INEQUALITY AND GROWTH: PATTERNS AND POLICY

Volume II: Regions and Regularities

Edited by

Kaushik Basu
and Joseph E. Stiglitz

International Economics Association

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Inequality and Growth: Patterns and Policy

Volume II: Regions and Regularities

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Preface
Inequality and Growth: A Preamble[1]

Kaushik Basu, Joseph E. Stiglitz and Vivian Hon

It was a part of the common wisdom of mainstream economics that, for developing countries, in the early stages of development, inequality would rise but, as growth persisted, inequality would, eventually, decline. Evidence gathered over the first three decades after World War II, seemed to suggest that this pattern would be borne out. But, as more time passed and growth persisted, inequality, as measured on several dimensions, has continued to grow. What this illustrates is the folly of trying to determine long-run future trends by extrapolating from a couple of decades of data. Looking at the past is an uncertain guide for the future: the innovations created at each stage of history may or may not make the next fundamentally different from those of the past. To peer into the future, we will not only need data but also analysis and theory. Our aim in this volume is more modest than peering into the distant future; but rather, to analyze the current state of global and regional inequality, to dissect the phenomenal increase in inequality that we have seen occur in recent times, and to better understand the relationship between inequality and development. But taking a cue from what was argued above, we have been mindful to bring analysis and economic theory to bear on data and statistics. This was one of the driving forces behind the conceptualization of this monograph, which eventually grew to being a two-volume set. But there were other driving forces.

As the world has continued to grow, the persistence of extreme poverty and the growing gap in the incomes and wellbeing between the world's poorest and the richest people have become unconscionably high. As is argued in one of the chapters, there is growing evidence that there is not just a glass ceiling for the very poor but a glass floor for those who are born very rich. That is, it is difficult for them to become poor. We should care not only about the average growth rates within the economy, but also about how those numbers translate into opportunities for individuals – all individuals, both those born to the rich and to the poor. The long-run relationship between growth and inequality is important to study but we also have to try to understand the contemporary patterns and regularities, including those relating income inequalities and inequalities of opportunity. And as we acquire better knowledge of these, we have to ask ourselves what are the accompanying policy challenges for growth that is not just rapid but also inclusive and sustainable, which is nothing but inclusive *over time*. Growth that benefits the current

generation at the expense of future generations is not, in a fundamental sense, inclusive.

It is possible that the growing income and welfare gaps are contributing to the growing political turmoil we see around the world, from the Arab Spring and growing refugee crisis to the Occupy movement. Each one of these developments has distinct proximate causes, but it is arguable that underlying them there is a deeper cause rooted in the sense of despair and deep feelings of injustice and inequity and the inability to exercise voice through normal political processes for a mass of people who have felt their relative positions deteriorate. Extreme inequality not only deprives masses from sharing the benefits of economic development but by robbing the disadvantaged of voice, it also has a propensity to erode democracy.

Fortunately, as the challenge of inequality and marginalization has grown, several new books and writings have appeared, from Stiglitz (2012), Galbraith (2012), Piketty (2014), through Milanovic (2014) and Bourguignon (2015), to most recently, Atkinson (2015). Of late, this is a topic in which there has also been welcome engagement both from unlikely institutions such as the International Monetary Fund (Berg and Ostry, 2011) and the OECD (2014) and from less-surprising ones, such as Oxfam (2015).

In 2013, the World Bank Group officially declared two mission goals for itself – the end of chronic, extreme poverty by 2030 and the promotion of shared prosperity in every society, the latter being defined (for the purpose of statistical computation) as the promotion of growth of the per capita real income of the poorest 40 percent of each society.[2] Implicit in this was the mission to help the poorest segment of society to grow faster than the rest, thereby mitigating inequality. This was the first time that the Bank set the curbing of inequality as a mission goal.[3]

The importance of a focus on inequality stems from the fact that the bulk of inequality is not a matter of individual choice – some people preferring leisure to work and so choosing to be poor. Indeed, the bulk of human inequality is determined by birth--by what a child inherits and the kind of schooling, education, and health care the child receives. Since there are no hardworking babies, this inequality cannot be driven by individual preferences over leisure and work.

Once it is agreed that the right direction to go from where we stand today is to strive to mitigate poverty and inequality, attention must turn to the drivers of poverty and inequality. This is where the relation between growth and inequality becomes significant. Growth is of course very important, especially for low-income countries and emerging economies. It is not possible for such countries to have significant across-the-board reductions in poverty without growth. But growth does not necessarily lead to the reduction of poverty.

More broadly, what does growth mean for the reduction in inequality, and what does inequality do for growth? These questions have led to a contentious

debate. There is an emerging consensus that inequality is bad for growth; and this is an idea that the reader will encounter in this two-volume book.

Some believers in "growth alone" (the view that the World Bank and other development agencies should focus just on growth) argue that growth will trickle down to the poor, unmindful of the fact that the word "trickle" itself gives away the hand of these commentators. This has been a contentious area of debate with a plethora of fallacies and misstatements. Consider, for instance, the finding, based on the study of large data sets, that over three quarters of poverty mitigation in recent decades can be attributed to plain and simple economic growth. From this, some people have deduced that growth therefore is the best cure for poverty and that we simply need to press on the growth accelerator and poverty will be taken care of.[4]

This, however, turns out to be a classic case of faulty deduction from arguably correct data. The fact that the bulk of the poverty eradicated in recent decades was because of growth does not mean growth is the best cure for poverty. All depends on what else was tried. If hardly any other relevant policies were tried, whatever poverty is eradicated would be because of growth, but that says little. It is like a Soviet economist studying job creation in the USSR in the 60s, 70s and 80s, and concluding that the government is the best creator of jobs, since almost all jobs were created by the state.

Indeed, even if growth by itself led to poverty reduction, given our poor record of eradicating poverty – in 2011, 14.5 percent of the world population lived below the poverty line of 1.25 dollars, Purchasing Power Parity (PPP)-adjusted,[5] per day – there is clearly a need to do much more and to look for appropriate policy interventions that go beyond "just" promoting growth.

This two-volume collection, *Inequality and Growth: Patterns and Policy,* is an effort to assemble the best of contemporary thinking on the subject. It is based on a roundtable convened by the International Economic Association (IEA) and the World Bank on "Shared Prosperity and Growth," and organized as part of the IEA 17th World Congress held at Dead Sea, Jordan, on June 10–11, 2014. In the roundtable that we organized, we tried to assemble an outstanding group of scholars, many of whom have grappled with the issues for many years, and from various perspectives.

The topics include conceptual issues and measurements, the state of global inequality, regional experiences, inequality of opportunity, consequences of inequality, and also some special areas that go beyond the traditional inequality discourse. The insights generated at the roundtable are critical in policy debates on economic development. The collection includes a total of sixteen full-length papers, and fifteen commentaries on those papers.[6]

The first volume, *Concepts and Analysis,* is a collection of papers on the conceptual and theoretical issues on inequality and its measurements. In chapter 1 of this volume entitled "New Theoretical Perspectives on the Distribution of

Income and Wealth Among Individuals," Joseph Stiglitz lays out five new stylized facts. First, there is growing inequality in both wages and capital income (wealth) and growing inequality overall. Second, wealth is more unequally distributed than wages. Third, average wages have stagnated, even as productivity has increased, and so the share of capital has increased. Fourth, there have been significant increases in the wealth-income ratio, and last, the return to capital has not declined, even as the wealth-income ratio has increased.

Section 1 of this chapter provides an overview of the key anomalies presented by the new stylized facts. It explains why they are inconsistent with the standard neoclassical models long used by economists, and explains how a focus on rents (ignored in the standard neoclassical models) helps to resolve the inconsistencies. It explains the central confusion between "wealth" as a measure of control over resources and "capital" (or more broadly, an aggregate measure of productive capital), and shows that the former can be increasing while the latter is decreasing (at least relative to income or effective labor supply). Land values can increase, but the productive capacities of the economy decrease. An increase in wealth as a result of exploitation (monopoly) rents can even result in a decrease in productive capacities as measured wealth increases. For instance, savings data from the National Income Accounts for the United States account for only a fraction of the observed increase in wealth; the rest is associated with an increased in the capitalized value of rents. Section 2 of the first chapter re-examines the equilibrium wealth distribution within the context of a standard neoclassical model of growth without land, showing that (contrary to Piketty's assertions) there is not ever increasing wealth and income inequality. Equilibrium inequality is related to underlying behavioral and technology parameters. Section 3 introduces land and rents into the model, analyzes the long-run determinants of land rents and the price of land, and explains how the credit system plays an important role in both the increase in the wealth-income ratio and the increase in wealth inequality. The chapter explains that in designing policies to mitigate inequality, one has to be sensitive to the possibility of tax shifting, but shows how capital taxes with revenues devoted to investment as well as land taxes can lead to reduced inequality and higher steady-state income levels.

In the chapter "Reflections on the 'Equity and Development': World Development Report Ten Years Later," Francois Bourguignon reflects on the 2006 *World Development Report* (WDR). While the report represented a major step forward in the Bank's broadening its focus beyond poverty and growth as the main poverty reduction tool, it fell short in putting the issues of inequality front and center stage. Besides political considerations, this choice was dictated by the recognition that the analytical link between inequality and development was more complex than a direct negative impact of income inequality on growth. Instead, the report focused on the inequality of opportunities as the major direct impediment to development and the ways of reducing it by "leveling the

playing field", including among other measures of income redistribution. The increased attention to inequality of opportunity was a significant contribution to the development policy debate.

Ravi Kanbur and Adam Wagstaff's chapter, "How Useful is Inequality of Opportunity as a Policy Construct?" acknowledges that the empirical analysis of equality of opportunity has contributed significantly to our understanding of the determinants of inequality of outcomes and have become an important part of the analysis of policy. At the same time, as the authors point out, there are limitations, both conceptual and empirical, of the practical usefulness of the concept for policymaking. Drawing on applications in the education and health sector, they argue, as Francois Bourguignon does in the previous chapter, that the focus on inequality of opportunity is often used to delegitimize concerns over inequality of outcomes, including those arising from luck, risk and the distribution of talent (which is also luck, one step removed).

In "The Effects of Fiscal Redistribution," Michele Battisti and Joseph Zeira use cross-country, pooled, and panel regressions to examine the role of fiscal policy in reducing income inequality. They test for the possibility of any reverse causality, namely that public spending increase is driven by pressure to redistribute and which type of fiscal policy is most strongly related to the redistribution of income. They find that a one percent increase in public expenditure as a percent of GDP reduces income inequality in both cross-country and pooled regressions by 0.3–0.4 percent. Fiscal policy is also significant in reducing poverty, in particular labor market subsidies. Due to data constraints, their analysis on poverty is limited to OECD countries.

The papers by Hai-Anh Dang and Peter Lanjouw, Tony Castleman, James Foster and Stephen Smith, and by John Ifcher and Homa Zarghamee propose alternative ways of conceptualizing and measuring inequality, poverty and vulnerability. The simplicity of poverty headcount measures have made them the most widely used measure for monitoring poverty. However, in their chapter, "Person Equivalent Headcount Measures of Poverty," Tony Castleman, James Foster and Stephen Smith argue that the headcount measures ignore the intensity of poverty and this incentivizes policymakers to focus their efforts on the least deprived segments of the poor, since it costs the least to help this group to cross over the poverty line. They contend that other conceptually robust measures are often dismissed from the policy discourse as being too complex and not intuitive. The "person equivalent headcount" measures they propose uses a monetary, benchmark measure of the average depth of poverty to count up the number of "person equivalent" poor. They calculate the person equivalent headcount for eighty countries using the World Bank's $1.25 per day poverty line, which shows a more rapid decline in global poverty and significant redistribution across regions and countries.[7]

In "Towards a Definition of Shared Prosperity: A Dynamic Perspective from Three Countries," Hai-Anh Dang and Peter Lanjouw present a complementary

measure to the shared prosperity measure employed by the World Bank which considers not only the currently poor, but incorporates the vulnerable population, the segment of the population that is currently non-poor but face a heightened risk of falling back into poverty. Using illustrations from India, the United States and Vietnam for the mid- to late-2000s, they find that the two approaches are qualitatively consistent, with Vietnam enjoying the greatest boost in shared prosperity, followed by India and lastly, the United States.

John Ifcher and Homa Zarghamee's chapter on "Evidence of the Compression of the Subjective Wellbeing Distribution with Economic Growth" looks at inequality from the subjective wellbeing perspective. To date, the existing literature has focused mainly on the mean of subjective wellbeing. The chapter expands the body of work to looking at inequality of subjective wellbeing, its changes and the relationship to growth. Using data from the World Values Survey and World Development Indicators, Ifcher and Zarghamee find that per capita income is inversely related to subjective wellbeing inequality in cross-sectional and time series (excluding the two fastest growing economies). The latter is an interesting corollary to the "Easterlin Paradox" – that, though as income increases, happiness increases, in the long run, increased income is not correlated with increased happiness.

Karla Hoff broadens the inequality discourse by looking at social exclusion from the perspective of behavioral economics. In her paper, "Behavioral Economics and Social Exclusion: Can Interventions Overcome Prejudice?" she demonstrates that mental models – intuitive, socially learned sets of ideas about how things work – can bias an individual's perceptions of himself and the world. She argues that government programs should attempt to look at both structural and behavioral factors in addressing social exclusion. Group deliberation changed perceptions and overcame biases in ways that led to the abandonment of female genital mutilation in many villages in Senegal. In the West Bengal state in India, political affirmative action for women improved the way men perceived women, parents perceived their daughters, and women perceived themselves. However, political affirmative action for low castes (the Scheduled Castes) appear to have had no impact on broadly shared mental models. In the Indian state of Uttar Pradesh, affirmative action for Scheduled Caste did not appear to change the perceptions that the high-castes held of the Scheduled Castes and may have led to worse performance by high-caste teachers in public education, which Scheduled Castes unlike high castes disproportionately depend on. In India and China, experiments showed the impact of activating existing mental models, rather than of trying to change them. Making salient (by publicly revelation) the social identities of students in dominant and stigmatized social groups created a gap between their average performance, with the stigmatized groups performing significantly worse.

The second volume, *Regions and Regularities,* examines the state of global inequality and inequality in different regions; and analyzes other kinds of inequality and discrimination.

In the first chapter, "The Inheritance of Employers and Nonlinearities in Intergenerational Earnings Mobility," Miles Corak and Patrizio Piraino examine intergenerational earnings mobility by looking at the role of parents on a child's interface with the labor market using a rich data set from Canada. They show that this explains nonlinearities in the intergenerational transmission of earnings. Getting a job in the father's firm plays a major role in preserving wealth and income advantages across generations.

In his chapter, "Do Nations Just Get the Inequality They Deserve?" José Gabriel Palma analyzes the contrasting centripetal and centrifugal forces at work within the distribution of income across countries. He argues that as a result of a process of convergence, the population located in the middle and Upper-middle (i.e., within deciles 5 to 9) tends to appropriate a share of about 50 percent of the national income. As a result, he proposes an alternative inequality measure to the Gini which is often referred to as the "Palma ratio". The Palma ratio defined as the ratio of the income share of the top 10 percent over that of the bottom 40 percent, tries to capture inequality where it currently exists (the top and bottom of the income distribution). The chapter suggests that the huge diversity of distributional outcomes across the globe is not just the result of abstract economic forces, but rather the consequence of differences in economic structure and political settlements.

The chapter by Nora Lustig, Luis Felipe Lopez-Calva and Eduardo Ortiz-Juarez examines the state of inequality in the Latin America and the Caribbean region In "Deconstructing the Decline in Inequality in Latin America" they show that inequality, as measured by the Gini coefficient and other indicators (including all variations of the Kuznets ratio), declined in sixteen of the eighteen countries in Latin America and the Caribbean during the period 2000 to 2012. They attribute the decline to the decrease in hourly labor income inequality and progressive government transfers. This is a study that clearly has lessons for other parts of the world and other economies at similar stages of development.

The Arab countries are the focus of Radwan Shaban's chapter, "Inequality in Arab Countries." He observed a similar general declining trend in the Arab countries, in the period leading up to the Arab Spring. Furthermore, the median Gini coefficient for the Arab countries, at 36 percent, was lower compared to 38 percent for the world and 40 percent for all emerging market economies and developing countries. He concludes by offering some plausible explanations of the difference between the measurement of inequality from household surveys and the perceived inequality as evidenced by the increased demand for fairness and social justice in the Arab countries.

In their chapter, James Galbraith, Beatrice Halbach, Aleksandra Malinowska, Amin Shams and Wenjie Zhang summarize a comprehensive revision and update of the University of Texas Inequality Project (UTIP) work on the

inequality of pay and incomes around the world for the period 1963–2008. Their new data set on industrial pay inequality (UTIP-UNIDO) based on the Industrial Statistics of the United Nations Industrial Development Organization covers 4,054 observations for 167 countries, and the revised Estimated Household Income Inequality (EHII) database of gross household income inequality covers 3,871 observations for 149 countries. Their paper "The UTIP Global Inequality Data Sets 1963–2008: Updates, Revisions and Quality Checks" provides a fairly comprehensive quality check of the database against other available measures. They conclude that the EHII data set is reliable in estimating trends and reasonably reliable in estimating the level of gross income inequality observed in household surveys, but provides the advantage of dense and consistent coverage across the global economy, and is therefore useful for comparative and historical analyses.

In "Inequality and the Fragility of Growth," Jonathan Ostry attempts to address two questions. To what extent does inequality render growth more fragile? And, if inequality makes growth less stable, what are the possible implications as far as redistributive policies are concerned? Ostry examines the relationship between the duration of growth spells and a number of determinants, including inequality. He focuses on spells rather than standard panel growth regressions because growth, especially for developing countries, is not a smooth process, and drawing inferences from panel growth regressions in such circumstances may be misleading. He finds that more equal societies have more durable growth spells. He then asks the question whether redistributive policies should be used to bring about less fragile growth. Ostry finds that except in extreme cases, there is no trade-off between growth and redistribution – a marked departure from the perspective that was dominant until recently, but consistent with the analysis of Stiglitz (2012) and other more recent studies.

To what extent does inequality in the control over a society's resources facilitate or hinder growth? This is one of the key questions in the growth and inequality debate. However, empirical studies to date have tended to use the distribution of income as a proxy for distribution of wealth. In "Does Wealth Distribution and the Source of Wealth Matter for Economic Growth? Inherited v. Uninherited Billionaire Wealth and Billionaires' Political Connections," Sutirtha Bagchi and Jan Svejnar attempt to answer the question posed by the title of their paper, using a derived global measure of wealth inequality from *Forbes* magazine's list of billionaire and decomposing wealth into three components: wealth obtained through political connections (cronyism), wealth generated from entrepreneurship, and inherited wealth. In their sample, inherited billionaires, the largest group account for about 54–72 percent of the total (depending on the year under consideration) and politically connected billionaires represent the smallest 4–13 percent of total billionaire wealth. They find that politically connected wealth and inherited wealth have a significant

negative effect on growth, while the effects on growth of wealth generated from entrepreneurship are insignificant.

Ashwini Deshpande's chapter on "Caste Discrimination in Contemporary India" examines the state of caste disparities and discrimination in India, and notes how discrimination is very much a part of modern Indian society and also across the world with different kinds of systems, which seem to suggest that discrimination based on social identities is compatible with freely functioning markets. She finds that the persistence of caste inequalities results in both inequality of opportunities and inequality of outcomes. To rectify intergroup discrimination, such as those based on caste, will require purposive multi-pronged interventions.

The chapters are followed by interesting commentaries and in some cases, vigorous challenges by the discussants: Martin Ravallion, Bhaskar Dutta, Aristomene Varoudakis, Sudhir Anand, Paola Giuliano, James Foster and Murray Leibbrandt in volume 1 and Francisco Ferreira, Joseph Stiglitz, Edward Wolff, Francois Bourguignon, Kendra Bischoff, Shantayanan Devarajan, Celestin Monga, and William Darity, Jr. in volume 2. The work in these two volumes illustrates the complexity of the processes that determine the level of inequality in society and the importance of understanding them. The chapters have drawn attention to the many dimensions of inequality and the difficulties of measuring them, and the importance of both the inequality of outcomes and inequality of opportunity. The chapters have shown that inequalities, both in income and opportunity, can be affected by policy; and that policies that reduce these inequalities tend to promote development and enhance growth.

Some of the subjects addressed in this book have long been neglected. We see this two-volume monograph as opening up a debate, while being aware that there is much more to be said about each of the questions that have been addressed here. The aim of this volume is to put the discourse on a more sound scientific footing by marshalling some of the leading experts to contribute to our understanding of the main patterns of, and interconnections between, inequality and growth, and to nudge us towards the design of more effective policies for creating a better and a more inclusive global economy.

Notes

1. The authors would like to thank Karla Hoff for her extensive comments.
2. The twin goals were adopted by the World Bank's Governors at the Development Committee meeting on April 20, 2013.
3. It is worth clarifying that prior to the newly enunciated goals, many in the World Bank had written and spoken about the excesses of inequality; what is new is the formal adoption of the mitigation of inequality as a goal. Some commentators argued

that the "bottom 40 percent" focus is not an inequality measure because it does not speak comparatively with the rest of the income distribution. While this is technically true, since the overall growth rate of each economy is so widely known, making the data available for the growth of the bottom 40 percent immediately shows whether the poorest 40 percent is catching up or falling behind. Making this data available is a prompt to policymakers to curb the growth of inequality, to make sure that the bottom 40 percent grows faster than the top 60 percent. To say that this is not an inequality measure because we do not say what the policymakers should do with the new data is like saying that providing the Gini coefficient is not an aid to curbing inequality unless we make it explicit each time that the aim is to minimize the Gini and not maximize it.

4. Here we overlook a number of complex statistical issues. If, as reflected in the emerging consensus, countries with lower inequality grow better and are more stable, and if (as is surely the case), lower inequality and greater stability are associated with lower poverty, there are difficult problems of identification that are not addressed by most of the statistical studies: policies that led to poverty and inequality reduction may have led to higher growth.

5. For those unfamiliar with purchasing power parity (PPP) numbers, we may point out that in most developing countries 1.25 dollars PPP-adjusted translates to 35 to 45 cents. The fact that nearly one-seventh of the world lives below this line is a serious indictment of our effort at poverty mitigation thus far.

6. Stiglitz's paper was planned as a standalone presentation for general discussion without a designated discussant.

7. Or $1.90 per day, which is the updated poverty line in 2011 based on new PPP data, but constant in real terms to $1.25 per day poverty line based on 2015 PPP data.

References

Atkinson, Anthony (2015) *Inequality: What Can be Done?* Boston: Harvard University Press.

Berg, Andrew and Jonathan D. Ostry (2011) "Inequality and Unsustainable Growth: Two Sides of the Same Coin?," IMF Staff Discussion Note SDN/11/08, April.

Bourguignon, Francois (2015) *The Globalization of Inequality*. Princeton, NJ: Princeton University Press.

Galbraith, James K. (2012) *Inequality and Instability: A Study of the World Economy Just Before the Great Crisis*. New York: Oxford University Press.

Milanovic, Branko (2013) "Global Inequality in Numbers: In History and Now," *Global Policy*, May.

OECD (2014), Focus on Inequality and Growth. www.oecd.org/social/inequality-and-poverty.htm.

Oxfam (2015) *Having it All and Wanting More*.

Piketty, Thomas (2014) *Capital in the Twenty-First Century*. Cambridge, MA: Harvard University Press. (First published as *Le Capital au XXI Siècle* in 2013).

Stiglitz, Joseph E. (2012) *The Price of Inequality: How Today's Divided Society Endangers Our Future*, New York: W.W. Norton.

1

The Inheritance of Employers and Nonlinearities in Intergenerational Earnings Mobility*

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1.1   Introduction

A growing literature addressing the intergenerational transmission of earnings often forms the backdrop for policy discussions dealing with equality of opportunity. This literature is generally framed in the context of a linear regression to the mean model, and motivated theoretically by models of parental investments in the human capital of their children as in Becker and Tomes (1986, 1979) and Loury (1981). The major concern of the empirical research has been the challenge of correctly estimating the elasticity of earnings between parents and their children in the presence of measurement errors and life cycle biases. Atkinson, Maynard, and Trinder (1983), Solon (1992, 1989) and Zimmerman (1992) offer a starting point that has led to a large number of studies from a

number of countries, surveyed by d'Addio (2007), Björklund and Jäntti (2009), Black and Devereux (2011), Corak (2006), and Solon (2002, 1999). Böhlmark and Lindquist (2006), Grawe (2006), Haider and Solon (2006) and Nybom and Stuhler (2016) represent some recent methodological developments.

Though this research is highly descriptive it has also led to a greater appreciation of causal processes. Attention to sibling and neighbourhood effects, as in for example Björklund et al. (2002), Björklund, Lindahl, Plug (2006), Oreopoulos (2003), and the research summarized in Solon (1999), suggests that within family, as opposed to peer or neighbourhood, influences play the central role in determining the degree to which a child's life chances are tied to socio-economic background. As such these findings have links to the growing research on early childhood development, the formation of values and preferences, and their impact on readiness to learn and pro-social behaviour that are important antecedents to educational attainment and ultimately labour market success.

While this certainly relates to discussions of equality of opportunity, there at the same time seems to be less emphasis on the structure of labour markets; the constraints or barriers embedded in them, and access to particular occupations or jobs, issues that traditionally also spoke to this policy concern. In fact, studies of the demand side of the labour market describe persistent differences in wages across firms and industries, as for example in Abowd, Kramarz, Margolis (1999) who examine wage differences between small and large firms or in Krueger and Summers (1988) who discuss inter-industry wage differences. These studies and an associated literature documenting within-industry firm differences, as for example in Baldwin (1998), suggest that more productive and more highly-paid workers are concentrated in particular firms.

It is also well known that on the supply side families and friends play important roles in the job search process. Datcher Loury (2006) suggests that up to 50 percent of jobs are found through family, friends or acquaintances, and also shows that the highest wages are paid to those who find jobs through "prior generation male" relatives who actually knew the potential employer or served as a reference. In this US study roughly 10 percent of men found jobs in this way.

If the demand side of the market is structured into high- and low-paying firms and if close family relatives play an important role in passing on jobs, then is it possible that the degree of intergenerational earnings mobility has something to do with not only human capital investment when children are young, but also with the firms with which they are employed as adults and the possibility that these firms are in some sense transmitted across generations? This is the question that motivates our research.

Our analysis of intergenerational earnings mobility focuses on the role that parents may play in structuring the child's interface with the labour market, in the extreme influencing the degree to which employers are passed on across the generations. We examine this issue with a large administrative data set on

a cohort of Canadian men containing information for both fathers and sons on up to four employers per year, starting in the year the child was 15 years old and continuing to early adulthood. The sample sizes available to us and the quality of the earnings data allow us to focus attention on specific points in the earnings distribution, particularly the upper tail. As such our analysis speaks to the potential long-run dynamics associated with the significant increases in income shares accruing to top earners that has been documented by Atkinson and Piketty (2007) and a host of associated research papers, with the Canada-United States comparison by Saez and Veall (2007, 2005) being most pertinent.

To the best of our knowledge, the implications of changes in cross-sectional inequality at the top of the distribution for the transmission of inequality across the generations have not been adequately addressed. The work by Björklund, Roine, and Weldenström (2012) is the only study focusing explicitly on intergenerational mobility at the top of the income and earnings distributions. They document a very high degree of transmission from fathers to sons in the very top of the distribution and explore the potential mechanisms explaining this persistence. They find that IQ, non-cognitive skills, and education of the sons are not the most likely transmission channels, while the inheritance of wealth might play a major role.

We show that the intergenerational transmission of employers can help explain the observed nonlinearities in the intergenerational transmission of earnings. In the first part of the paper, section 1.2, we draw on Mulligan (1999, 1997) to derive a number of insights from a reformulation of Becker and Tomes (1986). This analysis motivates our empirical model, and argues that parent–child earnings will be causally linked even in the context of perfect capital markets if employers are transmitted across the generations. The possibility of inheriting an employer raises the intergenerational earnings elasticity, and introduces a nonlinearity that varies positively with paternal earnings. This framework motivates the use of a particular version of a switching regression model in our empirical analysis, which is pursued along with a description of the data in sections 3 to 5 of the paper. We find that the intergenerational transmission of employers tends to increase the intergenerational elasticity of earnings, a result that is clearest in the absence of credit market constraints and heterogeneity in other endowments. We find that it is strongly associated with the preservation of top earning status across generations. These findings are discussed in the final concluding section.

1.2 Theoretical framework

The general structure of models dealing with the intergenerational transmission of inequality involves a two-period horizon in which parents use their

income both for consumption and for investment in their children during the first period, while children work and consume as adults in the second period. The maximization problem involves parents allocating their endowment between current consumption and expenditures that will increase the earnings capacity, and hence future wellbeing, of their children. A simplified version of the earnings-generating function for the child in adulthood, as presented in Becker and Tomes (1986), is offered as equation (1), where for convenience individual level subscripts are suppressed.

$$ln\,Y_t = \gamma_t H_t + \lambda E_t + l_t \qquad (1)$$

The earnings of an individual of generation t are represented as Y_t, and are related to the human capital of the individual, H_t, its valuation in the labour market, γ_t, and market luck l_t. E_t is thought of as ability. It affects earnings directly, and in most of this literature is also a catch-all for the cultural or genetic attributes of the family that are passed on to the child in a way not determined by parental control, and hence not responsive to incentives. It affects earnings indirectly by influencing investments in human capital, which is accumulated during childhood as a result of private expenditures of parents.

These endowments are assumed to be transmitted mechanically across generations according to a Markov process as given by, to use notation similar to Becker and Tomes (1986), equation (2).

$$E_t = \alpha_t + hE_{t-1} + v_t \qquad (2)$$

Parents observe the endowments of their children, and make human capital investments that are subject to a diminishing marginal return. All parents are able to make the optimal investment, notwithstanding their income or the ability level of their children, if capital markets are assumed to be perfect. This assumption permits even low-income parents of high ability children to make the optimal level of investment. In this way the human capital and hence earnings outcomes of children are separated from parental income, and the intergenerational transmission of inequality is determined by the degree to which ability is transmitted across the generations, as given by h.[1] The fact that earnings regress to the mean according to the inheritability of endowments, and independently of parental earnings, is a key result in this strand of the literature.

In Loury (1981) and Becker and Tomes (1986) it is recognized that some parents may not be able to invest the optimal amount of human capital in their children if there are borrowing constraints in financial markets that prevent the passing on of debt for repayment in the next generation from the increased earnings of the child. Parents must fund these investments by reducing their own consumption. This implies that the cost of funds are not the same across

families, and also that they are increasing in the level of expenditures on the child's human capital as the reduction in consumption raises the shadow cost of additional expenditures. This is reflected in equation (3) by the positive influence of parental income in the educational attainment of children.

$$H_t = \delta E_t + \theta \ln Y_{t-1}, \ \theta \geq 0 \tag{3}$$

When $\theta > 0$ capital markets are not perfect so that the child's level of human capital depends on parental income: the child's human capital is higher the more able the child, but also the higher the parental incomes. Some families will have enough income to make the optimal level of expenditures, but this will not be the case for other families. In the presence of borrowing constraints, earnings will persist across generations both because of inheritable endowments and because of suboptimal human capital investments. The intergenerational elasticity for the population as a whole displays a nonlinearity concave in parental earnings. As such, imperfect capital markets imply that child earnings will be related in a causal sense to parental earnings.

We augment this model by introducing the possibility of intergenerational transmission of employers. Following Mulligan (1999, 1997 pp. 55–7), we suggest that endowments have two dimensions: one that shifts the earnings function in a way that alters marginal returns and determines the efficient level of human capital; another that shifts it in an additive way and does not alter its slope. We suggest that the intergenerational transmission of employers is an endowment of this latter sort, reflecting the capacity of parents to influence the outcomes of the child's job search. The maintained assumption is that this is something that only happens after human capital investments are completed.

We also assume that this capacity is positively related to parental earnings, an assumption that we show later is justified by the patterns in our data. It is important to note that different hypotheses for the existence of a positive relationship between parental earnings and the intergenerational transmission of employers can be found in the literature. For example, Shea (2000), among others, hypothesizes that fathers in unionized jobs are able to pass on employment with the same firm to their sons. Further, the union–non-union wage premium implies that the children of these relatively higher earning fathers will also get a relatively higher wage offer from the firm. More generally, Atkinson, Maynard and Trinder (1983) note that when local labour markets are dominated by a single employer, it is more likely that sons would be employed at the same firm as fathers even in a non-unionized setting. Further, this being a dominant or large employer in the labour market may also suggest a dominant position in product markets so that the firm's revenues may incorporate a rent that is shared with workers. The intergenerational transmission of employers could also be positively related to parental income because the

degree of control parents have in the hiring policies of the firm may increase with income. In the extreme we can imagine parents being the owners of the firm and exerting preferential hiring of relatives. The literature on the succession of CEOs as in Pérez-González (2006) for the United States, and Bennedsen et al. (2007) for Denmark can be offered as an example of this possibility.[2]

Finally, we also note that the possibility of inheriting an employer may impact the earnings outcomes of children through their reservation wage. For a given job offer distribution the availability of a job in the father's firm, something the child knows with certainty, will lead to higher reservation wages in the same way that the availability of an independent source of income like unemployment insurance increases the reservation wages of the unemployed.[3] Individuals with higher earning parents will have higher reservation wages and therefore higher earnings. If this is the case, then the son's adult earnings may be influenced by the possibility of inheriting his father's employer even if he does not ultimately work for this firm. This is particularly relevant for the empirical implementation of our model.

The possibility of being employed with the same firm that employed their parents is information available to children, and its impact on earnings is transmitted across the generations in a manner different than depicted in equation (2) for other endowments. In particular we suggest that the earnings generating function in equation (1) be modified as follows.

$$ln\,Y_t = \gamma_t H_t + \lambda E_t + \phi\,lnY_{t-1} + u_t \tag{4}$$

In equation (4) earnings depend upon two types of endowments, ability E_t and the earnings impact of parental contacts represented as $\phi\,lnY_{t-1}$, where $\phi > 0$ indicates that fathers with greater earnings are more able to pass on employment in higher paying firms.

Equations (3) and (4) imply that $ln\,Y_t = (\phi + \gamma_t\theta)\,lnY_{t-1} + (\lambda + \gamma_t\delta)\,E_t$. So for children of the same ability E_t, the child with higher earning parents will have higher expected earnings. This occurs for two reasons. First, higher-income families are less severely constrained in the capital market. In the standard borrowing constraints model with one dimension of ability this effect is given by $\gamma_t\theta$. But this impact is accentuated by the presence of the second type of endowment so that the ultimate elasticity between parent and child earnings for children with equal E_t is $(\phi + \gamma_t\theta)$. The presence of the intergenerational transmission of employers implies any given difference in income between parents of equally endowed children will lead to a higher difference in the longer-run earnings of children because higher-paid parents have a higher-wage employer to pass on to their children.

As in the standard formulation, this framework motivates and informs the use of a linear regression to the mean model of intergenerational mobility: $ln\,Y_t = \alpha + \beta\,lnY_{t-1} + \varepsilon_t$, where β, the intergenerational earnings elasticity, is the

parameter of interest in need of interpretation. Following the calculations in Solon (2004) we derive β to be:

$$\beta = \frac{(\phi + \gamma_t\theta) + h}{1 + (\phi + \gamma_t\theta)h}. \tag{5}$$

This derivation clarifies that when both effects are in play, $\theta > 0$ and $\phi > 0$, the shape of the intergenerational earnings relationship is indeterminate. As such, nonlinearities cannot be used to test the predictions of the model without specifying how β varies across the population. This is a result of the existence of both credit market distortions and the transmission of job contacts.

In the standard formulation $\phi = 0$. In this context the model distinguishes a regime in which capital markets are perfect, with $\theta = 0$ and therefore $\beta = h$, from a regime in which parents are not able to borrow against the future earnings of their children, with $\theta > 0$, and $\beta = \frac{\theta\gamma_t + h}{1 + \theta\gamma_t h}$, which is greater than h when θ is positive. In Becker and Tomes (1986) this latter regime is described to be the case for low-income families, and as such a direct channel is opened between the earnings of parents and their children. This model predicts a nonlinear and concave relationship between parent and child earnings. Alternatively, in the context of a linear specification the intergenerational earnings elasticity for the population as a whole is higher than it otherwise would be, and is driven by the higher elasticity at lower earnings levels. The two regimes, $\theta = 0$ and $\theta > 0$, are often distinguished by whether parents make financial transfers to their children or not, as in Mulligan (1999).[4]

Assume $\theta = 0$, so that capital markets are perfect, and that $\phi > 0$. Then $\beta = \frac{\phi + h}{1 + \phi h}$, but in this case the higher intergenerational elasticity holds at higher earnings levels since parents with higher earnings pass on another type of endowment to their children. In other words, this model also predicts a nonlinear relationship between the logarithm of parent and child earnings, but convex in nature with a higher elasticity at higher parental earnings because the children of these parents are both more likely to inherit an employer, and more likely to inherit a higher-paying employer. The intergenerational elasticity for the population as a whole is higher than it otherwise would be, but now is driven by the higher elasticity at higher earnings levels. In a similar manner this suggests that the population consists of a mixture of two types of individuals, and raises the issue of whether and how these regimes can be empirically identified.

There are two important caveats to our theoretical framework. The first concerns the assumption that the transmission of employers is an additive endowment. For example, Magruder (2010) adapts the Becker–Tomes earnings-generating equation in a way that emphasizes a multiplicative role for parental networks by

stressing that human capital investments can only generate returns when individuals are in fact working.[5] More generally, working for a particular employer may influence the return to human capital and therefore alter incentives and the optimal amount of investment in education. It is not immediately clear in which direction this effect works. On the one hand it is easy to imagine that there may be a certain level of education required to gain employment with the father's firm, or to particular positions in the firm. On the other hand, it is also observed in the literature on the determinants of self-employment that the children of the self-employed may exert less effort in education, as for example in Gevrek and Gevrek (2010). These children are more likely to have entrepreneurial intent, or are more likely to be hired by their parents, and as a result they are more likely to cut their education short.[6]

The second caveat is that it is not immediately apparent that the intergenerational transmission of employers can be distinguished from other types of endowments that may also be additive in their impact on earnings. These may include time preference, risk aversion, entrepreneurship, and other aspects of personality including physical traits like beauty. These endowments may also vary positively with parental incomes, and perhaps distinctly so at the upper tail of the earnings distribution in the manner of Rosen (1981), with marginal differences in endowments implying significantly greater earnings. This is certainly the most important challenge in empirically implementing our framework. Although we cannot exclude the possibility of unobservable traits affecting both the son's decision to work for his father's employer and his earnings, we attempt to address this issue by introducing measurable markers for time preference and entrepreneurship.

In addition to these concerns, the other empirical issue that follows from our model is that the observed incidence of same employers across the generations understates the influence of employer inheritance because sons of high enough ability may have higher earnings with other employers. Even so, the opportunity to inherit the father's employer conditions their reservation wage and leads to higher earnings.[7] In other words, the information on whether a son actually works at the same employer as his father is not a perfect measure of whether or not he had a possibility of inheriting an employer from his father, and this needs to be recognized in the empirical analysis.

1.3   Nature of the data and some preliminary results

Our analysis is based upon the Intergenerational Income Data (IID) we developed at Statistics Canada from administrative information on individual income tax returns that have been grouped into families. While we have information on a number of cohorts of young men, our focus is on the oldest group at the time we began our analysis, those who are 33 years of age in the last year

Table 1.1 Descriptive statistics for fathers and sons linked intergenerationally

	Number of observations	Average Age		Average Earnings		Number of unique employers	
		Fathers (1980)	**Sons (1996)**	**Fathers**	**Sons**	**Fathers**	**Sons**
1 Entire sample	71,215	47.4 (6.14)	33	43,524 (27,085)	36,129 (22,953)	23,963	31,674
2 95th percentile and below of father's earnings distribution	67,499	47.3 (6.18)	33	39,724 (15,377)	35,434 (20,904)	23,070	30,378
3 96th percentile and above of father's earnings distribution	3,716	47.6 (5.22)	33	115,735 (68,499)	49,347 (45,281)	2,018	2,643

Note: Panel 1 refers to all inter-generationally linked sons born in 1963, and who are hence 33 years of age in 1996. Fathers' earnings are averaged over the five years the son was 15 to 19 years of age, and sons' earnings are averaged between 1994 and 1996. All monetary figures are expressed as constant 1992 dollars. The cut-off dollar value of the 95th percentile of the father's earnings distribution is equal to $79,910. The number of unique employers refers only to the main employer, the employer that paid the largest proportion of total earnings during the above periods. Figures in parentheses are standard deviations.

of observation. We observe their earnings in each year they file income taxes from the age 15 onward, and more importantly the earnings of their fathers since that time. For each year between 1978 and 1996 we also observe up to four employers that the sons and the fathers may have had. The appendix discusses the data in more detail.

Table 1.1 presents basic descriptive information. Father's earnings are averaged over the five year span in which the son was 15 to 19 years of age. To remain in our analytical sample the father must have positive earnings in each of these five years.[8] On average fathers are in their mid to late forties when we estimate their permanent earnings. Sons' earnings are averaged over a three-year period, 1994 to 1996, conditional on reporting positive earnings in each of these three years. As such the sample of sons is relatively young. This is likely to lend a downward bias to estimates of the intergenerational earnings elasticity. This is one reason we focus most of our analysis on the oldest available cohort. This restriction also simplifies many of the calculations and makes the sample size – at just over 70,000 – more manageable.

We work with a particular definition of whether or not a son is employed by the same firm as his father. It refers to the "main" employer of the father and the son, the employer accounting for the majority of earnings. We restrict this to mean the employer representing the majority of the father's earnings during the years the son was 15 to 19 years of age, and the employer accounting for the majority of the son's earnings when he was between ages

30 and 33. Just below 6 percent (5.9 percent) of this cohort of young men have as their main employer in adulthood the same main employer their fathers had when they, the sons, were between 15 and 19 years old.

In fact, the lifetime incidence of the intergenerational transmission of employers is much higher: 41 percent of 33-year-olds are or have been employed at some point since the age of 16 with an employer who also employed their father at any point in the past.[9] In other words, many more sons have at some point been employed with at least one of their father's employers than actually have, using the term loosely, a "career" job with the employer that gave their fathers a career job. This lends credence to our discussion of the role of the job search process and reservation wages by suggesting that the possibility of same firm employment across the generations is greater than what is observed by focusing on the main employer in adulthood.

The incidence of same main employer across the generations is positively associated with father's earnings. Figure 1.1 presents the proportion of sons
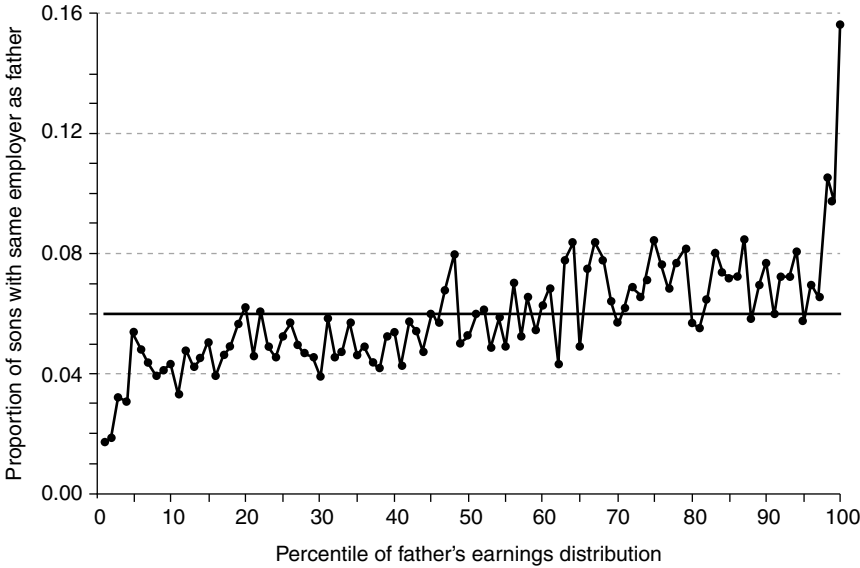
Figure 1.1   Proportion of sons with the same main employer as their father for each percentile of the father's earning distribution: father's main employer when son was 15 to 19 years compared to son's main employer between 30 and 33 years of age

Note: The horizontal solid line is drawn at 0.059, the incidence of same firm employment for the entire sample. Calculations are based on weighted observations of 71,215 sons who are 33 years of age. Father's earnings percentiles are calculated using a five-year average of earnings during the period sons were 15 to 19 years of age.

Source: Calculations by authors using Statistics Canada administrative data as described in the text and the Appendix.

in each percentile of the father's earnings distribution having the same main employer. For percentiles below about the 45th the incidence is, for the most part, below the overall average of 5.9 percent, while for percentiles above about the 55th it is above. Its highest values are among the top 3 percentiles, displaying a distinct jump to about 10 percent at the 98th and 99th percentiles and then to almost 16 percent at the top percentile.[10]

Table 1.2 offers the quartile transition matrix between father and son earnings, as well as the proportion of sons with the same main employer as the father in each cell. Many of the cells in the middle part of the transition matrix are not too different from 0.25, but the probability of sons born to fathers in the bottom quartile becoming bottom-quartile adults is over one-third, as is the probability of sons born to top-quartile fathers becoming top-quartile adults. What distinguishes these two points is the fact that the proportion observed to have the same employer as their fathers is much higher among sons of top-earning fathers. About 4 percent of sons of bottom-quartile fathers have the same employer as their father regardless of whether they remain at the bottom of their earnings distribution or move to the top. In contrast, only 3 percent of the sons of top-earning fathers who fall to the bottom quartile have the same employer as their father; this proportion is close to 12 percent for those who remain in the top quartile. A similar pattern holds for those born to fathers in the third quartile, and to a lesser degree the second quartile. For the most part

Table 1.2 Quartile earnings transition matrix with proportions of intergenerational transmission of employers within each cell

A. Father–son earnings quartile transition matrix

		Sons		
Fathers	Bottom	2nd	3rd	Top
Bottom	0.351	0.282	0.207	0.161
2nd	0.267	0.277	0.254	0.202
3rd	0.215	0.238	0.277	0.271
Top	0.168	0.203	0.262	0.367

B. Proportion of sons with the same main employer as father within each cell of the earnings quartile

		Sons		
Fathers	Bottom	2nd	3rd	Top
Bottom	0.041	0.048	0.038	0.042
2nd	0.027	0.059	0.067	0.061
3rd	0.022	0.046	0.083	0.101
Top	0.029	0.044	0.079	0.116

it is also the case that the upward movement of one quartile from the father's original position is associated with a higher percentage of same-firm employment than that associated with sons who remain in the same quartile as their fathers. Similarly, downward mobility of one quartile is associated with a lower fraction of same firm employment than that associated with sons who remain in the same quartile.

It should be noted that the patterns described in Figure 1.1 and Table 1.2 are not unique to Canada. Bingley, Corak, and Westergård-Nielsen (2012) undertake a comparative analysis of the intergenerational transmission of employers using Canadian and Danish data. The incidence of same firm employment across the generations is similar though slightly lower in Denmark (about 30 percent for the life-time measure and 4 percent for the main-employer measure versus 40 percent and 6 percent in the Canadian case), but the positive relationship with parental earnings, the sharp spike at the very top of the earnings distribution, as well as the association with the elements of the earnings transition matrix are striking by their similarity. Indeed, the Danish equivalent of Figure 1.1 is virtually the same, with the data points lying slightly below the Canadian, and rising sharply above the 90th percentile, but particularly above the 95th. The availability of detailed and comparable administrative data makes a comparison of these two countries possible and at the same time limits the ability to make comparisons to countries more similar to Canada.[11] But the fact that these two countries differ significantly in their geography, industrial structure, and labour markets suggests that the patterns our analysis focuses upon, particularly the non-linearity at high incomes, are not Canada-specific.

The major limitation of our data is associated with the covariates available for analytical purposes. We are restricted to making use of information relevant for and collected as a part of the filing of income tax returns. Educational attainment and occupation are not, for example, available to us, to say nothing of information from questions intended to measure time preference or risk aversion. However, we follow Mayer (1997) in suggesting that markers of other traits that may be important endowments passed on between fathers and sons can be obtained by using indicators for the presence of different types of incomes. Our analysis is focused on earnings, but all sources of total income are also available in the data. Mayer (1997) argues, for example, that the presence of asset income—as distinct from the actual amount—can be taken as an indicator of unobserved parental traits, like time preference or motivation that will influence the long-run outcomes of children. In addition, Hill and Duncan (1987) and Corak and Heisz (1998) also examine the association between child outcomes and so-called "first dollar" effects of different types of income. We borrow from these analyses and introduce indicators of whether the father reported any self-employment income, any investment income, and any capital gains over a five-year period during the son's teen years. These indicators are intended to capture, in some degree, the potential transmission of endowments associated

with entrepreneurship, time preference, and risk aversion. In the following section we also document that they vary positively with paternal earnings. While using this information falls short of a clear identification strategy, it is a step in the direction of recognizing that parental networks associated with employers may not be the only endowment to play a role in the child's earnings outcome.

1.4 The empirical model

Our objective is to estimate the intergenerational earnings elasticity by recognizing that the population of sons consists of a mixture of two groups, those who draw on parental job contacts and those who do not. The empirical strategy is to split the sample of families by the likelihood of having intergenerational employer contacts, and to assume separate linear models of earnings transmission for the two groups. Our theoretical discussion offers the logic behind this approach, namely that the group more likely to have parental networks should experience more intergenerational earnings persistence under the assumption of perfect capital markets. These families are identified by exploiting the information available in our data set.

Consider again the standard intergenerational earnings relationship, $\ln Y_t = \alpha + \beta \ln Y_{t-1} + \varepsilon_t$, but expressed as two distinct regression regimes: the first applying to individuals without intergenerational job contacts (say $I=0$); the second to those with contacts (with $I=1$).

$$\ln Y_t^0 = \alpha_0 + \beta_0 \ln Y_{t-1}^0 + \varepsilon_0 \qquad \text{if } I=0 \tag{6}$$

$$\ln Y_t^1 = \alpha_1 + \beta_1 \ln Y_{t-1}^1 + \varepsilon_1 \qquad \text{if } I=1 \tag{7}$$

We can think of the system described by equations (6) and (7) as a switching regression model. Three types of switching regressions can be distinguished depending upon the information available for the indicator I. If I is observed with certainty, the model is characterized with a known sample separation and the two equations can be estimated separately. If I is unobserved, the switching regression model has unknown sample separation, with each observation having an unknown probability $p \equiv \Pr(I=1)$ of belonging to regime 1, and probability $1-p$ of belonging to regime 0. The econometric challenge, in this case, is to estimate the parameters β_1 and β_0 without knowing *a priori* which of the n values of the dependent variable was generated by which regime (Quandt, 1972). When some information on I is available but this information is only partial, the model is one of imperfect sample separation. In this case, the "true" regime is unobservable, but there exists a proxy measure, Z, which identifies the regimes with error.

We focus on this latter case in order to recognize the degree of uncertainty with which our indicator of intergenerational transmission of employers

discriminates the sample observations across the underlying regimes. In other words, the subsamples of individuals working and not working for a past employer of their father (respectively with $Z=1$ and $Z=0$), will in effect be made up of mixed groups, with observations from both regimes ($I=0$ and $I=1$). This is the scenario studied in Lee and Porter (1984), who show that any misclassification will result in biased estimates of the β coefficients if the sample separation is treated as known.

We follow Lee and Porter (1984) as developed in Maddala (1986, pp. 1646–8) and Guo (2009) to derive the likelihood function for the system of equations (6) and (7). Assuming that the error terms in the two regression regimes ε_1 and ε_0 are independently and normally distributed with mean zero and constant (though not necessarily equal) variances, we can express the probability density function for Y_t in regime $I=0, 1$ as

$$f_{i,I} = \frac{1}{(2\pi)^{1/2}\sigma_I} \exp\left[-\frac{1}{2\sigma_I}(Y^I_{i,t} - \beta Y^I_{i,t-1})^2\right] \quad \text{for } I = 0,1$$

from which the joint density of Y_t and Z can be derived

$$f(Y_t|Z) = [f_1 p_1 + f_0(1-p_1)]^z [f_1(1-p_0) + f_0 p_0]^{1-Z} \tag{8}$$

where $p_1 = \Pr(I=1|Z=1)$ and $p_0 = \Pr(I=0|Z=0)$. Thus, the distribution of earnings is a mixture of two normal distributions, and is estimated by maximum likelihood under this assumption.

The parameters in the likelihood function can be estimated when a priori information to distinguish between the two regimes is available (Lee and Porter 1984; Guo 2009). In our case, we assume that those who work for the same employer as their father are more likely to be in the intergenerational job contact regime. That is, we assume that $\Pr(I=1|Z=1) > \Pr(I=1|Z=0)$, and that $\Pr(I=0|Z=0) > \Pr(I=0|Z=1)$ which implies that $p_1 + p_0 > 1$.[12] In our application the functional form of p_1 and p_0 is parameterized as a probit function: $\Phi(\gamma_0 + \gamma_1 Z)$. To this function we also add indicators for other endowments that may distinguish the regimes.

1.5   Estimates of the intergenerational elasticity of earnings

To fix ideas Table 1.3 offers results from least squares estimation under the assumptions of no sample separation, and of exogenous and known sample separation. Least squares leads to an estimated intergenerational elasticity of 0.250. This is at the upper end of the range reported in the empirical literature for Canada using these data as well as Instrumental Variables estimators from survey data. This reflects our decision to focus on just the 33 year olds, the oldest cohort available to us.[13]

Table 1.3 Least squares estimates of a linear regression to the mean model of intergenerational earnings mobility: no sample separation, and sample separation exogenous and known

	Least squares estimates		
	Constant	Coefficient	Sample Size
0. No sample separation	7.50	0.250	71,215
1. Sample separation exogenous and known			
No same main employer in adulthood	7.60	0.235	66,949
Had same main employer in adulthood	6.87	0.413	4,266
2. Lower 20% of father's earnings distribution			
No sample separation	8.55	0.146	12,674
Sample separation exogenous and known			
No same main employer in adulthood	8.57	0.140	12,132
Had same main employer in adulthood	7.67	0.353	542
3. Lower 95% of father's earnings distribution			
No sample separation	7.48	0.249	67,499
Sample separation exogenous and known			
No same main employer in adulthood	7.57	0.236	63,599
Had same main employer in adulthood	6.16	0.458	3,900
4. Upper 5% of father's earnings distribution			
No sample separation	9.17	0.248	3,716
Sample separation exogenous and known			
No same main employer in adulthood	9.82	0.144	3,350
Had same main employer in adulthood	10.66	0.533	366
5. Upper 3% of father's earnings distribution			
No sample separation	8.99	0.249	2,220
Sample separation exogenous and known			
No same main employer in adulthood	9.85	0.134	1,955
Had same main employer in adulthood	8.31	0.523	265

Note: Table entries are least squares coefficient estimates based upon a linear regression to the mean model with the natural logarithm of son's earnings averaged over three years (1994 to 1996) as the dependent variable, and the natural logarithm of the five year average of father's earnings during the years the son was 15 to 19 years of age. The model also controls for the age and age squared of the father. All sons are 33 years of age in 1996. All estimates are statistically significant at the 1% level.

When we assume that sample separation is exogenous and known the intergenerational elasticity for those with the same employer as their father is estimated to be just above 0.4, higher than any results from a linear specification reported in the Canadian literature. Table 1.3 also reports similar results for four additional sub-samples: the lower 20 percent of the father's earnings distribution; the lower 95 percent; the upper 5 percent; and the upper 3 percent. These distinctions are motivated by the patterns in Figure 1.1 – that there is a distinct rise in the intergenerational transmission of employers at the very top of the distribution. These subdivisions of the data are also in line with

Table 1.4 Maximum likelihood estimates of a switching regression to the mean model of intergenerational earnings mobility: imperfect sample separation, same main firm as proxy

	Maximum likelihood estimates				
	Constant	Coefficient	Sigma	$-\ln L$	p
1. Entire sample					
Regime without parental employer contact	6.45	0.314	0.691	−55,378	0.409
Regime with parental employer contact	8.40	0.187	0.314		0.591
		$\gamma_1 = 0.7430$			
2. Lower 20% of father's earnings distribution					
Regime without parental employer contact	7.41	0.269	0.649	−10,871	0.403
Regime with parental employer contact	10.1	−0.0110	0.350		0.597
		$\gamma_1 = 0.0530$			
3. Lower 95% of father's earnings distribution					
Regime without parental employer contact	6.47	0.297	0.680	−52,058	0.405
Regime with parental employer contact	8.44	0.184	0.315		0.595
		$\gamma_1 = 0.8129$			
4. Upper 5% of father's earnings distribution					
Regime without parental employer contact	9.36	0.078	0.318	−3,200	0.591
Regime with parental employer contact	8.28	0.485	0.860		0.409
		$\gamma_1 = 0.2117$			
5. Upper 3% of father's earnings distribution					
Regime without parental employer contact	10.6	−0.00548	0.344	−2,024	0.400
Regime with parental employer contact	6.21	0.589	0.904		0.600
		$\gamma_1 = 0.4880$			

Note: Table entries are maximum likelihood estimates using a Berndt-Hall-Hall-Hausman algorithm, with starting values given by least squares as presented in Table 1.3. Standard errors are estimated using the Outer Product of the Gradient. Convergence was attained within 20 iterations. All coefficients are significant at the 5% level except those shaded. The estimate of γ_1 in panel 4 has a p-value of 0.106. The model also controls for the age and age squared of the father. All sons are 33 years of age in 1996. Sample sizes for panels 1 through 5 are respectively: 71,215, 67,499, 12,674, 3,716, and 2,220. The column labelled p refers to the probability associated with each regime, calculated as $\Phi(\gamma_0)*\text{Pr}(Z=0) + \Phi(\gamma_0 + \gamma_1 Z)*\text{Pr}(Z=1)$.

the non-parametric results in Corak and Heisz (1999) and Corak and Piraino (2011) that suggest a distinct nonlinearity in the intergenerational earnings elasticity at the very top few percentiles of the father's earnings distribution. The results in panels 4 and 5 imply that for the top 5 percent and 3 percent of the father's earnings distribution the difference in the estimated elasticities across regimes is significantly larger, with the reported elasticities for those not having the same main employer lower than 0.2 and for those having the same employer above 0.5.[14]

We use the estimates reported in panel 1 of this table as starting values for the maximum likelihood estimation, the results of which are reported in Table 1.4. This table offers results from models in which sample separation is known imperfectly (using the same main employer indicator as the imperfect

classifier of the regime). As explained, the classification of regimes rests on the assumption that sons working for a former employer of their father are more likely to be in the "employer contacts regime." This proxy variable enters the likelihood expression in the probability function associated with each regime, $\Phi(\gamma_0 + \gamma_1 Z)$, so that the sign of the coefficient γ_1 on the same main employer dummy identifies the regression regime corresponding to the presence of paternal employer contacts. The only difference in the likelihood function between the unknown and uncertain sample separation models is in the functional specification of the probabilities associated with the regimes, thus we should not expect appreciably different estimates of the intergenerational coefficients in the two models.[15] The contrast between the estimates in panel 1 of Table 1.4 with those of panel 1 in Table 1.3 shows that the employer contact regime is associated with the lower elasticity, and at 0.19 a magnitude significantly lower than the 0.41 estimated under the assumption of known sample separation.

In order to interpret the two-regime switching regression results in Table 1.4, we must specify how β varies in the population in light of our theoretical framework. The augmented Becker–Tomes model shows that in the context of imperfect capital markets the intergenerational earnings elasticity will be affected by both credit market distortions and parental job contacts. The results in Table 1.4 provide evidence of the existence of multiple regimes across the father's earnings distribution, possibly as a result of the interaction between these two effects.

Therefore it is difficult to interpret these findings, except at the very top of the father's earnings distribution, where families are likely not to be credit constrained. In this sense the switching regression model in panels 4 and 5 can more cleanly distinguish the two theoretical regimes with respect to parental employer contacts. Compared to lower segments of the earnings distribution, the magnitudes of the elasticities are reversed, with the employer contact regime having the higher elasticity. That is, the intergenerational transmission of employers increases the earnings elasticity as predicted by theory when credit markets are perfect. It is clear from the results in panel 5 that the preservation of relative earnings status across the generations for sons of top-earning fathers is associated with the possibility of being employed at the father's firm. Without this endowment the elasticity is close to zero, and for those at the very top not even statistically different from zero (the p-value being 0.878). These sons are unlikely to stay in the top part of their earnings distribution: sons born to fathers at the very top are perfectly mobile – in this case perfectly downwardly mobile – if they cannot access their father's employer.

In the absence of exogenous variation in the inheritance of employers, the findings in Tables 1.3 and 1.4 are susceptible to alternative interpretations. A general reading of the results would be that unobservable characteristics

which cause sons of rich fathers to work for their father's employers are strongly associated with similar earnings outcomes as their fathers, while this seems not to be true for children of poorer parents. Moreover, it is hard to say what is going on at other parts of the distribution without clear controls for credit market constraints or other individual endowments.

To narrow down the scope for alternative interpretations, we replicate Table 1.4 with a multivariate specification of the probit equation, using indicators for the presence of paternal income from self-employment, interest, and capital gains. We introduce these indicators to proxy specific aspects of the father's endowment: entrepreneurship, time preference, and risk aversion. Table 1.5 reports the coefficient estimates from the probit equations only, since the

Table 1.5   Estimates of alternative regime proxies from maximum likelihood estimates of a switching regression to the mean model of intergenerational earnings mobility

	Same Main Firm	Father Self-employed	Father had Investment Income	Father had Capital Gains
A. Separate univariate models				
1. Entire sample	0.743	0.0105	0.356	0.146
2. Lower 20% of father's earnings distribution	0.053	0.229	0.555	0.495
3. Lower 95% of father's earnings distribution	0.813	0.0447	0.375	0.200
4. Upper 5% of father's earnings distribution	0.212	0.276	–0.0436	0.0422
5. Upper 3% of father's earnings distribution	0.488	0.283	0.218	0.0652
B. Single multivariate models				
1. Entire sample	0.728	–0.0365	0.338	0.0832
2. Lower 20% of father's earnings distribution	–0.0610	0.0816	0.495	0.321
3. Lower 95% of father's earnings distribution	0.798	–0.00567	0.350	0.128
4. Upper 5% of father's earnings distribution	0.200	0.278	–0.0839	–0.00956
5. Upper 3% of father's earnings distribution	0.485	0.279	0.193	0.00714
C. Sample proportions				
1. Entire sample	5.87	17.0	80.7	15.5
2. Lower 20% of father's earnings distribution	4.03	25.1	68.5	10.8
3. Lower 95% of father's earnings distribution	5.65	16.4	79.9	13.8
4. Upper 5% of father's earnings distribution	9.88	28.8	96.1	47.7
5. Upper 3% of father's earnings distribution	11.9	33.4	97.0	54.2

Note: Table entries are probit estimates from the maximum likelihood estimation of a switching regression model with imperfect sample separation. The maximum likelihood estimation uses a Berndt-Hall-Hall-Hausman algorithm, with starting values given by least squares as presented in Table 1.3. Standard errors are estimated using the Outer Product of the Gradient. Convergence was attained within 20 iterations. Only the coefficients on variables in the probit specification of the regime identifier are reported. All coefficients are significant at the 5% level except those shaded. Sample specifications and sizes are the same as those reported in the respective panels of Table 4.
Panel A refers to the estimates from a series of univariate probit specifications from a total of 20 separately estimated models.
Panel B refers to the estimates from a series of multivariate probit specifications for each of five models.

estimated elasticities are virtually identical across specifications. Panel A offers the results from a series of univariate, separately run models, in which these indicators are used on their own as regime identifiers. The first column in this panel repeats, for reference, the corresponding results for the same main firm identifier from Table 1.4. Panel B offers the results from multivariate specifications for each of the five samples, while Panel C presents descriptive information on sample proportions.

Focusing on the information in panel B and contrasting it with the information in Panel A and Table 1.4 illustrates four major results. First, for the population as a whole, in which the employer contact regime is associated with a lower intergenerational elasticity, including indicators for investment income and capital gains income that are meant to signal both the presence of a financial budget constraint but also personal characteristics like time preference and risk aversion, helps inform the labelling of the regime but does not change the estimate of the intergenerational transmission of employers. It would appear that there in fact are a host of endowments that parents pass on to children, but that these work together to increase mobility for the broad majority of the population. The employer contacts regime might be thought of as an unconstrained regime, or a regime of the "better" endowed. This regime is associated with a smaller intergenerational earnings elasticity because either credit constraints don't bind or the individuals have other endowments that are positive enough to overcome them.

Second, the role of paternal employer contacts in increasing the generational earnings elasticity is clearer when we contrast the results across points in the father's earnings distribution. The indicator for same firm employment is not statistically significant, and therefore does not distinguish the regimes, for the lowest earnings group, described in the second panel of Tables 1.4 and 1.5. The presence of interest income and capital gains play this role. The estimated intergenerational elasticity that is insignificantly different from zero in panel 2 of Table 1.4 is likely to reflect the circumstances of financially unconstrained sons from low-income fathers, or sons that have been endowed with characteristics associated with these sources of income and are valued in the labour market. However, when a larger fraction of the population is brought into the analysis, as in panels 3, same firm employment distinguishes the two regimes, and the earnings elasticity associated with the possibility of inheriting an employer becomes positive and statistically significant. It is not necessarily higher than the elasticity in the other regime because of the continued role of financial constraints or lack of other endowments, but it is higher than the statistically insignificant finding for the bottom 20 percent of the population.[16]

Third, at the upper end of the distribution the population can reasonably be characterized as facing perfect capital markets. There is also less heterogeneity in other endowments. In Table 1.5, panel C, rows 4 and 5 illustrate that

a significant minority have an entrepreneurial background (double that of the population as a whole), almost all have fathers reporting investment income, and the majority have fathers reporting capital gains (at least three times that for the population as a whole). For sons of top 5 percent fathers the intergenerational elasticity is higher in a regime that is distinguished by the presence of self-employment income, leading to an elasticity of 0.48 compared to 0.08 in its absence. Entrepreneurship associated with a self-employed father matters as an attribute in and of itself, or as the determining factor in how employers are transmitted intergenerationally.

Fourth, and finally, the interaction of these two factors is clearer for sons of fathers in the top 3 percent, where Figure 1.1 documented a distinct spike in the transmission of employers. The transmission of employers becomes the dominant indicator of regime type, leading to an intergenerational elasticity of 0.59 in its presence and essentially zero in its absence. The preservation of earnings status among the sons born to fathers at the very top of the earnings distribution is associated with not only having a father who has some self-employment income, but also with the possibility to connect his son with a job in his employer. The presence of investment income or capital gains income plays no role in identifying the regime.

1.6   Conclusion

The main objective of this paper is to examine the implications of family connections in labour market status, in particular the capacity of sons to work for the same employer as their fathers, for explaining nonlinearities in the intergenerational transmission of earnings. We adapt the standard model of intergenerational earnings mobility so that earnings are determined by two types of endowments. In particular, we consider a model in which parental employer contacts imply that some children will be employed with the same firm as their parents, and suggest that this is an endowment that directly influences the child's earnings function. In the absence of credit market constraints or heterogeneity in other endowments, the capacity to transmit an employer across generations raises the intergenerational earnings elasticity. Furthermore, it displays a nonlinearity that leads to a higher intergenerational elasticity at the upper end of the parent's earnings distribution. This result follows from an assumption that the intergenerational transmission of employers is positively related to parental earnings.

The administrative data we use on a cohort of young Canadian men clearly shows this positive relationship, and is also distinguished by a sharp spike in the transmission of employers from fathers in the top few percentiles of the earnings distribution to their sons. On average close to 6 percent of these young adults obtain the majority of their earnings from an employer who was also the

main employer of their fathers some 15 to 20 years earlier, but 16 percent of sons raised by fathers in the top percentile of the earnings distribution do so. Other studies show that these patterns are not unique to the Canadian case.

Our empirical analysis recognizes that some sons who are never observed to have been employed at a firm that once employed their fathers may still have their reservation wages influenced by the possibility that they could have such employment. Others who are observed to have had such employment could have found the employer on their own without relying on information or contacts from their parents. As such, an assumption of known and exogenous sample separation is not appropriate: the observation of same-firm employment across the generations is an imperfect indicator of regime type. Our maximum likelihood estimates account for this. We find higher intergenerational earnings elasticities for those in a position to inherit their father's employer when the possibility of credit market constraints and heterogeneity in other endowments are smallest. The empirical analysis also yields much higher estimates of the intergenerational earnings elasticity for those at the upper tail of the father's earnings distribution. We suggest that the preservation of intergenerational earnings status among top earners is influenced by the capacity of the sons to obtain employment with their father's employer.

Our analysis is related to a number of labour market concerns. In particular, by highlighting patterns in the intergenerational transmission of employers and earnings at the upper tail of the earnings distribution we raise further implications and issues for study in the literature that has documented the growing cross-sectional inequality in earnings due to increasing top shares. The findings also relate to long-standing attempts to understand inter-industry wage differentials. Further work could explore the conjecture Altonji and Dunn (1991) put forward, that alternative theories of wage structure can be assessed by recognizing the role of family connections in labour market status. In their view, the intergenerational transmission of employers and earnings we document would be consistent with non-market-clearing explanations for inter-industry wage premia.

But the major implication of our work is to stress the need for a more flexible specification and interpretation of the standard linear regression to the mean model of intergenerational earnings transmission. We suggest that as the intergenerational earnings literature continues to address issues of causality it should also recognize that parents might invest in the success of their children throughout the course of their life cycle, not just in the early years. The structure of labour markets and the way in which young adults make the transition to their career job may also be an important part of the intergenerational dynamic determining their long-run attainments, an aspect that may be just as closely tied to issues of equality of opportunity as private and public investments in the early years are often portrayed as being.

Appendix on the construction of the data

These data are also used in Corak and Piraino (2011) to discuss the intergenerational transmission of employers, and this appendix draws from their exposition. Canadians file their income tax returns (so-called T1 Forms) on an individual basis, and Statistics Canada has grouped these into families using a variety of matching strategies that are described in Harris and Lucaciu (1994). The resulting T1 Family File (T1FF) is the basic building block for the creation of the IID, an intergenerational linked set of T1 Forms for a series of cohorts of young men and women, and their mothers and fathers. This represents not quite four million individuals and their parents, and, in particular, 1.9 million men who are the starting point for our research. We focus on the male cohort born between 1963 and 1966, and in fact for the most part the oldest subset born in 1963. These individuals are linked to their fathers – not necessarily their biological fathers – if they filed an income tax return between 1982 and 1986 while still living at home. This is required to ensure that a parent–child match is made, and also that the child has an observed Social Insurance Number (SIN), a unique individual identifier that can then be used to link all subsequent T1 Forms which contain information on earnings. These T1 Forms are available for all years between 1978 and 1996.

The algorithm used to create the data leads to an underrepresentation of children from lower-income backgrounds, and from the major metropolitan areas: Montreal, Toronto, and Vancouver. This reflects the fact that children who leave home early or who otherwise are not engaged in the labour market while at home are less likely to be linked to a parent. It also reflects the fact that new immigrants and their children will be underrepresented in the data, the majority having a tendency to settle in the three major cities of the country. Weights based upon Census data have been created to account for this, and our analysis uses them throughout even though they make no difference to the results.

The sample sizes associated with the creation of our analytical files are detailed in Appendix Table A1.1, which makes clear that they are large – measured in the tens and hundreds of thousands – given that the data potentially represent the universe of individuals in these age groups.

Versions of these data have been used by Blanden (2005), Corak (2001), Corak, Gustafsson, and Österberg (2004), Corak and Heisz (1999), Grawe (2006, 2004),

Appendix Table 1.A1   Sample sizes associated with the creation of the analytical files from the Intergenerational Income Data

	Sample size	Weighted sample size
Entire sample, all male cohorts	1,890,923	2,474,667
1963 to 1966 male cohorts	653,959	886,099
Fathers with positive earnings in each of five years when sons were 15 to 19 years of age	340,199	417,510
Sons with positive earnings in each of three years between 1994 and 1996	240,478	294,706
Bottom percentile fathers and bottom percentile sons deleted	236,490	288,964
Fathers born between 1908 and 1952	236,210	288,607
Only 1963 cohort, those 33 years of age in 1996	71,125	84,343

Oreopoulos (2003) and Oreopoulos, Page and Huff Stevens (2008) to study a host of issues dealing with intergenerational mobility. Our application is unique in that we further develop the data by adding information on the specific firms employing parents and children throughout the period they are observed. We do this by relying upon a longitudinally consistent catalogue of all enterprises in the country, linked to individuals through the earnings remittance forms issued to employees (the T4) and used to support their income tax returns. This database of firms is referred to as the Longitudinal Employment Analysis Program (LEAP). See Statistics Canada (1992, 1988) for a description of its construction and use. Each T4 has a payroll deduction account number unique to a firm, and the LEAP serves to aggregate the possibly many account numbers per firm into a single longitudinally consistent identifier. For each individual (fathers and sons), and for each year from 1978 to 1996, we obtain unique firm identifiers for up to four employers. Very few individuals ever have more than four different employers in any given year. Using the individual's earnings from each employer we designate for a given year the firm accounting for the majority of total earnings as the "main" employer in that year, or sometimes over a five-year horizon according to our analytical needs.

The LEAP offers an accurate representation of the private sector, but our analysis of the intergenerational transfer of employers is hampered by the fact that it does not distinguish separate employers in the public sector. This refers to federal and provincial public services but not to municipal governments. For anything finer than a two-digit industry analysis this will overstate the degree to which employers or industries are passed across the generations. In order to recognize this, we consider father–son matches in employment in the public service as missing information on same-firm employment. Accordingly, we note that the analysis offers conservative estimates of the degree of intergenerational job contacts.

Notes

1. As Mulligan (1997) makes clear this also assumes that parental preferences are homothetic and therefore that the degree and nature of intergenerational altruism implies linear expansion paths.
2. The incidence of family-based succession is high in the US data used by Pérez-González (2006), more than one-third of the slightly over 300 successions among publicly traded companies. As such this raises the possibility of nepotism as the mechanism for the intergenerational transmission of employers in a way that suggests a positive correlation with parental income. Bellow (2003) offers a much broader picture by offering a historical look at nepotism with a focus on the United States. He distinguishes between "good" nepotism and "bad" nepotism. The former might be interpreted as fathers passing firm specific human capital to their sons that raises their productivity in the family firm; the latter as the hiring of sons entirely because of family connections with no regard to productivity. Rosenzweig and Wolpin (1985) explicitly model the development of firm specific human capital across the generations.
3. See Lancaster and Chesher (1983, pp. 1664–5). This result holds if a marginal change in one firm's wage does not change the distribution over all firms.
4. Grawe (2004), Grawe and Mulligan (2002), Han and Mulligan (2001) point out that with heterogeneity in child abilities and parental altruism the relationship between parental income and being credit constrained is not straightforward and cannot be easily determined empirically. This in large part motivates Guo (2009) to

frame this model in terms switching regressions with sample separation unknown or uncertain.

5. He finds that "all of the constraints to economic mobility reviewed in the literature are exacerbated in the presence of intergenerational networks." (Magruder 2010, p. 67) This result differs from our analysis by not incorporating a relationship between parental income and the capacity to act as a source of job referrals to the child. But the point is that accounting for this formulation will not change our results.

6. Our maintained assumption is equivalent to the usual assumption in the Becker–Tomes model that individual endowments are not correlated with parental income, that demand curves for human capital investment do not shift when parental income changes. The results are ambiguous when both curves shift. The original formulation in Becker and Tomes (1979) assumes that parents can invest in the endowments of their children, but this is generally not the case in the literature.

7. For tat matter the observed incidence of intergenerational transmission of employers could also overstate the influence on a child's earnings in the sense that employers may be found independently of any parental role, particularly if labour markets are segmented geographically and there are only a few employers in the location for which job search occurs. If the allocation of employers were random there would be a possibility that some sons will work for the same employer as their sons, and this would have nothing to do with the job contacts and networks of the father that sons may rely on, with firm specific human-capital investments parents make in their children, or with nepotism.

8. This is the preferred sample selection rule in Corak and Heisz (1999). They show that averaging over a five year horizon is long enough to correct for transitory earnings fluctuations. Mazumder (2005) suggests that almost twice as many years are necessary to correct for persistent transitory earnings fluctuations in the US administrative data he uses. However, unlike these US data the earnings information from the IID is not top coded. Chetty et al. (2014a,b) use of US administrative data is not limited by top coding, and they suggest that measurement error is reduced with even fewer years of averaging.

9. We derive this statistic by defining a vector of same-employer indicators that are set equal to one in year t if any of the son's employers in year t were the same as any of the father's employers over the period 1978 to t-1 inclusive. This definition of the intergenerational transmission of employers involves up to four different employers per year for both sons and fathers. At age 33 it represents the life time incidence of the intergenerational transmission of employers showing whether the son at any point since the age of 16 had the same employer as his father back to the year they were 15. See Corak and Piraino (2011) for a more detailed discussion and analysis.

10. The positive relationship depicted in Figure 1.1 is relatively robust to the definition of same-firm-employment. Corak and Piraino (2011) document a slightly different pattern when the focus is on the broader measure, ever holding a job with an employer that ever employed one's father. The incidence is U-shaped, generally falling when father's earnings are below the median and rising when they are above, with a sharp spike in the incidence among the sons of top percentile fathers.

11. Altonji and Dunn (1991, pages 293–8) use a number of cohorts from the US based National Longitudinal Surveys and show that there is a large, positive, and significant relationship between father and son industry wage premia, and also that collective bargaining status is correlated across the generations. They suggest that family connections in the rationing of jobs would permit fathers in industries paying rents to get their sons jobs in high wage firms. But they have no direct evidence at the firm level.

12. Lee and Porter (1984) and Guo (2009) offer the proof.
13. When a cohort of 30 to 33 year olds is used we obtain an intergenerational elasticity of 0.224, which is more in line with other research (Corak and Heisz 1999, Fortin and Lefebvre 1998). Corak (2006) and d'Addio (2007) report that as such Canada is among the relatively more mobile countries for which comparable estimates are available, in particular an intergenerational elasticity of a little over 0.2 is about half as great than commonly reported for the United States.
14. For example, the differences between the two elasticities for the entire sample, as described in panel 2 is 0.178 with a standard error of 0.021; for the lower 95 percent in panel 4 it is 0.222 (with a standard error of 0.026); and for the top 5 percent it is 0.389 (with a standard error of 0.085).
15. This is in fact the case, with the results being available upon request.
16. The fact that networked jobs are often found to have wage premia (particularly for men, as discussed in the survey by Ioannides and Loury, 2004) is also consistent with this pattern. At the bottom of the wage distribution, the network wage premium would run counter to the father's low-paying job. As the father's wage increases, getting a job with a father's employer is likely to be a higher-paying job, complementing the network wage premium.

References

Abowd, John M., Francis Kramarz, and David N. Margolis (1999) "High-Wage Workers and High-Wage Firms," *Econometrica*, vol. 67, pp. 251–333.

d'Addio, Anna Cristina (2007) "Intergenerational Transmission of Disadvantage: Mobility or Immobility across Generations? A Review of the Evidence for OECD Countries," OECD Social, Employment, and Migration Working Papers, No. 52.

Altonji, Joseph G. and Thomas A. Dunn (1991) "Relationships Among the Family Incomes and Labor Market Outcomes of Relatives," *Research in Labor Economics*, vol. 12, pp. 269–310.

Atkinson, A.B. and Thomas Piketty (eds) (2007) *Top Incomes Over the Twentieth Century: A Contrast between Continental European and English Speaking Countries*. Oxford: Oxford University Press.

Atkinson, A.B., A.K. Maynard, and C.G. Trinder (1983) *Parents and Children: Incomes in Two Generations*. London: Heinemann Educational Books.

Baldwin, John R. (1998) *The Dynamics of Industrial Competition*. Cambridge: Cambridge University Press.

Becker, Gary S. and Nigel Tomes (1986) "Human Capital and the Rise and Fall of Families," *Journal of Labor Economics*, vol. 4, pp. S1–39.

Becker, Gary S. and Nigel Tomes (1979) "An Equilibrium Theory of the Distribution of Income and Intergenerational Mobility," *Journal of Political Economy*, vol. 87, pp. 1153–89.

Bennedsen, Morton, Kasper Meisner Nielsen, Francisco Pérez-González, and Daniel Wolfenzon (2007) "Inside the Family Firm: The Role of Families in Succession Decisions and Performance," *Quarterly Journal of Economics*, vol. 122, pp. 647–91.

Bellow, Adam (2003) *In Praise of Nepotism: A Natural History*. New York: Random House.

Bingley, Paul, Miles Corak and Niels Westergård-Nielsen (2012) "The Intergenerational Transmission of Employers in Canada and Denmark," In John Ermisch, Markus Jantti, and Timothy Smeeding (eds), *From Parents to Children: The Intergenerational Transmission of Advantage*. New York: Russell Sage.

Björklund, Anders and Markus Jäntti (2009) "Intergenerational Income Mobility and the Role of Family Background," in Wiemer Salverda, Brian Nolan, and Tim Smeeding (eds), *The Oxford Handbook of Economic Inequality*. Oxford: Oxford University Press.

Björklund, Anders, Mikael Lindahl, and Erik Plug (2006) "The Origins of Intergenerational Associations: Lessons from Swedish Adoption Data," *Quarterly Journal of Economics*, vol. 121, pp. 999–1028.

Björklund, Anders, Jesper Roine, and Daniel Waldenström (2012) "Intergenerational Top Income Mobility in Sweden: Capitalist Dynasties in the Land of Equal Opportunity?," *Journal of Public Economics*, vol. 96, pp. 474–84.

Björklund, Anders, Tor Eriksson, Markus Jäntti, Oddbjørn Raaum and Eva Österbacka (2002) "Brother Correlations in Earnings in Denmark, Finland, Norway and Sweden compared to the United States," *Journal of Population Economics*, vol. 15, pp. 757–72.

Black, Sandra E. and Paul J. Devereux (2011) "Recent Developments in Intergenerational Mobility," in David Card and Orley Ashenfelter (edis, *Handbook of Labor Economics*, vol. 4b. Amsterdam: North Holland, Elsevier Science Publishers.

Blanden, Jo (2005) "Love and Money: Intergenerational Mobility and Marital Matching in Canada," Ottawa: Statistics Canada Research Paper No. 272.

Böhlmark, Anders and Matthew J. Lindquist (2006) "Life-Cycle Variations in the Association between Current and Lifetime Income: Replication and Extension for Sweden," *Journal of Labor Economics*, vol. 24, pp. 879–96.

Chetty, Raj, Nathaniel Hendren, Patrick Kline and Emmanuel Saez (2014a) "Where is the Land of Opportunity? The Geography of Intergenerational Mobility in the United States," *Quarterly Journal of Economics*, vol. 129, Issue 4 (November), pp. 1553–1623.

Chetty, Raj, Nathaniel Hendren, Patrick Kline and Emmanuel Saez (2014b) "Is the United States Still a Land of Opportunity? Recent Trends in Intergenerational Mobility," *American Economic Review Papers and Proceedings*. vol. 104, No. 5, pp. 141–47.

Corak, Miles (2001) "Death and Divorce: The Long-Term Consequences of Parental Loss on Adolescents," *Journal of Labor Economics*, vol. 19, pp. 682–715.

Corak, Miles (2006) "Do Poor Children Become Poor Adults? Lessons from a Cross country Comparison of Generational Earnings Mobility," in John Creedy and Guyonne Kalb (eds), *Research on Economic Inequality, Vol. 13*. Amsterdam: Elsevier.

Corak, Miles, Björn Gustafsson, and Torun Österberg (2004) "Intergenerational Influences on the Receipt of Unemployment Insurance in Canada and Sweden," in Miles Corak (ed.), *Generational Income Mobility in North America and Europe*. Cambridge: Cambridge University Press.

Corak, Miles and Andrew Heisz (1999) "The Intergenerational Earnings and Income Mobility of Canadian Men: Evidence from Longitudinal Income Tax Data," *Journal of Human Resources*, vol. 34, pp. 504–33.

Corak, Miles and Andrew Heisz (1998) "How to Get Ahead in Life: Some Correlates of Intergenerational Income Mobility in Canada," in Miles Corak (ed.), *Labour Markets, Social Institutions, and the Future of Canada's Children*. Ottawa: Statistics Canada, catalogue number 89-553.

Corak, Miles and Patrizio Piraino (2011) "The Intergenerational Transmission of Employers," *Journal of Labor Economics*, vol. 29, pp. 37–68.

Datcher Loury, Linda (2006) "Some Contacts Are More Equal Than Others: Informal Networks, Job Tenure, and Wages," *Journal of Labor Economics*, vol. 24, pp. 299–318.

Fortin, Nicole M. and Sophie Lefebvre (1998) "Intergenerational Income Mobility in Canada," in Miles Corak (ed.), *Labour Markets, Social Institutions, and the Future of Canada's Children*. Ottawa: Statistics Canada, catalogue number 89–553.

Gevrek, Deniz and Zahide Eylem Gevrek (2010) "Nepotism, Incentives and the Academic Success of College Students," *Labour Economics*, vol. 17, pp. 581–91.

Grawe, Nathan D. (2006) "The Extent of Lifecycle Bias in Estimates of Intergenerational Earnings Persistence," *Labour Economics*, vol. 13, pp. 551–70.

Grawe, Nathan D. (2004) "Reconsidering the Use of Nonlinearities in Intergenerational Earnings Mobility as a Test for Credit Constraints," *Journal of Human Resources*, vol. 39, pp. 813–27.

Grawe, Nathan D. and Casey B. Mulligan (2002) "Economic Interpretations of Intergenerational Correlations," *Journal of Economic Perspectives*, vol. 16, pp. 45–58.

Guo, Sheng (2009) "Rich Dad, Rich Kid? Switching Regression Estimates of Intergenerational Mobility of Consumption," Working Paper. Florida International University.

Haider, Steven J. and Gary Solon (2006) "Life-Cycle Variation in the Association between Current and Lifetime Earnings," *American Economic Review*, vol. 96, pp. 1308–20.

Han, Song and Casey B. Mulligan (2001) "Human Capital, Heterogeneity and Estimated Degrees of Intergenerational Mobility," *Economic Journal*, vol. 111, pp. 207–43.

Harris, Shelly and Daniela Lucaciu (1994) "An Overview of the T1FF Creation." LAD Reports. Reference Number 94-24-01 v1.2. Ottawa: Statistics Canada, Small Areas and Administrative Data Division.

Hill, Martha S. and Greg J. Duncan (1987) "Parental Family Income and the Socioeconomic Attainment of Children," *Social Science Research*, vol. 16, pp. 39–73.

Ioannides, Yannis M. and Linda Datcher Loury (2004) "Job Information Networks, Neighborhood Effects, and Inequality," *Journal of Economic Literature*, vol. 42, pp. 1056–93.

Krueger, Alan B. and Lawrence H. Summers (1988) "Efficiency Wages and the Inter-Industry Wage Structure," *Econometrica*, vol. 56, pp. 259–93.

Lancaster, Tony and Andrew Chesher (1983) "An Econometric Analysis of Reservation Wages," *Econometrica*, vol. 51, pp. 1661–76.

Lee, L.F. and R.H. Porter (1984) "Switching Regression Models with Imperfect Sample Separation Information: With an Application on Cartel Stability," *Econometrica*, vol. 52, pp. 391–418.

Loury, Glenn C. (1981) "Generational Transfers and the Distribution of Earnings," *Econometrica*, vol. 49, pp. 843–67.

Maddala, G.S. (1986) "Disequilibrium, Self-Selection, and Switching Models," in Z. Griliches and M.D. Intrilligator (eds). *Handbook of Econometrics, Volume III*. Amsterdam: North Holland, Elsevier Science Publishers.

Magruder, Jeremy R. (2010) "Intergenerational Networks, Unemployment, and Persistent Inequality in South Africa," *American Economic Journal: Applied Economics*, vol. 2, pp. 62–85.

Mayer, Susan E. (1997) *What Money Can't Buy: Family Income and Children's Life Chances*. Cambridge, MA: Harvard University Press.

Mulligan, Casey B. (1999) "Galton versus the Human Capital Approach to Inheritance," *Journal of Political Economy*, vol. 107, no. 6, Part 2: Symposium on the Economic Analysis of Social Behavior in Honor of Gary S. Becker, pp. S184–S224.

Mulligan, Casey B. (1997) *Parental Priorities and Economic Inequality*. Chicago: University of Chicago Press.

Mazumder, Bhashkar (2005) "Fortunate Sons: New Estimates of Intergenerational Mobility in the United States Using Social Security Earnings Data," *Review of Economics and Statistics*, vol. 87, pp. 235–55.

Nybom, Martin and Jan Stuhler (2016) "Heterogeneous Income Profiles and Life-Cycle Bias in Intergenerational Mobility Estimation," *Journal of Human Resources*, Vol. 51, no. 1.

Oreopoulos, Philip (2003) "The Long-Run Consequences of Growing Up in a Poor Neighbourhood," *Quarterly Journal of Economics*, vol. 118, pp. 1533–75.

Oreopoulos, Philip, Marianne Page, and Ann Huff Stevens (2008) "The Intergenerational Effects of Worker Displacement," *Journal of Labor Economics*, vol. 26, pp. 455–84.

Pérez-González, Francisco (2006) "Inherited Control and Firm Performance," *American Economic Review*, vol. 96, pp. 1559–88.

Quandt, R.E. (1972) "A New Approach to Estimating Switching Regressions," *Journal of the American Statistical Association*, vol. 67, pp. 306–10.

Rosen, Shewin (1981) "The Economics of Superstars," *American Economic Review*, vol. 71, pp. 845–58.

Rosenzweig, M.R. and K.I. Wolpin (1985) "Specific Experience, Household Structure and Intergenerational Transfers: Farm Family Land and Labor Arrangements in Developing Countries," *Quarterly Journal of Economics*, vol. 100, pp. 961–87.

Saez, Emmanuel and Mike Veall (2007) "The Evolution of High Incomes in Canada, 1920–2000," in A.B. Atkinson and Thomas Piketty (eds), *Top Incomes Over the Twentieth Century: A Contrast between Continental European and English Speaking Countries*. Oxford: Oxford University Press.

Saez, Emmanuel and Mike Veall (2005) "The Evolution of High Incomes in North America: Lessons from Canadian Evidence," *American Economic Review*, vol. 95, pp. 831–49.

Shea, John (2000) "Does Parents' Money Matter?," *Journal of Public Economics*, vol. 177, pp. 155–84.

Solon, Gary (2004) "A Model of Intergenerational Mobility Variation Over Time and Place," in Miles Corak (ed.), *Generational Income Mobility in North America and Europe*. Cambridge: Cambridge University Press.

Solon, Gary (2002) "Cross-Country Differences in Intergenerational Earnings Mobility," *Journal of Economic Perspectives*, vol. 16, pp. 59–66.

Solon, Gary (1999) "Intergenerational Mobility in the Labor Market," In Orley C. Ashenfelter and David Card (eds), *Handbook of Labor Economics, Volume 3A*. Amsterdam: Elsevier Science.

Solon, Gary (1992) "Intergenerational Income Mobility in the United States," *American Economic Review*, vol. 82, pp. 393–408.

Solon, Gary (1989) "Biases in the Estimation of Intergenerational Earnings Correlations," *Review of Economics and Statistics*, vol. 71, pp. 172–4.

Statistics Canada (1992) *Worker Turnover in the Canadian Economy: Separations and Hirings, 1978–1989*. Ottawa: Statistics Canada, Catalogue Number 71–539.

Statistics Canada (1988) *Developing a Longitudinal Database on Businesses in the Canadian Economy*. Ottawa: Statistics Canada, Catalogue Number 18–501.

Zimmerman, David J. (1992) "Regression Toward Mediocrity in Economic Structure," *American Economic Review*, vol. 82, pp. 409–29.

Towards Understanding Intergenerational Persistence, Slowly: Comments on "The Inheritance of Employers and Nonlinearities in Intergenerational Earnings Mobility" by Miles Corak and Patrizio Piraino

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Although the extent to which people object to income or wealth inequality varies, both within and across countries, some aversion to inequality *of opportunity* is almost universal.[1] Even in the United States where, at least until quite recently, aversion to income inequality was limited, equality of opportunity is generally held in high regard. Many still subscribe to the view famously expressed by President Franklin D. Roosevelt in his second Presidential Inaugural Address: "We know that equality of individual ability has never existed and never will, but we do insist that equality of opportunity still must be sought" (F. Roosevelt, 20 January 1937).

But how does one *measure* inequality of opportunity? Economists have often relied on (inverse) measures of intergenerational economic mobility: if everyone really had the same chances in life, there should be no systematic correlation between the economic status of parents and their children, when the latter are themselves adults. So if mobility is low – that is, if intergenerational persistence is high – then inequality of opportunity is likely to be correspondingly large.[2] And the most common indicator of persistence in the applied literature is the intergenerational earnings elasticity (IGE), typically estimated as the coefficient β in a regression of adult children's earnings on their father's (or mother's):

$$\log y_t = \alpha + \beta \log y_{t-1} + \varepsilon \tag{1'}$$

A low value of β indicates limited persistence in earnings across generations, and a more rapid regression towards the mean. A higher value indicates slower convergence towards the mean, a greater effect of parental background on child earnings, and greater inequality of opportunity. In a recent literature review, Brunori et al. (2013) report IGEs ranging from 0.071 in Denmark to 0.706 in South Africa – a ten-fold difference. The US and the UK have relatively

high elasticities, at 0.480 and 0.476 respectively: these are considerably higher than most European countries, but not as high as estimates for very unequal developing countries, such as Brazil (0.573) or Peru (0.600).

Miles Corak and Patrizio Piraino – both jointly and separately – are leading contributors to this literature. Corak's (2013) "Great Gatsby Curve", showing the positive association between cross-sectional income inequality and the intergenerational earnings elasticity for a range of developed countries, was prominently cited by Alan Krueger, in his capacity as Chairman of President Obama's Council of Economic Advisers, and quickly gained notoriety in the public debate in the United States. Piraino (2015) produced the IGE estimate for South Africa mentioned above.

In their paper for this volume ("The Inheritance of Employers and Nonlinearities in Intergenerational Earnings Mobility"), Corak and Piraino try to go beyond the simple *measurement* of intergenerational mobility, and to shed light on one particular *causal* mechanism through which the transmission of economic status across generations operates, namely what they call the "intergenerational transmission of employers".[3] Using a bespoke data set they constructed at Statistics Canada from individual income tax returns, they find that approximately 6 percent of Canadian males aged 30 to 33 in the period from 1994 to 1996 are employed primarily by the same firm that employed their parents approximately 15 years earlier, during the five-year span when they (the children) were aged 15–19. This proportion refers to "main employers" – that is, the firm that accounts for the majority of earnings (for both parents and children) during those periods. The incidence of *any* common employers between parents and children (between ages 16 and 33 for the adult children, and at any previous point for parents) is much higher, at 41 percent.

As the authors emphasize, the 6 percent figure for persistence of main employers is an average, and the rate is not constant across the distribution of father's earnings. In fact, the proportion rises fairly systematically with percentiles of that distribution, and spikes to 16 percent for the top centile. It contributes, therefore, to what this literature refers to as a nonlinearity in intergenerational earnings mobility.

I have three main comments on the chapter, which I greatly enjoyed reading. The first is on data, the second on theory and interpretation, and the third on the empirical strategy. The first thing to be recognized is the importance of assembling this matched father–son income tax data set, which allows the authors to look at the transmission of various aspects of economic advantage – including the identity of the employer – across generations of Canadian men. Although the data on covariates are relatively sparse, as the authors recognize, it is nevertheless a remarkable resource. Among other things, the source of the data means that we can be reasonably sanguine that the sample is also representative of the top of the distribution, which is unlikely to be the case with household survey data because of high rates of survey noncompliance in that

range. The much greater incidence of father–son transmission of employers at the very top, as compared to elsewhere in the distribution, adds to recent concerns with "opportunity hoarding" and the capture of privilege among North American elites.

My second comment concerns the interpretation of results in the light of the simplified Becker–Tomes theoretical framework described in section 1.2. The model that Corak and Piraino estimate empirically is effectively Eq. (1') above, albeit in a switching regression framework (equations 6 and 7 in their paper). But they interpret that equation as the reduced form of a model where the adult child's income (y_t) is a function of the child's human capital (H_t), own ability (E_t) and parental income (y_{t-1}) – their equation 4. The child's human capital is itself a function of own ability and parental income (their equation 3), and ability is autoregressive (equation 2). In other words, they see equations 6 and 7 as reduced-form estimates of the following model:

$$\log y_t = \gamma_t H_t + \lambda_t E_t + \phi \log y_{t-1} + u_t$$

$$H_t = \delta E_t + \theta \log y_{t-1}$$

$$E_t = \alpha_t + h E_{t-1} + v_t$$

Crucially, they interpret ϕ as a parameter capturing the intergenerational transmission of employers, a channel of transmission that is additional to the human capital channel ($\gamma_t \theta$) and to the genetic ability channel (operating through λ_t and h). $\phi > 0$ is interpreted as evidence of a direct effect of "family connections" in the labor market, operating *separately from and in addition to* any human capital and genetic transmission effects that take place earlier in the life cycle.

Whether $\phi > 0$ is assessed on the basis of the switching regression model in their equations 6 and 7. In essence, the population is assumed to consist of two groups – "those who draw on parental job contacts and those who do not". If β (from our equation 1') is significantly higher for the first group than for the second, then this is seen as evidence for rejecting the null hypothesis that $\phi = 0$, in favor of $\phi > 0$.

This seems a stretch. Consider an alternative model, in which there is no direct labor market effect of parental earnings on child earnings (that is, $\phi = 0$), but in which there is job market segmentation and the probability of getting a job in the higher-wage sector is an increasing function of the child's own human capital. For simplicity, let there be two sectors, 1 and 2 (indexed by j), with wages in 2 being higher than in 1. Also for simplicity, let the wage premium (ω) be purely additive. So the above model is replaced with:

$$\log y_{jt} = \omega I_{jt} + \gamma_t H_t + \lambda_t E_t + u_t, \ \omega > 0 \tag{2'}$$

$$I_{jt}=1 \text{ if } j=2; \; I_{jt}=0, \text{ otherwise}$$

$$H_t=\delta E_t+\theta \log y_{t-1} \tag{3'}$$

$$Pr(j_i=2)=g(H_{it}), \; g'(H_{it})>0 \tag{4'}$$

where I_{jt} is an indicator function that takes the value 1 when individual i (subscripts omitted) is employed in sector 2, and zero otherwise. Equation (4') indicates that the probability of i getting a job in 2 is increasing in his own human capital.

In such a model, there is only one channel of intergenerational transmission of advantage, namely a human capital channel. I have even suppressed the genetic channel through lagged ability, and there is no role for parental connections in the job market. Yet, the children of higher-wage parents tend to have higher levels of human capital (3'), and thus a greater chance of being in the high-wage sector (4'). They earn higher wages themselves, both because of sorting into the higher-wage sector (ω), and because of the usual returns to human capital (γ). Furthermore, if Sector 2 consists of a limited number of discrete employers, then I suspect that under fairly standard assumptions on the job-matching process, children of high-wage parents will be more likely to be employed by the same employers as their parents than those of low-wage parents – simply because a greater proportion of them is looking for jobs in that sector.

This is not to say that the channel Corak and Piraino hypothesize about – direct transmission of employers through the use of job connections, well after children are educated – does not exist. My observation is merely that the empirical strategy adopted in this paper – a switching regression estimation of a reduced-form equation (1') – is insufficient to identify it causally. Their results are also consistent with alternative models, such as one in which a parent that earns higher incomes because he is employed in a high-wage sector invests a lot in the education of his son, who then has a higher chance than the average child of ending up in the same sector as his father. Indeed, under additional standard assumptions on the matching process, this model could even generate a higher probability of having the same employer. In other words: identification of the structural parameter ϕ, of interest to Corak and Piraino, requires more empirical structure.

My third and final comment is really more of a question on the empirics. More specifically, it is a question about the interpretation of the maximum likelihood estimates of the switching regression when sample separation (between the subpopulations with and without parental employer contacts) is imperfect.[4] One striking feature of these results, reported in Table 1.4, is that the earnings elasticity appears to be *lower*, rather than higher, for children with

parental employer contacts, for all but the top 5 percent of the father's earnings distribution. This is in stark contrast to the results in Table 1.3, when the sample separation is assumed exogenous and known.

If I understand correctly, Table 1.3 shows that the IGE among children who are *actually observed* to have the same main employer as their fathers is higher than among those who have different main employers, across the distribution of father's earnings. The difference in elasticity between the two groups is greater at the top of the distribution, but positive throughout. It seems odd then that allowing for the indirect, reservation wage effect of parental employer contacts – which is what the imperfect sample separation estimation is intended to do – should reverse this result. One wonders whether this might be the result of an estimation algorithm where children who share main employers with their parents are allowed to be in the "no parental employer contact regime", as well as the reverse. In light of the theoretical suggestion that children with parental employer contacts might choose to work for that employer or take a better offer, it might have been preferable to restrict group membership so that all those who are actually observed to work for their parent's former employers remain in that regime – but some others are allowed to join it.

This last empirical query, however, is a relatively minor point. The concluding thought I would like to end with concerns the magnitude of the challenge inherent in causally identifying specific channels for the transmission of economic advantage across generations. It is one thing to estimate and compare correlations – that is, to *measure* mobility or inequality of opportunity. It is quite another to be able to claim that the causal contribution of a specific effect has been quantified.

This difficulty reflects the multiplicity of interrelated effects of parental characteristics and actions on their children. Genetic ability, monetary investments in children, non-monetary investments, and labor market connections, all potentially operate simultaneously and may be interdependent. This challenge has long been acknowledged in the literature (see, for example, Haveman and Wolfe, 1995), and it remains formidable. Corak and Piraino's chapter in this volume makes a nice contribution by extending the analysis in their 2011 JOLE paper, using a very interesting data set, constructed by the authors from Canadian tax records. But to make progress on the challenging task of identifying specific channels of transmission of economic advantage – in this case through parental connections with specific employers – one might need additional structure in the empirical estimation. Such structure might in turn require additional covariates to be observed in the data, so that the effects of parental income on education – or even certain measures of innate ability – might be jointly estimated. Thanks to work by Corak and Piraino, in this chapter and elsewhere, we have recently been learning a lot about intergenerational mobility, or the lack thereof. But there is still a very long way to go.

Notes

1. See, for example, Alesina, di Tella and MacCulloch (2004) on the differences between Americans and Europeans in their attitudes to inequality.
2. A recent literature has sought to measure inequality of opportunity more comprehensively, by accounting also for the role of other "pre-determined circumstances" beyond parental income – such as gender, race, place of birth, etc. But that literature confirms the central importance of family background as a key determinant of future advantage, and the two approaches are closely related. See Brunori et al. (2013) for a recent review.
3. The chapter is an extension of their 2011 paper (with that title) in the *Journal of Labor Economics*.
4. Here I suspend my more general disbelief, from the second comment above.

References

Alesina, Alberto, Rafael di Tella and Robert MacCulloch (2004) "Inequality and Happiness: Are Europeans and Americans Different?," *Journal of Public Economics*, vol. 88, pp. 2009–42.

Brunori, Paolo, Francisco Ferreira and Vito Peragine (2013) "Inequality of Opportunity, Income Inequality, and Economic Mobility: Some International Comparisons," Chapter 5 in Eva Paus (ed.), *Getting Development Right*. New York: Palgrave Macmillan.

Corak, Miles (2013) "Inequality from Generation to Generation: the United States in Comparison," Chapter 6 in Robert Rycroft (ed.), *The Economics of Inequality, Poverty and Discrimination in the 21st Century*. Santa Barbara, CA: ABC-CLIO.

Corak, Miles and Patrizio Piraino (2011) "The Intergenerational Transmission of Employers," *Journal of Labor Economics*, vol. 29, no. 1, pp. 37–68.

Haveman, Robert and Barbara Wolfe (1995) "The Determinants of Children's Attainments: a Review of Methods and Findings," *Journal of Economic Literature*, vol. 33, no. 4, pp. 1829–78.

Piraino, Patrizio (2015) "Intergenerational Earnings Mobility and Equality of Opportunity in South Africa," *World Development*, (67), pp. 396–405.

2

Do Nations Just Get the Inequality They Deserve? The "Palma Ratio" Re-examined

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> Inequality is a choice.
> **Joseph Stiglitz**

> I am my choices.
> **Jean-Paul Sartre**

Introduction

The main aim of this paper is to take another look at differences in within-nation income distribution in the current era of neoliberal globalisation. The emphasis will be on the study of middle-income countries with high degrees of inequality, especially those that have implemented full-blown economic reforms, such as those in Latin America and Southern Africa. I first examine statistically how unequal is inequality across the world in terms of overall inequality as well as of different groups within each country; then, I analyse why there is so much diversity in terms of distributional outcomes across the world. In doing so it would become apparent why the Gini has already served its purpose as a practical index of income distribution (i.e., how it has passed its sell-by date) and why a new index that I proposed in Palma (2011) – which was later christened the "Palma Ratio" by Alex Cobham and Andy Sumner[2] – could be more appropriate to understand issues such as those mentioned above.

The key questions I try to address here are: why is it that Latin America and Southern Africa have the huge inequalities they do? And why is it that while political oligarchies all over the world would be only too happy to lay their hands on a share of the national income as huge as that appropriated by their counterparts in Latin America and Southern Africa, only some seem able to get away with it? Among new entrants to this high-inequality club we now find some countries in the OECD, especially the US, and some in higher-income Sub-Saharan Africa. That is, there seems to be a new (post-Reagan and

Thatcher) distributive phenomenon in which now it is the highly-unequal middle-income countries (such as those in Latin America) that are showing *both* the more advanced and the more backward countries the shape of things to come. Many political institutions and distributive outcomes are indeed converging in this era of globalisation but, somehow unexpectedly, they are doing so towards features that are characteristic of unequal middle-income countries – especially in terms of their almost unlimited 'tolerance for inequality' – rather than towards those more civilised ones that characterised developed countries in their long post-FDR period, when income and wealth became more equally distributed. I shall conclude that in order to understand these new distributive dynamics what really matters is to try to comprehend the forces currently at work determining the income share of the rich – and what they chose to do with it!

2.1   How unequal is inequality across the world?

Let's start with a rather obvious point: using any measurement of inequality, what one finds across the world is that different economic structures and political settlements provide a remarkably wide variety of distributional outcomes (see Figure 2.1). Although this is a rather well-known phenomenon, once you really start thinking about it, it becomes difficult to think about anything else.[3] Not surprisingly, Ricardo said that the study of the distribution of income among the classes that contribute to the process of production (workers, capitalists and rentiers) is what economics was really about!

Among the countless issues arising from this graph, there are two that stand out. The first is that it confirms the existence of a huge range of inequality across countries *c.*2012 – in this case, from two countries with a Gini below 25 to two close to 65. And oddly enough, the two countries at each end of the distribution, Slovenia and South Africa, are not that dissimilar in terms of their level of economic development. The second is that middle-income (mineral-rich) Southern Africa and Latin America (and, increasingly, some higher-income Sub-Saharan countries) are clearly grouped at the wrong end of the inequality ranking.[4]

2.2   Inequality and income per capita

2.2.1   Evidence from the Gini

Figure 2.2 analyses income distribution across countries in the traditional way – i.e., vis-à-vis income per capita.[5] This figure indicates two basic trends. One is the increasing level of inequality found across Sub-Saharan Africa – from SS-A*** (countries with an income pc below US$ 650) to SS-A (those with one above US$ 2,000); that is, from Mali and Burundi, with a Gini of 33, to Zambia with one of 58 —, followed by lower middle-income Latin America (LA*), and
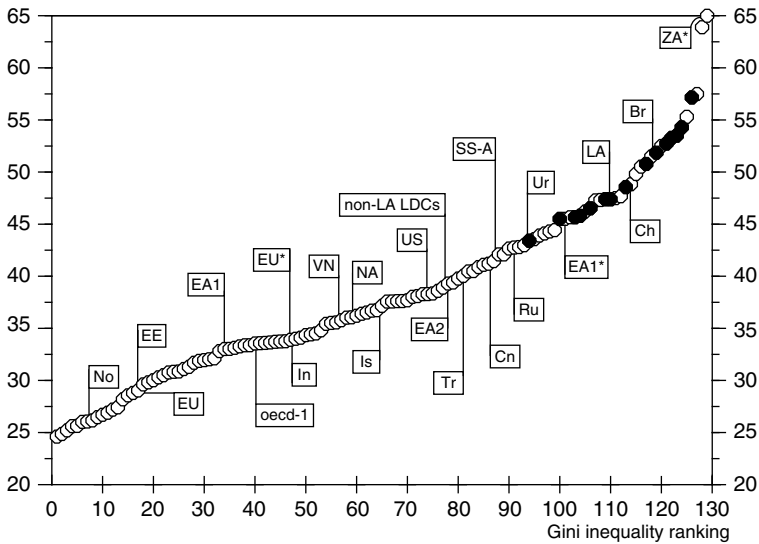
Figure 2.1   Gini indices of personal income distribution in 129 countries, *c*.2012
Notes:
- Highlighted countries are those of Latin America; the two countries with the highest Gini are South Africa and Namibia (with the former, literally, off the chart at 65.4).
- In the case of regions, the statistic used to measure centrality is the median. **Br**=Brazil; **Ch**=Chile; **Cn**=China; **EA1**=Korea and Taiwan; **EA1***=Hong Kong and Singapore; **EA2**=Indonesia, Malaysia and Thailand; **EE**=Eastern Europe; **EU***=Mediterranean EU; **EU**=rest of Continental Europe; **In**=India; **Is**=Israel; **LA**=Latin America[a]; **NA**=North Africa; **Ni**=Nigeria: **No**=Nordic countries; **OECD-1**=Anglophone OECD (excluding the US); **Ru**=Russia; **SS-A**=Sub-Saharan Africa; **Tr**=Turkey; **Ur**=Uruguay; **US**=United States; **VN**=Vietnam; and **ZA***=South Africa.[b] Unless otherwise stated, these acronyms will be used throughout the paper.
- For the sources of the data, see Appendix. Unless otherwise stated, these will be the sources of all figures in this paper.

[a] Here Latin America excludes Argentina and Venezuela due to unreliable data (especially in the latter); among the many issues behind this phenomenon, high and repressed inflation inevitably creates significant distortions in household surveys.
[b] If one uses for South Africa the World Bank-WDI dataset (instead of the OECD's), the Gini falls to (the still astonishing level of) 63.1.

then by middle-income Southern Africa (ZA, see the 90 degree angle ellipse); the other is a large distributional diversity among both middle- and high-income countries (see vertical ellipses).

The huge distributional diversity among middle- and high-income countries immediately casts serious doubt on the contemporary relevance (if it ever existed) of the traditional Kuznets' "Inverted-U" hypothesis in its cross-sectional version (see also Figures 2.11, 2.12 and 2.13 below for further analysis) – and with it, on the phoney excuse used by many academics, politicians and business people in some middle-income countries to justify high levels of inequality: that somehow 'inevitably' middle-income countries are bound to have a high degree of inequality – and that somehow 'inevitably' things are bound to get better on

their own accord as income per capita increases. So, it makes more sense (and it is much more efficient) to have a hands-off attitude towards inequality!

The diversity among middle-income countries is mostly the result of the contrast between Eastern Europe (both EE* and EE) and the Former Soviet Union excluding Russia (both FSU* and FSU) on the one hand – although in many of these countries oligarchs are doing their very best to 'modernise' their levels of inequality —, and middle-income Southern Africa and Latin America (both LA and LA*) on the other. Moreover, in all probability, many countries of the oil-producing Middle East for which there are no data would share the inequality heights of the latter two regions.[6]
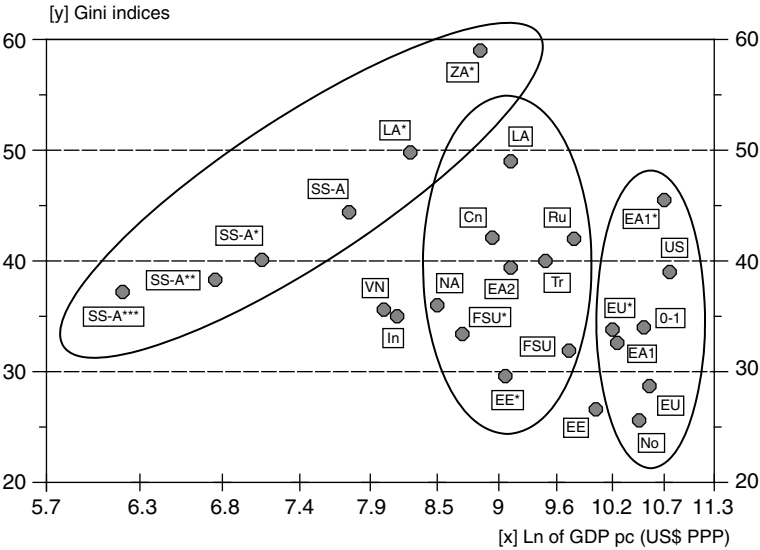
Figure 2.2   Gini indices and log of GDP pc, *c*.2012
Notes:
- Acronyms as in Figure 2.1, and **EE***= Eastern Europe with an income per capita below US$15,000; **EE**=those above that level; **FSU***=Former Soviet Union with an income per capita below US$10,000; **FSU**=those above that level (excluding Russia); **LA***= Latin America with an income per capita below US$8,000; **LA**= those above that level; **O-1**=OECD-1= Anglophone OECD, excluding the US; **SS-A***=Sub-Saharan Africa with an income per capita below US$650; **SS-A****=those between US$650 and US$1,000; **SS-A***= those between US$1,000 and US$2,000; and **SS-A**=those above that level. South Africa's actual Gini is 65.4.[a] **GDP pc**=Expenditure-side real GDP per capita (PPPs) in 2011. In this and following graphs, the range of the horizontal axis corresponds to the actual range of GDP pc in the sample.
- *Sources*: for income distribution as in Appendix; and for GDP pc, the Penn World Table (2014; PWT8.0). Unless otherwise stated, throughout the paper 'US$' will refer to this dollar.
[a] In this and following graphs, 'middle-income (mineral-rich) Southern Africa' is proxied by South Africa, as there are only data for this country and Namibia. This is so because the last reported data for Botswana (Gini of 61) only refers to 1994 (so it is not included in my sample; see Appendix). At the same time, the increasing number of close inequality-relatives in the region (e.g., Angola and Zambia) still do not qualify properly as 'middle income'.

Moreover, and perhaps ironically, some of the worst levels of middle-income inequality are found in countries characterised by the consolidation of democracy, such as those in Latin America and South Africa – a process that has often been led by so-called "centre-left" political coalitions. From this perspective, the common thread in them is that although many economic and political institutions have changed in the recent past – in some significantly – the narrow interests of the elite clearly have not. In the case of Latin America, for example, the unique comparative advantage of its oligarchies seems to lie precisely in being able to use different institutions (often quite astutely) – and in being flexible enough to enlarge its membership to include individuals coming from these 'centre-left' coalitions – in order to keep achieving their fairly immutable goals. In other words, few oligarchies in the world have shown such skills in their struggle for the "persistence of elites" despite the otherwise substantial institutional change. This brings us to the complex issue of "persistence and change in institutions", and in particular to the so-called "iron law of oligarchies" – i.e., how dysfunctional institutions are sometimes so effective in creating incentives for their own re-creation (Acemoglu and Robinson, 2006). And South Africa seems to be following now the same route with a vengeance.

In the case of Chile, for example, a recent study on tax returns (López, Figueroa and Gutiérrez, 2013) shows that after five so-called 'centre-left' governments since the return to democracy in 1990, the top 1 percent is still able to appropriate about one-third of all income (32.8 percent – in Korea this is just 12 percent), with the top 0.1 percent getting one-fifth (19.9 percent – in Korea this is 4.4 percent), and the top 0.01 percent, corresponding to individuals belonging to only 300 families, acquiring more that one-tenth of the total (11.5 percent – in Korea this is 1.7 percent).[7] And income distribution data from the same source (tax returns) indicate that some high-income OECD countries are now succeeding in their "reverse catching-up" efforts. As a result – and in contrast to Marx's famous prediction – now it is the highly-unequal middle-income countries that show the more advanced ones 'the image of their own future'.

For example, in this new "reverse catching-up" phenomenon it is not the Latin American labor markets or tax structures that are evolving to catch up with those of (formerly more enlightened) developed countries, but the other way round – surely the Bush brothers had an advisor from across the Rio Grande to help them engineer the electoral fraud in Florida during the 2000 Presidential Election... The most clear-cut case of this phenomenon is what is happening with the distribution of income in the USA, with the top 1 percent rapidly "catching up" with its Latin counterparts – jumping from being able to appropriate less than 10 percent of national income before Reagan, to 24 percent at the time of the onset of the current financial crisis (now it is back to about that level – and is rising). In fact, the top 1 percent in the US captured

just over two-thirds of the overall economic growth of real incomes per family over the period 1993–2012. Furthermore, "the share of the top decile in 2012 was equal to 50.4 percent of overall income, a level that was higher than in any other year since 1917 – even surpassing 1928, the peak of the stock market bubble in the 'roaring' 1920s" (Saez, 2013). In the era of globalisation we are all indeed converging, but not precisely towards the promised land of the Washington Consensus.[8] As someone from my part of the world would be tempted to say, "welcome to the third world!"[9]

2.2.2   Peering into the Gini

One issue I addressed in my 2011 paper is that the Gini, as a summary inequality statistic, is particularly obscure regarding some of the dynamics that are happening 'inside' each country's distribution. And there are obviously important benefits to focusing on dynamics *within* those distributions (see Figures 2.3 to 2.7).

Starting with D10, Figure 2.3 indicates that there is a particularly close correlation between the distributional geography of the Gini (Figure 2.2) and that of the income share of the top decile. In turn, Figure 2.4 shows the same phenomenon for the regional distributional structure of the income share of the bottom 40 percent (D1–D4), but now one which is the mirror image of that of
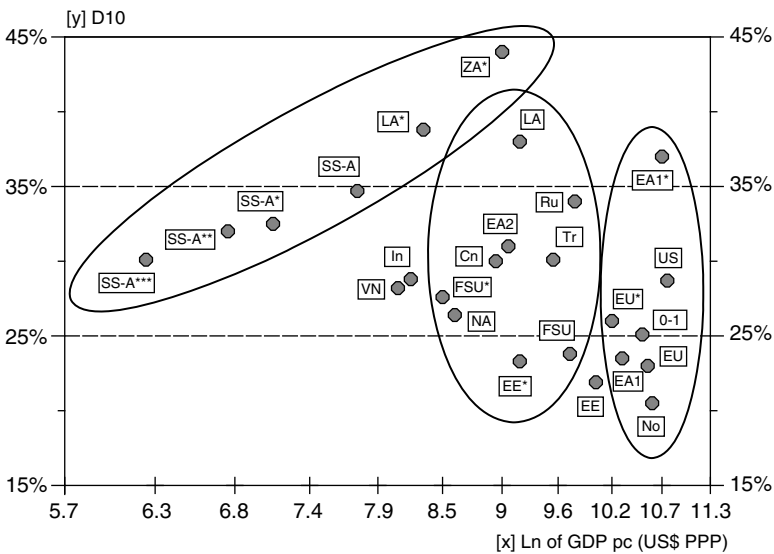
Figure 2.3   Income shares of decile 10 and log of GDP pc, *c.*2012
Note:
• South Africa's actual income share for D10 is 54.4%. Acronyms as in Figures 2.1 and 2.2.

the Gini (and D10), with Latin America and middle-income Southern Africa in a similarly iniquitous position – followed these days by Singapore and Hong Kong (EA1*) on the high-income side, by Russia (Ru) on the middle-income one, and by many Sub-Saharan countries with an income per capita above US$ 2,000 (SS-A) on the low-income side.

It is clear, therefore, that the Gini scene for regional inequality (Figure 2.2) presents an accurate reflection of the distributional disparities across countries at both ends of the income distribution (D10 and D1–D4). But what about *the other half* of the population in each country – that *between* D10 and D1–D4? Figure 2.5 shows one of the key contributions made in my 2011 paper: the distributional picture changes completely when one looks at the 50 percent of the world's population located within D5–D9 – the 'middle and upper-middle classes', sometimes called the "administrative classes" in institutional economics. Now the distributional geometry suddenly changes from one of huge diversity to one of a surprisingly similarity.

Evidence from Figure 2.5 indicates the striking phenomenon of a remarkable degree of *homogeneity* across regions/countries regarding the share of income that the middle and upper-middle classes are currently able to appropriate. Perhaps equally striking is the fact that no one seems to have noticed this before. The homogeneity in the middle and upper-middle is most prominent among rich countries – that is, no more diversity here (Hong-Kong apart), as
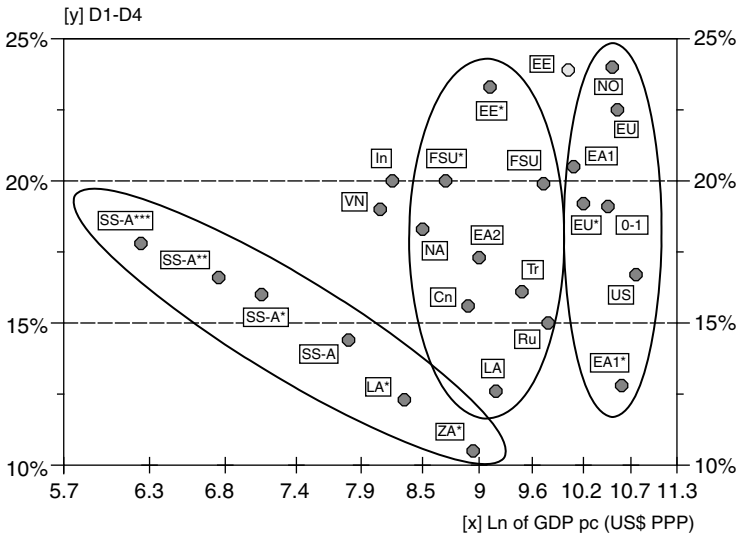
Figure 2.4 Income share of the bottom 40% and log of GDP pc, *c.*2012
Note:
• South Africa's actual income-share for 'D1–D4' is 6.4%. Acronyms as in Figures 2.1 and 2.2.
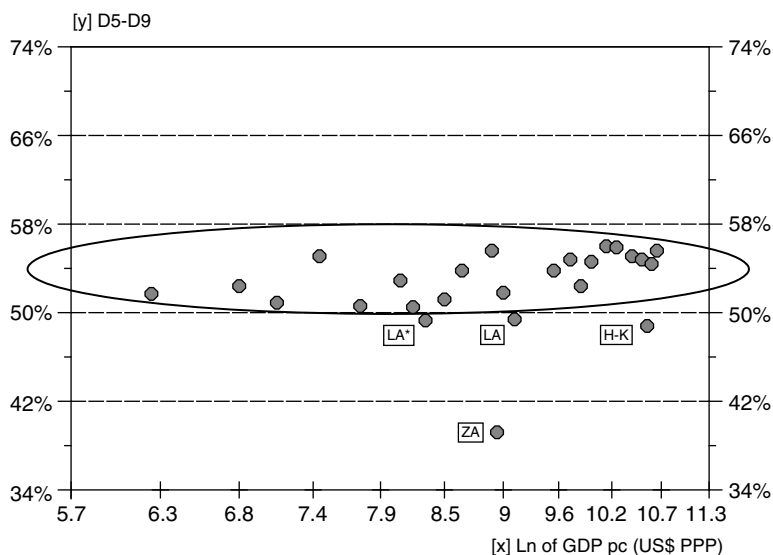
Figure 2.5   Income shares of the 'middle and upper middle' (D5–D9) and log of income pc, *c*.2012

Note:
- Acronyms as in Figures 2.1 and 2.2, and **H-K**=Hong Kong. Countries, group of countries and regions are the same as in previous figures.

opposed to the huge diversity found in the Gini and in the top and bottom deciles. Moreover, Eastern Europe (both EE and EE*), and countries from the former Soviet Union (both FSU and FSU*) are no longer outliers; and Latin America's median country in both sub-groups (LA and LA*, currently at 49.3 percent and 49.2 percent, respectively) are just about to join the '50/50 club' – 50 percent of the population getting 50 percent of the national income (or just above). In fact, even Hong Kong is not that far away (48.8 percent), and Singapore (its partner in EA-1*) already qualifies (51.8 percent). Only South Africa, with Namibia, Zambia and most likely Botswana are living in a world entirely of their own in this respect.[10]

The case of South Africa is particularly remarkable as it has simultaneously the second *lowest* aggregate share for D5–D9 in the whole sample (Namibia is "top 1") while having the *highest share in the world* for one of the components of this D5–D9 group: its 'civil-service-crowded' D9.[11]

As is evident in Figure 2.5, the current high degree of homogeneity in the income share of D5–D9 is reflected in the fact that its measures of central tendency are almost identical: the harmonic mean is 51.8 percent, the average is 52.1 percent, the median is 52.5 percent, and the mode is 52.6 percent. In turn, the coefficients of variation of the top 10 percent and the

bottom 40 percent are almost four times higher than the one of this group (see Table 2.1).

Furthermore, the current similarity in the income shares of D5–D9 across countries is even more remarkable in the 'upper middle' 30 percent of the population (D7–D9) (see Figure 2.6).

In this case, the overall homogeneity is even more intense – and now Latin America has already made it (both LA and LA*), and also Hong Kong.[12] The measures of central tendency are practically identical, with the harmonic mean at 36.7 percent, the average at 36.8 percent, and the median at 36.9 percent – and the coefficient of variation is just one-fifth those of the other two groups at the tails of the distribution (it is difficult to believe that this is just a twist of fate).[13]

As I mention in the 2011 paper (and discuss in more detail in Palma, 2014) – and confirmed here with data for *c.*2012 – it seems that a schoolteacher, a junior or medium-level civil servant, a young professional (other than economics graduates working in financial markets), a skilled worker, a middle manager, or a taxi driver who owns his or her own car (London apart), all tend to earn at the moment the same income across the world – as long as their incomes are normalised by the income per capita of the respective country.

If such homogeneity across the world were also to take place among the income share of the top 10 percent – let alone for the top 1 percent – at least
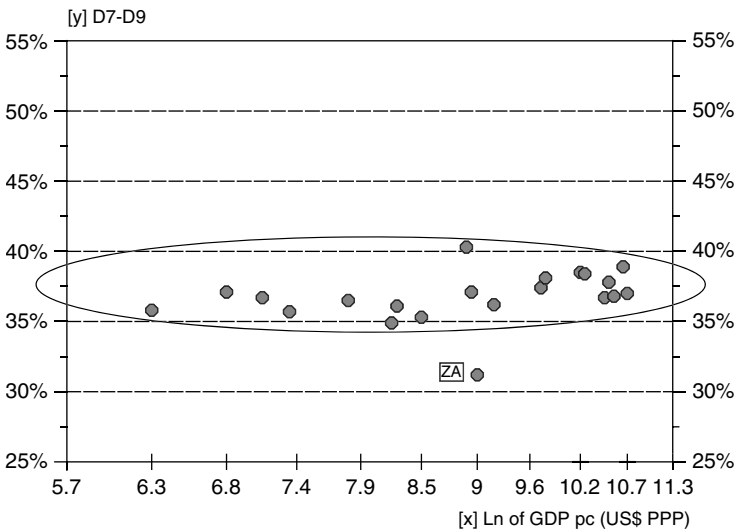

Figure 2.6 Income shares of D7 to D9 and log of income pc, *c.*2012
Note:
• Acronyms and sources as in Figures 2.1 and 2.2. Countries, group of countries and regions are again the same as in previous figures.

for the Latin American oligarchies (as well as for that of the US), this would be analogous to communism!

Basically, in middle-income countries with high levels of inequality, what is really happening is that while the top 10 percent has succeeded in appropriating a level of income which is similar *in absolute terms* to those of their counterparts in rich nations (see also Sutcliffe, 2001, and Milanovic, 2010), the middle and upper-middle have done so *in relative terms* (shares in national income). Meanwhile, the bottom 40 percent has a very – very – long way to go, as currently their income per capita is more akin to the average income of Sub-Saharan African countries.[14]

The key issue here is that in these so-called 'middle-income countries', only those in the middle and upper middle have 'middle-income' earnings – as those at the top have already succeeded in a premature catching up with their counterparts in rich nations, while those in the bottom 40 percent are still facing the challenge of a *massive* 'catching-up' – just to get to 'middle-income' levels. "Convergence", therefore, seems to be a far more complex phenomenon than is implicit in neoclassical models.[15]

Another issue that is important to clarify, as this aspect of my ideas has led to misunderstandings, is whether this homogeneity in the middle and upper-middle implies that distributive outcomes are basically the end-result of a battle of the tails, from which the middle and upper-middle are somehow able to shield themselves. In other words, the key question in this respect is whether those in D5–D9 are simply spectators of a rough distributive game played by the top and bottom struggling for their share of the other half – like Roman plebs enjoying the (distributional) circus from the safety of their seats – or whether they are very much part of the distributional struggle (down in the arena, rather than up in their seats). As I discuss in detail in my 2011 and 2014 papers, there is no 'lack of history' in how these middle and upper-middle groups have converged towards the '50–50 rule' (their half of the national income), and in how now they have a hard struggle ahead to keep it – as they have to face these days the new (post-neoliberal-reform) rampant voracity of the top income groups.

That is, the current '50–50' position of the middle and upper-middle is not the result of some sort of prophecy of the type "Thou shalt keep half of the overall product of the sweat of the collective brow; no more, no less," but rather a somehow surprising phenomenon in an otherwise very diverse set of distributional outcomes – the roots of which have some components which are still an intriguing mystery.

Due to the lack of space, I can only summarise here one of my main hypotheses regarding this contrast between the homogeneity in the middle and upper-middle vs the heterogeneity in the tails: basically (and in terms of after taxes and transfers income distribution data), while across the world the bottom

40 percent of the population has *very* different capacities to appropriate the output generated by their energy, creativity, and skills – that is, it has very different degrees of property rights over their human capital and efforts (and, therefore, over the value of their marginal productivity), the middle and upper-middle (especially the "administrative classes") seem to have both a similar relative level of productivity across the world (i.e., relative to the income per capita of the country), as well as a similar degree of property rights over their skills. Finally, although the top 10 percent has a similar strong capacity to appropriate the pre-tax output of its skills across the world, it nevertheless has a very *different* one in different countries when it comes to its post-tax share, as well as its capacity to extract that of others (especially that of the bottom 40 percent). If this is the case, these phenomena would explain not only a good deal of the distributional diversity across countries, but also the different degrees of incentives to acquire skills found among the bottom 40 percent across the world. For example, in highly unequal middle-income countries, what would be the point for the bottom 40 percent of making the effort to acquire further skills if the additional output is bound to be fully (or almost fully) appropriated by others?[16] This phenomenon, reflected in the coexistence of growing productivity with stagnant (or nearly stagnant) blue-collar wages – an anti-efficiency wage scenario – which has characterised many economies in Latin America since their economic reforms (see Palma, 2005 for the case of Mexico), is becoming common in high-income countries as well, especially in the US.

Regarding the middle and upper-middle, in order to be able to get their (relatively similar) shares of income they have had to form different types of political alliances to help them get (and defend) their half. And when these politico-economic alliances have broken down, the share of D5–D9 has changed significantly. For example, while in Latin America the middle classes seek to defend their share of income with different forms of alliances with the elite, in India the "administrative classes" do so mostly via clientelist alliances with the poor (which gives them the political power to mediate in the different conflicts between the capitalist elite and the state).[17] In turn, in South Africa the fortunes of the middle classes appear to be uniquely different as the dominant (redistributive) political alliance has turned out to be that between the new 'empowered' elite, the upper stratum of the new administrative classes, and the bottom 40 percent. While the latter may have gained a lot in political terms, in distributional ones this alliance has only succeeded in increasing the income share of the top (both D10 and D9) at the expense of the middle.[18]

In sum, what it is crucial to remember is that the regional distributional structure currently suggested by the Gini only reflects the income disparities among half the world's population – those at the very top and at the bottom of each country's distribution. It tells us little (or rather nothing) about the remarkable distributional homogeneity of the other half.[19] This raises serious questions

regarding how useful the Gini index is as an indicator of overall income inequality, especially because (from a statistical point of view) the Gini is more responsive to changes in the middle of the distribution.[20] That is, the most commonly used statistic for inequality is one that is best at reflecting distributional changes where changes are least likely to occur! As a result, the overall geometry of inequality as shown by the Gini may well distort the nature of income disparities across countries, and (most importantly) obscure its fundamentals.

The problem is that the most common alternative inequality statistics, those that have the advantage of being more responsive to changes at the top and bottom of the distribution – such as the Theil, tend to have the huge disadvantage of being extremely vulnerable to measurement errors precisely at the tails of the distribution (and, above all, at the top; see ibid.).

As a result, given the remarkable homogeneity in the middle and upper-middle (see especially Table 2.1), I suggested in my 2011 paper that instead of the Gini we should use a new inequality statistic – one that simply indicates the ratio of the income share of the top 10 percent over that of the bottom 40 percent. The obvious advantage of this inequality indicator is that it measures inequality where inequality exists; it is also simple, intuitive, transparent and particularly useful for policy purposes – that is, especially helpful for policy targeting, as for anyone aiming at lowering inequality the implications of this ratio are as crucial as they are straightforward. In other words, the mere fact of its simplicity – that is, one that purposely avoids all the often redundant (and even counterproductive) algebraic sophistication of alternative inequality statistics – becomes its main strength.[21] It is also better at highlighting the unique voracity of some oligarchies and, in particular, their capacity to get away with it (see Figures 2.12 and 2.13 below). It was later called the "Palma Ratio" by Alex Cobham and Andy Sumner.

Table 2.1 presents a set of statistics for the whole sample (129 countries), confirming the huge contrast between the homogeneity in the middle and upper-middle of the distribution of incomes across the world and the heterogeneity at the tails.[22]

Of all the statistics in Table 2.1, the coefficient of variation is, of course, the one that really matters: it best shows the current distributional contrast across countries between the homogeneous middles and the heterogeneous tails – as already mentioned, the coefficients of variation for both D10 and D1–D4 are nearly four times greater than that for D5–D9. Furthermore, they are five times larger than that for D7–D9.[23] This suggests that regardless of the per capita income level of the country, the characteristics of the political regimes, the quality of their institutions and of their educational system, the economic policies implemented, the structure of property rights, or whether or not they belong to countries that managed to get their prices 'right', their institutions 'right', or their social capital 'right', in almost all countries the 50 percent of the population

Table 2.1   Measures of centrality and spread for income groups, *c*.2012

	H Mean	Median	Average	st dev	c of var
D10	29.1	29.4	30.5	6.9	0.227
D1–D4	16.4	18.0	17.5	4.0	0.230
D5–D9	51.8	52.5	52.1	3.4	0.066
D7–D9	36.7	36.9	36.8	1.7	0.047

• H Mean = harmonic mean; st dev = standard deviation; and c of var = coefficient of variation.

located in 'D5–D9' seems to have currently the capacity to appropriate in the distributional struggle about half the national income. This is even clearer in the case of those in D7–D9 regarding their just over one-third of the pie.[24]

In turn, for the bottom 40 percent characteristics such as those mentioned above can make the difference between getting as much as one-quarter of national income (as in the Nordic countries and in some countries of Eastern Europe), or as little as a tenth – or even less, as in South Africa, Namibia and Honduras (6.4 percent, 8.2 percent, and 9.3 percent, respectively).

Finally, for D10 the sky is (almost) the limit, with some oligarchies managing to appropriate a share above 50 percent of national income (as in Namibia and South Africa), or close to it (as in Zambia, the Central African Republic and Honduras).

But as any summary statistics can hide diversity among its members, let's look at this contrast between the homogeneity in the middle and upper-middle and the heterogeneity in the tails in the whole sample; see Figure 2.7.

It seems patently obvious that the huge diversity of distributional outcomes across the world is almost entirely due to different shares for the top 10 percent and the bottom 40 percent.

2.3   Is the share of the rich what it's all about? The Palma Ratio

Obviously, a lot more research needs to be done on the forces shaping the income shares of different groups along such different paths – particularly in such opposite 'centrifugal' and 'centripetal' directions (D10 and D1–D4, and D5–D9, respectively). Remarkably, this simple observation does not seem to have been noticed before. Moreover, it seems odd that most of the recent literature on 'income polarisation' has produced indices that emphasise distributional changes around the middle of the distribution, exactly where there is greater income-share homogeneity. Wolfson, for example, started the whole 'polarisation' literature by developing an index that cuts the Lorenz curve right in the middle![25] In fact, the higher the degree of homogeneity in the middle and upper-middle of the distribution of income, and the higher
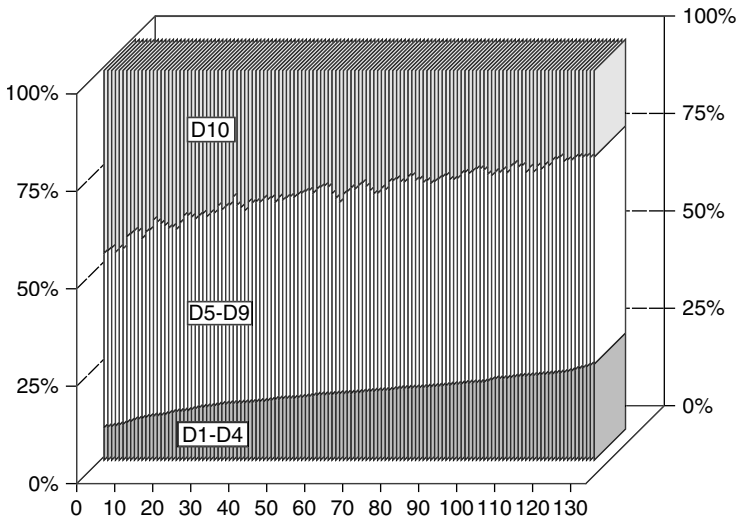
Figure 2.7   The homogeneous middle vs. the heterogeneous tails in 129 countries, *c*.2012
Note:
• Countries are ranked according to the income share of D1–D4.

the degree of heterogeneity at the very top and bottom, the more statistically and analytically meaningful simple income ratios (like that suggested by the Palma Ratio) become as indicators of distributional disparities across the world.[26] In fact, it could even be argued that as the sum of all shares has to be equal to 100, the '50–50 rule' implies that the share of decile 10 could suffice as an inequality statistic for the whole distribution. This is precisely the reason why the subtitle in my 2011 paper stated that "the share of the rich is what it's all about". However, I believe that the ratio of the two components that creates diversity in inequality (the share of decile 10 over that of deciles 1 to 4) is a more informative statistic of inequality, as it highlights better the role of the two 'offending parties'.[27]

One interesting result of this homogeneity in the middle and upper-middle regarding the Gini; as Tony Atkinson remarked in his comments on a draft of my 2011 paper, is that if D5–D9 gets half the income, then the Gini coefficient (in percentage points) is 1.5 times the share of the top 10 percent (in percentage points) minus 15. In this case the Gini has a maximum of 60 percent (although it may be slightly larger on account of inequality within the groups, since this calculation linearises the Lorenz curve).

Figure 2.8 shows the inequality ranking of the 129 countries in the sample according to the Palma Ratio.

The most important stylised fact revealed by Figure 2.8 – a phenomenon that was not evident in the Gini ranking of Figure 2.1 – is that inequality across the
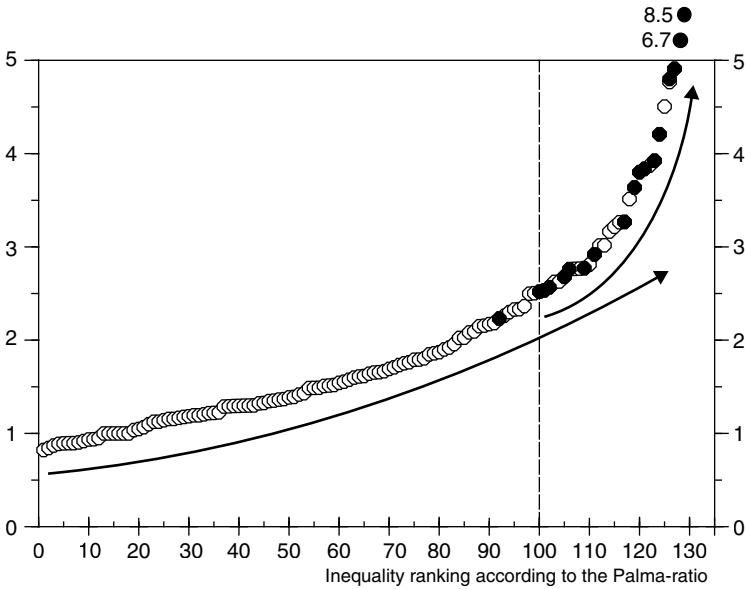
Figure 2.8 "Palma Ratio" of personal income distribution in 129 countries, *c*.2012
Note:
• Highlighted countries are those of Latin America and (mineral rich) middle-income Southern Africa. The last two, Namibia and South Africa, are (again) literally off the chart![a]

[a] If one uses the World Bank-WDI dataset (instead of the OECD's), South Africa's 'Palma Ratio' falls to (the still dismal level of) 7.1 – in fact, since the Fall of Apartheid in 1994 and the beginning of democracy, inequality in South Africa has increased among *all* races and geotypes (see Leibbrandt, et al, 2010; and Palma, 2011).

world, as measured by this ratio, first increases relatively slowly, and almost linearly, only to change gear when Latin American countries enter en masse (around ranking 100); to then increase rapidly and geometrically.[28] In fact, as the lower arrow in the graph indicates, had the 'steady pace' observed among the first 100 countries continued into the last quarter of the sample, the most unequal country in the world today would have posted a Palma Ratio of about 3 rather than one that is nearly three times as much![29]

2.4 Income distribution and education: a more multifaceted relationship?

Among the many analytical issues that need to be re-examined following the detection of this remarkable stylised fact – the distributional homogeneity in the middle and upper-middle – the intriguing relationship between 'human capital' and income distribution is a prime candidate, as this relationship is likely to be far more complex than the rather straightforward one usually assumed in

mainstream economics and UN reports.[30] According to this approach, education – both in terms of equality of opportunities and of overall excellence – is not just one of many variables in the determination of income inequality, but *the* crucial one. However, in all regions of the world (developed and developing, Latin American and non-Latin American), the top income decile is made up of individuals with relatively high levels of education, while those in the bottom four deciles have either relatively little schooling, or (in the more advanced countries) schooling of a very doubtful quality. So why do these two relatively *homogeneously* 'educated' groups (one homogenously 'highly-educated', the other homogenously 'little-educated') have the greatest distributional *diversity* across countries? In turn, if most of the world's educational-diversity (in terms of both quantity and quality) is found among the half of the population between D5–D9 – for example, in terms of the share of the population with secondary and (especially) tertiary education – why does one find extraordinary *similarity* across countries in the shares of national income appropriated by this educationally highly *diverse* group?

Chile, for example, with a gross tertiary enrolment of no less than 71 percent (World Bank-WDI, 2015; together with Argentina and Venezuela a country that has the largest tertiary education enrolment among all non-communist and non-ex-communist developing countries in the world), the 30 percent of its population between D7–D9 are currently only able to appropriate the 7th-*lowest* income share in the whole sample (33.7 percent; with only Namibia, South Africa, Zambia, Rwanda, the Central African Republic and Guatemala posting an even lower share). In fact, some countries with income shares for D7–D9 similar to Chile have rather different tertiary enrolment rates – in fact, some in single digits. That is, Chile, with a 71 percent rate for gross tertiary enrolment ends up generating an income share for D7–D9 similar to that of the Central African Republic (with an enrolment of just 3.1 percent), and Rwanda (7.1 percent). Perhaps the "it's all about education" distributive-brigade should go back to the drawing board.

And despite the fall in Chile's overall rates of inequality between 2003 and 2011 (the Gini fell from 0.55 to 0.51, while the Palma Ratio fell from 4.1 to 3.3), the share of D7–D9 remained invariant in its particularly low levels, despite the rapidly growing numbers of new graduates entering the labor market. So, in terms of the role of education in the distribution of income it is important not to lose sight of the multifaceted nature of the relationship between increased 'equality of opportunities' and of better quality in education, and increased distributional-equality – and of the fact that education (or any other factor that may be influencing the distribution of income for that matter) can only operate *within specific institutional dynamics*. Needless to say, a lot more work is urgently needed in this challenging area, and one that would recognise properly the huge complexity of the relationship between education and inequality.

2.5   Why is the mainstream of the economic profession so fixated on changes in the middle of the distribution – and so reluctant to analyse changes at the top?

With the above evidence it is somehow perplexing to find that both the early Washington Consensus' explanation of high inequality (1960s and 1970s), and the one developed later in the 1990s, were somehow obsessed with blaming 'excess' inequality in Latin America with what was supposedly going on in the *middle* of its distribution. This phenomenon, which characterised for so long most mainstream distributional theories, has begun to change only very recently thanks to the new tax-based distributional data produced initially by Saez, Piketty and Atkinson (among others). Until then, mainstream theory was surprisingly uninterested in what was going on at the top; as John Kenneth Galbraith once remarked at the time, "of all classes the rich are the most noticed and the least studied" (1977: 44). It now looks as though a certain cat is finally out of a certain bag.

For example, those of my generation will remember the 1960s and 1970s mainstream hypothesis concerning the supposed inequalising role of import-substituting industrialisation (ISI); the emphasis of the analysis was placed on the distortions created by ISI, leading to "labor aristocracies" in regions such as Latin America. This hypothesis was later recycled in the 1990s in an attempt to explain away the increased inequality that followed economic reforms; now the focus was on import liberalisation creating problems such as 'skill-biased technical change'. But the myopic focus was always the same: to explain diversities of inequality across the world the emphasis in the analysis had to be placed on issues explaining (supposed) diversities between the middle and the bottom of the distribution, not those that would help us understand cross-country diversities at the top.

In the case of the "labor aristocracy" hypothesis, widely invoked by the emerging Washington Consensus of the time, it was argued that one of the main causes of inequality in Latin America was the price distortions associated with ISI. These were supposed to have misaligned the values of marginal productivities across sectors, allowing for artificially high wages in manufacturing (à la Stolper and Samuelson). That is, wage differentials were much larger than if free trade had predominated.[31] However, there was little then (as now) to differentiate Latin America from the rest of the world – developing and developed, ISI and non-ISI – in terms of the income shares among groups that would include 'aristocratic' and 'non-aristocratic' labor. Furthermore, as the case of Chile indicates (see Figure 2.9), the abrupt end of ISI in 1973 (point number 2 in the graph) had little or no impact on Q3/Q2, an income-share ratio that could be used to proxy wage differentials between 'aristocratic' and 'non-'aristocratic' labor (see line at the bottom of the Figure).

In fact, Q3/Q2 ended up in 2010 exactly where it started in 1957, even though trade and industrial policies, especially tariffs – and almost everything
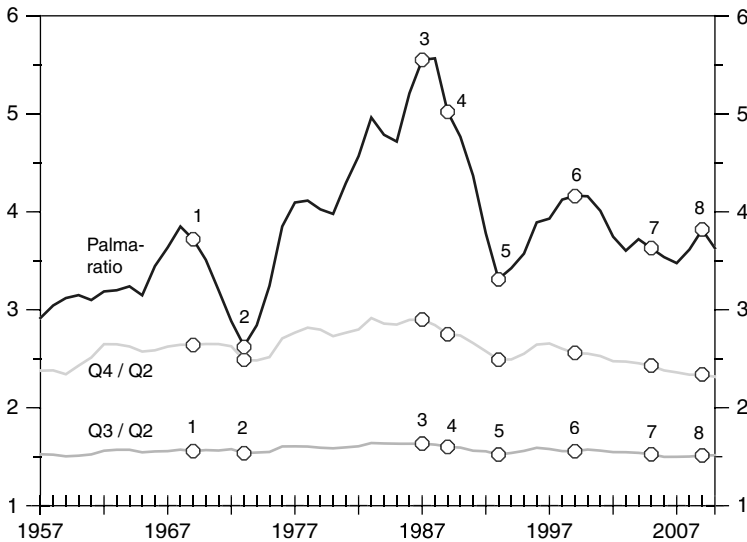
Figure 2.9   Chile: Palma Ratio, Q4/Q2 and Q3/Q2, 1957–2010
Note:
- **Q**=income-quintiles. **1**=election of Allende; **2**=Pinochet's coup d'état; **3**=the year Pinochet called a plebiscite seeking a mandate to remain in power for another eight years; **4**=first democratic government (centre-left coalition) that took office in 1990 after Pinochet lost his 1988-plebiscite (and was forced to call presidential elections at the end of 1989); **5**=second democratic government (same centre-left coalition, but a return to more 'free-market' distributional policies); **6–7** and **7–8**=next two governments by the same coalition. 3-year moving averages.
- *Source*: calculations done by Pamela Jervis and myself using the FACEA (2012) database. Chile is one of the very few countries in the developing world that has a relatively robust set of historical data for such a long period of time – at least for the 'Greater Santiago', where almost 40 percent of Chile's population live. 2010 was the last year for which data were available.

else – could not have been more different (and 'liberalised') by then. The remarkable stability of this ratio between the ISI and post-ISI periods (despite the fact that both development strategies took particularly extreme forms in Chile) – as opposed to what was happening at the tails of the income distribution – contradicts the above mentioned hypothesis (unless one were to believe that the ISI wage-distortion was immediately and perfectly matched by the post-ISI increased wage differentials due to shortages of skilled labor).

The latter proposition (one that yet again tries to explain high inequality by looking at diversities between the middle and the bottom of the distribution) was developed by many mainstream economists in the post-ISI liberalisation-cum-globalisation era; it was basically a recycled version of the previous (distortions-due-to-ISI vs an ideal world without ISI) approach. It tried to explain away the (supposedly) unexpected increase in inequality in many developing countries after the implementation of policies aiming at trade and financial opening and neoliberal economic and political reforms in general.

These increases in inequality, following greater integration into the world economy by now 'flexible' economies, were the exact opposite of the unambiguous predictions made by those circling around the Washington Consensus at the time.[32] Hence, it was argued that these (previously unforeseen) neoliberal-reform-related increases in inequality were taking place because although trade liberalisation had had the highly positive impact of bringing in higher imports of modern capital goods with latest technologies embodied in them, these (regrettably) were intensive in the use of skilled workers – a scarce factor in most LDCs. As a result wage differentials between skilled and unskilled workers had increased, and so had inequalities. However, as is obvious from Figure 2.9, what really differentiates Latin America's inequality was again not located where skilled and unskilled workers are likely to be located, but more towards the tails of the distribution of income. Then, even if import liberalisation did allow for an increase in the importation of capital goods which introduced new production techniques that made intensive use of skilled labor, evidence suggests that this does not alone account for much of the region's increased inequality after economic reforms.[33]

In fact, assuming that skilled workers – that is, those able to handle new technologies – are located as high as Q4, while unskilled ones in the formal sector are probably relegated to Q2, Figure 2.9 indicates an intriguing scenario: first, during the immediate post-ISI period (a highly inequalising period between 2 to 3 in Figure 2.9, which was characterised by radical reforms) the Q4/Q2 ratio did actually increase. However, this period was actually characterised by low (instead of high) demand for skilled workers due to remarkably low levels of investment (on average, just 16.9 percent of GDP), and low levels of imports of new capital goods (see Palma, 2012) – leading to little technological change, productivity stagnation (on average output per worker grew just at 0.3 percent p.a.), and a stagnant or even negative TFP growth (according to how one measures it; see Fuentes, Larraín and Schmidt-Hebbel, 2006). In turn, afterwards – during the less fundamentalist reform-period, which included the return to democracy and the 'roaring' '90s (from 3 to 6 in Figure 2.9) – wage differentials between skilled and unskilled workers (proxied by Q4/Q2) actually *decreased* from 3.1 to 2.5, despite high demand for skilled workers. This was due to high investment rates (high at least by Latin American standards – 24 percent of GDP), and high levels of imports of capital equipment, leading to rapid technological change, rapid productivity growth (4.8 percent p.a.), and particularly high TFP growth (see ibid.). In fact, even the ratio of the upper-middle (D7–D9) vis-à-vis that of the bottom 40 percent (a ratio not included in the graph) *fell* from 4.1 to 3.1 during this period of high demand for skilled workers due to dynamic technological change.[34]

And for the rest of Latin America, blaming inequalities on increased imports of capital goods is even less credible given their appalling investment record since the beginning of economic reforms; for example, in Brazil and Mexico their 2013 level of investment per worker (the last year when data are available) was actually

20 percent below their 1980 one – and it is not as though that level was particularly high to begin with! Furthermore, in the case of Mexico this is so despite having had one of the highest (if not the highest) levels of FDI per worker in the World. For the whole of Latin America, this statistic fell (on average) 10% during this 33-year period (i.e., in constant 2005 US$, it fell from US$ 4,377 in 1980 to US$ 3,924 in 2013 – commodity price boom and all; see Palma, 2015). In fact, in Latin America, the average rate of investment has struggled to reach even 20 percent of GDP since around 1990 (when most countries started to implement trade and financial liberalisation). Of this meagre percentage, investment in machinery and equipment contributed less than half of the total (in Brazil, for example, it has amounted to just 6 percent of GDP since 1990). And in all likelihood only about half of that was imported. Not surprisingly, even during the twelve-year period of commodity and financial bonanza after 9/11 and the Fed's response, GDP growth in Latin America was so mediocre that on the expenditure side five-sixths of that growth was simple expansion of consumption (and the debt to fund it), and on the product side more than two thirds was simple expansion of employment (almost entirely in technologically-challenged services and construction; see Ibid.). It should not surprise either that in Chile, a country that is so often highlighted as the best performer of the region, the average annual rate of TFP-growth for the last two decades has actually been nil (Ibid). Not precisely a vision of a region struggling to cope with the upheavals of a high-tech modernity…

Therefore, the effects of ISI on inequality during the former period, and of imports of modern capital equipment in the latter one, seem to be far more complex than the abovementioned one-dimensional and reductionist hypotheses – reductionist in the sense of the philosophical position that often characterises mainstream economics, which holds that a complex system is nothing but the sum of its parts, and that an account of it can be reduced to accounts of individual constituents. Figure 2.9, therefore, indicates that if one really wants to understand distributional change, rather than continue to be distracted by the middle of the distribution of income and wage differentials among production workers, it would be much more productive to focus on the tails, especially the top one – as the work of Sáez, Piketty and Atkinson (among others) has done, as my 2011 paper tries to do – and the resulting Palma Ratio highlights —, and as Piketty's latest remarkable book (2014) does again. So, let's not just 'notice the rich', but concentrate instead on the study of how they manage to appropriate such diverse shares of national income across the world, and why do they do such different things with their shares afterwards.

Obviously, the 'usual suspects' won't like it if the mainstream analytical focus turns its focus onto them,[35] but as long as the share of the middle and upper-middle remain relatively homogenous across countries, we have little choice but to keep reminding ourselves of what I believe to be the most fundamental of all distributional stylised facts (highlighted by the subtitle of my 2011 article): "the

share of the rich is what it's all about". And if one not only wants to understand why inequality is so diverse across the world, but also get closer to the understanding of why growth is also so dissimilar what we should write in our notice-boards is: "It's all about the share of the rich, and what do they do with it".

2.6   Why is inequality still so extreme in Latin America, and why is it getting even more obscene in South Africa? How does it affect growth?

When one wants to study the causes and consequences of extreme forms of inequality, there is one obvious place to start: Latin America. However, due to problems of space in this section I can only (and briefly) analyse three of the many issues that are at play in them.

2.6.1   Is there a 'ratchet effect' in action?

In Latin America there seems to be a tendency towards an inequalising 'ratchet effect' following (unfortunately rather common) negative distributional shocks; see Figure 2.10.
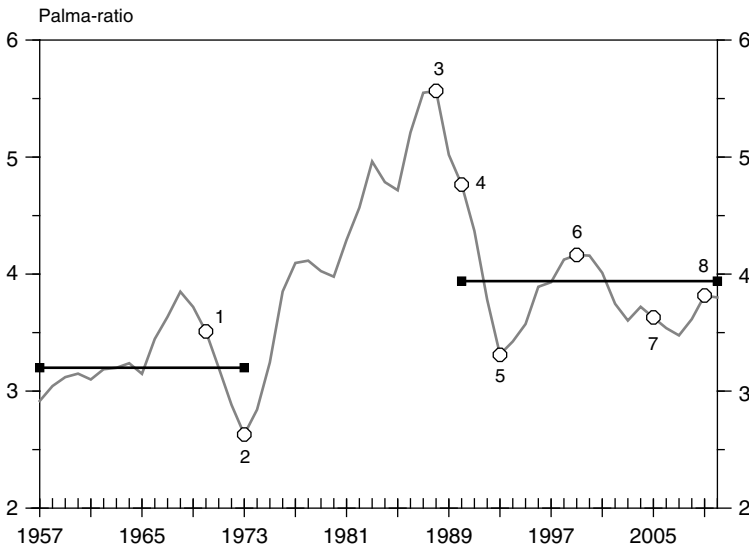
Figure 2.10   Chile: "Palma Ratios", 1957–2010 – a ratchet effect?
Note:
• From 1 to 8 and source as in Figure 9. 3-year moving averages. Black lines are harmonic means between the pre- and post-Pinochet periods (i.e., between 1957 and the *coup d'état* in 1973; and the return to democracy and 2010).[a]
[a] Remember that we have to stick to Chile owing to lack of systematic historical data for other Latin American countries (or South Africa).

The evidence of the dataset available for this period of over half a century points in the direction of a 'distributional ratchet' effect. This seems to result from the fact that in Latin America improvements in inequality have tended to be temporal (for example, from 1 to 2, and from 3 to 5), while deteriorations have tended to have more permanent effects (from 2 to 3, and from 5 to 6). In other words, the dice is loaded in the sense that the rich tend to be more capable than the poor at making their gains permanent. That is, the well-known restrained ability of human processes to be reversed once certain things have happened seems to apply only to *increases* in inequality.

Brazil seems to be another example of this negative 'distributional ratchet' effect, though there are no data as systematic as that for Chile to prove this; the evidence that exists (mostly thanks to Albert Fishlow; see, for example, Fishlow, 1972) also indicates that the huge deterioration in the distribution of income that took place immediately after the 1964 coup remained in place almost unchanged for the next forty years! So, although Brazil has apparently been moving in the right direction in the recent past (unlike South Africa), it has a long way to go to get to the levels of inequality found in that country pre-1964.[36] In fact, according to its Palma Ratio (based on household surveys) it still ranks today as the 120th most unequal country in this sample of 129 countries. As is often the case, perhaps too many bottles of champagne have been opened prematurely; and from a political point of view, as a result of the small improvements that have taken place among the bottom 40 percent, inequality has lost what for Wittgenstein was the key requirement needed for success in policy matters: a sense of urgency. As a result, the need to do something here and now about the distribution of income has fallen well down the list of priorities in comparison with poverty reduction. And, as the experience of Chile shows, in a middle-income country one can reduce poverty significantly without affecting the distribution of income.[37]

What has happened in the past in Chile and Brazil in terms of their 'ratchet effects' makes me wonder how really sustainable are the recent relatively minor improvements in inequality in some countries of the region (which are only statistically significant if one uses the traditional, but somehow unambitious, 'α'). Evidence suggests that in Latin America those that benefit from reduced inequality are nowhere near as capable of retaining their gains as are those who benefit from increased inequality when, sooner or later, the pendulum swings in the opposite direction.[38] The current economic and political crises in Brazil will be a good test of this ratchet effect hypothesis in terms of indicating the capacity of the poor to hold on to their previous gains.

2.6.2   Is the top 10 percent in Latin America – and Southern Africa – unique?

When Tony Atkinson read an early draft of my 2011 paper, his first question was whether I thought that the top 10 percent in Latin America is simply better
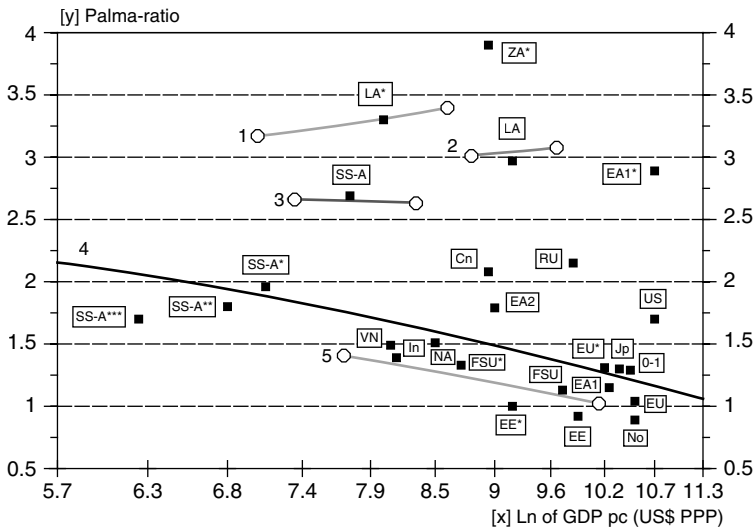
Figure 2.11 Palma Ratios and log of GDP pc, *c.*2012
Notes:
- **ZA*** = South Africa's actual 'Palma Ratio' is 8.5. The regression has four intercept dummies: Southern Africa (South Africa and Namibia), Eastern Europe and the former Soviet Union (EE, EE*, FSU and FSU* – line **5**), Qatar, and the EA1* (Hong-Kong and Singapore). It also has three slope dummies (LA*, line **1**; LA, line **2**; and SS-A, line **3**). Line **4**=base regression. All parameters are statistically significant at the 1% level (i.e., pretty unlikely to have occurred by chance). This regression has only one main explanatory variable (GDP pc squared), because if GDP pc is also included both explanatory variables became not-significant even at the 5% level (and if only one is included, GDP pc squared is the one that is more significant). 't' statistics are based on 'White's heteroscedasticity adjusted standard errors'. The R^2 of the regression is 69%. Regional dummies are reported only within the GDP per capita range of its members.
- Acronyms and sources as in Figures 2.1 and 2.2.

at getting a higher proportion of national income than most, or whether they are a different kettle of fish altogether. The uniqueness of Latin America's and Southern Africa's political settlement and distributional outcomes becomes evident in Figure 2.11, when the Palma Ratio is tested as dependent variables against income per capita.

Taking into account the usual structural instability of this type of cross-country regressions, Figure 2.11 shows that the result of such an exercise produces a regression which indicates that SS-A, LA*, LA and ZA are following their own unique inequality paths – proxied here by their highly significant dummies (an intercept one for South Africa and Namibia, and slope ones for the other three groups). These countries are not only highly significantly more unequal, but they even seem to be moving in a different direction than the rest – with Hong Kong and Singapore apparently catching up with them. Moreover, South Africa and Namibia (as well as Botswana), with their Palma Ratios of 8.5 and 6.7, are (literally) beyond the pale of this graph.[39]

However, it is important to emphasise that this regression is simply meant to be a cross-sectional *description* of cross-country inequality differences, categorised by GDP per capita. That is, they should not be interpreted in a 'predicting' way, because there are a number of difficulties with a curve that is estimated from a single cross-section – especially regarding the homogeneity restrictions that are required to hold.[40] This is one reason why the use of regional dummies is so important, as they can provide crucial information regarding the required homogeneity restrictions – and their evidence points in a different (heterogeneous) direction. Hence, regional dummies are reported only within the income per capita range of its members.

In the regional dummies there are two opposite paths. In one, Latin America, but especially LA*, inequality gets, on average, slightly worse as countries achieve higher income per capita (lines 1 and 2), even though some countries in Latin America have already reached high middle-income level status. At the same time, highly unequal SS-A (countries in Sub-Sahara with a GDP pc above US$ 2,000 – line 3) seem to be copying not only Latin American-style football, but also other less pious features of the region. The other path, followed by Eastern Europe and the former Soviet Union (EE, EE*, FSU, and FSU* – line 5), is characterised by inequality getting, on average, systematically better as income per capita increases. However, it is important to emphasise that this downwards slope – as well as that of the base regression – does not necessarily mean that the distribution of income within *individual* countries is currently improving as they get richer; it only means that although the distribution of income within many of these countries is currently deteriorating, we still find today as a stylised fact that the richer the country the lower the level of inequality (as a group).

As the relationship between inequality and income per capita is not homogenous across regions and countries, the homogeneity restrictions that are required to hold for 'prediction' are visibly not fulfilled. Therefore, not only analytically but also statistically there is no reason to expect that Latin America and Southern Africa will improve their remarkable inequality simply because their income per capita increases – that is, simply because this is what happened in some other countries in the past.

However, as is often the case, when work of this nature produces such statistically interesting and significant results, this "[...] involves the evolution of knowledge as well as ignorance" (Krugman, 2000). Is the cross-sectional-scenario that emerges from Figure 2.11 really the most appropriate way in which to represent the geography of inequality across the world? What about if the Sub-Saharan African countries with a GDP pc below US$2,000 (i.e., SS-A***, SS-A** and SS-A*) are best represented differently than by the base regression of Figure 2.11? For example, they may well have in their horizon what is happening in richer Sub-Sahara (SS-A), Southern Africa and Latin America rather
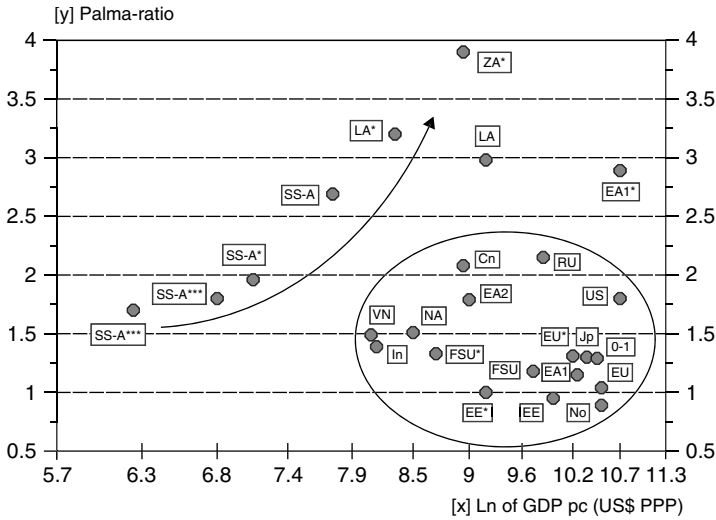
Figure 2.12 Palma Ratios and log of GDP pc, *c*.2012
Note:
• Acronyms and sources as in Figures 2.1 and 2.2.

than the rest of the sample. Closer inspection of the data (following what is already indicated in Figure 2 to 4) seems to suggest that a different narrative regarding Sub-Saharan Africa, Southern Africa and Latin America is not just possible, but in fact likely to be more accurate – see Figure 2.12.

Figure 2.13, in turn, illustrates the cross-sectional representation of this new scenario.

What an statistical paradox. Two such different econometric scenarios as those of Figures 2.11 and 2.13 have practically the same statistical support in the sample (at least in terms of R^2s and high significance of all parameters).[41] And in this new "two parallel universes" narrative (Figure 2.13), the answer to Tony Atkinson's question seems straightforward: yes, Sub-Saharan African, Southern African and Latin American oligarchies seem to be a different social 'organism' altogether. One could even borrow a metaphor from the Darwinian concept of "living fossils" – both in the sense that these oligarchies do not seem to have close 'living relatives' in other regions of the world (other than in the Middle-East, and lately in EA1* – that is, Hong Kong and Singapore), and that they appear to be similar to social and political 'organisms' other-wise only known to us from the study of (social and political) fossils from the past history of more advanced economies – when their wealth and income inequality was extreme and persistent, a phenomenon that lasted until about the World War I.[42] In other words, these odd 'species' (anomalous oligarchies)
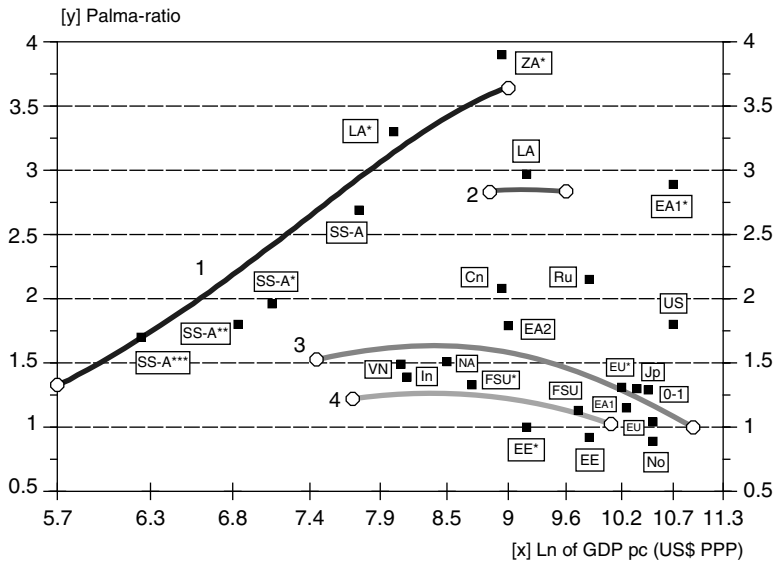
Figure 2.13   Palma Ratios and log of GDP pc: "two parallel universes"?, *c.*2012

Notes:

- The regression now has three intercept dummies: Eastern Europe and former Soviet Union (EE, EE*, FSU and FSU* – line **4**), Qatar, and the EA1* (Hong-Kong and Singapore). It also has two slope dummies (on the GDP pc square variable); one includes all four groups of Sub-Saharan African countries (SS-A***, SS-A**, SS-A* and SS-A), as well as Southern Africa (South Africa and Namibia), and Latin American countries with a GDP pc below US$8,000 (LA*) – line **1**. The other represents the rest of Latin America (LA – line **2**). Line **3** is the base regression. All parameters are statistically significant at the 1% level (in this regression both main explanatory variables are included, GDP pc and GDP pc squared). 't' statistics are based on 'White's heteroscedasticity adjusted standard errors'. The R[2] of the regression is 67%. Regional dummies are reported only within the GDP pc range of its members. The base regression is reported from Bangladesh to Norway (i.e., the whole span of the non-Sub-Saharan Africa sample, except for Ethiopia and Nepal on the low GDP pc side, and Qatar one the other side).
- Acronyms and sources as in Figures 2.1 and 2.2.

may only be in existence today because they have been exposed to less severe competition from below, and/or they are probably better equipped than oligarchies in other regions in the world to resist major social and political evolutionary upheavals. As mentioned above, in some of these countries many economic and political institutions have changed with the onset or the return to democracy (in some even significantly), but the underlying distribution of political power has not – and neither have the narrow interests of the elite. In fact, the unique comparative advantage of these oligarchies seems to lay precisely in being able to use different institutions (sometimes quite astutely) to achieve their fairly immutable goals.[43] As emphasised above, few oligarchies in the world seem to have such skills in their struggle for the 'persistence of élites' despite significant institutional change.

At the same time, Latin American and Southern African distributional outcomes are so extremely unequal that they seem to provide little evidence in support of Pigou's law of "diminishing marginal utility," or "less intense wants" at work, at least as far as income distribution (or status, power, or greed) is concerned. That is, not much evidence of 'diminishing returns' here; perhaps not least because (as a brilliant Argentinean cartoonist has put it) "it's become so outrageously expensive to be rich nowadays!" So, perhaps Adam Smith was closer to the mark when he said that as far as issues such as income distribution are concerned, "[...] it is the vanity, not the ease, or the pleasure, which interests us" (1759). Vanity indeed. And, as Nietzsche reminded us, "vanity is the fear of appearing original: it is thus a lack of pride, but not necessarily a lack of originality."[44]

Nearly a century ago, the Spanish philosopher José Ortega y Gasset stated that "[many in Latin America] have a narcissistic tendency to use reality as a mirror for self-contemplation" (1918). He was struck to find "so many self-satisfied individuals" – a phenomenon that for him was a major obstacle for progress, as "[...] human history is the product of discontent" (ibid.). Perhaps there is no better way to summarise what is wrong with Latin America's elites and with the current political settlements and distributive outcome than Ortega's observations, as (for reasons beyond the scope of this paper) with the new neoliberal ideological, political and economic paradigms in vogue in the region, these regional features have been revitalised with a vengeance.[45]

And let's remember: the unremitting trend towards increasing inequality found in the left-hand side of Figure 2.13 *has little or nothing to do* with the share of the middle or upper-middle of the distribution. Except for South Africa and Namibia (and probably Botswana), all groups qualify or are at the edge of the '50–50 rule'. So, it's all in the tails! For example, the already mentioned tax return data confirm this inequality 'uniqueness': in Chile the top 1 percent is able to appropriate 32.8 percent of national income, while the top 0.1 percent gets 19.9 percent, and the top 0.01 percent gets 11.5 percent of the total – while their counterparts in Korea were able to appropriate only 12 per cent, 4.4 per cent, and 1.7 per cent, respectively. And very recent (although preliminary) data for Brazil indicates that the top 1 percent manages to appropriate nearly 29 percent of national income. Given the apparent capacity of the middle and upper middle to defend their half, it's the bottom 40 percent that needs to be squeezed accordingly.

Basically, (with a nod to James Bond) for most oligarchies in Latin America, Southern Africa, and increasingly so for those in higher-income Sub-Saharan countries as well as the US (and some other OECD countries, especially the Anglophone ones) the new family motto should be "The World Is Not Enough" – as they move into a distributional outer space, propelled into dark matter by their insatiable greed, while finding their neoliberal ideology most

helpful in this endeavour (as it facilitates the rationalisation of this highly inefficient greed).

It is also important to remember that the share of the rich in Latin America's national income is so much higher than those of many other middle-income countries – such as those found in North Africa, the second-tier NICs, the former Soviet Union, and Eastern Europe (among others) – even though these middle-income countries often have even more market rigidities; often have prices, institutions and social capital that are less 'right'; often have property rights which are less well-defined and less well-enforced; often have more educational segmentation, and educational systems for the poor which are equally depressing; where often there is more gender discrimination, and more shortages of skilled labor; and where often there are democracies which are more 'low-intensity', and with more problems of 'governance'; where success or failure in business depends even more on political connections and corruption; and so on. And despite all this, their income distributions are significantly better than those in Latin America. So, perhaps it is time for those that have deforested half of the Amazon through publishing so much literature blaming Latin America's high inequality on issues such as those above to go back to the drawing board as well.

At the risk of stating the obvious, political and institutional factors, and the nature of the political settlement, are likely to have a far greater influence on the determination of income distribution than factors such as those mentioned above. These factors may well be part of the conditions that, for example, give Latin America's inequality its specificity, but this can only be understood through the movement of its institutional dynamics. That is, rather than thinking in terms of the *concrete effects* that that factors such as those mentioned above may have on its inequality, it would be more illuminating to understand the *concrete expressions* that these factors may find in that inequality. Some of the pieces of the distributional puzzle in Latin America and Southern Africa may well be the same as those of other parts of the world, but the way they fit together is certainly different. The specificity of inequality in these regions stems from the particular ways in which distributional struggles have manifested there, the different ways in which oligarchies have faced and temporarily overcome them, and the ways in which this process has created further distributional challenges, and so on.

In fact, the monotonous insistence of so many economists and politicians on blaming Latin America's huge inequality on 'exogenous' factors is very much like using a pair of scissors to cut an (analytical) knot that cannot be unravelled. Among the most recurrent 'exogenous' factors appearing in most of the relevant literature, we find the already mentioned high demand for skill labor due to new technologies (although, as mentioned above, such high demand is supposedly taking place in a region with one of the lowest investment rates in the world),[46] problems with the educational system, the abundance of natural

resources, market distortions resulting from erroneous policies or regulation (how could it possibly not be the fault of governments!), and the unfortunate institutions created at the start of the colonial past, half a millennium ago, such as the 'mita' and the 'encomienda' (an institution that was already pretty much gone by the end of the sixteenth century).[47]

As in so many other areas of knowledge, it is analytically far more productive for the understanding of why inequality is so unequal across the world to reject mechanical determinisms and the blaming of 'exogenous' factors. Explanations such as some of those in vogue today may actually help contribute to the understanding of a really complex phenomenon; but as inequality is surely an 'over-determined' whole, one thing is to recognise a probable condition, quite another to claim that that condition is a sufficient one. And from this perspective, over-determination makes the analysis of inequality particularly problematic for many of the traditional methodologies used in economics, as it complicates the standard counterfactual understanding of causation.

Otherwise, how can we understand, for example, that after taxes and transfers in Chile the Gini only improves 1.4 percentage points (or 3 percent; Solt, 2014), while in Finland the Gini improves by 20 percentage points (or by 43 percent – i.e., 14 times more)? So, let's also concentrate on individuals and societies' ultimate freedom of choice and responsibility in this. If we have the income distribution that we observe in Latin America, and the levels of poverty we still have (despite often high middle-income levels), as Stiglitz has stressed (see epigraph), it's (basically) *our choice*.[48] And, as Sartre kept reminding us, *we are our choices*, (see also epigraph); that is, nothing seems to define us better than our choices – and none more so than the income distribution we (collectively) choose to have (and often justify).

This idea (rather a worldview) is also emphasised by Simone de Beauvoir: "Life is nothing but a relation to the world, and the individual *defines* himself by making his own choices through the world about him." (1972; emphasis added).

Among the many issues at stake in the increasing-inequality trend found in the left-hand part of Figure 2.13 the one I want to highlight here is the already mentioned phenomenon that although the bottom 40 percent of the population has very different capacities across the world to appropriate the value of their marginal productivity, in Latin America, Sub-Saharan Africa and Southern Africa they seem to have almost none.[49] As the middle and upper-middle usually can keep their half, the top 10 percent tries to appropriate all the increase in the other half of national income.[50] In Southern Africa, in turn, the top 10 percent can also squeeze the middle.

And the well-rehearsed argument that all that is needed to deal with these huge inequalities is yet more of the same neoliberal reforms sounds increasingly hollow.

2.6.3   On multiple stable equilibria. Why the note in our notice-boards should remind us that "it's all about the share of the rich – and what they do with it"

Income polarisation between the tails in Latin America and Southern Africa – no matter how extreme – only tells us half of the story. The other half is that (despite the huge share of national income appropriated by the top earners, abundant finance, fairly well-defined and enforced property rights, and 'pro-market' reforms) every time private investment in Latin America or South Africa manages to rise much above 15 percent of GDP, the capitalist elite starts experiencing feelings of vertigo.[51] The key point is that huge inequality and mediocre growth are likely to be closely connected in the most unequal countries accounted for by the dummy on the left-hand side of Figure 2.13. From this perspective, the most striking difference between these countries and fast-growing Asia is found in their contrasting relationships between private investment and income distribution, for which Figure 2.14 shows two different steady states.

It is often acknowledged that the only historical legitimacy of capitalism – that is, the legitimacy of a small elite to appropriate such a large proportion of the social product – rests on its capacity to use it *productively* (that is, its capacity to develop society's productive forces). And it can *only* do so by reinvesting – out of competitive market's 'compulsions' rather than Samaritan tendencies – most of that huge share.[52] So no other statistic seems to reflect so neatly the difference between Latin America's 'subprime' capitalism and fast-growing Asia's capitalism – one that has a remarkable capacity for productivity growth, despite all its many problems, financial fragilities and contradictions. While in Latin America the ratio of private investment vis-à-vis the income share of the top 10 percent tends to hover around one-third, in most of Asia it has a value of at least double that (as seen, for example, in Thailand), or even higher (with Korea's ratio close to 1). In turn, as Figure 2.14 indicates for the US, no other statistic seems to reflect so neatly the process of "reverse catching-up" being currently followed (at different speed) by many advanced countries. However, this should not be confused with "reverse evolution": it is proper evolution, but one in which some of the disagreeable ghosts of the past have re-emerged triumphantly, but now resembling features that characterise current unequal middle-income countries.

Many emerging economies in Asia, instead, would be the equivalent today to what Keynes saw happening in continental Europe, especially Germany, between about 1870 and World War I – i.e., during the 'Third Technological Revolution', or third great surge of industrialisation, that of the 'Age of Steel, Electricity and Heavy Engineering' (Pérez, 2004), when the US and Germany overtook Britain:

> Europe was so organised socially and economically as to secure the maximum accumulation of capital. [...] The new rich of the nineteenth century
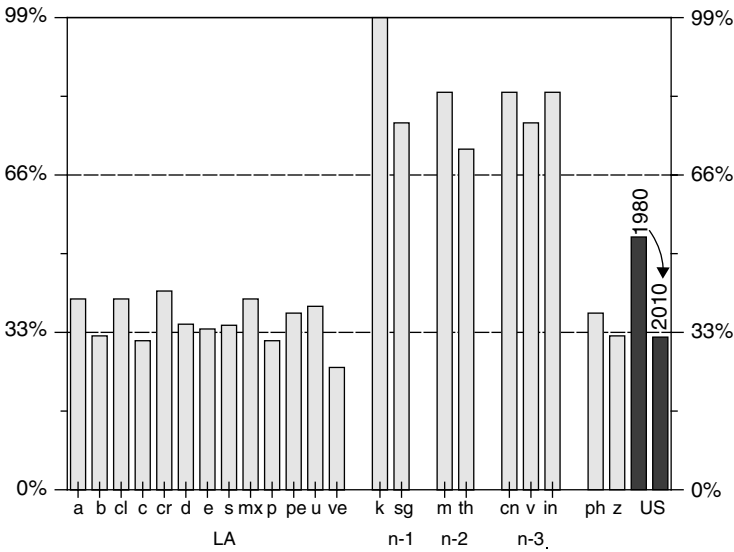
Figure 2.14 Private Investment as a percentage of the income share of the top decile, *c.*2010

Notes:

- **LA**=Latin America (**a**=Argentina; **b**=Brazil; **cl**=Chile; **c**=Colombia; **cr**=Costa Rica; **d**=Dominican Republic; **e**=Ecuador; **mx**=Mexico; **p**=Paraguay; **pe**=Peru; **s**=El Salvador; **u**=Uruguay; and **ve**=Venezuela); **n-1**=first tier NICs (**k**=Korea; and **sg**=Singapore); **n-2**=second-tier NICs (**m**=Malaysia and **th**=Thailand); **n-3**=third-tier NICs (**cn**=China; **in**=India; and **v**=Vietnam); **US**=United States (in 1980 and in 2010); **P**=Philippines; and **z**=South Africa.
- *Sources*: for the share of the top 10% as in Appendix (except for the US, which is Alvaredo, Atkinson, Piketty and Saez, 2014 – this different source complicates the comparison of the US ratio with that of other countries in the graph). And for private investment data, the IMF-WEO databank (IMF, 2015).

were not brought up to large expenditures, and preferred the power which investment gave them to the pleasures of immediate consumption. [...] Herein lay, in fact, the main justification of the capitalist system. If the rich had spent their new wealth on their own enjoyments, the world would long ago have found such a régime intolerable. [...] Thus this remarkable system depended for its growth on a double bluff or deception. On the one hand the labouring classes [...] were compelled [...] into accepting, a situation in which they could call their own very little of the cake that they and nature and the capitalists were co-operating to produce. And on the other hand the capitalist classes were allowed to call the best part of the cake theirs and were theoretically free to consume it, on the tacit underlying condition that they consumed very little of it in practice. (Keynes, 1919)

Not much danger of finding these progressive tendencies in the capitalist elites of Latin America – where instead of the power given by productive investment,

the 'discreet charm of these bourgeoisies' comes from the power emanating from the despotism of finance and the rent-seeking practices of oligopolistic capital, leading to the pleasures of immediate consumption, little market discipline and the easy pickings of financial speculation; and all this helped by the appropriation of rents from natural resources, and so on. Nor much chance to find these days those progressive tendencies mentioned by Keynes in their re-emerging close relatives in the US and some of Europe either. In turn, Figure 2.14 also indicates that in South Africa – in so many respects, Latin America's honorary middle-income country in Africa – and in The Philippines (the honorary one in Asia), a similar low ratio for private investment as a proportion of the income share of the top decile indicates that their capitalist elites are similar to their Latin American counterparts – especially in their preference for having their (rather large) cake and eating it.

In other words, Figure 2.14 indicates a great example of multiple stable equilibria. That of Asia (especially East Asia), where highly profitable opportunities are usually opened up by their almost uncanny predisposition towards the reality principle – with its insistence on high investment rates, market discipline, its remarkable technological absorption capabilities, and its strong macro-policy stands. And that of Latin America, where the gravy trains of easy opportunities tend to be opened up not by our predisposition to the reality principle, but rather by our innate tendency towards the pleasure principle. With the latter so easily satisfied by an endless supply of low-hanging fruits such as effortless asset bubbles, highly profitable market failures, vast rents from natural resources, timid institutions, an obliging macro, a considerate progressive intelligentsia (with a disturbingly high tolerance for inequality), and an instinctive aversion to competition or any other form of market compulsion. Who needs sticks when political elites are so efficient at solving the collective action problem of how to share the carrots!

And one of the many reasons why the sub-optimal equilibrium found in middle-income Latin America shown by Figure 2.14 is fairly stable – and profitable – for the elite, as explained so eloquently by Churchill many years ago, is that low wages (and the resulting inequality) is the best possible subsidy for inefficient producers:

> It is a national evil that any class of Her Majesty's subjects should receive less than a living wage in return for their utmost exertions… Where you have what we call sweated trades, you have no organisation, no parity of bargaining, the good employer is undercut by the bad and the bad by the worst. … Where these conditions prevail you have not a condition of progress, but a condition of progressive degeneration. (Hansard HC, vol 155, col 1888; 24 April 1906).

In other words, inequality is not only a critical choice, but one that matters for more reasons than one – not least because of the likelihood that inequality is as much a twin of inefficiency as the law of gravity is of the apple. From this perspective, the $64,000 question for Latin America and South Africa is how to get from their suboptimal but fairly stable equilibrium to the more dynamic one found in Asia. The only thing that is patently clear is that the invisible hand of unfettered market forces is unlikely to do the trick.

Finally, although Latin America's (and South Africa's) capitalist elites seem to have now this unique preference for accumulation via 'mobile' assets (rather than via a more challenging scenario of 'fixed' capital formation), on the positive side easy access to mobile assets has at least helped them to become more democratic, as mobile assets provides them with an easier 'exit' option (see especially Boix, 2003).

2.7   Why is inequality becoming so extreme in an increasing number of high-income countries?

2.7.1   Piketty's explanation for increased inequality among advanced countries

It is unfortunate that Piketty – an author who has made some of the most important empirical contributions to our knowledge of the income and wealth shares of the rich – seems to be leading the debate over increased inequality in most OECD countries since the fall of the Berlin Wall in the wrong analytical direction. This is so because in his book he gives too much emphasis in his analysis to the neoclassical theory of factor shares (see Piketty's otherwise brilliant book, 2014). And by doing so, most of the analytical debate on the forces leading to increase inequality that followed the publication of his book has got stuck there. This theory is still based in the (by now pretty much obsolete) 1950s' Solow–Swan analyses, which (as most of the related growth theory) not only assumed properly competitive markets (in danger of extinction these days), but also that the growth rates of some inputs (such as labour and knowledge), and the portion of production going to others (such as saving and investment) insist on being constant and exogenous – in a 'magical realist' world where prices are always 'right', there are no market failures, and everybody is paid the value of their marginal productivities (including the rich and the poor); where there are constant returns to scale, and diminishing returns rule; a world in which an autonomous permanent increase in the saving and investment rates produce only a temporary increase in the growth rate of output per worker, and where the only reason why financial markets exist is to fuel the real economy… The rate of depreciation is also constant (i.e., not subject to shocks such as the emergence of new technological paradigms). Furthermore, there is no government, increasing returns, unemployment, spare capacities,

diversity of goods, natural resources or institutions (or Latin American-style oligarchies).

Furthermore, the world that this theory tried to disentangle was rather different than the current one because profits were then made almost entirely in the real economy, and financial markets then had levels of liquidity which were able to handle without the need to accumulate more risks than was privately, let alone socially, efficient. This was basically the outcome of effective financial regulation and tough capital controls – that is, the Solow–Swan world was clearly a pre-'financialisation' one.[53] And it was one in which there was also highly progressive taxation. There was also a close symmetry between total corporate capitalisation (equities and bonds) and the replacement cost of tangible assets; in fact, the ratio of these two statistics, representing one version of the Tobin's 'Q', hovered around 1 – as opposed to the pre-2008 financial crisis levels well above 2 (see Bichler and Nitzan, 2009; see also Palma, 2009). This type of growth theory also had in mind economies that were dealing with the 'maturity' stage of a specific surge of industrialisation, that related to automobiles, oil, and mass production – and not economies struggling to adapt to a remarkable new technological revolution, and to a rapidly changing international order.[54]

In this 1950s-type neoclassical theory what mattered most for the distribution of income was the link between the capital intensity of production and the share of profits in total output; in this model (whose 'best before date' is well gone) the nature of this link depended on the elasticity of substitution between capital and labor. In this scenario, when this elasticity is greater than unity, an increase in the capital-output ratio leads to an increase in the share of profits in national income. As Piketty is trapped by this type of logic, the only way he can explain the increased share of wealth-owners in national income is by assuming both a process of vibrant accumulation of capital, and high levels of substitution between capital and labour. In other words – and against considerable evidence to the contrary – for Piketty we are supposed to be living in a world in which increasing inequality is due to too much real investment and high elasticities of substitution. That is, by choosing to work within this framework, Piketty can only square the neo-classical circle by resorting to questionable assumptions.[55] Not only his elasticity of substitution makes no sense in the real world, but also all the evidence indicates that the opposite is the case regarding his assumption on investment. In the US, for example, non-residential private investment during the last decade reached just 12.2 percent of GDP on average (12.5 percent since 1990, and 12.8 percent since 1980). Rather than 'over', this is what I would call 'under'-accumulation.[56] Basically, in the US and Europe there has been too little real (non-residential) investment and too much financial gains from the above mentioned factors since the neo-liberal reforms, which more often than not have resulted from the ever greater bargaining

power of rentier-capital – following the surprisingly successful post-Reagan and Thatcher and post-Berlin Wall process of re-legitimisation of capital. And all this not only has had a massive impact on the volume (and concentration) of wealth, but also has had negative impacts on the real economy – as most of the above distortions tend to create negative productivity shocks.

And as profits are so strong and real investment so remarkably weak, the sectoral balance of the corporate sector has bizarrely become positive in the US, Europe (except for France) and Japan (where it has reached 8 percent of GDP). So any type of mergers and acquisitions, share buybacks, executive pay, bonuses, political contributions, and corporate-sponsored retirement plans (in the US, retirement assets of just 100 CEOs add up to as much as the entire retirement account savings of more than 116 million people at the bottom of the pay scale) can now be easily financed. Furthermore, the combination of low levels of corporate investment and rising corporate net saving is one of the main factors driving the growing mismatch in financial markets between abundant liquidity and a relative shortage of solid financial assets – making the ease of performing a transaction in a hollow security or instrument the trademark of the current process of "financialisation". Wishful thinking has become delusional.

In the above mentioned interview Piketty argues that although he does not believe in the neoclassical model, he thinks "[...] it is a language that is important to use in order to respond to those who believe that if the world worked that way everything would be fine."[57] I understand that, but why did he not then move on in his analysis to a more enlightening analytical scenario after doing that? The point is that if the 1950s neoclassical model (and most of its sequels) do not offer us much help in understanding the relatively recent huge increase in inequality in many OECD economies, especially in the US, why stick to it after having had his engagement with the mainstream? If one wants to explain the dynamics of the universe, what would be served by sticking to a Ptolemaic model after having shown that it is a wrong worldview, and it is based on false assumptions?[58]

For many OECD countries since Reagan and Thatcher, the key stylised fact in this respect has been the contrasting dynamics of *wealth* and *productive capital*, as a significant proportion of the rapid increase in wealth since then has been of the non-productive nature. That is, wealth owners have been getting richer and richer not by doing something socially useful, but by succeeding in developing more effective forms of rent extraction. They not only have managed to increase greatly their market power, but have also increased their ability to exploit that market power (including via extensive abuse of corporate power and systematic abuse of consumers).[59] The increased share of the financial sector in GDP, together with pervasive financial mischief (like the mis-selling of financial products and money laundering), and outright fraud (especially due to the incentives provided by the new "too big to jail"

phenomenon) are also important parts of this story.[60] The transfer of under-priced assets from the public to the private sector, and that of huge liabilities the other way round after each financial crisis, has also increased private wealth massively – but not necessarily productive capital. At the same time, by succeeding in getting new forms of regressive taxation, and by governments turning a blind eye to ever greater (and often more imaginative) degrees of tax evasion and avoidance (as someone famously said: "We don't pay taxes; only the little people do"), those at the top have managed to capitalise a much larger share of their incomes than during the more enlightened post-FDR Keynesian period – leading also to the creation of more dynastic wealth. And as Tony Atkinson has put it, "inequality of outcome in one generation leads to inequality of opportunity in the next" (Atkinson, 1998; quoted in Segal, 2014). As discussed above, the top 1 percent has also improved significantly their ability to exploit the poor and the human capital of others (for example, flexible labor markets with precarious jobs and 'modern' practices such as widespread subcontracting and 'zero-hours contracts', in which there is no obligation for employers to offer work). Financial liberalisation has also played a crucial role in the colossal accumulation of non-productive capital in the countries studied by Piketty, not least because (as Stiglitz has explained) "Globalization opened up opportunities to find new people to exploit their ignorance. And we found them".[61] And so on.

Furthermore, due to the constraints of the neoclassical model, in his analysis Piketty cannot allow properly for other aspects of financialisation and for the role of asset bubbles (including tax-free capital gains from housing), which have also helped to develop a disproportionate increase in the market value of certain assets in the last three decades. This type of analytical model cannot account either for the rising inequality of labor earnings due to exploding top managerial compensation, as only a few neoclassical ideologues can still believe that this has happened because these rocketing earnings truly represent equally rising senior executives' value of marginal productivities. Perhaps increased bargaining power is more relevant. Nor can this model incorporate convincingly the inequalising effect of the growing number free-lunches and political rents that wealth holders get from obliging governments.[62]

The debate that followed Piketty's book has also overemphasised the role of wealth destruction during World War II on falling inequality, as Piketty's own data show that in the US there was a similar decline in inequality to that of Europe despite the fact that the first and only air attack by Japanese planes on the US mainland during the war took place when they dropped incendiary bombs on an Oregon state forest in 1942. Finally, by now Piketty also agrees that he gave too much emphasis to what he called in his book "the fundamental structural contradiction of capitalism", or "the fundamental force for divergence": the by now legendary "r>g".[63]

There are several key questions that now need to be addressed properly in the post-Piketty's book era, such as whether capital–output ratios and shares of wealth in national income can continue to diverge for ever? Also, can rents really make up an ever-increasing share of what in national accounts is still called profits? Or can the gap between the return to financial and physical capital, or that between productivity-growth and wages, continue to increase for ever? Can the gap for the "r" for the rich (who can invest more in information, who have better access to financial markets and political rents, and who can mitigate better the agency costs of their investment), and the "r" for the rest (who are mostly life-cycle savers for retirement) grow for ever? Or can the resulting gap between the average "r" and the marginal "r" also continue to grow and grow? Can the return to the wealth of the rich continue to remain exorbitantly high in the face of the enormous and continuous increase of financial wealth? That is, for how long will this neo-liberal ideology be able to continue being 'the art of helping the rich make huge amounts of money by playing the rest of us for suckers'?

Figures 2.15 and 2.16 illustrate just two of these issues in the build-up of the 2008 financial crisis: rapidly rising inequality seems to have had a crucial role
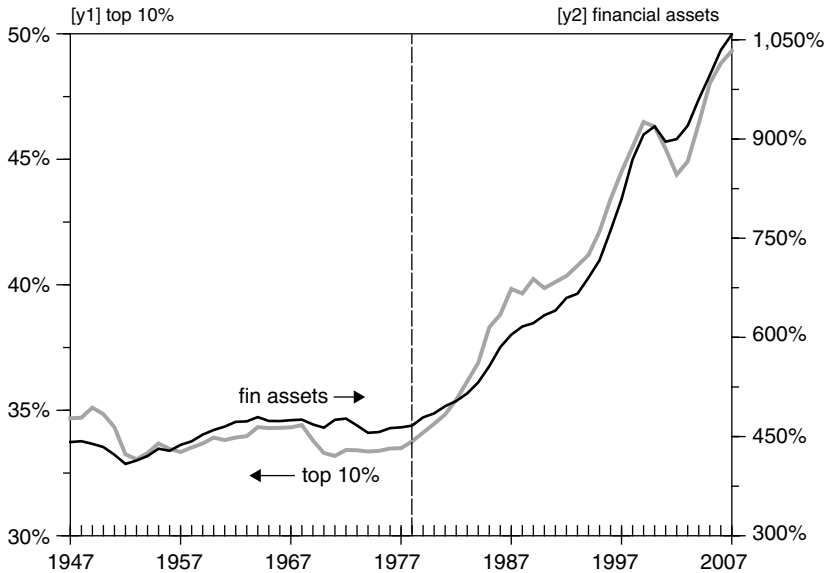

Figure 2.15 US: Income share of the top 10 percent and value of the stock of financial assets as % of GDP, 1947–2007
Notes:
• **fin assets**=value of financial assets as percentage of GDP; and **top 10%**=income share of the top 10% (includes realised capital gains). 3-year moving averages.
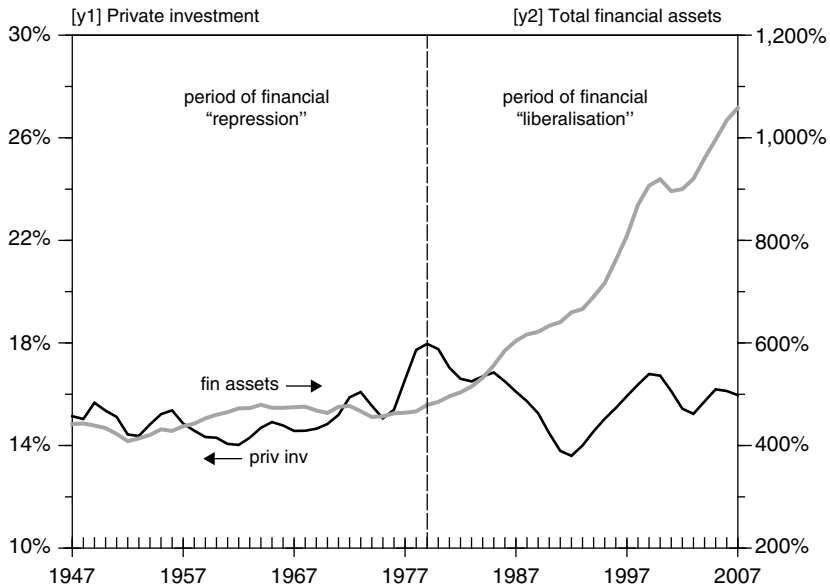• *Sources*: Alvaredo et al. (2014), and US Federal Reserve (2014).

Figure 2.16   US: stock of financial assets and non-residential private investment as % of GDP, 1947–2007

Notes:
• **fin assets**=stock of financial assets (all sectors); and **priv inv**=non-residential private investment (excludes inventories). Both series are expressed as percentage of GDP. 3-year moving averages.
• *Sources*: US Department of Commerce (2015), and US Federal Reserve (2014).

both in the meteoric rise of the value of financial assets, and in the related post-1980 increased decoupling between the real and financial worlds, one that has led to weak investment performance. First, Figure 2.15 shows a remarkable cointegration (also confirmed by the appropriate tests) between the stunning rise of the value of financial assets, and the increase of inequality.

The huge increase in inequality has concentrated income at the top to such an extent that it has become one of the major contributors to the increased liquidity in the US financial markets (a factor far more important in the lead up to the current global financial crisis than the famous Asian 'savings glut'). This increased liquidity has transformed financial markets into fundamentally frag-ile institutions, which are totally unable to self-correct.[64] Therefore, the current global financial crisis may have many roots, but (as discussed in more detail in Palma, 2009 and 2012) one crucial one relates to rapidly rising inequality. Figure 2.16 shows the related post-1980 increased decoupling between the real and financial worlds.

During the period of so-called "financial repression" that followed the Bretton Woods agreement in 1944 – one in which there was a deliberate

attempt to create an economic environment that would help generate strong linkages between financial and productive capital – total financial assets remained relatively stable as a share of GDP for about three decades, while non-residential (and overall) private investment experienced some acceleration (for non-residential one the two extreme points in the cycle were 9.8 percent of GDP in 1951 and 14.2 perecent in 1979 and 1980). The subsequent period of "financial liberalisation," a period of huge asset inflation, led to a more unstable rate of investment, with an average of 12.8 percent from 1980 to 2014 – 13 percent from 1980 to 2007). During this period the value of financial assets not only decoupled from the real economy, but the abundance of finance and the associated asset-price-led 'irrational exuberance', instead of having a positive pulling effect on private investment, seems to have had instead the effect of 'friendly fire' (except for some recovery during the Clinton years).[65] Therefore, there is little evidence here to support the McKinnon and Shaw-type argument in favour of financial liberalisation – one of the founding ideas of the Washington Consensus.

In sum, and as opposed to what Piketty suggests when working within the framework of his neo-classical model, there is little evidence that increased levels of inequality since 1980 have been the outcome of too many Schumpeterian entrepreneurs raising the share of profits by investing an increasing share of GDP in real capital formation, in a world in which flexible firms use technologies that can easily substitute capital for labor (reacting to changes in the relative productivity or the relative cost of the two factors). Instead, increased inequality in high-income countries during this period (both in income and wealth) seems to have been mostly the result of the *artificial* creation of an economic and political environment in which (paraphrasing Oscar Wilde) anyone who wanted to become rich by doing something socially useful simply lacked imagination.

2.7.2   Some elements of an alternative narrative regarding why inequality is becoming so extreme

As mentioned above, and as the data coming out of "The World Top Incomes Database" indicates, these days it is the highly-unequal middle-income country that seems to be showing the more advanced ones the shape of things to come. Borrowing again the language of Darwinian evolution, in what could be one of the supreme political ironies of all time, the Latin American oligarchies – the "living fossils" – may after all end up having the last (evolutionary) laugh, as several of their lost relatives, like that of the US, may be experiencing what in palaeontology is called a "Lazarus taxon": an organism that, having disappeared from the fossil record, inexplicably reappears sometime later. In the case of the US, for example, although it is true that rather than plantations now we have speculative finance, the present bears more

than a passing resemblance to what might have happened in the US had the South won the Civil War... However, as mentioned above, this should not be confused with "reverse-evolution": it is proper evolution, but one in which some of the unpleasant ghosts of the past have re-emerged jubilantly, but (as the world has certainly moved on) resembling now some features that characterise current unequal middle-income countries. In other words, I believe that analytically it is more fruitful to think about the increasing concentration of wealth an income in developed countries in terms of "reverse catching-up" with high middle-income countries of the Latin-type, rather than with a return to their pre-1914 existence.

The remarkable redistributive success of the top 1 percent tends to confirm the hypothesis that there is a huge contrast between the sophistication of neo-liberalism as a technology of power – maybe the most effective one ever – and the lack of sophistication of neoliberal economic policies (Palma, 2009). Perhaps this ideology is just shorthand for 'the art of getting away with such remarkably asymmetric distributional outcomes within democracies'. Or (as discussed in detail in Palma, 2009, and already suggested above), in the language of game theory a technology of power capable of transforming a particularly asymmetric set of distributive strategic choices, and the corresponding payoffs, into a Nash equilibrium built around the 'pure' strategy of the elite. And in part this was achieved by convincing the majority that there is no point in trying to challenge this Nash equilibrium while the all-too-powerful top income players keep their strategy unchanged. As a result, there has been a huge increase in the 'tolerance for inequality'. This is particularly true in Latin America, where neoliberalism is now capable of achieving extreme forms of inequality by means other than the more crude 'old-fashioned' forms of social conflict resolution.

The key point here is that the elite in many middle- and high-income countries is now able to achieve this Nash equilibrium by far more imaginative forms of ideological conviction. So much so that one could argue that in many countries it has got to the point where it is no longer really necessary to threaten the majority credibly with the idea that they have too much to lose and little chance of winning by challenging the top player's strategy. By ideologically convincing them that neoliberalism is the only workable game in town (or, in Mrs Thatcher's terms, that 'there is no alternative' – TINA), the elite can now get away with such remarkably asymmetric distributional outcomes mostly through *a spontaneous consensus type of hegemony* (in the Gramscian sense): a hegemony that is able to deliver such an unequal distribution of income through non-openly violent means. As a result, in Latin America military regimes – the traditional hedge against a progressive distributional challenge by the majority – has become obsolete! (At least for the time being...).

As it happened, in many developing countries the new process of legitimisation of capital has become so remarkably successful, and the new technologies

of power so surprisingly effective, that neoliberalism has been able to turn the tables on progressive forces and has become ('low-intensity') liberal-democracy's best friend.

The main issue here is that there is a big difference between the great majority in many middle- *and* high-income countries entering into such an unfavourable Nash equilibrium because they are faced with overwhelming odds against the likelihood of succeeding in challenging the 'pure' distributional strategy of the elite, and what is happening now when the majority seems to have entered into this Nash equilibrium mostly out of ideological conviction. Mrs Thatcher was certainly right when she once branded 'New Labour' as "my finest creation." If this is the case, the distributional game has probably ceased to be one of 'chicken' (or 'hawk-dove') – at least for the time being. In fact, all evidence suggests that (except for some spontaneous outbursts, such as those of students' demonstrations in Brazil and Chile) the great majority in many countries is now ideologically prepared to put up with such an unequal distributive outcome as if it was simply their lot in life. A much heightened degree of all sorts of economic uncertainties for them has undoubtedly helped in this endeavour...

Indeed, it could be argued that this component of the current ideology – its ingrained belief that 'there is no alternative' – synthesises the fundamental success of the 'Anglo-Iberian' neoliberal discourse. In terms of its distributive angle, the post-1980 new attitude towards inequality was also best summarised by Margaret Thatcher: "It is our job to glory in inequality and to see that talents and abilities are given vent and expression for the benefit of us all" (quoted in Wade, 2014). Or, as Robert Lucas stated it, "of the tendencies that are harmful to sound economics, the most seductive and […] poisonous is to focus on questions of distribution". The same for Martin Feldstein: "[those who oppose increases in income at the top are] spiteful egalitarians" (ibid.).

This discourse resembles an argument put forward long ago by Callicles, a character in Plato's *Gorgias* (dialogue): 'it is natural and just for the strong to dominate the weak, and […] it is unfair for the weak to resist such oppression by establishing laws to limit the power of the strong'. In Callicles' opinion (as in the neoliberal critique of what was going on pre-1980), 'the stronger, more aggressive and domineering by nature, has been defanged and domesticated by the legal institutions of the weak demos'.[66]

One key issue here is that despite delusional fantasies of the 'top' 1 percent, the 'strong' are not so by nature but by 'environment'. This is the core insight of the Darwinian idea that a subset of members of a population may come to flourish relative to other members simply because they possess a feature, which others do not, that renders them relatively suited to some *local environment*. The question of the intrinsic worth of those who flourish most is not relevant to this story.[67] The essence of neoliberalism is it deliberate attempt to create *an artificial* economic environment that is most suited to those features that

capital has (especially financial capital) and others do not: in the jungle, capital is king! And extremely mobile. For having achieved this most unlikely of Nash equilibria in democracies by a spontaneous consensus type of hegemony, the Latin American elite – and those of other countries where lost relatives are re-emerging – surely deserves an entry in the *Guinness Book of Political Records*.

And as soon as the 1 percent succeeded in convincing the majority of its 'unfettered-markets supremacy-cum-trickledown' distributional discourse, there could be only one outcome – as in 'free' markets (those with only 'self-regulation', little market discipline due to lack of competition, mounting bargaining power of capital, multiple artificially-created political and economic rents, lavish finance, and 'sterilised' governments) there can only be one distributional winner. In turn, gains from multiple asset bubbles and easy access to an almost unlimited amount of credit may have helped confirm the 'trickle-down potentials to the middle' part of the story – and help explain the relative stability of the '50–50 rule' – and why it has facilitated enough popular support from the middle and upper-middle for the 'unfettered-markets supremacy-cum-trickledown' discourse.[68] However, although this stable '50–50' share may help to explain the 'popularity' of neoliberalism among these groups, one should not underestimate other elements of the neoliberal discourse that are also particularly appealing to middle and upper-middle – such as the promotion of 'order' based on freedom, individual initiative, the strong enforcement of property rights, 'sound' macroeconomics, fighting paternalism vis-à-vis the poor, and so on.

These insights that emerge from an approach expressly centred (among other factors, of course) on four of the issues discussed: (i) the creation of an economic, political and legal environment that artificially favors capital (especially the non-productive one); (ii) the relatively stable share of income of the middle and upper-middle, and the financial gains that these groups can get via asset bubbles and easy-access-to-credit (the 'trickledown' part of the story for them); (iii) that high inequality in some middle-income countries, such as those in Latin America, is not about the poor having low incomes due to the low value of their marginal productivities, but about them having little or no property rights over their human capital, efforts and creativity (i.e., about their little capacity to claim the value of their marginal productivity); and (iv) the so far convincing 'there is no alternative' part of the neoliberal distributional discourse, which (among other things) helps the elite to get away with such a remarkably asymmetric distributional outcome through *a spontaneous consensus type of hegemony* – and helps neoliberalism to become the most effective technology of power ever —, are probably more productive workable hypotheses to explain the huge levels of inequality found in some middle-income countries, and the increasing levels of inequality found in some OECD countries since 1980, than the neoclassical theory of factor shares.

In sum, Piketty's neo-classical approach is not just inadequate when it comes to the analysis of rising inequality since Reagan and Thatcher because it does not 'fit the facts' (evidence indicates that his assumptions on capital-output rations and elasticities of substitution are simply wrong), but also because complex (and over-determined) systems (such as the distribution of income) are not just the simple sum of their parts. Therefore, an account of them cannot be reduced to the (algebraic or otherwise) description of their individual constituents. That famous dictum "long story short, we hear a story too good to be true – it ain't", it also applies to economic theory!

Conclusions

Building on my 2011 paper, I have analysed issues such as the contrasting nature of the centripetal and centrifugal forces at work in terms of income distribution (the latter at the tails, the former in the middle and upper-middle), as well as those relating to wealth, and how only few oligarchies have so far got away with the levels of inequality found in some middle-income countries. However, we now seem to live in a changing world where increasingly a process of "reverse catching-up" is taking place in some high-income countries. I have also discussed why Piketty's 1950s neo-classical approach does not help us much to understand current distribute affairs (and not just because it does not 'fit the facts'), as well as outlined some elements of an alternative narrative regarding why inequality is becoming so extreme.

And given the remarkable homogeneity found in the shares of the middle and upper-middle, I have suggested the use of an alternative inequality statistic – one that simply indicates the ratio of the income share of the top 10 percent over that of the bottom 40 percent. The obvious advantage of this inequality indicator is that it measures inequality where inequality exists; it is also simple, intuitive, transparent and particularly useful for policy purposes – that is, especially helpful for policy targeting, as for anyone aiming at lowering inequality the implications of this ratio are as crucial as they are straightforward. This is a very important point because, as Gramsci insisted, more often than not battles of the kind of inequality are won or lost on the field of ideology.

Taking a lead from Sartre's ideas, one should always reject mechanical determinisms and 'external' factors – characteristic of so many explanations of the increasing inequality found currently across many regions in the world – and insist on individuals and societies' ultimate freedom *and responsibility*: "I am my choices" was his worldview. "I am my freedom" was the key passage in one of his plays. It would be difficult to state more emphatically than this the dimensions of human freedom and individual (and collective) responsibility. For him, every act is a self-defining one – and probably none more than the

distribution of income; and no act of this kind can truthfully be blamed primarily on 'external' or 'exogenous' factors (see, for example, Sartre 1981).

From this point of view, for how long so many in mainstream economics – and neoliberals in general – are going to insist in their search for some sort of 'exogenous Holy Grail' that explains (and possibly justifies) huge inequalities in many parts of the world? They have tried lots of them, and with little success. As Einstein once said, "Insanity is doing the same thing over and over again and expecting different results."

While explanations such as those found in neoclassical economics, structuralism, Post-Keynesianism and path-dependency may help contribute to the understanding of a really complex (and surely 'over-determined') whole, ultimately (as Stiglitz has stressed), "inequality is a choice". However, it is not always clear who can act upon that choice, what that choice is really about, and what making that choice will really achieve. Also, as someone famously said in his analysis of events in France in 1848, people make their own history, but they do not make it as they please; they do not make it under circumstances they themselves have chosen, but under given and inherited circumstances with which they are directly confronted. Yet, the norm is that usually there are many more degrees of freedom than is generally acknowledged. For example, there can be little doubt that 'choice' – and 'taking responsibility for the outcomes of one's actions', as opposed to blaming exogenous factors, has something to do with the fact that Croatia has a median wage that is twice as large as Chile's, even though both countries have the same GDP pc...

You've really got to hand it to the Latin American capitalist elite. Pre-1980 they convinced the progressive forces of the region (including important sectors of the left) that there was nothing more 'anti-imperialist' than to provide them with vast rents via ISI; and that these huge rents, as opposed to what was happening in East Asia at the time, should be given to them without any form of performance-related conditionality. And now, with the help of a narcissistic ideology, their process of legitimisation has been so successful, and their new technologies of power so sophisticated that they have again convinced the majority (including most of the left) not only of "TINA" ("there is no alternative"), but that they actually deserve every privilege and reward, and any rent (including those of natural resources, of course) that they can extract.

So, we need to understand what makes us take particular choices when confronted with specific inherited circumstances. What helps form collective beliefs? How do spontaneous consensus types of hegemonies emerge? And how can they be changed?

The same issues, but from the narrower perspective of the recurrent debate between 'structure vs. agency', as far as income distribution is concerned I am clearly on the side of agency – although strongly emphasising that this agency

may well fail if it fails to understand structure (and therefore fails to adopt the right political and economic strategy to fight for change). The huge diversity of distributional outcomes across the world seems to support this view.

Pope Francis, in his surprisingly politically candid address to new Vatican ambassadors in May 2013, seems to support the view that democracies today resemble the government of the 1 percent, for the 1 percent, and by the 1 percent for self-constructed reasons:

> While the income of a minority is increasing exponentially, that of the majority is crumbling. This imbalance results from ideologies which uphold the absolute autonomy of markets and financial speculation, and thus deny the right of control to States, which are themselves charged with providing for the common good. A new, invisible and at times virtual, tyranny is established, one which unilaterally and irremediably imposes its own laws and rules. (http://w2.vatican.va/content/francesco/en/speeches/2013/may/documents/papa-francesco_20130516_nuovi-ambasciatori.html)

Tyranny indeed!

However, one should not underestimate (of course) the many obstacles facing the assemblage of the necessary social constituencies for a progressive distributive agency in middle-income countries (or in high-income ones), as history teaches us that these struggles have only succeeded when supported by a broad-base constituency – given the fierce opposition that they are bound to encounter from the 'usual suspects'. This is particularly true regarding the obstacles ahead in Latin America for this region to be able to go further in its current (rather timid) attempts to reduce inequality, given the remarkable stability of the sub-optimal and highly unequal distributional Nash equilibrium found there today – a good example of a Nash Equilibrium that is not 'Pareto Optimal', as all players' payoffs could well be increased from perspectives such as that of efficiency wages.

So far, telling stories about the middle (à la Washington Consensus) has proved to be mostly a distraction, although a rather effective one – brilliant storytelling has been the key to the success of the neoliberal ideology, because as one group of Native Americans used to say, "those who are good at storytelling will dominate the world".

And the fact that democracies get to be more and more something resembling the government of the 1 percent, for the 1 percent, and by the 1 percent (Stiglitz, 2011 and 2012) – and as the type of 1 percent found in the advanced countries after FDR and World War II, especially in the Nordic countries is a species in serious danger of extinction (if not already extinct), and as this type of 1 percent has never existed (and is highly unlikely to emerge now) in highly unequal middle-income countries – the choices of an ever more weird minority,

able to impose their will in the distributional struggle by ideology, (financial) force, the help of sterilised governments and heightened uncertainties for the rest seem increasingly to be what really counts. And part of their success in being able to impose their own brand of choices on society rests on their continuous success in convincing (otherwise) 'progressive' forces that under the current domestic and international constraints, the assemblage of the necessary social constituencies for progressive agendas is off the political map.

As is often the case, Warren Buffett explains all this beautifully and succinctly: "There's class warfare, all right, but it's my class, the rich class, that's making war, and we're winning." But what he did not explain is what Keynes (following a long tradition) tried to elucidate: when this happens, capitalism can easily become lacklustre – even self-destructive if financial markets are flooded with liquidity and allowed to run amok. Furthermore, in some important aspects this has led also to a process of "reverse catching-up" towards some unfortunate features of highly unequal middle-income countries. So much so that today it is not unreasonable to ask whether the highly-unequal middle-income countries are the ones trying to move from what North has called their "Limited Access Order," to the more enlightened 'open access' one (supposedly still in existence) in developed countries, or are we moving towards a world in which an increasing number of features of the "limited" one are becoming the rule – including for the industrialised countries?[69]

And in terms of 'choice', in the same way that more often than not "every nation gets the government it deserves" the same relates to income distribution. In turn – as Solt's database shows – the same could also be said for fiscal policy, one of the key instruments for dealing with inequality. From this point of view, Schumpeter's assertion, "The fiscal history of a people is above all an essential part of its general history" (1918), could not be more accurate today, as the contrast between Finland and Chile above indicates (while in the former the Gini improves by 43 percent after taxes and transfers, in the latter it only does so by 3 percent). Hence, today it would be more accurate to say, "The fiscal *and distributive* histories of a people are above all essential parts of its general history".

Appendix: Sample

In this paper, in order to construct my sample I use the following sources:
  i. OECD (2014) for high-income OECD countries, and other non-Latin American countries for which this dataset provides information (Czech Republic, Estonia, Hong-Kong, Hungary, Israel, Poland, Russia, Singapore, Slovakia, Slovenia, South Africa, and South Korea);
  ii. SEDLAC (2014) for all Latin American countries;

iii. Taiwan (2014) for Taiwan; and

iii. World Bank–WDI (2015; the WDI dataset) for the rest. In this source, I only
      included countries with data *after 2002* (as a result, Botswana, Trinidad and Tobago,
      Turkmenistan and Zimbabwe were excluded). I also excluded countries with a
      population of less than 1 million (Belize, Bhutan, Comoros, Djibouti, Fiji, Iceland,
      Luxembourg, Maldives, Montenegro, Saint Lucia, Sao Tome and Principe and
      Suriname).

iv.   For the historical analysis of the shares of D5–D9 and D7vD9 I also use the World
      Bank-WYD database (Milanovic, 2002, and updates – the last available one refers
      only to 2005).

Notes

1. Also, Facultad de Administración y Economía, Universidad de Santiago. Tony
    Atkinson, Stephanie Blankenburg, Ha-Joon Chang, Mariana Chudnovsky, Alex
    Cobham, Jonathan DiJohn, Jorge Fiori, Juliano Fiori, Samer Frangie, Jorge Friedman,
    Ester Gonzalez, Daniel Hahn, Geoff Harcourt, Emily Hogan, Pamela Jervis, Jorge
    Katz, Mushtaq Khan, Javier Núñez, Cristóbal Palma, Guillermo Paraje, Carlota
    Pérez, Ashwani Saith, Claudia Sanhueza, Paul Segal, Ignês Sodré, Andy Sumner, Bob
    Sutcliffe, Lance Taylor and Robert Wade have made valuable contributions to my
    work in this area over the years. My late friends Jaime Crispi, Carlos Díaz-Alejandro,
    Andrew Glyn and Carlos Lopes also influenced my thinking on this subject.
    Participants at many conferences and seminars, and current and former PhD stu-
    dents also made very helpful suggestions. The key ideas of this paper were developed
    while trying to deal with the grief of the sudden death of my life-long friend Gina
    Malengreau Fiori; I dedicate this paper to her. The usual caveats apply.

2. See Cobham and Sumner (2013a and b); see also Fisher (2013, especially the brilliant
    animation at the end of the article), Fisher (2014, map 7); and Green (2012). See also,
    Chang (2014).

3. However, as Robert Wade remarks, there is still a strange neglect of inequality in
    actual public policy making (Wade, 2014; more on this below).

4. On global inequality see Milanovic (2010 and 2013).

5. When I analyse income distribution across countries from the perspective of their
    income per capita I do so simply as a mechanism to visualise the geometry of within-
    country inequality across the world; i.e., it is just a cross-sectional description of
    cross-country differences in inequality, when categorised by income per capita.

6. And when data are available, as in the case of Qatar, it is unlikely that household
    surveys include the fate of the relatively large numbers of South-Asian temporary
    migrant workers in the construction industry, or of migrant domestic servants.

7. For the Korea data, see The World Top Incomes Database (2015). A recent study on
    Brazil shows a picture similar to that of Chile, with the top 1 percent able to appro-
    priate nearly 29 percent of national income (when the estimate takes into account
    the whole population); see Medeiros et al. (2014).

8. In the current one-sided scenario, where capital clearly has the total upper hand
    (one in which the outcome of the distributional game resembles a 'winner-takes-all'
    scenario able to deliver a Nash equilibrium characterised by the 'pure strategy' of the
    rich), a good deal of the civilisation brought to us by the vigorous economic, social
    and political struggles since events such as the London Dock Strike of 1889, the
    Ford-T, the fear of contagion from the utopian ideals of the first 'soviets', the New

Deal, the Marshall Plan, the British National Health Service and the Welfare State is fading away.

9. So many people were shocked to learn in the last Oxfam report that the richest 1 percent now have more wealth than the rest of the world combined; and that the richest 62 people in the world now have as much wealth as the poorest half of the global population (Oxfam, 2015; and Oxfam, 2016). But Latin-American readers of the report would think instead "tell me something new". In Chile, for example, according to a recent study, four family-groups (including that of a former President) control 47 percent of the assets traded in the Chilean Stock Exchange; see http://www.emol.com/noticias/economia/detalle/detallenoticias.asp?idnoticia=430194. According to the Forbes Wealth Report (see Forbes, 2014), in relative terms, no other main region in the world has created in the last ten years so many millionaires of all types as Latin America (i.e., individuals with US$ 30 million or more in terms of net assets, excluding their principal residence; centa-millionaires – those with net assets of more than US$ 100 million; and billionaires). And there was no fastest surge at the top than in those countries of South America where either the 'old'-left or the 'new'-one are in government, as in all three categories Venezuela, Brazil, Chile and Argentina came top (in different order according to the category). Meanwhile, 'right-wing' Mexico had an increase in these three categories which was only one-fourth to one-sixth those in the 'old-left' or 'new-left' countries – the Mexican capitalist élite seems to have been rather short-sighted when they opposed and (according to many reports) also helped steal a presidential election from the 'new-left' not once but twice...

10. The only other countries with a low share for D5–D9 in the whole sample (say, one below 47 percent), are Rwanda, Central African Republic, Guatemala, Honduras and Chile – for the (somewhat surprising) low share in Chile, see Palma (2011 and 2014).

11. As a result, after 20 years of democracy and continuous 'centre-left' ANC rule, the top quintal gets no less than 75 percent of overall income! In this country the drop in income-shares below D9 is so sharp that D8 already gets less than half the share of D9. For an analysis of this remarkable phenomenon, see Appendix 3 of my 2011 paper. Basically, although democracy has opened up opportunities for many non-white new business people and professionals, the 'black empowerment' policy has mostly succeeded in bringing new entrants into the top 1 percent, and a particularly large number of new entrants into a much enlarged administrative class – and in bringing them to the same relatively high level of wages (and benefits) held previously by white bureaucrats when these administrative jobs were reserved for whites, mainly Afrikaners (at the time of Mandela's release from prison, one third of the economically active white population was employed in the public sector, with Afrikaners constituting the largest number of public employees).

12. The only countries with a share for D7–D9 below one-third, other than the three already mentioned (South Africa, Namibia and Zambia) are Rwanda and the Central African Republic. And the only ones with a share that reaches 40 percent are China (40.3 percent, included in the graph), and Israel (40.4 percent).

13. Among the many issues that emerge from this homogeneity in the middle and upper-middle vs. the heterogeneity in the tails is the mistake of reporting income distribution data in quintiles, as the top one is the blend of two very different components – while D9 has the most homogeneous share of all deciles, D10 has a hugely heterogeneous one. Therefore, there is a major (and easily avoidable) loss of information if these two deciles are reported together.

14. In the case of Chile, for example, a country that in 2014 had a GDP pc in current dollars of US$15,000, and of US$ 23,000 in PPP terms (IMF, 2015; and GGDC, 2015), 25 percent of men and 43 percent of women (i.e., one-third of the working population) take home wages equivalent to less than US$11 per day. At the time when the traditional OECD countries had the current GDP pc of Chile, their hourly minimum wage was on average twice as much that of Chile today (perhaps this is what some call 'progress' these days.) See specially Durán and Kremerman (2015).

15. The same is true for output: in many 'middle-income' countries while the level of productivity for their resource-based activities are among the highest in the world, that of many other activities resemble those of low-income countries (see Palma, 2010; see also Katz, 2004).

16. However, if 'positive' incentives for the bottom 40 percent to acquire skills are missing (as they have little claim over the additional output resulting from their efforts), 'negative' ones are in abundance... That is, often the bottom 40 percent has to acquire skills just to remain where they are (i.e., in work).

17. See, for example, Khan (2000).

18. The next task should be to check whether this new finding of an overall homogeneity in the middle and upper-middle across countries is corroborated by datasets that measure inequality using sources other than household surveys, such as tax returns (when these cover a large proportion of the working population), or industrial pay (as in the UTIP-UNIDO data set).

19. For a criticism of the Gini, a '19th Century' statistics, see Cobham and Sumner (2013c). See also OECD (2013, especially Shepherd, 2013).

20. See, for example, Paraje (2004).

21. The opposite is the case of the Theil; according to Sen, this statistic "... is an arbitrary formula, and the average of the logarithms of the reciprocals of income shares weighted by income shares is not a measure that is exactly overflowing with intuitive sense." (Sen, 1973: 36).

22. Bob Sutcliffe calls this contrast "Palma's Law".

23. Alex Cobham, Luke Schlogl and Andy Sumner revisit the empirical basis of the relative stability of the 'middle and uppr-middle' with an expanded dataset across and within developing and developed countries; see Cobham et al. (2015).

24. Note that as far as the ex-communist countries are concerned, this became so only when in 'full transition' (see Palma, 2014). Also, this homogeneity seems to be *a group characteristic*, as individuals within the group – as evidenced in household surveys – can easily be upwardly or downwardly mobile.

25. See, for example, Wolfson (1997).

26. Following this logic, Doyle and Stiglitz made a proposal to include a 'Palma target' in the UN's post-2015 framework for global development (a Palma Ratio of 1 by the year 2030; see Doyle and Stiglitz, 2014). In turn, Engberg-Pedersen (2013) suggested that countries should aim to halve the gap between their starting point and a Palma of 1 by 2030.

27. As a result, as Cobham et al. (2015) remark, "the Palma is 'blind' towards intra-middle variation. However, this shortcoming might be offset by other desirable characteristics it has as a measure of income concentration. We know that by construction the Gini is over-sensitive to the middle; but in practice it is equally insensitive to the middle as is the Palma; so the implication would seem to be that the Palma Proposition holds sufficiently strongly to overcome the Gini's bias (possibly exacerbated by weaknesses in constructing Gini series from limited quintile data). That leaves a choice between a measure which by design is oversensitive to the

'wrong' bit of the distribution, but in practice tells us nothing about it; and a measure which by design and practice, deliberately tells us nothing about it. If you want to know about the middle, the Gini seems to be little good to you – but may fool you that it is."

28. The only Latin American country ranked in this sample below 100 is Uruguay (94).

29. As indicated by Cobham et al. (2015), "Data for the Palma Ratio is now listed and updated as standard measure of inequality in the OECD Income Distribution database (see Cingano, 2014 and OECD, 2014) and the UNDP annual Human Development Report (See UNDP, 2014), as well as by some national statistical offices, e.g. the UK (ONS, 2015). Further, interest in the Palma Ratio is evident among NGOs and international agencies alike (see for illustration, EC, 2014; OECD, 2014; Oxfam, 2014; UNDESA, 2013)."

30. See, for example, Neal and Rosen (2000). See also ECLAC (2010a and b).

31. See, for example, World Bank (1987) and Krueger (1983).

32. See, for example, Lall (1983).

33. Among those that favour this hypothesis, see for example Cline (1997, this book has a very useful survey of the literature). For critiques of this literature, see Krugman and Lawrence (1993), Atkinson (1997), and Paraje (2004).

34. The real world seems to insist in contradicting the often mechanical reasoning of so much of mainstream economics. The message we get (which we were supposed to have understood since John Stuart Mill) seems to be always the same: no matter what ideological perspective you are coming from, either you are able and willing to take seriously the complexities of social realities, or you may spend the rest of your life just 'delving deeply into the surface of things'.

35. Piketty's recent visit to Chile highlights this point: right-wing economists and political commentators spared no effort and expense to criticise his emphasis at analysing what was going on at the top of the distribution (sometimes even in abusive terms); see for example http://www.elmercurio.com/blogs/2015/01/17/28610/Estamos-o-no-hasta-el-Piketty.aspx.

36. Although Brazil's progressive social policies, increased minimum wage and efforts to increase the formalisation of jobs has succeeded in increasing the share of the bottom 40 percent, there is still a huge controversy regarding what is happening at the top. For example, according to Forbes (2014), since the Workers' Party took office in 2003, the number of millionaires, centa-millionaires and billionaires (as defined by Forbes) have increased by 273 percent, 274 percent and 256 percent, respectively. In 2013, for example, according to this Report one additional person became this type of millionaire every 27 minutes – in a country with a remarkably sluggish economy. Also, the already mentioned study of income distribution based on tax records (Medeiros, et al., 2014) shows not only a much larger concentration of income at the top than studies based on other sources, but also one that has been rising.

37. This became evident during the first 16-years of the centre-left coalition that followed the return to democracy in 1990 (la 'Concertación´). While the Gini stood immobile, poverty rates were cut by more than half (from about 40 percent to less than 20 percent of the population). Basically, when high middle-income countries define poverty in such an unambitious way as they do in Latin America, programmes of poverty reduction are so cheap that they can be carried out easily without affecting the bulk of the distribution

38. For a detailed analysis of this issue, see Appendix 1 in my 2011 paper.

39. As mentioned above, the last reported data for Botswana is from 1994 (therefore, not included in this sample); these data shows a Palma Ratio of 5.7.

40. See Pesaran, Haque and Sharma (2000).
41. All parameters are statistically significant at the 1% level. A good example for my lectures on econometrics, section "why should one always be careful when interpreting econometric results"… Econometrics is all about competing specifications, and sometimes, for all practical purposes, there can well be a draw! However, as the second equation does not fully nest the first, the comparison is more complicated than what one would like.
42. See Piketty (2014, chapter 10). According to Darwin, "living fossils [...] like fossils, connect to [...] orders now widely separated in the natural scale. [... but] they have endured to the present day from having [...] been exposed to less severe competition". (1859)
43. See also Arantes (2007); and Oliveira (2003).
44. *The New York Times* reported recently on a meeting with a Chilean businessman, describing him in the following way: "With his custom-designed Zegna suits, pink tie with matching Brioni handkerchief and colored diamond cufflinks [...] [he] boasted of having five Hummers, a private jet, a Caribbean island getaway, a wristwatch designed for him by Cartier at the request of Prince Albert of Monaco, even a Rolls-Royce Phantom Drophead convertible [for which] he paid $2.2 million [...]. [Also] he paid more than $400,000 to be the first South American to travel into space as part of Richard Branson's Virgin Galactic tour [...] He built a large home overlooking Santiago with 24-carat-gold-trimmed tiles in the swimming pool. He threw outlandish parties, including a 15th wedding anniversary celebration for 200 guests last November that cost $4 million and involved 600 entertainers, including Brazilian carnival dancers, and the musical acts Donna Summer and Air Supply. [...] he was now considering offers from companies to buy a majority of his mining assets [because] "I am not so happy working so much, it's very stressful," he said." (http://www.nytimes.com/2010/11/20/world/ americas/20chile.html). The common moaning among the Latin American élite that "work is so stressful" reminds me of Groucho Marx's assertion: "Money frees you from doing things you dislike. Since I dislike doing nearly everything, money is handy."
45. For an analysis of this issue, and of the main features of what I call the "Anglo-Iberian" neoliberal paradigm, see Palma (2010).
46. In Chile, for example, 86 percent of all new jobs created since 1980 took place in services (especially in trade, restaurants, hotels and personal services), activities not usually known for their exorbitant demand for skilled labor (of the type assumed in mainstream literature).
47. Few phenomena have had so many explanations of the 'exogenous'-type as inequality; some have even blamed Latin America's huge inequality on the lack of major wars in the region – as supposedly in OECD countries (especially Europe and Japan), and in some of the first-tier NICs (namely Korea and Taiwan) income distribution is supposed to have improved *only* due to the horror and anxieties of major conflicts (as well as the destruction of wealth that these have created). Others, instead, keep insisting on looking at what happened in Latin America's distant colonial past – as if 'path-dependency' had to be the inevitable recourse for every complex social and ideological process too complex to analyse (for an investigation that stretches the concept of path dependency well beyond its breaking point, see Sokoloff and Engerman, 2000; see also Cornia, 2012. For a view, which I endorse, that attributing Latin America's current inequality to historical persistence is just a myth, see Williamson, 2009).
48. As an ECLAC study shows (2010), in 6 countries in Latin America (Argentina, Brazil, Chile, Costa Rica, Panama and Uruguay), the total cost of a monetary transfer

equivalent to 'one poverty line' (the cost per capita of two baskets of basic foods) to *all* the unemployed, *all* people over 64 years of age, and *all* children under 15 years living in vulnerable households, is only equivalent to between 1.8 percent and 2.7 percent of GDP. If this subsidy is given only to each child and adolescent between 5 and 14 years of age, the total cost is 1 percent of GDP or below for those six countries; and if the subsidy is only given to each unemployed person, the total cost is below 1 percent of GDP for thirteen of the sixteen countries studied – and just one-third of a percentage point of GDP or less, in eight countries – that is, not such an insurmountable task! For an analysis of the ample scope that middle-income countries have to eradicate poverty, see Ravillion (2010); and Tregenna (2012).

49. That is one of the reasons why the level of the minimum wage is so important, as well as its degree of its enforcement.

50. As mentioned above, this phenomenon becomes evident in the decoupling of productivity growth from wage growth.

51. Kaldor (1959) was the first to discuss the contrast between Chile's high share of profits in national income and the country's low levels of saving and investment (see Marcel and Palma, 1989).

52. As discussed in Foucault (2004); Khan (2005); Woods (1999); and Palma (2009), classical capitalism is characterised not just by the presence of market opportunities but by competitive market 'compulsions', which ensure that both capitalists (of all sizes) and workers (of all skills) continuously have to strive to improve their performance in order to remain in the market. In no other economic system does continued existence depend on market competition in this way and therefore *on the systematic improvement of labor productivity*. Only in capitalism are there continuous pressures from competitive struggles, which lead to the constant improvement of the forces of production. Therefore, like in Alice in Wonderland, only in capitalism (but only when there is proper competitive pressures and the rules of the game are followed by all) it is always necessary to run just to remain in the same place. However, something rather different is happening today in this cosy blend we now call 'capitalism', where big business, particularly in financial markets, want to have their cake and eat it; i.e., have all the benefit that capitalism can offer, but none of its compulsions (just the carrots, but none of the sticks).

53. I understand for "financialisation" the rise in size and dominance of the financial sector relative to the non-financial sector, as well as the increasing diversification towards financial activities in non-financial corporations.

54. See especially Pérez (2004).

55. In an interview Piketty justifies his controversial elasticity-assumption saying that "If you were to take the standard neoclassical model, with a single good production function and perfect competition, etc., the only possible logical way to explain these two moving together [the capital/income ratio and the capital share of national income] would be an elasticity of substitution somewhat bigger than 1, say on the order of 1.5 [...]" (http://potemkinreview.com/pikettyinterview/). Some misunderstood this logical conclusion of the need for an elasticity higher than unity, and took it as a 'proof' that wages in highly unequal middle-income countries, such as Chile, should remain low; otherwise, labor could easily be substituted via capital intensive techniques (see, for example, De Gregorio, 2015). For empirical estimates of the elasticity of substitution, which show a rather different picture than the one assumed by Piketty, see for example Semienniuk (2014) and Rognlie (2014).

56. Investment rates for EU countries were at best similar, and sometime even lower than those of the US (IMF, 2015). On this line of critique of Piketty's book, see

specially Rowthorn (2014); see also Taylor (2014); and Harcourt (2015). For investment rates in the US, see US Department of Commerce (2015).

57. http://potemkinreview.com/pikettyinterview/.

58. Although the Solow–Swan model does not fit the data, or the dynamics of the new globalised, financialised, and technologically revolutionised world, some new models in this tradition have proved to be even less relevant to the analysis of current rising inequality, such as the case of 'representative-agent' models in which each individual owns an equal share of the capital stock. Oddly enough, in these models the inequality r > g also holds true in the steady-state equilibrium... As my Cambridge colleague Ha-Joon Chang (2014) says, "It is a mark of where we are in our political discourse that even to say "neoclassical economics is not the only school" seems radical".

59. In terms of the abuse of consumers there is again some "reverse catching-up" going on towards what has characterised unequal middle-income counties for a long time – although rich nations still have a long way to go in this direction... In Brazil, for example, a recent study made by the Federation of Commerce shows that real interest rates on credit cards were above 200 percent a year at the time (see http://finance.yahoo.com/news/Creditcard-debt-may-threaten-apf-3046211331.html?x=0). And an OECD study shows that in Chile we pay for the internet twice as much, but only get half the speed, of the OECD's average – a good example of what I like to call the "2 x ½" style capitalism, where many corporations accumulate rents by charging twice as much for providing services with only half the required quality (i.e., a preference for the creation of rents via 'predator'-type behaviour rather than profits as 'producers'). As the former head of Chile's largest holding company and former President of the Confederation of Chilean Industry (and current head of the board of directors of a mayor retail company) explains, lack of effective competition plays a crucial rôle in this: "[Chile] is a market economy in name only. Competition has disappeared; mergers and acquisitions have led to a huge degree of oligopolistic concentration." (http://www.atinachile.cl/node/ 4629).

60. When it was discovered that HSBC had become the bank of choice of Mexican drag-cartels (how much worse can it get!), the bank only received a fine and no one went to prison. The same happened when Standard Chartered Bank was discovered wilfully flouting US sanctions against suspected terrorist organisations. The same with bankers that were discovered rigging the LIBOR, the exchange rates markets, commodity prices, and so on. What a difference with FDR's way of dealing with financial fraud! (For the current impunity of financial fraudsters, see the blog of Rowan Boswell-Davies, a former Scotland Yard Fraud Squad detective, in http://rowans-blog.blogspot.co.uk/).

61. http://bigthink.com/videos/joseph-stiglitz-on-the-fall-of-lehman-brothers. He also discusses some of these issues in https://www.youtube.com/watch?v=RO8KWTb2iPM&feature=youtu.be.

62. These not only include the already mentioned colossal amounts of funds devoted to (unconditional) bailouts when things have gone wrong, (following the famous "heads I win, tails you lose" new style-accumulation), but also include those that resulted from the new logic of state-agency. The main aim of this was to reverse the post-FDR, post-war, Keynesian-type state agency – one in which the key component of the interaction between political power and markets was a rôle for the state as a 'constrainer' of the rent-seeking practices of oligopolistic capital (in order to foster competition and rationalise financial markets). The *de facto* outcome of this transformation was a new rôle for the state as a facilitator of the rent-seeking practices of big

business. Not only Bush asked polluters to write environmental regulation, but when Blair and Brown created a new regulatory body for the financial industry in the UK (the Financial Service Authority – FSA), they set it not only as an "independent non-governmental body" (i.e., a company limited by guarantee), but one that was actually financed by the financial services industry and run by financial-industry insiders (ex-bankers became Chairperson and Chief Executive Officer). That is, they set the FSA as operationally independent of Government, funded entirely by the financial corporations it was supposed to regulate, and led by financial-industry insiders. I suppose this was an attempt to solve the problem of 'regulatory capture': if lobbyists inevitably succeed in capturing the regulators, why not make them the regulators in the first place? As Foucault envisaged, by projecting the logic of unregulated markets into the heart of government, the new framework resulted in "[a] state under the surveillance of the market, rather than a market under the surveillance of the state" (2004, p. 120).

63. He said later: "I do not view r>g as the only or even the primary tool for considering changes in income and wealth in the 20th century, or for forecasting the path of income and wealth inequality in the 21st century. Institutional changes and political shocks – which to a large extent can be viewed as endogenous to the inequality and development process itself – played a major role in the past, and it will probably be the same in the future" (Piketty, 2015). Why did he not then move on analytically to these types of spheres properly? On the role of institutional changes and political shocks on inequality, see for example Acemoglu and Robinson (2014).

64. On the recurrent role of excess liquidity in the lead up to financial crises, see especially Kindleberger (2000). On the associated financial fragility see Minsky (1992). On the role of increased inequality on the current financial crisis, see Palma (2009).

65. But even then, it did not manage to get back to the levels at the end of the 'financial repression' era… Regarding the current struggles to recover from the global financial crisis, following Keynes' analysis of the 1930s crisis, what is needed is a greater degree of linkage between financial and productive capital: "[t]here cannot be a real recovery, in my judgment, until the ideas of lenders and the ideas of productive borrowers are brought together again. […] Seldom in modern history has the gap between the two been so wide and so difficult to bridge" (1931, p. 146; also quoted in Pérez 2002, 167).

66. See http://www.classicallibrary.org/plato/dialogues/15_gorgias.htm.

67. See especially Lawson (2003).

68. Regarding the famous "disappearing middle", one should never confuse the declining level of welfare that that share of the middle and upper-middle middle in high-income countries can offer – given the massive increase in the cost of education, health, housing and debts in general, the declining levels of pensions, regressive taxation, and so on – with a non-existing declining share of income of these groups. As discussed above (and in more detail in Palma, 2014), all evidence indicate that this share has reminded highly stable in OECD countries around the '50–50 rule' (and in the rest, there has been a process of convergence towards that level). But that is not the case with what that share can offer.

69. See North et al. (2007).

References

Acemoglu, D. and J. A. Robinson (2006) *Economic Origins of Dictatorship and Democracy*. Cambridge: Cambridge University Press.

Acemoglu, D. and J. A. Robinson (2014) 'The Rise and Decline of General Laws of Capitalism," NBER Working Paper 20766.

Alvarado, F., A. Atkinson, T. Piketty and E. Saez, (2014) "The World Top Incomes Database," at http://www.parisschoolofeconomics.eu/en/news/the-top-incomes-database-new-website/.

Arantes, P. (2007) *Extinção*. Boitempo Editorial.

Atkinson, A.B. (1997) "Bringing Income Distribution in from the Cold," *The Economic Journal*, vol. 107, no. 4.

Atkinson, A.B. (1998) "Preface," in A.B. Atkinson and J. Hills (eds), *Exclusion, Employment and Opportunity*, Centre for the Analysis of Social Exclusion Paper 4, London School of Economics.

Bichler and Nitzan (2009) "Contours of Crisis II: Fiction and Reality," *Dollars & Sense*, April 28. Available at http://www.dollarsandsense.org/archives/2009/0409 bichlernitzan.html.

Chang, H.-J, (2014), Economics: The User's Guide, Penguin.

Cline, W. (1997) *Trade and Income Distribution*. Washington, DC: Institute for International Economics.

Cobham, A. and A. Sumner (2013a) "On Inequality, Let's Do the Palma (Because the Gini is so Last Century)." Available at http://oxfamblogs.org/fp2p/on-inequality-lets-do-the-palma-because-the-gini-is-so-last-century/.

Cobham, A. and A. Sumner (2013b) "Is It All About the Tails? The Palma Measure of Income Inequality," Center for Global Development Working Paper 343, September. Available at http://www.cgdev.org/sites/default/files/it-all-about-tails-palma-measure-income-inequality.pdf.

Cobham, A. and A. Sumner (2013c) "Putting the Gini Back in the Bottle? 'The Palma' as a Policy-relevant Measure of Inequality." Available at https://www.kcl.ac.uk/aboutkings/worldwide/initiatives/global/intdev/people/Sumner/Cobham-Sumner-15March2013.pdf.

Cobham, A., L. Schlogl and A. Sumner (2015), 'Inequality and the Tails: The Palma Proposition and Ratio Revisited', DESA Working Paper No. 143. Available at www.un.org/esa/desa/papers/2015/wp143_2015.pdf. An early version can be found in Significance 11(1), 2014.

Cornia, G.A. (2012) "Inequality Trends and their Determinants: Latin America Over 1990–2010," *WIDER Working Paper* No. 2012/09.

Cornia, G.A. and F. Steward (2014) *Towards Human Development: New Approaches to Macroeconomics and Inequality*. Oxford: Oxford University Press.

De Gregorio, J. (2015) "A propósito de Piketty." Available at https://www.scribd.com/doc/254422390/A-PROPOSITO-DE-PIKETTY, and http://www.elmostrador.cl/pais/2015/02/02/monsieur-picketty-y-el-caso-chileno/.

De Beauvoir, S. (1972) The Second Sex, Penguin.

Doyle and Stiglitz (2014) 'Eliminating Extreme Inequality: A Sustainable Development Goal, 2015–2030', Ethics and International Affairs, 28(10).

Duran, G. and M. Kremerman (2015) *Los Verdaderos Sueldos en Chile. Panorama Actual del Valor del Trabajo usando la Encuesta NESI*. Estudios de la Fundación SOL.

EC (2014) EU Employment and Social Situation Quarterly Review: Towards a Better Measurement of Welfare and Inequalities, European Comission.

ECLAC (2010) Time for equality: closing gaps, opening trails. Available at http://www.cepal.org/en/publications/time-equality-closing-gaps-opening-trails-thirty-third-session-eclac-summary.

Engberg-Pedersen, L. (2013) 'Development Goals Post 2015: Reduce Inequality', Danish Institute for International Studies Policy Brief, DIIS.

FACEA (2012) *Encuesta Trimestral de Ocupación y Desocupación en el Gran Santiago*. Available at http://www.empleo.microdatos.cl/encuesta_ocupacion/.

Fisher, M. (2013) "How the World's Countries Compare on Income Inequality." Available at http://www.washingtonpost.com/blogs/worldviews/wp/2013/09/27/map-how-the-worlds-countries-compare-on-income-inequality-the-u-s-ranks-below-nigeria/.

Fisher, M. (2014) "40 More Maps That Explain the World." Available at http://www.washingtonpost.com/blogs/worldviews/wp/2014/01/13/40-more-maps-that-explain-the-world/.

Fishlow, A. (1972) "Brazilian Size Distribution of Income," *The American Economic Review*, vol. 62, nos 1/2.

Forbes, (2014) *The Wealth Report*. Available at: https://www.worldwealthreport.com/.

Foucault, M. (2004) *Naissance de la Biopolitique: Cours au Collège de France, 1978–1979*. Paris: Gallimard Seuil.

GGDC (2015) Total Economy Database. Available at http://www.conference-board.org/economics/.

Green, D. (2012) "'It's the Share of Rich, Stupid': Brilliant Inequality Stats and Politics from Gabriel Palma," *Oxfam blog*. Available at http://www.oxfamblogs.org/fp2p/?p=9964.

ILO (2014) KILM. Available at http://www.ilo.org/empelm/what/WCMS_114240/lang--en/index.htm.

IMF (2015) World Economic Outlook database. Available at: http://www.imf.org/external/pubs/ft/weo/2015/02/weodata/download.aspx.

Kaldor, N. (1959) "Economic Problems of Chile," *El Trimestre Económico*, April–June.

Katz, J. (2004) "Market-oriented Reforms, Globalization and the Recent Transformation of Latin American Innovation Systems," *Oxford Development Studies*, vol. 32, no. 3.

Keynes, J.M. (1919) *The Economic Consequences of the Peace*. London: Harcourt, Brace, and Howe, Inc.

Keynes, J.M. (1931) "The Grand Slump of 1930," in *Essays in Persuasion*. London: Macmillan.

Khan, M.H. (2000) "Rent-seeking as Process," in M. Khan and J.K. Sundaram (eds), *Rents, Rent-Seeking and Economic Development: Theory and Evidence in Asia*. Cambridge University Press.

Khan, M.H. (2005) "The Capitalist Transformation," in K.S. Jomo and E.S. Reinert (eds), *The Origins of Development Economics: How Schools of Economic Thought Have Addressed Development*. London: Zed Books.

Kindleberger, C. (2000) *Manias, Panics, and Crashes: a History of Financial Crises*, 4th edition. Wiley.

Krugman, P. and R. Lawrence (1993) "Trade, Jobs and Wages," National Bureau of Economic Research Working Paper No.. 4,478.

King, L and K. Rajan (2013) "An Alternative Measure of Income Inequality? The 'Palma Index' and Public Health in India," mimeo, Cambridge.

Lall, D. (1983) *The Poverty of 'Development Economics*. Institute of Economic Affairs.

Lawson, T. (2003) *Reorienting* Economics. New York: Routledge.

Leibbrandt, M., I. Woolard, A. Finn and J. Argent (2010) "Trends in South African Income Distribution and Poverty since the Fall of Apartheid," *OECD Working Papers*, 101.

López R., E. Figueroa and P. Gutiérrez (2013) "La 'parte del león': nuevas estimaciones de la participación de los súper ricos en el ingreso de Chile." Available at http://www.econ.uchile.cl/uploads/publicacion/306018fadb3ac79952bf1395a555a90a86633790.pdf.

Medeiros, M., P.H.G. Ferreira de Souza and F. Avila de Castro (2014) "O topo da distribui-ção de renda no Brasil: primeiras estimativas com dados tributários e comparação com pesquisas domiciliares, 2006–2012." Available at http://ssrn.com/abstract=2479685.

Marcel, M. and J.G. Palma (1989) "Kaldor on the Discreet Charm of the Chilean Bourgeoisie," *Cambridge Journal of Economics*, Kaldor Memorial Issue, April. Also in T. Lawson, J. G. Palma and J. Sender, *Kaldor's Contribution to Political Economy*. New York: Academic Press; and *El Trimestre Económico*.

Milanovic, B. (2002) "True World Income Distribution, 1988 and 1993: First Calculation Based on Household Surveys Alone," *The Economic Journal*, vol. 112, no. 476.

Milanovic, B. (2010) *The Haves and the Have-Nots: A Brief and Idiosyncratic History of Global Inequality*. Basic Books.

Milanovic, B. (2013) "Global Income Inequality in Numbers: In History and Now," *Global Policy*, May.

Minsky, H. (1992) "The Financial Instability Hypothesis," The Jerome Levy Economics Institute of Bard College, Working Paper No. 74.

Monckeberg, M.O. (2001) *El Saqueo de Los Grupos Económicos Al Estado Chileno*. Santiago: Ediciones B.

North, D., J.J. Wallis, S.B. Webb and B.R. Weingast (2007) "Limited Access Orders in the Developing World: A New Approach to the Problems of Development." Available at: http://elibrary.worldbank.org/doi/pdf/10.1596/1813-9450-4359.

OECD (2013) *Ending Poverty, Development Co-operation Report*. Paris: OECD.

OECD (2014) OECD Income Distribution Database (IDD). Available from: http://www.oecd.org/social/income-distribution-database.htm.

Oliveira, F. de (2003) "The Duckbilled platypus," *New Left Review*, 24.

Ortega y Gasset, J. (1918) "Impresiones de un viajero," *Hebe*, 5.

Oxfam (2014) Even It Up: Time to End Extreme Inequality, Oxfam.

Oxfam (2015) *Wealth: Having it All and Wanting More*. Available at http://policy-practice.oxfam.org.uk/publications/wealth-having-it-all-and-wanting-more-338125.

Oxfam (2016) 'An Economy For the 1%: How privilege and power in the economy drive extreme inequality and how this can be stopped'. Available at: http://policy-practice.oxfam.org.uk/publications/an-economy-for-the-1-how-privilege-and-power-in-the-economy-drive-extreme-inequ-592643.

Palma, J.G. (2005) "The Six Main Stylised Facts of the Mexican Economy Since Trade Liberalisation and NAFTA," *Journal of Industrial and Corporate Change*, December.

Palma, J.G. (2008) "De-industrialisation, Premature De-industrialisation and the Dutch Disease," *The New Palgrave Dictionary of Economics*, 2nd edition. Basingstoke: Palgrave Macmillan.

Palma, J.G. (2009) "The Revenge of the Market on the Rentiers: Why Neo-liberal Reports of the End of History Turned out to be Premature," *Cambridge Journal of Economics* 33(4). An extended version is available at http://www.econ.cam.ac.uk/research/repec/cam/pdf/cwpe0927.pdf.

Palma, J.G. (2010) "Why Has Productivity Growth Stagnated in Most Latin American Countries since the Neo-liberal Reforms?," in J. A. Ocampo and J. Ros (eds), *The Handbook of Latin American Economics*. Oxford: Oxford University Press. An extended version is available at http://www.econ.cam.ac.uk/research/repec/cam/pdf/cwpe1030.pdf.

Palma, J.G. (2011) "Homogeneous Middles vs. Heterogeneous Tails, and the End of the 'Inverted-U': the Share of the Rich is What it's All About," *Development and Change*, vol. 42, no. 1. An extended version is available at http://www.econ.cam.ac.uk/research/repec/cam/pdf/cwpe1111.pdf.

Palma, J.G. (2012) "How the Full Opening of the Capital Account to Highly Liquid Financial Markets Led Latin America to Two and a Half Cycles of 'mania, panic and crash'," in G. Epstein and M.H. Wolfson (eds), *The Handbook of the Political Economy of Financial Crises*. Oxford: Oxford University Press. An extended version is available at http://www.econ.cam.ac.uk/research/repec/cam/pdf/cwpe1201.pdf.

Palma, J.G. (2013a) "Cómo fue que nos graduamos de país de 'ingreso alto' sin salir del subdesarrollo." Available at http://ciperchile.cl/2013/07/15/como-fue-que-nos-graduamos-de-pais-de-%E2%80%9Cingreso-alto%E2%80%9D-sin-salir-del-subdesarrollo/.

Palma, J.G. (2013b) "¿Cuánto habrá que esperar para que los Chicago Boys & Asociados respondan por el botín que algunos se llevaron?" Available at http://ciperchile.cl/2013/09/12/%C2%BFcuanto-habra-que-esperar-para-que-los-chicago-boys-asociados-respondan-por-el-botin-que-algunos-se-llevaron/.

Palma, J.G. (2014) "How Homogenous is the Income Share of the Middle and Upper-middle Across the World, the Foundation of the 'Palma Ratio'? Has There Been a Convergence Towards the '50/50 rule?'," *Development and Change*, vol. 45, no. 6.

Paraje, G. (2004) "Inequality, Welfare and Polarisation in the Greater Buenos Aires, 1986–1999," PhD thesis, Cambridge University.

Penn World Table (2014), Version 8.0, at http://www.rug.nl/research/ggdc/data/penn-world-table.

Pérez, C (2002) *Technological Revolutions and Financial* Capital. Cheltenham: Edward Elgar.

Pesaran, H., N.U. Haque and S. Sharma (2000) "Neglected Heterogeneity and Dynamics in Cross-country Savings Regressions," in J. Krishnakumar and E. Ronchetti, (eds), *Panel Data Econometrics – Future Direction*. Amsterdam: Elsevier Science.

Piketty, T. (2014) *Capital in the Twenty-First Century*. Cambridge, MA: Harvard University Press.

Piketty, Thomas (2015) "About Capital in the 21st Century," mimeo, Paris School of Economics.

Rognlie, M. (2014) "A Note on Piketty's and Diminishing Returns to Capital," mimeo, MIT.

Rowthorn, R. (2014) "A Note on Thomas Piketty's 'Capital'," *Cambridge Journal of Economics*, vol. 38, no. 5.

Saez, E. (2013) "Striking it Richer: The Evolution of Top Incomes in the United States." Available at http://elsa.berkeley.edu/users/saez/saez-UStopincomes-2012.pdf.

Sartre, J.P. (19896) *Existentialism Is a Humanism*, in W. Kaufman (ed.), *Existentialism from Dostoyevsky to Sartre*. Meridian Publishing Company.

Schumpeter, J. (1918) "The Crisis of the Tax State," *International Economic Papers*, vol. 2, no. 4, 1954.

Segal, P. (2014) "The Problem of Riches," *Renewal*, vol. 22, nos 3–4. Available at http://www.renewal.org.uk/articles/the-problem-of-riches.

Semieniuk, G. (2014) 'Piketty's Elasticity of Substitution: A Critique," mimeo, New School for Social Research.

Sen, A. (1973) *On Economic Inequality*. New York: W.W. Norton.

Shepherd, A. (2013) "How Do We Get to Zero on Poverty – and Stay There?," in OECD (2013).

SEDLAC (2014) *Socio-Economic Database for Latin America and the Caribbean*. Available at http://sedlac.econo.unlp.edu.ar/eng/.

Solt, F. (2014) "The Standardized World Income Inequality Database." Available at http://thedata.harvard.edu/dvn/dv/fsolt/faces/study/StudyPage.xhtml?studyId=36908&tab=files.

Sokoloff K.L. and S.L. Engerman (2000) "Institutions, Factor Endowments, and Paths of Development in the New World," *Journal of Economic Perspectives*, vol. 14, no. 3.

Stiglitz, J.E. (1976) "The Efficiency Wage Hypothesis, Surplus Labour, and the Distribution of Income in LDCs," *Oxford Economic Papers*, vol. 28, no. 2.

Stiglitz, J.E. (2011) "Of the 1%, by the 1%, for the 1%." Available at http://www.vanityfair.com/society/features/2011/05/top-one-percent-201105.

Stiglitz, J. E. (2012) *The Price of Inequality*. New York: W.W. Norton & Co.

Stiglitz, J. E. (2013a) "Inequality Is Holding Back the Recovery." Available at http://opinionator.blogs.nytimes.com/2013/01/19/inequality-is-holding-back-the-recovery/.

Stiglitz, J. E. (2013b) "Inequality is a Choice." Avalable at http://opinionator.blogs.nytimes.com/2013/10/13/inequality-is-a-choice/?_php=true&_type=blogs&_r=0.

Sutcliffe, B. (2001) *100 Ways of Seeing an Unequal World*. London: Zed Books.

Taylor, L. (2014) "The Triumph of the Rentier? Thomas Piketty vs. Luigi Pasinetti and John Maynard Keynes," mimeo, New School for Social Research.

Taiwan, (2014) *National Statistics*. Available at http://eng.stat.gov.tw/mp.asp?mp=5.

The World Top Incomes Database (2015) Available at http://topincomes.parisschoolofeconomics.eu/#Database.

Tregenna, F. (2012) "What are the Distributional Implications of Halving Poverty in South Africa When Growth Alone is Not Enough?," *Applied Economics*, vol. 44, no. 20.

UNDESA (2013) Inequality Matters: Report on the World Social Situation 2013, UNDESA.

US Census Bureau (2014) Available at http://www.census.gov/data.html.

US Federal Reserve (2014) *Flow Of Funds accounts of the United States*. Available at http://www.federalreserve.gov/datadownload/.

US Department of Commerce (2015) Available at http://www.bea.gov/iTable/index_nipa.cfm.

UTIP (2014) "UTIP Global Inequality Data Sets." Available at http://utip.gov.utexas.edu/data.html.

Wade, R.H. (2014) "The Strange Neglect of Income Inequality in Economics and Public Policy," in Cornia and Stewart (2014).

Williamson, J.G. (2009) "Five Centuries of Latin American Inequality," National Bureau of Economic Research Working Paper No. 15,305.

Wolfson, M. (1997) "Divergent Inequalities: Theory and Empirical Results," *RIW*, vol. 43, no. 4.

Wood, E.M. (1999) "The Politics of Capitalism," *Monthly Review*, vol. 51, no. 4.

World Bank-WDI (2015), *World Development Indicators*.

Measuring Income Inequality: Comments on "Do Nations Just Get the Inequality They Deserve? The 'Palma Ratio' Re-examined" by José Gabriel Palma

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José Gabriel Palma has identified an important empirical regularity that has not been recognized in the past: the share of the middle is relatively constant across countries. He doesn't really provide an explanation of this regularity, but even without such an explanation, it should be clear that it's an important empirical observation with implications for both empirical work and policy. It says that the Gini coefficient may not best capture what is really going on when making comparisons of distributions across countries or over time. In the case of any measure, the focus ought to be on where there is variability and if this regularity is really true in the way that he has described it, then it means that variability can be found in the share at the top and the share at the very bottom. The middle, he demonstrates, just takes the same fraction of the pie. Differences across countries are, thus, to be found in the ratio of the share at the top to that at the bottom.

This has led to a very interesting discussion on the post-Millennium Development Goals, post-2015 agenda. Given the importance being ascribed globally to inequality, one suggestion has been that there ought to be a goal of reducing *extreme* inequality. The Palma ratio has been put forward as the metric that should be used, because that ratio really captures what is going on in inequality at the extremes – and movement in the extremes is where all the "action" is.

Palma's paper in this volume raises some very deep questions about the determination of inequality. There is no theory, at least none based on the standard neoclassical model, which provides any explanation for why different countries have these very different patterns at the top and bottom, just as there is really no theory that can explain why the share of the middle should be so constant. Palma argues very strongly, and I think convincingly, that the neoclassical model does not provide a good way of interpreting what is going on, and that one needs other models. However, I'm a bit more receptive to the use of neoclassical models as a benchmark than Palma. I believe that it is useful

to begin the analysis by explaining to what extent the neoclassical model does or does not provide an explanation, and, to the extent that the neoclassical model fails, to determine where it goes wrong or where it is simply inadequate.

In fact, though he dismisses the neoclassical model, he uses it in a very force-ful way – to argue that education is *not* the critical variable, as many analyses of income distribution using the neoclassical approach conclude. He points out that looking across countries, there is diversity in the education provided to the middle, and yet there is uniformity in the share of national income that goes to the middle. By contrast, those at the top all across the world are well educated, and those at the bottom have very poor education, and yet it is at the extremes that one finds the diversity of outcomes. This suggests that education is not really the explanatory variable that can provide an answer to the question of why countries differ so much in the distribution of income. His analysis is persuasive.

What I think plays a more important role – and Palma hints at this – is rent-seeking. The standard neoclassical model focuses on marginal productivity theory, *assuming* a competitive equilibrium. It is clear, however, that there's something else going on. There is a whole set of deviations from the standard competitive equilibrium, which give rise to income sources that can broadly be described as "rents," as I discuss in my contribution to this volume. These include monopoly rents, the rents accruing to CEOs as a result of their ability to take advantage of imperfections in corporate governance to divert corporate revenues to their own benefit, and the rents accruing to the financial system. The worst forms of rents are associated with moving money from the very poor to the very rich, as occurs when banks engage in predatory lending and abusive credit card practices. Understanding how these rents are generated, and how changes in the economy and in politics can lead to a change in these rents, is vital to understanding these extremes of inequality and how they change over time.

Palma also touched on one topic in his paper: the existence of a ratchet effect. There are certain periods when inequality increases, but then doesn't go down again at the termination of the "episode." That is something that has been observed in the United States: In the late 1970s and early 1980s we had a ratcheting up of inequality at the top; this showed up as an increase in the Palma ratio. There was no change in the pace of globalization at the time that could account for this, nor was there any major change in technology in that short period of time. Moreover, both these forces (changes in technology and changes in globalization) were *global*.

My interpretation of what happened in that episode was that it was a period of high inflation in which wages did not keep up. The CEOs discovered that they were able to seize a larger fraction of the corporate pie for themselves. Unsurprisingly, they then decided that that this was not a bad situation and worked to keep it this way. These changes cannot be explained by conventional

neoclassical theory; they cannot be explained in terms of skill-biased technical change or in terms of globalization. New norms were created; and even the old CEOs in the 1950s and 1960s looked – perhaps with a little envy – on what had happened to their successors, and said it was wrong. They had been indoctrinated with the old norms, and they said what's going on was "not right."

The most fundamental point of Palma's paper is to attribute the differences in outcomes to differences in what he refers to as the "political settlement". I absolutely agree that it is not just economics that is determining the outcomes – economic forces are operating everywhere, but there are nevertheless very marked differences in the outcomes across countries. (This was one of the main points that I raised in my books *The Price of Inequality* and *The Great Divide*.)

But there is still the crucial question of how we should explain these differences in the political settlement. Why are the political settlements in South America and South Africa so different from those observed in the rest of the world? And in answering it, one has to go beyond economics and into politics and sociology. Palma does provide some suggestions as to why it might be the case that the Latin American "settlement" entailed more inequality than elsewhere. But his analysis does not explain why among the OECD countries there are such large differences; why, for instance, the political settlement in the United States has so much higher levels of inequality than in Scandinavia.

In coming to terms with why countries might differ so much in their levels of inequality, one has to distinguish between inequalities in market income, and inequalities in after-tax and transfer income. Most analyses invoke standard neoclassical theory to explain market income; and then there is a *political* process that translates market income into disposable income, into what individuals actually have to spend (into income after taxes and transfers). There are differences across countries in the distribution of market income – explained, at least in part, by differences in the rents to which I referred earlier, but there are also marked differences in how the tax and transfer systems work. For instance, the United States has a high level of market income inequality, but what really distinguishes the United States is that it doesn't correct for the inequalities in market income, which then leads to a high level of inequality in income after taxes and transfers. Both aspects of inequality have to do with the political system.

Finally, this discussion provides an interesting segue into thinking about some of the issues that were raised by Piketty's analysis concerning the nature of capitalism, and in particular whether inequality is inevitably associated with capitalism. The fact that there is such diversity of outcomes, all within market economies, suggest that inequality is not an inherent property of capitalism. Inequality really has something to do with the political system, and that is where we ought to be focusing our attention. But it's also the case that Palma's

analysis, by critiquing the ability of the neoclassical model to explain what's going on, implies that Piketty's theoretical analysis, which relies heavily on a neoclassical model, is misguided. I concur with Palma that there are limits on the neoclassical model, but I think there are important extensions of that model, incorporating land and credit, which can provide further insights into the distribution of income and wealth among individuals. My paper in this volume attempts to provide such an analysis.

3

The University of Texas Inequality Project Global Inequality Data Sets, 1963–2008: Updates, Revisions and Quality Checks*

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3.1   Introduction

The UTIP-UNIDO data set of industrial pay inequality is a panel comprised of the between-groups component of Theil's T statistic measured in different countries and years across a stable and consistent set of industrial sectors. The Theil method is described in full elsewhere (Conceição, Ferreira and Galbraith 1999). Initially computed by Galbraith, Lu and Darity (1999) and updated by Galbraith and Kum (2004), the UTIP-UNIDO data set has the virtue of providing dense, consistent, accurate measures, and it has the limitation of being restricted to the inequality of inter-industrial pay. Its principal direct interest for economists is the study of common trends and of common factors affecting inequality, such as interest rates, debt crises, changing financial regimes, technology and trade. It has also proved to be a sensitive measure of major political events. Perhaps most important, the UTIP-UNIDO measures prove to be an effective instrument for estimating Gini coefficients for gross household income inequality, and this permits the construction of a dense and consistent panel of such estimates, complementing and extending the direct measurements available from other sources.

3.2   Updating UTIP-UNIDO

Updating UTIP-UNIDO was more difficult than computing it originally, as maintenance of the underlying set (UNIDO's Industrial Statistics) has been

uneven and categories have not always remained stable. The resulting anomalies in the new Theil measures were of two types: spikes due to missing values and wholesale shifts (data breaks) due to category changes. Each had to be evaluated separately, and adjustments made – a daunting task considering that behind each Theil value lies some 30 separate measures each of payroll and employment. These issues were handled on a case-by-case basis, using judgment and common sense to arrive at a set of "final revised values." The end result was a data set with 4,054 country-year Theil values over, up from 3,554 in the previous version.

3.3   Updating EHII

The calculation of EHII from UTIP-UNIDO was based on a regression of overlapping observations on the original Deininger–Squire data set of Gini coefficients, published by the World Bank around 1996. The regression controlled for the share of manufacturing in total population, and for the type of measure involved – whether gross or net of taxes, household or personal income, and whether a measure of income or expenditure – in the Deininger–Squire (DS) data set. Originally, 454 common country-year observations were found. The proliferation of Gini-type inequality measures in later years posed a challenge, but we decided to compute the new EHII so as to most closely resemble the previous version, this time using 430 common observations. The coefficient estimates are given in Table 3.1. They are very close to the originals.

Table 3.1   Revised coefficient estimates relating UTIP-UNIDO to Deininger–Squire

Dependent Variable:		lnGiniDS*		
Variable	Coefficient	Std. Err.	T-statistic	P>abs(t)
income	−0.15	0.03	−4.58	0.000
household	−0.79	0.02	−4.63	0.000
gross	−0.06	0.02	−3.11	0.000
lnUTIPUNIDO**	0.1	0.01	8.64	0.000
mfgpop***	−2.84	0.24	−11.73	0.000
constant	4.2	0.04	93.53	0.000
Number of Observations:		430		
F (5,424)		109.27		
R-squared		0.56		
Adj R-squared		0.56		
Root MSE		0.159		

*natural log of Deininger-Squire Gini Coefficient.
**natural log of UTIP-UNIDO Theil statistic.
***ratio of manufacturing employment to population.
Source: Authors.

EHII is then calculated using the coefficient estimates for the log of the UTIP-UNIDO measures (lnUTIP-UNIDO) and the manufacturing/population ratio (mfgpop), standardizing all coefficients on the concept of gross household income inequality. This estimates the effect of all cash inflows (including, for example, pensions) but not the effect of taxes.[1] The purpose of EHII is comparative. It is, above all, to populate a panel data set with as many conceptually consistent inequality measures as available data would reasonably allow. The new EHII panel has 3,871 estimates for 149 countries.

3.4   Checking the quality of the estimates

The next issue is the quality of the estimates. This is a question we had not previously addressed, beyond reporting the regression residuals that separated our EHII estimates from the corresponding DS values. That procedure had provided only the most limited comparison, since there were (and are) nearly ten times as many EHII observations as there are overlapping EHII-DS values. We felt it would be useful to attempt to place the EHII estimates in the context of the broader literature on economic inequality.

The difficulty in going beyond those first comparisons with DS was: what inequality measurements to pick? Our solution was to undertake a wide (if not comprehensive) literature search for Gini coefficients of all types for a sequence of countries, including some that are very well-studied, and others less so. Each coefficient was tagged by the country and year to which it applied, by its source document, and by the precise description of the type of inequality being measured. These types were then classed into three major groups by greyscale. Black represented measures of "market income inequality." Dark grey represented measures of gross income inequality, which would (in general) include pensions and other forms of cash income. Light grey represented measures of inequalities of disposable income, after transfers and taxes.[2] We used solid lines to represent measures of the household distribution, and dotted lines to represent measures of the personal distribution. Dense measures (annual or nearly so) are represented by continuous lines; measures with only sparse representation over time are represented by isolated markers. Against these measures taken from the literature, we plot the EHII estimate for gross household income inequality in a thick black line.

Figures A3.1 through A3.15 in the first appendix represent a selection of developed and developing countries.[3] The first, striking fact is the wide range of inequality measurements in this data, even for developed countries. In a typical, well-studied case for a small, seemingly homogeneous country, Denmark has a market income inequality estimated to be near 45 Gini points, and disposable income inequality measured at some 25 Gini points lower than that. Similar disparities appear for all of the other advanced social democracies, including Germany, France and Canada, and for the United Kingdom and the United States.

A casual narrative has sprung up around these numbers, to the effect that the most advanced countries have very unequal "primary" distributions, offset by a great deal of redistribution. But this is not correct. The UTIP-UNIDO series, which measure the inequalities of *pay*, show the Nordic and North European cases to be among the world's most egalitarian in their *primary* structures. On short reflection, though, the paradox disappears. Very high inequalities in "market income" in countries with advanced welfare states must stem from the existence of many households with zero market income – and no need for it. Household formation is endogenous to the social structure and available sources of income. In countries with strong public pensions, it is possible for many elderly couples and for single adults of all ages to form households on non-market income. One has to suppose that, in many cases, this is exactly what they do. Such households will be far more scarce in countries where market income is necessary for life.

Data for two distinct additional groups of countries appear to support this interpretation. For Russia, Poland, Hungary and the Czech Republic, we have inequality measures which show a narrower, yet still distinct, difference between "market-income inequality" and disposable-income inequality. We also have a class of inequality measures based on consumption surveys. A virtue of the EHII measure is that – being based on a data set of industrial pay inequality that is neither income nor consumption and that can be calculated across regions (Europe, the Americas) that have predominantly income-based surveys as well as regions (South Asia, Africa) where surveys are predominantly consumption-based – EHII provides a bridge that permits reasonable calibration of these two very different types of survey.

For the transition countries, a plausible interpretation of the evidence is that the post-communist countries do not have welfare states as developed as those in Northern Europe. On the other hand, they also do not have the inequalities of pay associated with Latin America, Sub-Saharan Africa, and other parts of what used to be called the Third World. Having said this much, it also seems clear that some reported measures or estimates of market income inequality are too variable and too erratic to be taken very seriously as indications of changing economic conditions.

Once outside the familiar data environments of the long-industrialized countries, matters become murkier, in part because there are fewer independent sources of information. For Mexico, for instance, all inequality measures apart from EHII stem from a single source, the Institute of Statistics, Geography and Informatics (INEGI) survey of household incomes. There exists a wide range of inequality measures for Mexico, but evidently they all merely reflect sampling, definition and computational choices made on the same underlying data set. A similar situation holds for Brazil. We also found that in many cases it was not possible for us to distinguish clearly from the source articles[4] whether the income concept was gross or net. It is, nevertheless, significant that for these

countries there is no distinct difference between market, gross and disposable income inequality measures on average. The numbers reported in the published literature are an overlapping and indistinct jumble. We take this as general support for the view that both market and disposable income inequalities are determined, in part, by the social structures of the welfare state.

In almost all cases, the movement of the EHII estimates track the historical pattern observed in other series reasonably well, which suggests – unsurprisingly – that changing inter-industrial pay dispersion has a strong effect on household income differentials. For a wide range of wealthy-country cases, the level of the EHII estimates come in where we would have hoped: below the estimates of "market income inequality," above the measures of disposable income inequality, and close to the (relatively few in number) direct measures of gross income inequality. We take both of these findings to be broad validation of the simple model used to estimate EHII, though three classes of exception will be noted below. The purpose of the EHII exercise was to take advantage of the dense and consistent measures of industrial pay inequality in UTIP-UNIDO to construct a panel of conceptually-consistent measures in a Gini coefficient format. Judging against the broad literature of inequality measures, EHII appears to be well-suited to this purpose.

A first important exception is the case of the United States. In the US, where both sample surveys and tax records abound and are widely considered to be reasonably accurate, EHII misses the great peaks of inequality that appeared in the late 1990s and in the years before the great financial debacle of 2007. There is no mystery as to the reason. Top incomes in the US are driven by capital asset prices, either in the form of realized capital gains, stock options realizations, financial commissions, or the wage/salary payout of venture capital investments in high-technology firms. These fluctuate closely with the movement of the stock market. EHII, on the other hand, depends wholly on the dispersion of pay in the industrial economy, which is much more stable. Thus, the difference between EHII and the reported measures of gross household income inequality in the US can be taken as an indication of the extent to which capital market incomes drive inequality in overall US incomes. This problem is largely limited to the US; few other countries have a similar degree of dependence of incomes on the capital markets or as accurate records of capital incomes.

The second big exception concerns some of the large emerging-market countries, including Mexico, Brazil and South Africa, and to a lesser degree Colombia, among others. Here as elsewhere the EHII estimates track the trends found in the survey literature well. But the values lie below measures of income inequality taken from household surveys. Some of this difference is impenetrable: when there are only two independent sources of measurement, as with Mexico, and they differ, the question of which one is "right" is impossible to resolve. We have no reason to doubt the integrity of household surveys in any country.

Yet we also have no reason to know that the methods used in those surveys were designed to give results consistent with those in other countries. Since there is no international standard for the definition of income or the taking of surveys – including for such sensitive issues as sampling the rich, the informal sector, and top-coding, it's quite possible that inequality values will diverge between countries for reasons related to differing national methods, and that the EHII approach generates the more-plausible basis for international comparisons.

That said, and on the other hand, it may be that the largest developing countries have dimensions of inequality that smaller countries lack. Were Brazil divided into two countries by the Amazon, or South Africa along racial lines, it's obvious that both resulting countries would be much more egalitarian than the amalgam that actually exists. For India, however, the EHII estimates (51 Gini points in 2006–7) are very close to the single data point for India reported by the Luxembourg Income Studies in their first paper on Indian income inequality. These coefficients lie toward the high end of the EHII scale, and well above the (very low, and plainly idiosyncratic) measures of Indian consumption-expenditure inequality that have figured prominently in the literature until recently, and that have sometimes conveyed a far more egalitarian picture of India in international comparison than, we believe, a consistent conceptual framework would warrant.

A third group of exceptions seems less significant. The EHII measures for Sub-Saharan Africa are, generally, much lower than the available survey evidence reports. However, for these countries the surveys themselves are extraordinarily sparse. In most cases, there are just a small handful of available country-year observations, scattered in time. What to make of them is a mystery to us, and we do not know the economic history of post-colonial Sub-Saharan Africa well enough to venture a view. Is Sub-Saharan Africa truly different *from all other regions* in its degree of non-industrial inequality? Perhaps it is; or perhaps there are idiosyncrasies in survey methods in the region.[5] We like the EHII method – it generates numerous useful estimates where previously there were very few – but its application to every part of the world should not be pressed. We also note a few cases, including Mexico, Brazil and China, where the EHII measures do not have the same coverage in time as national surveys, or (in the case of China) our own measures from the State Statistical Yearbook (Galbraith, Krytynskaia and Wang 2004; Galbraith, Hsu and Zhang 2009; Zhang 2014).

3.5 Conclusion

The University of Texas Inequality Project is pleased to publish updated measures of between-industries pay inequality for 167 countries over the years 1963–2008, and updated estimates of gross household income inequality for

149 countries over the same period. These new data sets have 4,054 and 3,872 country-year observations, respectively, the former in a Theil format and the latter as a Gini coefficient. They represent a careful reassessment of the original measures, the addition of new data points where the requisite information is available, and a re-estimate of the statistical model linking pay to income inequality. We believe these measures are a useful complement to the (more accurate, but limited) survey-based micro-data being made available through the Luxembourg Income Studies, and to the measures of top incomes from tax records compiled (for a relatively narrow group of countries) by Atkinson, Piketty and Saez (2011). We also believe that these measures are a useful alternative to other efforts to compile broad-based panel estimates of inequality. They are more internally consistent than the comprehensive compilations of the World Bank and WIDER, and (we believe) relatively free of the anomalous cases one observes in the Standardized World Income Inequality Database (SWIID).[6]

Further we have conducted a quality review of the estimated gross income inequality measures for 15 countries,[7] which consists of a systematic comparison of our estimates with others, of all different types, to be found in the published literature. Our general conclusion is that EHII works very well in most cases for the analysis of trends. It is close to survey-based measures as an estimate of the level of gross income inequality for advanced and transition economies, especially as a measure of the inequality of earned incomes. It does not capture fluctuation in capital income at the top of the income structure, which is due mainly to the flux of asset prices; on the other hand, there is no reason why it should have, and this is mainly a problem in the US case. For the large developing countries EHII is again an effective index of trends, but it should be treated with caution as a measure of their relative position.

Appendix 1: Comparisons and Sources for Fifteen Selected Countries

Legend

Calculation of UTIP-UNIDO

The UTIP-UNIDO data set is calculated by applying the formula for the between-groups component of Theil's T statistic to the industrial categories of the UNIDO Industrial Statistics data base. Thus, for each industry, one has p_i as the share of that industry in total employment, and Y_i/Y as the mean pay in that industry divided by the mean pay in all of manufacturing. The "Theil element" is the product:

$$p_i * (Y_i/Y) * ln(Y_i/Y)$$

and the between-groups component of Theil's T is the sum of these elements across all industries in the observed set.
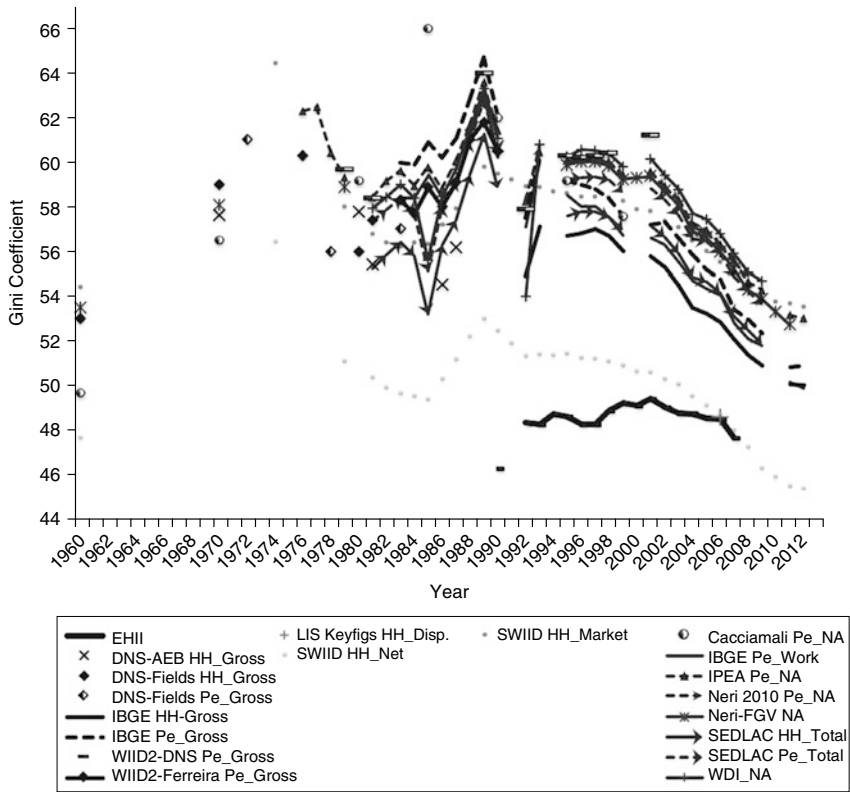
Figure 3.A1   Income inequality in Brazil, 1960–2012
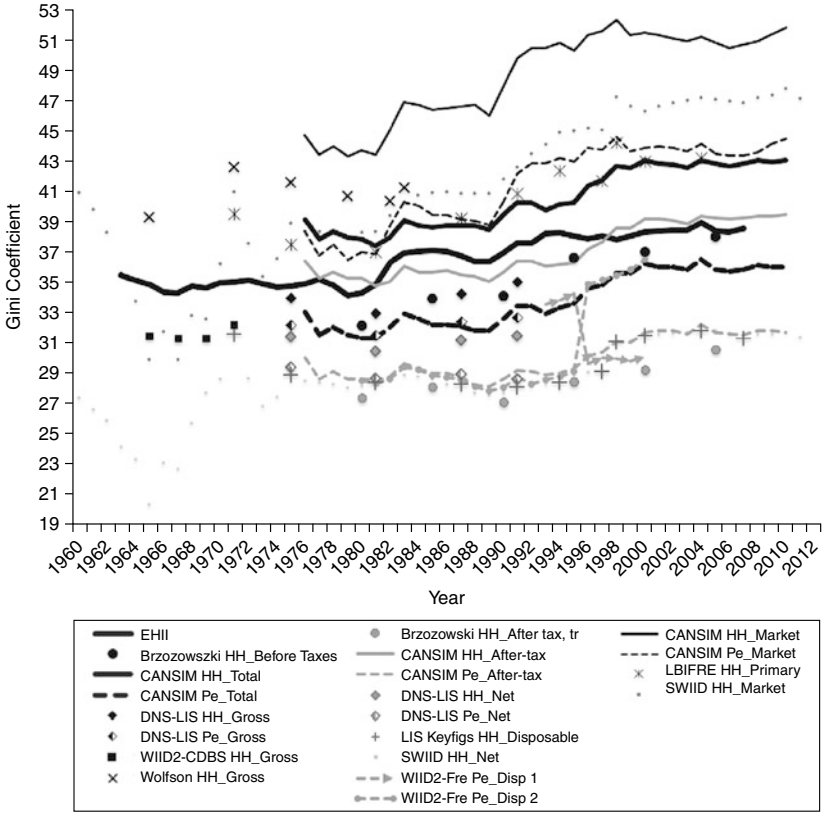
Figure 3.A2   Income inequality in Canada, 1960–2011
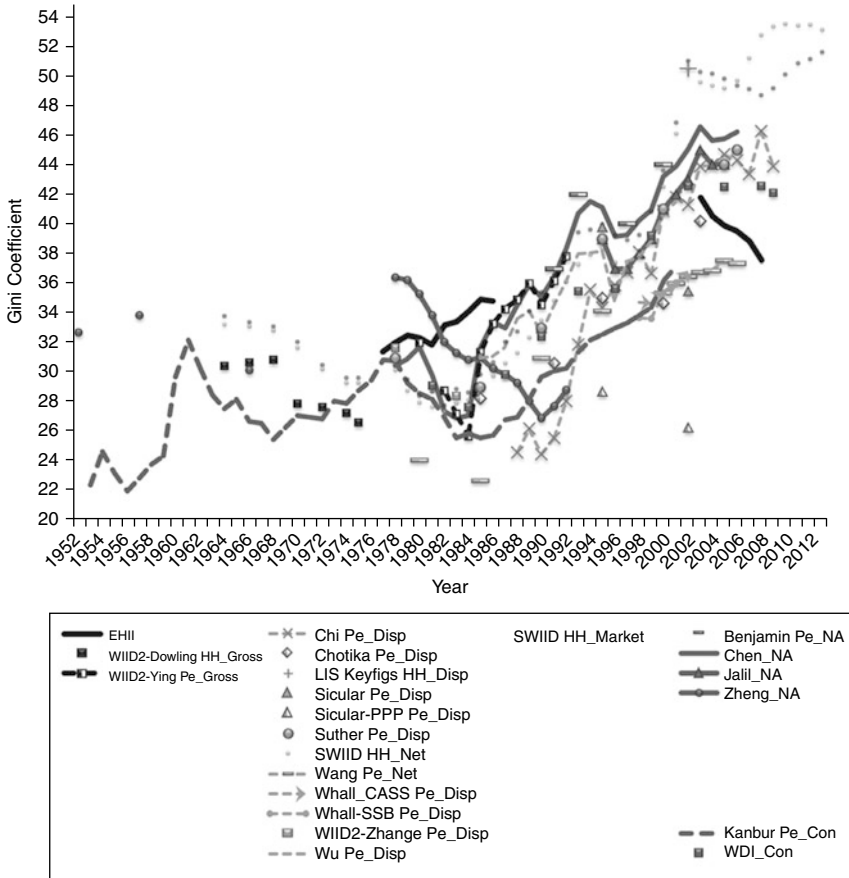
Figure 3.A3   Income and consumption inequality in China, 1952–2013
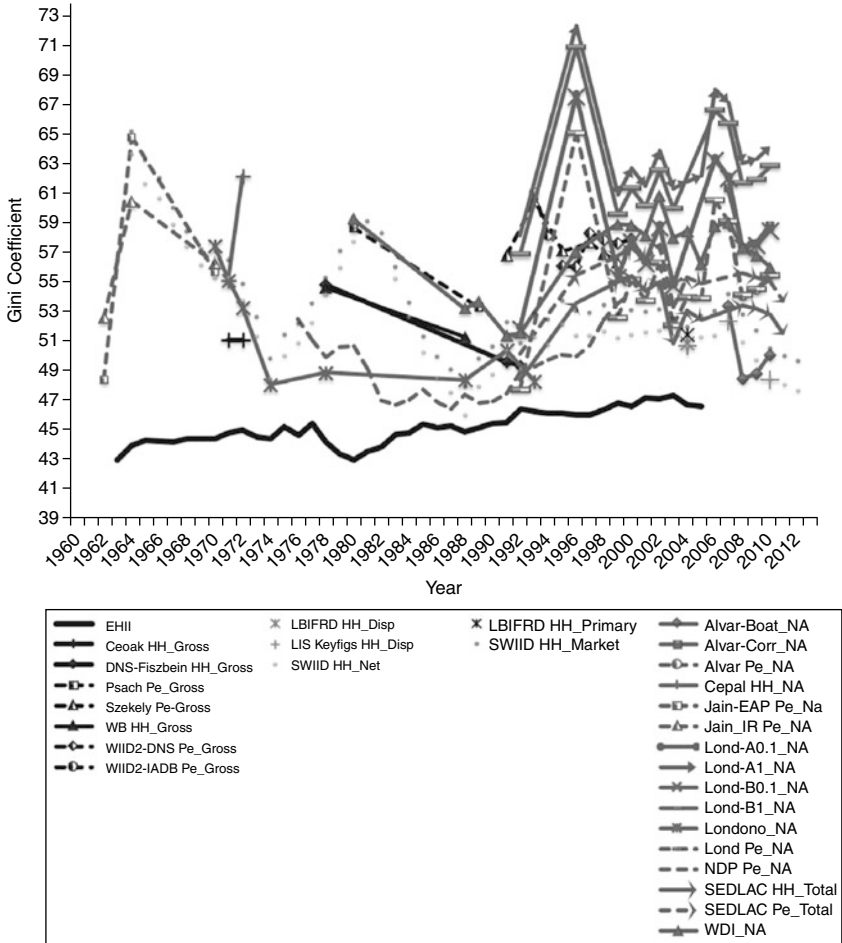
Figure 3.A4 Income inequality in Colombia, 1962–2012
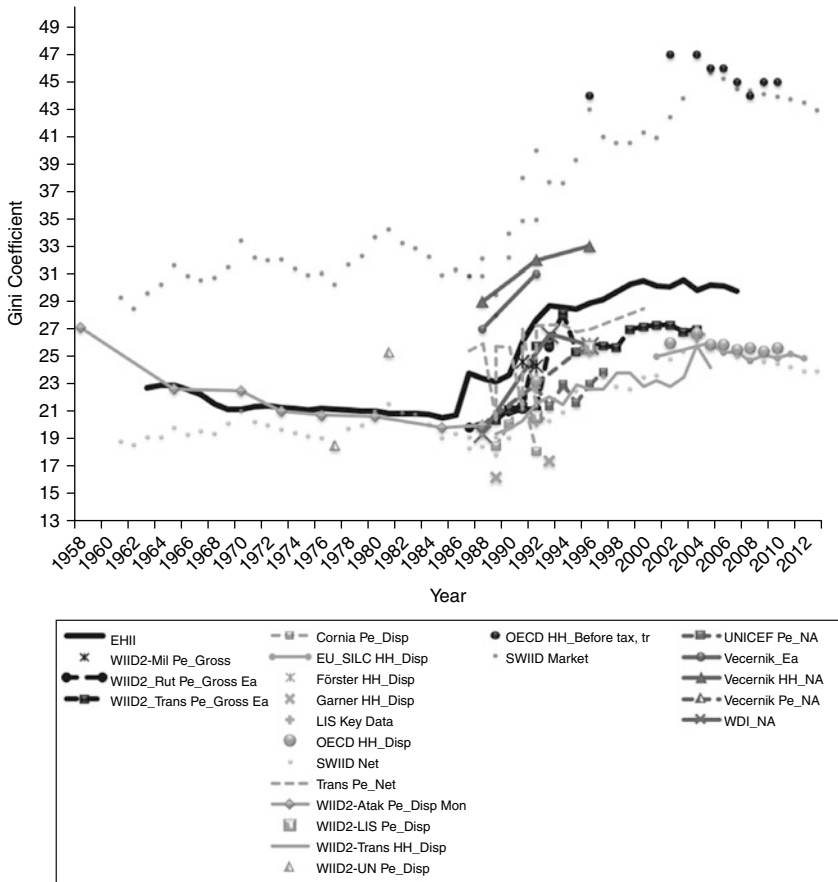
Figure 3.A5   Income inequality in Czechoslovakia and the Czech Republic, 1958–2013
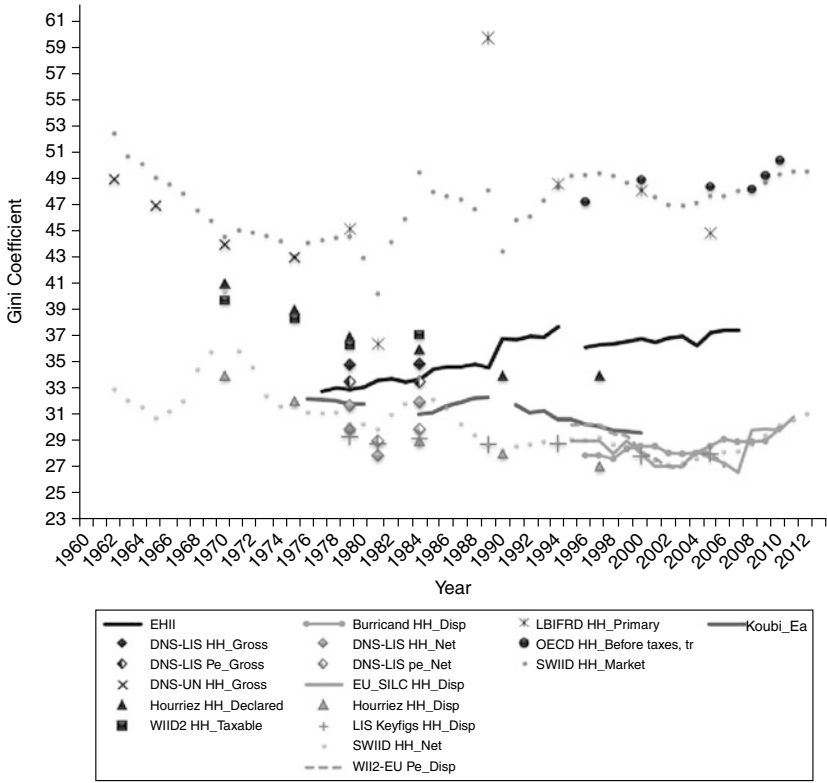
Figure 3.A6   Income inequality in France, 1962–2012
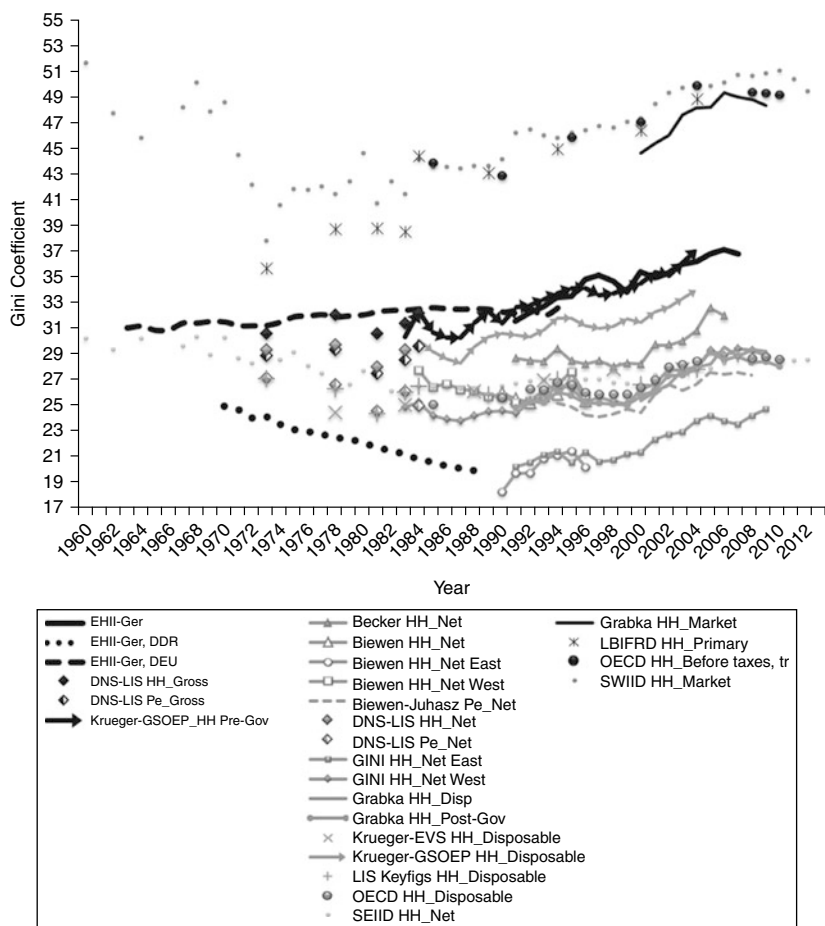
Figure 3.A7   income inequality in Germany, 1960–2012
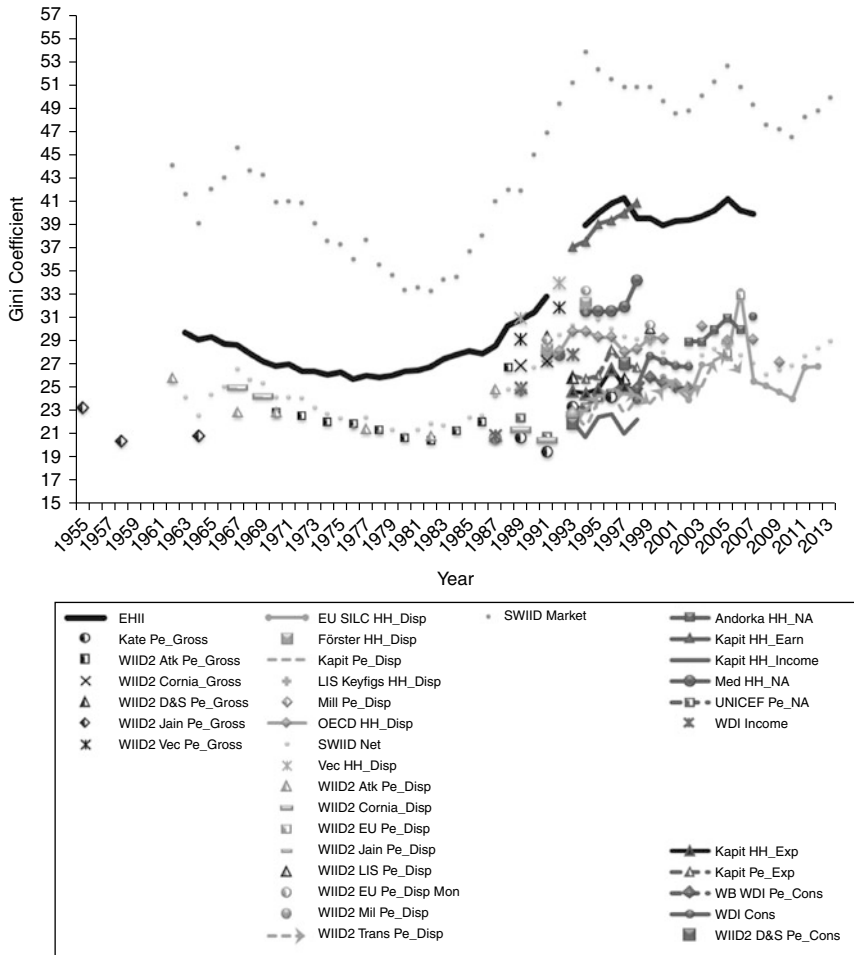
Figure 3.A8   Income inequality in Hungary, 1955–2013
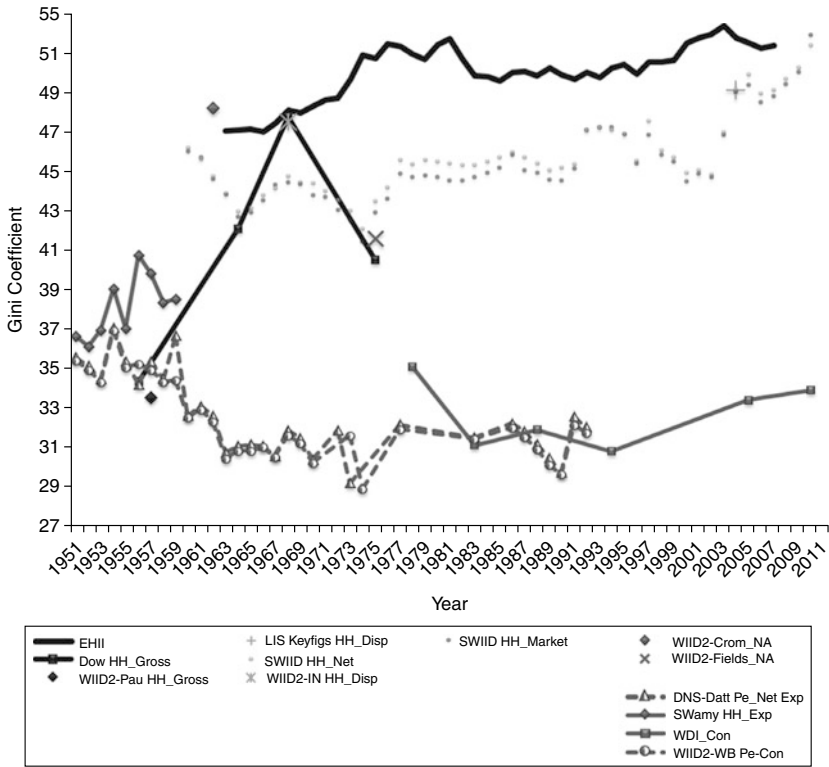
Figure 3.A9   Income and consumption inequality in India, 1951–2009
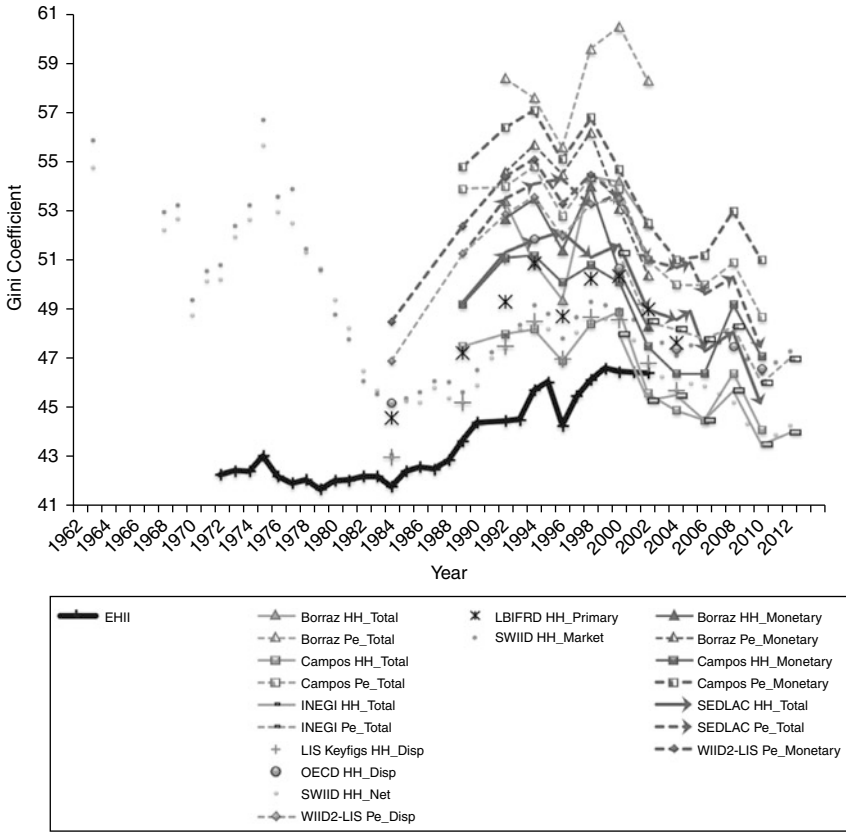
Figure 3.A10   Income inequality in Mexico, 1963–2012
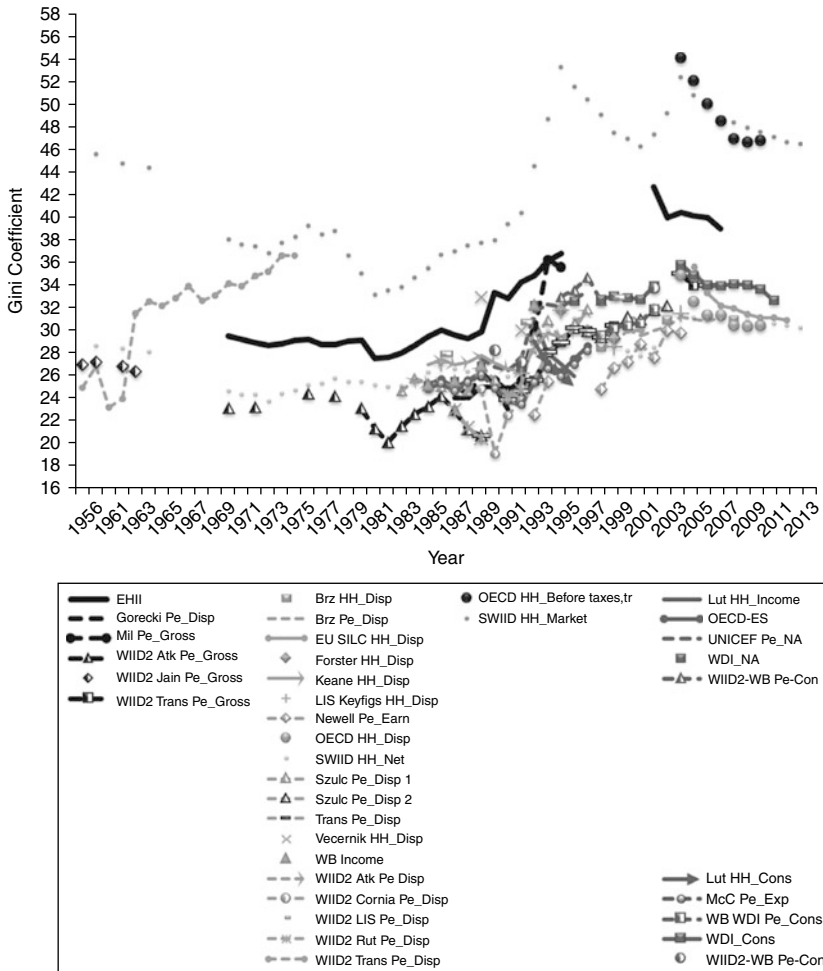
Figure 3.A11 Income inequality in Poland, 1956–2013
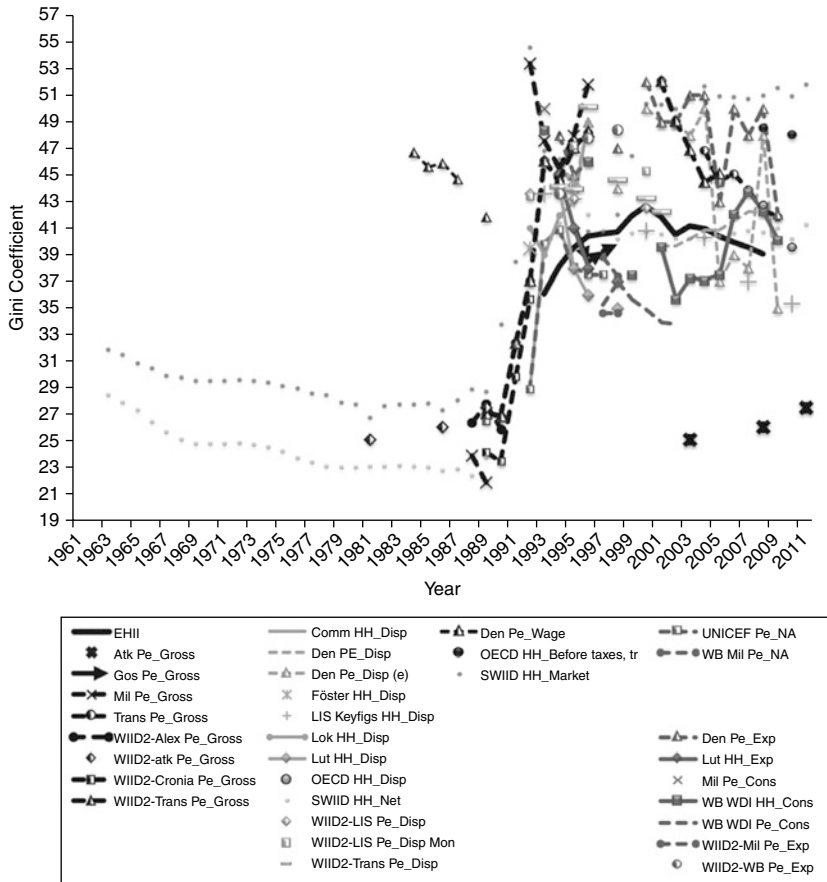
Figure 3.A12   Income inequality in Russia, 1981–2011
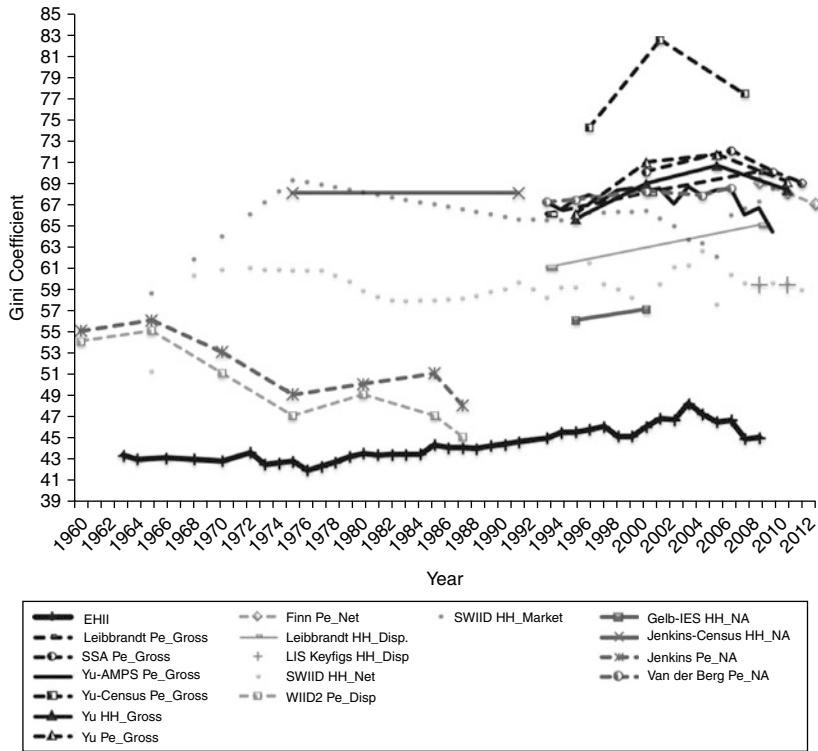
Figure 3.A13 Income inequality in South Africa, 1960–2012
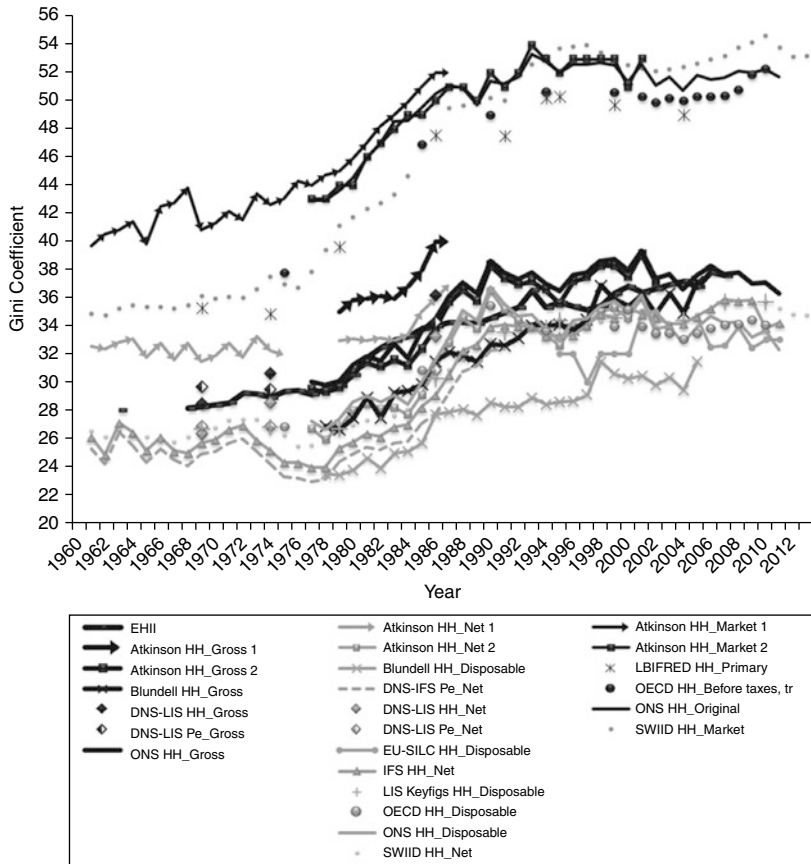
Figure 3.A14   Income inequality in the United Kingdom, 1961–2013
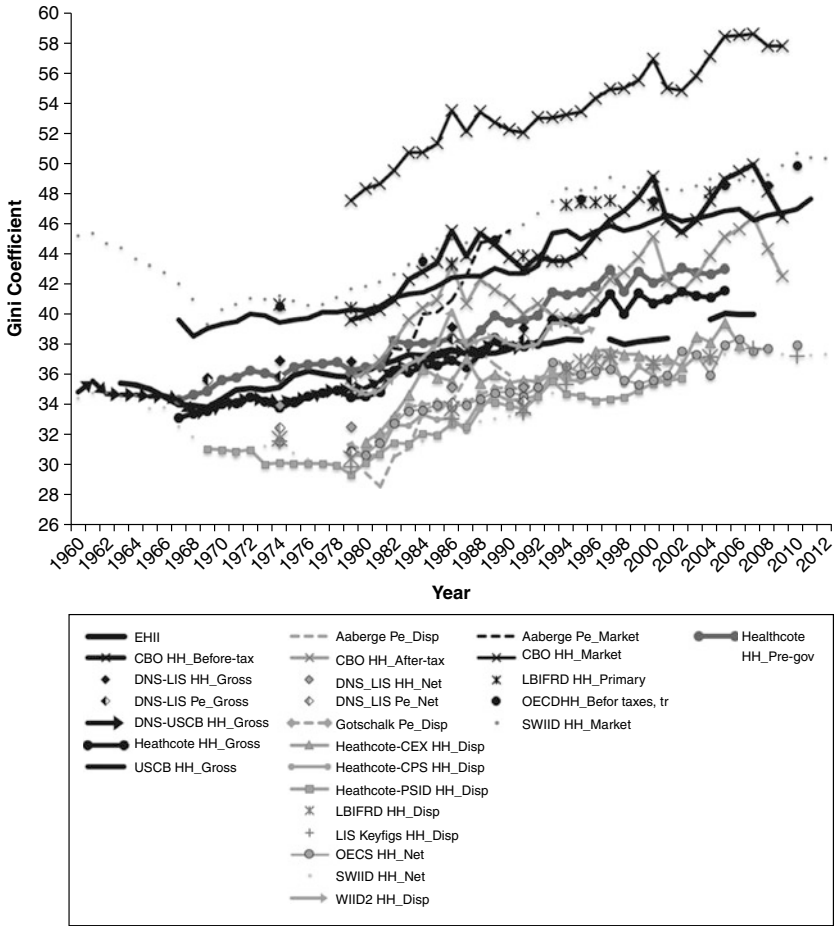
Figure 3.A15 Income inequality in the United States, 1960–2012

Acknowledgment

Final note

The UTIP-UNIDO and EHII data sets are freely available on the web-site of the University of Texas Inequality Project, at http://utip.gov.utexas.edu. We ask only that their use be acknowledged, and that papers, references and citations be shared with us when convenient. Comments on data quality, suggestions and notes about problematic observations are always welcome.

Notes

1. The treatment of public pensions and other transfers in some of the underlying DS measures appears murky, but these inequality measures are typically much lower than those for "market income," which suggests that some transfers are typically factored in.
2. Color makes these comparisons easier to see; the original color figures are available on-line in Working Paper 68 at http://utip.gov.utexas.edu.
3. The online version of this paper has figures of 10 additional countries.
4. And in some cases, we contacted the authors of those articles but were unable to get a clear answer from them either.
5. One paper on South Africa drops a clue: a third of respondents reported zero income of any type. That suggests a local definition of "income" different from what one might find elsewhere, or perhaps a greater suspicion of surveys.
6. A further difference with the SWIID is that every observation in EHII has underlying, independent measurement taken from UTIP-UNIDO; there are no interpolations across countries or years. The SWIID, moreover, is based in part on the EHII and UTIP-UNIDO calculations.
7. In UTIP Working paper 68, the comparison is extended to 25 countries, and we have nine more from Sub-Saharan Africa, available on request.

References

Aaberge, Rolf & Björklund, Anders & Jäntti, Markus & Palme, Mårten & Pedersen, Peder & Smith, Nina & Wennemo, Tom (1996) "Income Inequality and Income Mobility in the Scandinavian Countries Compared to the United States," Working Paper Series in Economics and Finance 98, Stockholm School of Economics, revised August 2002.

Atkinson, A.B. and J.E. Søgaard (2013) "The Long-run History of Income Inequality in Denmark: Top Incomes from 1870 to 2010," EPRU Working Paper Series 2013–01, Economic Policy Research Unit (EPRU), University of Copenhagen. Department of Economics.

Atkinson, A.B. and A. Brandolini (2009) "On Data: a Case Study of the Evolution of Income Inequality Across Time and Across Countries," *Cambridge Journal of Economics*, vol. 33, no. 3, pp. 381–404.

Alexeev, M. V. and Gaddy, C. G. (1993) "Income Distribution in the U.S.S.R. in the 1980s," *Review of Income and Wealth*, vol. 39, no. 1, pp. 23–36.

Altimir, O. (1986) "Estimaciones de la Distribucion del Ingreso en la Argentina, 1953–1980," *Desarrollo Economico,* vol. 25, no. 100, 521–66.

Andorka, Rudolf, Ferge, Zsuzsa and Tóth, István György (1997). "Is Hungary Really the Least Unequal? (A Discussion of Data on Income Inequalities and Poverty in Central and East European Countries)," *Russian and East European Finance and Trade*, vol. 33, no. 6, *Fiscal Policy and Fiscal Reform in Central Europe* (Nov.–Dec., 1997), pp. 67–94.

Atkinson, A. B. and Micklewright, J. (1992) *Economic Transformation in Eastern Europe and the Distribution of Income*. Cambridge: Cambridge University Press.

Atkinson, A. B., Rainwater, L. and Smeeding, T. (1995a) "Income Distribution in European Countries," LIS Working Paper No. 121. Luxembourg: Luxembourg Income Study.

Atkinson, A. B., Rainwater, L. and Smeeding, T. M. (1995b) *Income Distribution in OECD Countries: Evidence from the Luxembourg Income* Study, Social Policy Study. Paris: Organization for Economic Co-Operation and Development.

Atkinson, Anthony, Thomas Piketty and Emmanuel Saez (2011) "Top Incomes in the Long Run of History," *Journal of Economic Literature*, vol. 49, no. 1, pp. 3–71.

Akita, T. (2003) "Decomposing Regional Income Inequality in China and Indonesia Using Two-stage Nested Theil Decomposition Method," *Annals of Regional Science*, vol. 37, no. 1, pp. 55–77.

Bakarezos, P. (1984) "Personal Non-wealth Income Inequality and Tax Evasion in Greece 1962–1975," *Spudai/University of Piraeus: Journal of Economics and Business*.

Becker, Jens, and Faik, Juergen "Konflikt und Ungleichheit. Anmerkungen zur sozialen Verfasstheit der ‚Berliner Republik'," *Mittelweg*, vol. 36, no. 2-2010, pp. 71–88.

Benjamin, D. et al. (2005) "The Evolution of Income Inequality in Rural China," *Economic Development and Cultural Change*, vol. 53, no. 4, pp. 769–824.

Biewen, Martin & Juhasz, Andos, 2010. "Understanding Rising Income Inequality in Germany," IZA Discussion Papers 5062, Institute for the Study of Labor (IZA). Web. http://ideas.repec.org/p/iza/izadps/dp5062.html.

Blundell, Richard and Ben Etheridge (2010) "Consumption, Income and Earnings Inequality in Britain," *Review of Economic Dynamics*, vol. 13, no. 1, pp. 76–102.

Borraz Fernando and Lopez-Cordova Jose Ernesto (2007) "Has Globalization Deepened Income Inequality in Mexico?," *Global Economy Journal*, vol. 7, no. 1, pp. 1–57.

Brandolini, A. (1998) *A Bird's-Eye View of Long-Run Changes in Income Inequality*. Roma: Banca d'Italia Research Department.

Brandolini, A. (2004) *Income Inequality and Poverty in Italy: A Statistical Compendium*. Roma: Banca d'Italia.

Brandolini, A. and d'Alessio, G. (2001) "Household Structure and Income Inequality," Luxembourg Income Study Working Paper No. 254.

Brandolini, A. et al. (2009) *L'Evoluzione Recente Della Distribuzione del Reddito in Italia. Dimensioni della disuguaglianza in Italia: povertà, salute, abitazione*. Bologna: Società editrice il Mulino.

Brazil, *Anuario Estistico do Brasil (AEB)*, various issues.

Brzezinski, Michael (2010) "Income Affluence in Poland," *Social Indicators Research,* vol. 99, pp. 285–99.

Brzeziński, Michal and Kostro, Krzysztof (2010) "Income and Consumption Inequality in Poland, 1998–2008," *Bank i Kredyt*, vol. 41, no. 4, pp. 45–72.

Brzozowski, M., Gervais, M., Klein, P., and Suzuki, M. (2010) "Consumption, Income, and Wealth Inequality in Canada," *Review of Economic Dynamics,* vol. 13, no. 1, pp. 52–75.

Burricand, Carine, Cédric Houdré, and Éric Seguin (2012) "Les Niveaux De Vie En 2010," *Topics, Income-Wages*. Institut National De La Statistique Et Des études économiques (INSEE). Web. http://www.insee.fr/fr/themes/document.asp?reg_id=0&ref_id=ip1412.

Cacciamali, Maria Cristina (2002) "Distribuição de Renda No Brasil: Persistência do Elevado Grau de Desigualdade," in D. Pinho and M.A.S. Vasconcellos (eds), *Manual de Economia,* São Paulo: Ed. Sararaiva, pp. 406–22.

Caminada, Koen and Wang, Chen (2011) "Disentangling Income Inequality and the Redistributive Effect of Social Transfers and Taxes in 36 LIS countries," Department of Economics Research Memorandum, Leiden Law School. Web. http://www.law.leidenuniv.nl/org/fisceco/economie/hervormingsz/datawelfarestate.html.

Campos, Raymundo, Esquivel, Gerardo and Lustig, Nora (2012) "The Rise and Fall of Income Inequality in Mexico, 1989–2010," Working Paper Series. UNU-WIDER Research Paper, World Institute for Development Economic Research (UNU-WIDER). January.

Canada. *Statistical Yearbook of Canada*. Various issues.

CEDLAS and World Bank (2013) SEDLAC (Socio-Economic Database for Latin America and the Caribbean). Centro de Estudios Distributivos, Laborales, y Sociales, Universidad Nacional de La Plata http://sedlac.econo.unlp.edu.ar.

Cerisola, J. A. et al. (2000) *Distribucion del ingreso y gastos de consumo en la Republica Argentina* [Internet]. FACPE Federation Argentina de Consejos Profesionales de Ciencias Economi. Available from: http://www.facpce.org.ar/boletines/30/distribucion30.htm.

Charoenphandhu, N. and Ikemoto, Y. (2012) "Income Distribution in Thailand: Decomposition Analysis of Regional Income Disparity," *Journal of Rural Economics, Special Issue 2012.* Japan.

Chen, J., et al. (2010) "The Trend of the Gini Coefficient of China," BWPI, The University of Manchester.

Chi, W. (2012) "Capital Income and Income Inequality: Evidence from Urban China," *Journal of Comparative Economics*, vol. 40, no. 2, pp. 228–39.

Chotikapanich, D. et al. (2007) "Estimating Income Inequality in China Using Grouped Data and the Generalized Beta Distribution," *Review of Income and Wealth*, vol. 53, no. 1, pp. 127–47.

Chrissis, K. and Livada, A. (2013) "Income Inequality Measurement in Greece and Alternative Data Sources: 1957–2010," *Journal of Applied Economics and Business*, vol. 1, no. 2, pp. 13–22.

Commander, Simon, Tolstopiatenko, Andrei and Yemtsov, Ruslan (1999) "Channels of Redistribution Inequality and Poverty in the Russian Transition," *Economics of Transition*, vol. 7, no. 2, pp. 411–47.

Conceição, Pedro, Pedro, Ferreira and James Galbraith (2000) "The Young Person's Guide to the Theil Index: Suggesting Intuitive Interpretations and Exploring Analytical Applications," University of Texas Inequality Project Working Paper no. 14, March. 2.

Cornia, G.A. (1994) "Income Distribution, Poverty and Welfare in Transitional Economies: A Comparison between Eastern Europe and China," *Journal of International Development*, vol. 6, no. 5, pp. 569–607.

Cribb, J., Hood, A., Joyce, R., and Phillips, D. (2013) "Living Standards, Poverty and Inequality in the UK: 2013," Institute of Fiscal Studies (IFS) Report R81. June.

Cromwell, J. (1977) "The Size Distribution of Income: An International Comparison," *Review of Income and Wealth*, vol. 23, no. 3, pp. 291–308.

Cruces, Guillermo and Gasparini, Leonardo (2008) "A Distribution in Motion: The Case of Argentina," CEDLAS. Working Papers 0078. CEDLAS. Universidad Nacional de La Plata.

Datt, Gaurav (1995) *Income Inequality in India*, The World Bank, Washington DC, mimeo.

Deiniger, Klaus and Lyn, Squire (1996) "A New Data Set Measuring Income Inequality," *World Bank Economic Review*, World Bank Group, vol. 10, no. 3, pp. 565–91.

Deininger, K. and Squire, L. (2004) Unpublished data provided by World Bank based on unit record data.

Denisova, I. (2012) "Income Distribution and Poverty in Russia," *OECD Social, Employment and Migration Working Papers,* no. 132, OECD Publishing. Web. http://dx.doi.org/10.1787/5k9csf9zcz7c-en.

Denmark. *Danmarks Statistisk Arbog.* Various issues.

Denmark (1998). *Statistical Ten-Year Review 1998: Feature on Children and Their Families.* Kobenhavn: Aarhus Stiftsbogtrykkerie.

Denmark (1999). *Indkomster 1997 = Income 1997.* Kobenhavn: Danmarks Statistik.

Denmark (2000). *Indkomster 1998 = Income 1998.* Kobenhavn: Danmarks Statistik.

Denmark (2001). *Indkomster 1999 = Income 1999.* Kobenhavn: Danmarks Statistik.

Denmark (2002). *Indkomster 2000 = Income 2000*. Kobenhavn: Danmarks Statistik.

Denmark (2003). *Indkomster 2001 = Income 2001*. Kobenhavn: Danmarks Statistik.

Denmark (2004). *Indkomster 2002 = Income 2002*. Kobenhavn: Danmarks Statistik.

Domeij, D. and Flodén, M. (2010), "Inequality Trends in Sweden 1978–2004," *Review of Economic Dynamics*, Elsevier for the Society for Economic Dynamics, vol. 13, no. 1, pp. 179–208.

Dowling, J. M. Jr. and Soo, D. (1983) *Income Distribution and Economic Growth in Developing Asian Countries*, Asian Development Bank Economic Staff Paper No. 15. Manila: Asian Development Bank.

Escudero, Walter Sosa and Gasparini, Leonardo (1999) "Bienestar y Distribucion del Ingreso en la Argentina, 1980–1998," AAEP, Rosario, Argentina.

European Commission (2005) Eurostat Newcronos Database: Release Date 4.3.2005 [Internet]. Available from: http://epp.eurostat.cec.eu.int/portal/page?_pageid=1996,45323734&_dad=portal&_schema=PORTAL&screen=welcomeref&open=/&product=EU_MAIN_TREE&depth=1.

European Commission (2006). Eurostat Database: Date of Extraction 2.3.2006 [Internet]. Available from: http://epp.eurostat.cec.eu.int/portal/page?_pageid=1996,45323734&_dad=portal_schema=PORTAL&screen=welcomeref&open=/livcon/ilc/ilc_ip/ilc_di&language=en&product=EU_MASTER_living_conditions_welfare&root=EU_MASTER_living_conditions_welfare&scrollto=0.

European Commission. 2008. Eurostat Database: Date of Extraction 20.5.2008 [Internet]. Available from: http://epp.eurostat.ec.europa.eu/portal/page?_pageid=1996,45323734&_dad=portal&_schema=PORTAL&screen=welcomeref&open=/livcon/ilc/ilc_ip/ilc_di&language=en&product=EU_MASTER_living_conditions_welfare&root=EU_MASTER_living_conditions_welfare&scrollto=145.

Ferreira, F. and Litchfield, J. (1996) "Inequality and Poverty in the Lost Decade: Brazilian Income Distribution in the 1980s," in V. Bulme (ed.), *The New Economic Model in Latin America and Its Impact on Income Distribution and Poverty*. New York: St Martin's Press.

Ferrer-i-Carbonell, A., X. Ramos and M. Oviedo. 2013. "Growing Inequalities and its Impacts in Spain." Spain Country Report. The Gini Project. http://www.gini-research.org/articles/cr.

FIDE (1998) "Coyuntura y Desarrollo". *Anuario Estadístico*, Buenos Aires: FIDE.

Fields, Gary (1989) *A Compendium of Data on Inequality and Poverty for the Developing World*, Cornell University, March 1989.

Finn, A. and Leibbrandt, M. (2013) "Mobility and Inequality in the First Three Waves of NIDS." Cape Town: SALDRU, University of Cape Town. SALDRU Working Paper Number 120/ NIDS Discussion Paper 2013/2.

Fishlow, A., Fiszbein, A. and Ramos, L. (1993) "Distribuicao de renda no Brasil e na Argentina: Uma analise comparativa," *Pesquisa e planejamento economico,* vol. 23, no. 1, pp. 1–31.

Forster, Michael; Jesuit, David; Smeeding, Timothy (2003) "Regional Poverty and Income Inequality in Central and Eastern Europe," United Nations University – World Institute for Development Economics, Discussion Paper No. 2003/65.

Frangos, Christos C. and Filios, Spiros (2004) "On the Trend of Gini Coefficient in the Greek Economic Environment during the Years 1962 to 2002," *Archives of Economic History*, Special Edition, pp. 87–102.

Frenette, M., Green, D. and Picot, G. (2004) *Rising Income Inequality in the 1990s: An Exploration of Three Data Sources*, Ottawa: Statistics Canada.

Fuchs-Schuendeln, Nicola, Dirk Krueger and Mathias Sommer (2010) "Inequality Trends for Germany in the Last Two Decades: A Tale of Two Countries," *Review of Economic Dynamics*, vol. 13, no. 1, pp. 103–32. Web. http://www.economicdynamics.org/RED-cross-sectional-facts.htm.

Galbraith, James K., Jiaqing Lu and William A. Darity, Jr. (1999) "Measuring the Evolution of Inequality in the Global Economy," *UTIP Working Paper* No. 7, Jan. 31.

Galbraith, James K. and Hyunsub Kum (2003) "Inequality and Economic Growth: A Global View Based on Measures of Pay," *CESifo Economic Studies*, vol. 49, no. 4, pp. 527–56.

Galbraith, James K., Ludmila Krytynskaia and Qifei Wang (2004) "The Experience of Rising Inequality in Russia and China during the Transition," *The European Journal of Comparative Economics*, vol. 1, no. 1, pp. 87–106.

Galbraith, James K. and Kum, Hyunsub (2005) "Estimating the Inequality of Household Incomes: A Statistical Approach to the Creation of a Dense and Consistent Global Data Set," *Review of Income and Wealth*, vol. 51, no. 1, pp. 115–43.

Galbraith, James, Sara Hsu and Wenjie Zhang (2009) "Beijing Bubble, Beijing Bust: Inequality, Trade and Capital Inflow into China," *Journal of Chinese Current Affairs – China Aktuell*, vol. 38, no. 2, pp. 3–26.

García, Francisco Pérez (dir.) (2013) "Crecimiento y Competitividad: Los Retos de la Recuperación," Informe Fundación BBVA and the Valencian Institute of Economic Research (IVIE).

Garner, Thesia and Terrell, Katherine (1998) "Household Incomes in the Czech and Slovak Market Economies," *Mon. Lab. Rev.*, vol. 121, no. 11, pp. 59–62.

Gelb, Stephen (2003) "Inequality in South Africa: Nature Causes, and Responses," DfID Policy Initiative on Addressing Inequality in Middle-income Countries. The Edge Institute. Johannesburg, South Africa.

"Gini Coefficient of Equivalised Disposable Income (SILC)," *Eurostat*. European Commission, Web. http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search_database.

Goodman, Alissa and Steven Webb (1994) *For Richer, for Poorer: The Changing Distribution of Income in the United Kingdom 1961–1991*, London: Institute for Fiscal Studies (UKIFS).

Gorecki, Brunon (1994) "Evidence of a New Shape of Income Distribution in Poland," *Eastern European Economics*, vol. 32, no. 3, pp. 32–51.

Goskomstat (1996) *Yearbook of Russia: A Statistical Handbook*, Moscow: Goskomstat.

Grabka, Markus M., Goebel, Jan and Schupp, Jürgen (2012) "Has Income Inequality Spiked in Germany?," *DIW Economic Bulletin*, vol. 2, no. 12, pp. 3–14. http://EconPapers.repec.org/RePEc:diw:diwdeb:2012-12-1. Web. http://econpapers.repec.org/article/diwdiwdeb/2012-12-1.htm.

Growing Inequalities' Impacts (Gini) Project. Poverty and Inequality Database. Accessed 03.02.2014. Web. http://www.gini-research.org/articles/data_2.

Gustafsson, B., Li, S. and Sicular, T. et al. (2008) "Income Inequality and Spatial Differences in China, 1988, 1995 and 2002," in B. Gustafsson, S. Li, and T. Sicular (eds), *Inequality and Public Policy in China*, New York, NY: Cambridge University Press, pp. 36–61.

Gustafsson, B. and L. Shi (2002) "Income Inequality Within and Across Counties in Rural China 1988 and 1995," *Journal of Development Economics*, vol. 69, no. 1, pp. 179–204.

Habibov, Nazim (2011) "Who Wants to Redistribute? An Analysis of 14 Post-Soviet Nations," *Social Policy & Administration,* vol. 47, no. 3, pp. 262–86.

Heathcoat, Jonathan, Perri, Fabrizio and Violante, Giovanni L. (2010) "Unequal We Stand: An Empirical Analysis of Economic Inequality in the United States: 1967–2006," *Review of Economic Dynamics,* vol. 13, no. 1, pp. 15–51.

Henderson, David R., McNab, Robert M. and Rozsas, Tamas (2008) "Did Inequality Increase in Transition? An Analysis of the Transition Countries of Eastern Europe and Central Asia," *Eastern European Economics*, vol. 46, no. 2, pp. 28–49.

Hourriez, Jean-Michel, and Valérie Roux (2001) "Vue D'ensemble Des Inégalités économiques." Publications Et Services. Institut National De La Statistique Et Des études économiques (INSEE). Web. http://www.insee.fr/fr/themes/document.asp?reg_id=0&id=747.

Ikemoto, Yukio (1991) "Income Distribution in Thailand: Its Changes, Causes, and Structure," Institute of Developing Economies, Tokyo.

Ikemoto, Yukio (1993) "Income Distribution and Malnutrition in Thailand," *Chulalongkorn Journal of Economics*.

Ikemoto, Yukio and Kitti Limskul (1987) "Income Inequality and Regional Disparity in Thailand, 1962–81," *The Developing Economies*, vol. XXV, no. 3, September.

Ikemoto, Y. and Uehara, M. (2000) "Income Inequality and Kuznets' Hypothesis in Thailand," *Asian Economic Journal*, vol. 14, pp. 421–43.

"Income Distribution – Inequality," OECD. StatExtracts. Organization for Economic Co-operation and Development (OECD). Web. http://www.oecd.org/els/soc/inequality-database.htm.

India National Council of Applied Economic Research (NCAER) (n.d.) 'All India Household Survey of Income, Saving and Consumer Expenditure.' Working Paper, New Delhi.

"Ipeadata Macroeconomic Database," *Institute of Applied Economic Research (IPEA),* Updated 04/11/2013. Brazil.

Jain, S. (1975) *Size Distribution of Income: A Compilation of Data*. Washington, DC: The World Bank.

Jalil, A. and Feridun, M. (2011) "Long-run Relationship Between Income Inequality and Financial Development in China," *Journal of the Asia Pacific Economy*, vol. 16, no. 2, pp. 202–14.

Japan (1997) *Annual Report on the Family Income and Expenditure Survey 1997*, Tokyo: Japan Statistics Bureau.

Jappelli, T. and Pistaferri, L. (2010) "Does Consumption Inequality Track Income Inequality in Italy?" *Review of Economic Dynamics,* vol. 13, no. 1, pp. 133–53.

Jenkins, C. and Thomas, L. (2000) "The Changing Nature of Inequality in South Africa," Research Paper 203, World Institute for Development Economics Research.

Jitsuchon, Somchai (1987) "Sources and Trends of Income Inequality: Thailand 1975/76 and 1981," Master's Thesis, Faculty of Economics, Thammasat University.

Jitsuchon, Somchai (2001) "An Inquiry into the Proper Measurement of Poverty in Thailand." Paper presented at the Federation of the ASEAN Economic Associations Conference on Poverty and Income Distribution in ASEAN: Status and Policy Measures, Bangkok, 20–1 December.

Kakwani, Nanak and Krongkaew, Medhi (2003) "The Growth–Equity Trade-off in Modern Economic Development: the Case of Thailand," *Journal of Asian Economics*, vol. 14, no. 5, pp. 735–57.

Kakwani, N. (1996) "Income Inequality, Welfare and Poverty in Ukraine," *Development and Change*. vol. 27, pp. 663–91.

Kanbur, R. and X. Zhang (2005) "Fifty Years of Regional Inequality in China: a Journey Through Central Planning, Reform, and Openness," *Review of Development Economics*, vol. 9, no. 1, pp. 87–106.

Kapitány, Zsuzsa and Molnár, György (2004) "Inequality and Income Mobility in Hungary, 1993–1998," *Europe–Asia Studies*, vol. 56, no. 8, pp. 1109–29.

Kattuman, Paul A., and Redmond, Gerry (2001) "Income Inequality in Hungary 1987–1996," *Journal of Comparative Economics*, vol. 29, 40–65.

Keane, Michael P. and Prasad, Eswar S. (2002) "Transfers, and Growth: New Evidence from the Economic Transition in Poland," *The Review of Economics and Statistics,* vol. 84, no. 2, pp. 324–41.

Khan, A. R. and C. Riskin (1998) "Income and Inequality in China: Composition, Distribution and Growth of Household Income, 1988 to 1995," *China Quarterly*, no. 154, pp. 221–53.

Koen Caminada, Jim Been, Kees Goudswaard and Marloes de Graaf-Zijl (2013) "Inkomensongelijkheid en inkomensherverdeling in Nederland (in English: Income inequality and income redistribution in the Netherlands)," *Department of Economics Research Memorandum*, Leiden University (forthcoming).

Koubi, M., Mussard, S., Seyte, F., and Terraza, M. (2005) "Évolution des inégalités salariales en France entre 1976 et 2000: une étude par la décomposition de l'indicateur de Gini," *Économie et Prévision*, vol. 169–170–171.

Kuhonta, Erik Martinez (2003) "The Political Economy of Equitable Development in Thailand," *American Asian Review*, vol. 21, no. 4, pp. 69–108.

Lachman, D. and Bercuson, K. 1992. "Economic policies for a new South Africa," *IMF Occasional Papers* no. 91, Washington, DC: IMF.

Lecaillon, Jacques, Felix Paukert, Christian Morrisson, and Dimitri Germidis (1984) *Income Distribution and Economic Development: An Analytical Survey*, Geneva, Switzerland: International Labor Office.

Leibbrandt, M., Finn, A., and Woolard, I. (2013) "Post-Apartheid Changes in South African Inequality." *Income Inequality: Economic Disparities and the Middle Class in Affluent Countries*. Ed. Janet C. Gornick and Markus Jäntti, Stanford, CA: Stanford Univ., pp. 459–85.

Leibbrandt, M. et al. 2010. "Trends in South African Income Distribution and Poverty since the Fall of Apartheid," *OECD Social, Employment and Migration Working Papers*, No. 101, OECD Publishing. http://dx.doi.org/10.1787/5kmms0t7p1ms-en.

Leventi, C., Matsaganis, M., Mitrakos, T., and Tsakloglou, P. (2012) "Inequality and Poverty in Greece: Myths, Realities and the Crisis," South East European Studies at Oxford (SEESOX) Conference Paper. St. Antony's College. University of Oxford.

Lianos, Theodore P., and Kyprianos P. (1974) *Aspects of Income Distribution in Greece*, Center of Planning Economic Research, Lecture Series 28, Athens.

Lokshin, Michael and. Popkin, Barry M. (1999) "The Emerging Underclass in the Russian Federation: Income Dynamics, 1992–1996," *Economic Development and Cultural Change*, vol. 47, no. 4, pp. 803–29.

Lustig, Nora and Pessino, Carola (2013) "Social Spending and Income Redistribution in Argentina during the 2000s: The Rising Role of Noncontributory Pensions," Commitment to Equity (CEQ) Working Paper Series 1305, Tulane University, Department of Economics.

Luttmer, Erzo (2000) *Inequality and Poverty Dynamics in Transition Economies: Disentangling Real Events from Noisy Data*, Washington, DC: World Bank.

Luxembourg Income Study (LIS) (2005) Estimates calculated by WIDER using the unit record data provided in the LIS database as above in June 2005. Restricted online database.

McClements, L.D. (1977) "Equivalence Scales for Children," *Journal of Public Economics*, vol. 8, pp. 191–210.

Medgyesi, Márton, Szivos, Péter and Toth, István György (2000) "Szegénység és egyenlő-tlenségek: generációs eltolódások. (Poverty and Inequality: Generational Shifts)," *Társadalmi riport*, 177–204.

Meng, X. (2004) "Economic Restructuring and Income Inequality in Urban China," *Review of Income and Wealth*, no. 3, pp. 357–79.

Milanovic, Branko (1998) *Income, Inequality and Poverty During the Transition From Planned to Market Economy*, Washington, DC: World Bank.

Milanovic, Branko (1999) "Explaining the Increase in Inequality During Transition," *Economics of Transition,* vol. 7, no. 2, pp. 299–341.

Milanovic, B. and Ying, Y. (1996) *Notes on Income Distribution in Eastern Europe.* Washington, DC: The World Bank.

National Economic and Social Development Board (NESDB) Table 10.1 of the Poverty and Income Distribution Statistics 1988–2011 (in Thai). Released February 2013.

"National-level Inequality and Poverty Indicators," *Inequality and Poverty Key Figures*. LIS Cross-National Data Center in Luxembourg (n.d.) Web. http://www.lisdatacenter.org/lis-ikf-webapp/app/search-ikf-figures.

National Statistical Office (NSO) of Thailand. Statistical Tables. Current Income Share of Households By Quintile Groups of Households and the Gini Coefficient (Table 6). 2001 Household Socio-Economic Survey. Started 05.25.09. Accessed 04.02.14.

Neri, Marcelo C. (2010) "The Decade of Falling Income Inequality and Formal Employment Generation in Brazil," *Tackling Inequalities in Brazil, China, India and South Africa: The Role of Labour Market and Social Policies*. Paris: OECD, pp. 57–107.

Netherlands, *Statistical Yearbook of Netherlands*, Various issues.

Netherlands (2005). Household Income Inequality. Statistical Office of the Netherlands. Personal communication.

Newell, Andrew and Socha, Mieczyslaw W. (2007) "The Polish Wage Inequality Explosion," *Economics of Transition*, vol. 15, no. 4, pp. 733–58.

Organization for Economic Co-operation and Development (OECD) Equivalence Scale (2012) "Income Distribution Data Review – Poland." Web. www.oecd.org/social/inequality.htm.

Oliver, J., X. Ramos and J.L. Raymond (2001) "La Mejora en la Distribución de la Renta en España, 1985–1996: Un Análisis de Robustez," in *Desigualdad, Redistribución y Bienestar: Una Aproximación a Partir de la Microsimulación de Reformas Fiscales*, J.M. Labeaga and M. Mercader (eds.), Madrid: Instituto de Estudios Fiscales.

Palme, Joakim (2006) "Income Distribution in Sweden," *The Japanese Journal of Social Security Policy,* vol. 5, no. 1, June. Web. www.ipss.go.jp/webjad/webjournal.files/socialsecurity/2006/jun/palme.pdf.

Paukert F. (1973) "Income Distribution at Different Levels of Development: a Srvey of Evidence," *International Labor Review*, vol. 108, pp. 97–125.

Psacharopoulos, G. et al. (1997) "Poverty and Income Distribution in Latin America: The Story of the 1980s," World Bank Technical Paper no. 3, Washington DC: World Bank.

Pedersen, P. J. (2011) "A Panel Study of Immigrant Poverty Dynamics and Income Mobility – Denmark, 1984–2007," The Rockwool Foundation Research Unit, Study Paper No. 34. University Press of Southern Denmark.

Pedersen, P. J. and Smith, N. (2000) "Trends in Danish Income Distribution," *Labour*, 14: 523–46.

Pijoan-Mas, Josep and Sánchez-Marcos, Virginia (2010) "Spain is Different: Falling Trends of Inequality," *Review of Economic Dynamics*, vol. 13, no. 1, pp. 154–78.

"Principales Resultados de la Encuesta Nacional de Ingresos y Gastos de los Hogares (ENIGH) 2008" (English: Main Results of ENlGH 2008). July 2009. Instituto Nacional de Estadística Y Geografía (INEGI). Mexico.

"Principales Resultados de la Encuesta Nacional de Ingresos y Gastos de los Hogares (ENIGH) 2012" (English: Main Results of ENlGH 2012). July 2013. Instituto Nacional de Estadística Y Geografía (INEGI). Mexico.

Quintano, C. et al. (2009) "Evolution and Decomposition of Income Inequality in Italy, 1991–2004," *Statistical Methods and Applications*, vol. 18, no. 3, pp. 419–43.

Ravallion, M. and S. H. Chen (1999) "When Economic Reform is Faster Than Statistical Reform: Measuring and Explaining Income Inequality in Rural China," *Oxford Bulletin of Economics and Statistics*, vol. 61, no. 1, pp. 33–+.

Rutkowski, J.J. (1996) *Changes in the Wage Structure during Economic Transition in Central and Eastern Europe*. World Bank Technical Paper no. 340, Washington, DC: The World Bank.

Sen, A. and Himanshu (2004) "Poverty and Inequality in India: I," *Economic and Political Weekly*, vol. 39, no. 38, pp. 4247–63.

Sicular, T. et al. (2007) "The Urban–Rural Income Gap and Inequality in China," *Review of Income and Wealth* vol. 53, no. 1, pp. 93–126.

"Síntese de Indicadores da Pesquisa Nacional por Amostra de Domicilios (PNAD) 2012" (English: Financial Highlights from PNAD 2012) (2013) Brazilian Institute of Geography and Statistics (IBGE), Rio de Janeiro.

Slay, Ben. (2009) "Poverty and Social Policy Reform in Ukraine," *Problems of Economic Transition,* vol. 51, no. 8, pp. 56–80.

Solt, Frederick (2009) "Standardizing the World Income Inequality Database," *Social Science Quarterly*, vol. 90, no. 2, pp. 231–42.

Statistics Canada, Income Statistics Division. Socioeconomic Database (CANSIM). Table 202-0709. Accessed April 29, 2013.

Statistics Canada, Income Statistics Division. Socioeconomic Database (CANSIM). Table 202-0705. Accessed May 17, 2013.

Statistics Netherlands. Income and Spending Statistics. Statline Database. Accessed September 24, 2013.

Statistics Sweden (SCB). Statistical Tables. Income Distribution 1975–2012. Updated 02.20.14. Accessed February 3, 2014.

Sudo, Nao & Suzuki, Michio & Yamadai, Tomoaki (2012) "Inequalities in Japanese Economy during the Lost Decades," CARF F-Series CARF-F-284, Center for Advanced Research in Finance, Faculty of Economics, The University of Tokyo.

Sutherland, D. and S. Yao (2011) "Income Inequality in China Over 30 Years of Reforms," *Cambridge Journal of Regions, Economy and Society*, vol. 4, no. 1, pp. 91–105.

Svejnar, Jan (2002) "Transition Economies: Performance and Challenges," *The Journal of Economic Perspectives*, vol. 16, no. 1, pp. 3–28.

Swamy, Subramanian (1967) "Structural Changes and the Distribution of Income by Size: The Case of India," *Review of Income and Wealth*, series 1 3, 2, June.

Sweden *Statistical Abstract of Sweden (SAS)*, Various Issues, Sveriges Office Statistik, Stockholm.

Szulc, Adam (2000) "Economic Transition, Poverty, and Inequality: Poland in the 1990s," *Statistics in Transition,* vol. 4, no. 6, pp. 997–1017.

Szulc, Adam (2007) "Checking the Consistency of Poverty in Poland: 1997–2003 Evidence," *Post-Communist Economies,* vol. 20, no. 1, pp. 33–55.

Tachibanaki, Toshiaki (2006) "Inequality and Poverty in Japan," *The Japanese Economic Review*, vol. 57, no. 1.

"The Distribution of Household Income and Federal Taxes, 2010." 2013. Report by the US Congressional Budget Office. Washington, DC. December.

"The Effects of Taxes and Benefits on Household Income, 2011/12," 2013. Office for National Statistics (ONS), United Kingdom, July.

"Trends in the Distribution of Household Income Between 1979 and 2007," 2011. Report by the US Congressional Budget Office. Washington, DC. October.

TransMONEE (2004–08) A Database of Socio-economic Indicators for CEE/CIS/Baltics, Florence: UNICEF International Child Development Centre.Online database.

Tranmonee UNICEF (2013) *TransMonEE 2013 Database*, UNICEF Regional Office for CEE/CIS.

United Nations (1981) *A Survey of National Sources of Income Distribution Statistics (First Report)*, Statistical Papers, Series M, no. 72, New York: United Nations.

United Nations (1985) *National Accounts Statistics: Compendium of Income Distribution Statistics. Statistical Papers*, Series M, no. 79, New York: United Nations.

United Nations Development Programme, UNDP 2013 Development projects. https://data.undp.org.

UNU-WIDER World Income Inequality Database (WIID), Version 2.0c, May 2008.

US Census Bureau, *Current Population Survey, Annual Social and Economic Supplements*, Historical Income Table H-4, Washington, DC.

Van Ginneken, Wouter and Park, Jong Goo (1984) Generating internationally comparable income distribution estimates.

Vecernik, Jan (1995) Incomes in East-Central Europe: Distributions, Patterns and Perceptions. LIS Working Paper No. 129. Luxembourg: Luxembourg Income Study.

Vecernik, Jan (1996) "Incomes in Central Europe: Distributions, Patterns and Perceptions," *Journal of European Social Policy*, vol. 6, p. 101.

Vecernik, Jan (1998) "Distribution of Income in the Czech Republic in 1988–1996: Readjustment to the Market," Working papers of the research project "Social Trends" 8/1998.

Wang, Z. X. et al. (2009) "A New Ordered Family of Lorenz Curves With an Application to Measuring Income Inequality and Poverty in Rural China," *China Economic Review*, vol. 20, no. 2, pp. 218–35.

Whalley, J. and X. M. Yue (2009) "Rural Income Volatility and Inequality in China," *Cesifo Economic Studies*, vol. 55, nos 3–4, pp. 648–68.

Whiteford, A. and McGrath, M. (1999) "Income Inequality over the Apartheid Years," in M. Leibbrandt and N. Nattrass (eds), *Inequality and the South African Labour Market* (draft manuscript).

World Income Inequality Database (WIID2) United Nations University – World Institute for Development Economics Research UNU-WIDER. 2013.

Wolfson, Michael (1986) "Stasis Amid Change: Income Inequality In Canada 1965–1983," *Review of Income & Wealth,* 32.4 (1986): 337–369. Business Source Complete. Web. 4 May 2014.

"World DataBank." World Development Indicators. The World Bank. April 2014. Web.

World Bank. *World Development Indicators* [Internet]. Washington, DC: World Bank.

World Bank (2000). *Poverty During the Transition: HEIDE Database.* Washington, DC: World Bank.

World Bank 2002. World Bank Poverty Monitoring Database. Washington DC: The World Bank. Datasheet 2002.

Wu, X. and J. M. Perloff (2004) *China's Income Distribution over Time: Reasons for Rising Inequality*, American Agricultural Economics Association (New Name 2008: Agricultural and Applied Economics Association).

Ying, W. Y. (1995) *Income Poverty, and Inequality in China During the Transition*. Washington, DC: The World Bank.

Yu, Derek (2012) *Using Household Surveys for Deriving Labour Market, Poverty and Inequality Trends in South Africa*. Diss. University of Stellenbosch.

Yu, K., et al. (2011) "Foreign Direct Investment and China's Regional Income Inequality," *Economic Modelling*, vol. 28, no. 3, pp. 1348–53.

Zhang, P. Income Distribution in China's Transitional Periods. Institute of Economics, CASS.

Zhang, Wenjie (2014) "Has China Crossed the Threshold of the Kuznets Curve? New Measures from 1987 to 2012 Show Declining Pay Inequality in China after 2008," University of Texas Inequality Project Working Paper No. 67, April 21.

Zheng, F., et al. (2000) "Forecasting Regional Income Inequality in China," *European Journal of Operational Research*, vol. 124, no. 2, pp. 243–54.

Measuring Global Inequality: Comments on "The University of Texas Inequality Project (UTIP) Global Inequality Data Sets, 1963–2008" by James K. Galbraith, Beatrice Halbach, Aleksandra Malinowska, Amin Shams and Wenjie Zhang

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Almost twenty years ago I commented on James Galbraith's paper on this topic at a conference at the Levy Economics Institute of Bard College. At that time, the UTIP ("University of Texas Inequality Project") was only in its infancy. There were perhaps ten or a dozen countries covered in the work. Now, twenty years later, the country coverage has exploded to 4,054 country-year observations for 167 countries. The period covered is now 1963 to 2008. Moreover, a second database has been created – the EHII data set which has 3,871 observations on estimated gross household income inequality for 149 countries. Coverage is also now through 2008. This is a major achievement. Job well done!

The paper itself is rather brief in terms of text. As a result, some of my questions or confusions may be due to the abbreviated nature of the paper.

The UTIP-UNIDO (the "UNIDO" was added to the name of the database some time recently, I think) data set of industrial pay inequality is a panel data set. It shows the between-group components of Theil's T statistic across a stable and consistent set of industrial sectors. Here, it should be noted that most of the variation in industrial pay is *within group,* not between group. I am not sure whether the between group component is shown in absolute terms or *relative* to a weighted average of the within group Theil coefficients. I think the latter would be preferable.

The authors note that the intent of the database is to provide for the study of common factors affecting inequality, such as interest rates, debt crises, changing financial regimes, technology, and trade. This would be an interesting project by itself – I hope the authors will pursue this line of inquiry.

The construction of the EHII database is based on the UTIP-UNIDO database. Here, I get a bit lost. The method is to use a regression of overlapping

observations on the original Deininger and Squire (1996) data set of Gini coefficients by country and year. The regression has a number of control variables. The first is the share of manufacturing employment in the total population. I wonder why this variable was selected over possible alternative measures of the importance of manufacturing in the total economy. One possibility is manufacturing employment as a share of total employment or as a share of the total labor force. I think the former would be preferable. Another possibility is the ratio of manufacturing *value added* to total GDP. Some sensitivity analysis of the various alternatives would be useful.

The second is the income (or consumption) concept used in the Deininger–Squire data set – gross income, income net of taxes, household income, personal (I guess this means "individual) income, or expenditures. This is a clever technique to use. The regression is run on 430 common observations. In Table 3.1, the R^2 statistic is 0.56. I am not sure whether this represents a god fit. Time series regressions often have high R^2, so on the surface this seems pretty low for this type of regression. However, I am not sure. The authors should comment on this. On the other hand, the coefficient estimates are all statistically significant, so that this provides some solid support for their method.

Galbraith et al. then compare their estimated country-level Gini coefficients with other available measures in the literature. They report some remarkable findings. One notable result is that in most advanced social democracies like Denmark, France, and Germany, there is a substantial disparity between market income inequality and disposable income inequality. In Denmark, the difference is about 25 Gini points (the latter having lower inequality than the former).

Here, I wish that the authors were more precise in the definitions of these terms. What is market income? I gather that it includes labor earnings, self-employment income, and property income like interest, dividends, and rent. What about pension income? Perhaps, market income includes income from private pension plans (which are common in the United States but less common in continental Europe) but excludes income from public pension plans.

What about disposable income? The usual definition of disposable personal income (DPI) is gross money income minus personal current taxes. If that is the case, then the difference between market income and DPI is equal to the sum of government cash transfers like unemployment insurance and public pension benefits less personal tax payments. The difference between market income and DPI thus reflects the effects of the fiscal system on both its benefits side and its tax side.

Why is the difference between market income and DPI so large? Galbraith et al. argue that, in the main, the difference stems from the fact that in advanced welfare states like Denmark and Sweden very high inequality in market income is due to the fact that many households in these countries have *zero*

market income. That is to say, with generous government-provided benefits, particularly public pension benefits, many families in these countries, particularly retirees, have no need for additional market income. The government already provides all that is needed.

This is a very interesting argument. I wish the authors had provided some empirical evidence to support this view. One might think of using the household survey data to see, for example, whether Denmark has a higher share of households with zero market income than the United States. I also think that capital income must play some kind of role. The fact that capital income is very unequally distributed must also partly explain the much higher level of market income inequality than that of disposable income (or of labor earnings).

There are a few notable differences between measures of household income inequality based on sample surveys or tax records and the EHII measure. One that they comment on is the United States. As the authors note, the EHII misses the great peak in inequality that appeared in 2007, just before the onset of the Great Recession. The reason they give is that top incomes are driven to a large extent by capital asset prices, in the form of realized capital gains, stock options realizations, and the like. This type of income fluctuates closely with the stock market. In contrast, the EHII estimate of gross household income inequality is derived solely from the dispersion of pay in the industrial economy, which is much more stable. This sounds like a plausible explanation. However, the authors assert that "few other countries have a similar degree of dependence on incomes on the capital market." This again sounds plausible. However, some empirical evidence on this score would be useful – for example, comparing Denmark to the US in regards to the share of capital income in total income.

Indeed, it might be useful to compare the EHII time series of Gini coefficients with survey-based Gini coefficients for countries where a full time series is available from survey sources. The United States is a good example. Gini coefficients for family income are available for 1947 onward on the basis of the Current Population Survey (CPS). (Gini coefficients for *household* income are available for 1967 onward.) One could think of performing a unit root analysis on the two series to determine whether they are co-integrated. Moreover, one could also include other explanatory variables in the time series regression of EHII Gini coefficients on CPS Gini coefficients. Such explanatory variables might include the share of capital income in total personal income, the share of female-headed households in total households, the share of elderly households in total households, and the like. Such a regression analysis might help to determine the source of the discrepancy in the EHII inequality series and the CPS inequality series.

A second is a set of large emerging market countries such as Mexico, Brazil, and South Africa. The authors note that the EHII data are quite good at tracking trends in inequality over time, at least as indicated by results from survey data.

However, the EHII estimates tend to be lower than those taken from household surveys. The authors believe that the differences may stem in part from the income definitions used in the various surveys. This seems like a reasonable view. Once, again, however, it might be helpful to check at least one of the surveys (say for Mexico) to determine what the income definition is and how it differs from that of, say, the United States.

Another useful comparison would be between the EHII database and data from the Luxembourg Income Study (LIS). LIS is a collection of household microdata like the Current Population Survey. There are now data available from some 40 countries, covering both advanced industrial nations like France and Germany as well as middle and upper-middle countries like China, Hungary, Romania, and the Czech Republic and less developed countries like India and Guatemala. The advantage of the LIS is that it is possible to construct comparable income definitions across countries. A large number of studies have been completed to make cross-national comparisons of income inequality on the basis of the LIS. Studies that report Gini coefficients include O'Higgins, Schmaus, and Stephenson (1989) and Buhmann, Rainwater, Schmaus, and Smeeding, (1988).for 1980 or so; Atkinson, Rainwater, and Smeeding (1995) covering the years 1979 to 1987; and Smeeding (2005) for 2000 onward.

Here, too, one might want to compare the EHII Gini coefficients with those from these studies and others for the same country and year. Both level comparisons and rank comparisons might be of interest. How do the EHII Gini coefficients stack up relative to those computed from the LIS? Is the rank order in terms of inequality from the EHII relatively similar to that based on the LIS data? These comparisons would also be useful to determine the validity of the EHII data.

All in all, the EHII database seems like an important addition to the collection of international databases on income and inequality. The upshot depends on what purposes the EHII database will be put to use. The Penn World Tables (PWT), for example, has been used in a multitude of cross-country comparison studies on productivity growth and its determinants. One interesting feature of the PWT is that it includes a special code for data considered less reliable than that for the vast majority of countries. The EHII might consider including a special code of that nature for countries where notable discrepancies are found with survey data estimates of household income inequality (Mexico, for example).

One would think that the EHII could be used for a similar set of cross-country comparisons of the determinants of inequality. The fact that the EHII has a pooled cross-section structure will make the econometric estimation particularly powerful. One could think of a whole set of explanatory variables. These might include: (i) measures of the extent of international trade; (ii) immigration flows as a share of the population; (iii) the extent of unionization in the country;

(iv) measures of technology such as the ratio of investment in computer and information technology to employment; (v) productivity growth – both labor and total factor productivity; (vi) structural variables such as the share of agricultural value added in GDP; (vii) capital income as a share of national income; (viii) family structure variables such as the share of single female households in the total household count or the share of elderly households in the total household count; and (ix) political economy variables such as the relative level of a national minimum wage, social transfers as a share of GDP, and so on. Such cross-country analyses will make the EHII a particularly useful tool.

References

Atkinson, Anthony B., Lee Rainwater, and Timothy M. Smeeding (1995) *Income Distribution in Advanced Economies: The Evidence from the Luxembourg Income Study (LIS)*. Paris: OECD.

Buhmann, Brigitte, Lee Rainwater, Guenther Schmaus, and Timothy M. Smeeding (1988) "Equivalence Scales, Well-Being, Inequality, and Poverty: Sensitivity Estimates across Ten Countries Using the Luxembourg Income Study (LIS) Database," *Review of Income and Wealth*, vol. 34, no. 2, pp. 115–42.

Deininger, Klaus, and Lyn Squire (1996) "A New Data Set Measuring Income Inequality," *The World Bank Economic Review*, vol. 10, no. 3, pp. 565–91.

O'Higgins, Michael, Guenther Schmaus, and Geoffrey Stevenson (1989) "Income Distribution and Redistribution: A Microdata Analysis for Seven Countries," *Review of Income and Wealth*, vol. 35, no. 2, pp. 107–32.

Smeeding, Timothy M. (2005) "Public Policy, Economic Inequality, and Poverty: The United States in Comparative Perspective," *Social Science Quarterly*, vol. 86, no. s1, pp. 955–83.

4
Inequality and the Fragility of Growth*

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4.1 Introduction

Over the long run, sustained growth is central to poverty reduction. The rapid growth seen in much of the world over the past few decades – notably, but not only, in China and India – has led to an unprecedented reduction in poverty. And, in general, increases in per capita income tend to translate into proportionate increases in income of the poor. As Dollar and Kraay (2002) memorably put it, "Growth Is Good for the Poor." All the more reason, then, to place sustainability of growth at the center of any poverty reduction strategy.

The recent global crisis – and the impact this is having on economic activity, jobs, and the poor – is thus rightly spurring a renewed focus on the drivers of growth, including possible links between income inequality, crises, and growth sustainability. Piketty and Saez (2003) underscore the sharp rise in income inequality in the United States in the past two decades and its return to levels not seen since the late 1920s. A number of analysts have investigated how this may have contributed to the crisis. Rajan (2010) points to the political and economic pressures that led high-income individuals to save, low-income individuals to sustain consumption through borrowing, and financial institutions and regulators to encourage the process. Kumhof and Rancière (2010) detail the mechanisms that may have linked income distribution and financial excess, arguing that the same factors may have been at play in both the Great Depression and the Great Recession.

Some inequality is integral to the effective functioning of a market economy and the incentives needed for investment and growth (Chaudhuri and Ravallion, 2006). But too much inequality might be destructive to growth. Beyond the risk that inequality may amplify the potential for financial crisis, it may also bring political instability, which can discourage investment. Inequality may make it harder for governments to make difficult but necessary choices in the face of shocks. Or, inequality may reflect lack of access of the poor to finance and thus fewer opportunities to invest in education and entrepreneurial activity.

Earlier analyses have recognized the complex linkages among income distribution, growth, and policies to counter inequality. This chapter takes up the issue of whether growth can in fact be sustained in the face of a highly uneven income distribution. Does less inequality help to increase the duration of growth? Are inequality and unsustainable growth two sides of the same coin, or largely unrelated issues?

This chapter draws on earlier work (Berg, Ostry, and Zettelmeyer, 2012) that looked at growth in a way that emphasizes the turning points in countries' growth trajectories, and especially what determines when a long period of growth – a "growth spell" – comes to an end. Here the focus is squarely on the relationship between income distribution and the length of growth spells. The main finding is that equality seems to drive more sustainable growth.

But does such a finding of itself support efforts to redistribute? In particular, inequality may impede growth at least in part *because* it calls forth efforts to redistribute through the fiscal system, efforts that themselves may undermine growth. In such a situation, even if inequality is bad for growth, taxes and transfers may be precisely the wrong remedy. While the literature on this score remains controversial, the notion of a tradeoff between redistribution and growth seems deeply embedded in policymakers' consciousness. The negative effect of redistributive policies is indeed the central theme of Arthur Okun's famous (1975) book on the trade-offs between efficiency and equity and on the efficiency "leaks" that efforts to reduce inequality engender.

Some recent research (Ostry, Berg, and Tsangarides, 2014) suggests that redistribution has a generally benign impact on growth; only in extreme cases is there some evidence that it may have direct negative effects on growth. Given our earlier finding that equality exerts a protective effect on growth duration, the combined direct and indirect effects of redistribution – including the growth effects of the resulting lower inequality – are, on average, pro-growth.

4.2   Income distribution and growth sustainability

To what extent is the duration of growth episodes related to differences in country characteristics and policies, including income distribution? It has

long been recognized that the quality of economic and political institutions, an outward orientation, macroeconomic stability, and human capital accumulation are all important determinants of economic growth, and much work has gone into understanding the mechanisms and policy implications of these relationships. This chapter argues that income distribution may also – and independently – belong in this "pantheon" of critical growth determinants.

4.2.1   Why income distribution?

To set the stage, Figure 4.1 presents a simple correlation between length of growth spells and the average income distribution during the spell for a sample of countries. The measure of inequality is the Gini coefficient, which varies from 0 (all households have the same income) to 100 (all income received by one household).

There is a pattern here: more inequality seems associated with less sustained growth. What are the possible channels through which income inequality affects growth sustainability?

- **Credit market imperfections**. Poor people may not have the means to finance their education. A more equal distribution of income could thus increase investment in human capital and hence growth. In the data used here, there is a negative correlation between some indicators of human capital (notably, secondary education achievement) and income distribution,
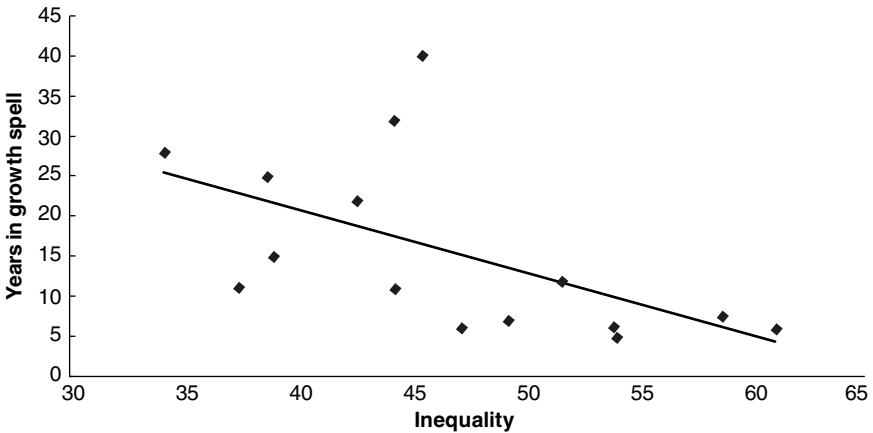
Figure 4.1   Duration of growth spells and inequality

Note: This figure includes spells that end in-sample (completed spells) only, because the length of incomplete spells is unknown. For this figure, minimum spell length is five years.
Source: Penn World Tables and Wider World Income Inequality Database.

even controlling for per capita income. This echoes the arguments in Wilkinson and Pickett (2009) that more unequal countries suffer from relatively poor social indicators.

- **Political economy**. In economically unequal countries, political power may be distributed in a more egalitarian fashion than economic power. Efforts to use this political power to effect redistribution, say, through the tax system, may create disincentives to investment and result in lower or less durable growth (Alesina and Rodrik, 1994). Meanwhile, efforts by economic elites to resist this redistribution, for example, through vote buying and other corrupt behavior, itself could be distortionary and wasteful and thus also detrimental to growth (Barro, 2000).
- **Political instability**. Income inequality may increase the risk of political instability, and the resulting uncertainty could reduce incentives to invest and hence impair growth. Rodrik (1999) argues that inequality and political instability may hamper countries' effectiveness in responding to external shocks. Similarly, Berg and Sachs (1988) find that unequal societies tended to experience relatively severe debt crises in the 1980s. IILS (2010) highlights links between unemployment and social unrest.

Against the background of these mechanisms, the question is whether the data lend support to the notion that societies with more equal income distributions have more durable growth.

4.2.2   Many hazards to growth

Many factors are likely to play a role in the duration of growth spells. In this section, the relationship between duration and inequality – and other key potential determinants – is examined more systematically. It goes almost without saying, given the nature of statistical relationships, that what follows should be interpreted as highlighting associations rather than causation, suggesting tentative stylized facts that seem to emerge from the data.

The approach here borrows from the medical literature that aims to gauge, for example, how long someone might be expected to live conditional on certain factors, for example, whether the person is a smoker, his or her weight, gender, and age (time "in the spell"). In our context, the probability that a growth spell will end depends on its current length and various "hazards" to growth. The analysis distinguishes between conditions at the onset of a growth spell and changes during the course of it. The latter are most interesting for the question of what policies might be able to extend the life of an ongoing spell.[1]

Unfortunately, there are not nearly enough data to test all the main growth theories – and hence candidate variables – at once. There are simply too few spells and too many candidates to disentangle everything. So the strategy is to

look at possible determinants of duration one at a time and then try to synthe-size the findings. The variable-by-variable analysis suggests the following are correlated with longer growth spells:[2]

- *Better political institutions*. Many have argued that political institutions that constrain the executive and secure political accountability help to sustain growth. We also find that several measures of better political institutions are correlated with longer spells.
- *Increases in education, health, and physical infrastructure*. One strong effect is of within-spell improvements in primary education. In addition, both the initial level and increases in child mortality reduce the expected duration of a spell, though with mixed significance and magnitude.
- *Financial development.* In line with conventional wisdom, increases in the ratio of bank deposits to GDP during the spell seem to have a protective effect.
- *Trade liberalization.* There is a significant and large effect of trade liberaliza-tion, consistent with the notion that mechanisms such as increased market size, promotion of competition, and transmission of know-how may link trade openness and growth and make growth more durable.
- *International financial integration*, depending on the nature of the capital flow. Foreign direct investment (FDI) seems to help duration, whereas growth of external debt seems to hurt (consistent with the findings in Dell'Ariccia et al., 2008).
- *Competitiveness and export structure.* Avoidance of exchange rate overvalu-ation, high shares of manufacturing exports in total exports, and various measures of the "sophistication" of export structures (Hausmann, Rodriguez, and Wagner, 2006; Hausmann, Hwang, and Rodrik, 2007) are all correlated with longer growth spells.
- *Macroeconomic volatility.* Increasing rates of currency depreciation and inflation both reduce the expected length of spells.
- *External shocks*. Reductions in the terms of trade and increases in US interest rates, in particular, are associated with shorter spells.
- *Inequality.* There is indeed a large and statistically significant association between low income inequality and growth duration. Inequality is among the variables with the economically strongest effect on predicted spell duration. It is also among the most robust variables, in that it remains statistically significant across samples.

Overall, the results of the analysis have the flavor of some interpretations of the East Asian "miracle": growth is most enduring in countries that main-tain outward orientation, have inward FDI but perhaps not much external debt or deficits, maintain macro stability, and have relatively equal income

distribution. Given this, it is worth noting that overall results hold up even when Asia is excluded from the sample.

4.2.3 Putting the hazards together

So far, we have looked one by one at the possible factors influencing the duration of growth spells. It is possible that many of the identified determinants of spell duration are themselves correlated with one another. For example, perhaps inequality is only indirectly capturing the effects of poor institutions, poor health or education, or other factors that might be the true drivers of growth duration.

To address this possibility, we now examine the joint effect of the above factors. Many potential determinants of duration remain important in this multivariate analysis, though their statistical and economic significance varies substantially depending on the exact sample, whether or not other potentially important variables are also included, and so on. Several variables are significant in at least some samples and specifications.

Figure 4.2 presents the results from the preferred multivariate specification in Berg, Ostry, and Zettelmeyer (2012). To give a feeling for the importance of each variable, the figure reports the increase in expected spell duration for a given increase in the variable in question, keeping other factors constant. Doing so requires first calculating expected duration when all variables are at the median for the sample (the 50th percentile). The expected duration is then
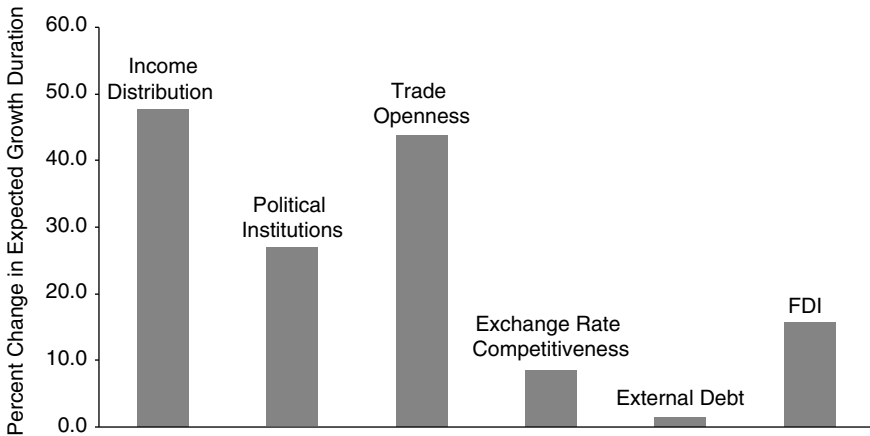
Figure 4.2   Effect of increase of different factors on growth spell duration

Note: For each variable, the height of the bar shows the percentage increase in spell duration resulting from an increase in that variable from the 50th to the 60th percentile, with other variables at the 50th percentile. For trade, the figure shows the benefits of having an open instead of a closed regime, using the Wacziarg and Welch (2008) dichotomous variable. For autocracy, the figure shows the effects of a move from a rating of 1 (the 50th percentile) to 0 (the 73rd percentile.)
Sources: Berg, Ostry, and Zettelmeyer (2012) and authors' calculations.

recalculated when the variable in question improves by 10 percentiles.[3] The main results are as follows:

- *Better political institutions* – measured by "autocracy" according to the Polity IV database – are correlated with longer spells: a reduction in autocracy from a rating of 1 (which corresponds to the sample median) to 0 on the 10-point scale is associated with a 25 percent longer spell.
- *Liberalized trade* – measured with the Wacziarg and Welch (2008) dichotomous variable that takes a value of 1 when trade has been liberalized and 0 otherwise – is associated with a 45 percent longer spell.
- *A smaller real exchange rate overvaluation* is associated with more durable growth. A decrease in overvaluation by 10 percentage points of the real exchange rate – measured as a deviation from purchasing power parity, after adjusting for per capita income – is associated with an 8 percent increase in expected spell length.
- *The effects of financial globalization* again depend on the nature of the capital flow. Higher FDI inflows are associated with longer spells, with an increase from 8 to 12 percent of GDP in FDI liabilities associated with an expected spell duration that is 15 percent longer. Lower external debt is associated with longer spells; a decrease from 44 to 39 percent in the ratio of external debt to GDP suggests an increase in the duration of the growth spell of about 2 percent.

A number of other variables that work one by one do not remain significant in the joint analysis. This may reflect the difficulty in identifying many different effects in a limited sample of spells, but possibly also that they are – at least in part – not independent drivers of duration but rather manifestations of the underlying forces captured by some of the above variables.[4]

4.2.4   Inequality: a significant hazard to growth sustainability

The key result from the joint analysis is that income distribution survives as one of the most robust and important factors associated with growth duration. As Figure 2 demonstrates, a 10-percentile decrease in inequality – the sort of improvement that a number of countries have experienced during their spells – increases the expected length of a growth spell by 50 percent. Remarkably, inequality retains a similar statistical and economic significance in the joint analysis despite the inclusion of many more possible determinants. This suggests that inequality seems to matter in itself and is not just proxying for other factors. Inequality also preserves its significance more systematically across different samples and definitions of growth spells than the other variables. Inequality is thus a more robust predictor of growth duration than many variables widely understood to be central to growth.

   The estimates of the effects of inequality mainly rely on cross-country variation, because generally inequality is fairly stable through time for a given

country. But sometimes income distribution does change dramatically, as in the United States, China, and a number of developing countries over the past few decades. And the estimates suggest that such changes may have significant effects on expected growth duration. To take one example, Brazil has complemented market-oriented reforms with progressive social policies aimed directly at poverty reduction (Ravallion, 2009). The multivariate estimates would suggest that the resulting decline in Brazil's Gini would, other things equal, increase the expected length of a growth spell by some 40 percent.

Income distribution is only one measure of social heterogeneity. Several authors have argued that ethnic or religious fractionalization plays a similar role to inequality in making a country more vulnerable to shocks or more unstable.[5] Anecdotally, there are clearly times when ethnic fractionalization seems to be associated with political and economic instability. And it seems plausible that ethnic and other sorts of fractionalization are correlated with and indeed interact with income distribution in complex ways. We find some evidence to support the idea that higher ethnic fractionalization is associated with shorter growth spells, but the effect varies substantially across samples and is often not statistically significant. For growth spells, at least, the evidence seems firmer on the importance of income inequality.

4.3   Redistribution and growth

My work, using data from Solt (2009), that is presented in Ostry, Berg, and Tsangarides (2014), looks at the relationship between growth duration on the one hand and inequality and redistribution on the other.

Before giving a flavor of the empirical results from this research, we can observe in Figure 4.3 that there is a strong negative relation between the level of net inequality and growth in income per capita over the subsequent period (top panel), and there is a weak (if anything, *positive*) relationship between redistribution and subsequent growth (bottom panel). We can observe roughly similar simple correlations for spell length (Figure 4.4), with a strong negative relationship between the level of net inequality and the duration of growth spells and a weak (in this case slightly negative) relationship between redistribution and the duration of growth.

The empirical findings in Ostry, Berg, and Tsangarides (2014) suggest that when redistribution is already high (above the 75th percentile), there is evidence that further redistribution is indeed harmful to growth, as the Okun "big trade-off" hypothesis would suggest. When it is below that level, however, there is no evidence that further redistribution has any effect on growth.

These findings suggest that, contrary to the big trade-off hypothesis, the overall effect of redistribution is pro-growth, with the possible exception of extremely large redistributions (Ostry and Berg, 2014). There is no negative direct effect, and the resulting lower inequality seems to be associated with
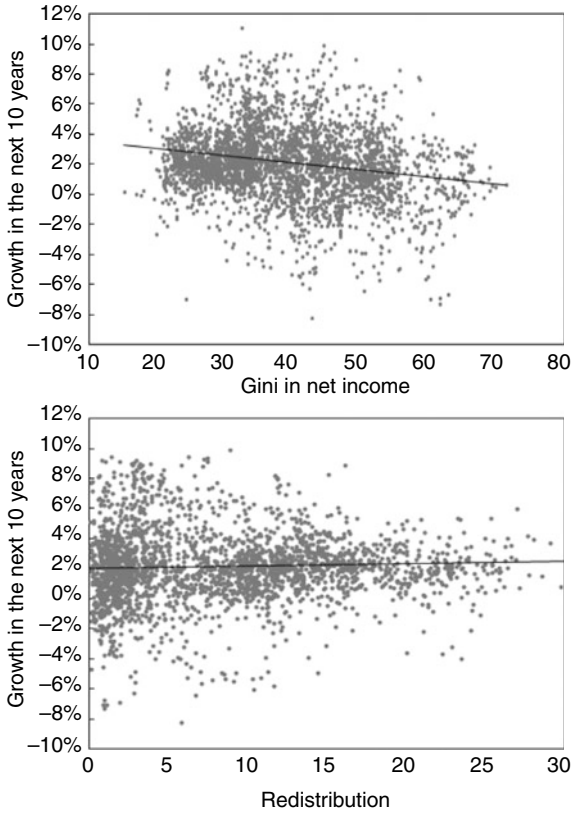
Figure 4.3   Growth, inequality, and redistribution
Note: Simple correlations between growth in the next 10 years, and the average net income inequality and transfers for a sample.
Source: Penn World Tables version 7.1, SWIID 3.1, and authors' calculations.

longer growth spells. For very large redistributions, the point estimate of the effect of redistribution on growth is negative and somewhat larger in absolute value than the estimated (positive) effect of inequality on growth, but this difference is statistically insignificant. This means that even in the case of large redistributions, there is little evidence of an overall adverse effect on growth, since the pro-equality and disincentive effects of the transfers roughly balance one another out. For smaller transfers, those of less than 13 Gini points, the evidence suggests that the overall effect of redistribution would be growth-positive (though not statistically significant): roughly neutral, but imprecisely estimated, direct effects of redistribution, and a statistically significant protective effect of the resulting reduction in inequality.
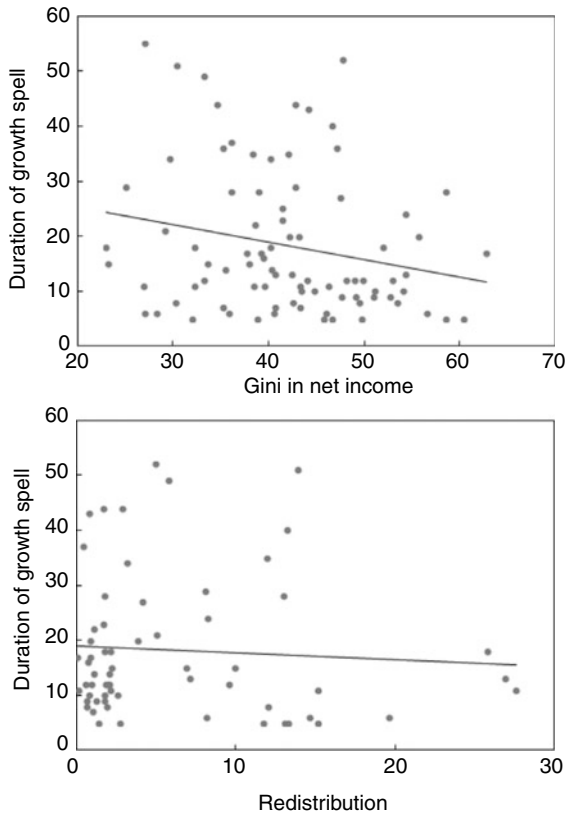
Figure 4.4   Duration of growth spells, inequality, and redistribution

Note: Simple correlation between length of growth spells, and the average net income inequality and transfers during the spell. Spells that end in-sample are included; minimum spell length is 5 years.
Source: Penn World Tables version 7.1, SWIID 3.1, and authors' calculations.

The results in Ostry, Berg, and Tsangarides (2014) on the effects of redistribution seem to hold also when controlling for a number of other potential determinants of spell duration. Additional controls preserve the results related to inequality. The results with respect to redistribution are more fragile, however. In particular, the negative effect of very large transfers seems to disappear when certain other factors are controlled for, such as exogenous shocks, institutions, debt liabilities, and openness.

4.4   Some tentative policy implications

The main results in this chapter are that: (i) increasing the length of growth spells, rather than just getting growth going, is critical to achieving income

gains over the long term; and (ii) countries with more equal income distributions tend to have significantly longer growth spells. Attention to inequality may be warranted for social reasons, independently of its effects on growth (Wilkinson and Pickett, 2009). The evidence presented here suggests, however, that it is difficult to separate the issues of growth and distribution over long horizons. Rather, growth and inequality-reducing policies are likely to reinforce one another and help to establish the foundations for a sustainable expansion.

In addition, with respect to redistribution, extreme caution – and thus inaction – is unlikely to be appropriate in many cases (Ostry, 2014). On average, across countries and over time, the things that governments have typically done to redistribute do not seem to have led to bad growth outcomes, unless they were extreme. And the resulting narrowing of inequality helped support more durable growth, apart from ethical, political, or broader social considerations.

It is nonetheless necessary to be cautious about what specific sorts of policies can be recommended based on the evidence presented here. This chapter has uncovered some patterns in the growth spell data. But income distribution is only a part of the story – there are clearly many other variables involved and much about growth spells that remains unexplained. Also, it is hard to separate cause from effect. And, of course, policies affect growth directly as well as through income distribution. It is important to think through some of these complications before drawing specific policy conclusions.

Inequality is partly the outcome of market forces (Welch, 1999), but this does not suffice to justify policy inaction. In general, if increasing inequality were somehow a natural counterpart to the development of a market economy, then one would expect richer countries to be more unequal, but they are not – if anything the reverse is true. Rather, much of the vast cross-country and time series variation in income inequality cannot be rationalized as an efficient market outcome. Some, for example, seems to be related to historical landholding patterns. These patterns – notably the prevalence of plantation versus smallholding agriculture – have little to do with current economic realities, but they seem to have set in motion human capital accumulation paths and societal organizations that continue to drive income distribution in the present day. Consistent with the evidence presented in this chapter, countries with more of this sort of "structural" inequality tend to grow more slowly (Easterly, 2007).

It would clearly be taking these results too far to conclude that an all-out effort to reduce inequality is the key to sustaining growth. Sometimes the positive direct effect of certain policies on growth may outweigh their negative effects on income distribution. For example, the initial reforms that ignited growth in China involved giving stronger incentives to farmers. Overall, this increased the income of the poor and reduced overall inequality as it gave a tremendous spur to growth. However, it probably led to some increased interfarmer inequality,

and efforts to somehow resist this component of inequality would likely have been counterproductive (Chaudhuri and Ravallion, 2006).

There is nonetheless surely policy scope to improve income distribution without undermining incentives – perhaps even improving them – and thereby contribute to lengthening the duration of growth spells.

- Better targeting of subsidies can be a win–win proposition, as with the reallocation of fiscal resources towards subsidies of goods that are consumed mainly by the poor, which can free up capacity to finance public infrastructure investment while better protecting the poor (Coady et al., 2010).
- Active labor market policies to foster job-richer recoveries (ILO, 2011) may help to make recoveries more sustainable, especially as rising unemployment appears to be associated with deteriorations in the income distribution (Heathcote, Perri, and Violante, 2010).
- Equality of opportunity can make for both more equal and more efficient outcomes (World Bank, 2005). For example, effective investments in health and education – human capital – may be able to square the circle of promoting durable growth and equity while avoiding shorter-run disincentive effects (Gupta et al., 1999). Such investments could strengthen the labor force's capacity to cope with new technologies (which may have contributed to more inequality in a number of cases), and thereby not only reduce inequality but also help sustain growth. They could also help countries address possible adverse distributional consequences of globalization and reinforce its growth benefits.
- Some countries have managed through pro-poor policies to markedly reduce income inequality. Brazil, for example, after its market-oriented reforms of 1994 implemented active pro-poor distributional policies, notably, social assistance spending, that were critical to substantial reductions in poverty (Ravallion, 2009).
- Well-designed progressive taxation and adequate bargaining power for labor can also be important in promoting equity, though with due attention to the need to avoid dual labor markets that perpetuate divisions between insiders and outsiders.

Beyond policy implications at the country level, there are also some lessons here for international institutions such as the IMF.

- Attention to distribution is important simply to understand risks to growth at the country level. Substantial attention has been placed on countries' vulnerability to crisis over near-term horizons. But crises and growth downbreaks are not tightly correlated. This may reflect partly the fact that the link between downbreaks and the timing of crises is not immediate, with growth

spells in many cases tending to end several years before a full-blown macro crisis. Some of the developing-country debt crises of the 1980s and 1990s may have resulted from borrowing that was premised – falsely as it turned out – on the continuation of high growth.

- Second, the efficacy of some standard policy recommendations may depend on forces related to distributional issues. It may be simultaneously true that inadequate regulation lay behind the financial crisis in the United States and that increasing inequality underlay the pressures on lenders and borrowers to overleverage. Better analysis of macroeconomic and financial sector linkages, and thus more appropriate regulation, can surely help. But such analysis cannot ignore the larger context of rising inequality if it is to yield useful policy advice.

The policy conclusions of this chapter hark back to an earlier emphasis on poverty and inequality. The 1980s debt crises and the resulting difficult period of structural adjustment programs brought home the fact that sustainability of adjustment was possible only when the benefits were widely shared. As a result, substantial attention was focused on how to achieve adjustment and growth with equity. Many analyzed the relationship between fiscal and other macroeconomic policies and equity. IMF lending facilities were redesigned, culminating in the conversion of the Fund's flagship facility for low-income countries from the Enhanced Structural Adjustment Facility into the Poverty Reduction and Growth Facility.

After many years of "great moderation," some of these lessons may have been forgotten. In the face of the current global economic turmoil and the need for difficult adjustment in many countries, it would be useful if these lessons could be remembered rather than relearned. It will remain the case that the policy considerations on the ground are complex. The main contribution of this chapter may be to push slightly the balance of considerations towards the view that attention to inequality may serve both equity and growth at the same time.

Notes

1. Many of the spells have not ended and their eventual length is unknown. However, the statistical techniques used in this section take these incomplete spells into account. If some factor is common to long incomplete spells but absent in short complete spells, a protective effect on duration can be identified.
2. Even these "bivariate" estimations include initial income, in addition to the variable of interest, to avoid misattributing to another variable the effects of underdevelopment itself, with which that variable might be correlated. It turns out that low initial income is independently a significant predictor of longer spells. The estimations can

also shed some light on whether the length of the spell itself is a risk factor, which it appears to be (the hazard is increasing in the time spent in the spell), even after including the other potential determinants.

3. To take the Gini as an example, the median in the sample is 40. A 10-percentile improvement takes the Gini to 37, which represents more equality than 60 percent of the Gini observations in the sample.

4. Lack of significance of manufactured exports may reflect the notion that these operate mainly by creating stronger institutions and reform constituencies, as suggested by Johnson, Ostry, and Subramanian (2007). Macro stability variables are also not terribly robust, possibly reflecting the idea that inflation reflects deep distributional conflicts (Taylor, 1991).

5. Easterly and Levine (1997), for example, attribute differences in a number of important public policy and economic indicators such as low schooling, political instability, and macroeconomic mismanagement to high ethnic fractionalization. However, they do not also control for income distribution.

References

Alesina, A., and D. Rodrik (1994) "Distributive Politics and Economic Growth," *Quarterly Journal of Economics*, vol. 109, no. 2, pp. 465–90.

Barro, R.J. (2000) "Inequality and Growth in a Panel of Countries," *Journal of Economic Growth,* vol. 5, no. 1, pp. 5–32.

Berg, A., and J.D. Ostry (2011) "Inequality and Unsustainable Growth: Two Sides of the Same Coin?," IMF Staff Discussion Note 11/08. Washington, DC: International Monetary Fund.

Berg, A., J. D. Ostry, and J. Zettelmeyer (2012) "What Makes Growth Sustained?," *Journal of Development Economics*, vol. 98, no. 2, pp. 149–66.

Berg, A., and J. Sachs (1988) "The Debt Crisis: Structural Explanations of Country Performance," *Journal of Development Economics*, vol. 29, no. 3, pp. 271–306.

Chaudhuri, S., and M. Ravallion (2006) "Partially Awakened Giants: Uneven Growth in China and India," in L.A. Winters and S. Yusuf (eds), *Dancing with Giants: China, India and the Global Economy*. Washington, DC: World Bank.

Coady, D., R. Gillingham, R. Ossowski, J. Piotrowski, S. Tareq, and J. Tyson (2010) "Petroleum Product Subsidies," IMF Staff Position Note 10/05. Washington, DC: International Monetary Fund.

Dell'Ariccia, G., J. di Giovanni, A. Faria, M. A. Kose, P. Mauro, M. Schindler, M. Terrones, and J. D. Ostry (2008) *Reaping the Benefits of Financial Globalization*, IMF Occasional Paper No. 264. Washington, DC: International Monetary Fund.

Dollar, D., and A. Kraay (2002) "Growth Is Good for the Poor," *Journal of Economic Growth*, vol. 7, no. 3, pp. 195–225.

Easterly, W. (2007) "Inequality Does Cause Underdevelopment: Insights from a New Instrument," *Journal of Development Economics*, vol. 84, no. 2, pp. 755–76.

Easterly, W., and R. Levine (1997) "Africa's Growth Tragedy: Policies and Ethnic Divisions," *Quarterly Journal of Economics*, vol. 112, no. 4, pp. 1203–50.

Gupta, S., B. Clements, R. Gillingham, C. Schiller, M. Verhoeven, R. Alonso-Terme, and A. Mourmouras (1999) "Should Equity Be A Goal of Economic Policy?," *Economic Issues* No. 16. Washington, DC: International Monetary Fund.

Hausmann, R., J. Hwang, and D. Rodrik (2007) "What You Export Matters," *Journal of Economic Growth*, vol. 12, no. 1, pp. 1–25.

Hausmann, R., F. Rodriguez, and R. Wagner (2006) "Growth Collapses," Working Paper No. 136, Center for International Development, Kennedy School of Government. Cambridge, MA: Harvard University Press.

Heathcote, J., F. Perri, and G. Violante (2010) "Unequal We Stand: An Empirical Analysis of Economic Inequality in the United States, 1967–2006," *Review of Economic Dynamics*, vol. 13, pp. 15–51.

International Institute for Labour Studies (IILS) (2010) *World of Work Report*. Geneva: International Labour Organization.

International Labour Organization (ILO) (2011) *Global Employment Trends 2011*. Geneva: International Labour Organization.

Johnson, S., J. D. Ostry, and A. Subramanian (2007) "The Prospects for Sustained Growth in Africa," IMF Working Paper No. 07/52. Washington, DC: International Monetary Fund.

Kumhof, M., and R. Rancière (2010) "Inequality, Leverage and Crises," IMF Working Paper 10/268. Washington, DC: International Monetary Fund.

Okun, A.M. (1975) *Equality and Efficiency: the Big Trade-Off*. Washington, DC: Brookings Institution Press.

Ostry, J.D. (2014) "We Do Not Have to Live with the Scourge of Inequality," *Financial Times*, March 4.

Ostry, J.D. and A. Berg (2014), "Measure for Measure," *Finance & Development*, vol. 51, no. 3, pp. 35–8.

Ostry, J.D., A. Berg, and C.G. Tsangarides (2014) "Redistribution, Inequality, and Growth," IMF Staff Discussion Note 14/02. Washington, DC: International Monetary Fund.

Piketty, T. and E. Saez (2003) "Income Inequality In The United States, 1913–1998," *Quarterly Journal of Economics*, vol. 118, no. 1, pp. 1–39.

Rajan, R. (2010) *Fault Lines: How Hidden Fractures Still Threaten the World Economy*. Princeton, NJ: Princeton University Press.

Ravallion, M. (2009) "A Comparative Perspective on Poverty Reduction in Brazil, India and China," Policy Research Paper No. 5080. Washington, DC: World Bank.

Rodrik, D. (1999) "Where Did All the Growth Go? External Shocks, Social Conflict, and Growth Collapses," *Journal of Economic Growth*, vol. 4, no. 4, pp. 385–412.

Solt, F. (2009) "Standardizing the World Income Inequality Database," *Social Science Quarterly*, vol. 90, no. 2, pp. 231–42.

Taylor, L. (1991) *Income Distribution, Inflation, and Growth: Lectures on Structuralist Macroeconomic* Theory. Cambridge, MA: MIT Press.

Wacziarg, R. and K.H. Welch (2008) "Trade Liberalization and Growth: New Evidence," *World Bank Economic Review*, vol. 22, no. 2, pp. 187–231.

Welch, F. (1999) "In Defense of Inequality," *American Economic Review*, vol. 89, pp. 1–17.

Wilkinson, R. and K. Pickett (2009) *The Spirit Level: Why Greater Equality Makes Societies Stronger*. New York: Bloomsbury Press.

World Bank (2005) *World Development Report 2006: Equity and* Development. Washington, DC: World Bank.

Comments on "Inequality and the Fragility of Growth" by Jonathan D. Ostry

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The chapter by Jonathan Ostry offers an interesting synthesis of two lines of research to which he has been closely associated: the relationship between income inequality and the length of growth spells (as analyzed in Berg, Ostry and Zettelmeyer, 2012) on the one hand, and the relationship that links inequality and growth (as studied in Ostry, Berg and Tsangarides, 2014) on the other. The following comments focus exclusively on the latter, because of the particular relevance of that line of research for economic and social policy.

Over the last twenty years or so, numerous attempts have been made to give evidence of some systematic relationship between income inequality and economic growth. According to theory, there are several channels through which such a relationship could go, with the sign of the relationship depending on the specific channel being considered. Hence the attempt to resolve this theoretical ambiguity through a careful empirical analysis of existing evidence across countries and across time periods. Is it possible to say that, overall, inequality in the distribution of income is bad, or possibly good for growth?

One weakness of the existing empirical literature is the essentially 'reduced form' nature of the relationship being tested and therefore the difficulty in relating findings to theory. Another weakness is the frequent inadequacy of the theoretical argument being invoked and thus the hypothesis being tested in relation with the data being used. For instance, many contributions would insist on the growth slowing-down effect of income redistribution, the latter being caused itself by too unequal a distribution of market income. Yet they focus ultimately on the empirical relationship between the post-redistribution level of inequality and growth whereas the right 'structural' approach would be to focus on the one hand on the relationship between the extent of redistribution and market income inequality, and on the other hand that between growth and redistribution. The right 'reduced form' would thus be a model with the growth rate over some period of time on the left-hand side of the equal sign and gross income inequality on the right-hand side.

A valuable contribution of the paper by Ostry, Berg and Tsangarides (OBT in what follows) is precisely to tackle more rigorously this issue of pre- and post-redistribution income distribution and redistribution itself. Doing so, they show that available panel data on country growth rates, inequality and redistribution lead to three important conclusions: (a) more unequal countries tend to redistribute more; (b) more unequal countries, by net incomes, tend to grow more slowly; (c) redistribution per se does not seem to have a significant effect on growth.

Those conclusions are in rough agreement with what many analysts and policymakers think on the basis of economic theory or their own intuition. They would probably all wish that the preceding empirical results be solidly founded so that they could use that evidence to convince reticent politicians that income equality and redistribution truly matter for growth and development. Yet, even when abstracting from the general criticism made to cross-country evidence as a support for policy recommendations, the policy implications of the results found by OBTs are not without some ambiguity and the results themselves may not be as strong as they appear.

The following comments are organized into three parts. The first part discusses the specification that is being used by OBT in the perspective of the existing theory of inequality and growth. The second part focuses on the way redistribution is measured, both conceptually and empirically. The last part handles the issue of distribution and redistribution data, as the authors use a new 'synthetic' database that relies on multiple imputation techniques for missing direct observations and whose properties and implications are not fully known.

What kind of inequality on the right-hand side?

There are various concepts, definitions and measures of economic inequality. It may not mean very much when one hears that "inequality is harmful to growth", or possibly the opposite, as long as the kind of inequality that is being considered is not clearly specified. Is it the inequality of disposable (or net) incomes, market incomes (that is, incomes before taxes and transfers), wealth, education, or more generally the inequality of opportunities? On all these aspects theory has something to say.

Too much net income inequality may be responsible for social and political unrest, and even crime and violence, which discourage investment and entrepreneurship. Absent unrest, however, inequality may be favorable to growth if rich people save and invest proportionally more than low- and middle-income people. The net income distribution may also be seen as resulting from the market income distribution and the redistribution policy in place. For instance, the higher the inequality of market incomes the stronger the redistribution,

either through majority voting, as in the well-known Meltzer–Richard model, or through other channels. Then, as a stronger redistribution may have a negative impact on growth - though higher taxes discouraging savings and entrepreneurship - it is the inequality of market income that should ultimately be one of the exogenous determinants of slower or faster economic growth among others.

One may also argue that the distribution of market incomes is itself influenced by all kinds of public interventions, including market regulation, price controls, indirect taxes and subsidies, minimum wages, wage-setting in the public sector and state-owned enterprises, and so on. All these channels may be responsible for changes in the degree of inequality and in the overall growth rate of the economy. Which one is most often difficult to disentangle. In any case, the point is that not even the inequality of market incomes can really be considered as an exogenous determinant of economic growth.

One can then go one step further up and consider that market incomes remunerate productive factors in the hands of people, so that the relationship between inequality and growth has actually to be sought in the distribution of wealth, labor skills, education and, more generally, the income-generating opportunities offered to people. For instance, some theories were developed to explain how, in presence of credit market imperfections, too unequal a distribution of wealth could generate a slow growth of the economy through the credit rationing of people with no or little wealth to be used as collateral.[1] More generally market imperfections leading to people having an unequal access to income generating or enhancing opportunities, may be directly responsible both for inefficient and slow growing economies and for high market income inequality. If so, it is not the inequality of incomes that should appear on the RHS of regressions trying to explain how inequality affects growth but the inequality of opportunities.[2]

In short, the theoretical literature about the growth–inequality relationship suggests that it is both complex and marred everywhere with endogeneity. Without structural models describing the various channels just mentioned, it would be difficult to recognize any true causality between some inequality variable on the RHS of a regression and growth on the LHS. Unfortunately, structural channels and the variables that could describe how they work are themselves excessively difficult to observe or to quantify.

All this does not mean that nothing can be said on the relationship between inequality and growth. Undoubtedly, capital market imperfections, labor market discrimination, unequal access to quality education or undemocratic decision making about public goods and infrastructure are responsible for income inequality, economic inefficiency and slow growth. There is ample micro-evidence of such imperfections and their effect. But it is difficult to aggregate all that micro-evidence to derive a quantitative macro relationship between those specific sources of inequality and growth.

Under these conditions, having gross or net income inequality on the RHS of a cross-country regression is simply a way of taking into account that there are more or less important sources of inequality in the economies which somehow reflect themselves in slower or faster growth. But it would be difficult to infer from such a relationship any kind of causality and, in particular, to consider that changing the RHS variable, in one way or another, will affect growth in a definite direction.

The specification used by OBT is an interesting way of resolving some of the preceding ambiguity. By introducing the extent of redistribution as a potential determinant of growth, along with income inequality, it should in theory allow for the identification of that part of income inequality that affects growth through redistribution – that is, the Metzler–Richard channel. The coefficient of the income inequality variables would then stand for the direct effects of inequality on growth, all causes combined. For this to be the case, however, some exogeneity assumptions are required.

The complete structural model analyzed by OBT has the following specification:

$$R = aG_Y + b + u \tag{1}$$

And

$$g = cX + dR + eG_y + v \tag{2}$$

where G_Y and G_y are respectively the inequality of the gross and net income distribution, g the rate of growth of the economy, R the extent of redistribution, as measured by $R = G_Y - G_y$, X a set of observed other growth determinants, whereas u and v stand for unobserved determinants and a, b, c, d and e are coefficients to be estimated on a panel of country observations in various periods.

Estimating (2) as a single equation actually requires assuming that both the extent of redistribution and the inequality of *net* incomes are exogenous with respect to unobserved growth determinants, v. But using (1) does not help. Clearly, R cannot be instrumented by G_Y, even assuming market income inequality is truly exogenous. Indeed, (2) may be rewritten as:

$$g = cX + dR + e(G_Y + R) + v$$

so that instrumenting R by G_Y would lead to full co-linearity. In the absence of some truly exogenous determinant of redistribution, other than G_Y, and possibly X, it is not be possible to identify separately the effects of R and G_y in (2) without assuming full exogeneity of both G_Y and R with respect to unobserved growth determinants.[3]

Another problem is that of the proper measurement and, as a matter of fact, the observability of R (or equivalently G_Y, given G_y). This is the issue we now turn to.

Measuring redistribution

As seen above, OBT do measure redistribution, R, as the difference in the inequality of market and net incomes, $R=G_Y-G_y$. This is the so-called Smolenski–Reynolds measure of redistribution. There are other choices. One could also use redistribution instruments, which is to say taxes and transfers, rather than their effect on inequality. As a matter of fact, a sizable part of the empirical cross-country growth literature tested the influence of taxation on growth rates, even though not necessarily in connection with inequality.[4] But, of course, using information on the distribution of income before and after taxes and transfers is a more direct approach, even though the way a given level of redistribution is achieved – for example, through various types of taxes and transfers – may matter a lot in analyzing how redistribution may affect economic growth.

Another issue is whether redistribution must be measured as the absolute or relative difference between the inequality of the market and the disposable income distribution. A simple argument suggests that a relative definition of redistribution may be preferred.

Consider the case of a linear redistribution system where disposable income, y, depends on market income, Y, in the following way:

$$y=Y(1-t)+T \qquad (3)$$

where t is the tax rate and T is a lump-sum transfer identical for all people in the economy, or possibly the supply of a public good. The government budget constraint imposes that, in the absence of leakages in redistribution:

$$T=t.Y^* \qquad (4)$$

where Y^* is the mean market income in the population. This formulation permits a direct representation of both the progressivity and the potential growth effect of redistribution. The extreme case $t=1$ would correspond to the full equalizing of incomes, whereas $t=0$ corresponds to no redistribution and $t<0$ leads to a regressive distribution by which inequality increases though the tax-benefit system rather than the opposite. This tax rate is relevant not only because it is an indicator of the extent of redistribution but also because simple theoretical models of growth suggest the tax rate on income is a major determinant of saving behavior and growth.

It turns out that, when inequality is measured by the Gini coefficient, the difference between inequality before and after linear redistribution as defined by (3) and (4) is given by:[5]

$$R = G_Y - G_y = t\,G_Y$$

On that expression, it is easily seen that the same intensity of redistribution as defined by the tax rate, generates more or less change in the degree of inequality depending on the initial level of inequality, G_Y. Conversely, a redistribution system that modifies the Gini coefficient from G_Y to G_y may be considered as equivalent to a linear redistribution system with a tax rate, $t°$, given by:

$$t° = (G_Y - G_y)/G_Y = R'$$

In relation with the rate of economic growth, the intensity of the redistribution is thus better described by the relative variation in inequality, R', than the absolute variation, R.

Using R' rather than R in the estimation of models (1) and (2) above can make a difference. In model (1), the risk is that using the absolute difference in Gini, rather than the relative difference, will exaggerate the role of initial or market income inequality in determining the extent of redistribution. In effect, regressing R on G_Y using the same database as OBT over the recent years yields a significantly negative coefficient. Yet, the coefficient ceases to be significant when R', rather than R, is used.[6] The OBT conclusion that redistribution increases with market income inequality must thus be taken with care.

As far as model (2) is concerned, the difference between R and R' is less clear, except that it may be found more satisfactory to use a concept that has the dimension of a tax rate rather than inequality to represent the impact of redistribution on growth. Yet, given the presence of G_y as an additional regressor, the model has both G_Y and G_y as explanatory variables. Therefore, using G_y and R or G_y and R' is a matter of functional form and is unlikely to drastically modify results.

Another issue linked to using $R = G_Y - G_y$ as an indicator of redistribution is the fact that, as noted by OBT, such a measure misses the redistribution that goes through in-kind transfers. Whether public expenditures in primary and secondary education should be considered as part of the redistribution system may be debated. They may as well be considered as public investment in future human capital and possibly redistribution towards future generations rather than the present one. This ambiguity about the way public spending on education is being handled in redistribution analysis is somewhat of a problem in view of the fact that it is precisely one of the channels through which redistribution may be thought to affect growth. Things are different in the areas of

higher education, public health care or infrastructure investments in developing countries. In all these cases, the distributive impact of public spending has been shown to be potentially sizable.[7]

Another component of redistribution not recorded in household surveys from which distribution and redistribution statistics are drawn is concerned with indirect taxation and subsidies. The existence of differentiated indirect tax rates on consumer goods and, in many developing countries, of consumer price subsidies on some key products may be responsible for some sizable redistribution. The only way their distributive impact may be taken into account is through an in-depth analysis of the general equilibrium effects of indirect taxation on consumer prices and the structure of consumer spending by household income level. Unfortunately, this kind of analysis is available only for a small number of countries and at some points of time.

If redistribution measures drawn from household surveys miss some important components of redistribution, they also sometimes include transfers which are not truly redistributive. This is the case of those transfers that are the counterpart of contributions made at an earlier stage in the life cycle of an individual. In countries where the pension system is predominantly "Pay as you go" (PYG), it is often the case that pension payments are considered as cash transfers to households who generally have few other incomes, and therefore as redistribution to low-income households. It follows that, other things being equal, redistribution will appear to be much stronger in countries with dominant PYG pension systems. Yet, it is difficult to ignore the fact that these transfers are, at least partly, equivalent to the remuneration of forced savings by the pensioners during their active lifetime. Redistribution thus takes place across various stages of the life-cycle rather than across individuals. Yet, as total contributions to the social security system are not observed in standard household income data sets, there is no way to correct for this bias. As a consequence, and other things being equal, market incomes will always appear much more unequal and redistribution stronger in countries with PYG pension systems than in others. The same remark applies formally to that part of the unemployment compensation system that can be considered as actuarially neutral.

Data issues

The preceding remarks offer a good transition to data issues. Data on distribution are often not strictly comparable either across countries and sometimes even across time periods within the same country. Very often, it is because they are not based on the same definitions – that is, individual earnings vs family incomes, income vs consumption expenditure – and sometimes because they do not cover the entire population of a country. OBT use a new data base

which presents two very serious advantages over other available international data bases for the kind of econometric analysis they pursue.

Relying practically on all existing primary and secondary data sources on inequality, the standardized world income inequality database (SWIID) tries to make inequality data as much comparable with each other as possible by taking explicitly into account the way they are defined.[8] Inequality may indeed refer to individual earnings, net household incomes per person or per adult equivalent, to consumption expenditures, etc. A multiple imputation technique is used to convert available data with heterogeneous definitions to common standards – that is, net and market household income per adult equivalent - making use of observations where several inequality measures with distinct definitions are simultaneously available. As a rough example, a country where only the Gini coefficient of the individual earnings distribution is available in a given year would be imputed a value for the Gini coefficient of net income per adult equivalent for that year based on a comparison with countries, or other years within that country, where both measures of inequality are available. Final series of Gini coefficients are then smoothened through taking a moving average of annual estimates or imputed values. In that way, SWIID provides annual series of Gini coefficients for equivalized household income for more than 130 countries in the world over the period 1990–2005 and a bit less outside that period.[9]

A second advantage of the SWIID database in the present case is to provide estimates of income inequality according to various definitions of income and in particular the distinction between net and market income. This makes it a unique data source for econometric studies of the relationship between inequality, redistribution and growth.

At the same time, one must not forget the conceptual difficulties stressed above in measuring redistribution and also the fact that that there is much less direct evidence on market incomes than on net incomes. Typically, household surveys from which distribution data are drawn would report net incomes and its various components, including, of course, cash transfers and direct taxes. It is essentially through the latter that market income is being reconstructed. Yet it is often the case that transfers and taxes are imperfectly reported. Moreover, in surveys that report consumption expenditures rather than income, the exercise of decomposing income by sources is not undertaken and the necessary information for reconstructing market income is essentially missing. For all these reasons, there are much fewer countries where it is possible to evaluate with a reasonable degree of accuracy the degree of market income inequality, even when abstracting from the conceptual and practical difficulties discussed above, than there are countries with data on the distribution of net incomes, or some approximation of it. Given the way SWIID is built, imputations based on a limited set of auxiliary data are much more frequent for market income inequality figures. This automatically affects the precision of these data.

It is a good thing in the SWIID database that all data come with an indication of their precision. Namely, the multiple imputation technique used to reconstitute unobserved inequality measures is performed a large number of times with varying assumptions on comparator countries or inequality concepts and the standard error of all these imputations is recorded in the database. In 2005, it turns out that, on average, the Gini coefficient of net incomes has a standard error of 1.3 percentage points, but that of market incomes has a standard error of 3 percentage points. In some instances, it is indeed pretty high. The standard error of the Gini coefficient of market incomes is above 5 percentage points for several sizable countries like Bangladesh,[10] Egypt, India, Kenya, Malaysia, Pakistan, South Africa or Vietnam.

As a result, redistribution estimates, absolute or relative, are still more imprecise. For instance, the mean relative redistribution is found to be 17 percent in 2005 – that is, the net income Gini coefficient is 17 percent below that of market income. Yet the mean standard error of that estimate is 5.3 percent.

The econometric consequences of measurement errors on the RHS variables of a regression is to bias the coefficients of imprecisely measured variables downward, making them closer to zero. The issue thus arises of whether the non-significant effect of redistribution on growth found by OBT on the basis of the SWIID data could not be the consequence of measurement errors. In the present case, the availability of some information on the size of the error should allow one to see whether this is a valid argument or not. The calculation is not an easy one as the model being estimated is not a single variable OLS regression. If this were the case, however, the orders of magnitude of the measurement error appearing in SWIID would suggest a rather limited measurement error bias. It was seen above that the standard error of the (relative) redistribution variable was around five percentage points. This figure should be compared to the standard error of redistribution in the whole sample which is around 16 percentage points, a figure not far from the mean redistribution itself. Converted into variance, this would mean that the measurement error is around 1/9th of the variance of the redistribution variable. With OLS, the resulting bias on the growth-redistribution regression coefficient would therefore be 1/9th and would not modify the conclusion reached by OBT. However, it would be worth trying to measure in a more accurate way this bias, and the bias on confidence intervals, entailed by the measurement error within the GMM estimation framework they use.

It should also be kept in mind that the measurement error provided in the SWIID database covers only errors due to the multiple imputation techniques used to construct the database and put a value on missing observations. It does not cover the conceptual errors discussed above, that is, in-kind redistribution, contributory benefits (pensions), indirect taxes and subsidies.

A last remark has to be made about the net income inequality data. As mentioned above, they are less subject to difficult imputations in the construction of

the SWIID database so that their measurement error appears to be moderate and it is unlikely that the estimated negative effect of inequality on growth rate in OBT be severely biased. At the same time, it must be stressed that there are very good reasons to believe that inequality is grossly underestimated by available surveys in most developing countries. This is because surveys usually ignore the very top of the income distribution - actually more so in those countries than in advanced countries - and also that, in surveys that collect income data, property income is grossly under-reported. This is a problem both for cross-country and over-time comparisons, especially in view of the fact that the GDP share of capital income seems to have increased quite substantially in a large number of countries in the recent decades,[11] suggesting an increasing divergence between actual and recorded net income inequality. We might actually be missing important links between inequality and growth because of this.

Conclusion

In summary, the OBT paper exploits most of the data on distribution both pre- and post-redistribution that are available today, thanks to the SWIID database. Of course, the generalized imputation technique used in that database makes it probably improper for the analysis of specific countries, imperfectly and incompletely covered by surveys. But it summarizes effectively all the information available across countries and time periods for econometric work. The OBT paper innovates not only in relying on a richer set of data, but also in introducing some structure into the usual reduced form inequality–growth empirical literature through explicitly taking into account the role of redistribution, besides that of inequality per se. That inequality of net incomes affects negatively growth on average and that 'observed' redistribution seems not to have any significant effect are interesting results that are in agreement with some arguments in the theoretical literature on inequality and growth, and as far as the first result is concerned with some of the previous empirical literature.

Does this mean that these results translate easily into policy recommendations? Would increasing redistribution, through the instruments explicitly taken into account in the data – that is, taxation and cash transfers, really entail no direct cost and a substantial growth benefit through a more equal distribution of net incomes? Of course, the cross-country caveat applies here. The results obtained apply *on average* across countries, not necessarily at the level of specific countries. But the limitation is more serious here because only a limited set of redistribution instruments is actually taken into account – and sometimes wrongly so, as with pensions. If some redistribution instruments are ignored, then the status of the net income inequality variable remains ambiguous, even though a little less so than in the previous literature where all kinds

of redistribution instruments are ignored. At the present stage, it remains possible that the net income inequality variable accounts both for the direct effect of inequality on growth and for those redistribution instruments not taken into account by the redistribution variable. In terms of the causality of the relationship between income inequality and growth, we have simply learned that standard redistribution through taxes and transfers has little impact on growth, provided, of course, that the assumption of exogeneity for market income inequality and redistribution implicit in the whole approach holds.

Two general conclusions can be drawn from this valuable attempt at integrating all available data into a cross-country cross-time periods empirical analysis of inequality, redistribution and growth. The first one is that considerable work remains to be done on the data side and some priority should be given to this agenda at a time the academic and policy communities increasingly focus on inequality issues as a factor affecting growth and development. Better data are needed for net income inequality figures in most developing and emerging countries, where they are most likely to be underestimated in varying proportions. Better redistribution analysis is needed at the country level beyond direct tax and transfer redistribution instruments.

The second conclusion is that, even though they suggest interesting regularities across countries, cross-sectional or panel country analysis cannot be a substitute to individual country micro- and macroeconomic policy analysis based on a more comprehensive view of the relationship between inequality, redistribution and growth.

Notes

1. An early survey of these models is Aghion et al. (1999).
2. On the relationship between the inequality of opportunities and economic development, see World Bank (2006) and Chapter 2 in volume 1.
3. Note that instrumenting R and G_y on their lagged values and time variations, as well as those of g, as done in system GMM estimation does not solve that issue since lagged values may depend themselves on unobserved growth determinants.
4. For a recent survey of this literature for developed countries, see Bergh and Henrekson (2011).
5. The proof is exceedingly simple when remembering that the Gini coefficient is defined as half the expected absolute income difference between two individuals taken randomly in the population.
6. This result was obtained by running simple OLS on R or R' as a function of G_Y rather than the more elaborated model appearing in Table 2 of OBT.
7. See, for instance, Garfinkel et al. (2006) for developed countries and Lustig (2011) for Latin America.
8. See Solt (2009). An update of that paper is available at http://myweb.uiowa.edu/fsolt/papers/Solt2014.pdf.

9. This was the case of version SWIID3.1. The last version covers more data points as well as more data sources.
10. This may be the reason why, oddly enough, Bangladesh appears among the top redistributive countries in OBT's Figure 7, alongside with Germany, the UK, France or Netherlands.
11. See Karabarbounis and Neiman (2014).

References

Aghion, Philippe, Eve Caroli and Cecilia García-Peñalosa (1999) "Inequality and Economic Growth: The Perspective of the New Growth Theories," *Journal of Economic Literature*, vol. 37, no. 4, pp. 1615–60.

Berg, Andrew, Jonathan D. Ostry, and Jeromin Zettelmeyer (2012) "What Makes Growth Sustained?," *Journal of Development Economics*, vol. 98, no. 2, pp. 149–66.

Bergh, Andreas and Magnus Henrekson (2011) *Government Size and Growth: A Survey and Interpretation of the Evidence*, IFN Working Paper, No. 858.

Garfinkel, Irwin, Lee Rainwater and Tim Smeeding (2006) "A Re-examination of Welfare States and Inequality in Rich Nations: How In-kind Transfers and Indirect Taxes Change the Story," *Journal of Policy Analysis and Management*, vol. 25, no. 4, pp. 897–919.

Karabarbounis, Loukas and Brent Neiman (2014) "The Global Decline of the Labor Share," *Quarterly Journal of Economics*, vol. 129, no. 1, pp. 61–103.

Lustig, Nora (2011) Fiscal Policy and Income Redistribution in Latin America: Challenging the Conventional Wisdom, ECINEQ, Working Paper 2011–227.

Ostry, Jonathan, Andrew Berg and Charalambos Tsangarides (2014) "Redistribution, Inequality and Growth", Staff Discussion Notes No. 14/2.

Solt, Frederick (2009) "Standardizing the World Income Inequality Database," *Social Science Quarterly*, vol. 90, no. 2, pp. 231–42.

World Bank (2006) *Equity and Development*, World Development Report. Washington, DC: World Bank.

5

Does Wealth Distribution and the Source of Wealth Matter for Economic Growth? Inherited v. Uninherited Billionaire Wealth and Billionaires' Political Connections*

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5.1 Introduction

Social scientists have grappled for decades with the key question of whether inequality in control over a society's resources facilitates or hinders economic growth. While there is a large theoretical and empirical literature on this topic, the question is far from settled.

Three important aspects of the literature contribute to this lack of consensus. First, while theoretical discussions are usually based on the distribution of wealth, empirical studies tend to use the distribution of income rather than wealth because data on the distribution of wealth do not exist for a sufficient number of countries (see, for example, Aghion, Caroli and Garcia-Penalosa, 1999, pp. 1617–18; Bénabou, 1996; and Ravallion, 2012, p. 506).[1]

Second, the literature does not adequately treat the varying nature and sources of inequality. Indonesia and the United Kingdom, for instance, have similar Gini coefficients – 32.5 and 33.7, respectively. Yet they differ markedly on such dimensions as the role of political connections in achieving economic

success and causing their distribution of income and wealth. It is striking that virtually all empirical studies ignore this distinction and most of them analyze the effects of overall measures of inequality on economic growth.[2]

Third, in a pioneering multi-country study, Ravallion (2012) has cast doubt on inequality as a determinant of economic growth. His research suggests that it is initial poverty rather than income inequality that affects economic growth of countries.

In this paper, we continue our research in this area (Bagchi and Svejnar, 2015), addressing the shortcomings noted in the first two points above and providing new evidence on the third point, namely whether inequality or poverty affects economic growth. As in Bagchi and Svejnar (2015), we first develop a measure of wealth inequality based on *Forbes* magazine's annual worldwide listing of billionaires. We then split billionaire wealth into three components reflecting the extent, if any, to which billionaire wealth has been obtained through political connections (cronyism) and whether it was generated by entrepreneurship or through inheritance. The focus on the relative role played by inherited billionaire wealth is the new aspect of our research. We next use annual data for 1987–2007 to construct four five-year panels and test hypotheses regarding the effects on growth of our measures of self-made politically unconnected, self-made politically connected, and inherited wealth inequality, income inequality, and poverty. Ours is the first paper to examine the effect of these different components of wealth inequality on economic growth in a cross-country, panel data setting.[3] We also tackle a methodological issue in much of the literature in this area, namely that findings may be biased on account of endogeneity of inequality in the growth regressions. We follow one of the leading empirical studies in this area – Forbes (2000) – and estimate a fixed effects model with lagged values of the explanatory variables. We also find that our results hold when we use a random effects approach in estimation.

As mentioned above, our key results come from specifications in which we account for the fact that some billionaires acquired wealth through the use of political connections or cronyism, while others created it in a relatively standard legal environment, and some inherited it. Hence, beyond the classification of billionaires as politically connected and politically unconnected (see Bagchi and Svejnar, 2015), we classify billionaires based on whether wealth was generated primarily through entrepreneurship or primarily through inheritance. Using these classifications, we split billionaire wealth into three components: that attributable to entrepreneurs who exploited political connections in generating wealth; entrepreneurs who did not exploit such connections; and those who inherited wealth. We then normalize these measures of billionaire wealth by GDP or physical capital stock or population and characterize the resulting variables as three distinct components of wealth inequality. We find that

the effect on growth of inequality based on self-made politically connected wealth and inherited wealth is negative, while the effects of self-made politically unconnected wealth inequality, income inequality, and initial poverty are statistically insignificant. The results suggest that researchers need to pay attention to the sources and nature of wealth inequality. Another important conclusion is that in an encompassing model, it is the components of wealth inequality, rather than income inequality or poverty that have a significant effect on economic growth.

The structure of the paper is as follows. In section 5.2, we offer a brief review of the theoretical and empirical literature that examines the impact of inequality and poverty on growth. In section 5.3, we present our empirical strategy and describe the data set used. In section 5.4, we present the main results capturing the impact of wealth inequality (and its components), income inequality, and poverty on growth. We also discuss a number of robustness checks that show that our findings are robust. Section 5.5 offers concluding remarks and outlines potential avenues for future work.

5.2   Review of the existing literature

The early view espoused by Kuznets (1955) and Kaldor (1956, 1961) was that economic development influences income distribution, with economic growth raising income inequality in the first stages of economic development and reducing it later (the 'inverted-U hypothesis'). Kuznets' hypothesis has been extensively examined and generally it has not received further empirical support (see, for example, Fields, 2001).

The more recent studies on growth and development examine the causation between inequality and growth in the opposite direction.[4] The emphasis is on the effect of wealth inequality – and, to a lesser extent, income inequality – on economic growth, with the theoretical literature yielding two main strands of studies. The first literature focuses on various transmission mechanisms through which greater initial inequality generates economic growth. Important mechanisms are a higher savings propensity of the rich (Bourguignon, 1981) and investment indivisibilities (Attanasio and Binelli, 2003). The other literature identifies economic and political channels through which inequality can be harmful for growth – redistributive taxation that would be favored by the median voter and which would reduce incentives and hence also growth (Meltzer and Richard, 1981; Alesina and Rodrik, 1994; Barro, 1999), credit constraints generated by low levels of collateral by the poor (Galor and Zeira, 1993), sociopolitical instability originating from the sense of relative deprivation by the poor (Gupta, 1990), and increased fertility among the poor who cannot afford to provide adequate education to their children (De La Croix and Doepke, 2003). The idea common to many of these theories is that extreme

wealth concentration may distort economic policies and therefore lead to poor economic performance.

As mentioned earlier, the absence of adequate data on the distribution of wealth has led researchers to rely on alternatives, usually data on income inequality as a proxy for wealth inequality. Two partial exceptions are a pioneering study by Alesina and Rodrik (1994) and an important later study by Deininger and Olinto (2000), both of which employ land holdings as a measure of wealth inequality. However, as Alesina and Rodrik (1994) mention, land is only one component of wealth and it does not quite fit their model's concept of capital as an accumulating asset. In addition, inequality in landholding is not an adequate proxy for wealth inequality in more developed economies.[5] In fact, our own calculations based on the 26 countries for which data exist indicate that there is no correlation between the Gini coefficient for land (sourced from Deininger and Olinto (2000)) and Gini coefficient for wealth, nor do we find a correlation between the 20 countries for which we have data on the Gini coefficient for land and the share of wealth going to the top decile of the population of a country (Bagchi and Svejnar, 2015).[6] In contrast, our measure of billionaire wealth normalized by GDP is positively correlated with both the Gini coefficient for wealth and the share of wealth going to the top decile.[7]

The empirical literature dealing with income inequality and economic growth is based on cross-country regressions (see, for example, Alesina and Rodrik, 1994, Persson and Tabellini, 1994, and Perotti, 1996) and, more recently, on panel data analysis (see, for example, Forbes, 2000 and Barro, 2000).[8] We contribute in the spirit of the latter literature.

Finally, an important motivation for our study comes from Morck, Stangeland, and Yeung (2000) who show that when the world's billionaires are divided into those who were self-made versus those who inherited their wealth, a country's per capita GDP grows faster if its self-made billionaire wealth is larger as a fraction of GDP and slower if inherited billionaire wealth is larger as a fraction of GDP. The authors argue that the negative consequences of having the very wealthy control a large fraction of a country's assets can lead to entrenchment, bias capital allocation, retard capital market development, obstruct entry by outsider entrepreneurs, and cumulatively retard economic growth. These observations have led Morck, Wolfenzon, and Yeung (2005) to conclude that "inequality involving new money wealth seems different from inequality involving old money wealth." They suggest that "economists need to think less about concentration of wealth per se and more about concentration of wealth in whose hands."

We use this finding, as well as our earlier research (Bagchi and Svejnar, 2015), as our point of departure in analyzing the effect of different sources and nature

of wealth inequality on growth. In particular, the negative correlation between inequality and growth in a cross-section of countries could thus have more to do with the fact that a large share of the national wealth is held by a small number of politically connected families or families with inherited wealth than with higher tax rates or higher expenditure on transfers and subsidies, which are among the channels through which inequality is often believed to affect growth.

The literature on the effect of poverty vs income inequality on economic growth is represented by a pioneering contribution by Ravallion (2012). He employs country-level data based on household surveys to examine the effect of initial poverty and income distribution on subsequent economic growth. Ravallion's dataset includes 90 countries with two surveys at varying points in time. Most of the estimation is hence carried out in a cross-sectional setting, but for about two-thirds of the countries there are three or more surveys and these countries are used for robustness checks, including the GMM estimation and allowing for country fixed effects. Ravallion's (2012) key cross-sectional result, obtained in an OLS model, is that poverty rather than income inequality influences economic growth and that the effect of poverty on growth is negative.

5.3 Data and empirical approach

5.3.1 Construction of data on wealth inequality

We follow Bagchi and Svejnar (2015) and employ a new source of data – *Forbes* magazine's annual listing of billionaires. *Forbes* has been publishing a list of the four hundred richest Americans since 1982 and in 1987 it enlarged its coverage to cover the richest individuals and families around the world.[9] We employ this latter list and assign each billionaire to a country with the locus of his business activities, which often coincides with his location. We generate three measures of wealth inequality defined for each year as the sum of the wealth of all the billionaires in a given country divided by either the country's GDP or physical capital stock or population.[10] Our first measure parallels that reported by *The Economist* (October 13, 2012 issue, SS3–SS6) for several countries.

Given the nature of our wealth inequality variables, we focus, of course, on the effects of concentration of wealth at the top of the wealth distribution pyramid. As such, our research belongs to the class of studies that examine inequality through the concentration of wealth or income in the top quantiles rather than taking into account the entire distribution (for example, Davies et al., 2008; Piketty and Saez, 2003; and Wolff, 2006). Focusing on the top of the distribution is desirable because over the last several decades concentration of

income and wealth at the top has increased (for example, Piketty and Saez, 2003, Kopczuk and Saez, 2004, and *The Economist*, 2012) and it is also widely believed that this concentration affects economic, political and social outcomes (for example, Stiglitz, 2012). Consequently, in a number of countries, including the United States and France, government tax authorities have taken keen interest in this group. Finally, Voitchovsky (2005) shows that inequality in different parts of the income distribution has different effects on growth and that a single inequality statistic for the entire distribution is insufficient to capture the effects of inequality on growth. Our research reported here and in Bagchi and Svejnar (2015) hence focuses on the impact on growth of wealth inequality at the very top of the distribution.

The key aspect of the present research is the focus on whether wealth has been acquired through political connections or through inheritance. As in Bagchi and Svejnar (2015), we identify the fraction of a country's billionaire wealth that has been generated through the use of political connections by classifying each billionaire into one of two categories: those who benefited from political connections in creating their wealth and those who did not. We create a dummy variable called "Political connections" and set it equal to 1 when we conclude, through an extensive search on Factiva and LexisNexis using news sources from around the world, that political connections had a material part to play in the success of the billionaire. We code this variable 0 when we conclude that political connections have not been crucial to the billionaire's rise to riches even though he may have had prior political connections. The criterion we use for classifying billionaires as being politically connected is that our extensive review of evidence indicates that the person would not have become a billionaire in the absence of political connections that resulted in favoritism and/or explicit government support. Three examples of billionaires who are classified as politically connected are given in the Data Appendix A.3. A complete classification of billionaires into the two categories of politically connected and politically unconnected is available from the authors on request.

As our discussion indicates, our measure is conservative in that only individuals who quite clearly benefited from political connections as a means of becoming billionaires are included in the politically connected category. In our sample, politically connected billionaires represent 4–13 percent of total billionaire wealth, depending on the year under consideration.[11]

The classification with respect to self-made versus inherited billionaire wealth – the key feature of this paper – is relatively more straightforward. If our research suggests that the billionaire had started the enterprise to which his wealth can be attributed, we classify such a billionaire as self-made. The list of billionaires also includes individuals who inherited wealth and now continue to either be passively involved or actively involved in growing the business.

Individuals in both of these categories are classified as billionaires with inherited wealth. In our sample, inherited billionaires account for anywhere between 54 and 72 percent of total billionaire wealth, depending on the year under consideration. We also observe a secular trend in that inherited wealth declines monotonically over the 1987–2002 period.

Our panel begins in 1987 – the first year in which the Forbes magazine's list of billionaires from around the world was published. Constructing the five-year panel structure in Forbes (2000) means that we use lists from years 1987, 1992, 1997, and 2002. We do so, but we substitute billionaire information from 1996 for 1997 because Forbes magazine changed its editorial criteria for inclusion in its billionaire list for the period 1997 to 2000. Further details regarding the construction of the wealth inequality variable and the robustness of results to using the 1997 list instead of the 1996 list are provided in the Data Appendix A.1.

The unit of observation in our sample is a country-(five-year) period combination. Summary statistics for the country-period observations with billionaires in the Forbes' data are provided in Table 5.1.[12]

As may be seen from Table 5.1, the number of countries on the *Forbes* magazine list grows over time. While only 23 countries appear on the first list in 1987, there are 42 countries on the list by 2002. The level of wealth inequality in these countries, calculated as the sum of all billionaire wealth in the country normalized by GDP, ranges from a low of 3.5 percent in 1987 and 1992, to a high of 7.6 percent in 1996. A list of countries which appear in the billionaire lists in each year of the sample is given in Data Appendix A.2.

We augment the sample that corresponds to the billionaire lists from the *Forbes* magazine with countries that do not have billionaires but for which data on all other variables are available. We include these countries in our base regressions and assign them a value of zero for components of billionaire wealth inequality. Assigning a value of zero is reasonable given the comprehensive nature of Forbes magazine's coverage of billionaires.

As in Bagchi and Svejnar (2015), for income inequality we employ data from the second round of the World Income Inequality Database compiled by the UNU-WIDER project on "Global Trends in Inequality and Poverty". This is the most recent data set on income inequality and it provides information on various measures of income inequality for over 150 countries with most observations drawn from the period between 1970 and 2006. We exclude from the data observations that do not cover an entire country or an entire population. Since the Gini coefficient is the most commonly available income inequality measure in the Database (and also the one used in the key study by Forbes, 2000), we use it instead of other possible measures. To reduce any inconsistency resulting from the fact that some Gini coefficients are based on income, whereas others are based on expenditure, we follow Deininger and Squire's suggestion and

Table 5.1   Summary statistics for Forbes' billionaire data

	1987	1992	1996	2002
No. of countries with billionaires	23	31	38	42
Total billionaire wealth (billions $)	$353	$612	$1,152	$1,649
Billionaire wealth, normalized by GDP	3.5%	3.5%	7.6%	5.4%
Billionaire wealth, normalized by physical capital stock	0.69%	0.90%	1.7%	1.2%
Billionaire wealth, normalized by population	0.035%	0.047%	0.11%	0.10%
Self-made politically unconnected billionaire wealth (billions $)	92.2	161.7	372.9	705.9
Self-made politically unconnected billionaire wealth, normalized by GDP	0.97%	0.95%	2.48%	1.68%
Self-made politically unconnected billionaire wealth, normalized by physical capital stock	0.23%	0.27%	0.62%	0.41%
Self-made politically unconnected billionaire wealth, normalized by population	0.0089%	0.014%	0.034%	0.034%
Self-made politically connected billionaire wealth (billions $)	15.4	26.7	56.7	26.1
Self-made politically connected billionaire wealth, normalized by GDP	0.70%	0.58%	0.85%	0.28%
Self-made politically connected billionaire wealth, normalized by physical capital stock	0.10%	0.11%	0.16%	0.042%
Self-made politically connected billionaire wealth, normalized by population	0.0013%	0.0018%	0.0041%	0.0014%
Inherited billionaire wealth (billions $)	245.7	423.7	722.9	917.4
Inherited billionaire wealth, normalized by GDP	1.85%	1.95%	4.27%	3.42%
Inherited billionaire wealth, normalized by physical capital stock	0.36%	0.52%	0.96%	0.77%
Inherited billionaire wealth, normalized by population	0.025%	0.031%	0.068%	0.066%

Notes:
The summary statistics are calculated only for the countries with billionaires when they have data on all the covariates. In the process, we lose between 1 to 4 countries given the lack of data on control variables depending on the year.
The billionaire list for 1996 is used instead of the billionaire list for 1997. Reasons for using the 1996 list instead of the 1997 list are mentioned in the text and details are provided in the Data Appendix A.1.

add the value of 6.6 to Gini coefficients based on expenditure or consumption (Deininger and Squire, 1998).

Finally, as in Bagchi and Svejnar (2015), for initial poverty we use the head-count index (H_{it}), given by the proportion of the population living in households with consumption per capita (or income when consumption is not available) below the poverty line and sourced from the World Bank's PovcalNet tool. Following Ravallion (2012), we set the poverty line at $2 per person

per day at 2005 PPP, which is the median poverty line amongst developing countries. For robustness, we also use a lower line of $1.25 a day which is the expected value of the poverty line in the poorest countries in terms of consumption per person and obtain similar results as those obtained with the $2 per person per day definition.

5.3.2 Empirical approach

The key new explanatory variables, the components of wealth inequality, are constructed as the respective component of billionaire wealth normalized by the country's GDP or physical capital stock or population. In other words, once we have classified billionaires as politically connected or not and as self-made or inherited, we add up the wealth of all self-made politically unconnected billionaires, all self-made politically connected billionaires, and all inherited billionaires, and normalize these sums by the country's GDP or physical capital stock or population. We call the resulting variables "Self-made politically unconnected wealth inequality", "Self-made politically connected wealth inequality", and "Inherited wealth inequality." Thus:

Billionaire wealth=Self-made politically unconnected
billionaire wealth+Self-made politically connected
billionaire wealth+Inherited billionaire wealth (1a)

Equivalently,

Billionaire wealth/GDP=Self-made politically unconnected
billionaire wealth/ GDP+Self-made politically connected
billionaire wealth/GDP+Inherited billionaire wealth/GDP (1b)

Wealth Inequality=Self-made politically unconnected wealth
inequality+Self-made politically connected wealth
inequality+Inherited wealth inequality (1c)

and analogously for normalization by physical capital stock and population.

The choice of these variables for normalizing is based on the fact that the preferred denominator – total wealth holdings in each country – is unavailable. At the same time, it is important to normalize the raw billionaire wealth holdings by a measure of the size of a given economy since not doing so would lead to artificially inflated values of wealth inequality for countries with a high per capita income and a large population. Thus, in the absence of measures of wealth holdings for each country, we use GDP, physical capital stock, and population as alternatives for normalizing billionaire wealth.[13] In using

a country's physical capital stock, we generate values of the physical stock of a country by the perpetual-inventory method (Nehru and Dhareshwar, 1993) and define wealth inequality as the ratio of the sum of billionaire wealth for a given country in a given year to the total estimated physical stock of capital in that country in that year.[14] Using GDP, physical capital stock, and population for normalizing billionaire wealth yield mostly similar results.

An important theme in the literature on the effects of income inequality and growth is that cross-country, cross-sectional regressions may lead to omitted variable bias (Forbes, 2000) and non-robustness of results (Levine and Renelt, 1992, and Deininger and Squire, 1998). To overcome these concerns, we use panel data to examine the effects on growth of the three types of wealth inequality, income inequality, and poverty. We start by using a fixed effects specification that is similar to Forbes (2000), with the difference being that we use the three measures of wealth distribution, income distribution, and poverty (rather than just income distribution) as our key regressors of interest. As in Forbes (2000), we regress the real GDP growth rate per capita in a five-year period t on the values of the explanatory variables at the end of period t-1 (that is, in the year preceding the start of the five-year period t). We also assume that in a fixed effects model the values of the lagged variables may be viewed as being predetermined and therefore unlikely to suffer from problems related to reverse causality (endogeneity). Our initial specification hence is:

$$\begin{aligned}
\text{Growth}_{i,t} = &\ \beta_0 + \beta_1 \text{ Self-Made Politically Unconnected Wealth} \\
&\ \text{Inequality}_{i,(t-1)} + \beta_2 \text{ Self-Made Politically Connected Wealth} \\
&\ \text{Inequality}_{i,(t-1)} + \beta_3 \text{ Inherited Wealth Inequality}_{i,(t-1)} + \beta_4 \text{ Income} \\
&\ \text{Inequality}_{i,(t-1)} + \beta_5 \text{ Headcount Poverty}_{i,(t-1)} + \beta_6 \text{ Income}_{i,(t-1)} + \\
&\ \beta_7 \text{ Schooling}_{i,(t-1)} + \beta_8 \text{ PPPI}_{i,(t-1)} + \beta_9 \text{ Dummy}_{i,(t-1)} + \alpha_i + \eta_t + \nu_{i,t}
\end{aligned} \tag{2}$$

where i denotes country and t annual time period (with t=1, 2, ... T). Growth is measured as the average annual growth rate in real GDP per capita in country i in period t, while the components of wealth inequality, income inequality, and headcount poverty have been defined above. "Income" is the real GDP per capita. "Schooling" is defined as the average years of secondary schooling in the male and female populations aged 25 and above, and PPPI is the value of the investment deflator, used as a proxy for market distortions. "Dummy" is coded 1 for all country-period observations which have at least one billionaire and 0 for countries which do not. Country fixed effects α_i are included to account for time-invariant country idiosyncratic factors, while period fixed effects η_t control for any global shocks in each period that are common across countries. Finally, $\nu_{i,t}$ is the random error term. We cluster standard errors at the country level in order to allow arbitrary country-specific serial correlation (Bertrand, Duflo, and Mullainathan, 2004).

Not all countries included in the estimation have billionaires in any given year. As in Bagchi and Svejnar (2015), we control for this feature by using a dummy variable with a value of 1 if a country had billionaires in a given year and 0 if it did not. Including this dummy variable into the regression allows country-year observations without billionaires to have different fixed effects than countries with billionaires in any given period. Moreover, including countries without billionaires allows us to estimate more precisely the effects of the other variables on economic growth.

The other variables used in equation (2) are relatively standard in the inequality-growth literature. The dependent variable, namely the growth rate in real GDP per capita, is calculated as the average annual compounded growth rate over a five-year period of Gross Domestic Product per capita in constant prices and expressed in national currency (IMF, 2009).[15] The level of initial income at the start of each period is measured by the log of real GDP per capita in International dollars in 2000 Constant Prices from the Penn World Tables v6.2. Schooling is captured by the average years of secondary schooling in the male and female population aged 25 and above (Barro and Lee, 2001). Because data on schooling are unavailable for years 1987, 1992, 1997, and 2002, we use instead data from 1985, 1990, 1995, and 2000. Finally, the Price Level of Investment (PPPI) is obtained by dividing the purchasing power parity (PPP) for investment goods by the US dollar exchange rate. This variable is used frequently as a proxy for market distortion that affects the cost of investment, such as tariffs, government regulations, corruption, and the cost of foreign exchange. This variable is common in growth regressions and it is also derived from the Penn World Tables.[16] In addition, we include initial poverty and headcount poverty, defined above, as key explanatory variables. Summary statistics for all these variables for the sample included in estimation are presented in Table 5.2.

5.4   Empirical results

In section 5.4.1, we present the results from our base specification – a fixed effects model with lagged values of the explanatory variables in which billionaire wealth is normalized by GDP, physical capital stock, and population, respectively. In section 5.4.2 we summarize the results of a number of robustness checks.

5.4.1   Base specification

In Table 5.3 we report the estimates of equation (2), with the components of wealth inequality, income inequality, and initial poverty being the key explanatory variables. The data are from countries reporting some incidence of poverty as measured by $2 per day. The Hausman test indicates that the fixed

Table 5.2 Descriptive statistics for dependent variable and all control variables

Panel A: Summary Statistics

	Definition	Source	Period/Year	Mean	Std. Dev.	Minimum	Maximum
Growth Rate	Growth in real GDP per capita	IMF World Economic Outlook Database	1988 – 1992	1.6%	3.9%	-7.4%	9.2%
			1993 – 1997	1.7%	3.8%	-11.4%	10.3%
			1998 – 2002	1.2%	2.2%	-3.4%	7.4%
			2003 – 2007	3.8%	1.7%	0.5%	10.4%
Income	Ln of Real GDP per capita in 2000 constant Prices (In International dollar per person)	Penn World Tables v6.2	1987	8.09	0.71	6.58	9.23
			1992	7.98	0.81	6.60	9.19
			1997	8.14	0.79	6.67	9.31
			2002	8.24	0.76	6.79	9.44
Female Schooling	Average years of secondary schooling in the female population aged 25 and above	Barro & Lee (2001)	1985	0.67	0.45	0.05	1.60
			1990	0.82	0.61	0.05	2.20
			1995	1.00	0.68	0.06	2.49
			2000	1.13	0.67	0.08	2.61
Male Schooling	Average years of secondary schooling in the male population aged 25 and above	Barro & Lee (2001)	1985	1.05	0.47	0.30	1.96
			1990	1.16	0.61	0.13	2.37
			1995	1.27	0.70	0.17	3.12
			2000	1.38	0.69	0.16	3.10
PPPI	Price level of investment, measured as the PPP of investment/ exchange rate relative to the US	Penn World Tables v6.2	1987	69.8	62.9	24.9	367.6
			1992	74.6	46.5	31.7	325.0
			1997	68.7	21.8	22.4	111.4
			2002	62.1	25.8	27.0	138.6
Self-made Politically Unconnected Wealth Inequality	Self-made politically unconnected billionaire wealth, divided by GDP	Forbes' listings & own estimates	1987	0.016%	0.087%	0%	0.47%
			1992	0.092%	0.41%	0%	2.47%
			1996	0.93%	3.41%	0%	21.33%
			2002	0.31%	0.76%	0%	3.38%

Self-made Politically Connected Wealth Inequality	Self-made politically connected billionaire wealth, divided by GDP	Forbes' listings & own estimates	1987	0.11%	0.45%	0%	2.28%
			1992	0.25%	0.71%	0%	2.66%
			1996	0.62%	2.27%	0%	13.77%
			2002	0.22%	0.86%	0%	5.35%
Inherited Wealth Inequality	Inherited billionaire wealth, divided by GDP	Forbes' listings & own estimates	1987	0.065%	0.21%	0%	0.88%
			1992	0.33%	0.77%	0%	2.94%
			1996	1.10%	2.06%	0%	8.85%
			2002	0.71%	1.79%	0%	10.11%
Income Inequality	Gini coefficient of any quality level and with either person or household as the unit of analysis	UNU-WIDER World Income Inequality Database	1987	45.5	10.4	22.7	62.0
			1992	48.7	9.3	29.4	69.5
			1997	50.9	8.2	29.5	71.0
			2002	50.6	8.0	26.7	66.6
Headcount Poverty	Percentage of the population in households with consumption per capita below $2/ day	World Bank PovcalNet tool	1987	47.0	31.9	0.1	96.5
			1992	48.5	31.8	0.2	95.2
			1997	43.2	30.5	0.5	92.4
			2002	39.1	27.2	0.2	90.7

Panel B: Pair-wise Pearson Correlations of Variables

		1	2	3	4	5	6	7	8	9	10
1	Growth Rate	1									
2	Income	0.16	1								
3	Female Schooling	0.17	**0.70**	1							
4	Male Schooling	**0.26**	**0.57**	**0.83**	1						
5	PPPI	–0.19	–0.13	–0.16	**–0.23**	1					
6	Self-Made Politically Unconnected Wealth Inequality	–0.03	0.14	**0.26**	**0.21**	–0.07	1				
7	Self-Made Politically Connected Wealth Inequality	–0.00	**0.21**	**0.28**	**0.31**	–0.11	**0.46**	1			
8	Inherited Wealth Inequality	–0.03	**0.33**	**0.31**	**0.27**	–0.09	**0.37**	**0.40**	1		
9	Income Inequality	**–0.22**	–0.14	–0.01	**–0.28**	0.24	0.04	–0.04	0.06	1	
10	Headcount Poverty	–0.03	**–0.84**	**–0.68**	**–0.54**	0.02	**–0.10**	–0.11	**–0.25**	0.07	1

Note: This table presents summary statistics and Pearson correlation coefficients between the regression variables. Panel A includes the mean, standard deviation, minimum, and maximum. Panel B reports the Pearson correlation coefficients with boldface indicating statistical significance at the 1% level. Growth Rate is the annual rate of growth in real GDP per capita, averaged over a 5-year period; Income is the log of Real GDP per capita in 2000 constant prices (in international dollar per person); Female Schooling is the average years of secondary schooling in the female population aged 25 and above; Male Schooling is the average years of secondary schooling in the male population aged 25 and above; PPPI is price level of investment, measured as the PPP of investment/ exchange rate relative to the USA; Self-made Politically Unconnected (Connected) Wealth Inequality is self-made politically unconnected (connected) billionaire wealth, divided by GDP. Inherited wealth inequality is defined similarly using the total wealth of all billionaires classified as inherited. Income Inequality is the Gini coefficient of any quality level and with either person or house-hold as the unit of analysis. Headcount Poverty is the percentage of the population in households with consumption per capita below $2/ day.

effects specification is more appropriate than the random effects specification in each case and in Table 5.3 we therefore report the fixed effects estimates.[17] Estimates from the random effects specification yield similar results and they are discussed as part of our robustness checks.

In column (1) of Table 5.3 we present results from the specification in which the components of wealth inequality have been constructed by dividing respective billionaire wealth by GDP, while estimates in columns (2) and (3) come from specifications where billionaire wealth has been divided by the country's physical capital stock and population, respectively.

The results indicate that it is self-made politically connected wealth inequality and inherited wealth inequality that have a significant negative effect on growth while self-made politically unconnected wealth inequality does not. The estimated effects of both income inequality and poverty are insignificant in all three specifications. These results hence suggest that it is important to distinguish the nature of wealth inequality in drawing inferences about the effect of wealth inequality on growth and they highlight the negative effect

Table 5.3 Impact of components of wealth inequality, income inequality, and head-count poverty on economic growth

	(1)	(2)	(3)
Dependent variable: Growth rate in real GDP per capita			
Self-made Politically Unconnected Wealth Inequality	0.0333	0.325*	–21.40
	(0.0335)	(0.166)	(30.88)
Self-made Politically Connected Wealth Inequality	–0.287***	–1.327**	–42.76
	(0.0960)	(0.561)	(26.36)
Inherited Wealth Inequality	–0.356*	–2.413	–96.02
	(0.199)	(1.567)	(64.52)
Income Inequality	0.000525	0.000695	0.000489
	(0.000415)	(0.000437)	(0.000411)
Headcount Poverty	0.000402	0.000378	0.000403
	(0.000289)	(0.000301)	(0.000286)
Income	–0.0833***	–0.0867***	–0.0836***
	(0.0282)	(0.0295)	(0.0288)
Female Schooling	0.00565	0.00687	0.00913
	(0.0220)	(0.0227)	(0.0218)
Male Schooling	0.00592	0.00262	0.00527
	(0.0222)	(0.0231)	(0.0221)
Price level of investment	–0.0694*	–0.0640*	–0.0632*
	(0.0370)	(0.0364)	(0.0361)
Country On List Dummy	0.00143	0.00194	-0.00155
	(0.0102)	(0.0109)	(0.00905)
Constant	0.624**	0.649**	0.626**
	(0.236)	(0.248)	(0.241)
Number of observations	160	149	160
R^2	0.62	0.62	0.61
F	64.91	62.56	80.81

Notes:
Growth Rate is the average annual compounded growth rate over a 5-year period of Gross Domestic Product per capita in constant prices and expressed in national currency; Income is the log of Real GDP per capita in International dollars in 2000 constant prices; Female (Male) Schooling is the average years of secondary schooling in the female (male) population aged 25 and above; PPPI is price level of investment, measured as the PPP of investment/ exchange rate relative to the USA (rescaled here by dividing by 1,000); Self-made Politically Unconnected (Connected) Wealth Inequality is self-made politically unconnected (connected) billionaire wealth, divided by GDP (col. (1)), physical capital stock (col. (2)), and population (col. (3)). Inherited wealth inequality is defined similarly using the total wealth of all billionaires classified as inherited. Measures of billionaire wealth are based on Forbes' billionaire lists for 1987, 1992, 1996, and 2002 along with author calculations. Country on List Dummy = 1 if a country has billionaires in a given year, 0 otherwise and is also based on author calculations. Column (2) is estimated using observations for which the capital to GDP ratio is between 2.58 to 14.43, corresponding to the 5th and 95th percentile values of the distribution of capital to GDP.

A list of countries included in this estimation are: Algeria, Bangladesh, Bolivia, Botswana, Brazil, Burundi, Cameroon, Central African Republic, Chile, China, Colombia, Costa Rica, Dominican Republic, Ecuador, Egypt, El Salvador, Fiji, Gambia, Ghana, Guatemala, Haiti, Honduras, Hungary, India, Indonesia, Iran, Jamaica, Jordan, Kenya, Lesotho, Malawi, Malaysia, Mali, Mauritania, Mexico, Mozambique, Nepal, Nicaragua, Niger, Pakistan, Panama, Papua New Guinea, Paraguay, Peru, Philippines, Poland, Rwanda, Senegal, Sierra Leone, South Africa, Sri Lanka, Swaziland, Thailand, Trinidad and Tobago, Tunisia, Turkey, Uganda, Venezuela, and Zambia.

All regressions include country and period fixed effects. Robust standard errors, clustered by country, in parentheses *p<0.10, **p<0.05, ***p<0.01.

of self-made politically connected wealth inequality and inherited wealth inequality in comparison to the insignificant (or even positive) impact of self-made politically unconnected wealth inequality.

In terms of the economic significance of the estimated impact of wealth inequality, note that the –0.287 coefficient on self-made politically connected wealth inequality in column (1) implies that a one standard deviation (1.35 percent) increase in the level of wealth inequality would result in a 0.39 percent decrease in real GDP per capita growth. Similarly, a one standard deviation increase in the level of inherited wealth inequality, holding constant the levels of self-made wealth inequality, results in a 0.55 percent slowdown in per capita GDP growth. Given that the mean per capita GDP growth over the period 1987–2007 was 1.9 percent, the slowdown of 0.39 percent associated with self-made politically connected wealth inequality and 0.55 percent associated with inherited wealth inequality are substantial in magnitude.

The estimated effects of the control variables are in line with what has been reported elsewhere in the literature. The effect of initial income is negative and significant at the 1% test level, thus providing support for the conditional convergence hypothesis that countries relatively close to their steady-state output level will experience a slower rate of growth. The coefficient on the price level of investment is also negative as is common. The coefficient on the variables corresponding to male and female schooling are positive but not significant. These coefficients are similar to those found in other growth models estimated using the same technique (for example, Caselli et al., 1996).

5.4.2   Additional robustness checks

We conduct a number of robustness checks (RCs) to assess the robustness of the result that self-made politically connected wealth inequality and inherited wealth inequality have a negative effect on economic growth whereas self-made politically unconnected wealth inequality does not. In the interest of brevity, the results are summarized below, with the detailed estimates being available from the authors upon request.

(a) RC1: Robustness to *Forbes* magazine's choice of countries for the billionaires in the data set: As described in Data Appendix A.1, in a total of 30 of the 1,652 entries we assign a person a different country than what was assigned to him by *Forbes* magazine. We examine the robustness of our results to *Forbes* magazine's assignment of country and find that the results remain essentially unchanged.

(b) RC2: Use of a random effects instead of a fixed effects specification: Our use of the country fixed effects model is based on the results of the Hausman test. In all cases, the results of the Hausman test reject the null hypothesis of no correlation between the unobserved country-specific random effects and the explanatory variables, implying that random effects estimates are

biased and inconsistent. However, we have also estimated the random effects specification, given that Griliches and Hausman (1986) stress that observing similar estimates across alternative panel data estimation techniques signals the absence of serious errors-in-variables problems. Using the random effects specification, we find that self-made politically connected wealth inequality has a coefficient that is negative and statistically significant at the 1% level in all three specifications. Inherited wealth inequality is not statistically significant, but it is negative in all three specifications. Finally, self-made politically unconnected wealth inequality is statistically insignificant all throughout.

(c) RC3: Robustness to inclusion of additional explanatory variables:

 (i) Adding a measure of institutional quality: The inclusion of country fixed effects deals with the problem of omitted variable bias in that all country-specific factors that are invariant over time (for example, a country's legal origin) are controlled for by the country fixed effect. However, the fixed effects specification does not deal with country-specific factors that may vary over time. Given the importance that the literature assigns to the quality of a country's institutions (for example, Rodrik, Subramanian, and Trebbi, 2004), we examine the robustness of our results to the inclusion of a measure of institutional quality. We employ the very widely used Economic Freedom Index constructed by the Fraser Institute and we find that controlling for this aggregate measure of institutional quality does not alter any of the findings of our paper.

(ii) Controlling for the exchange rate: The *Forbes'* billionaire list converts wealth in local currency into US dollars using the current exchange rates. Fluctuations in the exchange rates thereby induce a variation in the measure of wealth inequality even when the true underlying level of wealth inequality in the country is unchanged. We examine the robustness of our results to inclusion of the exchange rate as a control and find that our basic results continue to hold when this control is included.

(d) RC4: Using $1.25 per day per person as the poverty line: Thus far we have used a headcount measure of poverty based on the fraction of individuals consuming less than $2 per person per day, as used by Ravallion (2012). In addition, like him, we also consider for robustness a lower consumption threshold of $1.25 per day per person which is the expected value of the poverty line in the poorest countries. The results obtained with such a threshold are very similar to those obtained previously.

5.5   Concluding remarks

A key question in the social sciences is whether inequality in control over a society's resources facilitates or hinders economic growth. The question has been studied intensively, but the answer is far from clear-cut, in part because

theoretical arguments have been based largely on the distribution of wealth, while empirical studies have been forced to use the distribution of income as a proxy. We build on Bagchi and Svejnar (2015) and bridge this gap by using the first global measure of wealth inequality, focusing on the concentration of wealth at the very top of the pyramid – billionaire wealth. We proceed to split it into three individual components (self-made politically unconnected wealth, self-made politically connected wealth and inherited wealth) and estimate the effect of these components of wealth inequality on economic growth. In addition, motivated by Ravallion's (2012) recent finding that poverty rather than income inequality determines economic growth, we provide the first direct comparison of the effects of the components of wealth inequality, income inequality, and poverty on growth.

Our key finding is that when we enter self-made politically unconnected, self-made politically connected wealth, and inherited wealth inequality as three separate explanatory variables into our regressions, it is self-made politically connected and inherited wealth inequality that have a significant negative effect on growth, while the effects of self-made politically unconnected wealth inequality, income inequality, and poverty are insignificant.

Our research suggests that the policy debate about sources of economic growth ought to focus on the distribution of wealth rather than on the distribution of income. Moreover, particular attention ought to be paid to the politically connected concentration of wealth as a possible cause of slower economic growth. Further research in this area is obviously needed, especially with respect to the effects of wealth inequality at different parts of the wealth distribution, the effect of unequal distribution of income on growth, and the role of poverty.

A   Data Appendix

5A.1   Construction of billionaire lists

Forbes magazine published a list of the four hundred richest individuals in the United States, the so-called "Forbes Four Hundred", for the first time in 1982. It was then followed by the publication of a list of individuals and families from all countries from around the world having more than $1 billion in wealth (in nominal terms) in 1987. Since then, these lists have been published annually. For all countries of the world but the United States, we exclusively rely on the wealth data provided in the billionaire lists. In the case of the United States only, where additional information is available from the Forbes Four Hundred, we also use the information contained therein and aggregate the wealth of family members whose individual amounts of wealth are below a billion dollars, but cumulatively sum up to more than a billion dollars. We add them to the list

of billionaires to get an augmented list. This step is necessary in order to make the numbers comparable for the United States over all four years of the sample. All of our results are robust to the exclusion of United States from the sample.

In the vast majority of the cases, the locus of business activities for a billionaire is the same as the person's country of origin and/ or his country of birth. However, they do not match up in all cases. When that happens, we depart from *Forbes* magazine's chosen categorization of country and instead assign him to the country where he presently resides and maintains his business activities. For example, in the case of Stelios Haji-Ionnanou of EasyAir, whose business activities are currently based in the U.K. where he spends a considerable fraction of his time, we classify him as British. However considering his Greek origin, *Forbes* classifies him as Greek. Likewise in the case of Lakshmi Mittal of ArcelorMittal who *Forbes* classifies as Indian considering that he is of Indian origin, we choose to classify him as British since he moved out of India in the late 1970s and has been settled in London, U.K. since 1995. However, such circumstances arise in only 30 of the 1,652 entries on our list – that is, less than 2 percent of the total number of entries. These 30 billionaires who we categorize against a particular country different from *Forbes*' initial classification account for less than 2 percent of the total billionaire wealth and the results we obtain for wealth inequality are robust to whether we go with our choice of a country or with *Forbes*' magazine original assignment of country.

Finally, *Forbes* magazine changed its editorial policy for four years, between 1997 and 2000. In these years, they included only those billionaires who were either self-made (for example, Warren Buffett) or those who inherited their wealth and were actively managing it themselves (for example, Carlos Slim Helu of Mexico). This leads to the exclusion of billionaires from around the world who simply inherited their wealth and were no longer actively involved themselves in growing their businesses, such as the duPonts and Rockefellers in the U.S., the Quandt family of Germany (the largest shareholder in BMW), and Liliane Bettencourt of France (the largest shareholder in L'Oreal) to provide a few examples.[18] Thus while the three other years of the panel – 1987, 1992, and 2002 included all categories of billionaires, including those who simply inherited their wealth and were not actively managing it themselves such as those mentioned above, the 1997 list, generally failed to include them by design making it challenging to have the lists comparable across the four years. Given this limitation of the 1997 list, we use the 1996 list instead, assuming that had *Forbes* chosen to include all billionaires in their 1997 listing, then the measures of wealth inequality and political connections we would have arrived at for 1997 are similar to what we arrive at by looking at the 1996 list. That said, the correlation coefficient between wealth inequality, constructed from the 1996 and 1997 lists is 0.9456 (p-value=0.0000) and that between politically connected wealth inequality for the two years is 0.9600 (p-value=0.0000).

5A.2 Countries that appear on the *Forbes'* billionaire list
at least once in the four years – 1987, 1992, 1996, and 2002
and level of wealth inequality in those countries

Table 5.A.1 Level of wealth inequality in countries that show up at least once on Forbes' list of billionaires

Country	1987	1992	1996	2002
Argentina	–	1.3%	2.5%	1.0%
Australia	1.0%	0.7%	0.4%	1.4%
Bahrain	–	–	16.4%	–
Belgium	–	–	–	1.5%
Brazil	2.0%	1.5%	2.4%	2.9%
Canada	3.3%	2.9%	2.6%	6.2%
Chile	–	7.2%	11.5%	4.3%
China	–	–	–	0.1%
Colombia	10.5%	7.8%	3.9%	1.2%
Denmark	–	1.0%	2.6%	2.4%
Ecuador	–	–	5.6%	–
France	0.4%	1.3%	2.3%	4.5%
Germany	2.2%	4.9%	5.4%	10.5%
Greece	–	3.8%	9.8%	2.3%
Hong Kong	15.7%	20.0%	39.9%	25.6%
India	0.4%	0.8%	0.9%	2.5%
Indonesia	2.3%	2.3%	11.9%	0.9%
Ireland	–	–	–	1.1%
Israel	–	–	1.9%	5.6%
Italy	0.9%	1.0%	1.3%	3.2%
Japan	3.5%	2.2%	1.9%	1.5%
Kuwait	4.8%	–	9.5%	14.9%
Malaysia	–	4.3%	25.4%	10.0%
Mexico	0.9%	3.8%	7.0%	4.5%
Netherlands	2.9%	2.0%	2.1%	2.2%
Norway	–	–	–	0.7%
Peru	–	–	1.8%	–
Philippines	–	2.3%	28.2%	6.9%
Portugal	–	–	–	1.3%
Republic of Korea	2.1%	2.7%	4.0%	0.8%
Russia	–	–	–	4.3%
Saudi Arabia	8.2%	10.6%	12.0%	24.6%
Singapore	6.1%	4.8%	18.6%	13.5%
South Africa	–	–	2.9%	4.0%
Spain	0.4%	0.7%	0.7%	2.5%
Sweden	3.5%	3.7%	4.4%	16.0%
Switzerland	3.1%	4.0%	11.9%	15.6%
Taiwan	6.7%	4.7%	8.6%	4.7%
Thailand	–	3.7%	11.6%	1.8%
Turkey	–	2.4%	3.6%	6.2%
United Arab Emirates	–	–	–	2.4%
United Kingdom	1.8%	1.2%	1.3%	2.0%
United States	3.2%	3.7%	5.7%	8.3%
Venezuela	–	1.7%	3.4%	10.1%

5A.3 Classifying billionaires as politically connected or not

The following are three examples of brief news reports that resulted in classification of billionaires as "politically connected."

1. The first example is of an Indonesian magnate, Prajogo Pangestu.

   In any case, there's no denying that Indonesian government agencies have helped Mr. Prajogo make the leap from a successful timber merchant to a major corporate force. His Barito Group of companies, for example, is the state banking system's largest borrower, with loans of more than $1 billion outstanding, and benefits from an *unusually attractive 1992 debt rescheduling* [Emphasis added] that stretched repayment periods on about $460 million in timber industry borrowings into the next century. Mr. Prajogo, Mr. Bambang and their partners also stand to gain from a change of government policy last year that allowed them to proceed with their postponed $1.6 billion PT Chandra Asri petrochemical project, the products of which will be protected by *steep new tariffs* [Emphasis added] on imports. (*The Wall Street Journal Asia*, 1993)

2. We next provide *Forbes* magazine's description of the Birla family, India's only billionaire entry until 1996:

   The nationalists who later became free India's power elite rewarded the Birla family with lucrative contracts. After independence, the Birlas continued their lavish contributions to the ruling Congress Party. So accomplished are they in manipulating the bureaucracy, and so vast their network of intelligence, that they frequently obtain preemptive licenses, *enabling them to lock up exclusive rights for businesses as yet unborn* [Emphasis added] (Forbes, 1987).

3. Lastly, the following description pertains to Russian billionaire, Mikhail Fridman who shows up on the Forbes' list in 2002:

   Mikhail Fridman founded OAO Alfa Bank in 1991 and soon after recruited Pyotr Aven, former minister of foreign economic relations, to raise Alfa's political profile. The partners were among a handful of businessmen who helped to finance Boris Yeltsin's re-election campaign in 1996. The Kremlin *rewarded* these men by selling them state-owned oil and metals companies at *bargain-basement prices* [Emphasis added] (The Wall Street Journal, 2001).

A possible concern regarding the use of newspaper reports to construct the measure of politically connected wealth is that it may be biased by the level of press freedom. This concern can be allayed by the fact that our classification of billionaires as politically connected or politically unconnected is largely based on press reports from the international rather than the local press. To formalize this claim, we analyzed a subsample of twenty billionaires that we classified as politically connected in order to note the sources of the stories

which led us to classify these billionaires as politically connected in the first place. Of the 31 articles that were used in the classification process, about half were articles published in various issues of the *Forbes* magazine, with *The New York Times*, *The Guardian*, and the *Financial Times* being the other sources that were most often referenced. Only two of the 31 articles referenced can be classified as local sources and in each of these cases when we relied on local sources, there was information available from other international sources to substantiate our reasoning that these individuals were politically connected. This suggests that, although the use of accounts in the press to classify individuals as politically connected may have its shortcomings, the corresponding measures of politically connected wealth inequality are unlikely to be biased because of variations in the level of press freedom across countries.

Notes

1. There are only two studies that directly use wealth inequality data and looks at the effect of wealth inequality on growth. Ravallion (1998) studies the effect of geographic differences in the distribution of wealth on growth in China and finds evidence that high wealth inequality impedes growth. In related work, we (Bagchi and Svejnar, 2015) examine the effects of wealth inequality, income inequality, and headcount poverty on economic growth and find that wealth inequality is negatively associated with growth whereas income inequality and headcount poverty do not bear a statistically significant relationship.
2. Easterly (2007) is a notable exception in that he distinguishes between structural and market-based inequality. Moreover, as we discuss below, Morck, Stangeland, and Yeung (2000) note that when they divide billionaires into those who were self-made versus those who inherited their wealth, a country's per capita GDP grows faster if its self-made billionaire wealth is larger as a fraction of GDP and slower if inherited billionaire wealth is larger as a fraction of GDP.
3. As we discuss below, a pioneering study by Alesina and Rodrik (1994) and an important later study by Deininger and Olinto (2000) use land inequality as a proxy for wealth inequality, but this measure is more appropriate for low income agrarian societies than the world as a whole. In recent work (Bagchi and Svejnar, 2015) we have examined the effects of wealth inequality on economic growth and compared its effects to the effects of income inequality and headcount poverty.
4. A review of this literature may be found in Aghion, Caroli, and García-Peñalosa (1999), Ehrhart (2009), and Galor (2009).
5. As a study of income tax returns by Bakija et al. (2012) suggests, professionals account for an overwhelming share of the top 1 percent of income earners in the U.S.: 31 percent started or manage nonfinancial businesses, about 16 percent are doctors, 14 percent are a part of the financial services industry, 8 percent are lawyers, 5 percent are scientists and engineers, and about 2 percent are a part of the sports, entertainment or media industries. It would be hard to argue that for such individuals, their holdings of land capture, to any reasonable degree, their asset holdings.
6. Both measures of wealth inequality are sourced from Davies et al. (2008).
7. These results are reported in our paper, Bagchi and Svejnar (2015) and are available from the authors on request.

8. Another strand of the literature examines the relationship between growth spells and inequality and finds that high levels of inequality increase the likelihood that a growth spell will end (Berg, Ostry and Zettelmeyer, 2012 and Ostry, Berg, and Tsangarides, 2014).

9. The list of countries that appear on the Forbes' billionaire list in each year is provided in the Data Appendix A.2.

10. As billionaire wealth, GDP, and physical capital stock are expressed in nominal terms, the ratio of billionaire wealth to GDP or billionaire wealth to physical capital stock should not exhibit any secular trends because of inflation.

11. By this measure, the countries with the highest level of politically connected wealth inequality are Malaysia, Colombia, Indonesia, Thailand, and Mexico.

12. We lose eight of the 134 country-period observations which have billionaires in the estimation because data on schooling is not available for these observations. These correspond to Saudi Arabia (all four years: 1987, 1992, 1996, and 2002), Liechtenstein (1996 and 2002), Russia (2002), and the United Arab Emirates (2002).

13. Morck, Stangeland, and Yeung (2000) also use a similar measure in their paper and mention the lack of wealth-based Gini coefficients as an obstacle to estimating the effect of inequality in wealth distribution on economic growth.

14. We use the Stata module, Stockcapit (Amadou, 2011) for this exercise.

15. Sourced from:http://www.imf.org/external/pubs/ft/weo/2009/01/weodata/index.aspx.

16. Initial income and PPPI are obtained from the Penn World Tables (http://pwt.econ.upenn.edu/php_site/pwt62/pwt62_form.php). PPPI is frequently used in the macroeconomic and international literature and measures how the cost of investment varies between each country and the United States.

17. E.g., for column (1), $\chi 2 = 135.80$, and Probability $> \chi 2 = 0.0000$.

18. This is how *Forbes* described its change in editorial policy in 1997: "Ten years ago Forbes started counting billionaires outside the U.S. We found 96. Last year, 298–plus 149 American billionaires. With stock markets around the world up an average 23 percent in the last year, the billionaire population, like the deer population, is sure to have increased. Bowing to economic reality, we have revised our selection process this year. A billion bucks no longer gets you in. You've got to have made it yourself, or you've got to be actively managing it. This eliminates a fair number of jet-setters and Palm Beach residents. We have culled the roster of billionaires down to 200 people around the globe, the Global Superrich."

References

Aghion, Philippe, Eve Caroli, and Cecilia García-Peñalosa (1999) "Inequality and Economic Growth: The Perspective of the New Growth Theories," *Journal of Economic Literature*, vol. 37, no. 4, pp. 1615–60.

Alesina, Alberto and Dani Rodrik (1994) "Distributive Politics and Economic Growth," *Quarterly Journal of Economics*, vol. 109, no. 2, pp. 465–90.

Attanasio, Orazio and Chiara Binelli (2003) "Inequality, Growth and Redistributive Policies," in *Conference on Poverty, Inequalities and Growth: What's at Stake for Development Aid?* Paris: Afd/EUDN.

Bagchi, Sutirtha and Jan Svejnar (2015) "Does Wealth Inequality Matter for Growth? The Effect of Billionaire Wealth, Income Distribution, and Poverty," *Journal of Comparative Economics*, vol. 43, no. 3, pp. 505–530.

Bakija, Jon, Adam Cole and Bradley Heim (2012) "Jobs and Income Growth of Top Earners and the Causes of Changing Income Inequality: Evidence from US Tax Return Data," Working Paper.

Barro, Robert J. (1999) "Inequality, Growth, and Investment," NBER Working Paper No. 7038.

Barro, Robert J. (2000) "Inequality and Growth in a Panel of Countries," *Journal of Economic Growth*, vol. 5, no. 1, pp. 5–32.

Barro, Robert J. and Jong-Wha Lee (2001) "International Data on Educational Attainment: Updates and Implications," *Oxford Economic Papers*, vol. 53, no. 3, pp. 541–63.

Bénabou, Roland (1996) "Inequality and Growth," NBER Chapters, in *NBER Macroeconomics Annual 11*. Cambridge, MA: National Bureau of Economic Research, Inc.

Berg, Andrew, Jonathan D. Ostry, and Jeromin Zettelmeyer (2012) "What Makes Growth Sustained?," *Journal of Development Economics*, vol. 98, no. 2, pp. 149–66.

Bertrand, Marianne, Esther Duflo, and Sendhil Mullainathan (2004) "How Much Should We Trust Differences-in-Differences Estimates?," *Quarterly Journal of Economics*, vol. 119, no. 1, pp. 249–75.

Bourguignon, François (1981) "Pareto-Superiority of Unegalitarian Equilibria in Stiglitz' Model of Wealth Distribution with Convex Savings Function," *Econometrica*, vol. 49, no. 6, pp. 1469–75.

Caselli, Francesco, Gerardo Esquivel, and Fernando Lefort (1996) "Reopening the Convergence Debate: A New Look at Cross-Country Growth Empirics," *Journal of Economic Growth*, vol. 1, no. 3, pp. 363–89.

Davies, James B., Susanna Sandström, Anthony Shorrocks, and Edward N. Wolff (2008) "The World Distribution of Household Wealth," World Institute for Development Economic Research (UNU–WIDER) Working Paper No. DP2008/03.

Deininger, Klaus W. and Pedro Olinto (2000) "Asset Distribution, Inequality, and Growth," World Bank Policy Research Working Paper Series, No. 2375.

Deininger, Klaus W. and Lyn Squire (1998) "New Ways of Looking at Old Issues: Inequality and Growth," *Journal of Development Economics*, vol. 57, no. 2, pp. 259–87.

De La Croix, David, and Matthias Doepke (2003) "Inequality and Growth: Why Differential Fertility Matters," *American Economic Review*, vol. 93, no. 4, pp. 1091–113.

Diallo Ibrahima Amadou (2011) "STOCKCAPIT: Stata Module to Calculate Physical Capital Stock by the Perpetual-Inventory Method," Statistical Software Components S457270, Boston College Department of Economics, revised 17 June 2011.

Easterly, William (2007) "Inequality Does Cause Underdevelopment: Insights from a New Instrument," *Journal of Development Economics*, vol. 84, no. 2, pp. 755–76.

Ehrhart, Christophe (2009) "The Effects of Inequality on Growth: a Survey of the Theoretical and Empirical Literature," ECINEQ Working Paper No. 2009-107.

Fields, Gary S. (2001) *Distribution and Development: A New Look at the Developing World* (Russell Sage Foundation). New York: The MIT Press.

Forbes, Kristin J (2000) "A Reassessment of the Relationship between Inequality and Growth," *American Economic Review*, vol. 90, no. 4, pp. 869–87.

Forbes magazine, List of Billionaires, 1987, 1992, 1996, 1997, and 2002 issues.

Galor, Oded, and Joseph Zeira (1993) "Income Distribution and Macroeconomics," *Review of Economic Studies*, vol. 60, no. 1, pp. 35–52.

Galor, Oded (2009) *Inequality and Economic Development: The Modern Perspective*. Northampton, MA: Edward Elgar Publishing Ltd.

Griliches, Zvi, and J.A. Hausman (1986) "Errors in Variables in Panel Data," *Journal of Econometrics*, vol. 31, no. 1, pp. 93–118.

Gupta, Dipak (1990) *The Economics of Political Violence*. New York: Praeger.

Gwartney, James, Joshua Hall, and Robert Lawson (2011) "2011 Economic Freedom Dataset," published in *Economic Freedom of the World: 2010 Annual Report*, Economic Freedom Network. Data retrieved from http://www.freetheworld.com/2011/2011/Dataset.xls.

Heston, Alan, Robert Summers, and Bettina Aten (2006) "Penn World Table Version 6.2," Center for International Comparisons of Production, Income and Prices at the University of Pennsylvania, (Sep. 2006).

Kaldor, Nicholas (1956) "Alternative Theories of Distribution," *Review of Economic Studies*, vol. 23, no. 2, pp. 83–100.

Kaldor, Nicholas (1961) "Capital Accumulation and Economic Growth," in F.A. Lutz and D.C. Hague (eds), *The Theory of Capital*. New York: St. Martin's Press.

Kopczuk, Wojciech, and Emmanuel Saez (2004) "Top Wealth Shares in the United States, 1916–2000: Evidence from Estate Tax Returns," *National Tax Journal*, vol. 57, no. 2, pp. 445–88.

Kuznets, Simon (1955) "Economic Growth and Income Inequality," *American Economic Review*, vol. 45, no. 1, pp. 1–28.

Levine, Ross, and David Renelt (1992) "A Sensitivity Analysis of Cross-Country Growth Regressions," *American Economic* Review, vol. 82, no. 4, pp. 942–63.

Meltzer, Allen, and Scott Richard (1981) "A Rational Theory of the Size of Government," *Journal of Political Economy*, vol. 89, no. 5, pp. 914–27.

Morck, Randall, David Stangeland, and Bernard Yeung (2000) "Inherited Wealth, Corporate Control, and Economic Growth: The Canadian Disease," in Randall Morck (ed.), *Concentrated Corporate Ownership*. Chicago: University of Chicago Press, pp. 319–69.

Morck, Randall, Daniel Wolfenzon, and Bernard Yeung (2005) "Corporate Governance, Economic Entrenchment, and Growth," *Journal of Economic Literature*, vol. 43, no. 3, pp. 655–720.

Nehru, Vikram, and Ashok Dhareshwar (1993) "A New Database on Physical Capital Stock: Sources, Methodology and Results," *Revista de Analisis Economica*, vol. 8, no. 1, pp. 37–59.

Ostry, Jonathan D., Andrew Berg, and Charalambos G. Tsangarides (2014) "Redistribution, Inequality, and Growth," IMF Staff Discussion Note 14/02.

Perotti Roberto (1996) "Growth, Income Distribution and Democracy: What the Data Say," *Journal of Economic Growth*, vol. 1, no. 2, pp. 149–87.

Persson, Torsten and Tabellini, Guido (1994) "Is Inequality Harmful for Growth*?,"* *American Economic Review*, vol. 84, no. 3, pp. 600–21.

Piketty, Thomas and Emmanuel Saez (2003) "Income Inequality in the United States, 1913–1998," *Quarterly Journal of Economics*, vol. 118, no. 1, pp. 1–39.

Ravallion, Martin (1998) "Does Aggregation Hide the Harmful Effects of Inequality on Growth?," *Economics Letters*, vol. 61, no. 1, pp 73–7.

Ravallion, Martin (2012) "Why Don't We See Poverty Convergence?," *American Economic Review*, vol. 102, no. 1, pp. 504–23.

Rodrik, Dani, Arvind Subramanian, and Francesco Trebbi (2004) "Institutions Rule: The Primacy of Institutions Over Geography and Integration in Economic Development," *Journal of Economic Growth*, vol. 9, no. 2, pp. 131–65.

Stiglitz, Joseph E. (2012) *The Price of Inequality*. New York: W.W. Norton & Company.

The Economist, "For Richer, For Poorer" (2012). http://www.economist.com/node/21564414.

Voitchovsky, Sarah (2005) "Does the Profile of Income Inequality Matter for Economic Growth? Distinguishing between the Effects of Inequality in Different Parts of the Income Distribution," *Journal of Economic Growth*, vol. 10, no. 3, pp. 273–96.

Wolff, Edward N.(2006) *International Perspectives on Household Wealth*. Northampton, MA: Edward Elgar Publishing Ltd.

World Bank, Development Research Group (2013) *PovcalNet: The Online Tool for Poverty Measurement*. Washington DC: World Bank. Available: http://iresearch.worldbank.org/PovcalNet/index.htm?0.

World Institute for Development Economics Research (2004) *World Income Inequality Database*. Helsinki: WIDER. Available: http://www.wider.unu.edu/research/Database/en_GB/wiid/.

A Sociological Perspective on Wealth Inequality and Opportunity: Comments on "Does Wealth Distribution and the Source of Wealth Matter for Economic Growth? Inherited v. Uninherited Billionaire Wealth and Billionaires' Political Connections" by Sutirtha Bagchi and Jan Svejnar

Kendra Bischoff

A Sociological Perspective on Wealth Inequality and Opportunity

In light of the theme of the roundtable – Shared Prosperity and Growth – as well as the topic of this paper's panel – Inequality and Opportunity – I use Bagchi and Svejnar's paper "Does Wealth Distribution and the Source of Wealth Matter for Economic Growth? Inherited v. Uninherited Billionaire Wealth and Billionaires' Political Connections" as a springboard to focus my comments on the relationship between wealth inequality and opportunity. In this paper, the authors use cross-national panel data to investigate the much-debated and methodologically thorny relationship between inequality and economic growth. They operationalize the theoretical concept of inequality using a measure of wealth inequality instead of income inequality. Wealth is a more appropriate measure of resources than income, but data limitations have largely prevented scholars from analyzing the extent, causes, and consequences of wealth inequality in previous research. Using a measure of billionaire wealth, the authors find that upper-tail wealth inequality reduces economic growth, but only if that wealth inequality is generated by political connections or inheritance. Self-made politically unconnected wealth inequality, as well as income inequality and initial poverty levels, have no effect on economic growth.

Bagchi and Svejnar note that studies of resource inequality are generally theoretically linked to wealth, even if data limitations often prohibit its measurement. Put simply, wealth is equivalent to one's assets minus one's debt.

Wealth provides financial security during shocks in individual and family life, such as temporary unemployment or natural disasters (Keister and Moller 2000; Wolff 2002). This may allow families to stay in their homes during unstable times, providing continuity in children's schooling and social networks. If a family member becomes ill or disabled, wealth may provide the means to obtain medical assistance that allows other family members to continue working. Wealth can also help families weather even predictable peaks in expenses, such as the cost of a child attending college or the purchase of a home. Wealth is a durable resource that eases uncertainties and allows for investments that reap dividends over a lifetime. In addition, wealth inequality is more extreme than income inequality. In 2010, the top 10 percent of earners commanded 44 percent of all income in the United States, whereas the top 10 percent of wealth holders commanded 74 percent of all wealth. In the same year the Gini coefficient for wealth was 0.87, compared to 0.55 for income (Keister 2014). Thus, wealth inequality is arguably more consequential than income inequality for disparities in short- and long-term wellbeing, not only because of its differential effects, but also due to its magnitude.

Despite the paper's many strengths, the use of GDP as a measure of growth is questionable, especially in light of the roundtable's theme of shared prosperity. Instead, one might consider a measure that better captures the distribution of the rewards of growth across race/ethnicity, class, and gender groups. And if national economic growth is realized unequally across groups within a society, then the relationship between growth and opportunity must also be questioned. In addition, the authors focus on billionaire wealth inequality, however, from a within-country, structural perspective, wealth inequality even at a much lower level – for instance, the wealth of the top 5–10 percent of the resource distribution – is highly consequential. Nevertheless, this paper takes on a large and important question, and does so in an innovative way. Importantly, the authors ask not simply if inequality affects growth, but also whether the source of inequality matters.

Deviating from a macroeconomic perspective, I take a sociological perspective, focusing on structural processes that manifest through social institutions such as families, schools, and neighborhoods. In the remainder of my comments, I focus on social inequality by outlining three dimensions of the link between "everyday" wealth inequality and individual opportunities. These dimensions are not mutually exclusive, but highlighting them separately is worthwhile for conceptual clarity.

Intergenerational mobility

Intergenerational mobility, or the movement between social classes from one generation to the next, has long been of interest to sociologists and economists.

The rate of upward intergenerational mobility is considered a marker of a nation's commitment to equality of life chances regardless of circumstances at birth. From a meritocratic perspective, it is unfair that circumstances at birth should dictate a child's fate. Nonetheless, even in the United States, where the rhetoric of equal opportunity is ubiquitous, the education, occupation, and income of one's parents are highly predictive of their child's position in the class structure as an adult (Groves, 2008; Hout and Janus, 2011). Wealth inequality matters for intergenerational mobility because it creates disparate opportunity structures, especially during childhood when many of the building blocks of social mobility are set. Income can have the same effect, but wealth allows people to live "beyond their means" by enabling consumption that their incomes alone would prohibit. While some of this spending might be inconsequential to persistent intergenerational inequality, such as purchasing expensive clothing, other types of consumption may have significant consequences for the transmission of privilege, such as buying a residence in certain neighborhoods, providing high-quality schooling (public or private), and obtaining superior healthcare. In addition to advantages conferred during childhood, wealth can be gifted to young adults. This may provide the means to start small businesses, make investments, or pursue personal interests that are not financially lucrative. These pathways facilitate the maintenance and generation of wealth, as well as provide the freedom to explore various life trajectories.

Wealth can therefore bolster life outcomes throughout the life course, but, perhaps more importantly, the intergenerational transmission of wealth facilitates the accumulation of physical, financial, and human capital, as well as the maintenance of health and the advantage of physical safety. The inability to partake in this intergenerational process disadvantages those with little wealth, especially in highly consequential and competitive arenas, such as elite college admissions. Thus, individuals and families with similar incomes but differential wealth may experience very different opportunities and outcomes, which in turn affects the likelihood of intergenerational mobility.

Spatial manifestation

One way in which wealth inequality directly affects opportunities is through the spatial patterning of residential choice. The segregation of families by income, or by their ability-to-pay, has always been a feature of residential life, but it has grown more severe in recent decades in the United States in large part because of the rise in income inequality (Reardon and Bischoff 2011). Research has shown that income segregation increased by nearly 30 percent in US cities between 1970 and 2009, with large increases occurring in the 1980s and 2000s. By another metric, 65 percent of families in large US cities lived in middle class neighborhoods in 1970, but only 42 percent of families lived in

such neighborhoods by 2009. And although the segregation of poverty (separation of the bottom 10 percent of earners from all others) increased more over this 40 year period than the segregation of affluence (separation of the top 10 percent of earners from all others), the level of the segregation of affluence is considerably higher in all years than the segregation of poverty (Bischoff and Reardon 2014).

The uneven distribution of income and wealth across neighborhoods matters because the neighborhood environment may be consequential for individual outcomes, especially those of children. Theoretically, the effect of neighborhood context operates through the demographic composition of a local environment as well as the quality of available resources. For instance, there is great variation in the percentage of college graduates and unemployment rates across local environments, which may affect the outcomes of individuals who live there. In addition, the quality of public schools and the quantity of green space varies considerably across neighborhoods, as does the density of hazards, such as crime and pollution. Thus, not only might there be direct effects of lower-quality public goods, but there may also be fewer spillovers across proximate local environments as the rich and poor grow more geographically disparate. Spillovers would not only distribute some portion of the higher quality goods from affluent to low-income families, but it would also perhaps encourage more interaction between socially distant individuals. And given what is known about the substantial effect of income on political influence (Bartels 2008), increasing income segregation also means increasing polarization of political power across jurisdictions. As Durlauf (1996) has shown theoretically, resource deprivation in neighborhoods may contribute to the intergenerational transfer of social class through investments in local institutions that serve children, such as schools. In areas of concentrated wealth (poverty), households are not only advantaged (disadvantaged) by their own assets, but also by the assets of their neighbors. Wealth segregation may be even more severe than income segregation due to the extreme level of wealth inequality in the US, but less is known about the degree to which families are spatially separated by wealth.

It is also possible that wealth segregation itself – a characteristic not of individual neighborhoods, but of the arrangement of neighborhoods in a region or metropolitan area – affects individual opportunities and outcomes. This would imply that the abundance of resources in some neighborhoods is not independent of the dearth of resources in others. Although theories of how segregation distinctly affects individual outcomes are not particularly well developed, research has demonstrated the negative effect of metropolitan- and state-level segregation on inequality of educational attainment, infant health outcomes, and labor market outcomes (Mayer 2002; Mayer and Sarin 2005; Cutler and Glaeser 1997). More recently, Chetty et al. (2014) show that in metropolitan areas, income segregation is negatively correlated with social mobility in the

United States. It may be the case that segregation is simply an indicator of more pervasive structural inequality that negatively affects egalitarianism in a local environment. Alternatively, more direct mechanisms may be at work. Both Durlauf and Chetty provide a link between the spatial patterning of resource inequality and intergenerational mobility.

Racial/ethnic stratification

The final dimension of wealth inequality I emphasize is that of stratification by race/ethnicity. In 2011, the median net worth of the average white household was an astonishing 14 times greater than the median net worth of the average African-American household ($91,405 versus $6,446). The typical Hispanic household faired only slightly better than the typical African-American household, having a median net worth of $7,843. Put a different way, the median net worth of African-American households was 7 percent of that of white households in 2011. Although also cause for great concern, income gaps are far smaller than wealth gaps – in 2011, the median African-American household earned 59 percent of the income of the median white household (Pew Social Trends 2013).

The difference in racial/ethnic disparities between income and wealth highlights the fact that wealth inequality is stubborn and difficult to remedy in the short term. This is, in part, because of its entrenched, structural roots in discriminatory practices in the housing market, the education system, and the labor market. Even in the case of a first-generation college graduate who experiences upward intergenerational mobility and a relatively high salary, the resources at her disposal, especially in young adulthood, will most likely be of her own making. It may take several generations for families and individuals to build wealth and achieve true equity in opportunity, despite the façade of equity provided by income alone.

Subnational inequality is not captured by blunt measures such as GDP. National economic growth is likely not distributed equally among all members of a society, and, likewise, the perils of economic downturns affect some groups more than others. During the Great Recession, Hispanic and African-American families' median wealth declined by 66 and 53 percent, respectively, while white families' median wealth fell by only 16 percent (Kochhar, Fry, and Taylor 2011). As we move toward a more multi-ethnic and global society, inequality that cuts along ascribed characteristics is not only contrary to the norms and values that most societies claim to embrace, but it also causes special injury to the social and economic fabric of our societies, the effects of which are experienced over generations.

As highlighted by Bagchi and Svejnar, wealth inequality is rarely studied despite the theoretical interest in linking national resource inequality to growth. Although data limitations prevent the authors from including a comprehensive

measure of wealth inequality, their approach highlights the overreliance on income inequality as the standard measure of resource inequality. My comments have taken the issue of wealth inequality from a macroeconomic to a sociological perspective, highlighting social structural dimensions of the link between wealth inequality and opportunities for social and economic advancement.

References

Bartels, Larry M. (2008) *Unequal Democracy: The Political Economy of the New Gilded Age*. Princeton, NJ: Princeton University Press.

Bischoff, Kendra and Sean Reardon (2014) "Residential Segregation by Income, 1970–2009," in J. Logan (ed.), *Diversity and Disparities: America Enters a New Century*. New York, NY: Russell Sage Foundation.

Chetty, Raj, Nathaniel Hendren, Patrick Kline, and Emmanuel Saez (2014) "Where is the Land of Opportunity? The Geography of Intergenerational Mobility in the United States," *Quarterly Journal of Economics*, vol. 129, pp. 1553–1623.

Cutler, David M., and Edward L. Glaeser (1997) "Are Ghettos Good or Bad?," *Quarterly Journal of Economics*, vol.112, pp. 827–71.

Durlauf, Steven (1996) "A Theory of Persistent Income Inequality," *Journal of Economic Growth*, vol. 1, pp. 75–93.

Groves, M.O. (2008) "Personality and the Intergenerational Transmission of Economic Status," in S. Bowles, H. Gintis, and M.O. Groves (eds), *Unequal Chances: Family Background and Economic Success*. Princeton, NJ: Princeton University Press.

Hout, Michael and Alexander Janus (2011) "Educational Mobility in the United States Since the 1930s," in Greg Duncan and Richard Murnane (eds), *Whither Opportunity? Rising Inequality, Schools, and Children's Life Chances*. New York: Russell Sage Foundation and Chicago: Spencer Foundation, pp. 165–85.

Keister, Lisa (2014) "The One Percent," *Annual Review of Sociology*, vol. 40, pp. 347–67.

Keister, Lisa and Stephanie Moller (2000) "Wealth Inequality in the United States," *Annual Review of Sociology*, vol. 26, pp. 63–81.

Kochhar, Rakesh, Richard Fry, and Paul Taylor (2011) "Twenty-to-One: Wealth Gaps Rise to Record Highs Between Whites, Blacks, and Hispanics." Pew Research Center, Washington, DC. http://www.pewsocialtrends.org/2011/07/26/wealth-gaps-rise-to-record-highs-between-whites-blacks-hispanics/.

Mayer, Susan E. (2002) "How Economic Segregation Affects Children's Educational Attainment," *Social Forces*, vol.81, pp. 153–76.

Mayer, Susan E., and Ankur Sarin (2005) "An Assessment of Some Mechanisms Linking Economic Inequality and Infant Mortality," *Social Science and Medicine*, vol. 60, pp. 439–55.

Pew Social Trends (2013) "King's Dream Remains an Elusive Goal; Many Americans See Racial Disparities," Pew Research Center, Washington, DC. http://www.pewsocialtrends.org/2013/08/22/kings-dream-remains-an-elusive-goal-many-americans-see-racial-disparities/.

Reardon, Sean F. and Kendra Bischoff (2011) "Income Inequality and Income Segregation," *American Journal of Sociology*, vol. 116, no. 4, pp. 1092–1153.

Wolff, Edward (2002) *Top Heavy: A Study of the Increasing Inequality of Wealth in America*. New York: New Press.

6

Inequality in Arab Countries

Radwan A. Shaban

Inequality is often mentioned as a factor contributing to the recent and ongoing regional changes in the Arab countries. This paper briefly highlights what is known about measured inequality in the region. The focus of the paper is on inequality measures that are based on national household consumption and income surveys, while the final section broadens the discussion on inequality.

6.1 Levels of inequality in Arab countries

The data used in this paper are taken from the World Bank database. Inequality is reported using the Gini index of inequality in consumption/income. Table 6.1 reports the inequality measure for Arab countries in the database for all available years. One thing to note is that some countries are missing from the table as a result of non-availability of their household datasets. In particular, Qatar is the only Gulf Cooperation Council (GCC) country for which a Gini index is available and only in 2007.

6.2 In a global context, measured inequality in Arab countries is not excessively high

In a comparative global context, inequality in the Arab countries is not excessively high. The median Gini index across countries for the latest available year is: 38.5 percent for the world and 40 percent among all emerging and developing economies. Whether compared to the global median or that of emerging and developing regions, the median Gini index among Arab countries is comparatively lower at 36.0 percent (Table 6.2). The only emerging/developing region with lower median inequality than Arab countries is that of Eastern Europe and Central Asia. In particular, the median Gini index is higher in Africa or in the East Asia and Pacific region. While median inequality in Latin America is the highest among all developing and emerging regions, this partly reflects

Table 6.1 Gini index of income/consumption inequality in the Arab countries, by available year

Algeria	(1988, 40.2)	(1995, 35.3)	(2000, 34.0)	(2011, **31.0**)			
Egypt	(1991, 32.0)	(1996, 30.1)	(2000, 32.8)	(2005, 32.1)	(2008, **30.8**)		
Iraq	(2007, **30.9**)						
Jordan	(1987, 36.1)	(1992, 43.4)	(1997, 36.4)	(2003, 38.9)	(2006, 37.7)	(2008, 33.8)	(2010, **35.4**)
Mauritania	(1987, 43.9)	(1993, 50.1)	(1996, 37.3)	(2000, 39.0)	(2004, 41.3)	(2008, **40.5**)	
Morocco	(1985, 39.2)	(1991, 39.0)	(1999, 39.5)	(2001, 40.6)	(2007, **40.9**)		
Palestine	(2007, 38.7)	(2009, **35.5**)					
Qatar	(2007, **41.1**)						
Sudan	(2009, **35.3**)						
Syria	(2004, **35.8**)						
Tunisia	(1985, 43.4)	(1990, 40.2)	(1995, 41.7)	(2000, 40.8)	(2005, 41.4)	(2010, **36.1**)	
Yemen	(1992, 39.0)	(1998, 33.4)	(2005, **37.7**)				

Note: Each pair presents the year and the corresponding Gini index in %. The latest available Gini index is presented in boldface.
Source: World Bank database. The data for Algeria in 2000 and 2011 are taken from IMF Article IV report (May 2014).

Table 6.2 Gini index (%) – the regional median

Region	Median
World	**38.5**
Emerging and Developing Countries	**40.0**
North America	37.0
Western Europe	32.0
Latin America and Caribbean	50.0
Eastern Europe and Central Asia	34.0
Arab Countries	**36.0**
Africa	43.5
South Asia	36.0
East Asia and Pacific	38.5

Source: World Bank Inequality database.
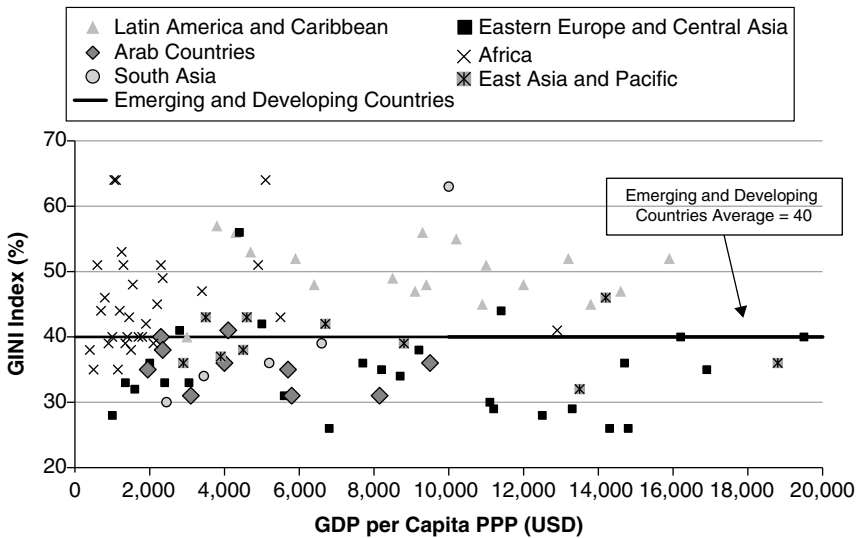
Figure 6.1 Gini index of inequality in Arab countries is not comparatively high
Source: World Bank Inequality database.

the fact that the welfare measure captured in most Latin American surveys relies on income, the distribution of which is typically more unequal than that of consumption.

As the median can hide country variations, Figure 6.1 shows a scattergram for emerging and developing countries of the Gini index versus GDP per capita in purchasing power parity terms. While there are indeed country variations, the figure clearly shows that the Gini index in the Arab countries is not particularly higher than in other regions, except for countries in Eastern Europe and Central Asia.

6.3 The Gini inequality index in Arab countries has not increased excessively over time

Figure 6.2 shows the trends over time in the Gini index for Arab countries with at least two years of available measures. There are indeed several patterns of changes in measured inequality over time. The figure does not reveal a generalized trend of rising measured inequality. Indeed, the most recent change in the Gini index reflects a *decline* in measured inequality in Algeria (2000, 2011), Egypt (2000, 2005, 2008), Tunisia (2005, 2010), and Palestine (2007, 2009).

6.4 Divergence/convergence among Arab countries

One possibility to consider is that rising inequality *among* Arab countries in economic fortunes could be an important factor. This would be the case if people compare their wellbeing with that of others in the whole region of Arab countries, not just their own country. This regional comparison could be
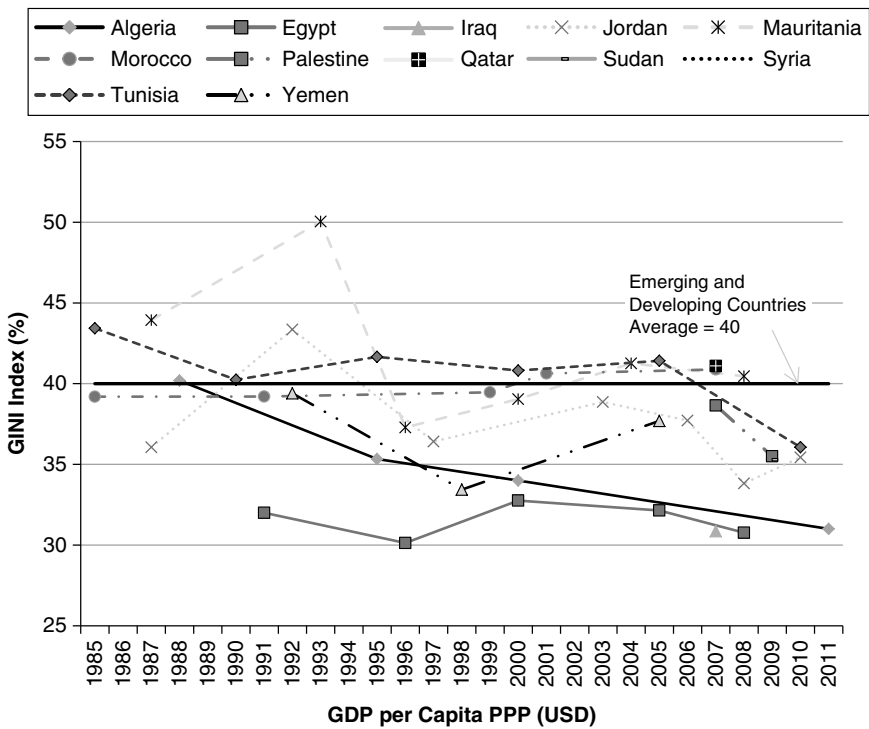
Figure 6.2 Measured inequality in Arab countries has not increased excessively
Source: Table 6.1.

driven by the large disparity in economic indicators, particularly among oil and non-oil countries, along with the close proximity and shared history and culture. The pattern of convergence or divergence across Arab countries would be an important indicator for whether inequality at the level of the whole Arab Region has increased or not.

There is a striking link between the oil price and the average regional GDP per capita for the Arab countries,[1] weighted by their population (Figure 6.3). Both the oil price and the regional average nominal GDP per capita dropped throughout the 1980s, fluctuated in a narrow range in the 1990s, and only recovered, and strongly so, in the 2000s. The oil price reached its 1980 level of USD 37/barrel only in 2004. The Arab regional GDP per capita reached its 1980 level of USD 2,886 only in 2003. This demonstrates the significance of oil not only for the oil-exporting countries, but for the whole Arab region. Indeed, the correlation coefficient of the oil price with GDP per capita is 0.986 for the oil economies, 0.913 for the non-oil economies, and 0.984 for the whole Arab region during 1980–2013. While outside the scope of this paper, there are important linkages that transmit outcomes from oil-exporting to oil-importing
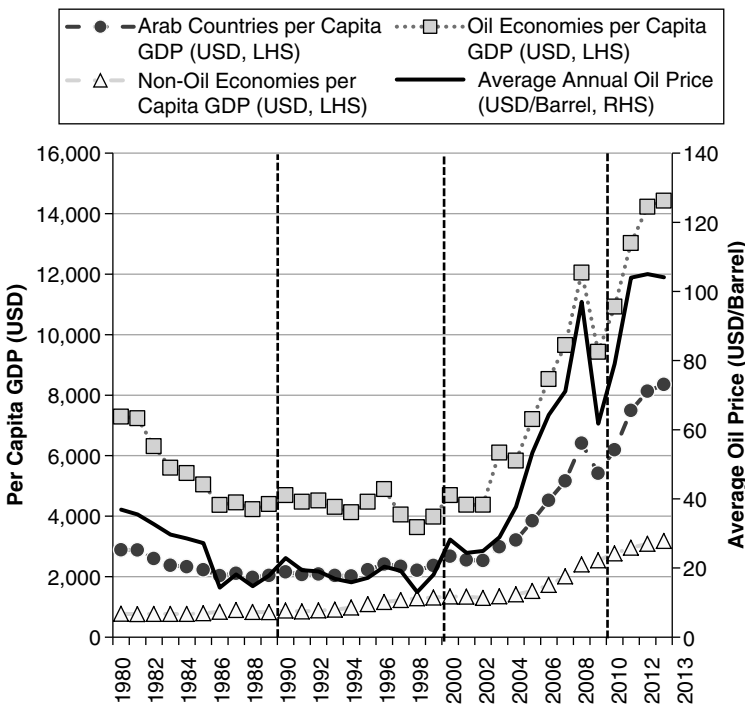
Figure 6.3   Arab region's GDP per capita is closely tied to the oil price
Source: World Bank.

countries through labor migration and remittances, trade, investment flows, and official financial assistance.

Given the dominance of oil in the economies of all Arab countries, it is therefore important to explore whether Arab economies have converged or diverged over time. This is done by examining the trends for Arab countries in GDP per capita relative to the year-specific regional population-weighted average of GDP per capita. The ratio of GDP per capita to its regional average is shown for the richer-than-average countries in Figure 6.4 and for the poorer-than-average countries in Figure 6.5. The GCC countries have higher income levels, and hence fall above the 1.0 ratio in any given year. If rich countries get richer while poor countries get poorer over time, then the trends in relative GDP would be rising over time in Figure 6.4 and declining over time in Figure 6.5. This is the case for Qatar, with a rising GDP per capita relative to the regional average since the mid-1990s, as a result of substantial investment in the production and export of gas. But the UAE's relative position has fallen since 2002, largely as a result of rapid population increase. While all six GCC countries have higher GDP per capita than the regional average, there are varying patterns for each country, making it difficult to conclude a specific generalized pattern for all oil or richer countries in Figure 6.4.

Similarly, the pattern in Figure 6.5 for poorer countries shows different country-specific patterns of their position relative to the regional average, but no generalized trend of relatively poor countries getting poorer over time.
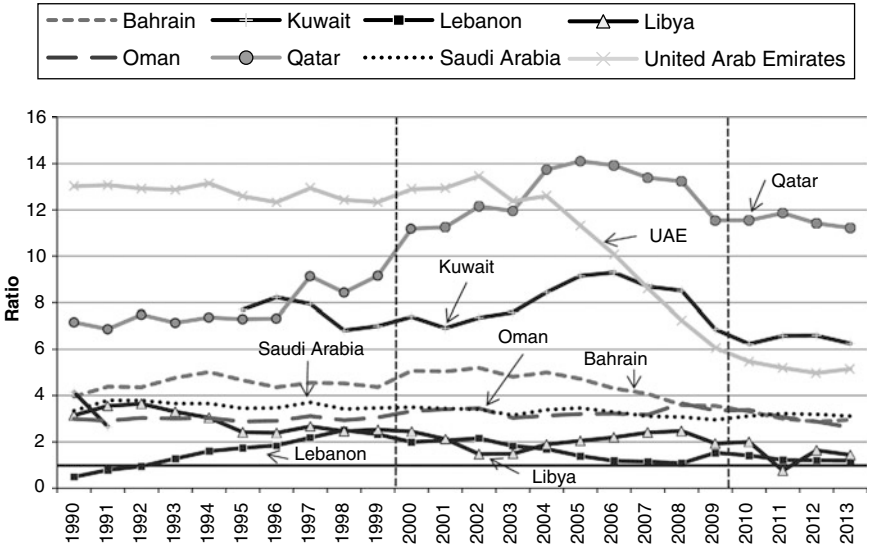
Figure 6.4 GDP per capita of richer Arab countries relative to the regional average, since 1990
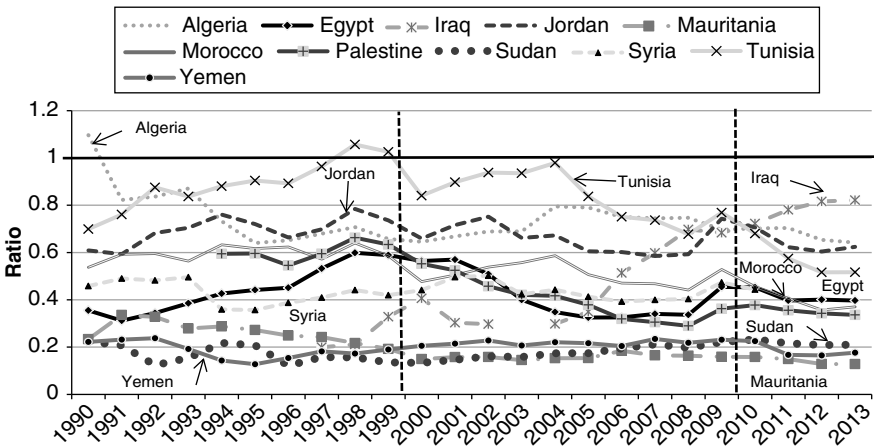
Figure 6.5 GDP per capita of poorer countries relative to the regional average, since 1990
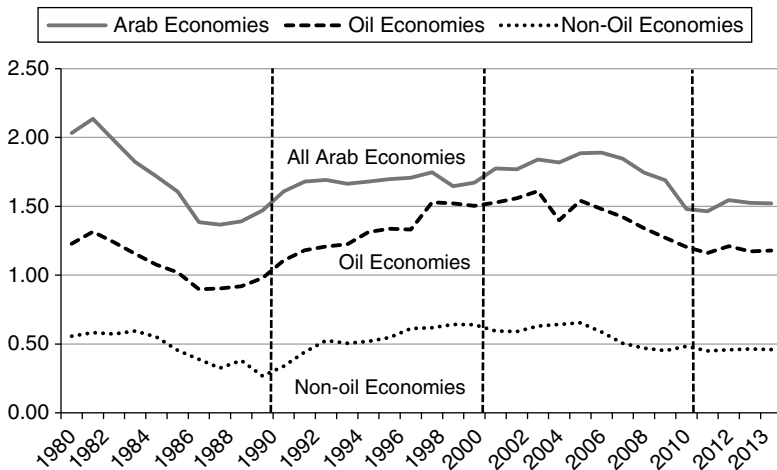
Figure 6.6 Coefficient of variation of GDP per capita among Arab countries

Whether there has been increasing or declining spread among Arab countries in their nominal GDP per capita, Figure 6.6 shows the coefficient of variation (CV) of GDP per capita among Arab countries. The CV has declined in the 1980s, reflecting the greater impact of the drop in the oil price on the richer oil-exporting countries at this time. Separating Arab economies into oil and

non-oil economies, the CV increased for both groups in the 1990s and declined in the 2000s. Consequently, the CV for all Arab economies slightly increased in the 1990s and the early part of the 2000s, only to fall from 1.9 in 2004–05 to a low of 1.5 in 2009–10; the latter period had a low oil price following the global financial crisis while the economies of Arab countries with large population were doing relatively better. The increase in the CV in 2011 is a reflection of a stronger oil price on the one hand, and difficult economic condition in poorer and oil-importing Arab countries. ***In conclusion, the trend in the coefficient of variation of GDP per capita among Arab countries would not be consistent with rising inter-country inequality accompanying the rapid increase in incomes in the 2000s.***

6.4   Other explanations

There are several other explanations that have been proposed for the popular demand for fairness and social justice and that are not fully captured by the levels or trends in measured income/consumption inequality. The following are four sets of such explanations.

One set of arguments focuses on measurement errors as an explanation. Household surveys are known to be relatively inadequate in capturing income/consumption among the rich and extremely rich. But this is true in many countries, and over time. Thus, for this argument to be valid, either of two things also has to happen. First, the surveys in the Arab World are worse in capturing the extent of inequality than in other regions of the world, making measurement errors larger in Arab countries compared to other regions. Second, measurement errors have increased over time in the Arab region, thus diluting the true underlying increase in inequality in any given country. However, the validity of either of these two arguments requires additional rigorous investigation.

The second set of arguments is that the relevant population for inequality comparison is not at the level of a given country. (i) It could be larger than the country to include the whole Arab region, which would bring inequality among countries into focus; this was discussed in the previous section. (ii) The relevant population for analysis could also be viewed as among subsets of a country's population. For example, growth may have benefited urban population more than the rural population, or those in the capital city than in outlying areas, or the coastal than inland regions. (iii) Also, the relevant group to observe could be other subsets of the population, such as the middle class in relation to other classes.

A third set of arguments relates to the notion that another variable broader than income is the relevant factor for the sense of social justice or fairness. Inequality in wealth may be the variable of focus. Another dimension is

inequality of opportunity, with a focus on public services such as education and health, or access to economic factors such as land, jobs, or other economic resources.

A fourth set of arguments is based on relative deprivation, and the perception of improvement relative to others.

Note

1. This section uses data for 19 Arab countries, broken down into the richer 9 "oil" economies of Algeria, Bahrain, Iraq, Kuwait, Libya, Oman, Qatar, Saudi Arabia, the UAE; and 10 poorer "non-oil" economies of Egypt, Jordan, Lebanon, Mauritania, Morocco, Palestine, Sudan, Syria, Tunisia and Yemen. GDP and population data are from the World Bank database.

Resolving the Arab-Spring Paradox: Comments on "Inequality in Arab Countries" by Radwan A. Shaban

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For the decade prior to the Arab Spring of 2010–11, the developing countries in the Middle East and North Africa were enjoying relatively rapid economic growth, averaging about 5 percent a year (Figure 6a.1). Yet a number of these countries faced uprisings and popular protests that toppled four autocratic leaders. The call for "bread, freedom and social justice" by the protesters led many observers to speculate that the growth was not broadly shared (see, for instance, Ncube, Anyanwu and Hausken, 2013; Alvaredo and Piketty, 2014).

Radwan Shaban's paper, "Inequality in Arab Countries," challenges the notion that the fruits of economic growth were not being shared across the population. He shows that, for Arab countries, within-country inequality was lower than the average for middle-income countries.

Furthermore, this inequality was *declining* during the period prior to the Arab Spring. In addition, whereas there is a wide variation in per capita GDP among Arab countries, these differences were narrowing during the same period. That is, between-country inequality was also declining.

Shaban's paper therefore raises a puzzle: If growth was high and inequality low and declining, why did the Arab Spring happen? What were the protesters demanding if these standard measures of economic welfare were moving in a favorable direction? A partial answer lies in the particular social contract between the government and the people in Arab countries. This contract was responsible for the positive indicators observed in these countries. But it could not meet the needs and aspirations of the growing middle class, who rose up to demand a new social contract.

Before going any further, we note that there are other indicators that corroborate Shaban's findings. First, in addition to declining inequality, extreme poverty in MENA has been falling and, at 2.4 percent, is one of the lowest in the world (Figure 6a.2). Secondly, the World Bank's second goal, boosting shared prosperity, where the latter is defined as the per capita income of the bottom 40 percent, also appears to be within MENA's reach. For those countries where
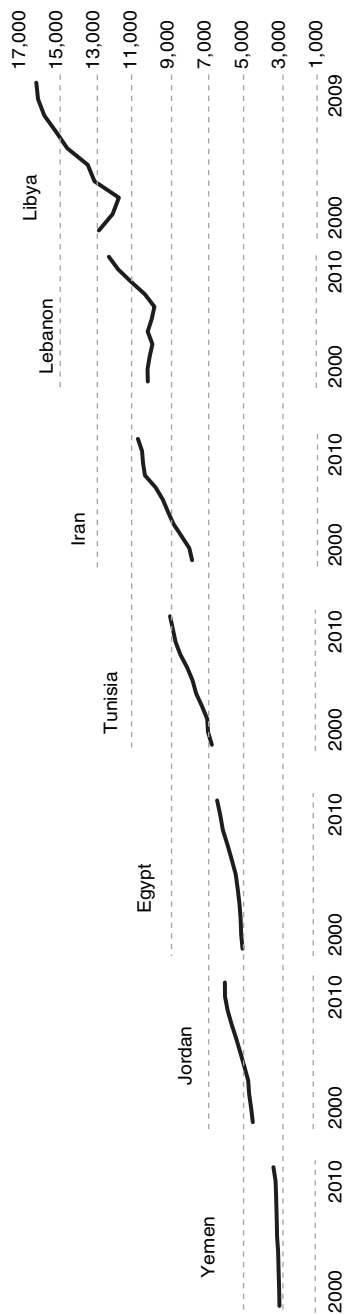
Figure 6a.1 GDP per capita, constant 2005 US dollars
Source: World Bank, MENA Quarterly Economic Brief, July 2014.
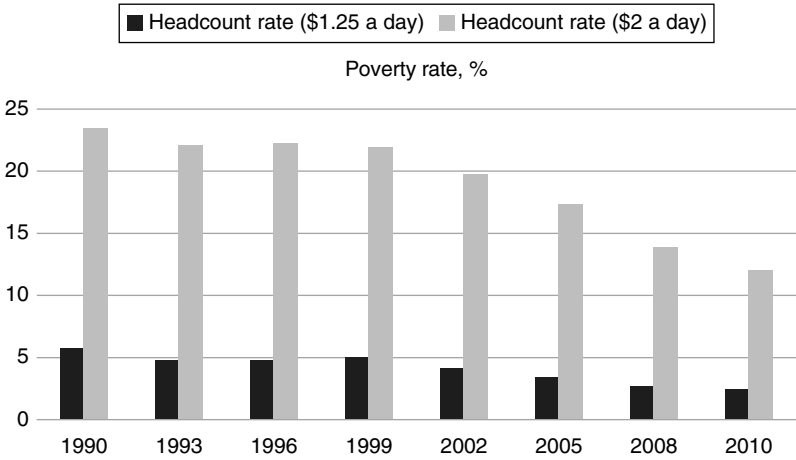
Figure 6a.2 Poverty rates in MENA
Source: World Bank, *World Development Indicators*, 2013.
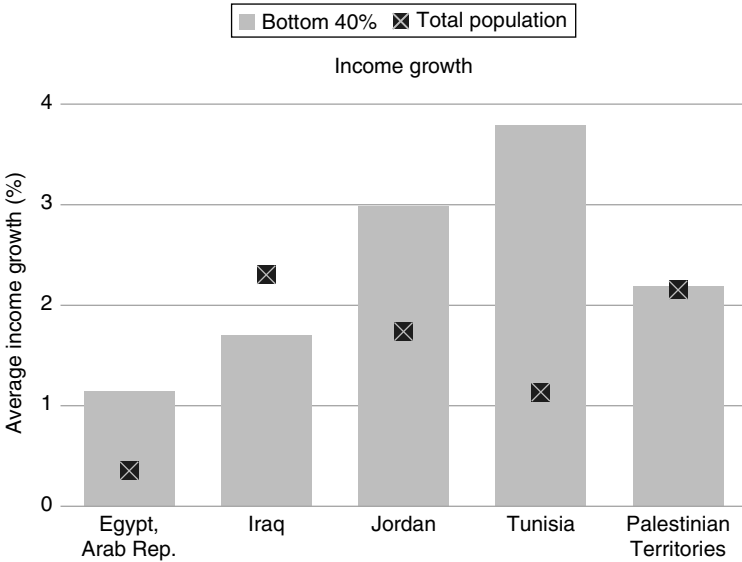
Figure 6a.3 Income growth in selected MENA economies
Source: World Bank Calculations from household surveys.

there are reliable data, in all but Iraq, the per capita income of the bottom 40 percent grew faster than the average (Figure 6a.3). These included the Arab Spring countries of Egypt and Tunisia. Finally, in terms of human indicators, MENA countries have had one of the best performances in the world. For

instance, child mortality rates fell faster than anywhere else, and the levels are comparable to those in much richer countries today (Figure 6a.4; Iqbal and Kiendrebiego, 2014).

While these facts may add to the Arab Spring paradox, in fact they contribute to its resolution. We start by asking the question: how did these countries manage to achieve such remarkable progress? The answer has to do with the social contract that existed between the government and its people. In almost all countries, governments provided free education and health; subsidies for food and, later, fuel; and jobs in the public sector with guaranteed benefits for life. The result was that human development progressed at a rapid pace; the economy grew thanks to oil-related rents and public investments; and the poor were protected with food subsidies. The outcome, as Shaban notes, was low and declining inequality, low poverty and, at least using the World Bank's definition, shared prosperity.

On the other side of this social contract, however, were governments that were authoritarian, brooked very little dissent, and in some cases denied human rights to certain groups.

At the turn of the century, several aspects of this social contract were beginning to fray. First, because of significant fiscal deficits, the public sector could no longer be the "employer of first and last resort." In fact, the public sector started retrenching. A generation of young people, who had diligently gone to school thinking they would get a public sector job, found themselves unemployed. Worse, their skills were not suited to the private sector, which nevertheless was not growing rapidly enough to absorb them. MENA found itself with the highest unemployment rate in the developing world, with the rates
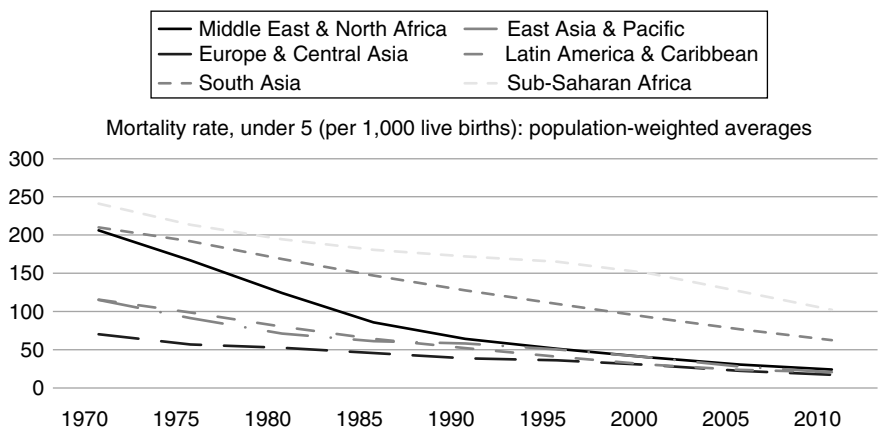
Figure 6a.4 Child mortality in different regions
Source: Iqbal and Kiendrebeogo (2014).

for young people and women nearly double the overall rate (Figure 6a.5). The unemployment rate was highest among those with a tertiary education.

Moreover, the few jobs that were available were based on connections (or "*wasta*") rather than merit, adding insult to injury (Figure 6a.6).

An important point to note is that these unemployed people were not the poor. The fact that they had finished high school and, in some cases, university puts them in the top half of the income distribution. They were the people
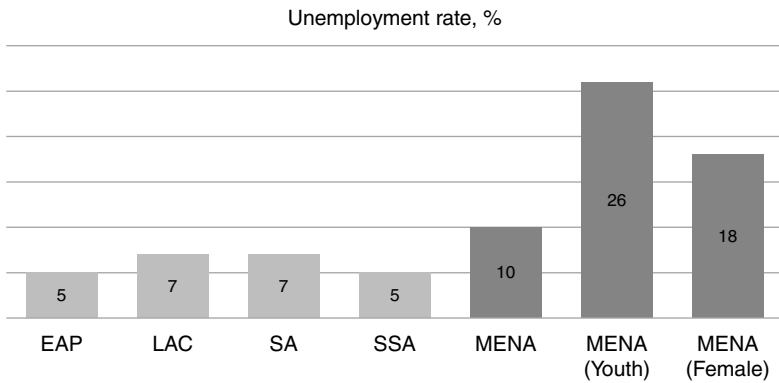
Unemployment rate, %

Figure 6a.5   Unemployment in MENA and other regions
Source: World Bank, *World Development Indicators*.
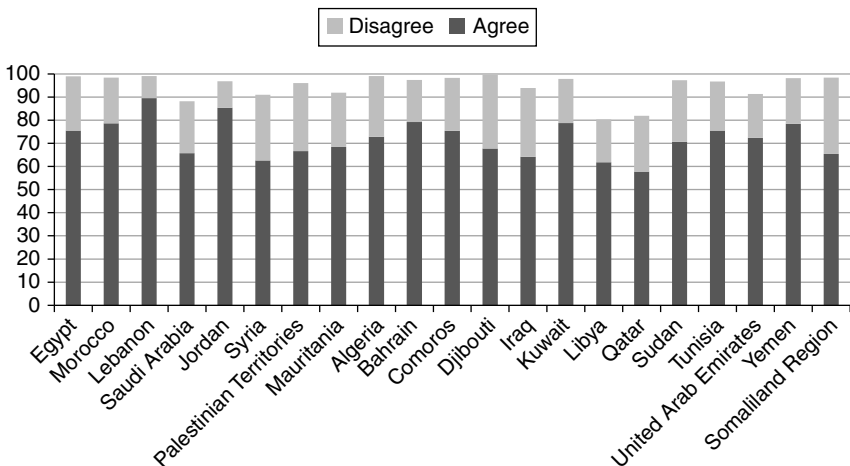
Figure 6a.6   Connections are critical to getting a job
Source: Hana Polackova Brixi, Ellen Marie Lust, and Michael Woolcock (2015) *Trust, Voice, and Incentives: Learning from Local Success Stories in Service Delivery in the Middle East and North Africa.* Washington, DC: World Bank Group.

whose families could support them while they were searching for a job. The majority of workers were in the informal sector, with much lower earnings. In Egypt, the share of the private labor force in informal employment ranges from 41 to 54 percent (World Bank, 2014). These people were technically not unemployed, but their situation was arguably worse. As the public sector retrenched, more and more workers entered the informal sector, further bidding down their earnings.

Secondly, it was becoming clear that lagging private sector job growth was related to the autocratic nature of the regimes. In particular, friends and families of the autocrats benefited through monopoly rents in domestic industries, undermining export competitiveness and employment creation. For instance, the firms associated with former Tunisian President Ben Ali's family, while they were only 0.8 percent of industrial output, accounted for 21 percent of profits (Rijkers, Freund and Nucifora, 2014). Moreover, these firms profited from regulations that restricted foreign investment in sectors where they were involved – mostly non-tradable sectors such as transport, banking and telecommunications – which raised prices for inputs to the tradable sectors and made them less competitive globally. As a consequence, growth was insufficient to absorb the large number of young people entering the labor market each year. Put another way, while the growth rate was relatively high, and variation in growth among MENA countries declining, the job-intensity of that growth was lower than in other middle-income countries, leading to a different kind of resentment.

Thirdly, while they protected the poor to some extent, the web of subsidies that were part of the social compact had become more of a burden than a benefit. Fuel subsidies, in particular, accrued mainly to the rich and resulted in an economic structure that favored capital- rather than labor-intensive industries. There is also evidence that, in Egypt, politically connected firms benefited disproportionately from fuel subsidies (Schiffbauer et al., 2014). And the previously free education and health, while it delivered on basic education and health, was becoming increasingly ineffective at delivering quality. Teacher and doctor absenteeism in schools and clinics were common. And a private sector emerged that made people pay for the same services to which they were entitled. As a woman in Egypt put it, "You can go to the private clinic and lose all your money, or go to the public clinic and lose your life" (World Bank, 2013).

As a reflection of these difficulties with the social compact, citizens' satisfaction with their governments was deteriorating, even when other economic indicators were looking promising. In almost all countries, the "life satisfaction index" was declining during the five years before the Arab Spring (Figure 6a.7).

Governments – and, to some extent, the international community – did not heed these signs. Resentment grew to the point where it erupted into widespread protests and in four countries, the autocratic leader was removed from office.
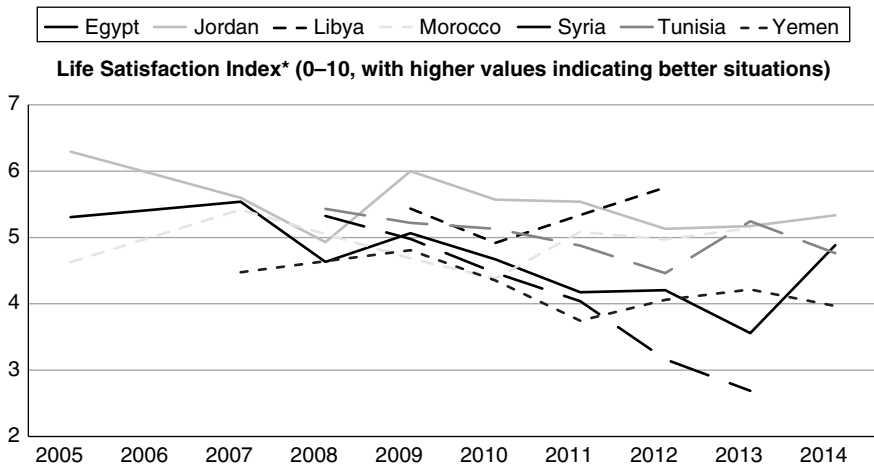
Figure 6a.7   Indicators of life satisfaction
Note: *Answer to question: Please imagine a ladder, with steps numbered from 0 at the bottom to 10 at the top. The top of the ladder represents the best possible life for you and the bottom of the ladder represents the worst possible life for you. On which step of the ladder would you say you personally feel you stand at this time?*
Source: Gallup World Poll (2015).

   In the four years since the Arab Spring, owing to continued political conflict and civil unrest, the economic situation in these countries has deteriorated. To calm political dissent, governments have undertaken actions that have served to reinforce the original social contract. Subsidies and public sector employment have increased. Public education and health continue to be delivered with little accountability to citizens. In some countries, political repression continues.

   Yet the lesson from this interpretation of the Arab Spring is that a new social contract is needed. The resolution of the Arab Spring paradox gives us the contours of such a contract. Industrial policy should emphasize competition (a "level playing field") to avoid capture of privileged industries by political elites. Subsidies should be replaced with targeted cash transfers, which reduce leakage of resources to the rich and give poor people a choice in which goods to consume. Health and education should be reformed to give citizens a voice in the quality of services. And the public sector should be rationalized to perform those functions that government should perform, rather than be an employer of first or even last resort.

   By pointing to the paradox of low inequality and citizen unrest in the Arab World, Shaban's paper has helped focus attention on the social contract, which contributed both to the low inequality and to the popular protests. This observation, in turn, provides the basis for a new social contract, one that is better

suited to the modern-day Arab World. Rarely has a paper that posed a puzzle made such an important contribution.

References

Alvaredo, Facundo and Thomas Piketty (2014) "Measuring Top Incomes and Inequality in the Middle East: Data Limitations and Illustration with the Case of Egypt," Working Paper No. 832, Economic Research Forum.

Iqbal, Farrukh and Youssouf Kiendrebeogo (2014) "The Reduction of Child Mortality in the Middle East and North Africa – A Success Story," World Bank Policy Research Working Paper 7023.

Ncube, Mthuli; John Anyanwu and Kjell Hausken (2013) "Inequality, Economic Growth and Poverty in the Middle East and North Africa," Working Paper No. 195, African Development Bank, December.

Rijkers, Bob; Caroline L. Freund and Antonio Nucifora (2014) "All in the Family: State Capture in Tunisia," World Bank Policy Research Working Paper No. 6810.

Schiffbauer, Marc, Abdoulaye Sy, Sahar Hussain, Hania Sahnoun and Philip Keefer (2014) *Jobs or Privileges: Unleashing the Employment Potential of the Middle East and North Africa*. Washington, DC; World Bank Group.

World Bank (2013) *Fairness and Accountability: Engaging in Health Systems in the Middle East and North Africa*. Washington, DC: World Bank.

World Bank (2014) "More Jobs, Better Jobs: A Priority for Egypt." Washington, DC: World Bank.

7

Deconstructing the Decline in Inequality in Latin America[1,2]

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Introduction

High inequality is a characteristic feature of Latin America. After rising in the 1990s, however, income inequality in the region has declined while it has increased in other parts of the world. For the region as a whole, the Gini coefficient declined from an average of 0.550 in the early 2000s to 0.496 circa 2012. Of the 18 countries with available data, 16 experienced a decline in their Gini coefficient during this period. What explains this remarkable shift in inequality trends in Latin America?

This chapter presents a survey of existing results drawing on our own research and a selection of available studies.[3] The analysis suggests that the decline in inequality is robust to the selection of the time interval, inequality measure and data source. Existing studies point to two main explanations for the decline in inequality: a reduction in hourly labor income inequality, and more robust and progressive government transfers (Azevedo et al., 2015; Azevedo et al., 2013a; Cornia, 2014; De la Torre et al., 2012; Lopez-Calva and Lustig, 2010; Lustig et al., 2013). Available evidence suggests that it is a fall in the skill premium (returns to schooling) that drives the decline in hourly labor income inequality. The causes behind the decline in returns to schooling, however, have not been unambiguously established. Some studies find that returns fell because of an increase in the supply of workers with more educational attainment; others, because of a shift in demand away from skilled labor.

This chapter is organized as follows. Section 7.1 presents the evolution of inequality for Latin America. Section 7.2 includes detailed country narratives that delve into the determinants of inequality changes. A synthesis of the main findings on the causes of the decline in the returns to education is presented in section 7.3. Section 7.4 concludes.

7.1 Inequality trends in Latin America

Income inequality has declined in Latin America over the 2000s. The Gini coefficient for household per capita income fell from a weighted (unweighted) average of 0.550 (0.532) in the early 2000s to 0.496 (0.483) circa 2012. The decline occurred in 16 of the 18 countries for which there is comparable data (Figure 7.1, Panel A). The rate of decline ranged from an annual average of –2.64 percent in Nicaragua to -0.28 percent in Venezuela. The Gini coefficient for household equivalized income fell from a weighted (unweighted) average of 0.530 (0.511) in the early 2000s to 0.475 (0.463) circa 2012. The rates of decline ranged from an annual average of –2.74 percent in Nicaragua to –0.25 percent in Paraguay (Figure 7.1, Panel B). The ranking of declines is virtually unaffected by using either per capita or equivalized income.[4]

Based on actual and interpolated Gini coefficients for 18 Latin American countries, weighted estimates suggest that inequality reduction has decelerated since 2010 (Figure 7.2, Panel A). However, as shown in panel B, this result is driven entirely by Mexico. When Mexico is excluded from the group, the decline in inequality continued.[5] Using pooled regional data for Latin America as a whole, World Bank (2014) and Cord et al. (2014) have argued that inequality reduction in the region has stalled. The stagnation in inequality reduction is attributed to the impact of the financial crisis on Mexico and Central America, which reflects a cyclical fluctuation, rather than a structural underlying trend (Cord et al., 2014).

The decline is also significant in terms of orders of magnitude. As shown in Figure 7.3, in 11 of the 12 countries for which the comparison is possible, the decline in the 2000s was higher than the increase in inequality during the 1990s. The global recession in 2008–09 did not change the downward trend in most countries.

Another indication of the significance of the decline in inequality is its contribution toward reducing poverty. Since 2000, the incidence of extreme poverty – i.e., the percentage of the population earning daily incomes of US$2.50 in purchasing power parity, PPP, or less – has dropped from 25 to 12.3 percent, a reduction of roughly 49 million people (Figure 7.4). During the same period, the incidence of total poverty – defined as those earning below US$4.00 PPP per day – fell from 42 to 25.3 percent, a reduction of roughly 57 million people. Applying the Datt–Ravallion decomposition approach (Datt and Ravallion, 1992)[6] reveals that, on average, 39 percent of the reduction in poverty is due to the decline in inequality. In Argentina, Bolivia, Chile, the Dominican Republic, Ecuador, El Salvador, Mexico, Nicaragua and Peru the decline in inequality accounted for over 40 percent of the reduction in poverty (Figure 7.5).

Additionally, as a result of growth and the reduction in income inequality, Latin America experienced increased upward mobility over the last decade.

Panel A: Household per capita income

Panel B: Household equivalized income
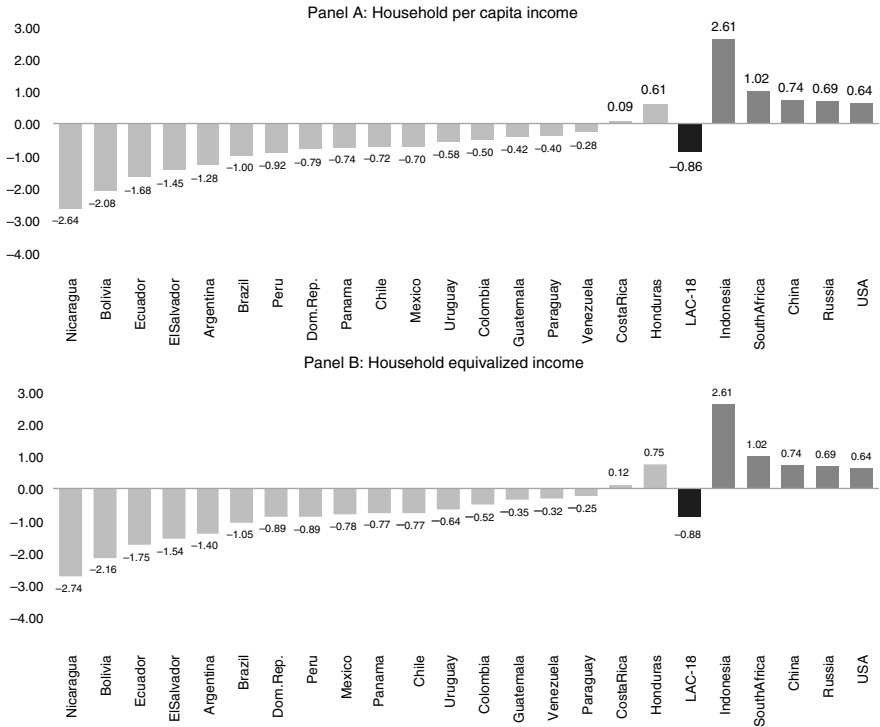
Figure 7.1 Change in the Gini coefficient; circa 2000–2012 (annual percentage change)

Notes: The average change in the Gini for each country is calculated as the percentage change between the end year and the initial year, divided by the number of years. The average for LAC-18 is the simple average of the changes by country. Using the bootstrap method, with a 95 percent significance level, the changes were not found to be statistically significant in Costa Rica. The changes in Colombia should be interpreted with caution due to comparability issues between the 2001 and 2012 surveys. The overall decline in inequality for the region as a whole remains virtually unchanged by including or excluding the Colombian figure: respectively, –0.86 and –0.88 percent for household per capita income, or –0.88 and –0.91 percent for household equivalized income. The following time periods were used to estimate the changes: Argentina (2000–13), Bolivia (2000–12), Brazil (2001–12), Chile (2000–11), Colombia (2001–12), Costa Rica (2001–09), Dominican Republic (2000–11), Ecuador (2003–12), El Salvador (2004–12), Guatemala (2000–11), Honduras (2001–11), Mexico (2000–12), Nicaragua (2001–09), Panama (2001–12), Paraguay (2001–11), Peru (2000–12), Uruguay (2000–12), and Venezuela (2000–06). The periods used for non-Latin American countries are as follows: China (1999–2009), United States (2000–10), Indonesia (1999–2011), Russia (1999–2009), and South Africa (2000–09). CEDLAS defines the household equivalized income as the total household income divided by $(A + \alpha_1 \cdot K_1 + \alpha_2 \cdot K_2)^{\theta}$, where A is the number of adults, K_1 the number of children under 5 years old, and K_2 the number of children between 6 and 14. Parameters α (with $\alpha_1 = 0.5$ and $\alpha_2 = 0.75$) are weights for adults and kids, while θ regulates the degree of household economies of scale (CEDLAS, 2012; p. 24). The changes based on household equivalized income in Panel B are for Latin American countries only.

Source: Authors' calculations, based on data from the Socio-Economic Database for Latin American and the Caribbean, SEDLAC (Center for Distributive, Labor and Social Studies, CEDLAS, and The World Bank), February 2014, for Latin American countries; World Development Indicators (World Bank) for China, Indonesia, Russia and South Africa; and Income Distribution Database (Organisation for Economic Co-operation and Development, OECD) for United States.
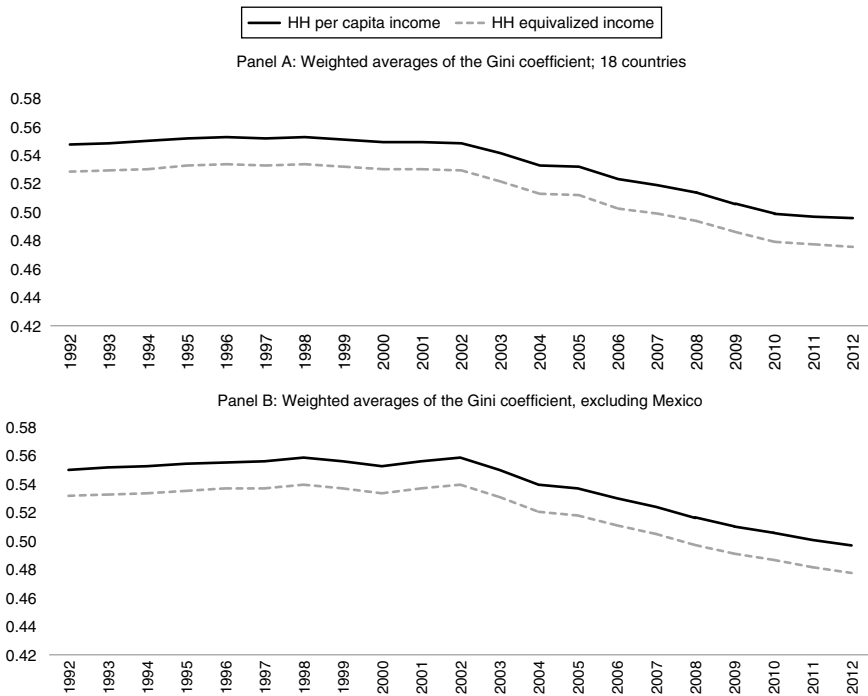
Figure 7.2 Evolution of the Gini coefficient in Latin America; 1992–2012

Notes: Linear interpolation is created in those countries with missing inequality data in a given year. This method provides Gini series during the 1992–2012 period for the following countries: Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Uruguay and Venezuela. Those series are used to estimate regional weighted averages.

Source: Authors' calculations, based on data from SEDLAC (CEDLAS and The World Bank), February 2014.

Declining income inequality appears to have had an instrumental value, not only in influencing poverty reduction, but also in contributing to the rise of the middle class. To analyze the effect of declining inequality on the size of the middle class, we consider the definition of middle class put forward by Lopez-Calva and Ortiz-Juarez (2014). The definition proposes an absolute income-based threshold, setting economic security as the condition that separates the middle class from the vulnerable.[7] Ferreira et al. (2013), using this vulnerability-based approach, show that the Latin American middle class is on the rise. Indeed, results indicate that the share of the middle class increased, on a regional weighted average, from 21.9 percent to 34.3 percent between 2000 and 2012.[8]

How much of the rise of the middle class is accounted for by the decline in income inequality? Azevedo et al. (2015) decompose the contribution of growth and inequality to the changes in the size of the middle class. Their
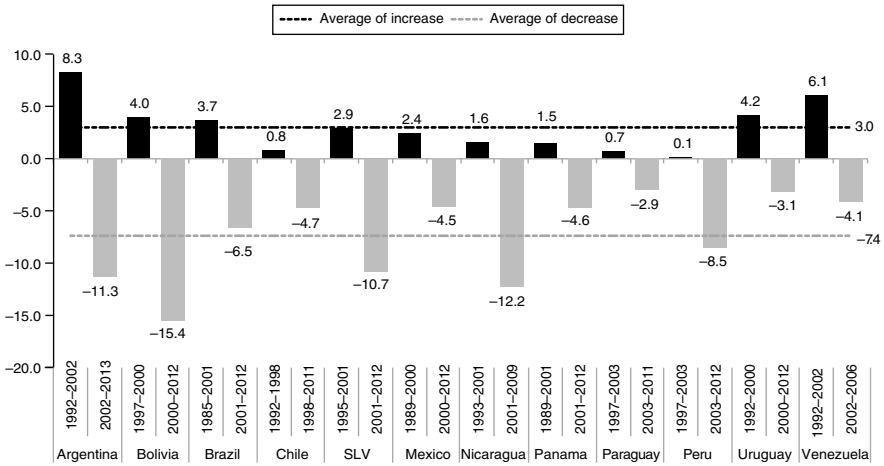
Figure 7.3 The rise and fall of income inequality (changes in Gini coefficients (in bars), expressed in percentage points)

Note: The percentage-point change in the Gini coefficient, before and after inequality started to decline. Although inequality in Ecuador started to decline in 2003, no comparable data were available for earlier years. The same occurred in Guatemala and Dominican Republic.

Source: Authors' calculations, based on data from SEDLAC (CEDLAS and The World Bank), February 2014.
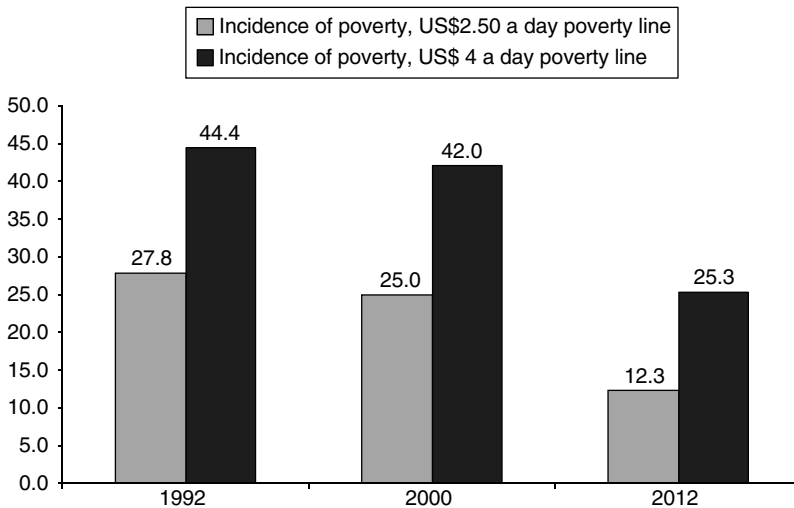
Figure 7.4 Poverty in Latin America, circa 1992–2012 (percentage of population)

Note: These figures represent the weighted average of the incidence of poverty in Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Uruguay and Venezuela.

Source: Based on data from SEDLAC (CEDLAS and The World Bank), February 2014.
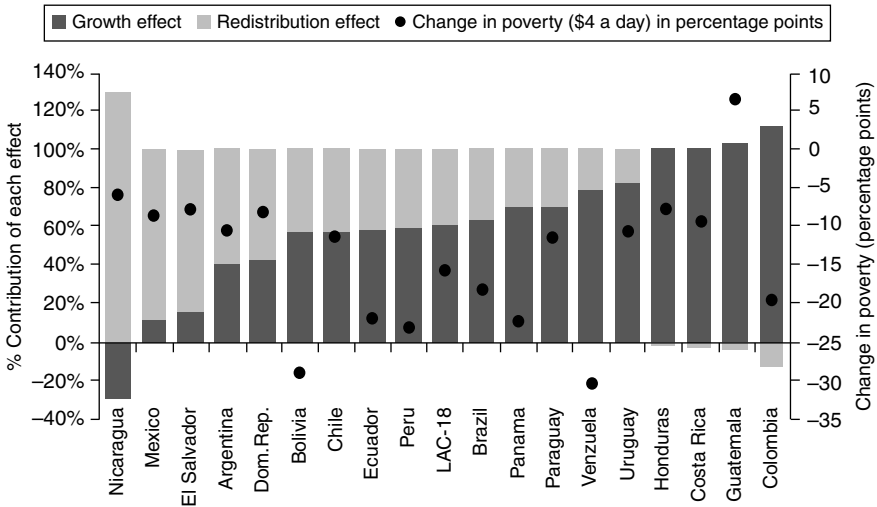
Figure 7.5 Contribution of the decline in income inequality to changes in poverty (percentages of contribution in selected countries; 2000s)

Note: The contribution which the decline in inequality made toward reducing poverty was calculated using the standard Datt–Ravallion decomposition methodology (Datt and Ravallion, 1992). The following time periods were used: Argentina (1998–2011), Bolivia (1997–2011), Brazil (2003–11), Chile (2000–09), Costa Rica (2002–09), Dominican Republic (2003–11), Ecuador (2003–11), El Salvador (1998–2010), Guatemala (2000–11), Honduras (2003–11), Mexico (2000–10), Nicaragua (2001–09), Panama (2001–11), Paraguay (2004–10), Peru (1997–2010), Uruguay (2004–11), and Venezuela (2004–11).

Source: Based on estimates provided by CEDLAS.

results suggest that, even while economic growth explains the largest share of the change in the middle class, redistribution also played a significant role. Decomposing the effects shows that, on average, 21 percent of the change in the size of the middle class was associated with the decline in inequality between 2003 and 2010. As Figure 7.6 indicates, the effect found is especially large in Bolivia, the Dominican Republic, Nicaragua and Mexico, where the reduction in inequality accounts for over 50 percent of the changes in the size of the middle class.

7.2 The equalizing role of declining skill premiums and government cash transfers

Disentangling the principal determinants of the decline in inequality in Latin America during the 2000s is not a straightforward task. Interestingly, there is no clear link between the decline in inequality and economic growth. Inequality has declined in countries that experienced rapid economic growth, such as Chile, Panama and Peru, and in countries with low-growth spells, such as Brazil and Mexico. Nor is there a link between falling inequality and the orientation
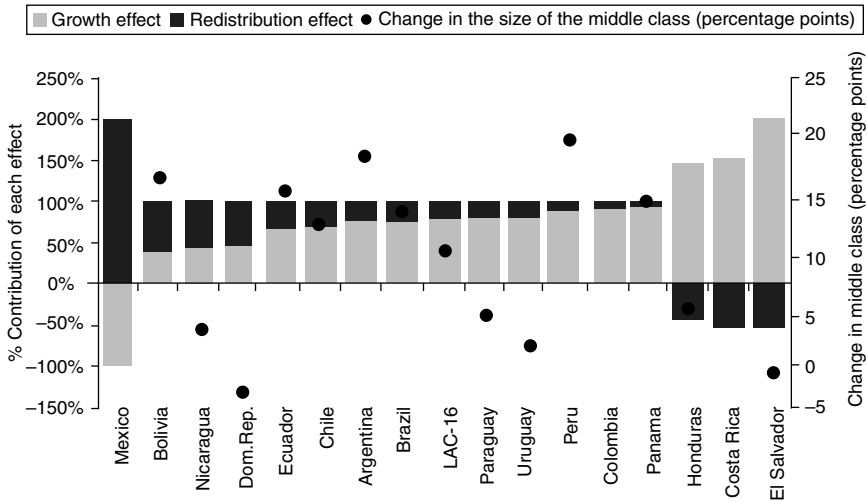
Figure 7.6   Contribution of the decline in inequality to changes in the size of the middle class (percentages of contribution in selected countries; circa 2003–2010)

Note: The contribution of the decline in inequality toward changes in the size of the middle class is calculated using the Datt–Ravallion decomposition method (Datt and Ravallion, 1992). The following time periods were used: Argentina (2004–11), Bolivia (2002–08), Brazil (2004–11), Chile (2003–09), Colombia (2003–11), Costa Rica (2003–09), Dominican Republic (2003–11), Ecuador (2003–11), El Salvador (2003–10), Honduras (2003–11), Mexico (2004–10), Nicaragua (2005–09), Panama (2007–11), Paraguay (2003–11), Peru (2004–11), and Uruguay (2003–11). The average for LAC-16 refers to the simple average of the effect in all 16 countries.

Source: Adapted from Azevedo et al. (2015), based on data from SEDLAC (CEDLAS and The World Bank).

of political regimes. Inequality has declined in countries governed by leftist regimes, such as Argentina, Bolivia, Brazil, Chile and Venezuela, as well as in countries governed by centrist and center-right parties, such as Mexico and Peru.

Existing studies point to two main explanations for the decline in inequality: a reduction in hourly labor income inequality, and more robust and progressive government transfers (Azevedo et al., 2015; Azevedo et al., 2013a; Cornia, 2014; De la Torre et al., 2012; López-Calva and Lustig, 2010; Lustig et al., 2013).

Applying a variation of the nonparametric decomposition method developed by Barros et al. (2006) to quantify the contributions to observed distributional changes,[9] Azevedo et al. (2013a) explored whether the recent decline in income inequality is the result of changes in demographic indicators (share of adults, defined as members 15 years old or more, and share of employed adults), labor income (hourly earnings) and non-labor incomes (e.g., public transfers, pensions and income from capital). Their main finding is that, for ten of the 14 countries included in their study, the most important factor has been relatively strong growth in labor income for workers at the bottom of

the income distribution and, in particular, an increase in hourly earnings. On average, 54 percent of the reduction in the Gini coefficient can be attributed to changes in hourly labor income. In terms of the contributions of non-labor incomes, changes in government transfers contributed, on average, 21 percent of the observed regional decline in inequality, while changes in pensions[10] contributed 9 percent (Figure 7.7).[11] There is, however, substantial heterogeneity across countries (see Azevedo et al. 2013a, Figure 7.7). A parametric decomposition following the Lerman and Yitzaki (1985) methodology shows similar results. During the 2000s, changes in labor income accounted, on average, for 62 percent of the reduction in inequality in the region, while transfers and pensions accounted, respectively, for 17 and 2 percent (Figure 7.7).

The key question then becomes: What explains the reduction in (hourly) labor income inequality?[12] There are several not mutually exclusive candidates: (i) human capital; (ii) labor market institutions; (iii) demographic composition of the labor force; and (iv) spatial segmentation. Human capital is usually measured by education (e.g., years of schooling) and work experience (e.g., actual years worked). Under labor market institutions, existing studies usually
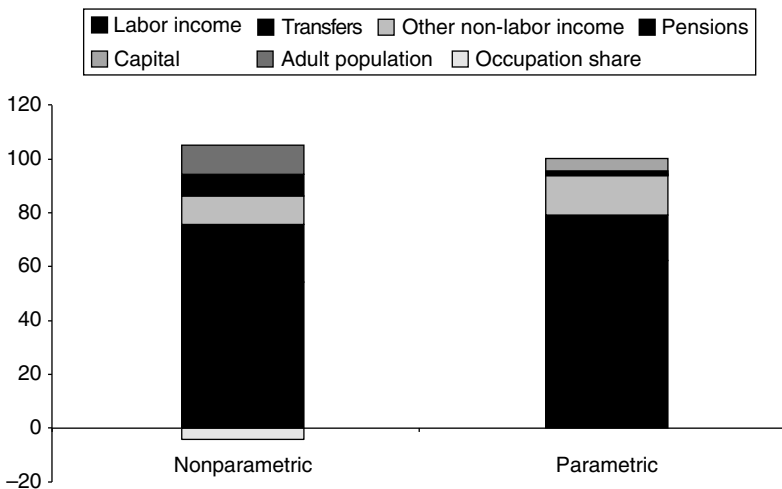
Figure 7.7 Contribution of proximate determinants to the decline in inequality (percentages of contribution; Latin America, circa 2000–2010)

Source: Azevedo et al. (2015). The nonparametric decomposition results are from Azevedo et al. (2013a), while the parametric results were provided by CEDLAS, based on data from SEDLAC (CEDLAS and The World Bank). The negative (positive) sign indicates an unequalizing (equalizing) effect of each determinant. The results shown are averages for 14 countries in the case of the nonparametric decomposition (Argentina, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Honduras, Mexico, Panama, Paraguay, Peru, and Uruguay) and 12 countries in the case of the parametric decomposition (Argentina, Bolivia, Brazil, Dominican Republic, Ecuador, El Salvador, Mexico, Nicaragua, Peru, Paraguay, Uruguay, and Venezuela). The sum of the contributions of each determinant is, as expected, 100 percent.

focus on the role of minimum wages, unionization and formality. The demographic composition of the labor force considers variables such as age, gender, and race (or ethnicity). Spatial segmentation looks into the distribution of the labor force by rural and urban areas, and by regions within a country.

Following standard labor economics, studies tend to separate out what can be attributed to changes in the distribution of the observable characteristics of workers (e.g., age, years of schooling, race, gender, working in formal or informal markets, earnings above/below minimum wages, and geographic location) – the composition or endowment effect –, and what is due to changes in returns to those characteristics – the pay structure effect.[13] Estimates of the size of the endowment and pay structure effects for each factor help identify the orders of magnitude of the 'proximate' determinants of observed changes in labor income inequality. The search for the 'fundamental' causes requires further steps. One key step, for example, is to assess the role of demand, supply and other factors (e.g., changes in the quality of education) in explaining the changes in returns to human capital. In turn, one may want to push the causal inference process further by, for example, linking the changes to structural changes in the composition of output (led by, for example, a boom in international commodity prices) and changes in education policy.

Existing studies do not cover the entire range of potential candidates in each case. However, in line with Lopez-Calva and Lustig (2010) and Gasparini and Lustig (2011), available evidence suggests that a fall in the returns to human capital – or, more precisely, in the returns to education – is a common factor to explain the decline in hourly labor income inequality (Azevedo et al., 2013b; Barros et al., 2010; Campos et al., 2014; De la Torre et al., 2012; Ferreira et al. 2014; Gasparini and Cruces, 2010). In particular, during the 2000s, in the majority of the 16 countries where overall inequality declined, the return to primary, secondary and tertiary education versus no schooling or incomplete primary schooling declined. In Brazil, Ecuador, Nicaragua, and Paraguay the return declined for all levels of education, vis-à-vis no schooling or incomplete primary, while in Costa Rica a decline was reported only for the return to primary education versus no schooling or incomplete primary, and in Uruguay only for the return to tertiary education. Results are more mixed for the remaining countries (Figure 7.8). Cornia's analysis (2014) confirms most of the previous evidence for six countries: Chile, Ecuador, El Salvador, Honduras, Mexico, and Uruguay. In particular, his findings show that changes in labor income explain a significant share of the shift in income inequality observed during the 2000s, and that the upward (during the 1990s) or downward (during the 2000s) trends in labor income inequality were accompanied in most cases by parallel shifts in the skill premium.

It should be noted that the endowment effect associated with changes in the distribution of education have tended to be unequalizing in spite of the fact

Figure 7.8 Changes in the Gini coefficient and in the returns to education (annual percent change; 2000s)

Note: The returns to different levels of education are calculated with respect to no schooling or incomplete primary school. Skill categories are determined by level of formal education. Educational levels correspond to completed primary school, lower- and upper-secondary school, and tertiary education. The time periods used to estimate the percentage changes are the same as those used in Figure 7.1.

Source: Authors' calculations, based on data from SEDLAC (CEDLAS and The World Bank), February 2014.

that the distribution of educational attainment has become more equal (see, for example, Campos et al., 2014; Ferreira et al., 2014; and Gasparini et al., 2011). This means that, had the pay structure by education level remained unchanged, the more equal distribution of the education endowment would have resulted in an *increase* in labor income inequality. Because this sounds counter-intuitive, this finding is known as the "paradox of progress."[14] Essentially, the 'paradox of progress' is a by-product of the convexity of returns: when returns to education are convex, there can be an inverse relationship between inequality of education and income inequality; i.e., as education inequality falls, for instance, income inequality can rise. Eventually, as the dispersion of years of schooling becomes smaller and smaller, this paradoxical result will disappear.

It is not just changes in the returns to education, however, that lie behind declining inequality in hourly earnings. For example, Ferreira et al. (2014) conclude that in the case of Brazil "[a]lthough the conventional explanation of falling returns to education did play a role, ... [the] analysis suggests that substantial reduction in the gender, race and spatial wage gaps conditional on human capital and institutional variables explain the lion's share of the decline in earnings inequality. ... [They] account for 6.3 of the 10 Gini points

difference between 1995 and 2012" (p. 1). The authors also find that rising minimum wages played a role in the period 2004–12 but not in 1995–2002.

The determinants of the decline in non-labor income inequality include: returns to capital (interests, profits and rents), private transfers (for example, remittances), and public transfers (for example, CCTs and noncontributory pensions). The contribution of changes in returns to capital in Argentina, Brazil and Mexico, for example, tended to be small and unequalizing (Lustig et al. 2013). However, a well-known fact is that household surveys underestimate income from capital so the unequalizing effect may have been larger than current estimates indicate. Esquivel et al. (2010) show that, in Mexico, remittances proved to be equalizing and they became even more so in the 2000s because they closed the gap between rural and urban household per capita incomes. Cornia (2014) also shows that the increase in migrant remittances in total household income appears to have had an equalizing effect in El Salvador and Mexico; however, in Honduras their effect was unequalizing.

In terms of public transfers, as mentioned above, Azevedo et al. (2013a) find that, on average, government transfers account for 21 percent of the decline in overall inequality. The role of noncontributory pensions cannot be disentangled because the authors included noncontributory pensions as part of total pensions (which account, on average, for 9 percent of the decline in overall per capita income inequality). Their analysis, therefore, may underestimate the role of government transfers in explaining the decline in inequality. For example, Lustig and Pessino (2013) show that for Argentina the large expansion in non-contributory pensions was fundamental in accounting for the reduction in inequality during 2006–09. In the case of Brazil, Barros et al. (2010) find that for the period 2001–07 changes in the size, coverage and distribution of public transfers account for 49 percent of the decline in inequality while in the case of Mexico, Esquivel et al. (2010) find that these factors account for 18 percent of the decline in inequality for the period 1996–2006.

7.3   The causes of the decline in the returns to education

As mentioned above, existing studies suggest that one of the main factors underlying the income inequality was the decline in the returns to education. Why did the returns to education decline? This is where explanations begin to differ. There are five potential – and not mutually exclusive – explanations for this phenomenon: a reduction in the relative demand for skilled workers; an increase in the relative supply of skilled workers; a mismatch between the demand and supply of skills of younger or older cohorts; and a degradation of the quality of education, especially at the tertiary level.[15] The quality of tertiary education could occur due to a combination of an expansion of tertiary education of lower quality and/or because those entering tertiary education programs

increasingly include individuals with lower abilities, as compared to previous patterns of human capital accumulation. The "mismatch" could occur because younger cohorts are graduating from the "wrong" majors (i.e., those with a declining market demand) or because the skills of the older workers become obsolete at a faster pace (e.g., older workers are slow in acquiring the skills required by the IT revolution and are replaced more quickly by younger and less expensive workers).

Lopez-Calva and Lustig (2010) posit that the most important factor behind the decline in the returns to education has been an increase in the relative supply of workers with completed secondary and tertiary education, a result of the significant educational upgrading that took place in the region during the 1990s (Cruces et al., 2011). This conclusion is also supported by Azevedo et al. (2013b), who suggest that the decline in the skill premium has been driven by an increase in the supply of experienced and educated workers in the region. In Brazil and Mexico, Barros et al. (2010), and Esquivel et al. (2010) and Campos et al. (2014), respectively, show that there have been notable changes in the composition of the labor supply and an increase in the relative supply of skilled workers seems to dominate as a factor explaining the decline in the skill premium. In Argentina (Gasparini and Cruces, 2010), the reduction in the skill premium appears to be related not just to the change in the composition of labor by skills but also to the employment effects of a booming economy.

The expansion of basic education that underlies the change in labor composition by skill in Brazil and Mexico, in turn, seems to be associated with higher public spending per student in basic education and an increase in education coverage in rural areas. These factors eased supply-side constraints. In addition, the conditional cash transfer programs *Bolsa Família* (Brazil) and *Progresa/Oportunidades* (Mexico) reduced demand-side constraints by compensating poor households for schooling costs and for the opportunity cost of children's labor.[16] A summary of these findings can be found in Table 7.1.

Not all studies find that the decline in the skill premium is the result of an increase in the supply of skilled workers, however. The study by Gasparini et al. (2011) for 16 countries in Latin America during 1989–2009 uses a partial equilibrium framework to study the supply and demand for labor. They assume a production function with an elasticity of substitution between skilled and unskilled labor (*sigma*) for different values[17] and find that, more often than not, demand-side factors dominate supply-side factors in explaining the decline in skill premiums (Table 7.2).

Linking these results to changing patterns in the composition of output, however, has proven elusive. In an attempt to disentangle the importance of supply and demand factors, Gasparini et al. (2011) estimate a series of wage skill premium regressions. In the absence of an unambiguous indicator for relative demand, the authors use several proxies, including country and year fixed

Table 7.1 Declining skill premium: summary of results

Study	Country coverage	Countries where supply-side factors dominate	Results
Azevedo et al. (2013b)	Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Honduras, Mexico, Panama, Paraguay, Peru, Uruguay	Labor population weighted average for LAC-15	The decline in the skill premium has been driven by a larger supply of experienced and educated workers in the region.
Campos et al. (2014)	Mexico	Mexico	Returns declined between 1994 and 2006, due to changes in supply and, to a lesser extent, in demand; institutional factors were not relevant.
Barros et al. (2010); Jaramillo and Saavedra (2010); Lopez-Calva and Lustig (2010)	Argentina, Brazil, Mexico, Peru	Brazil, Mexico, Peru	In Brazil, the fall in the skill premium seems to be caused both by changes in the composition of supply and demand. In Peru, it appears to be the result of the combined effect of an increase in the supply of workers with more years of schooling and the fact that demand for skilled workers did not outpace supply.
Gasparini and Lustig (2011); Lustig et al. (2013)	Argentina, Brazil, Mexico	Brazil, Mexico	In both countries, the main driver of the decline in the skill premium was an increase in the relative supply of workers with high levels of education as a result of the educational upgrading that took place during the 1990s.
Gasparini et al. (2011)	Argentina, Brazil, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Honduras, Mexico, Nicaragua, Panama, Uruguay, Venezuela	Colombia, Costa Rica	The skill premium rose in the 1990s and shrunk in the 2000s, within a context of a greater relative supply of skilled workers. This is consistent with an increase in the relative demand for skilled labor in the 1990s. Estimates of relative demand for the 2000s indicate a reversal (except for Colombia and Costa Rica) in these trends, i.e., a negative shift in the relative demand for skilled labor in the 2000s.

Table 7.2 Changes in the wage premium and the relative supply and demand for skilled/unskilled workers (annual percentage change)

	Wage premium		Relative supply		Relative demand ($\sigma=2$)		Relative demand ($\sigma=3$)	
	1990s	2000s	1990s	2000s	1990s	2000s	1990s	2000s
Argentina	3.5	–2.4	4.6	2.4	11.5	–2.3	15.0	–4.7
Bolivia	7.9	–4.6	–0.2	5.1	15.6	–4.1	23.5	–8.7
Brazil	–0.4	–3.2	1.6	4.4	0.8	–1.9	0.4	–5.1
Chile	0.5	–1.9	3.1	1.1	4.1	–2.7	4.6	–4.7
Colombia	2.5	–2.0	6.4	6.0	11.5	2.1	14.0	0.1
Costa Rica	0.4	–0.2	4.0	3.4	4.9	3.0	5.3	2.8
Ecuador		–3.2		3.4		–3.0		–6.3
El Salvador	1.7	–0.1	5.5	–0.3	8.9	–0.4	10.6	–0.5
Honduras	0.0	–1.9	2.6	2.3	2.6	–1.4	2.6	–3.3
Mexico	1.8	–2.8	3.6	2.2	7.2	–3.5	9.0	–6.3
Nicaragua	3.5	–6.9	4.6	6.6	11.6	–7.2	15.0	–14.1
Panama	0.3	–2.3	2.3	2.4	2.9	–2.2	3.1	–4.4
Paraguay	0.8	–5.6	5.3	6.1	6.9	–5.2	7.6	–10.8
Peru	0.6	–2.8	0.2	3.8	1.3	–1.8	1.9	–4.6
Uruguay	2.3	–0.9	2.9	1.1	7.4	–0.6	9.6	–1.4
Venezuela	1.1	–4.8	3.9	4.2	6.2	–5.4	7.3	–10.3
Mean	1.8	–2.8	3.4	3.4	6.9	–2.3	8.6	–5.1

Source: Gasparini et al. (2011), based on data from SEDLAC (CEDLAS and The World Bank).

effects – which are assumed to capture the evolution of relative demand; unemployment rates of different skill groups – assumed to affect remuneration gaps between skill groups; an index of minimum wage levels, by country – assumed to capture the potential impact of labor market institutions on the wage skill premium; and an index of "net barter terms of trade" – assumed to capture the effect of international prices in the region on the wage skill premium. Among all of these, only the role of the terms of trade, which captures the effect of the recent boom in commodity prices, seems to support the demand-side hypotheses.

Along these lines, De la Torre et al. (2012) suggest that this boom in commodity prices appears to have played an important role by inducing a significant reallocation of labor from non-commodity tradable sectors such as manufacturing, to sectors which are less intensive in skilled labor, such as services, which in turn reduced the skill premium and wage inequality. Nonetheless, Gasparini et al. (2011) show that despite the promising role played by the commodity boom, the patterns of employment by sector suggest a significant role for other forces.

For the six case studies included in his analysis, Cornia (2014) suggests that the drivers of the changes in the skill premium depended on the stagnation of demand for skilled labor during the 2000s; an increase in the supply of skilled workers following the surge in educational investments by governments during

the 1990s and 2000s; an increase in the demand for unskilled workers due to the adoption of a more competitive exchange rate favoring the unskilled, labor-intensive tradable sector; and a decline in the supply of unskilled labor due to rising educational attainment, a fall in birth rates and an increase in the rate of emigration. These results derive from a two-step approach in which changes over time in the Gini coefficient were first decomposed into changes in their *proximate determinants*,[18] and then changes in the shares and concentration coefficients of labor, transfers, capital, and remittance income were correlated with their *underlying determinants*.[19]

From a methodological point of view, it is not an easy task to determine whether demand or supply factors were predominant. A comparison of the results for Mexico between Gasparini et al. (2011) and Campos et al. (2014), for example, reveals that the results are overly sensitive to the age cohorts of workers, the period under study and, above all, the elasticity of substitution between skilled and unskilled workers which is very difficult to estimate in a robust manner – see, for example, the discussion by Manacorda et al. (2010). This is an area in which further research may prove useful, using alternative methods to estimate the elasticity of substitution in order to disentangle the contribution of demand and supply factors more precisely and robustly.

As mentioned above, another factor that could explain the decline in the returns to education is degradation in the quality of tertiary (as well as other levels of education). The average (relative) returns to secondary and tertiary education could have fallen because, as its coverage expanded, either the quality of the marginal institution or the quality of the marginal student, or both, were lower. Filmer and Schady (2014) show evidence suggesting that the expansion of school enrolment induced by CCTs has reduced the quality of education for these students, since there is no evidence that test scores or wages of the "CCT generation" are higher. Carneiro and Lee (2011) find a similar result. For college graduates in the US between 1960 and 2000, they find that increases in enrolment led to a decline in the average quality of college graduates, resulting in a decrease of 6 percentage points in the college premium. Castro and Yamada (2012) find evidence of the 'convexification' of the wage profile as a consequence of the low quality of basic education and the better quality of tertiary education began reversing starting in the 2000s. As documented by the authors, that finding is consistent with the decreasing quality of basic and tertiary education observed during the last ten years, as well as with the lower rate of increase in real wages for skilled workers compared to unskilled workers observed since the 2000s.

Using a completely different approach, Reyes et al. (2013) find that a significant proportion – between 35 and 42 percent, depending on the degree and the institution – of graduates from tertiary education obtain negative net economic returns. These findings, complemented with data for income which show that

the gap between the cost and the benefits of tertiary education depend on the quality of tertiary education (World Bank 2011), suggest that the quality of certain types of tertiary education has decreased the skill premium in Chile. In the case of secondary education, the study by Bassi et al. (2012) for Argentina, Brazil, and Chile finds that the decline in the skill premium for secondary education is due to a mismatch between the skills acquired by workers that go directly from secondary education to the labor market and the skills required by the labor market that hire these workers.

There is also evidence that a mismatch of skills for workers with tertiary education in the younger cohorts might be present in Brazil (Menezes Filho, 2012). In contrast, Campos et al. (2014) find evidence that there may be a mismatch between demand and supply of workers with tertiary education for the older – but not the younger – cohorts in Mexico.

7.4   Summing up

During the 2000s, inequality in Latin America declined in the majority of countries for which a comparison can be made. The decline was statistically significant and significant in terms of the order of magnitude. On average, the decline in inequality accounted for above 40 of the decline in poverty – the remaining 60 percent was accounted for by economic growth.

The two main explanations for the decline in inequality are a reduction in hourly labor income inequality and higher and more progressive government transfers. The fall in hourly labor income inequality, in turn, is explained – among other factors – by the reduction in the returns to education. Whether the latter is predominantly the result of an increase in the supply of workers with more educational attainment, a decline in the demand of workers with higher skills, a reduction in the quality of higher education, or a mismatch between the demand and supply of skills has not been unequivocally established.[20]

Notes

1. An earlier version of this chapter appeared in Spanish in "Los determinantes de la dis-minución de la desigualdad en América Latina," in Devlin, Robert, Oscar A. Echeverría and José Luis Machinea, editors, *América Latina en una era de globalización. Ensayos en honor de Enrique V. Iglesias*, Edición Cero, CAF, Banco de Desarrollo de América Latina, 2014.
2. The authors would like to thank Eduardo Levy-Yeyati and Norbert R. Schady, who provided very useful comments to an earlier draft.
3. Note that this chapter does not pretend to be a full-fledged survey of the existing liter-ature on the subject. The papers used as sources here tended to use a common frame-work (e.g., decomposition analysis to estimate the orders of magnitude of various

determinants). However, there may be other papers that also use decomposition analysis that were not included here.

4. The decline in inequality is observed regardless of the indicator or source. For example, the Theil index declined in the same countries and with almost the same ranking (it declined by –1.6 percent annually for LAC-18). The ratio of the share of the top 10 percent to the share of the bottom 40 percent (the so-called Palma ratio) also shows a decline in exactly the same countries and with the same ranking, making it a bit of a redundant indicator. In addition, in our view indicators based on partial information of the income distribution are less desirable because they are not sensitive to regressive transfers (i.e., they do not fulfill the Pigou-Dalton axiom) that occur outside the shares or quantiles considered in the ratio. If we use CEPALStat Gini's or PovcalNet (World Bank), although there are some changes in the ranking of countries and the orders of magnitude, the results are qualitatively the same.

5. Using pooled regional data for Latin America as a whole, World Bank (2014) and Cord et al. (2014) have argued that inequality reduction in the region has stalled. The stagnation in inequality reduction is attributed to the impact of the financial crisis on Mexico and Central America, which reflects a cyclical fluctuation, rather than a structural underlying trend (Cord et al., 2014).

6. This approach quantifies the relative contributions of economic growth and redistribution to changes in poverty. Changes in poverty are decomposed into three components: growth, redistribution, and a residual term. The growth component represents the change in poverty attributable to changes in mean income when holding the relative distribution of the reference year constant; the redistribution component represents the change in poverty attributable to changes in the distribution holding mean income constant; and the residual term represents the part that cannot be exclusively attributed to growth or redistribution.

7. Using a regression-based approach Lopez-Calva and Ortiz-Juarez (2014) establish the lower threshold by determining the amount of income associated with a given probability of falling into poverty.

8. Updated results for Ferreira et al. (2013), available in Azevedo et al. (2015).

9. The methodology developed by Barros et al. (2006) identifies the contribution that interactions between variables make in terms of changes in welfare, first by computing the joint impact of a subset of variables, and then subtracting the marginal impact of each variable. The simulation of a given factor therefore ends up being a "residual". In contrast, Azevedo et al. (2013a) compute a cumulative counterfactual distribution by adding one variable at a time, so that the impact of changes in each variable and its interactions with all other variables is calculated as the difference between the cumulative counterfactuals. According to the authors, the advantage of this variation is that it avoids attributing the residual to the last variable considered and allows for a more straightforward interpretation of the results. Since this approach may suffer from path-dependence, they remedy this by calculating the decomposition across all possible paths and then take the average between them. These averages constitute the Shapley–Shorrocks estimates of each component.

10. The category called pensions here includes both contributory and noncontributory old-age pensions. In some countries (e.g., Argentina), the latter are not trivial. Thus, the decomposition exercise may be overestimating the contribution of pensions and underestimating the contribution of government transfers.

11. Regarding the changes in demographic indicators, the equalizing effect of the share of adults accounted, on average, for 11 percent of the decline in inequality. Remarkably, the share of occupied adults in the household had no significant

importance in the majority of the analyzed countries, and for the regional average it even contributed to increase inequality with an effect of 4 percent, (see Azevedo et al. 2013a, Figure 7.7).

12. Studies have found that the change in labor earnings is not due to changes in hours worked but to changes in the hourly remuneration of labor (both for wage-earners and self-employed).

13. See the seminal papers by Oaxaca (1973) and Blinder (1973) and all the rich literature that followed.

14. The term was first introduced by Bourguignon et al. (2005). For a formal explanation, see their section "Education and Inequality: The Paradox of Progress" in chapter 10.

15. Another potential explanation – related to the degradation of tertiary education – is suggested by De la Torre et al. (2013) for the case of the returns to secondary education: a broadening of secondary education that may have included individuals with lower abilities. According to the authors, returns to secondary education vis-à-vis primary education declined more steadily and deeply in the past 15 years than those to tertiary education, vis-à-vis secondary education, and "*this would imply a lower average aptitude for secondary (and possibly tertiary) education groups, and would correspond broadly to a mean-reducing spread in the distribution of skills for higher education groups*" (De la Torre et al., p. 52).

16. There is some evidence that due to the poor quality of education, however, the additional schooling induced by these conditional cash transfers programs may not result in a palpable increase in returns.

17. This study uses the methodology developed by Katz and Murphy (1992) and Goldin and Katz (2007), who formalized Tinbergen's (1975) framework.

18. Depending on the country, the decomposition methods used were those proposed by Lerman and Yitzhaki (1985), Milanovic (1998), and Bourguignon et al. (2005).

19. The second step follows a least square dummy variables (LSDV) model to correlate the Gini coefficient with a set of explanatory variables, including indicators of external economic conditions; economic growth; distribution of human capital; taxes and public expenditure; minimum wage; real exchange rate; and democracy.

20. While not discussed in this chapter, some authors have linked the rise of pro-poor government transfers to the process of democratization and Latin America's turn to the left. See, for example, Robinson (2010), Cornia (2010) and Huber and Stephens (2012).

References

Azevedo, J. P, G. Inchauste, and V. Sanfelice. (2013a) "Decomposing the Recent Inequality Decline in Latin America", Policy Research Working Paper 6715, The World Bank.

Azevedo, J. P., M. E. Dávalos, C. Diaz-Bonilla, B. Atuesta, and R. A. Castañeda (2013b) "Fifteen Years of Inequality in Latin America: How Have Labor Markets Helped?," Policy Research Working Paper 6384, The World Bank.

Azevedo, J. P., L. F. Lopez-Calva, N. Lustig, E. Ortiz-Juarez (2015) "Inequality, Mobility and Middle Classes in Latin America", in J. Dayton-Johnson (2015) *Latin America's Emerging Middle Class*. New York, NY: Palgrave Macmillan.

Barros, R., M. N. Foguel, and G. Ulyssea (2006) *Desigualdade de renda no Brasil: uma análise da queda recente* (Vol. 1). Brasília: IPEA.

Barros, R., M. De Carvalho, S. Franco, and R. Mendonca (2010) "Markets, the State and the Dynamics of Inequality in Brazil," in L.F. Lopez-Calva and N. Lustig (eds), *Declining*

Inequality in Latin America: A Decade of Progress? Washington, DC: Brookings Institution and UNDP.

Bassi, M, M. Busso, S. Urzúa, and J. Vargas (2012) *Desconectados. Habilidades, empleo y educación en América Latina*. Washington, DC: Banco Interamericano de Desarrollo.

Blinder, A. S. (1973) "Wage Discrimination: Reduced Form and Structural Estimates," *Journal of Human Resources*, 8: 436–55.

Bourguignon, F., F. H. G. Ferreira, and N. Lustig (eds) (2005) *The Microeconomics of Income Distribution Dynamics in East Asia and Latin America*. Washington, DC: The World Bank–Oxford University Press.

Campos, R., G. Esquivel, and N. Lustig (2014) "The Rise and Fall of Income Inequality in Mexico, 1989–2010", in A. Cornia (ed.), *Falling Inequality in Latin America: Policy Changes and Lessons*, UNU-WIDER Studies in Development Economics, Oxford: Oxford University Press.

Carneiro, P. and S. Lee (2011) "Trends in Quality-Adjusted Skill Premia in the United States, 1960–2000", *American Economic Review*, 101(6): 2309–49.

Castro, J. F., and G. Yamada (2012) "'Convexification' and 'Deconvexification' of the Peruvian Wage Profile: A Tale of Declining Education Quality", Working Paper DD/12/02, Universidad del Pacífico.

Center for Distributive, Labor and Social Studies, CEDLAS, (2012) "A Guide to the Socio-Economic Database for Latin America and the Caribbean", CEDLAS and The World Bank, La Plata, Argentina.

Cord, L., O. Barriga, L. Lucchetti, C. Rodriguez-Castelan, L. Sousa, D. Valderrama (2014) "Inequality Stagnation in Latin America after the Global Financial Crisis of 2007–09". mimeo, World Bank.

Cornia, A. (2014) "Inequality Trends and their Determinants: Latin America over 1990 – 2010", in A. Cornia (ed.), *Falling Inequality in Latin America: Policy Changes and Lessons*, UNU-WIDER Studies in Development Economics, Oxford: Oxford University Press.

Cornia, A. (2010) "Income Distribution under Latin America's New Left Regimes", *Journal of Human Development and Capabilities*, 11(1): 85–114.

Cruces, G., C. Garcia-Domenech, and L. Gasparini (2011) "Inequality in Education. Evidence for Latin America", UNU-WIDER, Working Paper No. 2011/93.

Datt, G., and M. Ravallion (1992) "Growth and Redistribution Components of Changes in Poverty Measures: A Decomposition with Applications to Brazil and India in the 1980s. *Journal of Development Economics*, 38: 275–95.

De la Torre, A., E. Levy Yeyati, and S. Pienknagura (2013) "Latin America and the Caribbean as Tailwinds Recede: In Search of Higher Growth," Semiannual Report, Regional Chief Economist Office, Latin America and the Caribbean, The World Bank.

De la Torre, A., J. Messina, and S. Pienknagura (2012) "The Labor Market Story Behind Latin America's Transformation", Semiannual Report, Regional Chief Economist Office, Latin America and the Caribbean, The World Bank.

Esquivel, G., N. Lustig, and J. Scott (2010) "A Decade of Falling Inequality in Mexico: Market Forces or State Action?" in L.F. Lopez-Calva and N. Lustig (eds), (2010) *Declining Inequality in Latin America: A Decade of Progress?*, Washington, DC: Brookings Institution and UNDP.

Ferreira, F. H. G., S. Firpo, and J. Messina (2014) "A More Level Playing Field? Explaining the Decline in Earnings Inequality in Brazil, 1995–2012", IRIBA Working Paper 12, The University of Manchester.

Ferreira, F. H. G., J. Messina, J. Rigolini, L. F. Lopez-Calva, M. A. Lugo, and R. Vakis (2013) *Economic Mobility and the Rise of the Latin America Middle Class*, Washington, DC: The World Bank.

Filmer, D. and N. Schady (2014) "The Medium-Term Effects of Scholarships in a Low-Income Country", *Journal of Human Resources*, 49(3): 663–94.

Gasparini, L., and G. Cruces (2010) "A Distribution in Motion: The Case of Argentina", in L. F. Lopez-Calva and N. Lustig (eds), *Declining Inequality in Latin America: A Decade of Progress?*, Washington, DC: Brookings Institution and UNDP.

Gasparini, L., and N. Lustig (2011) "The Rise and Fall of Income Inequality in Latin America", Working Paper 1110, Tulane University.

Gasparini, L., S. Galiani, G. Cruces, and P. Acosta (2011) "Educational Upgrading and Returns to Skills in Latin America. Evidence from a Supply-Demand Framework, 1990–2010," Policy Research Working Paper 5921, The World Bank.

Goldin, C., and L. Katz (2007) "The Race Between Education and Technology: The Evolution of U.S. Educational Wage Differentials, 1890 to 2005," NBER Working Paper No. 12984.

Huber, E. and J. D. Stephens (2012) *Democracy and the Left: Social Policy and Inequality in Latin America*, Chicago: University of Chicago Press.

Jaramillo, M., and J. Saavedra (2010). "Inequality in Post-structural Reform Peru: The Role of Market and Policy Forces", in L. F. Lopez-Calva and N. Lustig (eds), (2010) *Declining Inequality in Latin America: A Decade of Progress?* Washington, DC: Brookings Institution and UNDP.

Katz, L., and K. Murphy (1992) "Changes in Relative Wages, 1963–1987: Supply and Demand Factors", *Quarterly Journal of Economics*, 107: 35–78.

Lerman, R. I., and S. Yitzhaki (1985) "Income Inequality Effects by Income Source: A New Approach and Applications to the United States", *The Review of Economics and Statistics*, 67: 151–6.

Lopez-Calva, L. F., and N. Lustig (eds) (2010), *Declining Inequality in Latin America: A Decade of Progress?* Washington, DC: Brookings Institution and UNDP.

Lopez-Calva, L. F. and E. Ortiz-Juarez (2014) "A Vulnerability Approach to the Definition of the Middle Class," *Journal of Economic Inequality,* 12 (1): 23–47.

Lustig, N., and C. Pessino (2013) "Social Spending and Income Redistribution in Argentina in the 2000s: the Rising Role of Noncontributory Pensions", CEQ Working Paper No. 5.

Lustig, N, L. F. Lopez-Calva, and E. Ortiz-Juarez (2013) "Declining Inequality in Latin America in the 2000s: The Cases of Argentina, Brazil, and Mexico", *World Development*, 44: 129–41.

Manacorda, M., C. Sánchez-Páramo, and N. Schady (2010) "Changes in Returns to Education in Latin America: The Role of Demand and Supply of Skills", *Industrial and Labor Relations Review*, 63: 307–26.

Menezes Filho, N. A. (2012) "Apagão de Mão de Obra Qualificada? As Profissões e o Mercado de Trabalho Brasileiro entre 2000 e 2010", Policy Paper No. 04, Centro de Políticas Públicas, Insper Instituto de Ensino e Pesquisa.

Milanovic, B. (1998) "Explaining the Increase in Inequality during the Transition", Policy Research Working Paper 1935, The World Bank.

Oaxaca, R. (1973) "Male–Female Wage Differentials in Urban Labor Markets", *International Economic Review*, 14: 673–709.

Reyes, L., J. Rodríguez, and S. Urzúa (2013) "Heterogeneous Economic Returns to Postsecondary Degrees: Evidence from Chile", NBER Working Paper No. 18817.

Robinson, J. A. (2010) "The Political Economy of Redistributive Policies", in L. F. Lopez-Calva and N. Lustig (eds), *Declining Inequality in Latin America: A Decade of Progress?*, Washington, DC: Brookings Institution and UNDP.

Tinbergen, J. (1975) *Income Distribution: Analysis and Policies*, Amsterdam: North-Holland.

World Bank (2011) *Chile's State-Guaranteed Student Loan Program (CAE)*, Washington, DC: The World Bank.

World Bank (2014) "Social Gains in the Balance: A Fiscal Policy Challenge for Latin America and the Caribbean." Washington, DC: LCSPP Poverty and Labor Brief, No. 6.

A Macroeconomic Accounting Note for Pope Francis: Comments on "Deconstructing the Decline in Inequality in Latin America" by Nora Lustig, Luis F. Lopez-Calva and Eduardo Ortiz-Juarez*

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United Nations Industrial Development Organization

7a.1   Introduction

Good news, even when it is true, is disturbing: it does not make for good stories and often raises perplexing philosophical questions. Homer certainly felt that way when he observed that "the Gods arranged [*all of men's trouble*], and sent them their misfortune in order that future generations might have something to sing about" (*Odyssey*, Book IV). The news of declining income inequality in Latin America over recent decades (Lustig et al., 2013, 2014; Cornia, 2015, 2014) is therefore perplexing: it should be cause for celebration to those who believe in positive theories of redistribution and in the idea that the quality of human life is closely linked to income and wealth indicators or to various forms of material rewards. In a region that has been home to Simon Bolivar, Che Guevara, Fidel Castro and other Hugo Chavez, the news of a more equal distribution of income should generate enthusiasm.

However, there are always several sides to morality, especially when it comes to issues regarding fairness and interpersonal theories of wellbeing. From that angle the good news in the empirical analyses by economists and statisticians may be of little value. Moreover, the positive trends from analyses of Gini coefficients would not have impressed Jorge Luis Borges (one of Latin America's literary giants and an admirer of Homer), who never believed in mechanical

computations of inequality measures: after all, it seems frivolous to try to summarize the richness, complexity, and mysteries of human life and equity into a few (randomly) collected numbers related to income and material wealth. Borges would probably have treated with disdain the reductionist approach consisting of deriving theories of inequality from some "objective" measures of social status or monetary rewards. If anything, he would have stressed the intrinsic and unshakable "equality" of people facing the infinite, undecipherable joys and tragedies of their human condition, well-beyond anything economics and numbers can conceptualize and capture.

From such a philosophical perspective, the enthusiasm over the declining trends of inequality in Latin America – assuming that they actually reflect a "true" evolution – may seem naive. From a political perspective, there is also the "Deng Xiaoping theorem," that is, the notion that economic development can only be achieved through gradualist economic strategies and sociopolitical trade-offs, which implies the social acceptance of some level of inequality. One of his most famous slogans was: "We should let some people get rich first, both in the countryside and in the urban areas. To get rich by hard work is glorious." That was perhaps a Chinese version of the Kuznets curve …[1]

In any event the news of declining inequality has not settled the debate on the reality and meaning of trends described in empirical studies. Mgr. Jorge Mario Bergoglio, the former Jesuit Archbishop of Buenos Aires better known these days as His Holiness Pope Francis ("a prominent figure throughout the continent" as noted in his official biography), is not impressed with the declining trends of poverty and inequality in his native region – or in the world for that matter.[2] He bluntly expressed his concerns about growing inequality – well beyond Latin America – in his November 2013 *Evangelii Gaudium*, in which he decried an "idolatry of money" in secular culture and warned that it would lead to "a new tyranny."

This chapter discusses the news of declining inequality in Latin America and some of the various perspectives from which it could be analyzed. Section 2 explores a few possible reasons why the progress on social inclusion could still seem doubtful to Pope Francis and to some analysts. Section 3 highlights the need to complement the existing body of empirical works based on the Gini coefficient with broader the macroeconomic framework that defines the conditions for shared prosperity. It also suggests an accounting exercise to assess the distribution of the benefits growth. Section 4 offers concluding remarks.

7a.2 If inequality is declining, why is Pope Francis still so unhappy?

Researchers have long debated whether economic inequality actually does matter in the pursuit of social goals, and, if so, what should be done about it.

Theories of distributive justice have challenged and enriched the notions, principles, and modes of conceptualization of fairness, social preferences, collective and individual responsibility, and the possible resource allocation mechanisms that could be considered – assuming, of course, that inequality is *in fine* about resources.[3] Theories of utilitarianism, popular with economists, deserve scrutiny in this context, and should be at least acknowledged up front when dealing with the empirics of inequality. Yet it is striking that most empirical analyses of inequality and poverty do not explicitly provide the caveat and hidden assumptions that they carry.

An old Japanese tradition recommends that one always gets into an argument with the genuine belief that the interlocutor holding the opposite view is right. So let's leave aside any philosophical skepticism and start with the acceptance that inequality has really been declining in Latin America in recent years (and perhaps decades). At face value, the news should be cause for celebration: the Gini coefficient fell in 15 of the 17 countries where there is comparable data, and the change was statistically significant in all of them. Even in Brazil, a country that once held the historical and worldwide record of a Gini coefficient of 0.63, there appears to be a major turning point: after rising in the 1970s and 1980s and a decade of almost no change in the 1990s, the Gini coefficient has declined steadily since 1998. Moreover, the income of the bottom 10 percent of the Brazilian population grew at 7 percent a year, nearly three times the national average of 2.5 percent (Lustig et al., 2013). Other studies confirm the declining trend: between 2002 and 2010 inequality fell in all 18 countries analyzed by Cornia (2015), with the exception of Nicaragua and Costa Rica.

Yet not everyone is convinced. Pope Francis, for example, is on a mission to combat inequality, which he sees as "the roots of social evil." Without referring specifically to the situation in his native region of Latin America, he has issued several important statements on what he sees as the rise and dangers of inequality, and criticize those people who

> continue to defend trickle-down theories which assume that economic growth, encouraged by a free market, will inevitably succeed in bringing about greater justice and inclusiveness in the world [...] This opinion, which has never been confirmed by the facts, expresses a crude and naive trust in the goodness of those wielding economic power and in the sacralized workings of the prevailing economic system [...] Today's economic mechanisms promote inordinate consumption, yet it is evident that unbridled consumerism combined with inequality proves doubly damaging to the social fabric. Inequality eventually engenders a violence which recourse to arms cannot and never will be able to resolve. It serves only to offer false hopes to those clamoring for heightened security, even though nowadays we know that

weapons and violence, rather than providing solutions, create new and more serious conflicts. Some simply content themselves with blaming the poor and the poorer countries themselves for their troubles; indulging in unwarranted generalizations, they claim that the solution is an "education" that would tranquilize them, making them tame and harmless. All this becomes even more exasperating for the marginalized in the light of the widespread and deeply rooted corruption found in many countries – in their governments, businesses and institutions – whatever the political ideology of their leaders. (Pope Francis, 2013)

An entire volume could be devoted to the many possible reasons why the Pope's view of growing inequality and poverty could be reconciled with the positive trends from empirical studies on Latin America. Perhaps the Supreme Pontiff of the Universal Church who served as Archbishop of Buenos Aires in 2001 when Argentina's economy collapsed is bound to have an asymptotic reading of any improvements in economic welfare: having witnessed sudden misery on a large scale and given his role as a global pastor and a moral force, he can only see the glass half-empty rather than half-full.

Perhaps Pope Francis is still viewing the world mainly through the prism of his Latin America's and his country's long history of poor economic performance and injustices (Edwards, 2009). Argentina used to be a high-income country, ranking among the ten richest in the world, well ahead of France, Germany and Italy. In the four decades years leading up to 1914, GDP had grown at an annual rate of 6 percent, the fastest recorded in the world. Its income per head was over 90 percent of the average of 16 rich economies. Unfortunately, the past hundred years have been marked by economic decline. The land of fertile pampas, which has produced the best beef steak in history, an extraordinary number of literary talents (Jorge Luis Borges, Silvina Ocampo, Julio Cortazar, Adolfo Bioy Casares among others), some colorful and larger-than-life political leaders (from Isabel Martinez de Peron, the first female president in the Americas, to Carlos Menem and Cristina Fernandez Kirchner, and of course, Luis Cesar Menotti (one of the most sophisticated football coaches of all times), Diego Maradona, and Lionel Messi, has been underperforming for a very long time.

Perhaps Pope Francis, a student of Fernand Braudel's theory of the *longue durée*, prefers looking at social problems with a different time scale. From that perspective he may choose to remember that high levels of income inequality has afflicted Latin America for almost five centuries—and that a relatively small dent of a decade does not (yet) mean much in the long continuum of time. The unfair distribution of land and political power started with colonial powers and was subsequently codified and perpetuated by social and economic institutions that granted enormous and pervasive privileges to a few (Engerman and Sokoloff, 2005). That self-fulfilling process was reinforced over time and

validated across generations,[4] with small agrarian and commercial oligarchies persuading themselves of the legitimacy of their power. It eventually led to structural distortions and injustices that an improvement of a few years of progress cannot reverse credibly.

By the 1950s, the region had accumulated much injustice that it became the land of exclusion: Gini coefficients of land distribution ranged between 0.61 (Mexico) and 0.93 (Paraguay), compared to between 0.29 and 0.56 in Asia and Africa (Frankema, 2009). In addition, Latin America exhibited a highly unequal distribution of human capital and suffered from an urban bias resulting from overvalued exchange rates and policies that penalized agriculture. During the three decades of import-substituting industrialization strategies (*c.*1950–*c.*1980), the story of inequality was mixed: while it fell markedly through the mid-1970s in Argentina, Costa Rica, Uruguay, and Venezuela due to urbanization and the introduction of income tax (Cornia, 2015) or the adoption of redistributive policies (Ocampo and Ros, 2011), it rose in the Southern Cone where neoliberal policies where implemented aggressively by military juntas.

Like most of the developing world, Latin American countries mainly gave up on their initial structuralist policies to embrace the Washington Consensus that became dominant in the 1980s and 1990s. The expectation that stabilization, liberalization, and privatization would generate sustained growth and shared prosperity did not materialize (Lin and Monga, 2014). The distributive impact of such neoliberal policies was mixed: despite the return of moderate growth and extensive internal and external liberalization, income concentration worsened further. "As a result, the average regional Gini index rose by 2.2 points from the early 1980s to 1990, by another 1.7 points between 1990 and 2000, and by 1.2 point during the recession of 2001–02, that is by 5.1 points for the two neoliberal decades" (Cornia, 2015, p. 2).

Perhaps Pope Francis, the first non-European to lead the Catholic Church in more than a millennium, approaches the complex problems of inequality in a very aggregated and holistic manner and – deliberately or unwittingly – mixes up all levels of discussion. If that is the case, it may be useful to break down the issues of inequality into several different levels of analysis:

One could start with first-order issues, which are mainly definitional: what is the meaning of inequality and what kind of inequality is being discussed? Depending on the answers one chooses to believe, the question will remain whether inequality can be reduced to any particular measurable metric. The logical next question is whether it matters. Empirical economists tend to ignore such questions, which they consider to be either philosophical in nature or unimportant. They generally start their analyses with second-order issues and focus on the causes of whatever they define as inequality. Glaeser's (2005) review of popular theories conclude that they tend to consider long-standing differences in inequality to reflect a wide variety of factors, such as colonialism

and patterns of agriculture, political institutions, policies and structures. More recent increases in inequality, at least in advanced economies, are often attributed to skill-biased industrial change, though government policies are seen as important instruments to mitigate its impact (Katz and Murphy, 1992; Hanratty and Blank, 1992).

Problems of empirical strategies, the selection of accounting techniques, and measurement, could be considered third-order issues. While empirical analyses of the dynamics of inequality are about income, it is well known that wealth, consumption, and many other variables could be good or even better proxies for wellbeing. In the battle of variables and indicators, the Gini has emerged as the winner, perhaps because its advantages outweigh its shortcomings.[5] Still, even using the Gini, measurement problems cannot be underestimated, as they involved substantial data issues, and methodological choices that can be subjective: for example, the debate over whether to use pre-tax or post-tax income as the proper metric for assessing inequality has not be concluded satisfactorily (Wolf, 2012). Likewise, the questions of whether the metric used should be limited to money income, or instead include income in kind, and whether non-taxed benefits such as employer-provided health insurance should also be part of the analysis, are still wide open, despite insightful new empirical analysis by Cobham and Sumner (2013).

Gini coefficient values at the extreme (0 or 1) are conceptually easy to judge: they reflect country situations where there is no gap between the income and population percentages (perfect equality) or where one person captures all the income (perfect inequality) and provide for relatively easy, black-and-white verdicts: almost everyone would feel psychologically comfortable formulating moral judgments under such scenarios. The problem is that such situations do not exist in reality. The difficult questions arise when things do not appear as clear-cut, and when Gini coefficients move from, say, .32 to .36, and tell stories in shades of gray. That is where the difficult art of the nuance is required: it becomes debatable whether a particular value of the Gini coefficient is inherently "good" or "bad."

After Atkinson (1970) pointed out that the Gini coefficient is too sensitive to changes in the middle of the distribution and does not adequately reflect changes at the bottom and top, it became clear that other tools should be used to complement it. The observation that the middle-income groups (the middle deciles between 5 and 9) generally receive about half of gross national income (GNI), and that the other half is typically shared between the poorest (10 percent) and the richest (40 percent) has led Palma (2011) to propose a new way of measuring inequality and poverty – one that focuses on income concentration by deciles, and analyzes more precisely the evolution of income between the richest 10 percent and the poorest 40 percent (the so-called tails).

Cobham and Sumner (2013) have carried out an empirical analysis to do just that. The story that emerges from their work is consistent with Palma's initial

observation: even in very different countries the middle 50 percent share of the national income appears relatively immune from changes in government policies on taxation and transfers, while the tails are significantly affected. This is particularly true in the case of Latin American countries. So perhaps Pope Francis intuitively knew something that economists and statisticians had to devote lots of time and effort to perceive: despite many years of economic growth life has not necessarily been that good for the poorest – or perhaps not as good as it could have been.

Then there is the question of sustainability. Even leaving aside the first- and second-order issues flagged earlier, the "good news" of declining inequality in Latin America is disturbing when one examines the factors driving the process. Two main explanations stand out in the empirical literature: the reduction in hourly labor income inequality (that is, the declining skill premium) and the patterns of robust and progressive government transfers (Lustig et al., 2014). Studies provide a variety of reasons for the declining skill premium: a reduction in the relative demand for skilled workers; an increase in the relative supply of skilled workers; an increase in minimum wages and unionization rates; the degradation of tertiary (or other levels) of education; and so on.

If true, many of these driving factors are neither sustainable, nor necessarily positive for the long-term growth of these countries. Economic growth is a process of continuous industrial, technological, and institutional upgrading, which requires incremental but constant improvements in the endowment structure based on the evolving comparative advantage (Lin and Monga, 2013). For these improvements to materialize, developing economies must set in motion a realistic system for producing an increasing quantity of higher-quality factors of production (skilled labor and capital). The reduction in relative demand for skilled workers or the degradation of the quality of education may contribute to the decline in Gini coefficients but, ultimately, these trends would become binding constraints on growth and poverty reduction. In that sense, the "good news" of declining inequality in Latin America may actually be "bad news" if the real causes of the decline in returns to schooling are found to be unsustainable.

So perhaps the Gini is not the right instrument to actually assess the dynamics of inequality? But even if one finds the appropriate metrics to capture progress, the underlying philosophical questions related to interpersonal comparisons of wellbeing will remain unanswered. If that is the case, the marginal intellectual gains research in the social sciences has devoted to this topic can only come from enriching the toolbox, and examining the issues from various complementary angles. One potentially fruitful perspective may be the estimation of the macroeconomic space available for improving social inclusion in each country.

7a.3   A macro accounting framework for thinking about shared prosperity

Where do we go from here? In searching for the way forward it may be legitimate and useful to go beyond the calculus of inequality and explore what the people of Latin America themselves think about their own welfare. It turns out that the evolution of national macroeconomic aggregates continues to be closely correlated with personal satisfaction: richer people, on average, report being happier. A 2014 Pew Research Center survey found that the decade of economic growth recorded in Latin America is reflected in self-assessments of wellbeing.[6] In fact, Latin American publics were the most content, with roughly two-thirds or more in Mexico, Venezuela, Brazil and Argentina saying they were doing well.

That is striking. Consider Mexico, a country described by its own political leaders as plagued by high levels of crime, violence, and corruption: it had the overall highest score in the survey, measuring in at 79 percent satisfaction in life. Just like Argentinians and Peruvians, Mexicans reported being considerably happier in 2014 than they were in 2002. These views were echoed by those of citizens in Venezuela and Brazil, who assessed their lives as "highly satisfying."

These stylized facts provide some new justification for digging deeper into the broad macroeconomic conditions under which social exclusion and inequality (measured by wealth and income indicators) could be addressed by public policy. It should be noted, however, that the analytical choice of trying to capture the mysteries of human condition and welfare through the minuscule lenses of simple surveys or some "mechanical" accounting techniques may eventually help appease Pope Francis' concerns about inequality, but would probably have infuriated Jorge Luis Borges who never believed that human experience could be reduced to microscopic issues of material poverty and social exclusion.

Borges's views of the determinants of the quality of human life and his contempt for calculations of income and wealth measures of inequality as proxies for human suffering could not differ more starkly from that of his fellow Argentinian Pope Francis. In a famous poem titled "John 1:14" (1969), Borges imagined Jesus back in Heaven after death and described Him as nostalgic about life on earth – a life that economists and empiricists would probably define mostly as frustrating in terms of his fight for justice and his combat against inequality, which culminated tragically with crucifixion on the Cross. Yet the poem presents the Holy Son as only reminiscent of the many pleasures that made his life on Earth a memorable and positive journey. Jesus misses some of the wonderful things he was able to "know only as a Word made flesh," such as the taste of honey and apples, the cry of birds flying high, smell of the rain in Galilee, and "the smell of that carpenter's shop." Borges also imagine with pity that from Heaven, poor Jesus would never see the night and its stars in the firmament…

Unfortunately, economists may not be able to assess human and social progress and design public policies based on such abstract principles. With apologies to Borges, one must assume that most people link the quality of their lives to the opportunities that they receive. Therefore, indicators of economic distribution of wealth and income must be constantly examined and taken seriously. Among those, consumption – or at least the ability to consume – appears to be a fundamental prerequisite to self-reported welfare. This is important, as wealth also has a significant effect on who is happy in any country. Individuals with higher incomes, more education, more key household goods and paid employment are more satisfied with their lives than people who are less well-off.

These survey results highlight the need to broaden the analysis of inequality and to go beyond the traditional discussions of Gini coefficients and other indicators of changes of relative shares of income and wealth. It is indeed imperative to also examine the broader accounting framework that determines the macroeconomic space available for social redistribution in the first place.

A macro accounting exercise also provides useful clues about the ways in which various countries absorb the growth in their domestic income, and sheds light on the many reasons why material wellbeing as measured in the national accounts may (or may not) translate into a perception of overall wellbeing. Various factors, such as increased expenditures associated with worsening infrastructure or health problems, may appear in the national accounts as increased output but they often reflect adverse welfare effects relative to GDP per capita. In the specific case of Latin American countries, as welfare theories predict, rising expectations from one household survey to another could eventually lead to the perception that living conditions are not improving as they should.

In addition to "micro" links between poverty as measured by income per capita and consumption-based welfare, two important "macro" links need to be considered. First, because the Gini coefficient does not tell the whole story of inequality in Latin America (as can be seen from studies using the Palma ratio), one can conclude that there are still important distributional differences between income groups and socioeconomic groups. Also, empirical analyses should assess the expected correlation between aggregate consumption indicators on the one hand, and the consumption of the lowest income quintiles or consumption in the poorest provinces of each country, on the other hand.

The link between aggregate output per capita and consumption per capita is a complex one, but it can be simplified to a certain extent when told from the accounting identity that links gross domestic product, total consumption, gross domestic investment, and exports and imports of goods and services. As illustrated in Figure 7a.1, GDP growth can then be broken down into its three components (aggregate consumption, investment, and the growth of the resource balance).

The decomposition of GDP into these components (consumption, investment, and the resource balance) offers an accounting framework that can
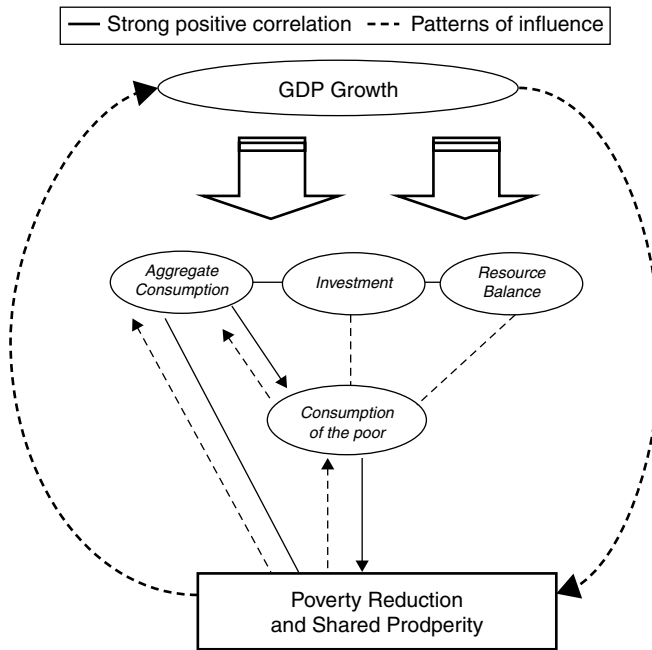
Figure 7a.1 GDP growth and its absorption
Source: Author.

be used to analyze the dynamics of wealth creation (at the macro level) and poverty reduction, which in turns provides a useful context for discussions of social exclusion and inequality.

Starting with the well-known identity

$$Y = C + I + (X - M) \tag{1}$$

Where Y is the gross domestic product, C total consumption, I gross domestic investment, $X - M$ the trade balance with exports and imports of goods and services in current prices.

Looking at the 2000–10 decade one can express the base year situation (2000 prices) as follows:

$$Y_0 = C_0 + I_0 + X_0 - M_0 \tag{2}$$

Let's bring into the picture the adjustment of terms of trade over a given period, AT_0, which is the difference between the exports' capacity to pay for the imports

(X_{CM}) and the ratio of export prices X_0 (exports in current prices divided by export price index with 2000 base year):

If, as stated, X_{CM}=Exports' capacity to pay for the imports (exports in current prices divided by import price index with 2000 base year), then it follows that

$$AT_0 = X_{CM} - X_0 \tag{3}$$

Or

$$X_0 = X_{CM} - AT_0 \tag{4}$$

Therefore, GDP at current prices in 2000 prices can be expressed as follows:

$$Y_0 = C_0 + I_0 + (X_{CM} - AT_0) - M_0 \tag{5}$$

Which can be rearranged:

$$Y_0 - C_0 = I_0 + (X_{CM} - M_0) - AT_0 \tag{6}$$

This equation helps measure the uses of GDP over any given period of time. Let Δ be the change in base year prices between 2000 and 2010. Then

$$\Delta Y_0 - \Delta C_0 = \Delta I_0 + \Delta(X_{CM} - M_0) - \Delta AT_0 \tag{7}$$

Divide both sides of equation (7) by the 2000 GDP, Y_0

$$\Delta Y_0/Y_0 - \Delta C_0/Y_0 = \Delta I_0/Y_0 + \Delta(X_{CM} - M_0)/Y_0 - \Delta AT_0/Y_0 \tag{8}$$

Again we can rearrange equation (8) as follows:

$$\Delta Y_0/Y_0 + \Delta AT_0/Y_0 = \Delta C_0/Y_0 + \Delta I_0/Y_0 + \Delta(X_{CM} - M_0)/Y_0 \tag{9}$$

Since we know that gross domestic income at 2000 prices equals the gross domestic product of the same year—the terms of trade adjustment in the base year is obviously zero—we can write

$$\Delta Y_0/Y_0 + \Delta AT_0/Y_0 = \Delta GDI_0/Y_0 \tag{10}$$

where GDI_0 is gross domestic income at 2000 prices.
Therefore, equation (10) can be re-written

$$\Delta GDI_0/Y_0 = \Delta C_0/Y_0 + \Delta I_0/Y_0 + \Delta(X_{CM} - M_0)/Y_0 \tag{11}$$

and used as the accounting framework for understanding how change in gross domestic income as a percentage of gross domestic product has translated into change in consumption, change in investment, and change in import capacity of the resource balance – which is an important indication of how growth affects (or does not) poverty dynamics and inform the discourse and public policy on social exclusion and inequality.

Table 7a.1 shows the change in gross domestic income and its absorption for Latin American countries.[7] The decomposition of the difference between changes in GDP and consumption indicates the following: GDP grew by 46.4 percent between 2000 and 2010 (simple average); terms of trade gains accounted for 9.6 percent of GDP and hence gross domestic income ($\Delta GDI_0/Y_0$) increased by 56 percent of GDP. The raise in income was absorbed in increased consumption of 38.7 percent of GDP ($\Delta C_0/Y_0$), increased investment of 15 percent of GDP ($\Delta I_0/Y_0$), and improved import capacity of resource balance of 2.3 percent of GDP [$\Delta(X_{CM}-M_0)/Y_0$].

In other words, Latin America has consumed most of its GDI gains during the 2000–10 period, which may explain poverty reduction and the higher levels of self-reported happiness in many countries. On average, the region has only invested about one-fourth of its GDI gains (15 percent of GDP out of a total of 56 percent of GDP), which may be insufficient to sustain high rates of growth in the long run – even under the assumption that these investments are productive and efficient.

These findings have an important implication for the design of macroeconomic frameworks in Latin American countries: the policy packages under consideration for the years ahead should reflect analyses of: (i) the determinants of aggregate consumption; (ii) the real welfare effects of reforms; and (iii) the impact of changes in relative prices, terms of trade, and in foreign financing on domestic absorption – public expenditures should target the poorest segments of the population.

The numbers in Table 1 also set the stage for future debates about the macroeconomic space for policies that reduce inequality and social exclusion. Since much of the recent research on inequality and the intellectual discussions have been narrowly on the declining Gini coefficients, one should expect Pope Francis and his successors to have even more to complain about in the years and decades ahead.

7a.4   Conclusion: elusive inequality?

The empirics of inequality in Latin America – measured with Gini indexes – are generally consistent across various recent studies and point to a clear improvement since the beginning of the decade of the 2000s. Aggregate-level survey results on self-reported wellbeing also indicate that the people there are

Table 7a.1 Growth of domestic income in LAC and its absorption, c.2000–c.2010

	Growth of GDI as % of Y_0			Absorption of GDI as % of Y_0				Discrepancy
	$\Delta Y_0/Y_0$	$\Delta TTE/Y_0$	$\Delta GDI_0/Y_0$	$\Delta C_0/Y_0$	$\Delta I_0/Y_0$	$\Delta(Xcm\text{-}M_0)/Y_0$	Total	
	%	%	%	%	%	%	%	%
	1	2	3=1+2	4	5	6	7=4+5+6	8=3−7
Argentina	45.4	3.2	48.7	37.7	11.7	3.2	52.6	3.9
Bolivia (Plurinational State of)	45.8	17.4	63.2	34.8	8.0	17.6	60.4	−2.8
Brazil	42.6	5.2	47.8	36.6	10.8	−0.5	46.9	−0.9
Chile	45.9	37.7	83.6	51.1	22.7	13.1	86.9	3.3
Costa Rica	53.1	−8.5	44.6	34.6	16.9	−7.5	44.0	−0.5
Ecuador	49.7	14.1	63.8	44.3	30.9	−14.4	60.7	−3.1
El Salvador	20.5	−5.1	15.4	20.2	−0.3	−5.2	14.8	−0.6
Honduras	49.9	−13.5	36.4	49.2	1.5	−14.3	36.4	0.0
Mexico	20.8	3.1	23.9	20.7	3.4	0.1	24.2	0.3
Panama	80.5	0.8	81.3	33.0	27.3	19.5	79.9	−1.4
Paraguay	40.3	8.3	48.6	40.3	11.1	−3.2	48.2	−0.4
Peru	72.1	22.0	94.1	52.5	32.9	9.6	94.9	0.9
Venezuela	36.1	40.5	76.6	48.3	18.4	11.3	78.0	1.5
LAC								
Simple average	46.4	9.6	56.0	38.7	15.0	2.3	56.0	0.0
Median	45.8	5.2	51.0	37.7	11.7	0.1	49.5	−1.4

Data Sources: Author, using the following: ECLAC-UN. CEPALSTAT and Social Panorama 2013. World Bank.

feeling happier and more confident about their future. Yet, if one digs deeper, the broad picture appears to be less clear-cut: first, the two main explanations often given for the reduction in inequality (reduction in hourly labor income inequality and robust and progressive government transfers) are not sustainable.

Second, analyses based on income concentration measures such as the Palma ratio shows that social exclusion is still a major structural and policy issue, even in countries that have achieved remarkable rates of growth for more than a decade. The lower deciles of the population do not seem to be getting their "fair" share of the expanding pie and they are increasingly angry about it – as seen in violent demonstrations and riots in Brazil in 2013–14. Moreover, sustained growth in many countries brings additional expectations to various social groups. This highlights the limits of "objective" measures of inequality, and validates some of the "subjective" perceptions of a welfare deficit in the region.

Since the real causes of the decline in returns to schooling are not well understood and the continuous creation of employment opportunities valued by workers in the labor force are *in fine* the best remedies to inequality, this chapter has suggested that the discussion be broadened. An exploration of the "macro" links between wealth creation and consumption provides additional information to reflect on the dynamics of poverty and inequality in Latin America.

However, it is unlikely that any level of sophistication in empirical analyses will satisfy the intellectual demands of skeptics such as Pope Francis, who rightly point to the moral aspects of inequality and poverty. Any society – especially of Latin America, where social exclusion is several centuries old and where human suffering is solidly entrenched – should constantly challenge itself and reassess and adjust public policies to meet ever higher ethical goals. Wealth and income measures of inequality are essential indicators of the pertinence and effectiveness of public policy, and perhaps also the quality of life. But at a much deeper level, the problems are of a philosophical nature. In a popular novel, Fuentes (1962) tells the story of a Mexican millionaire who meditates on his deathbed after a life as a revolutionary and a greedy businessman. He observes his body's decay, and contrasts the poverty of his own physical disintegration with the wealth of his soon-to-be useless assets. He amuses himself with images of an entire wall of his office covered with the diagram of the vast businesses he controls.

To those who assume that more equitable wealth and income distribution is a prerequisite for stable and happier societies, the meditations of Fuentes's dying character stress the fundamental equity among humans, and the impartiality of death as the ultimate regulator of life. But this is unlikely to settle debates that will continue forever, well beyond economics, accounting, and statistics.

Notes

1. The famous Kuznets Curve depicts inequality rising first and then falling as countries get richer (Kuznets, 1955).
2. Pope Francis has denounced in several public statements the "culture of selfishness" that, in his view, is widening the gap between rich and poor. He has condemned "savage capitalism" and the "dictatorship of the economy."
3. John Rawls, Amartya Sen, Robert Nozick, Ronald Dworkin and many others have made seminal contributions on these themes. See Roemer (1998), Cohen (2000), Gosepath (2011) and Lamont and Christi (2014) for critical summaries.
4. According to Prados de la Escosura (2005), even the improvements of international terms of trade experienced by Latin American economies during the globalization period 1870–1914 only made things worse: it raised land yields and the land rental/ wage ratio, which benefitted the small class of landowners.
5. See for example De Maio (2007) for an excellent summary discussion of such methodological questions and the relevance of various income inequality indicators.
6. The Pew Research Center survey was conducted in 43 countries among 47,643 respondents from March 17 to June 5, 2014. The survey asked respondents to measure their happiness on a scale of 0 to 10, where 10 represents the highest rung of life's ladder. Those who answered between 7 and 10 were counted as being happy. See Pew Research Center (2014).
7. The difference in growth of GDY and total absorption is due to minor inaccuracies in deflators and some data inconsistencies. However, since there are no substantive differences, valid conclusions can be drawn from this accounting exercise.

References

Atkinson, A.B. (1970) "On the Measurement of Inequality," *Journal of Economic Theory*, vol. 2, pp. 244–63.

Cobham, A and A. Sumner (2013) "Putting the Gini Back in the Bottle? 'The Palma' as a Policy-Relevant Measure of Inequality," March. https://www.kcl.ac.uk/aboutkings/worldwide/initiatives/global/intdev/people/Sumner/Cobham-Sumner-15March2013.pdf.

Cohen, G.A. (2000) *If You're an Egalitarian, How Come You're so Rich?* Cambridge, MA: Harvard University Press.

Cornia, G.A. (2015) *Income Inequality in Latin America*, WIDER Working Paper 2015/020, Helsinki, United Nations University UNU-WIDER.

Cornia, G. A., 2014. *Falling Inequality in Latin America: Policy Changes and Lessons*. New York: Oxford University Press.

De Maio, F.G. (2007) "Income Inequality Measures," *Journal of Epidemiology and Community Health*, vol. 61, no. 10 (October), pp. 849–52.

Edwards, S. (2009) "Protectionism and Latin America's Historical Economic Decline," *Journal of Policy Modeling*, vol. 31, no. 4, pages 573–84.

Engerman, S.L. and K.L. Sokoloff (2005) *Colonialism, Inequality, and Long-Run Paths of Development*, NBER Working Paper no. 11057, Cambridge, MA: NBER.

Francis, Pope (2013) *Apostolic Exhortation* Evangelii Gaudium *of the Holy Father Francis to the Bishops, Clergy, Consecrated Persons and the Lay Faithful on the Proclamation of the Gospel in Today's World*. Vatican City: Vatican Press.

Frankema, E. (2009) "The Colonial Roots of Land Inequality: Geography, Factor Endowments, or Institutions?," *The Economic History Review*, vol. 63, no. 2, pp. 418–51.

Fuentes, C. (2009 [1962]) *The Death of Artemio Cruz*. New York, Farrar, Straus and Giroux.

Glaeser, E.L. (2005) *Inequality*, Discussion Paper no. 2078. Cambridge, MA: Harvard Institute of Economic Research, July.

Gosepath, S. (2011) "Equality," in Edward N. Zalta (ed.), *The Stanford Encyclopedia of Philosophy*. http://plato.stanford.edu/archives/spr2011/entries/equality.

Hanratty, M. and R. Blank (1992) "Down and Out in North America: Recent Trends in Poverty Rates in the United States and Canada," *Quarterly Journal of Economics*, vol. 107, no. 1, pp. 233–54.

Katz, L. and K. Murphy (1992) "Changes in Relative Wages, 1963–1987: Supply and Demand Factors," *Quarterly Journal of Economics*, vol. 107, no. 1, pp. 35–78.

Kuznets, S. (1955) "Economic Growth and Income Inequality," *American Economic Review,* vol. 45, pp. 1–28.

Lamont, J. and F. Christi (2014) "Distributive Justice," in Edward N. Zalta (ed.), *The Stanford Encyclopedia of Philosophy.* http://plato.stanford.edu/archives/fall2014/entries/justice-distributive.

Lin, J.Y. and C. Monga (2013) "Comparative Advantage: the Silver Bullet of Industrial Policy," in J.E. Stiglitz and J.Y. Lin (eds), *The Industrial Policy Revolution: the Role of Government Beyond Ideology*. New York: Palgrave Macmillan, pp. 19–38.

Lin, J.Y., and C. Monga (2014) "The Evolving Paradigms of Structural Change," in B. Currie-Adler, R. Kanbur, D.M. Malone, and R. Medhora (eds), *International Development: Ideas, Experience, and Prospects*. New York: Oxford University Press, pp. 277–94.

Lustig, N, et al. (2016) "Deconstructing the Decline in Inequality in Latin America," in this volume.

Lustig, N, L.F. Lopez Calva, and E. Ortiz-Juarez (2013) "Declining Inequality in Latin America in the 2000s: The Cases of Argentina, Brazil, and Mexico," *World Development*, vol. 44, pp. 129–41.

Ocampo, J. A. and J. Ros (2011) *The Oxford Handbook of Latin American Economics*. New York: Oxford University Press.

Palma, J.G. (2011) "Homogeneous Middles vs. Heterogeneous Tails, and the End of the 'Inverted-U': It's All About the Share of the Rich," *Development and Change*, vol. 42, no. 1, pp. 87–153.

Pew Research Center (2014) *Spring 2014 Global Attitudes Survey*. Washington DC: Pew Research Center.

Prados de la Escosura, L. (2005) *Growth, Inequality, and Poverty in Latin America: Historical Evidence, Controlled Conjectures*, Working Paper 05-41, no. 4. Madrid: Universidad Carlos III, Department of Economic History and Institutions.

Roemer, J.E. (1998) *Theories of Distributive Justice*. Cambridge, MA: Harvard University Press.

Wolf, C., Jr. (2012) "The Inequality Debate," *The International Economy*, June 4.

8
Caste Discrimination in Contemporary India[1]

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8.1   Introduction

To what extent do social identities rooted in antiquity, such as caste, shape present-day socioeconomic outcomes in a rapidly globalizing and modernizing economy, such as India? It has been argued that "rapid economic growth and the expansion of the middle class are accompanied by new opportunities for individual mobility which further loosens the association between caste and occupation" and that "there are other areas of life in which the consciousness of caste has been dying down" (Beteille, 2012). In addition to rapid changes in the economy, the critical 73rd and 74th amendments to India's constitution in 1992 paved the way for greater political representation of the so-called lower castes. Their sustained increased presence in the political arena, both as elected representatives at various levels, as well as important leaders within several political parties, has been termed India's "silent revolution". This is one more reason to expect either a reversal, or at least a flattening of traditional caste hierarchies. Indeed, this has been viewed as a large enough flux, such that we now have "a plethora of assertive caste identities... [that] articulate alternative hierarchies" leading to a scenario where "there is hardly any unanimity on ranking between jatis" (Gupta, 2004).

These views suggest that present-day disparities between the so-called upper and lower castes are essentially a hangover from the past, mostly lingering effects of historical discrimination, and not a result of active discrimination in the modern segments of the Indian economy which is market-driven and not based on traditional systems of reciprocity and patronage that were hallmarks of the caste economy. This conclusion would be strengthened by the belief that markets have no mechanism, and presumably no interest, in actively perpetuating discrimination based on social identities.

This paper attempts to verify the validity of this view by reviewing the latest national level, macro evidence on the current state of caste disparities

and discrimination in various spheres, and finds that discrimination against formerly untouchable castes (officially, Scheduled Castes, SCs, or Dalits) and marginalized tribal groups (Scheduled Tribes, STs, or Adivasis) is very much a characteristic of the modern, contemporary, globalizing Indian economy. It is not merely seen in rural areas where caste is more easily known, but also in urban areas where caste is, prima facie, anonymous. The existence of the presumably antiquated practice of caste discrimination in a modern economy characterized by high growth, fundamental structural changes and rapid integration into the global economy might seem anachronistic at first sight. However, evidence from across the world indicates that discrimination based on social identities is compatible with fully market-driven economies. The evidence leads to the conclusion that caste as an axis of disadvantage is not about to wither away in post-reform India, and the simultaneous existence of discrimination in so many different spheres presents serious challenge to policy makers.

The rest of the paper is organized as follows: Section 8.2 presents the evidence on disparities in outcomes on a variety of indicators, both at the household and individual levels, and conducts a difference-in-differences (D-I-D) analysis across six birth cohorts of the three broad caste groups (SC-ST, Other Backward Classes (OBCs) and Others) such that we can trace intergenerational shifts across the three caste groups to trace patterns of convergence or divergence in each individual indicator. Section 8.3 presents estimates of labor market or wage discrimination. Section 8.4 examines the disparities and discrimination in the self-employment sector. Section 8.5 offers concluding comments.

8.2 Disparities in outcomes

The nature and degree of change in the economic ranking between castes, or broad caste groups, is a matter of empirical verification. The caste system is a system of graded inequalities, with the so-called upper castes conventionally at the top of the socio-economic hierarchy, and the ex-untouchable castes, now clubbed together in the official category of Scheduled Castes, at the bottom.[2] Researchers have used data from large sample surveys such as the National Sample Survey (NSS), National Family and Health Survey (NFHS) and so forth to analyse relative position of broad caste groups, ST-SCs,[3] OBCs and "Others", the residual group of the non-SC-ST-OBC population (for instance, Deshpande 2007; Iyer et al. 2013; Madheswaran and Attewell 2007; Zacharias and Vakulabharanam 2011). "Others" include the Hindu upper castes and could be considered a loose approximation for the latter, but data constraints do not allow us to isolate the upper castes exclusively. Some papers, such as Hnatkovska et al. (2012) and Deshpande and Sharma (2014) divide the groups into two broad categories – SC-ST and non-SCST.

These studies establish disparities between the broad caste groups, but the more interesting question is whether disparities are widening or narrowing over time. Ideally, good quality, nationally representative longitudinal data would be best able to answer the issue of change over time. However, in the absence of such data,[4] Deshpande and Ramachandran (2014) use cohort analysis based on data from two quinquennial rounds of the employment-unemployment surveys (EUS) of the NSS for 1999–2000 and 2009–10 (NSS-55 and NSS-66, respectively), to examine the multiple dimensions of material standard of living indicators, and the changes therein for the three broad caste groups.[5] We construct six cohorts aged between 25 and 74 years in 2010 from the two NSS rounds, and examine changes in multiple indicators using a difference-in-differences (D-I-D) approach, comparing gaps between successive cohorts across the three social groups to see if the gaps in key indicators of interest have increased or decreased over time.

Through an analysis based on a comparison of different age cohorts, we are able to build a comprehensive trajectory of change for each of the caste groups since Independence, as the oldest cohort in our analysis consists of individuals born between 1926 and 1935, and the youngest cohort consists of those born between 1976 and 1985. Thus, we are able to track outcomes for successive generations of individuals who reached adulthood in the 63 years between Indian independence (in 1947) and 2010.

8.2.1   The broad picture: household-level indicators

We examine four indicators of standard of living for the three major caste groups: SC-STs considered together, OBCs and the "Others", for the two survey rounds, NSS-55 and NSS-66, respectively. The indicators of interest are monthly per capita expenditure (MPCE), proportion of the group that is urban (percent urban) and two land holding measures: land owned and land possessed.

D-I-D for household-level variables is calculated as:

$$D-1-D_{jk} = [(Indicator_{ijs} - Indicator_{iks}) - (Indicator_{ij(s-1)} - Indicator_{ik(s-1)})] \qquad (1)$$

where j and k are the two caste groups being compared, for the ith indicator (say MPCE) between survey rounds s and s-1.

"Others" have the highest MPCE, followed by OBCs, and then the SC-STs. While the MPCE for each of the groups has expectedly increased in nominal terms, the D-I-D allows us to see the relative gains of groups. In 1999–2000 the gap between "Others" and OBCs was Rs. 213, which increases to Rs. 640 in 2009–10. Thus the OBC MPCE has fallen behind that of the "Others" by Rs. 428 over the decade. Comparing the "Others" to SC-STs, the gap increases from Rs. 293 to Rs. 893 over the two decades, implying the Others' MPCE has

increased by Rs. 600 relative to SC-STs over the ten-year period. Thus, SC-STs not only continue to have the lowest MPCE, but the other two groups have gained relative to them in terms of MPCE. OBCs have gained relative to SC-STs, but the magnitude of their falling behind Others is over 2.5 times their gain over SC-STs. Thus, on MPCE, there is no evidence of convergence between "Others," either with OBCs or with the SC-STs.

Urbanization (the percentage of the group's population which is urban) is an indicator of structural change or of potential integration into the modern, formal sector economy. We see a rise in urban proportions for both OBCs and "Others" (from 24 and 39 to 28 and 43 percent, respectively, between the two survey rounds, but virtually no change for the SC-ST population at around 17 per cent in the same time period). Again, looking at relative changes across groups using D-I-D, we find a similar pattern to the indicator MPCE, with no evidence of convergence. The two land holding variables (land possessed and land owned)[6] show sharp disparities across caste groups in both rounds, with average values for SC-STs slightly over half of the values for Others. The changes over the period are not significant.

Overall, at the household level, we see a clear hierarchy in MPCE, with "Others" at the top, followed by OBCs and then SC-STs. Over the decade, the gap between OBCs and SC-STs has increased in favor of the former, and "Others" MPCE has increased relative to both SC-STs and OBCs, but the magnitude of gain has been larger vis-à-vis the SC-STs than OBCs.

8.2.2 Individual-level indicators

The D-I-D for individual-level indicators over consecutive birth cohorts is calculated as follows:

$$D-1-D_{jk} = [(\text{Indicator}_{ijn} - \text{Indicator}_{ikn}) - (\text{Indicator}_{ij(n-t)} - \text{Indicator}_{ik(n-t)})] \quad (2)$$

where j and k are the two caste groups being compared, for the ith indicator, first for the nth cohort and then for the n-tth cohort.

8.2.2.1 Education

The gaps in years of education for the oldest cohort in our data (born during the period 1926–35) are 1.85 and 2.29 years of education, between "Others" and OBCs and SC-STs, respectively. For the youngest cohort, born between 1976 and 1985, the equivalent gaps are 2.21 and 3.68 years, respectively. Comparing the youngest and oldest cohort shows that over the 50-year period, gaps between the "Others" and the OBCs and SC-STs increased by 0.36 and 1.59 years, respectively, and the D-I-D are significant at the 1% level.

We also analyse the trends for four separate categories of education, viz., the proportion of each cohort that is literate or more, has finished primary

schooling or more, has finished secondary schooling or more, and finally is a graduate or above. The analysis shows convergence between "Others" and the two other groups – SC-STs and OBCs – for lower categories of educational attainment, namely, literacy and primary schooling. However, this picture is overturned when higher categories of education, viz., secondary schooling or higher, and graduate degree or above are considered. For instance, comparing the same two cohorts for the category of graduate degree or higher, we see that the OBCs and SC-STs fall further behind "Others" by 1.6 and 5.5 percentage points, respectively. The fact that on the higher categories of education, which would be critical to achieve social mobility, traditional hierarchies have not only persisted but also widened over the 50-year period is noteworthy. This indicates that policies targeted towards closing the gaps at the higher education levels are not entirely misplaced, as the lower educational levels are witnessing a convergence between broad caste groups, but higher levels are not, and hence targeted policies would be needed to close those gaps.

8.2.2.2   Intergenerational transmission of education

We estimate relative intergenerational persistence in education, for the three social groups and two survey rounds, by estimating the following equation:

$$E_i^s = \alpha + \beta E_i^f + R_i + S_j + A_i + \varepsilon_i \qquad (3)$$

where E_i^s and E_i^f refers to the years of education of son labeled i and father of i, respectively, R_i is the religion dummy for individual i, S_j is the state fixed effect, A_i is the age of son i, ε_i is the error term, and β the parameter of interest. The β parameter measures how strongly the son's education depends on his father's education. A value of 0 would imply that there is no independent effect of father's education on the son's education and there is complete intergenerational mobility.

The estimates for β parameters show that the intergenerational persistence of education is seen to be strongest for SC-STs, followed by OBCs and finally "Others" for both the survey rounds. We find that SC-STs have the lowest levels of mobility in the economy. The fact that fathers' education has the biggest impact seems to suggest that "family factors" are more important for the relatively more backward groups. This finding resonates somewhat with Munshi and Rosenzweig (2006) who find that lower-caste working class families are more likely to use referrals, i.e. use their family and caste networks that are predominantly working class.

However, over the two survey rounds we see a decrease in the relative intergenerational persistence of education. The average β coefficient decreases from 0.51 to 0.42 over the two NSS rounds indicating an increase in mobility for all three social groups; hinting at an increase in equality of opportunity.

The education transition matrix

The results reported so far have analysed shifts across birth cohorts. We go further to examine generational shifts by constructing a matrix which depicts the transitional probabilities of the son's education belonging to a particular education category given the father's level of education.

The transition matrix provides us easy visual representation of the underlying intergenerational mobility in education for the three social groups. It helps us understand whether the pattern of increasing educational attainment which we observed above is driven by sons of household heads with high education obtaining even higher education (i.e. intergenerational persistence), or is it due to the upward movement of sons whose fathers had low education moving up the ladder (intergenerational mobility).

Comparing the transitional probabilities of NSS-55 with those of NSS-66, we first observe that for all three social groups there is an increase in the average proportion of fathers in higher educational categories. For instance, the proportion of fathers with more than primary schooling but less than secondary schooling increases from 17.45 to 22.85 percent, 23.98 to 29.87 percent and 27.87 to 29.80 percent for the SC-STs, OBCs and Others, respectively. We also observe that for sons whose fathers had education categories of secondary schooling and above, the probability of the son achieving an educational category equal to or higher than their father increases for all three groups, that is, intergenerational persistence is high for families with higher levels of education. For instance, for the probability of the father belonging to the education category "more than secondary but lower than higher secondary" and his son belonging to a same or higher category increases from 73.8 to 75.9 percent, 72.8 to 85 percent and 82.1 to 87.8 percent for the SC-STs, OBCs and Others, respectively.

Having said this, it should be noted that conditional on fathers' education, sons from the group "Others" are more likely to achieve an education category equal to or higher than their father as compared to SC-STs and OBCs. So, for instance, in 2009–10, for fathers with education category "graduate education and higher", the probability that the son also achieves the same educational category is 37.8, 33.56 and 54.01 percent for the SC-ST, OBCs and Others, respectively. The reading of the matrix suggests that the ability of highly educated parents to ensure an equivalent or higher education level for their children is best reaped by the "Others". The fact that SC-ST sons have a higher probability of being graduates and above, compared to OBCs, contingent upon their fathers being graduates suggests that reservations for SC-STs in higher education might be playing a role. All these results are confirmed through the multinomial probit regressions reported in the paper.

8.2.2.3   Occupation

The paper classifies occupational attainment in several different ways. One, based on skill level, we can classify occupations into white-collar, blue-collar

and agricultural workers. Another classification could be the NSS usual and principal activity status (UPAS), for which the first cut is threefold: whether in the labor force or not, and, if yes, whether employed or not. For those who are employed, the categories are own-account worker, and employer, helper in household enterprise, regular wage/salaried employment, casual wage labor in public works and casual wage labor in other types. We can also divide all jobs into private versus public sector (regardless of whether they are white or blue-collar). We look at D-I-D for all three classifications.

To sum up some of the key findings, the proportion of those in agricultural jobs is highest for the oldest cohort, and steadily declines to the youngest cohort for all the caste groups. This is matched by an increase in proportions in blue-collar jobs, with inter-caste differences. The disparities are the sharpest for white-collar jobs. Comparing the cohort born in 1926–35 to that born in 1966–75 (these would be 35–44 years old in 2010), the gap between OBCs and "Others" and between SC-ST and "Others" has increased to 12.04 and 16.65 percentage points, respectively (from 5.4 and 5.8). Thus, occupational disparities in attainment of the most prestigious jobs have sharpened over the six decades. This mirrors the continued divergence in secondary and higher education categories. The same finding is reinforced by multinomial logit estimates of probability of being in one of the three job categories.

8.2.2.4   Public sector jobs

However, one important finding needs to be highlighted. We find that SC-ST percentages with access to public sector jobs are consistently higher than those for OBCs, a trend that is at variance to that for white-collar jobs. We believe that the difference in the relative picture between SC-STs and OBCs reflects the longer operation of SC-ST quotas. Others have the highest percentage of public sector jobs across cohorts. The D-I-D reveals that OBCs are catching up, both with SC-STs and "Others". This is most strikingly true for the cohort born between 1956 and 1965, individuals who would have been between 35 and 25 years old in 1990, and hence eligible to take advantage of the new quotas. This catch-up also continues to the next younger cohort. We see a similar convergence between SC-STs and Others, which is contrast to the divergence in access to white-collar jobs.

Within the public sector, white- and blue-collar jobs present different scenarios. The result of quotas can be clearly seen here. Take a representative example. 6.51 percent SC-STs, 13 percent OBCs and 26.29 percent of the cohort born between 1956 and 1965 are in white-collar jobs. But of these, 36 percent of (the 6.51) SC-ST, 21.2 percent OBCs and 24.08 percent "Others" are in the public sector. This reveals that there are gaps between caste groups, even within the public sector, but a much higher proportion of SC-STs owes their access to white-collar jobs to the public sector. If there had been no quotas, the

SC-ST access to white-collar jobs would not have been as large as 6.51, which is already less than one-fourth the proportion of the "Others". The D-I-D for white-collar public sector jobs reveals that OBCs are gaining vis-à-vis both SC-STs and "Others", whereas SC-STs are losing vis-à-vis the "Others".

Thus, our suspicion, that the lagging behind of the SC-STs in white-collar jobs is a result of gaps in the private sector, is further confirmed by this picture. Of course, our data do not allow us to identify quota beneficiaries explicitly; hence attributing the catch-up to quotas is conjectural. The OBCs access to white-collar jobs (both public and private), as well as public sector jobs (both blue- and white-collar) shows convergence with "Others". A part of this convergence would be due to the operation of quotas but not all of it, since there is convergence between OBCs and "Others" in both public and private sectors.

8.3   Wage gaps and labor market discrimination

The average wages for the three caste groups show the expected ranking. In 2009–10, the average daily wages were Rs. 145, 188, and 310 for SC-STs, OBCs and Others respectively. Interestingly, for OBCs and Others, average wages for the cohort born during 1956–65 were the highest, as this cohort is between 45–54 years old, at the peak of its earning cycle, but somehow this is not true for SC-STs.

Overall, comparing Cohort 2, which is the oldest cohort that went to school after Independence (born 1946–55), with Cohort 5, the D-I-D shows that both OBCs and SC-STs have fallen behind "Others" in terms of average daily wages by Rs. 55 and Rs. 57 respectively, despite some convergence occurring among the younger cohorts.

8.3.1   Blinder–Oaxaca decomposition

We perform the Blinder–Oaxaca (B–O) decomposition on the average male wage gap between "Others" on the one hand, and OBCs and SC-STs, respectively, in order to separate the explained from the unexplained component (the latter often treated as a proxy for labor market discrimination). We control for three different sets of observable characteristics: one, personal characteristics (PC), namely, years of education, age, age squared, marital status; two, added to PC, we control for region and sector (rural/urban) of residence;[7] and three, added to all these, occupation – agricultural, white-collar or blue-collar jobs.

Based on NSS-66, the results of the B–O decomposition exercise between Others and OBCs reveal that in regressions including personal characteristics as controls, for all cohorts between 25 to 74 years, the (geometric) means of daily log wages are Rs. 194 for Others and Rs. 135.88 for OBCs, amounting to a difference of 42.8 percent. The differences in endowment account for about 62 percent of the gap with around 38 percent remaining unexplained. With

the full set of controls, differences in personal and geographical characteristics account for about 65.5 percent of the observed gap. Running similar regressions for each of the cohorts separately, we find that from older to younger cohorts, the absolute wage gap reduces, but the proportion that cannot be explained by differences in personal characteristics increases.

As is well known, the decomposition estimates are sensitive to the choice of the counterfactual, that is, the assumption about the wage structure that would prevail in the absence of discrimination. The results described here are based on the assumption of the pooled model, where the counterfactual wage structure is one that characterizes the whole population. Using the "Others" wage structure as the counterfactual, for all cohorts, the proportion of the gap that is explained by endowments alone is smaller. This implies that, with the PC specification, if OBCs had characteristics similar to the Others, the wage gap would be 54 percent smaller. If the labor market treated OBCs like Others, the wage gap would be reduced by 28 percent. The interaction term captures the combined effect of characteristics and coefficients, and shows again that if the OBCs were more like the Others, and if the market treated them as such, the wage gap would be smaller by 18 percent. Similar to the pooled model, we find that the absolute gap is lower for younger cohorts, but the proportion explained by endowments also goes down, and the proportion due to coefficients (conventionally taken as a measure of discrimination) increases as we move from older to younger cohorts.

We conduct similar decompositions between SC-ST and Others, which reveal that the average daily wages are Rs. 194 and Rs. 109 for Others and SC-ST, respectively, implying that the absolute wage gap between these two groups is 77 percent. Thus, the average wage gap between SC-ST and Others is a little less than twice the wage gap between OBCs and Others. However, the unexplained proportion of the daily wage is around 39 percent, which reduces to 27 percent once differences in region, sector and occupation are taken into account.

These are results from the pooled model. Using Others' wage structure as the counterfactual, we find that the absolute wage gaps between Others and SC-STs are higher than the corresponding gaps between Others and OBCs, reiterating once again that SC-STs are at the bottom of the economic hierarchy. Again the proportion of the gap explained by endowment differences is higher for SC-STs than it is for OBCs. However, overall and for the three youngest cohorts we see that the proportion of the gap explained by the interaction term is higher for SC-STs than for OBCs. This suggests that if SC-STs were more like the Others, and if the labor market treated them more like the Others, the wage gap would be significantly less.

The absolute wage gaps between the Others and SC-ST are higher than the gaps between Others and OBCs for all cohorts. However, the proportion that can be explained by differences in observed characteristics is always higher

for the SC-ST as compared to the OBCs. One potential explanation could be that even though in terms of access to schooling, the OBCs have been closing the relative gap with the Others faster than the SC-ST, that has not necessarily translated into convergence in quality. This implies that the educational attainments of OBCs and Others converge, but returns (coefficients) diverge as increased access might be masking the differences faced in schooling quality by the two groups. Similarly, our occupational categories reflect broad differences in occupation status, and the movement of OBCs into what are classified as white-collar jobs might be at the lower end, again implying convergence in endowments, but returns (coefficients) could diverge as the two groups are employed in different kinds of white-collar jobs.

8.4   What does the self-employment sector reveal?

Given compelling evidence of labor market discrimination, there is a view that members of marginalized groups should turn to self-employment (and entrepreneurship). Indeed, there are several examples where ownership of small business has been an important factor in the economic success and mobility of immigrant groups such as the Chinese, Koreans, Jews and Italians in the United States (see Fairlie, 2006 and the references therein) and ethnic minorities in England and Wales (Clark and Drinkwater, 2000). The implicit assumptions underlying these claims have been that one, a sufficiently large part of the self-employment activity would be entrepreneurial, rather than survivalist; and two, discriminatory tendencies that characterize the labor market would somehow be missing from other markets, such as land, credit or consumer markets, critical to the success of entrepreneurial activities.

   The suggestion that marginalized groups should focus on setting up their own businesses has several strands, one of which argues that members of these groups should create jobs, especially for members of their own community. This argument has prompted, in India, the advocacy of "Dalit Capitalism" – inspired by "Black Capitalism" in the United States – the first step of which has been the formation of the Dalit Indian Chamber of Commerce and Industry (DICCI), mirroring the long-established industry association Federation of Indian Chambers of Commerce and Industry (FICCI).

   DICCI was founded on April 14, 2005, on the birth anniversary of Dr B. R. Ambedkar, acknowledged by the DICCI as their "messiah and the intellectual father". Interestingly, while Ambedkar was responsible for making compensatory discrimination for Dalits mandatory through constitutionally guaranteed quotas in government jobs, the DICCI group rejects job reservation as a means to Dalit emancipation, as they feel quotas have added yet another (negative) stereotype to the Dalits, seen as they are as "the State's *Jamais*" (sons-in-law of the State). Instead of depending on the State to provide

Dalits decent jobs, the DICCI has adopted as its mission statement "be job givers, not job seekers", exhorting members of the Dalit community in India to become entrepreneurs.[8] The DICCI believes that this will help Dalits rise to the top of the social pyramid, and will pave the way for the end of the caste system. The long history of engagement with the question of annihilation of caste is testimony to how vexed this question is, with no easy answers. Deshpande and Sharma (2013) argue that in order to understand the spread of "Dalit Capitalism" it is not enough to focus on the top end of Dalit businesses (the billionaires), but instead, to investigate the extent and spread of Dalit participation in small businesses, which more accurately reflects the material conditions of millions of Dalits who are not in wage employment. The small group of highly successful Dalit industrialists represents a miniscule fraction, not only of the overall Dalit population, but also of Dalit businesses. An over-whelming proportion of Dalit businesses are small, household enterprises that are often owner-operated.

8.4.1   Caste in the MSME sector

Deshpande and Sharma (2013) use unit-level data from the registered manufac-turing segment of the Third and Fourth rounds of the Indian Micro, Small and Medium Enterprises (MSME) census data for 2001–2 and 2006–7, respectively, to understand the changes in involvement and dynamics of Dalits, Adivasis and women in this sector.

   We find clear caste and gender disparities in the ownership of registered manufacturing MSMEs, where SCs and STs are under-represented compared to their population shares, OBCs are roughly equal to their population share and "Others", especially Hindu upper castes[9] are over-represented. Caste disparities have marginally increased over 2001–2 and 2006–7, whereas gender disparities have marginally decreased. Proportions of SC, ST, OBC and female ownership are higher in rural compared to urban areas.

8.4.1.1   *How is production differentiated by caste?*

The top five activities, which collectively account for roughly 62 percent of all registered manufacturing MSMEs, are food products and beverages, apparel, fabricated metal products, furniture and textiles.

   This overall picture changes somewhat when we differentiate by caste of the owner. Activities dealing with leather – tanning and dressing of leather, manufacture of luggage and footwear – stigmatizing jobs traditionally asso-ciated with one of the Dalit castes, are the most important activity for SC manufacturing and these do not appear in the top five activities of any other caste group. However, over the period, the proportion of SC-owned enterprises engaged in leather has shown a decline. Also, leather forms a larger share of urban SC-owned units, compared to rural.

The stigma of untouchability has traditionally kept Dalits out of food-related industries (Navsarjan Trust 2010; Shah et al. 2006). We find that the proportion of SC-owned firms in food products and beverages is significantly lower than the national average, and that of all other caste groups. However, over the period, this proportion has increased, both in rural and urban areas, and again, proportions are smaller in urban areas compared to rural. To the extent that Dalit participation in leather and exclusion from food are indicators of traditional caste practices, we find some evidence of loosening of these ties, but find that these practices more strongly entrenched in urban compared to rural areas, which is an enigma.

The OBC picture is very similar to the all-India picture; given the high share of OBC-owned enterprises, this is probably driving the all-India picture. Roughly 7–8 percent of Hindu upper-caste units are engaged in the production of machinery and equipment, a category of production that distinguishes them from the other caste groups. Rural upper castes are also engaged in the production of non-metallic mineral products.

8.4.1.2 *Employment*

The typical enterprise had 6.4 employees in 2006–7, with a higher average in urban enterprises. The MSME census does not specifically ask what proportion of employees are family labor versus hired wage employees, but it would be reasonable to infer that the probability of use of family labor would be higher, the lower the number of average employees.

The average number of employees is also an indication of the scale of the enterprise. We can see that this number has gone up for all manufacturing enterprises regardless of the caste and gender of the owner, but shows differences by caste and gender of owner/manager. SC, ST and OBC-owned enterprises tend to be smaller than Others-owned, with the Hindu upper caste enterprises employing the highest average number of employees (8.59) in 2006–7.

8.4.1.3 *Owner-operated enterprises: survival activities?*

Whether a self-employed individual is an entrepreneur, or simply involved in survival activities, is a matter of inference based on attributes of the business. Owner-operated units, which by definition have one employee, can be reasonably seen as representing survival activities, possibly distress-driven. The proportion of such units has increased over the period to stand at 22.6 percent in 2006–7. Unsurprisingly, the proportion of such units in rural areas is greater, but the increase in urban proportions has been sharper compared to rural.

Proportion of owner-operated manufacturing enterprises is highest among SCs: 40 percent in 2006–7, an increase from 38 percent in 2001–2, indicating that a large part of Dalit manufacturing is small-scale and survival-driven. Proportions of owner-operated units in ST and OBC-owned businesses are

significantly lower than that among SCs. However, the biggest contrast is between these three groups and the "Others", whose proportions of owner-operated enterprises have remained practically unchanged over the period, whereas the other three groups have registered significant increases. The proportion of owner-operated enterprises among the Hindu upper castes at 11.5 percent is the lowest among all caste groups, indicating that these businesses are more entrepreneurial than survival-driven.

8.4.1.4   Homophily

What about the caste composition of the employees? Over the period, the proportion of employees who are SC, ST and OBC have fallen, with a corresponding increase in the proportion of Others.[10] The employee share of SC, ST and OBCs is greater in rural enterprises than in urban, with the share of "Others" being exactly the opposite. The gender break-up reveals that manufacturing MSME employees are overwhelmingly male, with less than one-fifth of the employees being female; female proportions being higher in rural than urban areas, with the rural–urban gap having narrowed over the period.

Looking at the distribution of employees by caste of owner, we find that between 2001–2 and 2006–7, the share of SC employees in SC-owned enterprises has *declined* from 85 to 61 percent (for STs, the corresponding figures in ST-owned enterprises are 70 to 60 percent). There is a similar decline for percentage of OBC employees in OBC-owned firms, but an *increase* in "Other" employees in Others'-owned firms. In 2006–7, in OBC and Others'-owned enterprises, between 74 and 77 percent of employees belong to the owner's caste group.

It could be argued that these numbers simply reflect the use of family labor and not homophily. While we cannot distinguish between the two with exact certainty, we can provide pointers. In 2006–7, the median number of employees in the manufacturing MSME sector was 3. We find that 50.52 percent of micro units, 0.57 percent of small units and 0.6 percent of medium-sized units had less than 3 employees. Conversely, of all units with less than 3 employees, 99.94 percent were micro units, 0.05 small, and none were medium-sized. Adding this to the fact that smaller enterprises are more likely to use family labor, we can look at employee shares separately for units above and below the median number of employees. For firms with more than 3 employees (presumably with greater use of hired labor), 65 percent of employees in OBC firms are OBCs and 70 percent of employees in Others' firms are "Others" (similar to upper-caste firms), whereas only 39 and 49.7 percent of employees in SC and ST firms are SC and ST, respectively. Thus, the majority of employees in the *larger* SC-ST firms are *not* SC-ST. This outcome could potentially be explained by the skill differential between SC-ST and "Other" employees, but data do not allow us to separate employer preferences that are due to caste

affinity from those that are due to the potential skill of the employees. Also, it should be noted that what we observe are outcomes as a result of the hiring process. Whether these outcomes are due to homophily or simply reflect the relative availability of employees from different caste groups is difficult for us to ascertain, since labor demand and supply cannot be separated.

Recall the DICCI mission statement: "be job givers and not job seekers". Empirically, how does the ability of Dalit enterprises to create jobs compare with that of other caste groups? At the national level, of the total workforce in registered manufacturing MSMEs, only 4 percent is employed in SC-owned firms, 2.2 percent in ST-owned firms, 27.7 percent in OBC-owned firms, and 66 percent in firms owned by Others (of which, 41.5 percent is employed in Hindu upper-caste owned firms). Notice that, over time, the share of OBC and Other employees in SC-ST owned enterprises has risen significantly, whereas the share of SC-ST employees in OBC and Others-owned enterprises has shrunk. Both due to the smaller size of SC-ST firms, and to the strong possibility that OBCs and "Others" practice homophily, evidence suggests that the beneficiaries of jobs created in the registered manufacturing sector will be disproportionately OBCs and Others. Thus, the potential of Dalit businesses to create jobs for Dalits seems to be limited based on the evidence so far. However, in firms above the median number of employees, the highest proportion of SC and ST employees is in firms owned by SCs and STs, respectively, and is significantly greater than the corresponding proportions in firms owned by other caste groups. Thus, the likelihood of SC and ST employees getting hired is far greater in SC/ST-owned firms, indicating that the rise in Dalit/Adivasi entrepreneurship is critical to improving employment outcomes for members of these groups.

8.4.1.5   Entrepreneurship or survival?

Our estimates of growth regressions reveal that in comparison to Others-owned firms, SC, ST and OBC-owned firms register significantly lower growth, after controlling for size and other characteristics. Given that high-productivity entrepreneurial firms are likely to grow fast, while firms that are in low-productivity survival activities register lower growth, based on evidence in this paper, and on other evidence on the informality and low-productivity nature of SC-ST economic activity (NCEUS, 2008), we can say with greater certainty that SC and ST-owned businesses are more likely to be survivalist than entrepreneurial.

There exists independent evidence that Dalit firms face discriminatory barriers to expanding their businesses and this could be a possible mechanism to explain our growth results. In a case study of Dalit businesses in north-west India, Jodhka (2010) finds that most Dalit businesses are small in size, run mostly as self-proprietorships in the informal sector (these would be classified

as own-account enterprises in our data set). Some Dalits in his study felt that they had been victims of prejudice. Locally dominant communities, who have traditionally dominated the business scene, do not like Dalits getting into business: "they hate us" or they "do not like us being in the business" were among the common responses from Jodhka's Dalit businessman respondents. Some others reported being regarded as outsiders or "odd actors". Many felt handicapped because of not being part of traditional business communities. A large proportion of his Dalit respondents felt that caste affected their business negatively, both because of discrimination from traditional business communities, and also because of the attitude of consumers. "Identification with my caste name tends to discourage my clients. Even when they do not have caste prejudice, they feel we may not be able to deliver because we are traditionally not the ones who have been in business or possess enough resources to run a good business" (Jodhka 2010:47). This is similar to evidence from other countries, for example, Borjas and Bronars (1989) find evidence that the large observed differences in self-employment rates across racial groups (Asians, blacks, Hispanics, and whites) in the US is partly due to consumer discrimination.

8.4.2   Discrimination in the small business sector

The evidence of systematic and persistent caste differences outlined above does not prove discrimination along caste lines in the business sector; all the gaps could, in principle, be accounted for by the fact that businesses owned by Dalits and Adivasis have characteristics that are systematically inferior to those of non-SCST-owned businesses. For instance, SCST owners could be less educated, poorer, lack strong business networks and so forth, and accounting for these characteristics might explain the entire gap in business earnings. Of course, the fact that SCSTs enter the field of self-employment with inferior characteristics indicates the presence of "pre-market" discrimination.

Deshpande and Sharma (2015) examine whether differences in earnings between SCST and non-SCST-owned household nonfarm businesses could be entirely explained by differences in characteristics, or whether there is a residual unexplained gap in earnings, which is indicative of discrimination. Using the India Human Development Survey (IHDS) data for 2004–05, we use two methodologies for understanding the earnings structure of household nonfarm businesses (referred to as simply "businesses" hereafter): OLS estimation of mean earnings for SCST and non-SCST businesses; and quantile regressions for a distributional analysis to look beyond the mean and to understand "what happens where" in the earnings distribution. We decompose the mean earnings gap through the conventional Blinder–Oaxaca decomposition. We then use the quantile regressions to decompose the gap at each percentile of the earnings distribution in order to examine whether and how the extent of discrimination changes along the earnings distribution.

We find clear differences in observable characteristics between SCST and non-SCST businesses. The latter are more urban, record larger number of total man-hours, and have owners who are more educated, less poor, possess a greater number of assets, have better networks and are more likely to have a business in a fixed workplace. These disparities get reflected in both indicators of business performance in the data – gross receipts and net income – such that SCSTs, on average, perform significantly poorly compared to non-SCSTs.

The Blinder–Oaxaca decompositions reveal that depending on the specification of explanatory variables, as much as 55 percent of the net income gap could be attributed to the "unexplained" or the discriminatory component. Quantile regressions reveal that gaps are higher at lower deciles than the higher ones (both raw gaps, as well as after controlling for characteristics), and the decompositions also reveal that the unexplained component is higher at the lower deciles than higher, suggesting that SCST-owned businesses at the lower end of the conditional earnings distribution face greater discrimination, as compared to those at the higher end.

8.4.2.1 The sticky floor

Our analysis shows the presence of greater discrimination at the lower end of the conditional earnings distribution. The actual magnitudes vary according to the specification used, for example, one specification shows that the unexplained or discriminatory component declines from 46 percent at the 10th percentile to 42 percent at the 90th percentile. This suggests that, conditional on observable characteristics, those starting at low-level activities might face greater constraints, but those constraints ease as businesses earnings increase.

The phenomenon of higher caste gaps at lower levels of earnings is similar to the "sticky floor" phenomenon observed in the gender wage gap literature. Sticky floors are broadly defined as declining earning gaps as one moves from lower to higher quantiles of the earnings distribution (for example, Arulampalam et al., 2007). Unlike gender wage gaps in most developed countries that are characterized by "glass ceilings" (that is, increasing wage gaps as one moves from lower to higher quantiles), several developing countries reveal a sticky floor, for instance India (Deshpande, Goel and Khanna, 2015, and China (Chi and Li, 2008). This is revealed by both higher gaps at lower wage levels, as well as greater discrimination (higher unexplained component) at lower wage levels. Sticky floors (or their opposite, glass ceilings) refer both to raw, unconditional wage gaps, as well as to gaps in the conditional wage distributions estimated by quantile regressions. For labor markets, a possible explanation for the "sticky floor" (in contrast to the "glass ceiling" effect, which refers to increasing wage gaps as one moves from lower to higher quantiles) is statistical discrimination. For self-employment, reasons behind the sticky floor need to be explored further.[11]

8.5   Concluding comments

The first part of the paper establishes that intercaste disparities continue to mark virtually all indicators of material wellbeing. The D-I-D analysis based on successive birth cohorts allows us to look at intergenerational shifts and we find that other than in literacy, primary and middle-school education, there is divergence across all other indicators between Others on the one hand, and OBCs and SC-STs on the other. Blinder–Oaxaca estimates of labor market discrimination reveal that one, SC-STs face wage gaps that are nearly double that of OBCs, and two, that younger cohorts of OBCs face lower discrimination, compared to older cohorts, a pattern not seen for SC-ST.

The existence of labor market discrimination leads us to ask if self-employment could be an alternative for marginalized groups to escape discrimination, to improve their material lot, and be job givers to members of their own communities. Our results indicate that one, the self-employment sector is marked by strong intercaste disparities; two, that SC-ST businesses tend to be more survivalist than entrepreneurial; and three, that these are much smaller than upper-caste businesses, and as yet, not major vehicles for job-creation for Dalits. We also find significant discrimination against SC-ST businesses, with higher discrimination in the lower ends of the earnings distribution, or a "sticky floor" effect.

Desai and Dubey's (2011) analysis of "caste in 21st century India" indicates that our findings fit into the larger pattern of persistence of caste inequalities, which results in inequalities in opportunities as well as inequalities in outcomes that their paper documents. They find an increase in civic and political participation by marginalized groups, but also document how economic and educational disparities continue to flourish. As result, they find that Brahmins are ahead of everyone else, even of other forward castes, in terms of total income and wage income.

The importance of evidence pointing to persistent disparities cannot be overemphasized. As Teltumbde (2011) suggests that, in order to assess the impact of Dalit capitalism, we need to establish the improvement or deterioration in Dalit conditions in relation to the non-Dalit population. He argues "the celebration of Dalit capitalists and their Chamber of Commerce on the basis of some 100-odd individuals (out of more than 170 million) in businesses, the cumulative value of which may not even be a droplet in the corporate ocean..." (p. 10). He points out that the presence of a few rich Dalit individuals is historically speaking, not a new phenomenon. Thus, the celebration of Dalit capitalists should be placed in context. As Guru (2012) argues, the reason Dalit capitalists appear spectacular is because their success is juxtaposed against the mass of poor Dalits. Moving to the larger point of whether the success of Dalit capitalists represents the triumph of markets as suggested by Prasad and Kamble (2013), Guru (2012) suggests that it is state and political patronage,

rather than the free and competitive context of the market that provided the initial conditions for the mobility of the Dalit millionaire in India.

The simultaneous existence of discrimination in self-employment and wage employment, presents serious challenges for public policy, further complicated by the existence of pre-market discrimination for Dalits and Adivasis which results in a lower and poorer quality of educational and skill attainment. For this reason, focusing on improvement in educational outcomes ought to be a key component of the strategy to enhance both employability as well as earnings of these marginalized groups.

While job quotas target salaried employment in the public sector, that may not be the appropriate instrument to tackle discrimination in others segments of the labor market, as well as discrimination faced by the self-employed. More research is needed before we can suggest a balanced and multifaceted policy package. However, international evidence offers some pointers. For instance, looking at the entrepreneurial success of migrant groups in countries such as the US and the UK indicates that Fairlie's (2006) suggestion of stimulating business creation in sectors with high growth potential (for example, construction, wholesale trade and business service) might be one effective element of public policy for promoting job creation and increasing earnings, especially in areas where marginalized groups are concentrated. There could be other such measures. What is clear is that given the various spheres marked by discrimination, an anti-discriminatory public policy, in order to be successful, needs to be multi-pronged.

Notes

1. I am grateful to William (Sandy) Darity and participants at the World Bank–IEA roundtable on "Shared Prosperity and Growth" for comments on an earlier version of this paper. I alone am responsible for all remaining errors.
2. See Deshpande (2011) for details about the caste system.
3. For the purpose of this analysis, the two groups are pooled together, as despite considerable differences in their social situation, their economic outcomes are very similar.
4. The India Human Development Survey (IHDS) would be a nationally representative panel, but at the moment only the first round is available for public use.
5. In between these two rounds, NSS conducted another quinquennial survey in 2004–05, NSS-61. We believe a decade is a good length of time to compare trends, therefore we focus on two rounds which are ten years apart.
6. Land possessed is defined as land (owned+leased-in+neither owned nor leased-in)-land leased out.
7. We divide India into six regions or zones, namely, East, West, South, North, Central and North-East.
8. http://www.dicci.org/about.html, accessed October 31, 2012.
9. The fourth round of the MSME census breaks down Others into Hindu upper castes and rest of Others.

10. MSME census does not ask for the religion of employees, so we cannot identify the Hindu upper castes among the employees.
11. A possible suggestion, which we tested and found to be invalid, is that the firms at higher percentiles of the income distribution might be larger (in terms of number of employees). In that case, if the source of discrimination is consumer discrimination, then information about the caste of owner might not be common knowledge and the business might be evaluated on characteristics. However, our estimates reveal that the average number of employees, first, varies very little across deciles of net income; and second, the limited variation is similar to the earnings gap, i.e. businesses in the first decile have the highest average number of employees (1.7). This declines steadily up to the fifth decile (1.3) to rise to 1.4 in the 10th decile.

References

Allen, W.D. (2000) "Social Networks and Self-employment," *Journal of Socio-Economics*, vol. 29, pp. 487–501.

Arulampalam, W., A.L. Booth, and M.L. Bryan (2007) "Is There a Glass Ceiling Over Europe? Exploring the Gender Pay Gap Across the Wage Distribution," *Industrial and Labor Relations Review*, vol. 60, no. 2, pp. 163–86.

Barsky, R., J. Bound, K.K. Charles, and J.P. Lupton (2002) "Accounting for the Black–White Wealth Gap: A Nonparametric Approach," *Journal of the American Statistical Association*, vol. 97, pp. 663–73.

Beteille, Andre (2012) "India's Destiny Not Caste in Stone," *The Hindu*, February 21, 2012. http://www.thehindu.com/opinion/lead/indias-destiny-not-caste-in-stone/article2913662.ece?ref=relatedNews.

Borjas, G., and S. Bronars (1989) "Consumer Discrimination and Self-employment," *Journal of Political Economy*, vol. 97, pp. 581–605.

Chi, W., and B. Li (2008) "Glass Ceiling or Sticky Floor? Examining the Gender Earnings Differential Across the Earnings Distribution in Urban China, 1987–2004," *Journal of Comparative Economics*, vol. 36, no. 2, pp. 243–63.

Clark, K., and S. Drinkwater (2000) "Pushed Out or Pulled In? Self-employment Among Ethnic Minorities in England and Wales," *Labour Economics*, vol. 7, pp. 603–28.

Damodaran, Harish (2008) *India's New Capitalists: Caste, Business and Industry in a Modern Nation*. New Delhi: Palgrave Macmillan.

Daniels, C. (2004) *Black Power Inc: The New Voice of Success*. New York: John Wiley and Sons.

Desai, S., and Dubey, A. (2011) "Caste in 21st Century India: Competing Narratives," *Economic and Political Weekly*, vol. XLVI, no. 11, pp. 40–9.

Deshpande, Ashwini (2007) "Overlapping Identities Under Liberalization: Gender and Caste in India," *Economic Development and Cultural Change*, vol. 55, no. 4, pp. 735–60.

Deshpande, Ashwini. (2011) *The Grammar of Caste: Economic Discrimination in Contemporary India*. New Delhi: Oxford University Press.

Deshpande, Ashwini and Rajesh Ramachandran (2014) "How Backward are the Other Backward Classes? Changing Contours of Caste Disadvantage in India," Centre for Development Economics, Working Paper No. 233.

Deshpande, Ashwini, and Smriti Sharma (2013) "Entrepreneurship or Survival? Caste and Gender of Small Business in India," *Economic and Political Weekly*, vol. XLVIII, no. 28, pp. 38–49.

Deshpande, Ashwini, and Smriti Sharma (2015) "Disadvantage and Discrimination in Self-Employment: Caste Gaps in Earnings in Indian Small Businesses," forthcoming in *Small Business Economics: An Entrepreneurship Journal*.

Deshpande, Ashwini, Deepti Goel and Shantanu Khanna (2015) "Bad Karma or Discrimination? Male–Female Wage Gaps Among Salaried Workers in India," IZA Discussion Paper No. 9485 and Centre for Development Economics Working Paper No. 243.

Dunn, T.A., and D.J. Holtz-Eakin (2000) "Financial Capital, Human Capital, and the Transition to Self-employment: Evidence from Intergenerational Links," *Journal of Labor Economics*, vol. 18, no. 2, pp. 282–305.

Fairlie, R. (2004) "Does Business Ownership Provide a Source of Upward Mobility for Blacks and Hispanics?," in Douglas Holtz-Eakin and Harvey S. Rosen (eds), *Public Policy and the Economics of Entrepreneurship*. Cambridge, MA: MIT Press.

Fairlie, R. (2006) "Entrepreneurship Among Disadvantaged Groups: An Analysis of the Dynamics of Self-Employment by Gender, Race and Education," in Simon C. Parker, Zoltan J. Acs, and David R. Audretsch (eds), *International Handbook Series on Entrepreneurship*, vol. 2. New York: Springer.

Gupta, Dipankar (ed.) (2004) "Caste in Question: Identity or Hierarchy?," *Contributions to Indian Sociology: Occasional Studies 12*. New Delhi: Sage Publications.

Guru, Guru (2012) "Rise of the Dalit Millionaire: A Low Intensity Spectacle," *Economic and Political Weekly*, vol. XLVII, no. 50, pp. 41–9.

Hnatkovska, V., A. Lahiri and S. Paul (2012) "Castes and Labor Mobility," *American Economic Journal: Applied Economics*, vol. 4, no. 2, pp. 274–307.

Iyer, Lakshmi., T. Khanna and A. Varshney (2013) "Caste and Entrepreneurship in India," *Economic and Political Weekly*, vol. XLVIII, no. 6, pp. 52–60.

Jafferlot, Christophe (2003) *India's Silent Revolution: The Rise of Low Castes in North Indian Politics*. New Delhi: Permanent Black.

Jodhka, Surinder (2010) "Dalits in Business: Self-Employed Scheduled Castes in Northwest India," *Indian Institute of Dalit Studies Working Paper*, vol. 4, no 2.

Madheswaran, S. and P. Attewell (2007) "Caste Discrimination in the Indian Urban Labour Market: Evidence from the National Sample Survey," *Economic and Political Weekly*, 4146–53.

Munshi, Kaivan (2003) "Networks in the Modern Economy: Mexican Migrants in the US Labor Markets," *Quarterly Journal of Economics*, vol. 118, no. 2 (May), pp. 549–99.

Munshi, Kaivan and Mark Rosenzweig (2006) "Traditional Institutions Meet the Modern World: Caste, Gender and Schooling Choice in a Globalising Economy," *American Economic Review*, vol. 96, no. 4 (September), pp. 1225–52.

National Commission for Enterprises in the Unorganized Sector (NCEUS) (2008) *The Challenge of Employment in India: An Informal Economy Perspective*. New Delhi: Government of India.

Navsarjan Trust (2010) *Understanding Untouchability: A Comprehensive Study of Practices and Conditions in 1589 Villages*, Navsarjan Trust and Robert F. Kennedy Centre for Justice and Human Rights, Ahmedabad, India. http://navsarjan.org/Documents/Untouchability_Report_FINAL_Complete.pdf/view.

Prasad, C.B., and M. Kamble (2013) "Manifesto to End Caste: Push Capitalism and Industrialization to Eradicate this Pernicious System," *Times of India*, January 23.

Shah, Ghanshyam, Harsh Mander, Sukhadeo Thorat, Satish Deshpande and Amita Baviskar (2006) *Untouchability in Rural India*. New Delhi: Sage Publications.

Teltumbde, A. (2011) "Dalit Capitalism and Pseudo Dalitism," *Economic and Political Weekly*, vol. XLVI, no. 10, pp. 10–11.

Vakulabharanam, V. and A. Zacharias (2011) "Caste Stratification and Wealth Inequality in India," *World Development*, vol. 39, no. 10, pp. 1820–33.

Reflections on Caste and Intergroup Disparity: Comments on "Caste Discrimination in Contemporary India" by Ashwini Deshpande

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The renewed interest in the problem of inequality sparked by Thomas Piketty's (2014) recent book, *Capital in the Twenty-First Century,* possesses a glaring omission. That absence also is evident in Jamie Galbraith's (2014) review of Piketty's book, a review that is, in my estimation, the best one that I have read. But both Piketty and Galbraith focus exclusively on general inequality and give no attention to intergroup inequality, that is, disparities based upon ethnicity, race, caste, and/or gender.

In a paper we published almost 15 years ago, Ashwini Deshpande and I (Darity and Deshpande, 2000) tried to initiate a systematic examination of the relationship between intergroup and general inequality. We tried to begin an exploration of two major issues: 1. whether intergroup inequality sets the floor (what Deshpande calls the "sticky floor") on the degree of general inequality; and 2. whether intergroup inequality drives general inequality, general inequality drives intergroup inequality, or whether the relationship is bidirectional. We only made a start at this investigation, but the resurgence of interest in inequality suggests the importance of returning to the questions that we found compelling at the start of the current century.

The focus on intergroup inequality – specifically caste disparity in India – animates the excellent paper that Deshpande has prepared for the current IEA roundtable. Her paper makes clear that intergroup difference, discrimination, racism, and casteism are not merely an anachronism or a residual atavistic throwback to more primitive times. Instead, group-based inequality is woven into the fabric of the modern world, including caste inequality in modern Indian society.

Therefore, Indians should not bear any particular embarrassment about the persistence of intergroup inequality there, since it is virtually a universal phenomenon. Inequality between groups is characteristic of nations at all positions along the spectrum of economic development; it does not matter whether economic development is captured by per capita income, national

educational attainment, health outcomes, degree of political democracy, or degree of gender equity (Darity and Nembhard, 2000; Deshpande and Darity, 2003). Social exclusion of stigmatized groups of the most pernicious sorts occur in both high growth societies with high rewards for credentialed human capital, low growth societies with low rewards for credentialed human capital, and all types of societies in between.

Unequal relative group positions can be found across virtually all nations across the globe. Neither national guilt nor embarrassment is particularly useful under these conditions. Societies with intense group-based inequalities are best served by moving to address these inequalities with wisdom and speed rather than guilt and shame.

What may be unique about India is that its caste divisions have their origins in deep antiquity across multiple millennia. Caste inequality continues to be enforced by a horrific array of acts of violence and intimidation (Narula, 1999; Soundarajay, 2014; Dominguez, 2014). In contrast, even in India, ferocious divisions over religious identities have a far more recent history. The racial divide in most of the countries of the Americas dates approximately 500 years to the trans-Atlantic slave trade and slavery. Genocidal violence between Tutsis and Hutus in Rwanda and Burundi is a product of the virulent form taken by Belgian colonialism in the first part of the twentieth century. The extended violent conflict between Catholics and Protestants in Northern Ireland was forged in the crucible of British colonialism.

Why do these divisions persist? In the interest of full disclosure, I reject Gordon Allport's (1954) theory of prejudice that bias arises out of ignorance or an individual psychological defect. Instead, I view intergroup disparity as having a material foundation. Social exclusion of stigmatized groups provides benefits for dominant groups, particularly in creating and maintaining an advantage in terms of relative position. Thus, I align my views with Herbert Blumer, whose 1958 article in the *Pacific Sociological Review* provided an early powerful counterpoint to Allport.

Consciousness of these divisions may diminish or fade. However, this need not mean a decline in the privileges associated with being a member of a dominant group and penalties associated with being a member of a subaltern group. The United States of America offers a strong example. Short answer survey research typically suggest a vast improvement in American racial attitudes, but this ostensible attitudinal change has been accompanied by *no significant change* in the relative economic position of blacks and whites since the March on Washington half a century ago (Fletcher, 2013). In fact, there is evidence to the racial wealth gap in the USA has widened over the course of the 50 years, to the point where, at the median, black households have approximately 1/15th of the net worth of white households. Indeed, the median net worth of black household heads with college degrees is less than the median

net worth of white household heads who never finished high school (Tippett et al., 2014).

I am curious about caste disparities in wealth in India based upon comprehensive estimates of the value of assets and debts. We do have data on the possession or lack of land ownership and other types of property, but no current aggregate monetary measures of wealth differentials between, say, Dalits and high caste Hindus. Nor do we have existing research that enables us to isolate the role of inheritances and *in vivo* transfers in shaping those gaps.

The most that we have are estimates drawn from two rounds of the All India Debt and Investment Survey, data collected in 1991–1992 and in 2001–2002 reported by Zacharias and Vakulabharanam (2009, p. 9) in a Levy Economics Institute working paper. They find that in 2002 in both urban and rural areas, dalits and tribals typically have about one-third of the net worth of high caste Hindus calculated at either the mean or median. But we lack any new estimates for the succeeding decade and a half. What follows are some observations about specific details in Deshpande's paper, primarily suggestions for extensions. I would like to make five major comments.

First, I want to emphasize how much I like the strategy used to compensate for the absence of longitudinal data – the strategy of tracing a single cohort over time with the National Sample Survey. When the second wave of the Indian Human Development Survey is available an authentic longitudinal data set finally can be mobilized that will include details about caste position and economic conditions.

Second, the paper documents staggering gaps in educational attainment associated with caste; in fact, the gaps in education actually have grown in recent years. In the United States, for given family socioeconomic (parental education and income) status, blacks actually obtain more years of schooling and credentials than whites with similar socioeconomic status. If wealth were taken into account, blacks display an even greater educational edge. I am curious about what the evidence on the education-family resources nexus looks like for dalits and adivasis in comparison with higher caste Hindus.

Third, Deshpande's research demonstrates that employment discrimination does not consistently fall during the course of the span of the various National Sample Surveys. Not only does Deshpande report that discrimination is much higher against dalits and tribals than OBCs ("Other Backward Classes"), but, while there is evidence of a decline in discrimination across cohorts for OBCs, no such decline is evident for SCs ("scheduled castes" or dalits) and STs ("scheduled tribes" or tribals). Indeed, the international record does not establish that discrimination generally falls anywhere, regardless whether they have market-based economies or not; both Brazil and post-apartheid South Africa provide striking examples of the failure of discrimination to erode (Darity and Nembhard, 2000 and Deshpande and Darity, 2003).

Fourth, Deshpande reports that discrimination is more pronounced in the private sector than the public sector. This, perhaps, is unsurprising since Indian affirmative action – an antidiscrimination policy – on behalf of SCs and STs only has been applied in public sector employment. The Deshpande finding is consistent with the results my students in the Global Inequality Research Seminar at Duke reached using the Indian Human Development Survey in a paper forthcoming in the *Review of Black Political Economy* (Axmann, Swanson, and Cuspinera, forthcoming).

It should be noted that affirmative action conventionally construed does not address wealth inequality; Malaysia's wealth redistribution policy under the New Economic Policy is the rare exception. I would like to see more of a discussion of how caste wealth gaps might be addressed in India. Darrick Hamilton and I have argued that the US should adopt a universal endowment policy for all newborn infants with amounts graduated on the basis of their family's wealth position, similar to the UK's now defunct Child Trust Fund (Hamilton and Darity, 2010). Should India consider a similar policy to close gaps in wealth by caste?

I also need to mention that a standard complaint made against affirmative action is it lowers productivity by putting less competent employees from target populations into positions they do not merit. But Deshpande has a spectacular study with Thomas Weisskopf that shows that the efficiency of affirmative action recipients (dalits and adivasis) employed in the Indian railway sector – a form of public sector employment – is at least as great as that of non-SCs and non-STs. There is some indication that this may be attributable to greater motivation to perform on the part of members of the stigmatized groups.

Fifth, and finally, Deshpande's paper includes a remarkable discussion of the mysticism associated with notions of "dalit capitalism" in India – a mysticism that parallels the ephemeral, spectral nature of "black capitalism" in the United States. Similar to black businesses in the USA, job creation by dalit and adivasis enterprises in India is low. There is no lack of entrepreneurial motivation on the part of SCs or STs; I submit that there is a lack of resources to launch sustainable enterprises, similar to conditions for blacks in the USA (Bogan and Darity, 2008). A key assertion that I would like to make that I believe is applicable to intergroup inequality in both countries is the following: self-employment does not produce wealth to the same extent that wealth produces self-employment. In the US context the comparative level of black business ownership – compared with white business ownership – has remained unchanged since E. Franklin Frazier's *Black Bourgeoisie* first appeared in English in 1957.

I would like to make one last comment related to caste and self-employment. I refer to what I would like to call the "Deshpande paradox": caste gaps in ownership of business enterprises are greater in urban than rural areas in India. The conventional expectation is caste disparities in business ownership would be more pronounced in rural areas, since discriminatory differentials are larger

there. But that expectation is not borne out by the data. The paradox may be explained if we had clearer information about caste-based wealth disparities in both urban and rural India.

Perhaps the distribution of wealth *within* dalits and adivasis is more similar in both urban and rural areas than the distribution of wealth among higher-caste Hindus. But if there are proportionately many more higher-caste Hindus at the upper end of the wealth distribution in urban rather than rural areas, this could lead to a greater gap between them and SCs and STs in the creation and maintenance of business enterprises in urban versus rural areas. But clearly this is a puzzle that requires additional research.

References

Allport, Gordon (1954) *The Nature of* Prejudice. New York: Perseus Publishing.

Axmann, Nicholas, Kendal Swanson, and Victor Cuspinera (forthcoming) "Is the Public Sector a Haven for Castes and Religions Facing Wage Discrimination?" *Review of Black Political Economy*.

Bogan, Vicki and William Darity Jr. (2008) "Culture and Entrepreneurship? African American and Immigrant Self-Employment in the United States," *Journal of Socio-Economics*, vol. 37 pp. 1999–2019.

Blumer, Herbert (1958) "Race Prejudice As a Sense of Group Position," *Pacific Sociological Review*, vol. 1, no. 1, pp. 3–7.

Darity, William, Jr. and Ashwini Deshpande (2000) "Tracing the Divide: Intergroup Disparities Across Countries," *Eastern Economic* Journal, vol. 26, no. 1, pp. 75–85.

Darity, William, Jr. and Jessica Gordon Nembhard (2000) "Racial and Ethnic Inequality: The International Record," *American Economic Review*, vol. 90, no. 2, pp. 308–11.

Deshpande, Ashwini and William Darity Jr. (2003) "Boundaries of Clan and Color: An Introduction," in William Darity Jr. and Ashwini Deshpande (eds), *Boundaries of Clan and Color: Transnational Comparisons of Intergroup Disparity*. London: Routledge, pp. 1–13.

Deshpande, Ashwini and Thomas Weisskopf (2013) "Affirmative Action and Productivity in the Indian Railways," Delhi School of Economics, unpublished manuscript, June. http://sitemaker.umich.edu/tomweisskopf/files/railways.june.2013.pdf.

Dominguez, Gabriel (2014) "Violence Against Dalit Women 'Not Taken Seriously'," *Deutsche Welle* May 30. http://www.dw.de/violence-against-dalit-women-not-taken-seriously/a-17673338.

Fletcher, Michael (2013) "Fifty Years After March on Washington, Economic Gap Between Blacks, Whites Persist," *The Washington* Post, August 27. http://www.washingtonpost.com/business/economy/50-years-after-the-march-the-economic-racial-gap-persists/2013/08/27/9081f012-0e66-11e3-8cdd-bcdc09410972_story.html.

Frazier, E. Franklin (1957) *Black Bourgeoisie*. Glencoe, IL: The Free Press.

Galbraith, James K. (2014) "*Kapital* for the Twenty-First Century*?*," *Dissent*, Spring. http://www.dissentmagazine.org/article/kapital-for-the-twenty-first-century.

Hamilton, Darrick and William Darity Jr. (2010) "Can 'Baby Bonds' Eliminate the Racial Wealth Gap in Putative Post-Racial America," *Review of Black Political Economy*, vol. 37, nos 3–4 (September), pp. 207–16.

Mangino, William (2010) "Race to College: The 'Reverse Gap'," *Race and Social Problems*, vol. 2, nos 3–4 (December), pp. 164–78.

Marsh, Kris, William Darity Jr., Philip N. Cohen, Lynne M. Casper, and Danielle Salters (2007) "The Emerging Black Middle Class: Single and Living Alone," *Social Forces*, vol. 86, no. 2 (December), pp. 735–62.

Mason, Patrick (1997) "Race, Culture and Skill: Interracial Wage Differences Among African Americans, Latinos and Whites," *Review of Black Political* Economy, vol. 25, no. 3 (Winter), pp. 5–39.

Narula, Smita (1999) *Broken People: Caste Violence Against India's Untouchables*. New York: Human Rights Watch.

Piketty, Thomas (2014) *Capital in the Twenty-First Century*. Cambridge: The Belknap Press of Harvard University Press.

Soundarajay, Thenmozhi (2014) "India's Caste Culture Is a Rape Culture," *The Daily Beast*, June 9. https://www.google.com/?gws_rd=ssl#q=india+caste+culture+is+a+rape++culture.

Tippett, Rebecca, Avis Jones-DeWeever, Maya Rockeymoore, Darrick Hamilton, and William Darity Jr. (2014) *Beyond Broke: Why Closing the Racial Wealth Gap is a Prioity for National Economic* Security. Report prepared by Global Policy Solutions, the Carolina Population Center (UNC at Chapel Hill), the Research Network on Racial and Ethnic Inequality (Duke University), and the Milano School of International Affairs, Management, and Urban Policy (the New School), May. http://globalpolicysolutions.org/wp-content/uploads/2014/04/Beyond_Broke_FINAL.pdf.

Zacharias, Ajit and Vamsi Vakulabharanam (2009) "Caste and Wealth Inequality in India," Levy Economics Institute of Bard College Working Paper No. 566 May. http://www.levyinstitute.org/pubs/wp_566.pdf.

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