Effects of income inequality on economic growth

Markus Brückner, Daniel Lederman 07 July 2015

The relationship between aggregate output and income inequality is central in macroeconomics. This column argues that greater income inequality raises the economic growth of poor countries and decreases the growth of high- and middle-income countries. Human capital accumulation is an important channel through which income inequality affects growth.

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Aggregate output and income distribution

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The relationship between aggregate output and the distribution of income is an important topic in macroeconomics (Galor 2011). The role that income inequality plays in economic growth has also received quite a b... s and the press recently. ... k Group has included ... ve for developr... me poverty and boosting ... 0% of developing countries. The IMF has weighed in with a ...ssion on the role of income distribution as a cause and consequence of economic growth (see, for example, Ostry et al. 2014).

In a recent paper (Brueckner and Lederman 2015), we provide estimates of the within-country effect that income inequality has on aggregate output. Our empirical analysis starts from the premise that the effect of changes in income inequality on GDP per capita may differ between rich and poor countries. This premise is grounded in economic theory. In a seminal contribution, Galor and Zeira (1993) proposed a model with credit market imperfections and indivisibilities in investment to show that inequality affects GDP per capita in the short run as well as in the long run. Galor and Zeira's model predicts that the effect of rising inequality on GDP per capita is negative in relatively rich countries but positive in poor countries. We test this prediction by introducing in the panel model an interaction term between income inequality and countries' initial (i.e. beginning of sample) GDP per capita.

How large are the effects?

Our empirical analysis shows that for the average country in the sample during 1970-2010, increases in income inequality reduce GDP per capita.

Specifically, we find that, on average, a 1 percentage point increase in the Gini coefficient reduces GDP per capita by around 1.1% over a five-year period; the long-run (cumulative) effect is larger and amounts to about -4.5%.

To be clear, this finding implies that, on average, increases in the level of income inequality lead to lower transitional GDP per capita growth. Increases in the level of income inequality have a negative long-run effect on the level of GDP per capita. We document the robustness of this result to alternative measures of income inequality, alternative income inequality data sources, splitting the sample between pre- and post-1990 period (end of the Cold War), and restricting the sample to countries located in Latin America and the Caribbean or Asia.

While the ... equality on GDP per capita is negative and significantly different ... tries' initial income level. In an econometric model that includes ... initial GDP per capita and income inequality, the coefficient on the intera... ignificantly different from zero at the 1% level. Quantitatively, ...e size ... action term implies that differences in initial income induce a ...tant... the impact that changes in income inequality have on GDP per capita. For

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example, at the 25th percentile of initial income the predicted effect of a 1 percentage point increase in the Gini coefficient on GDP per capita is 2.3% (with a corresponding standard error of 0.6%); at the 75th percentile of initial income the effect is -5.3% (the corresponding standard error is 0.8%).

The estimates from the interaction model thus suggest that in poor countries, increases in income inequality raise GDP per capita while the opposite is the case in high- and middle-income countries.

Effects of inequality on human capital

Additional evidence that our empirical results are in line with Galor and Zeira's (1993) model comes from the response of investment and human capital.[1] Our panel estimates show that within-country increases in income inequality significantly increase the investment-to-GDP ratio in poor countries but decrease it in high- and middle-income countries. Furthermore, within-country increases in income inequality significantly increase human capital (measured by the average years of schooling and share of the population with a secondary and tertiary education) in poor countries. On the other hand, in high- and middle-income countries increases in income inequality reduce human capital.

Identification

Identification of the causal effect of income inequality on aggregate output is complicated by the endogeneity of the former variable. Income inequality may be affected by countries' GDP per capita as well as other variables related to deep-rooted differences in their geography and history. We address this issue by estimating a panel model with country and time fixed effects. We instrument income inequality with variation in that variable not driven by GDP per capita building on the work of Brueckner et al. (2015).

Conclusion

Our empirical analysis is motivated by the theoretical work of Galor and Zeira (1993). who examine [illegible] equality and aggregate output in the presence of credit market imperfec[illegible] man capital investment. Galor and Zeira's model predicts heteroge[illegible] lity on aggregate output across countries' initial income levels. Taking th[illegible] conometric model included an interaction between measures [illegible] income inequality and countries' initial level of GDP per capita. Instrumental variables estimates [illegible]ed that income inequality has a significant negative effect on aggregate output for the average

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country in the sample. However, for poor countries income inequality has a significant positive effect. We document that this heterogeneity is also present when considering investment – in particular, investment in human capital – as a channel through which inequality affects aggregate output. Overall, our empirical results provide support for the hypothesis that income inequality is beneficial to economic growth in poor countries, but that it is detrimental to economic growth in advanced economies.

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Footnc...

Ideally, in the cross-country time series context, we would like to use data on the distribution of ...h rather than income since wealth inequality is the relevant measure in theoretical models with

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credit market imperfections. Unfortunately, data on wealth inequality are not available to generate a long time-series for a large number of countries. As noted in previous empirical research (e.g. Perotti 1996), income inequality and wealth inequality are highly positively correlated.

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