many terrible killers (Hassoun, 2020a).

Similarly, the rise of drug resistance and the advent of climate change threaten previous global efforts to control many devastating diseases (Abubakar et al., 2013; Watson et al., 2005). For instance, the spread of malaria, like many other vector-borne diseases, depends on climatic factors like temperature and rainfall as well as the movement of people. Malaria transmission is likely to increase as people seek refuge from climate change related extreme weather events and flooding (Watson et al., 2005). Although insecticides and good treatments exist to combat the disease, drug resistance also poses a threat to adequate treatment (White, 2004). Similarly, drug resistance is a serious problem for controlling the TB pandemic. Patients often require long, complicated, and costly treatment when they are infected with drug resistant forms of TB.

3 What Good Pandemic Preparedness and Response Requires

I believe every individual should have a legally secured human right to health along the lines articulated in the International Covenant on Economic, Social and Cultural Rights (ICESCR) Article 12 and The United Nations Committee on Economic, Social, and Cultural Rights (UNCESCR) General COmment 14 (UN-OHCHR, 1966; UNCESCR, 199). The human right to health is a right to the socially controllable determinants of health that protects individuals' autonomy, interests, and ability to live minimally well (Hassoun, 2020c). The social determinants of health include, but are not limited to, essential medicines, vaccines, and other basic healthcare services. Though, as I noted above, I believe medicines are *essential* when they are important for health and life. So, on my account, people should have rights to many medicines that are not currently on poor countries' or the World Health Organization's (WHO's)—cost constrained—essential medicines' lists. Moreover, I believe that the ICESCR's Article 2(1) makes it incumbent upon rich states to assist poor ones in securing the universal right to health (UN-OHCHR, 1966). Individuals, corporations, and other organizations also have duties to help fulfill the right when poor states are unable or unwilling to fulfill their obligations as articulated, for instance, in the Declaration on the Right and Responsibility of Individuals, Groups, and Organs of Society to Promote and Protect Universally Recognized Human Rights and Fundamental Freedoms and the Human

Rights Guidelines for Pharmaceutical Companies in Relation to Access to Medicines (Hunt, 2008; Lee and Hunt, 2012; UN, 1999).[1]

Even many of those who reject the idea that everyone should have a legally secured human right to health along the lines set out above, maintain that people should be able to access essential health technologies around the world. Some argue that this access is important for promoting global welfare or equality. No one deserves the luck of their birth, and few can choose the country in which they reside, so those in rich countries do not have a stronger claim to access life and health sustaining medicines than those in poor countries. Moreover, many argue that rich countries have contributed to the plights of the poor through a shared and violent history of colonialism and oppression and profit from instituting, upholding, and sustaining coercive rules (e.g. of international trade) that often exacerbate the access to medicines problem (Hassoun, 2012; Pogge, 2002). Finally, it is in rich countries' long-term interests to ensure everyone can access new treatments and vaccines. Pandemics may continue to circle the globe and resurge if we do not fight them effectively by providing everyone with access to essential health technologies in a timely manner. So adequate pandemic preparedness and response requires putting in place the basic healthcare systems essential for administering them. Moreover, to ensure access to essential health technologies,

[1] "Each State Party to the present Covenant …[must undertake]… steps, individually and through international assistance and cooperation, especially economic and technical, to the maximum of its available resources, with a view to achieving progressively the full realization of the rights recognized in the present Covenant by all appropriate means, including particularly the adoption of legislative measures" (UN-OHCHR, 1966).

While, the third General Comment states: "The Committee notes that the phrase [in Article 2(1)] 'to the maximum of its available resources' was intended by the drafters of the Covenant to refer to both the resources existing within a State and those available from the international community through international cooperation and assistance. The Committee wishes to emphasize that in accordance with Articles 55 and 56 of the Charter of the United Nations, with well-established principles of international law, and with the provisions of the Covenant itself, international cooperation for development and thus for the realization of economic, social and cultural rights is an obligation of all States. It is particularly incumbent upon those States which are in a position to assist others in this regard" (UNCESCR, 1990). "That is, all states must protect and fulfill their citizens' human rights. They must also help other states that require assistance. Moreover, on the standard account of human rights responsibilities, other agents, e.g. companies and individuals, have secondary duties to assist when states do not do so. Every agent must respect and refrain from violating human rights. That is, no agent should make it difficult, or impossible, for people to fulfill their human rights" (Hassoun, 2020c).

policymakers must advance research and development in a way that does not just serve the interests of those in rich countries.

Adopting this ethical framework makes it clear that the international community has done a poor job of responding to many global health threats. Although we have made some progress, we did not even succeed in fulfilling the health-related Millennium Development Goals. For instance, we did not halt or reverse the spread of AIDS nor did we provide universal access to antiretrovirals (though new infections fell by 39% from 2000 to 2019) (WHO, 2014, 2021a). Moreover, as I have argued, many countries still bear significant burdens of malaria and tuberculosis and drug resistance poses a challenge for successful treatment (Abubakar et al., 2013; White, 2004). Even our global response to polio—one of the greatest efforts to improve public health of all time—has yet to completely eliminate the disease partly because we have not done enough to invest in health systems in poor countries—providing the requisite cold chains and other health infrastructure, quality and safety-control measures, information systems, health workers, education and training (Gligor et al., 2018; Samant et al., 2007). In many countries, political instability, armed conflict, and persistent viral transmission have also made it difficult to administer vaccinations (Pallansch and Sandhu, 2006). Though with sufficient creativity and resolve (e.g. by relying on "days of tranquility" to administer vaccines), it is still possible to eliminate polio in difficult locations (as it has been eliminated in Ethiopia and Sudan) (Pallansch and Sandhu, 2006; Hassoun, 2020c).

Medicines widely available in high-income countries are often either unaffordable or unavailable in lower-income countries because they are costly, people lack adequate health insurance, health delivery infrastructure is poor; governments are fiscally restricted; and poor countries often possess weak regulatory capacity (Towse et al., 2011). Poor countries often lack sufficient funding, manufacturing supply, transportation and distribution networks, healthcare infrastructure, and workers (Frost and Reich, 2008). Many low-income countries affected by severe epidemics of diseases like malaria, TB, and HIV, had on average $41 per capita in 2017 to spend on all aspects of health compared with $2,937 per capita in high-income countries (WHO, 2019a). So even when treatments are widely available within countries, costs can be prohibitive. Other factors besides costs also limit access to health care. Patients may lack the ability to get to health centers or have trouble accessing treatment because of cultural

stigma, misinformation, or a history of exploitation. For people in low-income countries, failure to secure and adhere to treatment may mean increasing drug resistance, poorer health, and further impoverishment (Mackintosh et al., 2011).

In some cases, few good treatments exist to combat terrible global diseases because they primarily afflict the global poor (Hotez et al., 2016). Market-driven research and development incentives have historically failed to produce sufficient new products for low-income countries with limited purchasing power (WHO, 2017a). The patent system gives pharmaceutical companies the most incentive to create drugs to treat (but not cure) chronic diseases of rich patients who can continue to buy them indefinitely (Hassoun, 2020c; Pogge, 2002). They cannot make as much money from addressing the world's largest health problems prevalent in poor countries.

How can we do better? Consider our response just to COVID-19. The COVAX initiative co-led by the World Health Organization (WHO), the Coalition for Epidemic Preparedness Innovation (CEPI), and the Global Alliance for Vaccines and Immunizations (GAVI), one of the largest external funders for vaccines in poor countries, is a global facility to support the development, manufacturing, and distribution of COVID-19 vaccines around the world (Berkley, 2020; Crager, 2018). At the start of the pandemic, COVAX aimed to help poor countries vaccinate 20% of their populations (Berkley, 2020). They then expanded their targets to vaccinate 70% of the global population. However, as of February 2023, 76% of people in low-income countries (about a third of the global population or 2.5 billion people) have not received a vaccine (UNICEF, 2023). Without greater cooperation in developing and administering COVID-19 vaccines, we cannot vaccinate the global population quickly. Competition among countries for limited vaccine supplies just drives up the price and undercuts allocation efforts (Rand Corporation, 2020; Callaway, 2020; Hassoun, 2020b).

Arguably, we could have greatly sped up research, development, and provision of new vaccines at low prices had every high-income country joined and fully supported COVAX and required companies to (1) share their research via patent pools and (2) implemented alternative reward mechanisms for new vaccines, to (3) allow low-cost generic production on good access conditions. Patent pools are agreements to share research and development data creating a collaborative, rather than competitive, research and development system and historical evidence suggests that

they can be quite effective. Consider the Medicine Patents Pool (MPP), for instance, that allows companies to pool patents for HIV, hepatitis C, and tuberculosis medicines. It has helped to expand generic production, reduce prices, and ensure access to several essential health technologies. The MPP estimates that it helped countries save $270 million dollars in 2016 and more than $300 million in 2017 just for HIV (UNITAID, 2017). And, rather than allowing companies to compete for limited manufacturing capacity, driving up prices and delaying production, we could have rewarded companies for new innovations through COVAX's advance market commitments—but on the condition that they allow generic companies to produce resulting medicines at cost as well (WHO, 2021a). Generic competition can reduce drug costs and 80% of manufacturing capacity is in the generics sector (Miller, 2020). So, reducing transaction costs in this way may have greatly reduced consumers' costs and accelerated vaccine production. If supply would still not suffice to meet demand, the international community could have required producers to offer new technologies on good access conditions.

It is quite possible that this global collaboration for open access research and development would even have been cost-effective—reducing competition globally for a global public good. Companies making bilateral deals with companies to secure scarce supply drive up prices (Callaway, 2020). Even just considering the economic costs that the international community could have saved, the return to investments in health and human capital may be significant. Again, some estimate that the COVID-19 crisis will cost the world economy at least $12.5 trillion USD through 2024 and at the start of the pandemic, it was costing the world US$375 billion monthly (Berkley, 2020; Elliott, 2020; UN, 2020; Shalal, 2022). Others attribute the loss of US$1.2 trillion to bilateral deals and competition for scarce vaccines alone (Rand Corporation, 2020).

More generally, we should recognize that public health is a global public good and collaborate to ensure open access to research and equitable rewards for new developments to secure low cost access to essential health technologies. We can reward companies based on the global health impacts of their technologies delinking companies' profits from sales volume and allowing generic production of resulting products. Good measures of the health impact of new technologies already exist and it is possible to expand this kind of evaluation to form the basis for advance

market commitments for new drugs and technologies as long as countries require companies to share their research and development costs (Hassoun, 2015, 2016a, 2020c).

Many countries lack adequate cold chain storage, transportation and distribution networks, healthcare infrastructure, and workers to provide essential health technologies (Hassoun, 2020f). The global response did not include any funding for the health systems connector pillar of the Access to COVID-19 Tools Accelerator (ACT-A) until September 2020 and as of June 2022, it possessed $350 million USD (primarily for oxygen and personal protective equipment) compared to $4.13 billion USD for vaccines (Usher, 2021; WHO, 2022a). Fair allocation should help individuals everywhere and not just those who are fortunate enough to live in rich countries (Hassoun, 2020e, f, g).

4 How a New Pandemic Accord Can Advance Equitable Research, Development, and Distribution of Essential Health Technologies

In light of these observations, I suggest some core provisions for a new pandemic accord to advance equitable research, development, and distribution of essential health technologies. While it may never be feasible to implement an agreement along the lines of what I propose, I hope it is possible to make progress toward this end. Empirical, as well as further normative, research is necessary to establish that the specific provisions I propose will promote equity in access to essential health technologies. Moreover, discussion and deliberation among stakeholders may help to greatly improve the proposal. To ensure that any resulting changes do not just serve the interests of individual states, however, all of those involved in these discussions should explicitly commit to engage in this process with the aim of promoting the global common good and not merely the interests of those they represent.[2] Moreover, even if an agreement along

[2] States make international agreements and for that reason, international institutions are often most responsive to states' interests. At least when decisions are made based on equal country votes, and not financial power, small island states and large countries like Brazil, China, and Canada are all treated equally. So, per population, resources are often distributed very inequitably and we see all kinds of odd and counterproductive results (e.g. small island states get a disproportionate share of international aid). Moreover, in

the lines of what I propose is never implemented, insofar as implementing it (or a revised proposal) would promote equity in access to essential health technologies, it can serve as a standard by which to judge existing practices and alternative proposals for equitable research, development, and distribution of new treatments and vaccines.

Key provisions in a new pandemic accord to advance equitable research, development, and distribution of essential health technologies might include the following:

1. Signatories agree to endorse the human right to health and individuals' rights to access important medicines as articulated in the Universal Declaration on Human Rights (UN-OHCHR, 1966; UNCESCR, 1990; WHO, 1946, 2019b; Hunt, 2008; Lee and Hunt, 2012; UN, 1999).
   (a) Essential medicines lists should be determined solely by optimal medical benefit and other measures outlined here should be taken to ensure that they are available, acceptable, affordable, accessible, and of good quality.
   (b) States with the ability to do so should provide the requisite assistance to respect, protect, and fulfill these rights in states failing to do so.
   (c) Individuals, corporations, and other organizations have duties to help fulfill these rights when states are unable or unwilling to fulfill their obligations.
      i. Pharmaceutical companies, in particular, should:
         (1) Act to respect and protect the human right to health in everything they do from clinical trials to R&D, pricing, and marketing.
         (2) Do their part to ensure that essential health technologies are available in sufficient quantities in the countries where they are needed and that all patient groups, not just the rich, can access these technologies.
         (3) Offer voluntary licenses to manufacture, import, and distribute essential health technologies in all low- and

practice decisions often advance the interests of the wealthiest states. For this reason, I believe that global agreements and international institutions' charters should explicitly specify that becoming a member requires acting for the common good.

middle-income countries when these medicines are not otherwise widely accessible in these countries.
(4) Contribute to developing drugs for neglected diseases and other diseases of the poor in line with the global burden of these diseases.
(5) Refrain from making it difficult, or impossible, for people to access essential health technologies through patenting practices, lobbying, and price gouging.

2. Signatories commit to fund pharmaceutical research and development collaboratively through advance market commitments or prizes. Reward systems should ensure sufficient future research and development and companies must provide open access to research and development cost and price data, intellectual property, and resulting products (Love and Hubbard, 2007; Snyder et al., 2020; MSF, 2018; Public Citizen, 2019; WHO, 2020).

   (a) Signatories should require companies to make data publicly available with full transparency on research and development costs as well as prices to allow proper reimbursement and price competition.
   (b) Signatories should require companies to put all research and development knowledge, data, and intellectual property in the public domain to advance scientific research.
   (c) Signatories should require companies to put licenses for resulting products in the public domain so generic companies and other producers can use them royalty free and on good access conditions.
   (d) Funds should be distributed to companies in proportion to the global health impact of their products and be available for diagnostics and treatments as well as vaccines and other preventative technologies.

3. Signatories must agree to provide significant investments in global health infrastructure, which shall be equitably distributed based on global need (WHO, 2021b; Saxena et al., 2023).

   (a) Funding should be sufficient for all countries to establish universal healthcare systems, employ health workers, and institute facilities to ensure adequate cold chains and supply of vaccines and other essential health technologies for all.

(b) Funding should be distributed in line with individuals' needs, which may not require equity at the country level.

4. To secure access to essential health technologies, signatories should implement, and support the implementation of, adequate manufacturing supply, transportation and distribution networks, and healthcare infrastructure in partnership with civil society. This requires:

   (a) transparency and coordination to monitor and reduce supply chain risks
   (b) providing the requisite technical support, equipment, manufacturing and distribution networks (especially in low- and middle-income countries with unreliable electricity sources), healthcare facilities, and the workforce to provide and administer essential health technologies.
   (c) Signatories should take particular care to invest sufficiently in diagnostics and treatments as well as vaccines and other preventative measures which include:
      i. Investments in the social determinants of health—e.g. basic sanitation and infrastructure.
   (d) Signatories should ensure that healthcare workers in every country receive the wages, support, tools, and protection necessary to deliver essential health technologies and combat brain drain.
   (e) Trust is also essential to ensure essential health technologies' uptake and this requires transparency, communication, accountability, and partnerships with community leaders and civil society groups, especially in marginalized communities.
   (f) If supplies of essential health technologies are initially limited, signatories should take all reasonable steps to expand access and ensure that they are allocated equitably to those in greatest need and at greatest risk in the interim (Herlitz et al., 2021).

5. Moreover, until the terms of the accord are fully implemented, signatories should exercise and support each other's attempts to extend access on essential medicines and other health technologies using international legal flexibilities available to address public health problems included in the World Trade Organization's Trade Related Intellectual Property Rights Agreement and other international trade agreements, but their efforts should not be limited

by such agreements (Public Citizen, 2019; MSF, 2018; Urias and Ramani, 2020; WHO, 2017b; Kessomboon, 2010; Baker, 2009).

(a) Signatories must take all reasonable steps to ensure that patents do not limit access to essential health technologies.
(b) Signatories must issue compulsory licenses on essential products not only for domestic consumption but for international consumption.
(c) Signatories must refrain from engaging in practices such as litigation, listing countries on intellectual property watch lists, and threatening or applying sanctions for exercising these flexibilities.
(d) Moreover, this agreement should explicitly take precedence over existing treaties, and the Vienna Convention on Treaties should be amended if necessary to permit this, so that countries do not have to abide by TRIPS and TRIPS + provisions if they constrain access to essential health technologies.

6. Until signatories have achieved universal access to essential health technologies and the care necessary to support their uptake, without financial hardship, they should set targets, monitor and evaluate performance, and expand access to these technologies as quickly as possible (Hassoun, 2016b; UN Secretary General's High-Level Panel on Access to Medicines, 2016; WHO, 2021b).

(a) Signatories must set targets and take proactive steps to expand access to essential health technologies, and ensure good quality care, as quickly as possible.
(b) Signatories must collect good quality data and establish rigorous monitoring and evaluation systems to track progress in expanding access to essential health technologies and ensuring good quality care.
(c) Signatories must take other proactive steps as needed to expand access to essential health technologies, and ensure good quality care, as quickly as possible.

5 Objections and Replies

I cannot hope to fully defend any of the specific provisions suggested here, so will just note a few ways of challenging specific suggestions before considering a few ways of challenging many of them together at more length below. First, some will object that it may be difficult to get the data

necessary to reward companies based on the health impacts of their technologies (Stevens and Ezell, 2020). Second, some will claim that price transparency will prevent differential pricing. Finally, some will object that we need the competition that patents allow to get good research and development outcomes and, more generally, should not change our system for rewarding pharmaceutical companies' efforts or constrain their action as their efforts are effective and produce immense public good (Grabowski et al., 2015).

In response to the first point, note that the full terms of this proposal require providing good data and transparency in order to create the proposed reward mechanism. There is a lot of data available on medicines' health impacts already (Hassoun, 2015, 2020c). However, further testing of this mechanism would, indeed, be necessary to establish that the data can be made available and it will have the intended effects. In response to the second worry, it is true that the data I believe we should require companies to provide may undermine other efforts to advance access to essential health technologies (like differential pricing) so it is important to consider the costs as well as benefits of increased transparency in evaluating its marginal contribution. That said, companies often resist differential pricing and, even where it exists, poor countries may face higher prices (Kanavos et al., 2004; Danzon et al., 2013; Vandoros and Kanavos, 2014). So, the benefits of data transparency may be well worth the cost of less differential pricing. If any of the proposals I suggest are likely to have greater costs than benefits, the proposal should be amended. Moreover, it is important to sequence the implementation of the proposals contained herein correctly. Signatories might allow companies to retain control over information that supports differential pricing until they put in place the mechanisms that remove the need for such efforts. Finally, in response to the third worry, I believe that historical evidence suggests patents may not be particularly effective in helping people to access essential health technologies in poor countries (and I survey some of this evidence in Hassoun, 2020c). Moreover, there are good reasons for companies to take even more proactive efforts to help people access, and avoid impeding access to, essential health technologies. Finally, it is possible to test new reward mechanisms, implement flexibilities in the TRIPS and other trade agreements, and constrain patent terms and companies' actions selectively, before implementing these proposals more widely to fully evaluate their effects.

More generally, some will object to the claim that individuals have a human right to health and, more specifically, to the idea that there is any obligation to provide the kind of international aid the proposal outlines. Rather, some critics argue that we must ration scarce health resources and deny the right exists because it cannot tell us how to ration (Sreenivasan, 2012). Some reject the claim that there is one universal standard for human rights (UN-OHCHR, 1966). These people suggest that the human right to health is merely aspirational, little more than a goal at which it would be good for countries to aim (Nickel, 1987). So, while rich countries might have to provide some (minimal) amount of aid to other countries, poor countries should just aim to realize the right "progressively" (Nickel, 1987). On this interpretation of the human right to health, right now, poor countries must only provide a limited list of essential medicines that are highly constrained by cost (WHO, 2019b). Others think there is no obligation to provide significant aid beyond borders at all (Nozick, 1974).

I believe that everyone has a human right to health that requires providing access to essential health technologies for all because doing so is so important for protecting each person's ability to live well. First, even if the right cannot help us to ration scarce health resources, it does something more important for us—it inspires us to try hard to fulfill its claims (Hassoun, 2020c). Second, a plausible reading of the right—in light of concern for each individual's ability to live even minimally well—suggests that we must do much more than progressively realize the right (UN-OHCHR, 1966; Hassoun, 2020c). Those who reject all significant obligations to aid are often concerned about protecting individual freedom. But essential health technologies are often important for this freedom and, in any case, each individual's ability to live a minimally good life and, for instance, avoid terrible death and disability because they lack access to essential health technologies—trumps others' freedom to do whatever they might like (Hassoun, 2012).

Alternatively, some may object to any global accord that would advance equitable research, development, and distribution of new treatments and vaccines by arguing that pandemic preparedness and response are matters of national security. These critics might claim that countries can legitimately refuse to sign on to, and implement the provisions of, this agreement because doing so imperils their security.

Although countries may refuse to sign on to the agreement because they believe doing so will imperil their security, I have argued that *refusing*

to sign will imperil our security. We face a global tragedy of the commons where competition for scarce resources and profit-maximizing behavior on the part of pharmaceutical companies reduces our ability to protect global health. This leaves us all less secure. So, countries should support this agreement partly to protect national security.

Similarly, some claim to endorse "vaccine nationalism"—national partiality in allocating vaccines and other essential health technologies—for ethical reasons. For instance, Kyle Ferguson and Arthur Caplan defend vaccine nationalism in "Love Thy Neighbour? Allocating Vaccines in a World of Competing Obligations" (Ferguson and Caplan, 2020). They claim that when we belong to a nation-state, we belong to a community that creates (moral) reasons to act in the interests of our co-citizens. They say that our obligations to members of the global community (or those outside of our nation-state) are weaker than those to our co-citizens because of the nature of our associative ties with them. So, "within a nation-state, there are legitimate moral reasons to procure and allocate vaccines in a self-interested manner" (Ferguson and Caplan, 2020).

The problem with Ferguson and Caplan's argument is that they provide little reason to think that our associative ties to compatriots *justify* stronger obligations toward them. They suggest that we owe gratitude to compatriots presumably because compatriots help each other to develop their character, morals, meet their needs, fulfill their desires, and so forth through states (Ferguson and Caplan, 2020; Anoko et al., 2020). But people arguably owe a larger debt of gratitude to non-compatriots than to compatriots. Those who create the foundations of civilization, invent technologies like writing, electricity, computers, and vaccinations do transform all of our lives for the better, but they live in many different countries. Global movements, e.g. to end wars that threaten people beyond borders, may also be as important for the quality of our lives as our compatriots' contributions (Brock and Hassoun, 2013).[3] In

[3] Ferguson and Caplan could also argue that compatriots typically engage in mutually advantageous cooperative activities—creating and sustaining a national economy, language, history, culture, science, and so forth—and this gives compatriots stronger moral obligations to one another. Or they could point out that compatriots' shared history binds them together and argue that compatriot favoritism is crucial to promote the common good, and maintain solidarity and mutual trust within a nation (Brock and Hassoun, 2013; Miller, 1998, 2008). However, given our global interdependence, we cooperate with others beyond borders in sustaining our languages, history, culture, science, and so forth. Global trade agreements and institutions help to sustain economic activity and prevent and

explaining why I believe countries should endorse this paper's proposal, I did so mostly on pragmatic grounds—but vaccine nationalism is terribly unethical precisely because no one deserves the luck of their birth, few have much control over their country of residence, and individuals' ability to live minimally well is at stake (Hassoun, 2020c). When there are four ventilators per 12 million people in some developing countries, and people are being buried in cardboard boxes in mass graves, it is simply unconscionable to argue that wealthy countries can keep their money and medicines to themselves or even help their populations first (Maclean and Marks, 2020). Vaccine nationalism fails to respect basic human rights and the people who have them.

Some may argue that there is nothing we can do to help poor countries—they must help themselves, so any proposed global agreement to help poor people access essential health technologies will fail. Aid's critics often claim that continuously sending aid to the needy undermines their self-sufficiency and disempowers poor people (Easterly, 2006; Moyo, 2010). So perhaps funding essential health technologies will disempower the global poor and undermine their ability to create their own medicines. Or maybe poor people in developing countries just require good institutions they must build themselves; some will argue that we cannot effectively help people in poor countries with bad governance access good quality medicines (Hassoun, 2014; Risse, 2012). Unless the local community is involved, giving poor countries money may not really help them—corruption or other problems will undermine our efforts (Easterly, 2006; Moyo, 2010). And, even if we give these countries a full allotment of essential health technologies, perhaps we cannot know if we are actually helping those most in need, or if medicines will be distributed equitably.

address global economic crises. Most languages, cultures, and scientific endeavors extend well beyond borders. Take the example of maintaining peaceful relationships with those in other countries—this requires international cooperation—and brings significant benefits to people not only in the countries that refrain from conflict but to those in many others that might be affected by it. Peace enables us to maintain economic, cultural, and scientific relationships and generally carry on with our lives. We may even be more indebted to those who actively help to sustain this peace, than compatriots. Similarly, our shared history extends well beyond our history with compatriots and people often belong to multiple religious and other groups with which they feel strong ties and may have deep affiliations (Brock and Hassoun, 2013). Some argue that a single person cannot care so deeply about everyone, but given that nations are of very different sizes, it remains a mystery why we would be able to have such ties with those in our nations and not beyond. And even if this is true, its moral relevance is dubious.

These are all analogues of common arguments against international aid and I reject many of them in other papers (e.g., see Hassoun, 2012, 2014). While inadequate regulatory systems and corruption are problems in many poor countries, and the international community should support efforts to produce and distribute good quality medicines locally, we can help poor countries address these problems by helping them to secure the necessary resources and capacities (Naher et al., 2020). There is good evidence that aid programs often work and there exist good ways of ensuring that medicines are safe as well as affordable and otherwise accessible (Hassoun, 2012, 2016a; Mackintosh et al., 2011). Critics should establish that it is impossible to make positive progress with empirical evidence and policymakers should also employ this evidence in trying to help people to access essential health technologies. Moreover, we should work to improve research and development and manufacturing capacity globally even if we cannot completely solve the access problem immediately.

6 Conclusion

To protect everyone's human right to health and right to access essential medicines and other health technologies, countries should come together to create a new pandemic accord that will advance equitable research, development, and distribution of essential health technologies. Adequate pandemic preparedness and response requires putting in place basic health care systems and advancing research and development in ways that do not just serve the interests of those in rich countries. So, beyond endorsing the Universal Declaration's interpretation of the human right to health, key provisions of a new accord should include (1) commitments to fund pharmaceutical research and development collaboratively. Signatories should require open access research and development financed by advance market commitments or prizes sufficient to cover companies' costs and ensure sufficient funds for future research and development. Moreover, signatories should (2) provide significant investments in global health infrastructure and these should be equitably distributed based on global need, and (3) ensure that the essential health technologies and the basic health services necessary to support their uptake are available, acceptable, affordable, accessible, and of good quality. Furthermore, until the terms of the accord are fully implemented, signatories

should (4) utilize, and support each other's attempts to extend access to essential health technologies utilizing, flexibilities in international trade agreements—though signatories' attempts to extend access should not be limited by the terms of these agreements. Moreover, they should (5) set targets, monitor and evaluate performance, and expand access to essential health technologies as quickly as possible. Anything less is inequitable.

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Discussion

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The COVID-19 pandemic presents an unprecedented global challenge in the control of the pandemic and reducing its health and economic impacts. The health impacts have been large and impacted all countries including developed countries. The pandemic has made it clear that biomedical technologies are critical, particularly diagnostic tests, drugs, and vaccines, and there have been extraordinary levels of concern and worries around increasing access and affordability of medical products.

This paper builds on the important premise that to ensure access to essential medicines, policymakers must advance research and development in a way that does not just serve the interests of those in rich countries. The author proposes a Global Agreement to Advance Equitable Research, Development, and Distribution of New Treatments and Vaccines.

It, therefore, is a very timely contribution to the set of mechanisms that have been advocated to ensure free and just distribution of vaccines and medical products, as the world continues to grapple with various agreements and collaborations to augment treatment and vaccine supplies in an equitable manner across countries.

The Issue

Vaccines and medicines are cited as examples of "global public goods" (GPGs). The UN Secretary-General's High-Level Panel Report on Access to Medicines outlines efforts to create a new agreement in the WTO and other trade agreements on the supply of public goods (UNSGACCESSMEDS 2016). However, as Global Alliance for Vaccine Initiative (GAVI 2020) points out, while disease eradication as a whole is a public good (vaccination gives non-excludable and non-rival benefits), drugs and vaccines are subject to supply constraints and end up being often both rivalrous and excludable.

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This makes the fear of vaccine nationalism in the COVID times real; there has been global nervousness that to safeguard their own interests, countries will "turn more inwardly, collaborate less with global institutions, and become more nationalistic" (Amaya and De Lombaerde 2021). The pandemic has spread due to global connectedness and impacted globally, but countries have responded keeping their national and local interests in mind, "exposing new geopolitical and societal fault lines while exacerbating material divides that make the difference between living and dying (Hyndman 2021)." There are instances of serious and openly inequitious actions like Gilead's approach to Remdesivir (MSF 2020). In the initial phase, USA refused to join the global COVAX facility that was set up to ensure more equitable distribution of vaccines between countries. There are also instances of countries brokering deals with major pharmaceutical companies to pre-order COVID-19 vaccines (Amaya and De Lombaerde 2021). While the developed countries are far ahead in terms of both production and distribution capacity, the less developed countries need their requirements of vaccines precisely because the pandemic can be halted only when all receive the vaccines they need. Vaccine nationalism is a short-sighted approach to tackle a global phenomenon like COVID-19.

A mechanism to iron out these several issues and bridge the inequities in treatment and vaccine remains as urgent now as in the beginning of the pandemic and is an essential part of pandemic preparedness.

The paper addresses these issues: not only do we need fair distribution of critical products like vaccines, but also need mechanisms for sharing data, knowledge, and the know-how necessary to manufacture quality products and vaccines. These should be treated as global public goods as well. As the author rightly points out, one can invoke right to health and other clauses to make available vaccines and medical products for countries that need them the most. It is in the interest of Big Pharma to get into global alliances and cooperation as well because these countries rely on global pharmaceutical manufacturing supply chains. Thus, India and China as major players can only gain from such agreements.

The paper advocates the following major points that the signatories to the Global Agreement to Advance Equitable Research, Development and Distribution of New Treatments and Vaccines must agree to:

- **endorse the human right to health and individuals' rights to** access important medicines as articulated in the Universal Declaration on Human Rights.
- commit to fund **pharmaceutical research and development collaboratively** through advance market commitments or prizes. Reward systems should ensure sufficient future research and development and companies must provide open access to research and development cost and price data, intellectual property, and resulting products.
- agree to provide significant **investments in global health infrastructure**, which shall be equitably distributed based on global need.
- secure access to essential medicines by supporting the implementation of, adequate **manufacturing supply, transportation and distribution networks**, and healthcare infrastructure in partnership with civil society.
- until the terms of the accord are fully implemented, signatories should **exercise and support each other's attempts to extend access on essential medicines using international legal flexibilities** available to address public health problems included in the World Trade Organization's Trade Related Intellectual Property Rights Agreement and other international trade agreements, but their efforts should not be limited by such agreements.
- finally, until signatories have achieved **universal access to essential medicines** and the health care necessary to support their uptake, without financial hardship, they should set targets, monitor and evaluate performance, and expand access to essential medicines as quickly as possible.

All of these are excellent points, and if the global community can agree to do this, nothing like it. The question, however, is who is in charge, who decides the priorities, who invests, and who allocates? Most importantly, what has changed since the pandemic started that would enable such cooperation to take place in the current situation?

Of course, there have been instances of cooperation before. For example, the global strategy around HIV/AIDS has been fairly successful, with new platforms like the Global Fund for HIV, TB, and Malaria created, which continues to be a key organization that shows that collaboration and cooperation can happen and can help needy countries. With

countries like India agreeing to slash prices of available essential HIV drugs, the major obstacles were to a great extent lessened. However, the question of global funding remains the most important concern.

In the case of COVID-19, however, the issues are different and more challenging. The scale of impact has been much higher across countries, with developed countries—who are the pioneers in vaccine development—equally adversely impacted. The mortality and morbidity rates have been much higher than what the AIDS epidemic witnessed. Also, in the case of the COVID-19 pandemic, the cooperation required was for mostly *undiscovered* drugs and vaccines, and it was not clear what, how, and how much of these would be produced and by whom. Also, the need for vaccination meant that the volume of production required had to be sufficient for the global population—an unprecedented requirement. This unprecedented demand only accentuated the complexity of dealing with GPGs with global benefits spilling across every national border and involving a far wider range of stakeholders—national governments, pharmaceutical companies, organizations involved in scientific research, pharmaceutical companies, nongovernmental agencies, development partners, not to mention the beneficiaries—from all countries.

In this scenario, there will remain conflicting, contradictory, and confrontational interests and incentives of this huge set of diverse stakeholders. Countries have different economic strengths and negotiating power: some are mainly consumers, others are producers, and some are a mix, giving rise to divergent market interests.

It is not clear how these often contradictory objectives can be ironed out in the proposed framework of agreement. The challenge remains in dealing with GPG (Saksena 2021), in that there is no obvious mechanism for resolving them. Who should intervene? What are the mechanisms of bringing countries with diverse health issues, economic situation, production capabilities, and requirements together? What would have changed from the situation the world is in today that would usher in this new era?

To give an example, what kind of incentives will prompt companies to give open access to "research and development cost and price data, intellectual property, and resulting products", and why would they be more transparent with data? Why should developed countries fund R&D in developing countries if they are not assured of augmented supply?

How can one ensure that private interests will not influence global policy-making? Would the consortium work if all countries—especially the ones with significant presence in the vaccine market—do not join the forum?

The only way such a global strategy will work is by adopting an all-or-nothing approach; if some opt out, there will always be incentives to strike bilateral or even multilateral deals, especially in a seller's market with huge shortfalls in supply requiring explicit or implicit rationing.

The best example of why the suggested steps in this paper may not work is the COVAX facility backed by WHO and GAVI, which was set up as a global procurement mechanism to supply COVID-19 vaccines to all countries in the world. In the face of supply constraints, COVAX also ended up in the vaccine nationalism trap (Usher 2021). "Donor countries and vaccine manufacturers systematically broke COVAX's principles for maximizing the impact of dose-sharing, delivering doses late, in smaller quantities than promised, and in ad hoc ways that made roll-out in recipient countries difficult" (de Bengy Puyvallée and Storeng 2022).

Also, it is not just availability of drugs and vaccines; estimates indicate that countries will need to spend millions of dollars to vaccinate their populations. The health systems requirement for supporting a mass vaccination program—consumables, storage, distribution, staff—would remain overwhelming. Just a supply of vaccines with countries unprepared to take on mass vaccination might prove counterproductive and inefficient.

With ravaged economies and high health costs, national governments may not right now have the bandwidth to engage in the fairly complex negotiation outlined in the paper. Instead, their priorities should be health systems strengthening, expanding in-country production capabilities of medical products and raising finances to build up a resilient health sector.

Vaccine inequities continue despite efforts by international organizations like the WHO and World Bank, and there seems to be no immediate mechanism to these inequities. The only hope is for more and more vaccines to emerge and from developing countries as well. That would ease up supply and help in reducing the inequities.

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CHAPTER 8

Law and Industrial Policy in the Age of (De)Globalization: The Perspective of IP Protection

Cheryl Xiaoning Long

1 Introduction: Conventional View of Courts & New Challenges in Globalization

In the face of globalization and the ensuing international conflicts, the conventional view of a neutral, objective court that treats all litigants from different industries equally has been increasingly challenged. And this is probably more evident in the area of intellectual property law, where judiciary prejudices and forum shopping on an international scale have helped muddle the line between law and industrial policy.

In this essay, I will present two examples to illustrate the increasing overlap between law and industrial policy, and discuss the implications

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of such development for both economic integration and global governance.[1] The first example relates to how litigants choose the location to file legal suits regarding Standard Essential Patents (SEPs), whereas the second example relates to how litigation outcomes in China involving intellectual property disputes are different between foreign plaintiffs and domestic plaintiffs. In the former, I intend to explore the determinants of case outcomes in SEP litigations and the implications for court choice among international firms when parallel proceedings are possible. In the latter, I address the question of whether there exist judicial prejudices in China, and who are prejudiced against if the answer is in the affirmative.

Through these two examples, I attempt to examine how firms navigate through the court system in different countries and how globalization plays into the whole process. The exploration brings about a complex and subtle picture as to how the progression of economic integration has interacted with legal, political, and social differences across countries to form a complicated framework, in which to evaluate the aftermath of globalization in the court system. On one hand, with deepening globalization, more disputes get resolved in courts and multinational firms have more venues to file their litigations; but on the other hand, differential treatments between domestic and foreign litigants persist in various countries, regardless of whether they have independent judiciaries or not. These patterns are then utilized to analyze whether and how the law of one price applies in the rule of law, and to draw lessons for the gradualist approach to economic reforms.

2 Theoretical Predictions: How Does Globalization Relate to Rule of Law?

2.1 The Conventional View: The Theory of Globalization Promoting Rule of Law

The question that we are faced with is the following: Can we expect the rule of law to be maintained in a world faced with rapid and increasing globalization, interrupted by periods of setback, i.e., deglobalization? The initial expectation is that rule of law, being a system that values equal and

[1] I appreciate the insightful comments from Professor Jaivir Singh on an earlier version of this essay that helps improve my understanding of what globalization implies for rule of law in different countries.

non-discriminatory treatment of all participants, will not only continue to be maintained in countries with an existing tradition of rule-based governance, but will also be extended to parts of the world where local governance relies more on relationship, cultivated from personal loyalty or social network.

The underlying logic for the optimistic view regarding the expanding role of law is the following: Economic growth will bring parties together from different parts of the world, who would like to be treated the same when resolving conflicts, whereas the modern court system has long prided itself in the objective, neutral, and arm's length role it plays in arbitrating disputes. Even in developing countries and transition economies, where modern law has just recently taken hold, the courts have fashioned after their counterparts in the developed world with more mature judiciaries in molding themselves into the independent and respected arbitrators. Higher demand naturally leads to greater supply; these forces thus combine to produce the hopeful expectation of better rule of law over a larger part of the world, in response to globalization.

2.2 The Alternative View: The Theory of Globalization Induced Instrumentalization of Courts

An alternative view, however, is that the prediction above is founded on shaky grounds, as it neglects the innate limitations of the rule of law concept. The rule of law is defined by the United Nations (UN) as "a principle of governance in which all persons, institutions and entities, public and private, including the State itself, are accountable to laws that are publicly promulgated, equally enforced and independently adjudicated, and which are consistent with international human rights norms and standards."

Thus, so long as each country has its own law-making bodies, different legal rules will become laws in different parts of the world, even when the rule of law is followed in all countries. Given that international human rights' norms and standards have been met, equal enforcement *within* each jurisdiction of the corresponding laws thus fulfills the goal of justice and equity. Thus, the golden standard of the rule of law as the modern governance mechanism can be met without any harmonization across countries.

Such limitation of the rule of law is not new, but with the advent of globalization, it has become ever so more apparent and pertinent. Due to

rapid economic integration, trade and investment occur across national borders frequently, and firms get into disputes, many of which will be resolved through litigation in other countries. When that happens, courts with jurisdiction only over domestic firms originally will have to make legal judgments involving both domestic and foreign firms. In such cases, foreign firms and domestic firms will often experience unequal treatments, which contradicts the prediction above of improved rule of law at the presence of globalization.

It appears that an unbiased court system cannot exist for everyone if you want to maintain national sovereignty in the face of increasing economic integration, for the following reasons. Firstly, both the country's law and its judges' mindset reflect the preferences of their domestic constituents more than those of foreigners. For example, judges in the U.S. are more likely to favor a more liberalized or less regulated market system, as compared to judges in European countries. And similarly, their attitudes toward a potentially monopolistic behavior, such as tie-in arrangements, may be more tolerant than those in European countries or China. Secondly, industrial policy is explicitly followed in some countries and as a result domestic firms will be favored or dis-favored, depending on the policy implemented at the time by the national government. For example, when foreign direct investment is pursued by the government in China, foreign firms are likely to be favored in the judicial system.

Consequently, judges in different countries and even different courts in the same country may rule differently in similar cases, both because laws themselves are different in different jurisdictions and because judges rely on their own convictions and experiences when interpreting the laws. And to the extent that a country's laws are made to best achieve economic progress and provide protection for its own people, it may seem natural to expect a judge's ruling favors the domestic firm when the litigation also involves a foreign firm.

3 How Do Courts in Different Countries Rule Differently in SEP Cases?

We now turn to analyze two specific cases to compare the two theories outlined above. In this section, courts in different countries are studied to compare how they rule differently on cases involving standard essential

patents (SEPs); while in the next section, legal outcomes for foreign plaintiffs are examined in Chinese intellectual property litigations to detect potential differential treatments.

With the past half century of increased globalization, courts in ever more countries have become involved in litigating disputes between corporations of different nationalities. Has the process of globalization helped reconcile legal outcomes of similar cases reached in different jurisdictions? In other words, has the rule of law been enhanced on a global scale in the age of globalization?

3.1 A Tale of Two Courts: FRAND Royalty Rates for SEPs

To address this issue empirically, we turn to a type of cases that have become prevalent in recent years across the world, in both well-established courts and upcoming courts in developing countries, i.e., litigations involving standard essential patents (SEPs). Specifically, we study where litigants choose to file SEP suits (between the U.K. and China, in particular) and how their choices influence the legal outcomes. A Standard Essential Patent (SEP) is a patent that must be used to comply with a technical standard. Consequently, an SEP owner holds a superior bargaining position that may lead to substantial monopoly profit from licensing, which is unjustified as it is due to the standard's value rather than the underlying technology contained in the SEP. To avoid such monopoly-related problems in licensing, essentially all Standard Setting Organizations (SSOs) impose FRAND obligations on its members during licensing, where FRAND stands for fair, reasonable, and non-discriminatory, pointing to the licensing terms for related SEPs.

But what does FRAND mean exactly and how does one determine whether a certain royalty rate satisfies the FRAND requirement? In particular, how do we know whether the royalties offered are fair or not by the FRAND standard? As no SSOs have provided detailed guidelines for applying their FRAND requirement, SEP-related cases have become the hotbed for legal disputes.

The lack of clear guidance from the SSOs has also resulted in the large amount of discretion enjoyed by courts from different countries in interpreting the FRAND obligation and thus setting SEP licensing fees, not only for their own countries but also for other regions or even the whole world. Figure 1 depicts how the number has changed for various types of SEP cases filed in Chinese courts between 2016 and 2020. Clearly, China

has become the new favorite of litigants in SEP related disputes in recent years, joining the U.S., the U.K., and several European countries as the popular venues for adjudicating FRAND obligation.

Interestingly but perhaps not surprisingly, courts in different countries have given very different interpretations of the FRAND obligation and accordingly reached drastically different SEP licensing fees as the fair rates to charge. An example consisting of a pair of cases involving SEP licensing fees serves to illustrate this point. Consider the following two SEP cases, each of which involves the Chinese electronic giant, Huawei, and a patent assertion entity (PAE). An PAE is a legal entity that does not innovate or manufacture, but rather specializes in purchasing, licensing, and litigating patents.

One case is Unlimited Planet (UP henceforth) v. Huawei, which was filed in a U.K. court in 2017, where UP (a PAE) used patents purchased from Ericsson to sue Huawei for infringement damages. After lengthy legal battles, the U.K. court settled on a 3-part licensing fee schedule as follows:

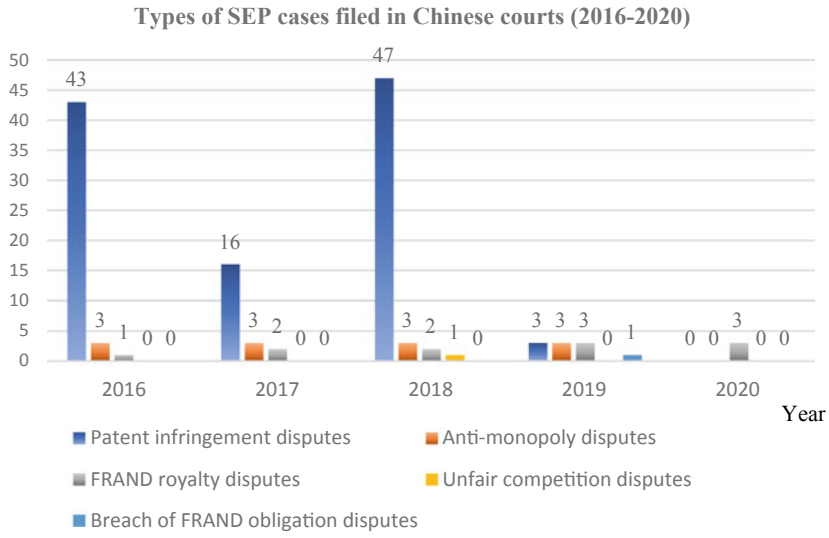

Fig. 1 SEP disputes litigated in Chinese courts (2016–2020)

- 4G/LTE: 0.062% for handsets, and 0.072% for infrastructure;
- 3G/UMTS: 0.032% for handsets, and 0.016% for infrastructure; and
- 2G/GSM: 0.064% for handsets, and 0.064% for infrastructure

where the percentages refer to the proportion of final product revenue paid to SEP holders as by licensing fees.

The contrasting case is Huawei v. Conversant, which was filed in a Chinese court in 2018, where Huawei sued Conversant, another NPE that specializes in licensing and litigating patents originally owned by Nokia. The Chinese court established the following licensing fee schedule:

- 2G/3G: 0.0018%; and,
- 4G: 0.00225%,

with the percentages referring to the proportion of final product revenue paid to SEP holders as by licensing fees.

Clearly, the two schedules above exhibit drastic differences, with licensing fees set much higher in the U.K. court. In particular, the comparison of per patent royalty rate as the proportion of final product revenue between the two cases is as follows:

- 3G: 0.032/5 = 0.0064% (UP-Huawei case) v. 0.0018% (Huawei-Conversant case);
- 4G: 0.062/5 = 0.0124% (UP-Huawei case) v. 0.00225% (Huawei-Conversant case),

where the rates obtained in the former case are *3.5–5.5 times* those in the latter case.

As both Unwired Planet (UP) and Conversant are U.S.-based patent assertion entities (PAEs) litigating in a foreign court (U.K., China) in each of the two cases, the opposing side in the litigation is the same company, Huawei, but suing in a foreign court (U.K.) in one case but in its home court (China) in the other, thus allowing for meaningful comparison between the two cases. In particular, if we assume that the two parties (UP and Huawei) are treated equally in the U.K. court, they are both foreign firms, neither of which warrants the preferential treatment reserved for domestic firms in the U.K. Consequently, by comparing the outcomes

from the two cases, we will be able to find out the preferences granted to Huawei versus its opponent in the Chinese suit.

In any case, the ranking of the two parties' treatments in the U.K. court only provides a baseline for comparison, thus its exact value is irrelevant, although the choice of equal values facilitates the discussion. Alternatively, we can begin by assuming that the two parties are treated equally in the Chinese court, and then compare the two rulings to determine the preferences granted to UP versus Huawei in the U.K. case.

Regardless, the above comparison shows that Huawei has obtained much better outcomes from the Chinese court, while UP has secured more favorable rulings in the U.K. court. At the same time, it is worth noticing that China and the U.K. are representative of two types of economies, where the former is the host country of many influential manufacturers that implement the SEPs to produce cell phones and other ICT products, while the latter does not have any major manufacturing firms, but strives to secure its position as a forum of choice for SEP holders wishing to secure their rights.

Thus, the large differences in SEP royalty rates adjudicated in different courts are consistent with IP laws enforced in line with each country's industrial policy, aimed at protecting their own major industries or promoting their development strategies. In fact, the more general pattern holds where countries with large manufacturers or large domestic markets (such as the U.S.) tend to favor IP practitioners, whereas those without important producers are more likely to favor IP holders. Consequently, licensing fees for SEPs determined in courts in the former group of countries tend to be lower than in the latter group.

3.2 Influence of Industrial Policy on Law? Parallel Litigation and Other Development

Multinational corporations appear to be fully aware of such patterns and have acted accordingly by filing parallel litigations involving the same SEPs all over the world. Figure 2 illustrates the series of legal cases that Conversant and Huawei filed against each other in different countries. Just like UP, Conversant chose to litigate in the U.K., where courts are more friendly to patent holders, while Huawei filed a counter-suit against Conversant in a Chinese court, believing that the country's judiciary system would be more sympathetic to manufacturers.

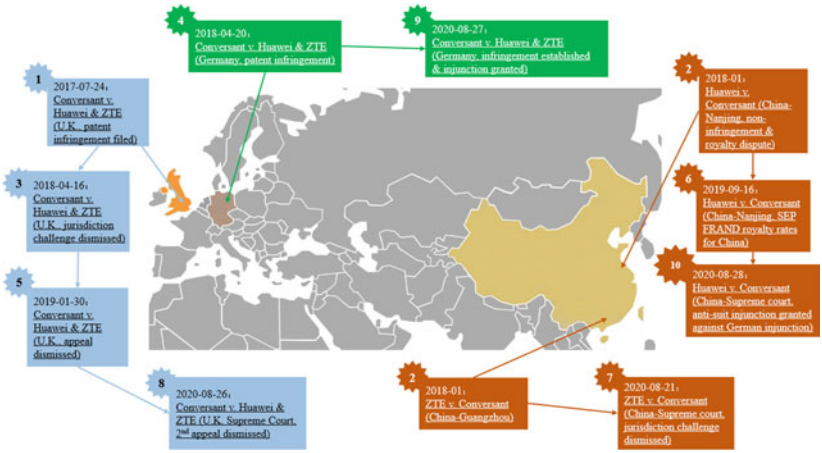

Fig. 2 Parallel SEP litigation around the world (Conversant v. Huawei and ZTE)

It is worth pointing out that neither Unwired Planet (UP) nor Conversant, both of which are U.S.-based patent assertion entities (PAE's), chose to litigate in their own country. Apparently, they did not expect the U.S. courts to provide better treatment than the British courts, which is in line with the discussion above that puts the U.S. in the same camp as China due to their similar stance in how to balance the protection of IP rights and the interests of manufacturers and welfare of consumer.

Consequently, we would expect to see more parallel litigations across the globe filed by parties involved in essentially the same patent disputes. In response, novel legal development has followed in various countries to restrain these proceedings and to avoid their own judicial decisions becoming irrelevant, with more anti-suit injunctions and anti-anti-suit injunctions getting issued. Fortunately, up to this point, these parallel proceedings—including the simultaneous filing of cases and the imposition of these anti-suit injunctions and anti-anti-suit injunctions—seem to have led the opposing parties to more conscientious negotiations and ultimately successful resolution of their disputes.[2]

[2] See, for example, the cases of Huawei v. Conversant, Xiaomi v. Ericsson, and OPPO v, Sharp.

But what is striking about the above pattern is not only the judicial cooperation in achieving national development goals in China, a country notorious for its government intervention in the market, but also the seemingly convenient compatibility between U.K. courts' pursuit of patent holders and the country's lack of major manufacturers in the ICT sector. Is it too far fetched to infer that the coordination between the judiciary and the government is not peculiar to China? Do other countries also share this pattern or do they expand the rule of law to the global stage such that unbiased and equitable treatments are granted to firms from different jurisdictions?

Two new developments further help to answer the questions above. While the U.S. FTC's decision in March to not appeal the 9th circuit court's decision regarding its anti-trust suit against Qualcomm has been viewed by some as evidence for high-tech sector's influence on both the judiciary and the administrative branches in the U.S., the following change in Germany is exclusively related to the legal system. On 18 August 2021, limited exceptions to the automatic injunction claim against patent infringers have been introduced to the German patent law, as these exceptions previously established by the case law of the German Federal Court of Justice (FCJ) have been formally codified and promulgated.[3] With this reform, patent holders will find it more difficult and thus less lucrative to demand excessive licensing fees with the threat of halting the entire production of the targeted manufacturer, who may have accidentally infringed some patents of little value. And the change is most warmly welcomed by the automobile industry, with Mr. Hildegard Müller, President of the German Association of the Automotive Industry (VDA), hailing it as "good news for Germany as a location for industry."[4]

Clearly, the discussion so far has provided supportive evidence for the theory that globalization has induced courts in various countries to

[3] The newly introduced addition to Section 139 para. 1 German Patent Act regarding the injunction claim due to patent infringement reads as follows: "The claim is excluded insofar as its realization, due to the special circumstances of the individual case and the principles of good faith, would lead to a disproportionate hardship for the infringer or a third party, which is not justified by the exclusive right. In this case, the injured party shall be granted appropriate financial compensation. This shall not affect the claim for damages pursuant to Paragraph 2."

[4] For Mr. Hildegard Müller's press release, see: https://en.vda.de/en/press/press-releases/210611_Patent-law-reform-passed_an-important-signal-about-Germany-as-a-location-for-industry.html (accessed on October 26, 2021).

become instrumental in promoting industrial policy. Specifically, the U.K. court issues substantially more favorable rates for SEP's to sustain its position as patent holders' favorite venue for litigation, while lower royalty rates are given in Chinese courts, a country boasting of multiple large manufacturers of cell phones and other ICT products. And the pattern of more favorable stance toward manufacturing firms also appears to exist in the U.S. and Germany, two other countries that are home to major manufacturing firms.

4 Is There Judicial Prejudice Against Foreign Firms in China?

The evidence presented above is observationally equivalent to legal bias against foreigners. And such bias is to be expected, as legal rulings usually reflect domestic preferences. There are multiple ways for such preferences to be reflected. In some countries, industrial policy is explicitly pursued by a collectively minded and strong-willed government, resulting in courts following the lead in distributing judgments in line with the government's policy goal. In other countries where no such industrial policy or national development priorities exist, court rulings still reflect domestic preferences, since the laws themselves and the judges' interpretations of laws both aim to protect the best interests of the country and its people. As a result, it is logical to expect courts to rule more in favor of their local firms on average, regardless whether the country actively pursues industrial policy or not.

Given that the domestic firm, Huawei, received much better outcome in its Chinese litigation than a similar case filed in the U.K., one may expect such favorable treatments to be shared by other domestic firms in the Chinese court system, especially since China is a society that values collective interests more than the Western world. We empirically study this possibility in this section.

4.1 The Research Design: Do Chinese Courts Treat Foreign Firms Differently?

To study whether Chinese courts treat foreign plaintiffs differently from their Chinese counterparts, we examine a large data sample on first instance cases involving intellectual property (IP) infringement and ownership disputes that were filed from 2014 to 2017. In response to

the requirement in 2014 that all legal rulings be posted online to increase information transparency, a large quantity of judgment documents have been made available on various websites. We collected information on all cases that involve IP disputes to focus our study for the following reasons: First of all, IP cases are considered more technical, usually handled by more specialized judges with less political involvement, and thus are less likely to trigger government intervention; secondly, the area of IP is more internationally oriented due to both its more recent history and the great influence of the outside world since the field's very beginning in China; furthermore, IP cases are more comparable in many aspects, which allows for better controls in the estimation process.

The straightforward goal is to empirically explore whether Chinese courts exhibit judicial discrimination when ruling on foreign-related cases. To evaluate how well or how fairly plaintiffs are treated in the court system, we construct the following variables to measure how favorable the legal outcome is toward the plaintiff in a litigation: The judgment amount is the amount of damage granted in the judgment to the plaintiff, the judgment ratio is the ratio between the judgment amount and the amount of damage claimed by the plaintiff, and the defendant litigation fee ratio is the ratio between the amount of litigation fee paid by the defendant and the total amount of litigation fee paid in the case. As the proportion of litigation fee paid by each party reflects the degree by which each of them is found at fault in causing the dispute and thus the litigation, it is a measure for how much each party wins in the case in the minds of Chinese judges. Thus, these three outcome measures provide information from different perspectives on how successful the litigation is for the plaintiff. Holding all other case characteristics constants, they can serve as indicators for how favorable the plaintiffs are in the minds of the judges.

Essentially, we conduct a regression analysis based on the following estimation model:

$$\text{judgement}_{ijcmt} = \beta_0 + \beta_1 yg\_\text{type}_{ijcmt} + \gamma X + \mu_j + \theta_c + \omega_t + \varphi_m + \varepsilon_{ijcmt} \quad (1)$$

where the dependent variable $judgement_{ijcmt}$ indicates the legal outcome of case i that is ruled in month m of year t in court c located in province j, measured by judgment amount (in logs), judgment ratio, or defendant litigation fee ratio, while the main explanatory variable of interest, *yq_type*,

is an indicator variable for whether the plaintiff is a foreign firm (=1 for foreign firms, = 0 otherwise).

Other control variables include case characteristics that may also influence the legal outcome, such as the amount of damage claimed (*lnsuqiu*), type of case (*case_type*: patent, copyright, or trademark), form of trial (*trial_process*: panel of judges or single judge), whether a public juror is present during trial (*rmpsy*), as well as party characteristics that may be influential, whether the plaintiff's location is the same as that of the court (*same_plain*), whether the defendant or their attorney has appeared in court (*attend_bg*), and whether the plaintiff/defendant is represented by an attorney (*ygls*, *bgls*, respectively).[5] Finally, the provincial GDP level (in logs, *lngdp*), case type (patent, copyright, or trademark), court level (basic, intermediate, or high level), as well as province, year, month, and court fixed effects (μ_j, ω_t, φ_m, and θ_c) are controlled for in different specifications, to take into account other potential effects of case, court, space, and time on the legal outcome; ε_{ijcmt} is the random error term.

To abstract from complexities introduced by plaintiffs that are individual persons, our sample of the analysis focuses on IP cases with corporate plaintiffs. Table 1 gives the baseline results from our estimation, and for each of the three outcome variables, results from three estimation specifications are provided, with different sets of the control variables included. With the most comprehensive set of control variables included in the last specification for each outcome variable, we discuss the findings based on columns 3, 6, and 9 in Table 1.

As can be seen from Table 1, the estimation results suggest that foreign corporate plaintiffs fare significantly better than domestic plaintiffs in terms of court judgment, judgment ratio, and defendant litigation fee ratio. Specifically, when controlling for various observable case characteristics, a typical foreign firm obtains a better outcome along all three dimensions from a case that it files against a Chinese defendant, as compared to a typical Chinese firm filing a similar suit. Not only the foreign corporate plaintiff will obtain a higher amount of damage judgment, but also the damage granted will take up a higher proportion of the damage amount claimed by the plaintiff. Similarly, the defendant in

[5] See Long and Li (2021) for detailed discussion of the empirical study.

Table 1 Baseline results

	Judgment amount			*Judgment ratio*			*Defendant litigation fee ratio*		
Variables	*(1)*	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*	*(7)*	*(8)*	*(9)*
yg_type	*0.6245***	*0.7152***	*0.8633***	*0.0446***	*0.0628***	*0.0567***	*0.0597***	*0.0637***	*0.0570***
	(0.122)	*(0.134)*	*(0.155)*	*(0.018)*	*(0.013)*	*(0.014)*	*(0.015)*	*(0.015)*	*(0.017)*
lnsuqiu	0.6529***	0.6403***	0.6020***	−0.0163***	−0.0352***	−0.0425***	−0.0712***	−0.0548***	−0.0604***
	(0.041)	(0.049)	(0.056)	(0.005)	(0.003)	(0.004)	(0.005)	(0.004)	(0.008)
same_plain	0.2637**	0.1472	0.1528	0.0529***	0.0419***	0.0515***	0.0181	−0.0071	0.0014
	(0.096)	(0.113)	(0.110)	(0.010)	(0.010)	(0.010)	(0.026)	(0.014)	(0.010)
attend_bg	−0.6600***	−0.6660***	−0.5861***	−0.0765***	−0.0648***	−0.0571***	−0.0446***	−0.0678***	−0.0580***
	(0.096)	(0.104)	(0.095)	(0.015)	(0.014)	(0.014)	(0.009)	(0.011)	(0.010)
trial_process	−0.3753**	−0.1730	−0.2956*	−0.0246	−0.0210	−0.0094	0.0558*	0.0574**	0.0060
	(0.168)	(0.120)	(0.151)	(0.022)	(0.019)	(0.015)	(0.032)	(0.024)	(0.018)
Rmpsy	0.1327	0.2524***	0.2589***	0.0019	0.0298*	0.0237	−0.0145	0.0033	0.0091
	(0.116)	(0.083)	(0.086)	(0.018)	(0.017)	(0.014)	(0.023)	(0.019)	(0.006)
Ygls	0.2963**	0.1496	0.0991	0.0224*	0.0114	0.0159	0.0022	0.0086	0.0087
	(0.112)	(0.114)	(0.106)	(0.012)	(0.013)	(0.015)	(0.017)	(0.015)	(0.014)
Bgls	−0.4829***	−0.4701***	−0.3700***	−0.0298**	−0.0196	−0.0101	−0.0325*	−0.0379**	−0.0225**
	(0.150)	(0.123)	(0.091)	(0.012)	(0.014)	(0.013)	(0.019)	(0.015)	(0.009)
Lngdp	0.1875	0.8007	−0.3740	0.0088	−0.0314	−0.2814	−0.0057	−0.0154	0.0130
	(0.124)	(1.609)	(1.751)	(0.018)	(0.169)	(0.211)	(0.028)	(0.250)	(0.247)
Constant	0.0751	−6.4144	6.5111	0.4191*	0.9819	3.6823	1.5287***	1.4858	1.2713
	(1.439)	(16.969)	(18.303)	(0.212)	(1.788)	(2.229)	(0.313)	(2.634)	(2.578)
Case type	N	Y	Y	N	Y	Y	N	Y	Y
Court level	N	Y	N	N	Y	N	N	Y	N
Province FE	N	Y	N	N	Y	N	N	Y	N

	Judgment amount			*Judgment ratio*			*Defendant litigation fee ratio*		
Variables	*(1)*	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*	*(7)*	*(8)*	*(9)*
yg_type	*0.6245****	*0.7152****	*0.8633****	*0.0446***	*0.0628****	*0.0567****	*0.0597****	*0.0637****	*0.0570****
	(0.122)	*(0.134)*	*(0.155)*	*(0.018)*	*(0.013)*	*(0.014)*	*(0.015)*	*(0.015)*	*(0.017)*
Year FE	N	Y	Y	N	Y	Y	N	Y	Y
Month FE	N	Y	Y	N	Y	Y	N	Y	Y
Court FE	N	N	Y	N	N	Y	N	N	Y
Observations	29,311	29,251	29,187	29,166	29,107	29,043	27,026	26,970	26,894
R^2	0.151	0.181	0.246	0.061	0.143	0.245	0.143	0.216	0.412

the case with a foreign plaintiff will have to pay a larger percentage of the litigation fee for the case, indicating a bigger win for the foreign firm.[6]

4.2 Explaining the Pattern of Better Outcomes for Foreign Plaintiffs in Chinese Courts

How should the above pattern be interpreted? When presented with the findings above, a recently retired senior judge, who was among the first generation of IP judges and had presided over multiple ground-breaking IP cases, provides the following explanation: Foreign firms that choose to litigate in China tend to be large international firms with rich legal experiences from many countries; they also devote more time and resources to litigation preparation, with superbly qualified legal and technical experts hired on their team. Consequently, their case is usually better argued in court, with strong evidentiary support presented by the best talent in the field.

So, it is to be expected that cases with foreign corporate plaintiffs should have better outcomes. The pattern observed above thus reveals a judiciary system that delivers justice in an unbiased fashion. And this argument is strongly supported by the various government documents issued in China that emphasize equal treatment of foreign firms and domestic firms during litigation (see Supreme People's Court 2009), as well as various studies conducted by several major Chinese courts based on cases filed in their own jurisdictions (see Luo 2020; Beijing IP Court 2019, for example).

One can go a step further to discuss the relationship between globalization and rule of law. Since the country's integration into the global economy at the turn of the century, China has relied more on the rule-based governance system to regulate relations among various economic agents. The trend of using courts to resolve disputes has become inevitable, because different countries need to agree upon some mechanisms for dispute resolution, and the modern court system has been

[6] Court hearing charges are an important part of litigation costs. According to the State Council Order No. 481 of the People's Republic of China, "Methods for the Payment of Litigation Costs", the litigation costs shall be borne by the losing party. If part of the case is won or part of the case is lost, the people's court shall determine the amount of litigation costs that each party will bear, based on the specific circumstances of the case. Also see He and Su (2013) and Yu and Wei (2017).

discovered as a common denominator among various arbitration venues. It is then logical to infer that globalization helps to enhance the role of the court system. In addition to placing the requirement upfront for unbiased, arm's length judication, the continued learning process along with the deepening of globalization also helps transfer more legal experiences from countries with a longer history of modern courts to less experienced countries, which further promotes rule of law.

4.3 Additional Patterns in Foreign Plaintiffs' Better Outcomes

Consistent with the finding above, Table 2 shows that the general pattern of foreign plaintiffs obtaining better outcomes is preserved when foreign plaintiffs are separated by their home country, indicating that the above results are robust.

Two more sets of results are found regarding how foreign plaintiffs obtain different legal outcomes in IP cases litigated in Chinese courts. The finding in Table 3 presents evidence that foreign plaintiffs are more likely to get favorable rulings in cases involving larger amount of damage claims, as implied by a higher proportion of litigation fee paid by the defendant.

Furthermore, the results in Table 4 suggest that there is more favoritism toward foreign plaintiffs suing in courts of higher levels. Specifically, foreign plaintiffs with cases sued in intermediate courts tend to pay

Table 2 Separating plaintiffs by country

Variables	*Judgment amount (1)*	*Judgment ratio (2)*	*Defendant litigation fee ratio (3)*
*yg*_Japan/Korea	0.9952***	0.0180	0.0696
	(0.327)	(0.039)	(0.043)
*yg*_EU	1.0533***	0.0493**	0.0841***
	(0.176)	(0.020)	(0.021)
*yg*_US	0.5834**	0.0749***	0.0172
	(0.212)	(0.019)	(0.021)
Observations	29,172	29,028	26,879
R^2	0.246	0.245	0.413

Notes Plaintiff and case characteristics, GDP, court FE, year FE, and month FE are included as control variables

*, **, ***: significance level at 10%, 5%, and 1%, respectively

Table 3 More favoritism in cases with larger damage claims

Variables	*Judgment amount (1)*	*Judgment ratio (2)*	*Defendant litigation fee ratio (3)*
yg_type	−1.0415	0.0430	−0.3714***
	(1.725)	(0.156)	(0.120)
lnsuqiu	0.5972***	−0.0426***	−0.0616***
	(0.057)	(0.004)	(0.008)
*lnsuqiu*yg_type*	0.1528	0.0010	**0.0345*** **
	(0.144)	(0.013)	**(0.009)**
Observations	29,179	29,035	26,886
R^2	0.246	0.245	0.413

a lower proportion of litigation fee than in cases filed in basic level courts, implying a higher proportion of litigation fee paid by the defendant and thus more favorable outcome for the plaintiff.

Given the explanation above for why foreign firms tend to enjoy better outcomes in IP cases, an additional link is needed to provide consistent interpretations for these two sets of patterns just discussed. Evidently, the magnitude of outcome differential between foreign plaintiffs and domestic plaintiffs increases with the size of claimed damage and thus the economic significance of the case. Thus, the foreign plaintiff involved in a case with a larger amount of damage or a case filed in a higher-level court needs to spend disproportionately more resources than its Chinese

Table 4 More favoritism at courts of higher level

Variables	*Judgment amount (1)*	*Judgment ratio (2)*	*Defendant litigation fee ratio (3)*
yg_type	0.6703***	0.0594***	0.0319
	(0.214)	(0.016)	(0.029)
courtlevel_mid*yg_type	0.3225#	−0.0124	0.0514*
	(0.200)	(0.029)	(0.029)
courtlevel_IP*yg_type	0.4658	0.0216	0.0264
	(0.564)	(0.038)	(0.053)
Observations	29,187	29,043	26,894
R^2	0.246	0.245	0.412

*, **, ***: significance level at 10%, 5%, and 1%

counterpart in a similar case, in order to justify the larger outcome gap observed in Tables 3 and 4.

While it may be a bit challenging to accept this assumption, an alternative explanation for the better legal outcomes of foreign firms will not require such a leap of faith. We turn to this more subtle explanation next.

4.4 A More Subtle Explanation for Foreign Plaintiffs' Better Outcomes?

One may provide a different explanation for the empirical pattern of foreign plaintiffs obtaining better outcomes in Chinese courts, not necessarily more pessimistic, but certainly more subtle regarding the role of law in the country's governance. As China has been pursuing a national strategy of attracting foreign direct investment since the beginning of its "reform and opening up" era in the late 1970s, many policies and measures are designed or implemented to lure in foreign investors at all level of governments. Various preferential treatments have been granted to foreign firms, including more relaxed foreign exchange controls, favorable rental rates for land use right, expedited procedures for investment approval, and so on.

Within an environment where the record to bring in foreign investment helps local leaders achieve career advancement, it is then expected that local courts will be pressured to play along in distributing favorable rulings to foreign investors. Under these circumstances, the court system effectively acts as a government agency in China, as it does not enjoy the lofty status of its counterparts in countries with truly independent judiciaries. Thus, when the government intends to promote FDI, the courts follow its lead by giving out preferential treatments to foreign firms.

This theory can easily explain the differential outcome observed in Tables 1 and 2, and just as easily it can account for the patterns presented in Tables 3 and 4, since larger cases and those filed in higher-level courts draw more attention and exhibit more influence, thus justifying the even more favorable treatments of foreigners in these cases.

Accordingly, the role of globalization in impacting the court system is more complex in this account of events. In this explanation, while foreign firms appear to be well treated in the judiciary system, the more favorable outcomes result from the government's active pursuit of its industrial policy. Although the outcome is apparently opposite to the common concern of xenophobia, the ultimate source for such results is government

policy, which is opposite to the underlying rationale for globalization, i.e., market economy free from government intervention. As industrial policy may be adjusted over time, when tides change, foreign investors may no longer receive equal treatments in Chinese courts, not to mention favorable ones.

The rush to join in and benefit from economic globalization by way of government promotion has thus led to the instrumentalization of the court system, which is a real possibility in China, a party-state characterized by the lack of judicial independence. And furthermore, this less sanguine view of globalization's effects on the court system finds support in the following additional results. Table 5 provides empirical evidence that foreign firms litigating in regions with greater openness are favored even more, where the degree of openness is measured by the ratio between international trade volume and gross regional product (GRP), the ratio between export and GRP, or the ratio between import and GRP. Furthermore, results in Table 6 imply that foreign firms litigating in regions with more international trade conflicts are favored less.

While these patterns are difficult to reconcile with the theory that greater effort by foreign firms explains their bigger win in Chinese courts, it is hard to believe that foreign firms tend to be more devoted in cases filed in Chinese regions that are more open, but less committed in suits litigated in Chinese regions where local firms have suffered more in international trade disputes.

On the other hand, these patterns are fully consistent with the Chinese IP law enforced in line with the nation's industrial policy aimed at attracting foreign investment and implemented following the "carrot-and-stick" strategy. In regions where foreign trade and investment are important, a larger carrot is meted out as the reward (i.e., a larger preferential treatment), whereas in regions where foreign trade is interrupted during trade disputes, a stick is administered as the penalty, resulting in a smaller preferential treatment.

In summary, the general pattern of foreign plaintiffs achieving good results in their IP litigation in Chinese courts is consistent with two competing theories: the theory of globalization enhancing rule of law and the theory of globalization inducing the instrumentalization of courts to help promote industrial policy. But the following patterns seem to provide more support for the instrumentalization theory of courts as far as China is concerned: On the one hand, the higher the external economic

Table 5 More favoritism in regions with greater degree of openness

	Judgment amount			*Judgment ratio*			*Defendant litigation fee ratio*		
Variables	*(1)*	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*	*(7)*	*(8)*	*(9)*
yg_type	0.7151***	0.7322***	0.6861***	0.0427**	0.0444**	0.0252	0.0431*	0.0481**	0.0168
	(0.197)	(0.161)	(0.203)	(0.020)	(0.017)	(0.036)	(0.023)	(0.020)	(0.032)
h_open	−0.1128			0.0008			−0.0451**		
	(0.160)			(0.011)			(0.017)		
*h_open*yg_type*	**0.3883***			**0.0364#**			**0.0374#**		
	(0.212)			**(0.022)**			**(0.022)**		
h_import		0.0020			0.0140			−0.0199	
		(0.154)			(0.013)			(0.021)	
*h_import*yg_type*		**0.3879****			**0.0360***			**0.0268#**	
		(0.172)			**(0.020)**			**(0.018)**	
h_export			−0.0637			−0.0102			0.0273**
			(0.132)			(0.040)			(0.013)
*h_export*yg_type*			0.2515			0.0446			**0.0560#**
			(0.267)			(0.037)			**(0.035)**
Observations	29,187	29,187	29,187	29,043	29,043	29,043	26,894	26,894	26,894
R^2	0.246	0.246	0.246	0.245	0.245	0.245	0.413	0.412	0.413

*, **, ***: significance level at 10%, 5%, and 1%

Table 6 Less favoritism in regions with more trade conflicts

	Judgment amount	*Judgment ratio*	*Defendant litigation fee ratio*
VARIABLES	*(1)*	*(2)*	*(3)*
yg_type	0.8911***	0.0757***	0.0421*
	(0.309)	(0.022)	(0.025)
N	−0.0018	−0.0017**	0.0011*
	(0.007)	(0.001)	(0.001)
*N*yg_type*	−0.0013	**−0.0025*** **	−0.0006
	(0.009)	**(0.001)**	(0.001)
Observations	18,011	17,925	16,527
R^2	0.268	0.275	0.448

dependence of a region, the more likely foreign firms' intellectual property litigation filed in the region will get favorable judgment, and on the other hand, trade friction weakens the advantage of foreign firm plaintiffs in getting favorable judgment.

It is, however, worth pointing out that the potential role of Chinese courts in working in tandem with the government to promote the country's industrial policy is referred to as the instrumentalization of the judiciary, implying the courts' passive role in following the government's lead. But alternatively, the synergy between the court and the government may be explained by common preferences of people staffing these two systems, and these preferences may also resemble those held by the country's lawmakers. Thus, there may not be anything special about the logic of Chinese courts' behaviors, as compared to the underlying principles of courts in other countries, except that their specific behavioral patterns seem rather peculiar, favoring foreign firms rather than discriminating against them!

5 Discussion: Law, Industrial Policy, and the Gradualist Approach to Reforms in the Age of (De)Globalization

Several conclusions can be drawn from the discussion above. The first relates to how China has effectively utilized its courts to help promote its industrial policy. Two seemingly contradictory patterns emerge from the discussion above. In the case of SEP litigation, the judgment issued

by the Chinese court is substantially more favorable to Huawei than the legal outcome in a similar case filed in the U.K.; but when we examine a large sample of IP cases filed in China during 2014–2017, foreign corporate plaintiffs are found to obtain better outcomes on average than their Chinese counterparts.

Yet paradoxically, these two apparently opposite outcomes are logically consistent, if they are viewed from the lens of the country's industrial policy. While China has generally been pursuing a policy to attracting foreign direct investment (FDI) in the past 40 years, it has adopted more selective policies toward FDI in recent years, by classifying investment projects into different categories (including those to be encouraged, those to be permitted, and those to be restricted). And amid more fierce competition with the West in the past few years, imagined or real, the country has leaned more inward. With a greater emphasis on independent research and development, the government has shown a greater willingness to support its domestic firms on the global stage, especially in the high-tech sector.

Based on the discussion on SEP litigation and related legal development, the second conclusion is reached that the judicial process in other countries also faces pressure from industry interest and oftentimes surrenders to it. In other words, courts throughout the world are expected to give more preferential treatments to parties that align more with domestic interests, regardless of whether the country boasts of an independent judiciary. Caution is thus called for when we consider the role of the court system in a new era, as it no longer has as much the independent and unbiased status as it claimed to have when there was not much need to deal with foreigners in the past.

This finding challenges the value of the independent court system and the value of rule of law, because the typically aloof judiciary now looks more like a government agency that pursues certain policy priority, for example, industrial policy. And critics of the Chinese positions now face a greater need to cope with the argument that no real difference exists between a party-state and a liberal democracy.

Yet, such criticisms are not completely fair, as the rule of law in the contemporary world is burdened with some intrinsic limitations. On the one hand, laws are promulgated and enforced within a certain jurisdiction; on the other hand, disputes occur among legal entities that pay taxes to and thus seek protection from different jurisdictions. Consequently, with increasing globalization in the absence of an effective global judicial

system, we are bound to see very different outcomes for arguably similar legal cases litigated in different jurisdictions.

In other words, law and the related judicial services are not the same as goods and services that are traded on the market, and we cannot expect them to follow the law of one price with the advent of globalization. Given that law and the court system reflect the preferences of individual countries, just like the political system, we cannot expect the law of one price to apply in rule of law. Rather, we are faced with a situation resembling Dani Rodrik's "globalization trilemma",[7] but we need to replace democracy with the rule of law, which refers to the equal treatment of the same party litigating in different countries. We cannot have sovereignty, hyper-globalization, and the rule of law all at the same time, but will have to choose two out of the three.

As we have seen in the face of fast economic globalization, without the accompanying political integration, meaningful exchange of ideas and profound improvement in mutual understanding among different societies, the increasing degree of economic integration will lead to a larger number of disputes, including litigations filed in different countries and different jurisdictions, with drastically different legal outcomes coming out of these legal disputes. So at least in the short run, we will see more quarrels, arguments, and disputes rather than more dialog, discussion, or agreement. And whether these encounters, inside or outside of the court system, will lead to more understanding or a more volatile world for us to live in remains to be seen.

A deeper lesson might be the following: The idea of rule of law is not automatically preserved or even enhanced when we have economic integration. If the drastically different legal judgments—coming out from the arguably similar cases—are not interpreted within the context of different cultural, political, and social backgrounds, but rather used as excuses to exaggerate misunderstanding and animosity among different people from different countries, then the cost of globalization may be greater than the benefit from it, and the value of economic integration will be all lost, especially in the long run.

But more importantly, another difference distinguishes the two situations discussed above. While firms can choose where to file a law suit

[7] In what Professor Dani Rodrik calls the 'Globalization Trilemma', countries cannot have national sovereignty, hyper-globalization, and democracy, but they can only ever choose two out of the three (see Rodrik 2000).

so that they can expect a more favorable or equitable ruling in the case involving international SEP disputes, investors of existing projects cannot escape from the discriminatory treatments imposed on them in the host country where the judiciary system enforces the law differentially toward different parties within the jurisdiction. In other words, the potential litigant's ability to move across jurisdictions or the lack of it is a key factor that separates the SEP royalty rate example from the IP litigation example discussed above.

And the existence or absence of investor mobility is important in determining the ultimate implications of differential judiciary treatments. While differences in social preferences are to be expected among different jurisdictions, investors can make voluntary choices where to locate their enterprises. In contrast, for firms already established in a certain jurisdiction, they have limited options when faced with differential treatments based on their ownership or other types of identity-based classification.

Given the inability of most domestic investors to escape, such differential treatment favoring foreigners in the judicial system seems very effective in helping the government to reach its development goal, i.e., attracting foreign investment. In fact, the very approach of industrial policy is characterized by the emphasis on differential treatments granted by policy makers and regulators. And to a large extent, the gradualist approach to economic reforms championed by China in the past forty years shares this intrinsic feature of differential treatment.

On the surface, this approach seems an ingenious easy way out when reforms challenging for the whole society need to be pushed forward, as they may encounter less opposition if implemented with exceptions for various groups with special interests. For example, at the beginning of economic reforms in China, prices for raw materials and other production factors were kept for state-owned firms at the within-plan level, but were determined by market forces for firms of other ownership types. And even now, interest rates remain below market levels for firms with access to state owned banks. Similarly, foreign firms have been granted various preferential treatments to attract more investment from aboard, ranging from land lease to foreign exchange access, and further to legal services as evidenced in Sect. 4.

Unfortunately, the advantages brought by the gradualist approach in overcoming early resistance to reforms only exist for the short run! As time passes by, just as capitalism creates the working class as its own gravediggers, *the gradualist approach to reforms creates its own fatal enemy*

in the form of vested interest groups, who will insist on maintaining the various preferential treatments and favoritism and will fight with tooth and nail against changes that will take these privileges away.

In the process of stalling further reforms, these entrenched groups may point to the different positions taken by other countries toward certain issues, to justify the discriminatory measures practiced domestically. By confusing the differences within the country with those across countries, they can then portray the lack of rule of law in the country as the norm throughout the world. As thus, the focus is switched away from discriminatory measures in the country and the lack of rule of law can be obscured as the real source for income inequality and social injustice. Furthermore, by turning against globalization, the vested interest groups may also hope to find some common ground with their populist opponents, who are easily fueled by anti-Western sentiment and will be more likely distracted from demanding for more equality and rule of law.

Consequently, the complex interplay between economics and politics implies that globalization is a mixed blessing for rule of law. When the economic progress is a result from distorting the fundamental economic system (for instance, through various preferential treatments to overcome the system's intrinsic handicaps) to benefit from greater economic integration with the rest of the world, the gradualist approach is mistakenly credited for the gains from globalization and its defining feature of special treatment may be further glorified, especially because it aligns with the interests of certain elite groups. Thus, it is not at all certain that deepening economic integration without reforms in other parts of the society will help promote the spirit of rule of law, even in countries that have enjoyed the most economic benefit from the integration.

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Discussion

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The paper by Cheryl Long *Law and industrial policy in the era of (de)globalization: The perspective of IP protection*

Aims to highlight how a very important aspect of the *rule of law*—namely that all litigants must be treated equally, does not really play out in a globalized world. According to her, this is evident because litigants with different identities, foreign or domestic, are not treated equally—a point she makes by exploring two cases. The first case shows how the courts in different countries rule on cases involving standard essential patents (SEP) and the second case reveals how Chinese Courts rule in general intellectual property cases involving foreign or domestic firms. In the former case, she finds that litigation associated with disputes around the question as to whether SEP licenses fulfill FRAND (fair, reasonable, and non-discriminatory) standards favors Chinese firm if litigated in a Chinese court rather than if litigated in the U.K., EU, or U.S.; in contrast, firms that have been incorporated in the developed world get more favorable outcomes in British, European, and American courts. In the latter case, Long presents extensive empirical work to show that foreign corporate clients fare better than Chinese firms in general intellectual property litigation in China. The two cases are understood to be equivalent because they reflect the impulse to use law as industrial policy—in the first case to support domestic manufacturers and in the second case the perpetuation of the policy by the Chinese state to expand foreign direct investment. Thus, since law as practiced in each country furthers the values enshrined in the legal system of that country, it is her contention that if there are sovereign interests—it is not possible to have the equality (equal treatment) associated with the idea of the rule of law.

However, it can be argued that the two cases are not equivalent. The first case can be thought of as an instance where firms choose to litigate in a jurisdiction that will fetch them a favorable outcome—firms with different specializations (some working well as licensees and others as innovators) seek out the FRAND regime that is advantageous to them.

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The second case is an example of a situation where the law/judge within a single jurisdiction chooses to treat litigants differently on the basis of their identity driven by concerns to operationalize state policy. It is of course Long's contention that both cases reflect state policy in the operation of law—yes, but the way in which values are perpetuated is different in the two cases. Each jurisdiction can seek to perpetuate a value, say one jurisdiction privileges more innovation, and firms that innovate rather than license will choose the jurisdiction that supports innovation—and if the rule of law is followed within the jurisdiction, all litigating firms will be treated equally; firms anticipating a bias have the option to move to another jurisdiction. This is in contrast to a situation where to perpetuate a value there is discrimination within a jurisdiction—here firms cannot escape the jurisdiction to gain a favorable outcome.

It is not just that firms cannot escape the jurisdiction—there are also larger consequences that emanate from jurisdictions that orient the law to discriminate across firms.

While Long's work emphasizes intellectual property, this problem multiplies when we think of the various contexts in which it comes to the fore. For example, the idea that laws in a special economic zone should be different from the hinterland is an essential part of an East Asian developmental move—prominently configured by China for its own developmental effort and this developmental strategy is popular and mimicked in India as well. While clearly discriminatory, some mitigation ensues if we think of this as a case where firms and other economic actors can choose their locations as per their specializations and abilities. At a stretch, this is perhaps analogous to the first case discussed by Long. However something akin to Long's second case—an impulse to legally discriminate across foreign and domestic firms to increase FDI inflows has been attempted in India, albeit unsuccessfully.

A closer look at the Indian example forefronts the problem with discriminating within a jurisdiction by applying law based on the identity of litigants. To provide some background, over the planning period (roughly from 1950 to 1991) the role of law and policy in India tended to be blurred in economic matters. As the country liberalized in 1991 (read globalized), there was more explicit mention of the role of law in governing economic activity (Government of India 1993). Simultaneously in 1991, the country opened up to the external world expanding trade and soliciting FDI. In light of this, India signed several Bilateral

Investment Treaties (BITs) and by 2016 it had one of the largest investment treaty arrangements in the world. Starting around 2012, foreign investors used these BITs to sue the Indian state. The reaction of the Indian state was to denounce these treaties in 2017, and India now seeks to sign new treaties that are more tilted toward protecting the rights of the state than investors. It is not possible to go into the details of the cases against India but the overarching concern of investors that led them to litigate against the Indian state stemmed from poor legal governance of long-term contracts in India (Singh 2021). One of the impulses by the Indian government to grapple with the problem posed by international treaties was to suggest a law in 2020. This law sought to appoint mediators and fast track courts to settle disputes between the investors and the government. To quote a snippet from a press report of the time 'Foreign investors have highlighted the enforcement of contracts as one of their biggest concerns, said the second official, adding that improving on this front would also reduce litigation for the government' (Shah and Ahmed 2020). Fortunately, such a law was not passed but if it had been, it may have benefited foreign investors, but it would have discriminated against domestic producers who would certainly not have had their contracts governed by mediators and fast track courts. Most importantly, this 'solution' would not have taken care of the endemic problems facing Indian law such as long pendency of suits and inability to process long-term contracts essential for investment. By discriminating for foreign investors—not only is injustice done to domestic producers, but long-term reform and development of legal infrastructure is sacrificed for apparent short-term gain.

Whether it is the instance of the Indian state attempting to enact a law that gives foreign firms access to differential arbitration when investment disputes show up, or the occasion when the Chinese justice system passes biased IP judgments in favor of foreign firms, these are all attempts at regulating economic activity without upholding the norm of equality that forms an integral part of the rule of law. While Long's contention that there is little or no harmonization of law across jurisdictions is probably correct—all systems of law do push the values of their jurisdiction; this is not the same as differential treatment of economic entities with the object of furthering some national (developmental) interest. The economic entities that face adverse discrimination and cannot exit the jurisdiction are of course seriously disadvantaged but more widely the legal development of the jurisdiction is also impaled.

Indeed, as time has gone by, there has been greater orientation to regulating economic activity in counties like China and India that

go well beyond putting in place a rule of law. This approach understands the law not as a general law that is applied to specific incidents, but as constructing or interpreting law differently for different identities. If we see the market as moving resources to generate value, then this is an instance of excessive regulation or over-regulation—it may produce short-term benefits but there are also short-term losses and long-term institutional damage—disallowing sustainable and robust institutions from developing. I would like to invoke an anecdote to emphasize the importance of developing a jurisdiction with legal infrastructure for growth and development. While visiting the Mercatus Centre George Mason University over 2021, I learnt of a competition based on the U.S. that solicited ideas for startups from across the world. It turned out that a number of Indian candidates won the competition, however these startups were dissuaded from incorporating themselves in India largely because the long-term legal surety in the event of disputes if incorporated in India was perceived as being dubious. The startups ended up being incorporated in the U.S., presumably because of all around rule of law concerns. It is in this sense it is important to develop the legal capabilities of all jurisdictions. Yes, some jurisdictions will discriminate against those seeking participation in the economy from another jurisdiction but to the extent there is competition across jurisdictions these problems will iron themselves out or at least have the potential to do so. On the other hand, by discriminating within a jurisdiction only, short-term regulatory goals may be achieved at the expense of inhibiting the legal development of the jurisdiction.

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CHAPTER 9

Neither Crime Nor (Much) Punishment: India's Cartel Penalty Practices

Aditya Bhattacharjea and Oindrila De

1 Introduction

The ancient Indian treatise on statecraft, Kautilya's *Arthashastra*, contains perhaps the world's earliest prescription for penalties on cartels.[1] We would like to draw attention to three aspects of this prescription, in

[1] Kautilya is supposed to have been an advisor (possibly prime minister) to the emperor Chandragupta Maurya, who reigned over much of India from c.321–298 BCE.

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light of current practice. First, it prescribes a monetary penalty, unlike the draconian criminal sentences that Kautilya prescribed for some other economic offences.[2] Unlike in many other countries, cartelization remains a civil offence in India, and the law only imposes monetary penalties on wrongdoers. Second, Kautilya prescribed a flat lump-sum penalty of 1000 silver coins called *panas*.[3] This was very different from the penalties for some other economic offences, which he prescribed as increasing functions of the value of the goods involved.[4] It also differs from modern law and economics approaches that we shall outline in the next section, which derive optimal deterrent penalties as a multiple of the illicit gains to the cartelists, or the harm to their victims. Third, although 1000 *panas* was the highest monetary penalty prescribed in the book, it was actually quite modest compared to the pay levels prescribed for employees of the royal court: it was equal to the annual salary of a grade III courtesan, soothsayer, astrologer, court poet, deputy priest, or head of an administrative department.[5] In this chapter, instead of making such extraneous comparisons, we rely on the economic theory of optimal deterrence and the penalty practices of a few other jurisdictions to show that the monetary penalties under the Indian Competition Act, although apparently substantial on paper, are considerably diluted in practice.

We proceed as follows. Section 2 reviews the theoretical literature on optimal deterrent fines and empirical assessments for a few jurisdictions, highlighting methodological and data-related constraints. Section 3 provides a comparative assessment of the cartel penalty provisions under India's Competition Act and that of some other jurisdictions. Section 4

[2] Such as capital punishment for paying counterfeit coins into the treasury, or amputation of a thumb and finger for women spinners who do not carry out their assigned work or misappropriate raw material (Kautilya, n.d., p. 334).

[3] This was the fine prescribed for cartelisation by 'artisans and craftsmen with the aim of lowering the quality, increasing the profits or obstructing the sale or purchase', and 'by merchants conspiring to hoard, with the aim of selling at a higher price' (Kautilya, n.d., p. 250). The *Arthashastra* asserted that 'traders form cartels in order to raise prices [for the goods they sell] or lower them [for the goods they buy] … making one hundred *panas* on one *pana* or one hundred measures on one measure [of grain]' (p. 134).

[4] The *Arthashastra* (Kautilya, n.d., p. 250) specifies penalties in terms of multiples or increasing step functions of the value of the goods, in cases involving the use of false weights, misrepresentation of the quality or origin of goods, or profit margins higher than those permitted.

[5] Kautilya, p. 291.

briefly reviews the penalty practices in the 12 years since the relevant sections of India's Competition Act were brought into force. Section 5 presents the results of what we believe is the first-ever attempt to assess empirically the deterrence value of Indian cartel penalties, applying the methodology adopted in some earlier literature. Section 6 summarizes our findings and recommends some improvements in penalty practices.

2 Optimal Cartel Fines: Theory and Empirical Literature

Competition authorities around the world most commonly use monetary penalties or fines to penalize cartels.[6] The objective of the authorities is not only to desist cartels but also to deter them.[7] Accordingly, the fines can be restitutive or compensation based and dissuasive or deterrent (Allain et al., 2011).[8] Optimal cartel fine has remained a debated issue in the academic and policy literature, where most discussion centers around US and EU competition practices. Several authors try to shed light on whether the current fining guidelines are optimal in deterring collusion, or suffer from over or under enforcement.[9] Since Becker (1968), the economic approach to law enforcement states that a crime will be committed if gains from the illegal act outweigh the penalty imposed. Therefore, penalty should compensate damages (net harm inflicted on others). Landes (1983) applied this concept in the context of hard-core

[6] In the United States of America (USA), United Kingdom (UK), and a few other jurisdictions where participation in a cartel is a criminal offence, individuals (managers/executives) involved in the cartel agreement can be imprisoned.

[7] A few recent studies point out the role of public and reputational sanctions in deterring anti-competitive conduct (see Aguzzoni, 2013; Bos, 2019; Mariuzzo, 2020). These authors explored the stock market effect of cartel detection and prosecution and found its negative impact on the stock prices and/or firm valuation.

[8] Deterrence can be either specific (if it deters the infringing firms from undertaking illicit activities in the future) or general (if it dissuades other potential infringing firms from taking up illicit activities). 'Restitutive' here does not mean that the fine accrues to those who have been harmed by the cartel. In most jurisdictions, including India, the fine goes to the state treasury. Some jurisdictions, including India, also allow private damage (compensation) claims by the victims separately.

[9] Though deterrent effect of competition enforcement can also be gauged from the duration of convicted cartels (Harrington and Chang, 2009), or the statistical distribution of cartel overcharges (Bos et al., 2018; Davies et al., 2018), we restrict our analysis to optimal fines only.

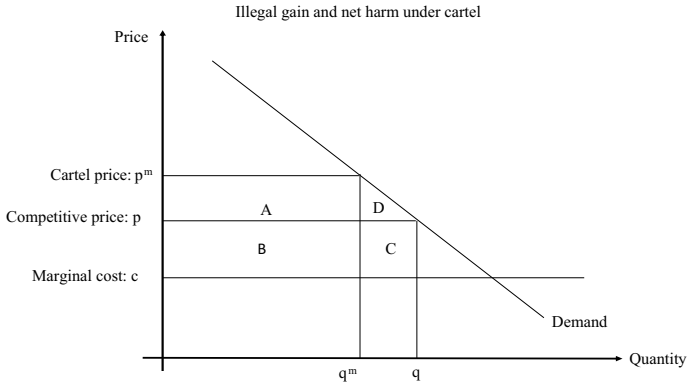

Fig. 1 Illegal gain and net harm under cartel

cartels assuming identical and risk-neutral cartel members, and detection and conviction probability (α) equal to 1. Deterrent fines will be a multiple of damages for $\alpha < 1$. The net harm inflicted on others is equal to the lost consumer surplus (CS, or area A + D in Fig. 1). On the other hand, the gain for the cartelized firms is excess profit from collusion, which is area A−C. Since these two are highly correlated, and CS is harder to estimate, many economists agree with the view that fines meant to achieve deterrence could be based on either harm or illicit excess profit gained from the agreement (Bageri et al., 2013).[10]

In recent theoretical models, due consideration is also given to the practices of competition authorities, such as incremental fines linked to the duration of cartels, or use of sales revenue instead of profit in determination of optimal fines. Buccirossi and Spagnolo (2007) or BS developed a static model where excess profit or illicit gain under cartel is expressed in terms of sales revenue and three unknown parameters: competitive markup ($m = \frac{p-c}{c}$), cartel overcharge ($k = \frac{p^m-p}{p}$), and the price elasticity of demand, ε, calculated at the competitive price 'but for' the cartel, p. It is a useful measure since a majority of jurisdictions, including India, predominantly use sales/turnover data as the basis of setting the cartel fine instead of profit. Using BS (2007), Combe and Monnier (2011) or

[10] Werden (2009) as well as Connor and Lande (2008, 2012) also endorsed the view that a cartel's illegal gain should be the basis of the fines.

CM set the optimal restitutive and dissuasive fine benchmark as $n\Delta\pi$ and $\frac{n\Delta\pi}{\alpha}$, respectively where n is the length of the cartel (duration) and α is probability of detection. Smuda (2023) or SM also expresses the optimal fine as a fraction of affected sales, which has to be greater than or equal to the ratio of overcharge rate and probability of detection ($\varphi \geq \frac{k}{\alpha}$). Though it requires fewer unknown parameters to be used, his approach ignores the output reduction effect of a cartel.

However, this static approach is contested both theoretically and empirically when a dynamic game of collusion is considered, in which cartel members can deviate from the collusive outcome. Therefore, a new breed of literature has emerged that shows that for deterrence, it is not necessary to make collusion unprofitable or to satisfy the participation constraint, but it is sufficient to make collusion unstable or to satisfy incentive constraint (BS, 2007; Harrington, 2014). Allain et al. (2015) or ABKP adopted this approach in their theoretical framework and showed that the measurement of static deterrent fine used by CM is flawed. According to the authors, in a static framework, deterrent fine should be: $\frac{n\Delta\pi}{(1-(1-\alpha)^n)}$ where α is per year probability of detection which is constant over n years (cartel duration). Intuitively, the longer the cartel lives, ex-ante probability that cartel will be detected increases. On the other hand, in the dynamic framework, optimal deterrent fine should be $\frac{\Delta\pi}{\alpha}$, lower than the fines in the static framework and independent of length of the cartel or duration.[11] Boyer et al. (2018) point out that the Beckerian fining rule (compensating harm inflicted on others) falls short of the proportionality criterion required in legal jurisprudence, but dynamic deterrence proposed by ABKP is consistent with it.

Harrington (2010, 2014) discussed the issue of incremental penalty linked to duration of the cartel. He argued that since foregone interest on duration is never paid by the violators, and length of the cartel as documented by the competition authorities is often less than the actual duration of cartels (due to lack of hard evidence), the effect of the penalty depreciates at a rate $\beta \in (0, 1)$, the longer the cartel survives. Harrington (2014) shows that in a dynamic model, if the penalty is independent of duration, the penalty multiple required for a damage-based penalty is $\frac{1}{\alpha}$, but including penalty depreciation rate in his model, penalty multiple that

[11] In ABKP, dynamic deterrent fine criterion is derived under very restrictive assumptions (deviation profit is marginally larger than cartel profit, and firms are very patient). Relaxing these assumptions will reduce the benchmark fine even further.

is sufficient to deter collusion becomes $\frac{\beta}{\alpha}$.[12] He argues that if we only consider the value of α given in the empirical literature (between 0.05 and 0.20), the penalty multiple becomes 5 to 20, which is much higher than the maximum limit recommended in USA (twice the gross gain or loss). However, calibrating a reasonable value range of β (between 0.025 and 0.125), the author finds that the sufficient penalty multiple lies in the range between 0.125 and 2.5, which is lower than what is practiced in the USA. But for EU prosecuted cartels, he concludes that calculating penalty multiple will be difficult without the knowledge of overcharge, since EU uses turnover data.[13]

Researchers have used these theoretical optimal fine benchmarks to empirically assess the deterrent effect of fines imposed by antitrust/competition authorities in the USA, Europe, and China. Table 1 summarizes the theoretical benchmarks used, variables captured from the data, unknown parameters assumed from other empirical studies, dataset used, and observation on deterrence. There is considerable variation in the data, methods adopted, and results obtained. Except Connor and Lande (2012) or CL who use net harm to others, all other studies use illicit gain from cartels as a benchmark of analysis, and ABKP is the only empirical paper that found over deterrence. While CL used USA and Jing et al. (2020) or JGY used Chinese-prosecuted cartel data, the other three papers used EU-prosecuted cartel data.[14] Moreover, CL's calculation of

[12] In an earlier static oligopoly model, Harrington (2010) incorporated this penalty depreciation rate and found that the penalty multiple to make collusion unprofitable (not unstable) was $\frac{1-(1-\alpha)\delta\beta}{\alpha}$.

[13] This points our attention to Bageri et al. (2013) and Katsoulacos et al. (2015, 2020) who examine welfare properties of different penalty bases. They find that a revenue-based penalty incentivizes firms to reduce revenue which results in increase in price and reduction in output for non-deterred cartelized firms (with positive MC and MR). Though such revenue distortion is not present in profit-based or overcharge-based penalties, profit-based penalty is still a weak instrument since it targets the total earning of the non-deterred cartels compared to the overcharge-based penalty that targets cartel price directly. According to their analysis, the best welfare properties come from their proposed sophisticated revenue-based penalty regime, in which the penalty base is revenue but penalty rate applied to that base varies with the percentage overcharge set by the cartel.

[14] For their empirical analysis, JGY used a methodology proposed by Heimler and Mehta (2012) which is slightly different from BS. They expressed optimal fine in terms of price elasticity of demand, Lerner index, and cartel overcharge: $F_s = \frac{\Delta\pi}{\text{sales}} = (1-\varepsilon L)\frac{\Delta p}{p} - \varepsilon\left(\frac{\Delta p}{p}\right)^2$. To consider the dynamic elements of the fining policy, they

cartel fines includes total fine on cartelized firms, individuals, damage payouts, and opportunity cost of imprisonment/house arrest, unlike all other papers that include fines imposed on cartelized firms only. We also find that only CL and CM conducted their analysis at the cartel level, not at the firm level. Finally, an important source of variation comes from the range adopted in different papers for the unknown parameters, which are taken from different empirical papers published previously.

Though detailed discussion of this literature is beyond the scope of this study, the divergent parameter values adopted in these empirical papers exposes many caveats of the existing empirical framework for optimal cartel fine calculation. First, theoretical models express optimal fines in terms of illicit excess profit under a cartel. However, as it will be shown in the next section, a majority of jurisdictions rely on the value of affected sales/turnover as the basis of fines. To establish the relationship between the illicit profit and affected sales under cartel, we require information on elasticity of demand, competitive markups, and overcharge rate. However, establishing 'but for' competitive price is almost impossible. Empirical literature mentioned above resorted to various estimates available in the previous studies on cartels. Second, as Harrington (2010, 2014) points out, and the evidence presented in De (2010) and Levenstein and Suslow (2011) showed, it is difficult to measure the exact length of cartel agreements, since the start of an agreement is hard to determine due to lack of hard evidence/documentation and the end date may also be imprecise since a few cartels will still be active even after being detected. Third, probability of detection and conviction cannot be ascertained correctly and varies significantly across jurisdictions. In Sect. 5, we attempt to deal with these problems in a pioneering attempt to estimate optimal cartel penalties in India.

3 Cartel Sanctions: A Comparative Analysis

In this section, we provide a comparative overview of the penalty guidelines in a few jurisdictions. We compare Australia, Brazil, Canada, China, EU, India, Japan, Korea, Mexico, Russia, South Africa, USA, and UK, using International Competition Network (2008, 2017) and OECD

include detection probability, discount factor, and duration-related depreciation rate as proposed by Harrington (2010) to arrive at the dynamic fine calculation as: $F_D = \frac{\Delta\pi}{\text{sales}}[1-(1-\alpha)\beta\delta]/\alpha$.

Table 1 Summary of empirical studies on optimal cartel fine

Author	*Benchmark*	*Theoretical framework*	*Variables observed in data*	*Unknown parameters*	*Data*	*Result*
CL	Net harm to others	Landes (1983)	Cartel fines; cartel overcharge	Allocative inefficiency (3–20%), probability of detection (25–30%), and conviction (80%) and 20–24% taken together	75 cartels prosecuted in the US	Under deterrence[15]
CM	Illicit gain (as % of affected sales)	BS	Cartel fines, cartel duration, affected sales, and competitive markup (operating result-turnover ratio)	Overcharge (20% for national and 30% for international cartels), price elasticity of demand (0–2), and probability of detection (15%)	64 cartels prosecuted in the EU between 1975 and 2009	Under deterrence

[15] Connor and Lande (2019) repeated this exercise without accounting for the allocative efficiency loss and found 73 out of 75 cartels were sub-optimally sanctioned.

Author	*Benchmark*	*Theoretical framework*	*Variables observed in data*	*Unknown parameters*	*Data*	*Result*
ABKP	Illicit gain (as % of affected sales)	BS and ABKP	Fines on cartelized firms, affected sales, and their duration within cartel	Overcharge (5–30%), price elasticity of demand (0–2), probability of detection (15%), and competitive markup (5–20%)	138 firms in 25 cartels over the period 2005–2012	Over deterrence
SM	Illicit gain (as % of affected sales)	Own theoretical framework	Fines on cartelized firms, affected sales, and their duration within cartel	Overcharge rate (5–100%); probability of detection (5–100%)	247 firms prosecuted in EU between 2007 and 2020	Under deterrence
JGY	Illicit gain (as % of affected sales)	Heimler and Mehta (2012) and Harrington (2010)	Price elasticity of demand (industry estimate); Lerner index ((value added minus cost of wages and salaries)/output)	Overcharge rate (estimated value: 4.9%), probability of detection (12–15%), discount factor (0.95), and penalty declining factor (0.95)	76 firms convicted in 10 antitrust cases in China	Optimal deterrent fine has good explanatory power for the actual fines with a low price-overcharge rate of 4.9%

(2016). The first thing to note is that apart from deterrence, many competition authorities have other objectives for sanctioning cartels such as punishment or retributive justice, restitution, or recovery of illegal gain, though these objectives are not always mutually exclusive.[16] For example, in the *Excel Crop* Case, the Supreme Court of India clarified that the objective of India's Competition Act is deterrence and punishment.[17] However, our comparative assessment of these jurisdictions reveals that deterrence is the predominant objective of cartel sanctions across the board.

Competition laws can be either criminal, administrative or civil, or even dual in nature. With the exceptions of EU,[18] China and India, most of the jurisdictions, irrespective of their income status have moved toward criminal sanctions for individuals involved in the cartel, though most countries still impose administrative/civil penalties on corporations. Another important point is that in many OECD countries (other than Mexico), bid rigging receives the harshest punishment. Even in a few countries in the EU (Germany, Austria, Italy, Poland, Hungary), criminal sanctions are allowed only for bid-rigging cartels.[19]

The method of setting fines in cartel cases in different jurisdictions usually follows a step-by-step process which starts with a base fine, and then adjusts it according to aggravating and mitigating factors within the limit of a maximal cap/limit, if any. Leniency/reduction in fines is considered thereafter. However, it is important to remind ourselves that penalty guidelines mentioned are imprinted in the law and not necessarily practiced as laid down. We shall come back again to this issue while discussing the penalty provisions vis-a-vis practices in India's competition regime in the next section.

There are a few noteworthy characteristics of the penalty provisions for cartels. First, most of the jurisdictions use some form of relevant turnover/sales as the basis for their fine calculation. That is, if a firm earns

[16] In a few countries, punitive or exemplary punishment beyond the harm caused can be sought (as used under tort law in civil offence). This may result in fines beyond restitution or even deterrence.

[17] *Excel Crop Care Limited v. Competition Commission of India & Another (2017) 8 SCC 47,* para 74, p. 79.

[18] Many countries within EU have criminal sanctions for cartels, such as France, Greece, Romania, and Denmark.

[19] In China, bid rigging also receives a jail sentence, but not under anti-monopoly law.

revenue from selling more than one product or service, the fine is based only on the turnover of the one involved in the infringement. We find that Brazil uses total turnover (for the firm or group of firms within the national boundary) if relevant turnover information is unavailable.[20] The Competition Commission of India also used to calculate penalties based on total profits or turnover, but from 2017 onwards it has moved to relevant turnover as the base, after the Supreme Court judgment in the *Excel Crop Care* case. Moreover, India is the only jurisdiction that uses profit as a basis of penalty calculation among all the jurisdictions reviewed here. Apart from administrative fines, Chinese anti-monopoly law also permits confiscation of illegal gains of cartels.

Having fixed the penalty base, the next step is to apply the penalty rate. In the USA, this begins with 20% of the affected volume of sales (or what is called 'relevant turnover' in India). The basic fine is then the highest of (i) US$100 million, (ii) twice the gross pecuniary gain, or (iii) twice the gross pecuniary loss to those harmed by the cartel. The base penalty usually amounts to much more than 20% of affected sales. The EU starts with a fine of up to 30% of affected sales for all types of competition offences, multiplied by the number of years for which the infringement lasted. For cartels, there is an additional deterrent penalty of 15–25% of a year's affected sales. The total fine is capped at ten percent of total turnover.

In terms of duration of the cartel, the legal provisions are more diverse. Japan, Australia, and Brazil consider fixed term penalty (one year for Australia and Brazil and three years for Japan). For a few other countries in our sample, duration is treated as an aggravating factor, and no clear definition is provided in the law (Canada, China). In those jurisdictions that consider the continuous duration of infringement (US, EU, UK, Korea, Mexico, South Africa), two different measurement approaches are used. EU, UK, and South Africa use a simplified method where the cartel's last year's penalty (penalty base or affected sales×penalty rate) is multiplied by the number of years of infringement. If the duration is less than 6 months, it is considered as ½ in EU and UK and in proportion of months in case of South Africa. On the other hand, USA, Korea, and Mexico use the entire duration of the cartel. The disadvantage of using

[20] For other individuals or public and private entities that do not perform business activity (e.g. trade associations), Brazil imposes monetary penalty between 50,000 and 2 billion BRL.

the second method is that the entire affected sales from a specific start till the end date of the agreement need to be calculated. Indian competition law allows penalty based on the whole duration of cartel whereas for other anti-competitive practices, the penalty is based on last three years of turnover/sales. However, as we shall show in the next section, cartel penalty practices in India are more or less based on the three-year fixed term only.

The most important aggravating factors mentioned by most authorities are recidivism, leadership/coercion in cartels, or refusal to cooperate with the authorities, whereas mitigating factors are cooperation with the agency (outside of a leniency program, which is used in many jurisdictions to reward cartel participants who submit evidence that enables the agency to initiate or strengthen an investigation), immediate termination of the agreement, institution of a compliance program, etc. These provisions are vague in most of the jurisdictions except where separate penalty guidelines are issued (EU, UK, Korea, and South Africa).

4 An Overview of India's Cartel Enforcement Regime

In this section, we discuss India's cartel enforcement regime, focusing exclusively on cartel penalties. First, we review the penalty provisions specified in the law both for firms as well as individuals, discuss the status of horizontal agreement cases, and provide an overview of CCI's penalty practices in these cases.

4.1 Cartel Penalty Provisions and Practices in India

As discussed in detail in Bhattacharjea and De (2017), India moved from a reformative to a punitive competition regime with the enactment of the Competition Act, 2002. However, as the title of this chapter indicates, antitrust violations in India remain a civil, not criminal offence. They may result in cease and desist orders under Section 27(a) and monetary penalties under Section 27(b) of the Act. The latter is of two types: one is general for all types of agreements (horizontal or vertical) and abuse of dominance, while the other is specific for cartel agreements, and is more severe. Whereas the prescribed limit for the general civil penalty is not more than ten percent of the *average* turnover of the enterprise for the three preceding financial years, the limit for the specific penalty (for cartel

agreements) is up to three times its profit for each year of the continuance of such agreement or ten percent of its turnover for *each year* of the continuance of such agreement, whichever is higher.[21]

Some simple analytics can be applied to this structure of penalties. First, if we consider only the turnover-based penalty, the aggregate turnover during the cartel's life is likely to be larger than the average of the last three years' turnover. This is trivially true for cartels lasting three or more years; but even for a one-year cartel, it is true if turnover in the cartel year is higher than the average annual turnover of the two non-cartel years. In general, longer-lived agreements will attract a much harsher penalty under the cartel-specific penalty regime than the general penalty regime. Second, it is easy to figure out that three times the profit will always be higher than 10% of turnover if the profit/sales ratio is more than 3.33%, which is on the lower side under normal circumstances. So, the profit-based cartel penalty will normally be higher than the turnover-based penalty. Finally, a penalty based on *total* profits (A + B in Fig. 1) will always be higher than one based on the *excess* profits (A−C) attributable to collusion. It also obviates the need to calculate the 'but for' competitive price and the elasticity of demand, for which data and econometric expertise may be lacking. On paper, therefore, statutory cartel penalties in India are quite severe by international standards, and much easier to compute. However, as we will see in the next section, these provisions are diluted in practice by the CCI and also by the judgments of the appellate bodies.[22]

Till July 2021, the total number of Section 27(a) and 27(b) orders pertaining to antitrust cases (except mergers/acquisitions or combinations) is 124. Five of these were remanded cases in which the Commission

[21] In the original Act, the penalty for cartels was mandatorily 'equivalent to three times of the amount of profits made out of such agreement by the cartel, or ten percent of the average of the turnover of the cartel for the last preceding three financial years, whichever is higher'. This was replaced by 'up to three times of its profit … or ten per cent of its turnover for each year of the continuance of such agreement' in the amended Act in 2007. Therefore, the amended Act is more discretionary in nature, establishes a penalty based on total rather than excess profits, and puts more emphasis on the duration of the cartel agreement.

[22] Section 48 of the Act deals with individual culpability and personal liability of the directors, managers, and other officers of the firms/associations. Although the amount is not specified in the Act, analogously with the corporate penalties in Section 27, penalties of up to ten percent of incomes have been imposed on individuals involved in cartel agreements on behalf of their firms.

issued fresh orders that rectified deficiencies pointed out by appellate bodies. Out of these 124 (119 if we remove remanded cases) orders, 83(78) were passed under Sections 3(1) and/or (3(3)) which are related to horizontal agreements among firms/associations (67%). Table 2 summarizes the outcomes of these 78 cases in which the Commission found a contravention, and their current status in the higher courts (Appellate Tribunal and/or Supreme Court). There are 17 cases where only cease and desist orders were passed and no fines were imposed. In half of these cases (8), non-imposition of penalty was due to similar penalties imposed on the respective firms/associations in a concurrent case. In four other cases, restrictive contractual arrangements were modified/removed, hence no penalty was imposed. In two cases, penalties were waived on the ground of parties' MSME (micro, small and medium enterprises) status and ability to pay criteria along with other criteria such as cooperation with DG or ineffectiveness of the bids, lack of awareness, etc. In another case, penalty was not imposed taking into consideration the trade association's demonstrating a widespread compliance program post first conviction. In a very recent case, although the cartelists' leniency applications provided enough evidence that manufacturers were exchanging detailed price information with an objective to seek price increases, the investigation could not find evidence of resulting concerted action. Since exchange of price information does not constitute violation per se, no penalty was imposed. Also, in a recent collective boycott case, no penalty was imposed considering the ineffective nature and short duration of the boycott. We believe that all these cartels would not have been let off so easily in advanced jurisdictions. In the remaining 61 cases, the Commission imposed monetary penalties on the firms/associations involved in the cartel.

Since 2014, CCI also started penalizing individuals (managers/executives/office bearers) involved in horizontal agreements and so far, penalized a large number of office bearers in 30 cases. Out of these 30 cases, the first two cases were very problematic where CCI imposed penalty on individuals invoking Section 27 of the act. In both the cases, individual penalties were dismissed in appeal. In a few other cases, individual penalties were dismissed on the ground of violation of principle of natural justice, or because the CCI's finding was reversed due to insufficient evidence of cartelization. However, in more recent cases, individuals have been penalized to the extent of 10% of their average incomes over three years.

Table 2 Penalty status in CCI and Appeal Court/Supreme Court cases

Penalty status	**No. of cases**
No penalty	17
Firms/Corporations penalized	61
Individuals penalized	30
Total	78
Appeal status	**No of cases**
No appeal	16
Appeal allowed (penalty dismissed)[a]	11
Appeal dismissed (penalty upheld)	13
Appeal pending[b]	33
Penalty modified	5

[a]Includes a case where originally no penalty was imposed by CCI, and LPG manufacturers case where the Supreme Court found no contravention and dismissed the original CCI order
[b]Includes 8 cases pending at Supreme Court

There has been a growing backlog of pending appeals at different levels. In the original Competition Act, appeals against CCI orders were heard by a dedicated Competition Appellate Tribunal (COMPAT), with any further appeal to the Supreme Court. But in 2017, the COMPAT was abolished, and appeals were transferred to the existing National Company Law Appellate Tribunal (NCLAT), which was already overburdened by appeals under the Companies Act, and was subsequently flooded with appeals under the new Insolvency and Bankruptcy Code. Not surprisingly, we see a slowdown of appeals and appeal disposals in the post COMPAT period. NCLAT disposed of very few Section 27 cases, and as of December 2020, 33 cases were pending before either the NCLAT or the Supreme Court.

4.2 Methodology of Cartel Sanctions

As mentioned in the previous section, India's competition law allows penalty calculation on the basis of firm profit during the whole cartelized period. However, in practice, the Competition Commission has rarely used profit (10 cases only) in fine calculation, and except two cement cases and LPG cylinder case (where profit-based penalty was imposed on one out of 48 firms!), the other seven profit-based penalties were imposed in the last three years. At this point, we should also mention that in 26 out of 61 cases in which fines were imposed, trade associations rather

than firms were penalized, and since associations do not have profits, the basis of fines was income receipts (membership fees, donations, advertising revenue, etc.), which would have been very small relative to the income or turnover of the individual members. Firms on the other hand were predominantly fined on the basis of average turnover for one, two, or three years depending on the availability of data in 25 out of 61 cases. In two early cases and two very recent cases, CCI imposed fixed amount of fines for no apparent reasons (Table 3).

A major shift in the penalty/fining calculation came after the Supreme Court verdict in *Excel Crop Care vs. CCI*, which held that the penalty on enterprises involved in anti-competitive practices should be calculated on the basis of 'relevant turnover' of the enterprise and not the 'total turnover', to maintain the principle of proportionality:

> When the agreement leading to contravention of Section 3 involves one product, there seems to be no justification for including other products of an enterprise for the purpose of imposing penalty… Even the doctrine of 'proportionality' would suggest that the Court should lean in favour of 'relevant turnover'….. [Para 74]

It is also noteworthy that Justice N. V. Ramana (later Chief Justice of India) also passed a concurring judgment discussing the penalty provisions of the Act. In his view, the Commission should follow a two-step guideline for imposition of fines. In the first step, penalty will be determined by the relevant turnover, and in the second step, aggravating and mitigating factors will be considered. He proposed a number of aggravating and mitigating factors including duration of the alleged agreement.

Table 3 Criterion used for fine calculation

Criterion used for penalty	*No of cases*
Fixed amount	4
Income receipt (for associations)	26
Turnover	16
Profit	3
Turnover-profit mix	4
Turnover for firms; income for associations	5
Profit for firms; income for associations	3
Total	61

Note Relevant profit/turnover/income are used only in 12 cases

However, Justice Ramana also capped the penalty limit at 10% of the relevant turnover.[23]

Our analysis in Section 3 shows that almost all jurisdictions use 'relevant turnover' or 'value of affected sales' as the starting point for the imposition of penalty. Therefore, the *Excel Crop Care* judgment is more or less consistent with the practices of more evolved as well as the newer jurisdictions. The recognition that the penalty calculation must a follow a certain step by step procedure is also a welcome move. Most of the jurisdictions where the penalty is not solely decided by the Court (e.g., Australia) more or less follow a step-by-step procedure. However, two major drawbacks of the judgment are that it completely overlooked the profit-based penalty method for cartels, and suggested a penalty cap based on relevant turnover. Effectively, the 10% relevant turnover cap suggested by Justice Ramana leaves no room for considering aggravating circumstances like leadership in cartel or recidivism, etc. unless the base penalty begins with a lower percentage of turnover.

After the pronouncement of this judgment in May 2017, CCI more or less followed the proportional turnover/profit criteria for penalty calculation (12 out of 29 cases where fines were calculated on the basis of relevant turnover/profit/income). Exceptions are a few bidding cases where the parties were not present in that particular product market and put cover bids, cases involving associations with income receipts only, or cases with no penalty. There are a handful of cases where the Commission did not mention whether the turnover used for penalty calculation is relevant turnover or global turnover, and a few others where the firms' penalty was calculated according to turnover because three times average profit was less than 10% average turnover. Another important point to note is the Commission's arbitrariness in dealing with duration of cartels. Pre-*Excel Crop* judgment, duration of the horizontal agreement was seldom mentioned in penalty calculation. In a few recent cases, duration is considered for penalty calculation, and it is interesting to note that all these cases are leniency cases where length of the cartel is relatively easy to establish, because one or more cartel members come forward with evidence in the hope of getting a reduced penalty. Moreover, in these

[23] Supreme Court also permitted the CCI Director General to look into the past and subsequent conduct of the parties to ascertain any pattern in the firms' behaviour, even though the findings and penalty will be confined to a period post-notification of the relevant provisions of the Act (mentioned in the *Excel Crop Care* judgment (para 46).

cases, the Commission reported exact duration (days and/or months of cartel operation), which may be difficult to prove otherwise.

Apart from refraining from calculating penalties on the basis of profits and cartel duration in most cases, which could have resulted in much larger penalties, the Commission has usually not imposed penalties at the maximum statutorily permissible rates. Moreover, it has not shown much consistency in determining the rates to be applied in different cases, sometimes mentioning a couple of aggravating or mitigating factors, and sometimes arbitrarily fixing the rate of penalty without giving any justification at all. Table 4 shows the different criteria and range used by the Commission.

Income receipt criterion was used for cases involving associations, and most of the cases attracted the 10% limit since the base amount was negligible. Penalty was partially or fully based on profit in ten cases but none of these cases attracted 3 times of profit which is the statutory limit. Two cement cases attracted 50% of profit and 8 other cases received penalty in the range of 1 to 2 times of profit. However, we should also note that 6 out of these 8 are leniency cases where relevant reduction in the range of 20–100% was applied after these base fines were calculated. There are more variations within the turnover criterion, ranging from 0.3 to 10%.

Table 4 Distribution of penalty rates for each penalty criterion

Criterion	*Range*	*Frequency*
Total income	10%	26
	Below 10%	9
Relevant income	10%	2
Total turnover	5–10%	3
	1– <5%	11
	<1%	1
Relevant turnover	5–10%	3
	1–<5%	4
Total profit	1–2 times[a]	3
	less than 1	2
Relevant profit	1–2 times	5

[a]Includes LPG cylinder case where 1 out of 48 firms is penalized on the basis of 2.1 times of its profit

Note Frequency here means how many times CCI has used these criterion-range combinations. Therefore, these numbers are not equivalent to number of cases or number of undertakings/associations punished

Also, relevant turnover, profit, or income is used 14 times in 12 cases and on average, there is not much difference in the range adopted when relevant turnover/profit/income is used instead of total turnover.

5 Quantitative Assessment of Cartel Penalties

We have shown above that both theoretical literature and international practices point toward using relevant turnover/profit, duration, as well as some measure of probability of detection and conviction in the calculation of optimal fines. In this section, we critically evaluate whether the methodologies used by CCI is consistent with the economic theory of optimal deterrence, or with the practices of other jurisdictions. We analyze all 17 CCI orders on horizontal agreements where fines were imposed after the Supreme Court's *Excel Crop Care* judgment, which established relevant turnover or profit or both as the penalty base and try to ascertain whether the actual fines imposed were optimal. In our sample of 17 cartels, 11 cartels were penalized purely on the basis of turnover/sales, 3 were based on profit only, and in 3 other cases, mixed methods were used.[24] For our understanding, we also included these three cases for deducing turnover-based optimal fine.

First, we use the static and dynamic deterrence and restitutive fines methodology proposed by ABKP to estimate optimal fines for 14 cartel cases. As mentioned in Sect. 2, the authors used BS's methodology to first measure the excess profit in terms of revenue under cartel as follows:

$$\text{Excess profit} = \Delta\pi = \frac{k[(1+m)(1-\varepsilon k) - \varepsilon m]}{(1+m)(1+k)(1-\varepsilon k)} S \tag{1}$$

where $\Delta\pi$ = Excess profit due to cartelization;

k = overcharge by cartel $\left(\frac{p^m - p}{p}\right)$; m = competitive markup without cartel $\left(\frac{p-c}{c}\right)$;

ε = elasticity of demand; and S = value of sales/turnover under cartel, or $p^m q^m$

[24] Around 31 cases have been decided after the *Excel Crop Care* judgment (including the *Excel Crop Care* case itself, and two other remanded cases). Among these, 10 cases had only associations involved, 3 cases with no fine, and 1 with fixed fine. We remove these 14 cases from our analysis. Also, three cases which are included here were bid rigging cases where CCI could not use relevant turnover since they were not players in the bidding market and put cover bids.

They then derived different optimal fines as:

$$\text{Restitution based fine: } n\Delta\pi \tag{2}$$

$$\text{Static Deterrent fine: } \frac{n\Delta\pi}{\left(1-(1-\alpha)^n\right)}; \text{ and} \tag{3}$$

$$\text{Dynamic deterrent fine : } \frac{\Delta\pi}{\alpha} \tag{4}$$

where n = duration of the cartel and α = probability of detection per year. There are three unknown parameters in these equations: probability of detection (α), overcharge rate (k), and competitive markup (m). Their paper chose parameter values from earlier literature. To simplify our analysis, we start with a lower bound of m and k (5% only) and elasticity = 1.5 (elastic demand). With these parameter values, estimated excess profit is 4.4% of the turnover. If we increase values of m and k, resultant restitution and deterrent fines benchmarks will be higher. Since the profitability of a cartel is reduced if the price elasticity of demand is high, deterrence will be easier to achieve. Therefore, lower value of ε will result in higher restitution and deterrence benchmark. Moreover, we have used probability of detection = 15% which both CM and ABKP have taken as the lower bound (deterrence) whereas the same is 100% (upper bound) for restitution fine. Given the inexperience and capacity constraints of a new competition jurisdiction like India, 15% probability of detection seems reasonable. Increasing this percentage will decrease the static and dynamic deterrent optimal fines benchmark. It is important to note that we have used actual fines before any reduction under leniency guidelines. Also, we worked out the duration of the cartel from the evidence discussed in the orders. The Commission did not systematically established length of the cartel barring a few leniency cases as mentioned previously. Therefore, the actual length may be much longer than the duration reported here. For turnover information, most of the cases provide the last three years sales/turnover/profit information except a few leniency cases where the information is provided for the entire duration of cartel. Therefore, we take the turnover/profit information for the latest year and multiply it by our estimated duration.

The ratio of actual fines to calculated optimal fines is shown in Fig. 2 (ratio of actual to restitution, static deterrent and dynamic deterrent fines) for these 14 cartels. Cases are presented here in the chronological order

of the CCI decision. We can see that 6 out of 14 cases in our sample meets the restitution fine criteria (values above 1) with the very minimum values of markup and overcharge considered in the literature. Four out of six cases are leniency cases, so the final penalties after reduction were substantially lower than what is considered here. Moving to deterrent fines, none of the fines in our sample actually achieve static deterrence criteria, and in only one case exceeds the dynamic deterrent fine. This too is a leniency case.

Though the results presented here are revealing, they are distant from the economic theory of optimal deterrence since fines are calculated here at the aggregate cartel level assuming homogeneous incentive and participation constraints across firms. However, reality can be different. Therefore, it is more practical to calculate optimal fines at the firm level. There are 113 firms involved in these 14 cartels. However, a large number

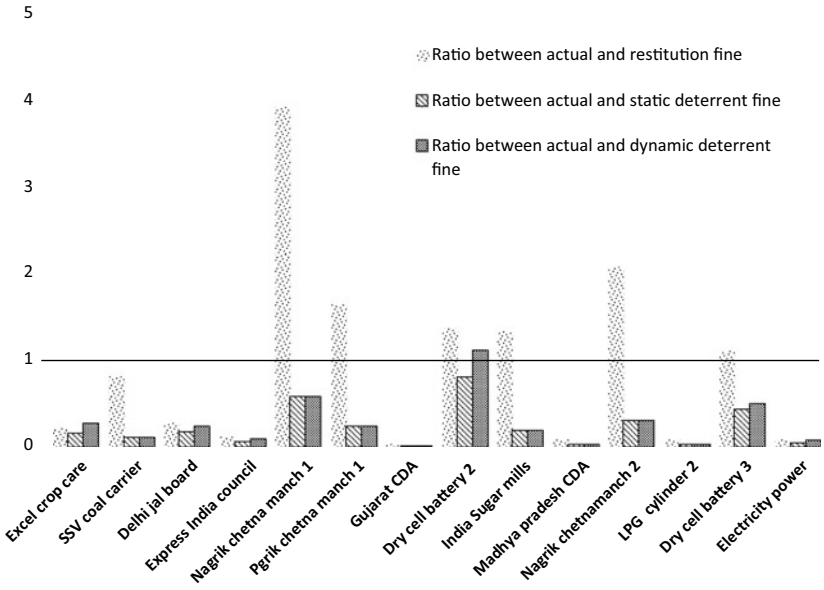

Fig. 2 Ratio of actual to optimal fines: cartel level

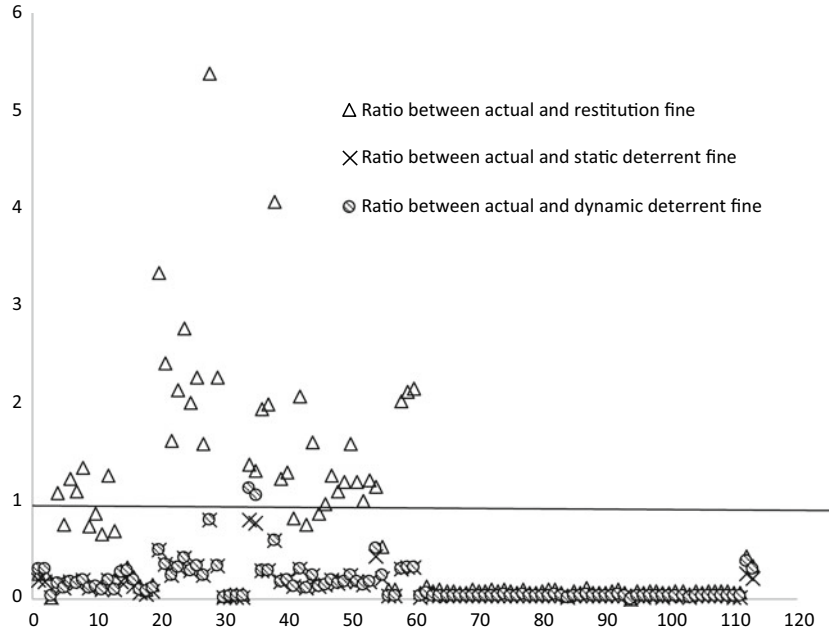

Fig. 3 Ratio of actual to optimal fines: firm level

of firms (51) are firms involved in the LPG cylinder case.[25] Figure 3 shows actual fines in proportion to optimal restitution, static deterrent and dynamic deterrent fines using the same method discussed above, but for individual firms within each cartel.

The first thing to notice here is the very low penalty ratio of many firms, compared to the restitution and deterrence benchmark fines. This includes 51 firms involved in the LPG case where actual fine was very small (1% of turnover). Overall, 35 firms satisfy the restitution benchmark (values above 1). All the firms involved in the cartels that satisfied aggregate restitution criteria earlier (Fig. 2, values above 1) individually satisfy the same criteria except 4 firms involved in sugar mills association cartel. On the other hand, fines imposed on 5 out of 10 firms in SSV coal carriers

[25] This case decided in 2019 is different from the earlier LPG case decided in 2012 which was later dismissed by the Supreme Court of India.

also individually satisfy the benchmark though the overall penalty for the cartel falls short of the restitution benchmark. The above calculations are based on the penalties handed down in the original CCI orders. The degree of under-deterrence would be even greater if we consider leniency, or the reduction or reversal of many of these penalties on appeal,[26] and the erosion of the real value of penalties by the passage of time, even if they are upheld.

We did not conduct any separate analysis for relevant profit-based penalties imposed in three cases. If we assume a 15% probability of detection, dynamic deterrence requires a penalty which is about 6 times the cartel's excess profit. According to the Act, the cartel penalty can be three times its actual profit (not excess profit under cartel), which is sufficient for deterrence even with excess profit as high as 50% of actual profit. Since penalty is imposed on at least three years' profit, it may even reach the static deterrence benchmark. In these three cases, 1–2 times of profit either for three years or for the whole duration of cartel are used as penalty, which can achieve high level of deterrence.

How would these benchmarks change if we change the values of unknown parameters or use a different method suggested by the literature? Let us first discuss the impact of value changes. If we assume that the probability of detection is doubled (30%) due to proper functioning of the leniency program, CCI's increased efficiency and experience, we find that only 2 out of 14 cartels satisfy the static deterrent benchmark and 3 cartels satisfy the dynamic deterrence benchmark including the one that qualified with 15% probability of detection. An important point to notice is that all three cartels were detected through leniency application and penalty was imposed either according to the accurately measured duration (two cases) or in excess of the actual duration.[27] There is no change in restitution fine since it assumes probability of detection equals one. Similarly, if we assume a higher elasticity of demand (absolute value 2), with other parameter values unchanged, excess profit becomes 4.3% of turnover instead of 4.4% estimated earlier. Due to this negligible change, none of the results change.

[26] In Bhattacharjea and De (2017), we showed that the reductions were disproportionately higher for larger penalties.

[27] For a short-term bid rigging arrangement (3 months), penalty was imposed according to three-year average turnover.

Finally, we check the robustness of the results by employing other benchmarks suggested in the literature. If we consider net harm to others instead of illegal profit and add an allocative inefficiency component of 3–20% to the excess profit (as assumed by CL), deterrence benchmark will be even higher. If we use the benchmark proposed by SM and assume 5% overcharge and 15% probability of detection as before, the proposed fraction of affected sales or penalty rate for optimal fine would be greater than or equal to 33.3%, much higher than the maximum 10% penalty limit prescribed in the Indian competition law. We can only achieve this number by assuming a 50% probability of detection or lowering the overcharge rate below 5%! If we consider the Heimler and Mehta (2012) static deterrence methodology as applied by JGY, estimated expected profit becomes 4.25% of turnover with a with pre-cartel Lerner index value of 5% (equivalent to competitive markup). This is a negligible change from our original estimate of 4.4%. However, if we consider their dynamic deterrent fine instead, which also includes discount factor 0.95 and duration depreciation rate 0.95, the resultant expected profit is 1% of the turnover. Therefore, dynamic deterrence benchmark is significantly reduced. If we apply this benchmark in our data, 8 out of 14 cases satisfy the dynamic deterrence benchmark. In a nutshell, our results are quite robust in terms parameter values and alternative methodologies used except the last one.

6 Conclusions

We have come a long way from Kautilya's prescribed lump-sum penalty for cartelisation, to a more theoretically grounded proportional one with some exceptions, mostly confined to penalties on trade associations.[28] However, the theoretical models of optimal cartel penalties that we reviewed in Sect. 2 of this paper would be difficult to apply to any real-world cartel regime, without good estimates of cartel overcharges, demand elasticities, and the probability of detection and punishment. In

[28] We do feel strongly about one such recent order, in which a national federation representing 4000 booksellers, publishers, and subscription agents was penalized a mere INR 200,000 (about USD 2600) for restricting the quantum of discounts its members could offer, and directing them not to respond to procurement advertisements whose terms the federation found unacceptable. Supplies to our University's libraries were specifically mentioned.

India, our assessment is further complicated by the inconsistent pattern of penalties imposed by the CCI. But our rough exploratory calculation shows that fines are considerably below optimal. It is certainly evident that penalties have been far lower than what were statutorily permissible, for several reasons: the use of the turnover rather than profit base (this is quite apart from the fact that theory shows that basing fines on turnover can be counterproductive); calculations based on an average of three years (with either base) rather than the actual duration of the cartel; penalties at much lower rates than the allowable maximum; imposition of penalties on the revenue of trade associations, which would be a tiny fraction of the turnover or profits of their members; failure to impose enhanced penalties on recidivists; and imposition of penalties in only a single case when offences were established in multiple similar cases.

As it is, with no scope for criminal sanctions on individuals, and an as-yet untested regime for private damages, India's deterrent penalties are considerably weaker than those in many established jurisdictions. Even these penalties were frequently reversed or reduced on appeal. The appellate process is getting prolonged, which increases the uncertainty of the outcome and reduces the present value of whatever fine might ultimately be upheld. Only about 0.4% of the penalties imposed from 2009 to 2019 were actually realized by the Commission.[29] And this entire discussion is based on cases that reached the stage of establishing a violation of the Act; as we showed in Bhattacharjea and De (2017), many cases fail to reach that far due to inadequate evidence or procedural lapses.

Some obvious policy implications follow from our analysis. Foremost of these is the need to announce guidelines to reduce the scope for arbitrary and inconsistent penalties.[30] These guidelines should provide for

[29] Calculated from data in Competition Commission (2019, p. 23). The most recent report provides figures on penalties and realisations for only the last three years rather than the cumulative data, but almost the entire recovery in 2019–2020 came from just one of the 16 cases in which penalties were imposed; the rest were stayed by the NCLAT (Competition Commission, 2020, pp. 25–28). (These data are for all penalties, not just those imposed in cartel cases.) The number of cases heard and decided by the CCI and NCLAT fell steeply in 2020–2021 due to the COVID-19 pandemic, and the CCI either imposed modest lump-sum penalties, or refrained from imposing any penalty, in the handful of cases in which contraventions were established.

[30] A committee set up by the government to propose changes in the competition law strongly recommended that the CCI should issue penalty guidelines, and record any reasons for derogating from them (Ministry of Corporate Affairs, 2019, paras 3.7–3.12).

a base penalty and specify enhancements and reductions for aggravating and mitigating factors, with recidivism and bid rigging in public procurement high on the list of aggravating factors. The guidelines should also endorse a consistent profit and duration-based penalty regime, as already prescribed in the law. The severity of such a penalty gives more scope for fixing the base penalty at less than three times profit, and adjusting it upwards for aggravating factors, whereas there is less scope for adjusting the turnover-based penalty within the cap of 10%.

As pointed out by Boyer et al. (2018), the dynamic deterrence benchmark satisfies the proportionality criterion, which is also the legal standard for fines in various jurisdictions including India (see Supreme Court's *Excel Crop Care* judgment, para 74). Moreover, our analysis shows that profit-based penalty prescribed by Indian law is sufficient for deterrence. Therefore, we suggest that CCI should use the profit-based penalty in cases in which reliable profit estimates are provided by firms and where firms are not making losses. Given that trade associations do not have profits, and their turnover is negligible relative to the profits their members earn from collusion, the profits of individual members should form the basis of penalty calculations in the Indian context.[31]

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One of us (Bhattacharjea) was a member of the committee, whose recommendations are yet to be implemented.

[31] Due to space limitations, we could not discuss India's evolving cartel leniency programme, which like in other jurisdictions was designed to encourage cartel members to come forward with evidence that would enable the CCI to establish a case against their co-conspirators. See Bhattacharjea and De (2021) for some sceptical remarks based on economic theory, international practice, and the few leniency cases decided so far by the CCI.

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Discussion

Haokun Sun

This paper by Aditya Bhattacharjea and Oindrila De discusses the optimal cartel fine in India theoretically and empirically. They review all 80 cases in which the Competition Commission of India (CCI) established a contravention of Section 3(3), and all consequent appeals decided by COMPAT/NCLAT and Supreme Court, from 2009 to 2020. Their project then compares these implemented punishments (not much) to the optimal sentence in the literature, initiated by the Chicago school. They conclude the current penalties on cartels are insufficiently mild and incentive incompatible compared to the illicit profit from forming a cartel. That is, in most cases, penalties fall short of restitution and deterrence benchmarks suggested by some of the earlier literature. Economists are keen to reveal the market inefficiency but sometimes shy away when turning to policy implications. On the contrary, this project strongly suggests an optimal cartel fine and argues that it is implementable. The authors suggest that "in order to enhance both punishment and deterrence, CCI should adopt a consistent profit and duration-based penalty regime already prescribed in the law, and issue penalty guidelines taking into account the lack of profit/turnover data, aggravating and mitigating factors, as well as aberrations such as the role trade associations in the Indian context."

The paper considers the classically defined cartels, i.e., 'horizontal' agreements between competitors that (1) fix purchase or sale prices; (2) restrict production, supply, markets, or technical development; and (3) rig bids in an auction. The authors find that India's Competition Act allows for a much harsher penalty than other jurisdictions in cartel cases. Surprisingly, the actual practices followed by the CCI are often inconsistent and non-transparent (low penalty recovery). The basic economic logic of the cost–benefit trade-off for implementing sufficient law enforcement, argued by Gary Becker (1968), is that parties obey laws only if the gains from doing so outweigh the gains of violating the law, net of

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any penalty. A firm's profit from normal competition (π^n) must exceed its profit from participating in a cartel (π^c) minus the expected fine [= amount of fine (F) times probability of having to pay (α)], such that $\pi^n > \pi^c - \alpha F$. To deter cartels, we need $F > \frac{\pi^c - \pi^n}{\alpha}$. Becker (1968) defines the optimal fines as the economic damage; Landes (1983) argues the optimal fines should equal the loss of consumer surplus from such a cartel; and closer to the above relation, Bageri et al. (2013) highlight that the distortive effects of antitrust fines should be based on revenue.

This project adopts the approach suggested by Buccirossi and Spagnolo (2007). Let $\Delta\pi$ = illicit profit due to cartelization; k = overcharge by cartel; m = competitive markup (without cartel); α = probability of detection; ϵ = elasticity of demand; and S = value of sales/turnover (or $\frac{n\Delta\pi}{\alpha}$ with n for the length of cartel). The optimal fine should satisfy

$$F^c = \frac{\Delta\pi}{\alpha} = \frac{k[(1+m)(1-\epsilon k) - \epsilon m]}{\alpha(1+m)(1+k)(1-\epsilon k)} S.$$

Unfortunately, as the authors point out, adoption of a consistent profit and duration-based penalty is not easy in practice. This is partly because of the fact that profit and duration are difficult to investigate.

Moreover, increasing the fine would reduce the probability of detection, including even reluctant deterrence. For instance, a leniency program encourages firms to commit and provide supportive evidence of the cartel. Such a carefully designed mechanism sets cartel members in a prisoners' dilemma game, which may result in whistle-blowing as the unique equilibrium. Moreover, theoretically, these mechanisms are robust to the absolute scale of punishment; punishing the committed ones less would do. One can easily prove that as the size of a cartel increases, the probability for at least one firm to commit and report the cartel rises. The commit probability also increases in a dynamic setting, especially if the amnesty bonus is contingent on the length of the cartel.

Needless to say, the judicial punishment should be incentive compatible for both harmless criminals and harmful activities. The incentive for a firm not to form a cartel should be not only higher than forming a cartel, but also lower than the incentive for a firm to do other (more) harmful criminal activities, such as corruption, monopoly, and terrorism. As seen earlier, the incentive compatibility constraint for a normal competition to yield more profit than a cartel requires $\pi^n > \pi^c - \alpha F^c$ or $F^c > \frac{\pi^c - \pi^n}{\alpha}$, whereas the incentive compatibility constraint for cartel

to surpass monopoly implies $\pi^c - \alpha F^c > \pi^m - \beta F^m = \Rightarrow F^m > \frac{\pi^m - \pi^c + \alpha F^c}{\beta}$. Simply raising F^c may increase the chance for other harmful criminals.

Given the empirical challenges and unobserved factors, setting a brutal punishment level or a tight range would not be practical, especially when these cartels are too big to regulate. Therefore, it would be perhaps more crucial to improve the judicial sentencing standard/fairness in those scenarios. The literature has suggested multiple factors that may impact the judicial sentencing decision in these cases. For instance, Abrams et al. (2012) and Alesina and La Ferrara (2014) reveal party race bias in capital sentencing. Chen et al. (2016) pointed out that judges' experiences significantly impact the court decision.

Overall, the project by Aditya Bhattacharjea and Oindrila De analyzes the cartel penalty regime in India in terms of the literature on optimal penalty for restitution and deterrence, as well as current penalty practices in different jurisdictions. It criticizes the inefficiency in the cartel penalty practices under the current Indian judicial system and suggests several ways to improve such punishment bar. This paper has a strong policy implication and sheds light on the literature for optimal antitrust punishment.

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CHAPTER 10

Legal Challenges for Corporations in the 21st Century

Kaushik Basu and Ajit Mishra

This chapter is based on a transcript of the Panel Discussion on Legal Challenges for Corporations in the 21st Century, held on 23rd January, 2021. The session was chaired by Prof. Kaushik Basu and the three panelists were Dr. Naushad Forbes (Co-Chairman, Forbes Marshall), Mr. Dhruv Sawhney (Chairman, Triveni Group, India), and Mr. Janmejaya Sinha (Chairman, Boston Consulting, India). After the panelists shared their views, other participants joined in the discussion. We have kept the conversational style intact.

The landscape of the global economy is changing at a pace rarely seen before. This is throwing up new challenges for regulation, policymaking

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and the law, for not just India, but the world. We have had two days of discussion with contributions from prominent scholars, economists and lawyers on various issues within the broad field of law and economics. In this session, we have speakers, who are running businesses, advising corporations and living the life amidst the very changing global landscape that scholars have been analysing. The aim of this session is to hear the views of these practitioners from their own perch of business and their interactions with governments and regulatory authorities, and to engage with them on some key questions.

Question 1: The regulation of big corporations—from Big Tech to Big Pharma—has created controversies all over the world. Traditional antitrust laws do not seem to be working. Should we leave markets unregulated or do we need to think out of the box as to how we regulate big corporations to ensure that the benefits are widely dispersed?

Kaushik Basu opened the discussion by pointing out how the challenge of regulation has got heightened by the rise of the mega corporation. At one level, the largeness is of value because industries like those related to technology and pharmaceuticals have great economies of scale; their size makes them efficient and enables them to conduct expensive research. On the other hand, such market dominance is not good for the workers, nor for the consumers, as old-fashioned oligopoly theory taught us. Not surprisingly, this has led to a contentious debate. While many economists believed, and a few still do, that big corporations should be left free to face the market forces on their own, this view is not shared by many. Even in countries like the US where the market has been important, there has been concern that there should be some regulatory structure for the big players especially now that business has become bigger than ever anticipated. The challenge is made harder by the fact that traditional policies such as the antitrust laws, which in the US go back to the late nineteenth century, do not seem to be working as effectively as one would have wished.

Naushad Forbes: As economies move on, law should move along with them. Looking at the history of antitrust activities, the world used to be better for antitrust interventions. Examples include the breaking up of Standard Oil in the early twentieth century or an unsuccessful attempt to break up US Steel or the recent breakup of AT&T along with breaking up of IG Farben in Germany which ended up in three leading chemical

companies. If there are monopolies having dominant power in certain regions, then they end up with not just excessive pricing power but also with lower productivity. In such cases, companies spend their resources in buying out competitors instead of investing in technology and R&D. Thus, instead of competing on the basis of R&D, they compete to gain market dominance. The present antitrust legislation in the countries reflects a time when people priced aggressively to put others out of business and then raising prices after they had done so. The big tech companies today operate without charging for their services, and don't need similar pricing strategies to expand. In such a situation, it is possible for these companies to fulfil all requirements of the antitrust legislation and still attain dominance without falling foul of any legislation.

For this reason, the legal structure needs to keep up with how the industries are moving. We therefore require internationally coordinated action by governments to set new rules that would operate to break up the existing technology company monopolies. Breaking these up is much tougher than preventing them from being formed. The present antitrust legislation can be used to prevent acquisitions which prevent competition from developing. For example, when Facebook acquired WhatsApp, they were both not so large that it would have been a matter of concern. It is, however, questionable as to why the acquisition by Facebook of Instagram was allowed to take place. Facebook at that time was already a huge corporation, and Instagram was an emerging competitor. This could have been prevented through existing antitrust legislation. Governments around the world need to agree on some rules relating to what a competitive behaviour constitutes and what a competitive market requires. They need to be willing to ensure that the market remains competitive.

Janmejaya Sinha: An overarching regulatory framework needs to be laid out before going into the details of the regulations. Four things need to be considered while talking of such a regulatory framework. First, is the regulation within the country or is it present internationally? Second, if it is international, then what is the geopolitical (international) context? Third, if it is domestic, then how is the geopolitical context impacting the domestic choices and how does the political economy of the country express itself? Lastly, what are the areas of regulation?

The foundational issue in the areas of technology regulation is the international dimension. This means that we first need to specify issues

that are internationally agreed upon to be regulated and further identify the underlying common value structure, allowing such a discussion internationally. But, in terms of the international context, the world's leading powers, the US and China, do not share the same value structure. The US values liberty, privacy, and entrepreneurialism. On the other hand, China values state control, public good and the primacy of the Party towards certain national goals. In such a situation, even creating a framework of discussion becomes difficult. The same dilemma is reflected in the domestic context as well, the world is getting divided into spheres. As the Singapore Prime Minister had stated, choosing between US and China is quite hard both because of the nature of Singapore's trade, and the strategic importance of both countries in the long run. It makes geopolitical navigation very hard if one wants to stay on good terms with both.

In terms of specifics, there are eight areas of concern in relation to tech regulation. They are as follows: (1) privacy, (2) data localization, (3) immigration, (4) tax, (5) sanctions (any country with a dollar account can get sanctioned in ways which are awkward for them), (6) cyber, (7) monopoly and (8) content oversight. It is a complicated discussion which cannot be easily simplified. These are the important questions that we need to come to terms with before delving into questions about who should regulate monopolies and how. The framework laid out here is to problematize the issue that is being dealt with and appreciate why it is so difficult to deal with.

In India especially, we need to see how we can create bilateral constructs where we can at least agree upon the underlying framework to start making some progress to effectively regulate firms operating in our boundaries. Bilateral or trilateral discussions would help us come to clear standards with which we can move forward. The exact details of regulations have to be jointly discovered even as interests would be varied.

Dhruv Sawhney: There are some basic problems in relation to the question. First, in capitalism, the winner takes all. There is a concentration of power by success. Second, there is the question whether we want to have decentralized legislations. This is a concept that we need to start thinking about because the governance aspect is really about the individual, when we speak of liberties or data.

Legal procedure today is based upon precedents which is dangerous given that the technological developments in the last five years have

destroyed all the precedents. There is very little in law talking about what has happened in the last five years with large corporations that were not conceived of then but surfacing now. We need to realize that regulation cannot change the dynamics.

The national and politically narrow-minded constructs cannot be avoided. While it is important to talk of breaking monopolies, for them not to be there, the paradigm has to be constructed differentially. The foundation of global standards may already have a bias having been formed by special groups. We are in a time of not very high growth with a realization that things like demands for jobs are going to be very difficult to satisfy. While the concentration of power in big corporations is dangerous, at the same time, we need to make sure that the international regulation that we bring does not add to the problem. Many multinationals have used the existing regulations especially in the area of trade to stifle competition.

We need a different paradigm to approach the problem of regulation of corporations with new concepts and constructions. The regulations that we do bring about cannot be long term and should have the ability to change very fast because the present technological changes will not be there a few years down the line, to be succeeded by fresh ones. We need to understand that we are putting something in the interim and that it would not continue for a long time to come.

Question 2: While globalization began at least 5,000 years ago, its pace picked up after WWII and especially in the last 3 or 4 decades with the advance of digital technology. Yet, our laws remain by-and-large balkanized and nation-specific. This is creating hurdles to business and also creating incentive to spend time and energy navigating these laws. We have also not been able to grapple well with global issues like climate change and labor migration. How should we handle globalization? Should there be more effort to have global laws and conventions?

Naushad Forbes: Post the Second World War, the world set up many multilateral institutions such as the UN, WHO, WTO, and more recently the Paris Accord which could in the future evolve into a climate change related multilateral institution. These are what we need right now. Thus, a mechanism does exist for addressing issues of global regulation. It is important for the leading countries to subscribe to these multilateral institutions—especially the US. Under Donald Trump, the US actually dropped out of several multilateral institutions. Trump in fact directly

attacked the premise of these institutions having any kind of say over national sovereign rights. Out of the seventeen executive orders that President Biden signed on his first day, two were to re-join multilateral institutions (the WHO and the Paris Accord). But the world cannot be held hostage to the outcome of the US elections every four years. We therefore need a different mechanism. For instance, a group of like-minded countries such as Germany, Japan, South Korea, Australia, Canada, Indonesia and India that subscribe to international law and systems could give multilateral institutions the credibility they need so that we are not completely dependent on what happens in the US over the electoral cycles. However, these countries would have to commit to accept what the multilateral institution determines to be the right decision, even if it is against their own immediate interests.

Janmejaya Sinha: We need multilateral institutions for negative global externalities like climate and health. For mercantilist and economic issues, we need to think of creating bilateral or regional structures which can determine how to function given the disparities in the underlying value system that different parts of the world have. In addition, countries need to develop soft power as it helps them be able to shape the narrative by being able to constrain the powerful by getting them to answer questions on what is fair and therefore more universally acceptable.

Dhruv Sawhney: Broadly speaking, globalization has not worked. Corporations have adopted globalization because that is what makes them successful. Now, we want to stop such globalization and bring in regulations to move back. Secondly, globalization has received setbacks politically. For instance, in the case of Brexit, the British have moved out of globalization, a move that took place democratically. Further, laws related to globalization have to be implementable. We have frequently seen that UN resolutions (laws) have failed to be implemented. For example, in the case of the Iraq war, whatever was prescribed could not be implemented.

There are national groups and interests which are also at work. For example, China has become one of the superpowers of the world without being properly globalized, and now, it can come in and out as per its own convenience and for a national not a global purpose. The intent now therefore has to be global cooperation which is the soft power bit. There cannot be a law which you can implement and everyone would

follow. The soft power and cooperation aspect is recognized when they are doing it for their national and individual good.

The whole construct of globalization needs to change. A great example is the issue of climate change. There has to be an accord on climate change because it affects individual countries (and citizen living inside) though some countries may be affected sooner than others. Trade, however, cannot be put in the same basket as climate change because if we were to put it all in one basket, there would be innumerable examples of things not having worked in the past. Similarly, labour migration is an example of an issue that requires international cooperation but we have to ensure that it does not take away jobs domestically. So, some mechanism has to be there to take into account labour issues in international cooperation. This is not to be seen as international labour laws which have been used to stifle national competition, and we have to be careful about the power of big corporations to do that. Security too needs a global approach because of its impact on so many people across different countries.

We need to think of globalization not just in terms of trade where we can never get away from the national aspects. There has been a big point of India not joining the Regional Comprehensive Economic Partnership (RCEP). We need to think of how we can join such global structures while considering the national prerogatives. Thus, it is cooperation rather than globalization that we need to talk about.

Question 3: Corruption is a big challenge for all emerging economies. What people do not often realize is that just determination and anger are not good enough to control corruption. We need expertise and proper design because a poorly planned corruption control scheme with ill designed laws can devastate the economy and hamper legitimate business. What can be done in this regard?

Kaushik Basu pointed out that what makes corruption control harder than people imagine is that corrupt and legitimate activities are intertwined in an economy. If the heavy hand of regulation is used unmindful of collateral damage, legitimate activity can be brought to a halt while going after corruption. For example, if we were to investigate and question every international transaction of every Indian in order to stop illegal money from being parked abroad, we would end up creating bureaucratic hurdles that would slow down the legitimate engagement of Indians with international business, and this would negatively impact India's connectivity with the world and ultimately hurt the nation's growth. At the same time,

we do need to curb corruption. What we have to realize is that to do so, without bringing the whole economy to a halt, is not easy. There is also the risk of government nurturing cronyism in its effort to control corruption. Corruption containment requires intelligence, expertise and design. We have to look around the world for experiments, successes and failures. For example, the Indonesian government created a completely independent body comprising of thinkers, regulators and corporations to deal with corruption and the government did not have a say as to who is corrupt. This is because often corruption control mechanisms become instruments for the government to use to attack and persecute those whom they do not like.

We need to decide if we should create such an autonomous body, if we should have a committee of corporates along with government officials and also social activists to think of the rules and regulations we need and the power and agency we should give to such an autonomous body.

Naushad Forbes: Corruption is not just a problem of emerging markets; it is a much broader problem. For example, if we were to consider the super Political Action Committees of the US and their financing of politics, it is nothing but corruption. It does not involve a specific bribe but it involves financing in exchange of either favourable legislation or blocking of legislation later on. With recent changes in India's political party donation laws, it is now completely legal, for a corporate, to make an anonymous donation to a political party. It is legal but that does not make it less corrupt. Here, there may be an exchange taking place that we may never know of since it is anonymous and opaque. We need much more transparency in all these areas. Consider for example, Goldman Sachs' work with the Greek government before their currency crisis. This was legal at that time. The question is, does that make it less corrupt because it was legal at that time?

We normally tend to come up with very specific regulations that end up being met in most cases. The compliance does not necessarily improve matters. For example, in the case of SEBI regulations for corporate governance in India, corporates do comply with these regulations but it is not obvious that because of this we end up with more honest firms. Regulations cannot make dishonest firms turn honest. We need to address the ways in which the systems operate, where we could know everything about a transaction and its implications and nobody would mind such transparency. The metric has to be to see how we get as

much transparency as we possibly can in dealings between companies and government without placing undue burden on parties for compliance.

Janmejaya Sinha: Corruption can be divided into three buckets. First is petty corruption (speed money) which is much more prevalent in emerging markets where bureaucratic delay can be easily engineered and well- developed institutions do not exist. The second form of corruption is political funding which prevails in many countries, not just in emerging markets. The third is contract corruption where one wants to change the odds of a deal where the counterparty is most often a government agency but sometimes, may even be a large corporation. Simplistic solutions like asking for the setup of an autonomous body to oversee corruption begs the question as to who regulates the regulators. Speed money is not a cause of worry in these markets because as the per capita income grows, petty money would become less of an issue. In terms of the other two, the central question is whether we can have transparency post the deal. For instance, in cases of election funding, at the end of the election term, without any consequences, we could come to know how much money was given to which party by whom. There need to be mechanisms which can enable such transparency.

Next, we need to have contract enforcement within a reasonable time unlike right now when civil cases go on for 20 to 40 years and the results of a civil case then do not have any consequence. Strengthening of institutions is critical but that comes with development and a lot of use. When institutions get established, accepted and used, then there are consequences and people try to follow the rules and recognize that getting caught has consequences.

Dhruv Sawhney: First, corruption is universal and not just a phenomenon of emerging economies. We need to make corruption a much broader subject.

Second, the political process in a democratic system is a very big cause of corruption, be it giving flush money in some emerging economies or having a deal-based system in some developed economies. It is still a quid pro quo. The primary issue is transparency and governance which should root out how we approach political funding. In large parts of the world like China, Russia and Eastern Europe, they have done away with such a system. Yet, China did not grow into a superpower from a developing economy without any corruption.

Third, it is crucial to use technology as a viable tool of lessening the impacts of corruption. With the digital age, the discretionary powers can be lessened.

Fourth, the stifling of competition by big corporations and globalization is also corruption. When a medium-sized firm has to deal with a big corporation and there has to be international arbitration, the big corporation is in a position to spend much more. While, the Indian system of contracts is not sustainable due to the absence of quick judgements, it is not right to have a mechanism which is going to make transparency more difficult and force the smaller people out of the system. In contracts, therefore, we should not have long-term resolutions like India has.

Open Discussion

Ajit Mishra

Corruption—Economists previously thought of corruption as a pure enforcement problem. Now there is a growing realization that it is in fact part of a bigger governance problem. In terms of instruments, the earlier literature reflected the influence of the economics of enforcement and focused mostly on sanctions/penalties, rewards and monitoring or audit (detection of corrupt act), but now economists are widening these and issues like transparency, moral education and intrinsic motivations are also viewed as important components of anti-corruption strategies.

While there is agreement that transparency and non-discretionary powers are essential, the crucial question is how to bring these in. Often, it is through legislation, new rules and regulations. But if these new rules are not carefully designed, they can lead to undesirable outcomes. There are studies which show that excessive regulations to fight corruption can be counter-productive. They will end up stifling the system. For example, the United Nations Convention against Corruption says that we must reduce the *ad hocness* in our system and specify everything (that is related) in a contract, so as to reduce scope for corruption. There are, however, instances where this attempt can be taken to a ridiculous level. When an author looked at the procurement of oatmeal cookies by a government agency in a certain country, the description runs into 26 pages!

For control of corruption, we need a system-wide approach. For example, when we talk of how corruption in corporations has to be controlled, it should not be a pure enforcement issue, and there should be scope for some self-regulation, to be taken into consideration while framing laws.

Globalization—In terms of globalization, the decision by the UK to exit the EU (Brexit) is often cited an example of setback to globalization. However, Boris Johnson's interpretation would be that the UK moved out of a regional bloc to go global! Still, it is widely accepted that globalization has caused deep dissatisfaction and rising inequalities within countries. The benefits of globalization have not reached all sections of society. We do need the cooperation framework as Mr. Sawhney had suggested.

Bob Hockett

Corruption—We seem to automatically view corruption as something criminal or quasi-criminal or representing a deep moral failing. This is true of many instances of corruption. However, there may be instances where the corruption we encounter isn't like that. It may be due to acculturation to a different set of norms that we have been attempting to use to displace other norms. These were not automatically depraved or immoral. If we were to regard certain social practices or social institutions as those that bring rewards provided that certain procedures are followed, it is like following the rules of a game for gains. But, if these rules are not followed, then that is what is corrupt. If this is done in established games like soccer or cricket where the rules are well known and fixed, then there is a moral turpitude involved when those rules are not followed. But if the game changes less overtly so that is it has evolved into a new game, then somebody might be playing by the old rules without fully realizing that these are not the current rules. Such a person is not morally depraved but simply not up to date with the new rules. Treating it like such a game with changing rules, we might be able to better anticipate when corruption is going to occur and be able to deal better with it as we are viewing it as a social phenomenon and not as something that requires moral sanctions.

Amrita Dhillon

Corruption—A literature review of the new behavioural approaches to corruption would take account of norms that Bob Hockett and Ajit Mishra were talking about. The findings of this literature say that people care about both descriptive and prescriptive norms. Descriptive norms are what people around you are doing. That is the culture of corruption. For example, if one is stopped by a traffic police cop in India, the expectation is that he will ask for a bribe and one is prepared to pay that bribe. Since one expects others to be corrupt, they are more likely to be corrupt themselves. An important question that comes up is how do we change these norms at all. Prescriptive norms are about appropriateness of actions, and these may differ across different societies. For example, is helping the family more appropriate than being honest?

Luis F. López-Calva

Corruption—One of the issues with the approach taken by many international organizations is that the issue of corruption control is seen as

one of state capacity and enforcement. This is why we have failed systematically. Only now, we have moved onto the soft behavioural aspects to help us understand what sustains such a deals-based equilibrium. If we continue to approach corruption as only an issue of institutional capacity that requires enforcement as a solution, we face a problem. There is the theory of collective representation, if one is perceived as corrupt because of being in the political system, the benefit from not being corrupt is small because they will still be seen as corrupt and would also lose the opportunity to get some money which is not rational. It is a complicated question as to what kind of devices we need to move towards an equilibrium without corruption. Leadership also matters. If a President says that not paying taxes is a not bad thing to do, it is much more difficult to move to an equilibrium without corruption! When corruption is approached through a more social and behavioural angle, it becomes more complex but at the same time anti-corruption strategy is potentially more effective.

Dhruv Sawhney

Corruption—Consider the case of electricity theft. The administration deals with about 250,000 farmers every day. Electricity and stealing of electricity were a big issue. Now, providing electricity became a good political thing. They went against people stealing the electricity because they showed that when somebody was tapping lines they were stopping someone else from getting power. It became a social norm to stop this corruption. There should be laws to make it a social good.
Climate Change—Climate change in India is slowly becoming a political necessity, to stop Delhi from being one of the most polluted cities in the world. It does not have to come from regulation because we cannot stop every farmer from burning crop residue. The Paris Accord is a really good thing which would also help us put some figures on carbon neutrality. It is better for it to be a cooperative movement than a legislative one.

Kaushik Basu

Social Norms—We must not overlook the fact that we do things sometimes not because we make personal gains from such acts, not because the law requires us to do so, but because it is a deeply ingrained norm to do so. Most of us do not think of picking someone else's pocket, and this has nothing to do with the law, nor with our view that there may not be enough money in the person's pocket, but rather because we are

programmed in terms of our norms and values, not do so. Economists do not pay enough attention to this. But the success of societies could depend critically on the kinds of norms that prevail. This is related to what Ajit Mishra referred to as intrinsic motivation. Moral education can indeed play a role in curbing corruption and creating a better society.

Amrita Dhillon

Moral costs and corruption—There was an experiment where they make students do some real-world tasks. They exogenously have some bribes being offered to them where they bend the rules a little bit, and when they see that they are harming a third party, the demands for bribes reduce. They take longer to come to a decision as to whether to take bribes or not. The moral costs are made more salient when you show the harm to a third party.

Despite there being such a crisis related to climate change, the political corruption is coming down. In the case of electoral bonds, all parties seem to agree that it is fine to have such a system.

Naushad Forbes

Globalization—Is there a correlation between de-globalization and the democratic protest movements that have been going around the world? Globalization actually supports democratic movements in most countries. For example, in Belarus, the protestors were highly inspired by what had happened in Eastern Europe many decades ago and they also had support from governments overseas. However, they do hold off criticizing countries like China because it is too powerful. But, if they did, it would support the democratic movements in different parts of the country.

Climate Change—The approach to the Paris Climate Agreement was that if we were to start from voluntary action by countries, it would be a way to get everyone on board. It can then be made transparent in terms of how the countries are doing in acting on their own voluntary commitments. This can be used to eventually move to where this could become legally binding.

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