WID.world Working Paper N° 2018/4

Extreme inequality: evidence from Brazil, India, the Middle East and South Africa

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January 2018

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Abstract

This paper presents new findings about inequality dynamics in Brazil, India, the Middle East and South Africa from the World Wealth and Income Database (WID.world). We combine tax data, household surveys and national accounts in a systematic manner to produce estimates of the distribution of income, using concepts coherent with macroeconomic national accounts. We document an extreme level of inequality in these regions, with top 10% income shares above 50% of national income. These societies are characterized by a dual social structure, with an extremely rich group at the top, whose income levels are broadly comparable to their counterparts in high-income countries, and a much poorer mass of the population below top groups. We discuss the diversity of regional contexts and highlight two explanations for the levels observed: the historical legacy of social segregation and modern economic institutions and policies.

Introduction

One of the concrete implications of the debates that followed the publication of *Capital in the Twenty-First Century* (Piketty, 2014) was the partial release of new administrative tax data by public authorities, particularly in emerging and developing countries. As a result, it is now possible to re-examine inequality in regions where inequality statistics were previously rare and to get a better understanding of global inequality dynamics (Alvaredo et al. 2018). This paper presents new insights into extreme inequality as observed in Brazil, India, the Middle East and South Africa. We begin by describing the methodological challenges specific to the measurement of inequality in these regions. We then present the main findings on their levels of income concentration and their common distributional features, before providing a brief discussion of their multidimensional origins.

I. Dealing with data limitations to measure inequality in emerging countries

Official income inequality measures in emerging countries mostly rely on household survey data, which are known to underestimate top income levels and are hardly comparable across

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time and countries. In recent years, more fiscal data have become available, enabling the construction of more consistent income inequality statistics. All the series discussed in this paper follow the same general Distributional National Accounts (DINA) guidelines (Alvaredo et al. 2016). We combine national accounts, surveys, and fiscal data in a systematic manner in order to estimate the full distribution of pre-tax national income in Brazil, India, the Middle East and South Africa.[1] The focus on the Middle East, comprised of 15 countries, is motivated by its relatively large degree of cultural and linguistic homogeneity and by the comparability of its population size to that of other large countries.

Despite our best efforts at approximating the DINA framework, we emphasize that the series produced for these regions are far from perfect due to major data limitations. First, in all these countries, a very substantial fraction of national income as reported in national accounts is missing from self-reported household survey income. The ratio between total survey income and national income generally varies between 40%-50%, except in Brazil where it has moved closer to 60% in recent years, and in Gulf countries, where it is as low as 20%-30%. Additionally, inequality trends in surveys and DINA may differ. In Brazil, for instance, surveys indicate a clear decline in inequality whereas the DINA series depicts a more stable picture. In India, the gap between growth in national accounts and growth in household surveys remains an unresolved puzzle (Deaton and Kozel, 2005). To the extent that this missing income generally accrues to relatively small groups of the population, this implies that survey-based statistics may severely underestimate income inequality in these countries. To tackle this gap, some studies attribute all missing income to the top 10% income recipients, or use Pareto-type imputations to distribute the missing income (Lakner and Milanovic, 2013; Burkhauser et al. 2016; Jenkins, 2017). Our preferred strategy is to merge surveys and fiscal data using a "generalized Pareto" interpolation (Blanchet, Fournier and Piketty, 2017). This strategy arguably leads to more realistic estimates of inequality as it relies on additional data and on better estimation techniques for the very top of the income distribution.

Figure 1 illustrates the proportion of total national income covered by each income source. Even after correcting the top of the survey distribution (first bar) with tax data (second bar), a relatively large portion of national income is still missing. When we are able to decompose this missing non-fiscal income into identifiable income sub-categories, such as undistributed corporate profits or imputed rents, and when we have information on the concentration of such income, we reallocate it to estimate a final national income distribution. In the absence of more disaggregated data, we attribute the missing portion proportionally to the entire distribution, which by construction has no impact on income shares.

[1] For methodological details, see Morgan (2017) for Brazil; Chancel and Piketty (2017) for India; Alvaredo, Assouad and Piketty (2017) for the Middle East. For South Africa, see the online supplementary material.

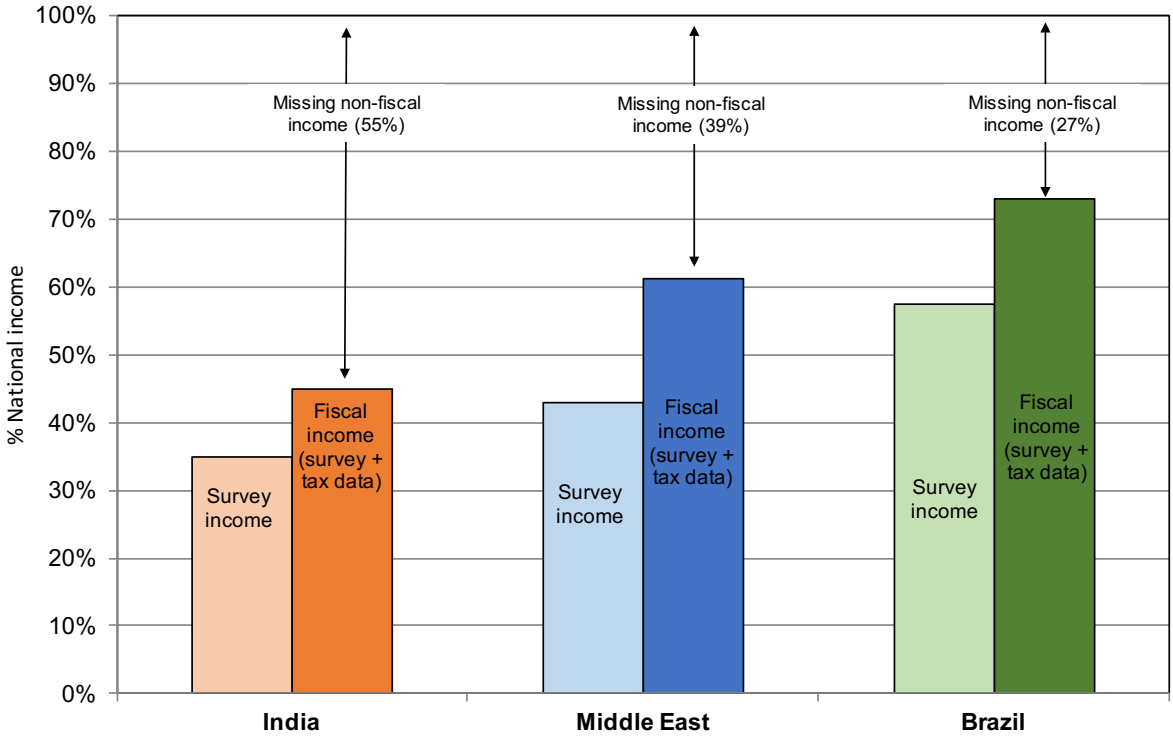

Figure 1. Gap of survey income and fiscal income to national income
Notes: Survey income is the total income from raw survey data. Fiscal income is the total income from the combination of survey and income tax data. Latest years available (2012-2016). Source: WID.world.

Second, fiscal data and national accounts also suffer from substantial limitations in these regions. Income tax records often cover a minority of the total adult population, ranging from about 1% in Lebanon[2], over 7% in India and 15% in South Africa to 20% in Brazil. These levels are close to the ones observed in the USA or France up to the interwar period (10-15%), but much lower than the levels observed in the decades following World War II (50% or more) (Piketty 2001; Piketty and Saez, 2003). In addition, income variables in tax statistics are often less detailed, which increases the need for additional assumptions to link them to national accounts. Similarly, national accounts tend to present varying degrees of disaggregated information, which makes it difficult to precisely identify income categories within each sector of the economy and to impute missing components to the income distribution. Given these caveats, we systematically include estimation bounds, which allow us to confirm that our conclusions are robust to a wide range of alternative assumptions.[3]

II. The world inequality frontier and the structure of extreme inequality

[2] The Lebanese tax data, exploited in Assouad (2017) are currently the only fiscal sources available in the Middle East. See Alvaredo, Assouad and Piketty (2017) for details about their application to other Middle-Eastern countries.
[3] Each country-specific paper presents estimation bounds and justifies the choice of the benchmark series. See in particular the Indian study and its use of alternative estimation scenarios (Chancel and Piketty, 2017, Appendix 13).

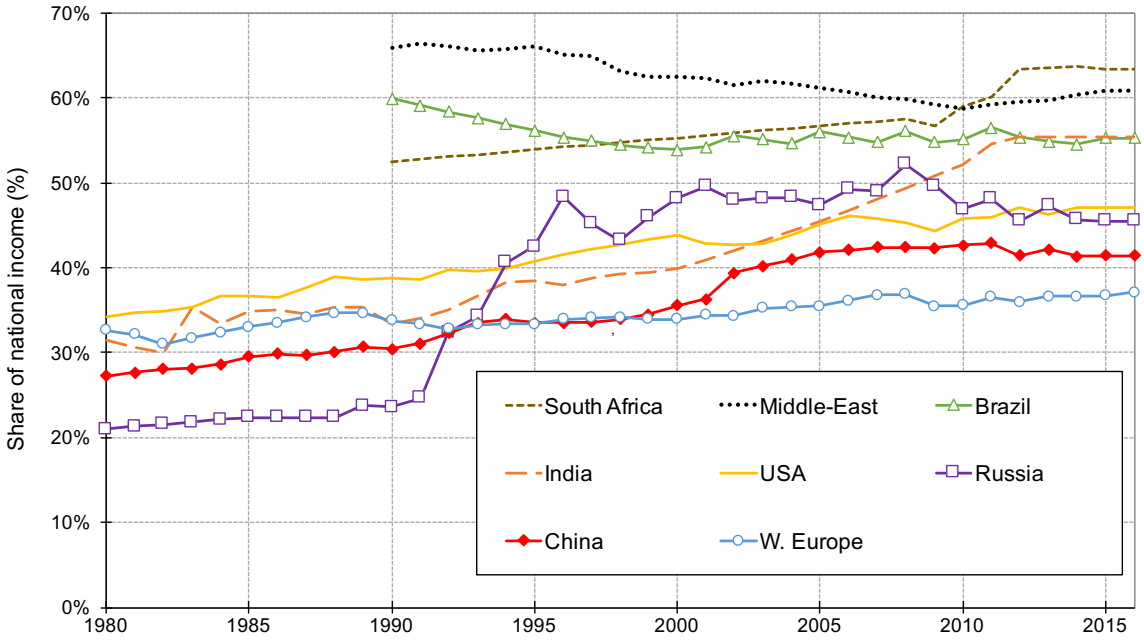

Figure 2. Top 10% income shares across the world, 1980-2016
Notes: Distribution of national income (before taxes and transfers, except pensions and unempl. insurance) among adults. Corrected estimates combining survey, fiscal, wealth and national accounts data. Equal-split series (income of married couples divided by two), except for the Middle East (household per capita). Latest years available (2012-2016). Source: WID.world.

Two robust findings emerge when we look at the regions analyzed in this paper. First, the top 10% income share is greater than 50% of total pre-tax national income, compared to 40-50% in the United States or China, and less than 40% in Western Europe (see Figure 2). While we observe rising top income shares in India and South Africa, as in nearly all countries in recent decades, Brazil and the Middle East display relatively stable levels of extreme inequality. They nevertheless all seem to define now a "world inequality frontier", with the highest income concentrations in the world (Alvaredo et al. 2018).

Second, all these societies are characterized by a dual structure. As shown in Table 1, our estimates reveal that the average income of individuals at the very top of the distribution is broadly comparable to average levels observed for similar groups. Official statistics relying on household survey data alone tend to miss this fact. At the bottom of the distribution, as expected, we find that individuals are much poorer than their counterparts in high-income regions. With the exception of the Middle East, the average income of the bottom 90% in emerging regions is below the average income of the bottom 50% in Western Europe and the USA. This dualistic structure reflects the absence of a broad "middle class" comparable in size to the one in high-income countries. Whereas the middle 40% receives more than the share accruing to the top 10% in Western Europe, and a bit less in the USA, it is left with far less income than the top 10% in Brazil, India, South Africa and the Middle East (between 20-30 percentage points less), as Figure 3 shows.

Table 1. Average incomes in Western Europe, USA, Brazil, India, Middle East and South Africa: 2016 Euros (PPP)

Income groups (distribution of per adult pre-tax income)	USA	Western Europe	Middle East	Brazil	South Africa	India
Full Population	**€37,938**	**€34,214**	**€22,760**	**€9,115**	**€8,439**	**€4,391**
Bottom 50%	€9,560	€14,308	€5,002	€2,233	€,848	€1,345
Middle 40%	€38,301	€35,916	€17,499	€7,387	€6,654	€3,343
Top 10%	€178,372	€126,938	€132,594	€50,432	€53,538	€23,808
incl. Top 1%	*€766,341*	*€417,501*	*€553,321*	*€253,759*	*€154,877*	*€95,388*
incl. Top 0.1%	*€3,535,792*	*€1,553,248*	*€2,043,377*	*€1,313,729*	*€,486,861*	*€,378,319*
incl. Top 0.01%	*€16,514,272*	*€6,143,396*	*€8,999,447*	*€6,817,909*	*€1,457,794*	*€1,684,895*
incl. Top 0.001%	*€72,081,591*	*€24,494,358*	*€18,569,002*	*€35,399,859*	*€4,286,839*	*€17,278,335*

Table 1. Average incomes in USA, Western Europe, Brazil, India, the Middle-East and South Africa

Notes: Values are expressed in 2016 PPP Euros. The unit is the adult individual (20-year-old and over; income of married couples is split into two, except for the Middle East, where we split household income equally among all adult household members). Income corresponds to pre-tax national income. Corrected estimates combine national accounts, surveys and fiscal data. Source: WID.world

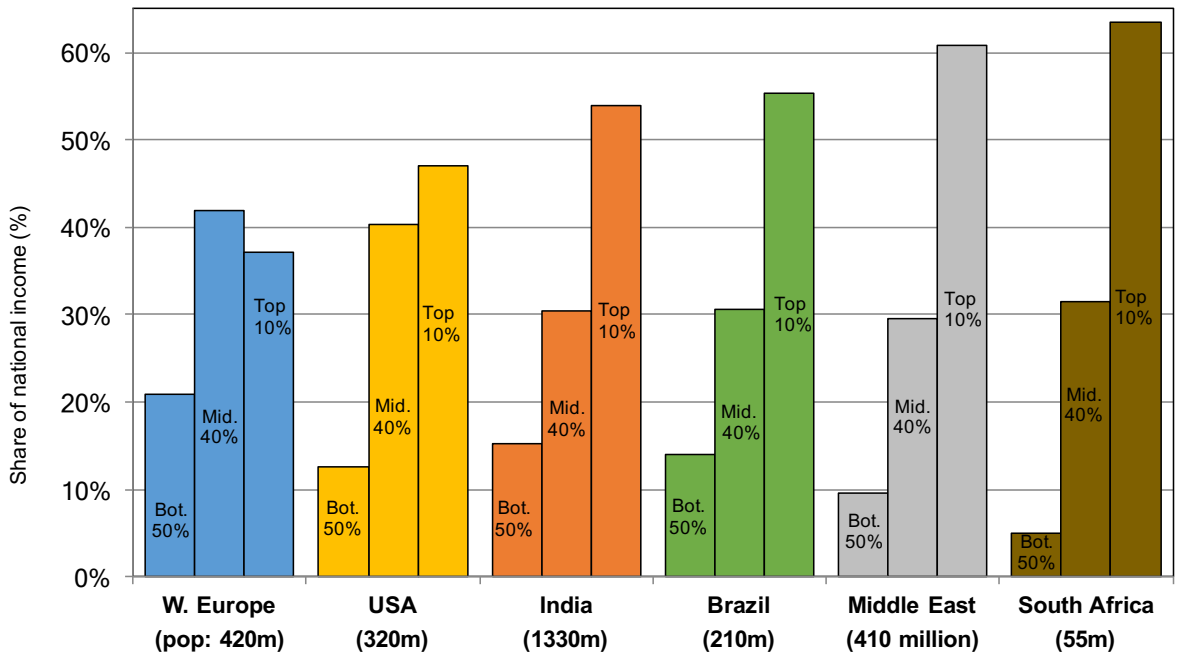

Figure 3. Bottom 50% vs. Middle 40% vs. Top 10% income shares across the world

Notes: Distribution of national income (before taxes and transfers, except pensions and unemployment insurance) among adults. Corrected estimates combining survey, fiscal, wealth and national accounts data. Equal-split series (income of married couples divided by two), except for the Middle East (household per capita). Latest years available (2012-2016). Source: WID.world.

III. The multifaceted origins of inequality at the frontier

The origins of extreme inequality vary across the frontier. We identify two broad sources: historical social and racial segregation and modern economic institutions and policies.

In South Africa, extreme inequality is closely related to the legacy of the Apartheid system. Until the early 1990s, only the white minority, representing about 10% of the population and roughly constituting the top 10% of the income distribution today, had full mobility and ownership rights. Admittedly, there is a small economic elite within the racial elite that has benefitted from the end of international economic sanctions. Nevertheless, South Africa stands out as a country marked by the historical persistence of racial privileges.

In Brazil, the legacy of racial inequality also plays an important role. It was the last major country to abolish slavery in 1888, at a time when slaves made up about 30% of the population. Linked to this is the persistence of large regional inequalities that stem from the colonial and slave-owning period. Inequality was also influenced by more modern factors, particularly the development of the Brazilian economy into the continent's industrial powerhouse in the 20th century. The politics of industrialization throughout the century favored only a minority of workers (primarily in the formal sector), in a context of limited agrarian reform and weak taxation of inherited fortunes. Even during the more progressive decade of the 2000s, persistent neglect of further tax and land reform meant that top income groups continued to capture most of the renewed growth of the economy.

In India, extreme inequality derives directly from the caste system that institutionalized socio-economic, legal and political disparities among citizens. Strikingly, we document a sharp rise in income inequality over the last decades, which was concomitant to profound transformations in the Indian economy. From its independence in 1947 to the 1980s, India's economy was highly regulated and the government pursued an explicit objective to limit the power of the economic elite. From the mid 1980s onwards, Indian governments implemented gradual deregulation and opening-up reforms, such as privatization of state-owned economies, price control deregulation, the opening of markets to international trade and strong decline in tax progressivity. Such transformations led to higher national income growth rates than in the previous decades but this growth was distributed very unequally, with the top 0.1% richest capturing as much total growth as the bottom half of the population since 1980.

In the case of the Middle East, extreme inequality is due to enormous between-country inequality, stemming from the geography of oil ownership and the transformation of oil revenues into permanent financial endowments in sparsely populated countries. However, within-country inequality is also large, explained by the existence of rigid social inequalities. This is particularly true in Gulf countries, where we almost certainly underestimate domestic inequality by a large margin, given the growing share of migrant workers working under highly exploitative conditions that we do not entirely capture.

IV. Final remarks

Brazil, India, the Middle East and South Africa are characterized by extreme levels of inequality, with top 10% income shares higher than 50% of national income, and by a dual social structure, with a strikingly small share of income accruing to the middle 40% of the distribution. Interestingly, such extreme levels of income concentration have different drivers. While some are rooted in the legacies of past social hierarchies and ownership rights, others are associated to the functioning of modern capitalist economies.

The multifaceted origins of extreme inequality highlight the need for different policy responses to tackle it, including mechanisms of regional redistribution, major land and fiscal reforms, or pro-poor investments in health, education and infrastructure. We nevertheless stress a common characteristic of these regions: their tax systems rely overwhelmingly on indirect taxes, with only few components comprising of direct progressive taxes. In particular, it is striking to observe the near absence of a progressive inheritance tax regime – a historically powerful tool to limit the persistence of extreme income inequality levels and to finance much-needed welfare services.

While our estimates, based on Distributional National Accounts guidelines, stand out as more robust than survey-based official inequality statistics, we reiterate that measuring inequality in such countries is fraught with methodological difficulties. We thus stress that access to more and better data is critical in these countries, where a lack of transparency raises the problem of democratic accountability, independently of the actual level of inequality observed.

References

Alvaredo, F., Atkinson, A. B., Chancel, L., Piketty, T., Saez, E., & Zucman, G. (2016). *Distributional National Accounts Guidelines: Concepts and Methods used on WID.world*. WID.world Working Paper 2016/1

Alvaredo, F., Chancel, L., Piketty, T., Saez, E., & Zucman, G. (2018). *World Inequality Report 2018*. Harvard University Press (forthcoming).

Alvaredo, F., Atkinson, B. (2010). 'Colonial rule, apartheid and natural resources: top incomes in South Africa'. Centre for Economic Policy Research Discussion Paper, no. 8155

Alvaredo, F., Assouad, L., Piketty, T. (2017) 'Measuring Inequality in the Middle East, 1990-2016: The World's Most Unequal Region?' WID.world Working Paper 2017/15

Assouad, L. (2017) 'Rethinking the Lebanese economic miracle: The extreme concentration of income and wealth in Lebanon 2005-2014' WID.world Working Paper 2017/13

Burkhauser, R. V., Hérault, N., Jenkins, S. P., & Wilkins, R. (2016). 'What has been happening to UK income inequality since the mid-1990s?' Answers from reconciled and combined household survey and tax return data (No. w21991). National Bureau of Economic Research.

Blanchet, T., Fournier, J., & Piketty, T. (2017). 'Generalized Pareto Curves: Theory and Applications'. WID. world Working Paper. 2017/3

Chancel, L., Piketty, T. (2017). 'Indian income inequality (1922-2014): From British Raj to Billionnaire Raj?' WID.world Working Paper 2017/11

Deaton, A., Kozel, V. (2005). 'Data and dogma: the great Indian poverty debate'. *The World Bank Research Observer*, *20*(2), 177-199.

Jenkins, S.P. (2017). 'Pareto Models, Top Incomes and Recent Trends in UK Income Inequality'. *Economica* (2017) 84, 261–289.

Lakner, C., Milanovic, B. (2013). 'Global Income Distribution: from the Fall of Berlin Wall to the Great Recession'. Policy Research Working Paper No. 6719. World Bank, Washington, DC.

Morgan, M. (2017). 'Extreme and Persistent Inequality: New Evidence for Brazil Combining National Accounts, Surveys and Fiscal Data'. WID.world Working Paper 2017/12.

Piketty, T. (2001). *Les hauts revenus en France au XXème siècle*. Grasset.

Piketty, T., & Saez, E. (2003). Income inequality in the United States, 1913–1998. The Quarterly journal of economics, 118(1), 1-41.

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