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Convergence in income distributions: Evidence from a panel of countries☆

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ABSTRACT

There is growing evidence that countries' income distributions have changed significantly since globalization accelerated in the early 1990s. Using a large panel of Gini indices covering 81 countries between 1990 and 2010, we find strong evidence that inequality declined in nations that were initially highly unequal, while inequality increased in nations with initially low inequality. This pattern holds for both developed and developing countries, but developed countries' relative income distributions have converged at a more rapid pace. These findings are robust to the method of estimation, level of economic development, time horizon, data source or measure of inequality. Our results suggest that income distributions in countries are becoming increasingly unequal yet more similar to each other. Consequently, countries are beginning to coordinate their strategies to jointly reduce inequality through initiatives such as the United Nations' Sustainable Development Goals.

1. Introduction

Rising income inequality consistently ranks as one of the most important political issues around the globe. The World Economic Forum's 2015 report stated that there is no bigger policy challenge preoccupying leaders around the world than reducing rising inequality and making growth more inclusive.[1] The Pew Research Center reported that 60% of respondents worldwide described the gap between the rich and the poor as a major challenge.[2] In 2015, the G20 listed income inequality as a threat to global security, and urged member nations to raise tax rates and coordinate tax collection efforts.[3] President Obama has called widening income inequality the "defining challenge" and Pope Francis has spoken out against the "economy of exclusion."[4] Persistently high inequality can lead to political turmoil and instability. High inequality levels not only undermine the effectiveness of economic growth but impact a range of social outcomes, such as trust, crime, social mobility, health and educational achievement (Wilkinson and Pickett, 2007).

The rise in inequality within countries in the last few decades has often been linked to policies broadly referred to as globalization. For instance, a UNDP (2013) report on inequality stated that globalization, and to a certain extent skills-based technical change, were important exogenous drivers of inequality (also see IMF, 2007). Galbraith (2010) argued that in a world of globalized financial and commodity markets, the upward movement of inequality within-countries exhibited a strong common pattern across countries. Dreher and Gaston (2008) found evidence that globalization, on average, increased income inequality in OECD countries from 1970 through 2000. Inequality increased within developed countries since the 1990s, according to Morelli et al. (2015). With globalization, these countries faced similar economic conditions: rising imports from emerging markets, slowing

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[1] See: https://www.weforum.org/reports?page=4.
[2] See: http://www.pewresearch.org/fact-tank/2015/01/21/inequality-is-at-top-of-the-agenda-as-global-elites-gather-in-davos/.
[3] See: http://www.consilium.europa.eu/en/meetings/international-summit/2015/11/G20-Antalya-Leaders-Summit-Communique-_pdf/.
[4] See: http://www.cbsnews.com/news/obama-income-inequality-the-defining-challenge-of-our-time/ and https://berkleycenter.georgetown.edu/quotes/pope-francis-on-rejecting-an-economy-of-exclusion.

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economic growth, and outsourcing of service jobs. Jayadev (2007) demonstrated that under globalization, openness of capital account invariably led to a decline in labor's share in the national income. Bergh and Nilsson (2010) observed that inequality increased most sharply in high income countries in response to greater freedom to trade internationally. Reddy (2005) argued that in middle income countries, where wage determination involved rent sharing, increased competition due to international trade led to a lowering of bargained wages and an overall rise in inequality. [5] Whereas inequality within-countries increased, simultaneously there was also a decline in between-country inequality (Moatsos et al., 2014). Income shares of different segments of society became more similar across countries. Chambers and Dhongde (2016) showed that the decile income shares exhibited a statistically significant decline in dispersion between countries. Alvaredo and Gasparini (2015) found that the standard deviation of the Gini coefficients between countries decreased substantially over time. It is likely that policies, broadly referred to as globalization, shaped the income distributions within countries in a similar fashion. Are income distributions within countries converging? In this paper we seek an answer to this question.

We compile data on as many as 81 countries over a period of two decades (1990 to 2010) and test for convergence in income distributions. We focus on the conventional notion of beta convergence, which predicts that countries with low inequality will experience a rise in inequality levels whereas more unequal countries will witness a decline in inequality. In the last few decades, traditionally more equal nations such as India and China experienced a surge in their inequality levels. After the fall of communism, inequality levels also increased in low inequality countries in Eastern Europe and Central Asia. On the other hand, inequality decreased in highly unequal nations. Latin American countries (with initially higher than median inequality levels) registered a significant decline in inequality in the early 2000s, in part because several of these countries adopted pro-equality policies such as increases in minimum wages and cash transfers targeted at lower income households (UNDP, 2013). Thus, anecdotal evidence supports the notion of convergence in relative income distributions.

Convergence of income distributions is also implied by the Kuznet's hypothesis (Kuznets, 1955) because 1) developing nations, with low initial inequality, will experience a rise in inequality, 2) developed nations near the threshold will have high initial inequality but will subsequently experience a prolonged decline in inequality, and 3) inequality is predicted to decline in all nations in the long-run. Empirical evidence on Kuznet's Curve is ambiguous. In recent years, Huang et al. (2007) showed that an inverted-U shaped relationship between inequality and per capita GDP prevails in countries with mild inequality, but not in countries with very high or very low inequality. Barro (2008) and Agnello et al. (2012), on the other hand, found strong evidence in favor of the Kuznet's hypothesis. Galbraith (2010) and Bhattacharya (2011) observed that there is a tendency for the Gini coefficient to rise and then decline; however inequality may rise again. Since the Kuznet's hypothesis is implicitly consistent with convergence in income distributions, testing such convergence will shed more light on the veracity on Kuznet's theory.

Furthermore, convergence in income distributions is implied in other ways in the literature. Per capita income is only the first moment of a country's income distribution. Once augmented with idiosyncratic shocks, most versions of the neoclassical growth model imply convergence in distribution: countries with the same fundamentals should tend towards the same invariant distribution of wealth and pretax income (Benabou, 1996). Tselios (2009) argued that when capital flows from high-income (low-inequality) countries where it is abundant to low-income (high inequality) countries where it is scarce, spatial disparities decline and both income per capita and inequality converge. Similarly, when individuals migrate for better jobs, they move to high-wage regions with low inequality, resulting in convergence in income distribution. Gallup (2012) predicted convergence in distributions through a different channel. As income levels increase democratic participation also increases. Greater political activism by low income groups will likely change the income distribution through government tax rates and transfers, increased public funding for education and health, and so on. Such redistributive policies increase the rate of convergence in highly unequal nations.

Compared to the extensive literature on convergence in per capita incomes across countries, empirical literature on convergence in income distribution is relatively sparse. Until recently, most evidence of inequality convergence was based on country-specific case studies, not cross-country investigations. In a series of papers, Lin and Huang (2011, 2012a, 2012b), found that income inequality across U.S. states has converged over time. Within-country convergence in income inequality has been reported by Goerlich and Mas (2004) for Spanish provinces, Marina (2000) in Argentine provinces, and Gomes (2007) in Brazilian municipalities. Benabou (1996) was the first to undertake a cross-country analysis of inequality convergence using data for about 30 countries. Overall, his findings are ambiguous, with evidence of convergence between 1970 and 1980, and separately between 1980 and 1990, but no evidence of convergence over the combined time period of 1970 to 1990. Ravallion (2003) found a negative correlation between the initial Gini index and the subsequent change in the Gini index among developing countries in the 1990s, though the effect was less statistically significant when one allowed for measurement error. Bleaney and Nishiyama (2003) showed that income distribution among OECD countries converged significantly faster compared to developing countries. Both Ezcurra and Pascual (2005) and Tselios (2009) found convergence in income inequality among European Union countries. More recently, Alvaredo and Gasparini (2015) found evidence supporting convergence in the Gini coefficients among developing countries between 1981 and 2010.

We contribute to this nascent but slowly emerging literature in the following ways. The biggest obstacle to testing cross-country inequality convergence has been the lack of reliable data. Our first contribution is to compile a notably larger panel of Gini indices compared to the previous literature. Our panel covers Gini indices in 81 countries over two decades (1990 and 2010). Cross-country data on inequality indices is often less compatible, and of poor quality. Typically, a researcher faces a tradeoff between the extensive coverage of a dataset versus the reliability of its estimated inequality measures. In an attempt to strike a balance, we choose two datasets, both published by the World Bank. We use the All the Ginis dataset to compile highly consistent values on the Gini indices for developed countries and use the Povcal dataset which is more extensive but less consistent for Gini indices in developing countries. We find that the relative income distributions of developed countries converged at a faster speed compared to developing countries. The result is consistently observed in the literature and can be attributed to the fact that developed countries are more homogeneous, possessing more similar institutions, and capital and labor endowments, compared to developing countries which experienced uneven economic development.

Our second contribution is that we test convergence in relative income distribution by using cross-section as well as panel data models. We use the Ordinary Least Squares (OLS) estimator in a cross-section setting and the Generalized Method of Moments (GMM) estimator for a dynamic panel model with country effects. However, in small-sized samples such as ours, the GMM estimates, though consistent, are often inefficient. Hence we also use a novel OLS estimator (Bao and Dhongde, 2009) which makes use of a greater number of observations

[5] Note that there is some ambiguity regarding the impact of certain policies, implemented during globalization, on income distributions; the impact may differ depending on countries/years included in the analysis. For instance, Asteriou et al. (2014) found that financial globalization has been the driving force of inequality in the EU-27 nations. On the other hand, Ang (2010), and Agnello et al. (2012) demonstrated that financial reforms such as the elimination of subsidized directed credit, the reduction of excessively high reserve requirements, and improvements in securities market policies, helped promote a more equal distribution of income within countries.