Understanding Poverty

Abhijit Banerjee

Roland Benabou

Dilip Mookherjee

<1> Table of Contents

<2> Introduction- Abhijit Banerjee, Roland Benabou and Dilip Mookherjee

27) Racial Stigma: Toward a New Paradigm for Discrimination Theory – Glenn C. Loury

28) Aspirations, Poverty and Economic Change – Debraj Ray

<1> Chapter 5: The Kuznets' Curve, Yesterday and Tomorrow

<1> Thomas Piketty[*]

<2> Introduction

During the past half-century, the Kuznets' curve hypothesis has been one of the most debated issues in development economics. And rightly so. In a nutshell, the hypothesis simply says that income inequality should follow an inverse-U shape along the development process, first rising with industrialization and then declining, as more and more workers join the high-productivity sectors of the economy (Kuznets (1955)). This theory has strong – and fairly optimistic – policy consequences: if LDCs are patient enough and do not worry too much about the short run social costs of development, then they should soon reach a world where growth and inequality reduction go hand in hand, and where poverty rates drop sharply.

Today, the Kuznets' curve is widely held to have doubled back on itself, especially in the United States, with the period of falling inequality during the first half of the 20th century being followed by a sharp reversal of the trend since the 1970s. Consequently, most economists have now become fairly skeptical about universal laws relating development and income inequality. It would be misleading however to conclude that Kuznets' hypothesis is no longer of interest. First, a number of poor countries might not have passed what Kuznets identified as the initial industrialization stage. So it is still important to make sure that we understand why developed countries went through an initial inverse-U curve. Fifty years after Kuznets, what do we know

about the reasons why inequality declined in the West during the first half of the 20th century, and are there lessons to be drawn for today's poor countries?

Next, one could argue that was has been happening since the 1970s in developed countries is just a remake of the previous inverse-U curve: a new industrial revolution has taken place, thereby leading to rising inequality, and inequality will decline again at some point, as more and more workers benefit from the new innovations. In a sense, Kuznets' theory can be viewed as a sophisticated formulation of the standard, trickle-down view of development: innovations first benefit to a few individuals and eventually trickle down to the mass of the people. Back in the 1950s, Kuznets stressed the rural/urban dimension of the process: in his view, development meant moving from a low-income, rural, agricultural sector to a high-income, urban, industrialized sector. But the same logic can obviously be applied to other two-sector models, e.g. to a model with a "old economy" sector and a "new economy", IT-intensive sector. So the more general question I want to be asking is the following. Looking at the most recent trends both in rich and poor countries, what evidence do we have in favor of this "technical change" view of inequality dynamics, whereby waves of technological innovations generate waves of inverse-U curves?

The rest of this essay is organized as follows. In Section 2, I will focus upon the inequality decline that took place in the West during the first half of the 20th century. I will argue that recent historical research is rather damaging for Kuznets' interpretation: the reasons why inequality declined in rich countries seem to be due to very specific shocks and circumstances that do not have much to do with the migration process described by Kuznets and that are very unlikely to occur again in today's poor countries (hopefully). In Section 3, I will take a broader perspective on the technical change view of inequality dynamics, drawing both from historical

experience and more recent trends. I will argue that this view has proven to be excessively naïve to properly account for the observed facts, and that country-specific institutions often play a role that is at least as important as technological waves. Section 4 offers some concluding comments. Although this essay focuses primarily on the impact of development on distribution (in the Kuznets tradition), I will occasionally refer to the reverse causality from distribution to growth (an issue which has attracted a lot of attention over the past ten years).

<2> Why Did Inequality Decline in the West?

At the time Kuznets gave his presidential address to the 1954 American Economic Association Annual Congress in Detroit, there was little data on distribution. For the most part, the address (which was to become his famous 1955 article) relied on the 1913-1948 series on U.S. top income shares that Kuznets had just constructed and published in a voluminous and path-breaking book (Kuznets (1953)). Although income distribution had played a central role in economic thinking at least since the time of Ricardo and Marx, this was the very first time that an economist was able to produce an homogenous distribution series covering a reasonably long time period. These series showed that a marked inequality decline had taken place in the U.S. over the 1913-1948 period.[1] Kuznets had no data prior to the creation of the federal income tax in 1913, but the general presumption was that inequality had been rising during the 19th century, with a turning point around 1900. In order to account for the turning point, Kuznets introduced the famous two-sector model. The theory of the inverse-U curve was born.

A large number of studies have attempted since the 1950s to test the inverse-U curve hypothesis in LDCs. However, as was noted in a recent survey, it is fair to say that the evidence

is mixed and at best inconclusive (Kanbur, 2000). In fact, data limitations make it very difficult to perform some proper testing of Kuznets' hypothesis outside developed countries. In most LDCs, estimates of income distribution are scarce and available for a selected (and typically small) number of years. When time series are available, they are usually limited to the most recent decades, and never go back in time before the 1950s. This makes it almost impossible to conduct adequate longitudinal testing of the inverse-U curve theory in most countries.[2] One often needs to revert to cross-sectional testing, which raises serious issues of interpretation and reliability, especially given the poor quality and lack of homogeneity of available cross-country data sets on income distribution.[3] The sharp decline in inequality that occurred in developed countries during the first half of the 20th century and that served as the basis for the 1954 AEA presidential address remains until the present day the best available evidence in favour of the Kuznets curve hypothesis.

There are however important pieces of evidence that Kuznets was missing in 1953-1954 and which contribute to explain why he advocated such an overly optimistic and universal interpretation of what happened during the 1900-1950 period. First, because existing data at his time ended in 1948, he was not able to see that the inequality decline in the U.S. and in most other developed countries stopped almost immediately after World War 2. Next, and most importantly, available U.S. data did not allow him to decompose income inequality trends into a labor income component and a capital income component. Fortunately, there are other countries (such as France) where administrative tax data makes it possible to construct separate series for income inequality, wage inequality and wealth inequality over the entire 20th century. France is also an interesting testing ground regarding the impact of rural-urban migration on inequality dynamics: agricultural workers were particularly numerous at the beginning of the century in

France (around 30% of all wage earners in 1900, down to 20% in 1930, 10% in 1950 and less than 1% in 2000), and very low wages were concentrated in that sector.

The key finding is that although top income shares have declined substantially in France over the 1900-1950 period (even more so than in the U.S.), wage inequality – as measured by top wage shares and by broader indicators such as the 90-10 interdecile ratio – has remained extremely stable (see Figure 5.1 and Piketty (2003)). That is, the decline in income inequality was for the most part a capital income phenomenon. Holders of large fortunes were badly hurt by major shocks during the 1914-1945 period (wars, inflation, recessions), and this explains why top income shares fell. This interpretation is confirmed by a myriad of independent data sources (including estate tax data and macroeconomic series) and by the very peculiar timing of the fall: top capital incomes and income inequality at large did not start falling until World War 1, partly recovered during the 1920s, fell sharply during the years of the Great Depression, and even more so during World War 2. The labor market and the rural-urban migration process played no role: low-wage rural workers slowly disappeared, but they were replaced by low-wage urban workers at the bottom of the distribution, so that overall wage inequality hardly changed.

Although existing data is not as complete as for France, newly constructed U.S. series (allowing for more detailed decompositions than the original Kuznets series) show that the same general conclusion also applies to the U.S.: wage inequality did not start declining before World War 2, and the bulk of the 1913-1948 inequality decline can be accounted for by capital income shocks.[4] Recent research on the U.K., Canada and Germany also confirms the key role played by shocks in inequality dynamics during this period.[5]

Needless to say, the idea that capital owners were hurt by major shocks between 1914 and 1945 and that this did contribute to the inequality decline is not new. What is new is that there

was not much else going on. It is also interesting to note that Kuznets did stress in his 1955 article the key role played by wars, inflation, recessions and the rise of progressive taxation – though this is not the part of the explanation that most economists chose to remember. It is only at the end of his presidential address that he suggested that an additional process (based upon the two-sector model) might also have played a role. Kuznets was fully aware that he had basically no empirical support in favor of this interpretation: "this is perhaps 5 per cent empirical information and 95 per cent speculation, some of it possible tainted by wishful thinking"(Kuznets pg 26, 1955). But, as he himself put it quite bluntly, what was at the stake in the 1950s was nothing but "the future prospect of the underdeveloped countries within the orbit of the free world" (Kuznets pg 24, 1955). To a large extent, the optimistic theory of the inverse-U curve is the product of the cold war.

There are two other important lessons that can be drawn from historical research on income inequality in the West. First, the rise of progressive income and estate taxation probably explains (at least in part) why top capital incomes were not able to fully recover from the 1914-1945 shocks and why capital concentration never returned to its pre-war level. That is, progressive taxation can have a substantial long run impact and pre-tax income inequality, via its effects on future capital concentration. Although this view was fairly common early in the 20th century, it has been overly neglected during the recent decades. Cutting back on progressivity can have important long run consequences on wealth inequality and the resurgence of rentiers, both in poor countries and in developed economies.

Next, it is interesting to note that the structural decline of capital concentration that took place between 1914 and 1945 in developed countries does not seem to have had a negative impact on their future growth performance – quite the contrary: per capita growth rates have

been substantially higher in the post-war period than during the 19th century, and all the more so in countries like France or Germany where the shocks incurred by capital owners were particularly severe. This is consistent with the theory of capital market imperfections: in the presence of credit constraints, excessive wealth inequality entails negative consequences for social mobility and growth. There are good reasons to believe that the 1914-1945 shocks allowed new generations of talented entrepreneurs to replace old-style capitalist dynasties at a faster pace than would have otherwise been the case.[6] At the very least, what we learn from these historical case studies is that high capital concentration was not a pre-requisite for growth. Such a case studies approach to the inequality-growth relationship seems more promising that the reduced-form, cross-country regressions routinely run by economists during the 1990s, and from which it is fair to say that we did not learn very much (due in particular to the poor quality of ready-to-use cross-country data sets).[7]

<2> Technical Change Vs. Institutions

The fact that capital shocks played the leading role during the 1914-1945 period obviously does not imply that the technical change view of inequality dynamics has no relevance. After all, the idea that technological waves have a major impact on labor market inequality makes a lot of sense. The problem with this view is that it is excessively naïve and deterministic. In practice, the impact of technology on inequality depends on a large number of institutions, and these institutions vary a great deal over time and across countries. Chief among these are the institutions governing the supply and structure of skills, from formal schooling institutions to on-the-job training schemes. To a large extent, the dynamics of labor market

inequality are determined by the race between the demand for skills and the supply of skills. New technologies tend to raise the demand for skills, but the impact on inequality depends as to whether the supply of skills is rising at a faster or lower rate. There is no general presumption that the race should go one way or the other.

One example might make the point more concrete. The supply of skills has been rising continuously since the Industrial Revolution, both during the 19th century and during the 20th century. In a country like France, in spite of the constant rise of literacy rates over the 19th century, substantial segments of the labor force (especially among rural workers) were basically illiterate in 1900. They have been slowly replaced by urban workers with basic skills during the 20th century. Why is it that the end of rural backwardness and the diffusion of industrial technology did not lead to a compression of wage inequality, contrarily to what Kuznets had expected? Well, probably because the demand for new skills kept increasing, and the supply of new skills was just enough to prevent wage dispersion from rising. Had the schooling institutions managed to raise the supply of skills at a faster pace, the outcome might have been different.

Another leading example is the rise of wage dispersion that occured in the U.S. since the 1970s. According to one popular theory, this dramatic evolution is simply due to skill-biased technical change. However a number of economists have challenged this explanation. For instance, it has been noted that education-related wage gaps rose solely for younger workers, but not for older workers. What this suggests is that the slowdown in the rate of growth of educational attainment (number of college graduates etc.) for the younger cohorts has been a key driving force behind the observed changes.[8] Whether or not wage dispersion will decline in the future probably depends a lot on the ability of educational institutions to deliver higher growth rates of skill supply.

It has also been noted that inequality between bottom wages and the middle ranks rose only during the 1980s and then stabilized during the 1990s, despite continuing advances in computer technology. This suggests that changes in the minimum wage (rather than market forces) played the dominant role (the minimum wage fell in the 1980s, and stabilized in the 1990s).[9] Minimum wage and other labor market institutions can in turn have an impact on the direction of technical change: for instance, more wage compression can encourage more investment in technologies increasing the productivity of less-skilled workers.[10]

There are many other institutions that also play a key role for inequality dynamics. For instance, it is very hard to explain the dramatic rise of very top wages in the U.S. (which account for a disproportionate share of the rise of top wage shares observed since the 1970s) on the basis of technical change alone. Between 1970 and 2000, the average real compensation of the top 100 CEOs has been multiplied by a factor of more than 30, while the average wage in the U.S. economy has increased by about 10% (see Figure 5.2). There is a lot of evidence suggesting that such a phenomenal rise of executive compensation has more to do with bad governance and lack of control (perhaps due to very dispersed capital ownership) than with the rise of CEO efficiency and productivity.[11] Investors have recently started to realize that CEO compensation had gone out of control, but there is a long way to go before we come back to a more reasonable state of affairs. It is also quite likely that changing social norms and attitudes toward inequality have played an important role in this evolution. Short of that, it's difficult to understand why very top wages increased so much in the U.S. and not in Europe. The idea that social norms are an important factor for pay setting is particularly plausible for very top wages, given that it is virtually impossible for board members (as well as for economists) to measure precisely the productivity of a CEO.

Finally, note that governance institutions and changing social norms can also be relevant for the analysis of rising income inequality in a number of LDCs. For instance, it is unclear whether one can account for the huge rise of very top incomes (and particularly top wages) observed in a country like India during the 1990s on the basis of demand and supply alone (see Figure 5.3). There is today in large parts of the world a wider acceptance of inequality than was the case a few decades ago, and this probably has a strong impact on actual inequality. Whether or not this will remain so in the near future is very much an open issue at this stage.

<2> Concluding Comments

In this essay, I have attempted to provide a critical overview of recent research on the interplay between economic development and economic inequality. There are a number of important conclusions that emerge.

First, the reasons why inequality declined in industrialized countries during the first half of the 20th century do not have much to do with the optimistic trickle-down process advocated by Kuznets in the 1950s. The compression of income distribution that took place during the 1914-1945 period is due for the most part to very specific capital shocks and circumstances that are very unlikely to happen again in the future. Progressive income and estate taxation probably explain to a large extent why capital concentration did not return to the very high levels observed before the shocks. The historical experience of developed countries also shows that high wealth inequality is not necessary for growth, and that it can even be harmful.

Next, there exists a myriad of country-specific institutions (from educational and labor market institutions to corporate governance and social norms) that play a key role to shape the

interplay between development and inequality. Rising dispersion of income is not the mechanical

and largely unavoidable consequence of technical change. Nor is the trend going to reverse in a

spontaneous fashion. Inequality dynamics depend primarily on the policies and institutions

adopted by governments and societies as a whole.

<2> Bibliography

Acemoglu, Daron. "Cross-Country Inequality Trends." *NBER Working Paper* 8832 (2002).

Atkinson Anthony Barnes. "Top Incomes in the United Kingdom over the Twentieth Century."

Mimeo, Nuffield College, 2003.

Atkinson, Anthony Barnes and Andrea Brandolini. "Promise and Pitfalls in the Use of

« Secondary » Data-Sets : Income Inequality in OECD Countries as a Case Study." *Journal of

Economic Literature* 39 (2001): 771-799.

Atkinson, Anthony Barnes and Thomas Piketty. "Top Incomes over the Twentieth Century."

Volumes 1 and 2, Oxford University Press, 2005 (forthcoming).

Banerjee, Abhijit and Esther Duflo. "Inequality and Growth : What Can the Data Say ? "

Mimeo, MIT, 2001 .

Banerjee, Abhijit and Thomas Piketty. "Top Indian Incomes, 1922-1998." *CEPR Discussion

Paper*, 2004.

Bertrand, M. and Sendhil Mullainathan. "Do CEOs Set Their Own Pay ? The Ones Without

Principals Do." *Quarterly Journal of Economics* 116 (2001): 901-932.

Card, David and John Dinardo. "Skill-Biased Technical Change and Rising Wage Inequality:

Some Problems and Puzzles." *NBER Working Paper* 8769 (2002).

Card, David and Lemieux, Thomas. "Can Falling Supply Explain The Rising Return to College for Younger Men? A Cohort-Based Analysis." *Quarterly Journal of Economics* 116 (2001): 705-746.

Dell, F. "Income Inequality in Germany, 1880-2000." Mimeo, Paris-Jourdan, 2004.

Kanbur, Ravi. "Income Distribution and Development." In *Handbook of Income Distribution*, ed. A.B. Atkinson and F. Bourguignon (2000): 791-841, Elsevier.

Krugman, Paul. "For Richer." The New York Times, 10/20/2002 .

Kuznets, Simon. "Shares of Upper Income Groups in Income and Savings." National Bureau of Economic Research, 1953.

___ "Economic Growth and Economic Inequality." *American Economic Review* 45 (1955): 1-28.

Lee, David S. "Wage Inequality in the United States during the 1980s: Rising Dispersion or Falling Minimum Wage*?" Quarterly Journal of Economics* 114 (1999): 977-1023.

Piketty, Thomas. "Income Inequality in France, 1901-1998." *Journal of Political Economy* 111 (2003): 1004-1042.

Piketty, Thomas, Gilles Postel-Vinay and Jean Laurent Rosenthal. "Wealth Concentration in a Developping Economy: Paris and France, 1807-1994." *CEPR Discussion Paper*, 2004.

Piketty, Thomas and Nancy Qian."Income Inequality and Progressive Income Taxation in China and India, 1986-2010." Mimeo, Paris-Jourdan and MIT, 2004.

Piketty, Thomas and Emmanuel Saez. "Income Inequality in the United States, 1913-1998." *Quarterly Journal of Economics* 118 (2003): 1-39.

Saez, Emmanuel and Michael Veall. "The Evolution of High Incomes in Canada, 1920-2000." Mimeo, UC Berkeley and McMaster University, 2004.

---

[*] Contact Information : piketty@ehess.fr or piketty@ens.fr .

[1] Kuznets also relied on a couple of disparate estimates available for Germany and the U.K. suggesting that a similar trend had taken place in these countries.

[2] In countries where reasonably homogeneous series going back to the 1950s are available, one tends to observe a U-curve (with inequality falling until the 1970s and rising since the 1970s-1980s) rather than an inverse-U curve. See e.g. the case of Taïwan described by Kanbur (2000, pp.808-811). See also the 1922-2000 top income shares series recently constructed by Banerjee and Piketty (2004) for the case of India, which also depict a U-shaped curve (see Figure 4 below).

[3] See e.g. Atkinson and Brandolini (2001).

[4] See Piketty and Saez (2003).

[5] See Atkinson (2003), Saez and Veall (2004) and Dell (2004). An international data base offering homogenous top shares series for over 20 countries is currently being compiled by Atkinson and Piketty (2005).

[6] Recent research by Piketty, Postel-Vinay and Rosenthal (2004) on wealth accumulation in pre-1914 France shows that the very high levels of wealth concentration observed on the eve of WW1 were associated to retired rentiers rather than active entrepreneurs (i.e. wealth was getting older and older until WW1), which is consistent with the credit constraints view.

[7] See the references above. One additional problem with ready-to-use data sets (such as the Deininger-Squire data set) is that they never offer any decomposition of income inequality into a wage inequality component and a wealth inequality component, which makes them particularly ill-suited for the study of the credit constraint channel. For a sharp critique of cross-country regressions on inequality and growth, see also Banerjee and Duflo (2001).

[8] See Card and Lemieux (2001) and Card and DiNardo (2002).

---

[9] See Lee (1999) and Card and DiNardo (2002).
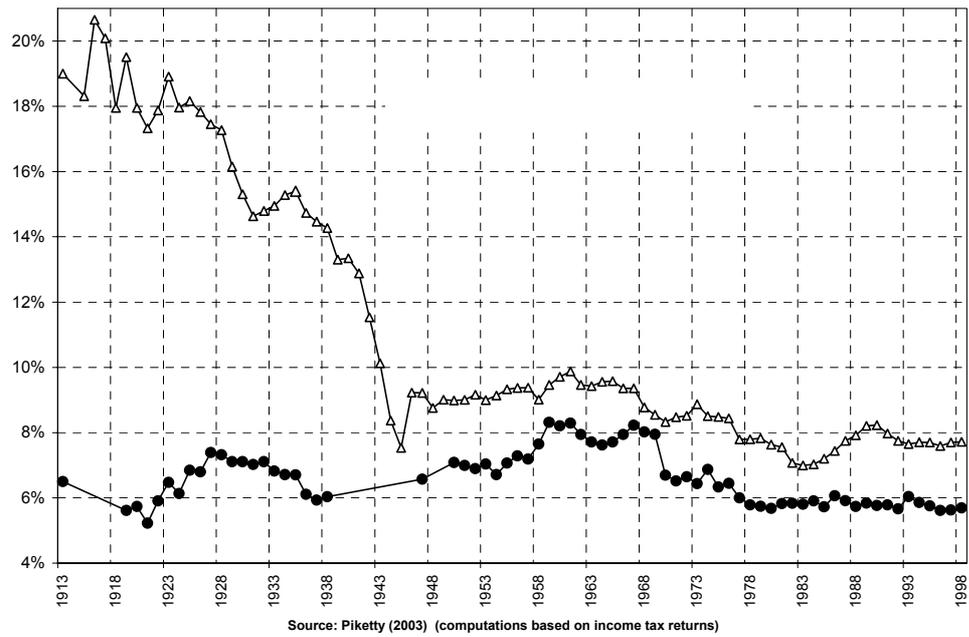
[10] See Acemoglu (2002).

[11] See Bertrand and Mullainhattan (2001). See also Krugman (2002).

Piketty, Figure 5.1

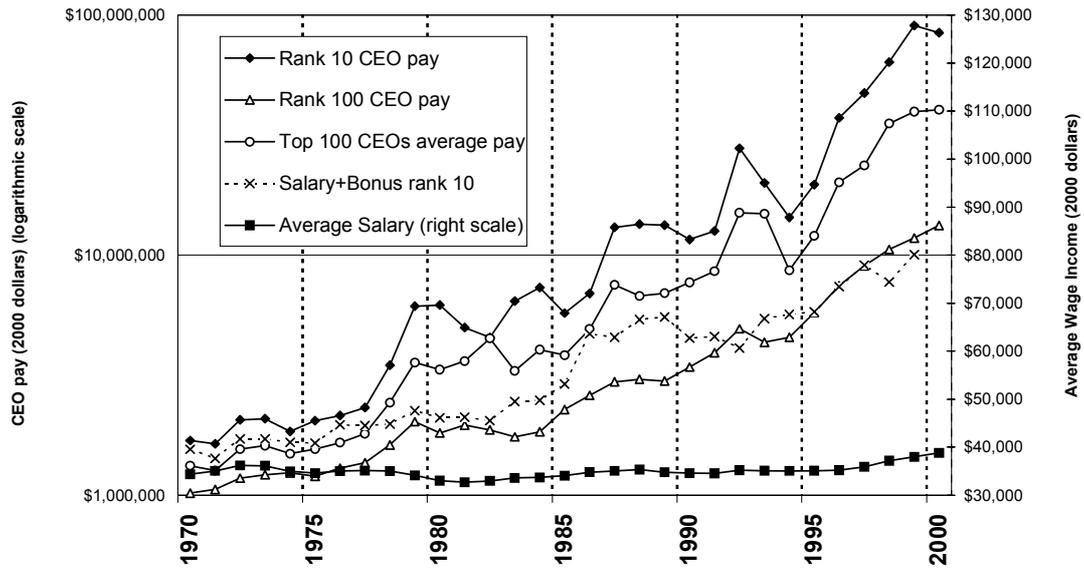<1> The fall of top capital incomes in France, 1913-1998

Figure 1: The fall of top capital incomes in France, 1913-1998

Source: Piketty (2003) (computations based on income tax returns)

Piketty, Figure 5.2

<1> CEO Pay vs. Average wage Income in the US, 1970-2000

Figure 2: CEO Pay vs Average Wage Income in the U.S., 1970-2000

Source: Piketty and Saez (2003) (authors' computations using annual Forbes surveys)

Piketty, Figure 5.3

<1> The top 1% income share in India, 1922-2000

Figure 3 : The top 1% income share in India, 1922-2000

Source: Banerjee and Piketty (2004) (authors' computations based on income tax returns)