Poverty and Shared Prosperity:  
Let’s Move the Discussion Beyond Growth*

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Abstract

Some authors argue that it is enough to focus on growth to achieve lower poverty and greater shared prosperity. Policy makers are warned that any effort to make growth more equal would be a distraction at best and could even be detrimental. Achieving the World Bank target of a 3 percent poverty rate by 2030 will require, however, more targeted policies favoring the poorest segments of the population. But what would be these policies? While studies investigating determinants of GDP growth have been numerous, less is known about factors influencing household incomes at the lowest segments of the income distribution. This paper estimates income drivers for the poorest two income quintiles drawing on a panel of 117 countries over the period 1967-2011. Its results suggest that maintaining macroeconomic stability as well as investing in human and physical capital would not only be associated with faster overall economic growth, but also with even faster income growth for the poorest segments of the population. This paper confirms the central role overall economic growth should play in any strategy to reduce poverty. Its results suggest, however, that in addition policymakers may have instruments to tweak the distribution of the benefits of faster economic growth in favor of the households at the bottom of the income distribution. There thus need not be a trade-off between inequality and growth.

Keywords: Growth, inequality, poverty, education, infrastructure, macroeconomic stability, panel data  
JEL Classifications: O11, D31, O54

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Introduction

Meeting the World Bank’s Twin Goals of promoting shared prosperity and ending extreme poverty by 2030 under inequality-neutral growth would require very optimistic assumptions about growth rates going forward. Achieving these Twin Goals will thus require policies that go beyond fostering faster growth to include measures that change its distribution to favor the poorest. Development should thus shift its focus away from average per capita income and emphasize that good growth should benefit the least well-off in society. This calls for a prioritizing of policies that are expected to be especially pro-poor. But what would be the measures most promising to deliver this faster growth for lower income groups?

Drawing on recent empirical studies taking the opportunity of a growing availability of more standardized country data on income distribution, this paper argues that maintaining macroeconomic stability as well as investing in human and physical capital would not only accelerate overall economic growth, but benefit more particularly the poorest segments of the population. This paper confirms the central role overall economic growth should play in any strategy to reduce poverty. Its results suggest, however, that in addition policymakers may have instruments to tweak the distribution of the benefits of faster economic growth in favor of the households at the bottom of the income distribution, ensuring that everyone can live up to their potential. This paper shows that there thus not need be a trade-off between inequality and growth. Economies can foster faster growth while also increasing inclusiveness.

The paper proceeds as follows: Section I presents some stylized facts, Section II discusses the literature on income drivers of the poorest segments of the population; Section III presents our approach, the data, and the results for our panel of countries; the final section concludes with some considerations for policy and future research.

I. Some Stylized Facts

While overall income growth is a necessary condition to reduce extreme poverty, in many low-income economies, it will not be sufficient. Simple back-of-the-envelope simulations show that a global poverty rate of 3 percent could be achievable, assuming stable and continuous annual growth rates in per capita consumption of at least 4 percent in all developing countries and unchanged income distribution. These assumptions are highly optimistic, however, such growth rates having been far from common over the past three decades. Were countries to grow at their respective annualized growth rates of the past 20 years instead, global poverty would remain at

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1 The World Bank has adopted the Twin Goals of ending extreme poverty (defined as a fall of the percentage of people living with less than $1.25 a day to no more than 3 percent globally by 2030) and promoting shared prosperity (defined as income growth of the bottom 40 percent of the population in every country).

2 Ravallion (2013).

around 7 percent of the world population by 2030, a considerable distance from the 3 percent target.

Even when experiencing periods of robust economic growth, many countries have not been able to share equally the proceeds of this better performance among their population. Recent research has been showing that an economy could grow for sustained periods of time, while leaving large sections of its population behind and sometimes even worse off. Inequality itself could be detrimental to economic growth, potentially trapping economies in a vicious circle of ever slowing economic growth and widening inequalities.

Just eye-balling the data, one can notice the challenge. Figure 1 plots the data from Dollar et al. (2016) covering a sample of 299 growth spells over the period 1967 to 2011 (see below for further details). One notices that while overall the observations could fit on a 45 degree line, indicating a unitary elasticity, there is a lot of variation and noise, in particular, for the income growth of the bottom 20. Particularly troubling, many observations show that the income of the poorest have declined, even when the overall economy has grown (lower right quadrant). Understanding the factors behind these unfavorable developments would allow economies to prevent or contain them.

Even if these factors cannot be changed, policy advice should take these specificities into account. As illustrated in the lower right quadrant, providing policy recommendations valid on average for a large sample of countries may show counter-productive translated to small samples or to an individual country. A better understanding of their specificities is needed, if generally valid advice is to be tailored to the needs of particular countries.

**Figure 1**

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Graph 1" /></td>
<td><img src="image2.png" alt="Graph 2" /></td>
</tr>
</tbody>
</table>

*Sources: Dollar et al. (2016) and LIS*
II. Brief Review of the Literature

While econometric studies investigating determinants of GDP growth have been numerous, less is known about factors influencing household incomes at different segments of the income distribution. Empirical work by Dollar and Kraay (2002), Dollar et al. (2015), and Dollar et al. (2016) rejects the idea that other factors than mean income growth would influence incomes of the poor, thus suggesting that growth would be mostly distribution neutral. Similarly, Deininger and Squire (1996), Chen and Ravallion (1997), and Easterly (1999) suggest that growth does not have an impact on inequality. According to this literature, on average across countries, household income of the bottom 20 or 40 percent of the income distribution grows at almost exactly the same rate as mean household income.4

As a result, the focus of research has been mainly put so far on identifying drivers of overall economic growth, with the idea that growth would benefit everyone including households at the bottom of the income distribution. As Stiglitz (2015) puts it, many economists argued that the best way to help the poor was to increase the size of the nation’s economic pie, and any attention on the small slice of the pie given to the poor would be a distraction from the bigger picture. Any quest for greater equality could even undermine growth and policy makers should be actively discouraged going down that road (Dollar et al., 2015).

If the benefits of economic growth took time to reach the poorest and inequality were to grow, these authors would point out that much of the increase in inequality happened at the upper end of the income distribution (the rich growing richer) and there was nothing to worry about (Dollar et al., 2015). The work of Kuznets (1955) provided further reassurance that this widening in income gaps would be only temporary. Kuznets, on the basis of US data over the period 1913-1948, suggested that after an initial period of economic growth in which there could be an increase in inequality, as economies became richer they became also more equal. As Piketty (2015) points out, for Kuznets it was enough to be patient, and before long growth would benefit everyone.

Piketty’s work shows unfortunately a more sobering picture. The sharp reduction in income inequality that was observed in almost all advanced countries between 1914 and 1945 – and that Kuznets picked up – stemmed essentially from the world wars and the violent economic and political shocks they entailed. Since the 1970s, income inequality has increased significantly in rich countries, especially in the United States, despite overall economic growth.

So if the fruits of faster growth were to be more equally distributed among the population, what policies would be needed? What could be driving the differences observed in Figure 1? First, the type of production factors being used to drive economic growth matters (Klasen, 2007). Expanding sectors where poor are working and using production factors that the poor possess, such as unskilled labor, will benefit them (Loayza and Raddatz, 2010). Ferreira et al. (2010) finds, for

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instance, that growth in the service sector in Brazil was substantially more poverty-reducing than in either agriculture or industry.

Specific policies (such as trade or access to finance) have also been shown to explain the levels of poverty. These studies generally observe that a stable macroeconomic framework, a business friendly environment, and access to factors of production (education or credit) are conducive to lower poverty and higher incomes for the poorest.\(^5\) Taxes, fiscal redistribution and public service provisioning also matter for distributional aspects of growth. For instance, Balakrishnan et al. (2013) looking at the experience of Asian economies argue for increases in spending on health, education, and social safety nets, as well as reforms to make financial systems more inclusive.

Similarly, studies on inequality seem to agree that higher inflation leads to higher inequality, while more and better infrastructure and more human capital lead to lower inequality (Barro, 2000; Li and Zou, 2002; Lundberg and Squire, 2003; Lopez, 2004; Dabla-Norris et al., 2015). The results on the effects on income distribution of trade, financial development or government spending are, however, mixed.

### III. Data, Methodological Approach, and Cross-Country Results

**Dependent Variable**

Following Dollar et al. (2016), this paper draws on household data from two sources: the World Bank’s POVCALNET covering primarily developing countries and the Luxembourg Income Study databases covering developed countries (LIS). Household income data is organized in “spells,” i.e. income changes between two survey years, calculated as average annual log differences.\(^6\) These are calculated for average income, income at the bottom 20 percent and the bottom 40 percent. This paper focuses on those non-overlapping spells that are at least five years long, which provides 299 spells for 117 countries with a median spell length of 6 years, which is the preferred sample of Dollar et al. (2016).

**Control Variables**

Building on the existing literature, our model also includes two sets of control variables that serve as proxies for a variety of policies and institutions that might matter for growth and relevant for changes in the incomes of the poorest segments of the population (a complete list with sources and descriptive statistics are given in Appendix A). The first group includes variables capturing policies that may matter for the distribution of income: (i) the mean income growth rate to take into account the strong link between mean income growth and income growth at lower parts of the distribution; (ii) inflation and inflation variation as two measures to control for the macroeconomic environment; (iii) telecommunication connectivity (use of land and mobile lines) as a proxy for

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5 See for instance Le Goff and Singh (2014) or Singh and Huang (2015).
6 POVCALNET data is either income or consumption, LIS data is disposable income. We still refer to “income” in our paper.
infrastructure; (iv) school enrollment and life expectancy are included as standard variables in most growth regressions as they reflect the level of human capital and the potential to generate income; and (v) financial development measured by the ratio of credit over GDP.

The second group of control variables reflect characteristics which may be less easy to change through policies although potentially important for economic growth and income distribution: (i) democratic accountability captures the type of governance observed in a country and how responsive a government is to its people; (ii) the population aged 15-64 as a share of total population controls for the effects of demographics and variations in the working age population; and (iii) the initial income level captures initial conditions.

**Approach**

Following Dollar et al. (2016), the following equation will be estimated using ordinary least squares, controlling for country-fixed effects:

$$\Delta Y_{jt} = a_i + \rho Y_{i,-t} + bX_{i,-t} + \epsilon_{it}$$

where \(-t\) indicates that the variable is the value at the beginning of the ‘growth spell’ (time period between two income data points), \(Y^I\) is log income, \(\Delta\) is the first-difference operator, \(X\) are the control and policy variables (either in logs or levels), \(a_i\) are country specific dummy variables, and \(\epsilon\) is a standard error term with expected value 0 and existing second moment.\(^8\)

**Econometric Issues**

As all panel studies, our estimations could face endogeneity issues. The endogeneity bias may arise from measurement errors, omitted variables or potential reverse causality between the dependent variable, income growth, and our variables of interest. It is possible, for instance, that as income grows, a larger share of the population becomes better educated or live longer. The use of country fixed effects and the consideration of initial income would try to capture relevant initial conditions and variables that could have been omitted.

Furthermore, studies on poverty or on income typically address reverse causality by lagging the explanatory variables so that income growth in a given year is explained by the values on the

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\(^7\) From the International Country Risk Guide (ICRG) rating, the Democratic Accountability indicator goes from 0 to 6, the highest score for responsive governments. Generally, higher scores are assigned to Alternating Democracies, while the lower scores assigned to Autarchies.

\(^8\) Dollar et al. (2016) use Bayesian Model Averaging to try to deal with model uncertainty. Ciccone and Jarocinski (2010) have, however, questioned this approach, arguing that the results could be too sensitive to small changes in the dependent variable. To overcome this difficulty, Rockey and Temple (2016) recommend to include initial incomes and regional or country fixed effects. While Dollar et al. (2016) include the former, they do not include the latter although they recognize statistically significant differences in the growth-poverty elasticities between regions. Against this backdrop, we preferred adopting here the more traditional OLS framework with the appropriate controls.
explanatory variables in the previous year. In this spirit and similar to Dollar and Kraay (2002) and Dollar et al. (2016), we have used the value of the variable at the beginning of the spell. For example, it seems reasonable to assume that income-growth over the period 2000-2005 would be unlikely to influence life expectancy in 2000.

Results

Results are presented in Table 1. Column 1 shows the drivers for the income growth of the bottom 20 percent and column 2 for the bottom 40 percent. If the growth of the mean were to explain by itself the growth of the poorest, none of the coefficients would appear statistically significant besides overall growth. A quick glance at the results in these two columns shows that this is not the case. In line with Dollar and Kraay (2002) and Dollar et al. (2016), we find that income growth at the bottom 20 and 40 percent is positively and statistically significantly associated with mean income growth. The short-run elasticity around 0.88 is not statistically different to unity.

Turning to our policy variables, one can observe that macroeconomic conditions do matter for the income growth of the two poorest quintiles. While the level of inflation does not appear to be statistically significant, inflation variations seem to be correlated negatively with income growth at the bottom of the income distribution. The poor do not seem to be affected by inflation any more than the average household (i.e. beyond any effect through the mean income growth), but they seem to be penalized to a greater extent by surprises in the inflation rate. In other words, their coping strategies seem to be as effective as those favored by richer households for steady inflation rates but they seem to be more vulnerable to sudden accelerations in price increases.

Improvements in human capital seem to favor the poor. Life expectancy, included to proxy health conditions more generally, seems to be associated with faster income growth for the bottom 20 and bottom 40 percent. Another year of life expectancy increases growth at the bottom 20 of the distribution by about 0.4 percentage points, which is a very high magnitude. The coefficient for school enrollment, as an indicator of human capital, also appears to be correlated positively with income growth at the bottom of the income distribution.

Similarly, improvements in physical capital seems to be pro-poor. Better and more accessible infrastructure, as measured by land lines and mobile phone use, is also positively associated not only with average income growth, but also with faster income growth at the bottom of the income distribution. The economic magnitude of this relationship is, however, smaller than in the case of life expectancy.

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9 The robustness of the results have been investigated by imposing various sample restrictions and adding control variables. For instance, only the post-1980 period was considered, excluding the period where only LIS data are available, fewer and covering only OECD countries. Additional potential control variables were also added such as terms of trade, government debt, government consumption, urbanization, different governance indicators, and the share of agricultural GDP. In all cases, the results reported above remain unchanged.

10 Increased health might have effects on growth via various channels. See e.g. the contributions by Knowles and Owen (1995), Bloom et al. (2003), Weil (2007), and Jayachandran and Lleras-Muney (2009).
Finally, financial development appears to be detrimental to the poor. Deeper financial sectors as measured by higher private credit-to-GDP ratios is negatively associated with income growth of the two poorest quintiles. This result is in line with the argument that greater access to credit in the absence of accompanying institutional reforms such as stronger property rights and wider access to credit information could be detrimental to the poor.\textsuperscript{11}

\begin{table}[h]
\centering
\caption{Regression results – Bottom 20 and Bottom 40}
\begin{tabular}{lcc}
\hline
\textbf{VARIABLES} & \textbf{Income growth (B20)} & \textbf{Income growth (B40)} \\
\hline
Initial income level & -0.114*** & -0.0975*** \\
(0.0428) & (0.0327) \\
\Delta Mean income & 0.888*** & 0.877*** \\
(0.149) & (0.144) \\
Life Expectancy & 0.00388* & 0.00313** \\
(0.00198) & (0.00141) \\
School enrollment (gross) & 0.000876* & 0.000675* \\
& (0.000501) & (0.000348) \\
Inflation & 4.22e-05 & 3.18e-05 \\
(4.43e-05) & (3.37e-05) \\
Inflation variation & -1.75e-05** & -1.33e-05*** \\
(7.03e-06) & (4.09e-06) \\
Credit/GDP & -0.000569** & -0.000331* \\
(0.000255) & (0.000176) \\
Population 15-64 & 0.00754*** & 0.00561*** \\
(0.00253) & (0.00166) \\
Connectivity & 0.000371* & 0.000277* \\
(0.000187) & (0.000146) \\
Democratic Accountability & 0.000355 & -0.00212 \\
& (0.00558) & (0.00385) \\
Constant & -0.0113 & 0.103 \\
(0.237) & (0.185) \\
\hline
Observations & 207 & 207 \\
R-squared & 0.628 & 0.683 \\
Number of countries & 85 & 85 \\
\hline
\end{tabular}
\footnotesize{FE Regression. Cluster-robust standard errors in parentheses} \\
\footnotesize{*** p<0.01, ** p<0.05, * p<0.1}
\end{table}

\textsuperscript{11}See Singh and Huang (2015), for instance, for a review of this literature.
IV. Conclusion

The view that overall economic growth would sooner or later benefit every segment of the population is being questioned. Recent research is increasingly showing that an economy could grow for sustained periods of time, while leaving large sections of its population behind and sometimes even worse off. Furthermore, in the absence of any change in income distribution, overall economic growth would need to accelerate unrealistically if the target of a global poverty rate of 3 percent were to be achieved. Policies to ensure more inclusiveness are hence needed.

The main aim of this paper was to illustrate that maintaining macroeconomic stability as well as investing in human and physical capital would not only accelerate overall economic growth, but benefit more particularly the poorest segments of the population. This paper confirms the central role overall economic growth should play in any strategy to reduce poverty. Its results suggest, however, that in addition policymakers may have instruments to tweak the distribution of the benefits of faster economic growth in favor of the households at the bottom of the income distribution. There thus need not be a trade-off between inequality and growth: the overall pie can grow larger as well as the slice allocated to the poorest households, all with the same set of policies. Governments can foster faster economic growth while at the same time increasing inclusiveness, ensuring that everyone can live up to their potential.

Policy makers should thus make every effort making growth more equal. The results presented in this paper should be seen as a starting point to identify and prioritize broad policy areas. First, the indicators used would need to be improved. Gross primary enrollment is not the best way to measure enrollment nor learning achievements. Experience has shown that packing children in school classes may not lead to better outcomes if little learning is taking place in these classes. This paper does not provide any guidance on how to achieve the outcomes discussed here. For education outcomes to improve, a range of measures need to be put in place: to name a few, teachers need to be trained, be present in classrooms, and actually teach; textbooks need to be available; minimum security needs to be provided, as well as food. The same comment is valid for health. Further work to refine the analysis provided in this paper could thus include case studies of countries where improvements in critical areas have taken place and might provide more concrete policy guidance.

Further research could also consider the financial cost of reaching these outcomes. Richer households have very often the same health or education indicators irrespective of their county’s level of development. They can afford the best services available in the country or fly out to access them abroad. Any significant improvement in health or education outcomes at the national level would only be possible, thus, by improving these outcomes for the poorest segments of the population. This would mean in many instances revisiting the composition of spending in these areas. Very often, public spending in health or education are favoring the richer households or being lost on unproductive activities. In such cases, reshuffling the composition of this spending
may deliver better outcomes for the poorest without necessarily requiring substantial additional financial resources.
References


World Bank (2015), *A Measured Approach to Ending Poverty and Boosting Shared Prosperity*, Washington, DC
## Appendix A: Definition of the variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Source</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Income</td>
<td>POVCALNET and LIS</td>
<td>Level and growth. Data is organized in &quot;spells&quot; (i.e. income changes between two survey years, calculated as average annual log differences), calculated for average income, income at the bottom 20 percent or the bottom 40 percent.</td>
</tr>
<tr>
<td>Life expectancy</td>
<td>WDI</td>
<td>Life expectancy at birth, total in years at the beginning of the spell.</td>
</tr>
<tr>
<td>School enrollment</td>
<td>WDI</td>
<td>Gross primary school enrollment at the beginning of the spell.</td>
</tr>
<tr>
<td>Inflation</td>
<td>WDI</td>
<td>Annual growth of the consumer prices index at the beginning of the spell.</td>
</tr>
<tr>
<td>Inflation variation</td>
<td>WDI</td>
<td>Standard deviation of annual inflation during the five years prior to the end of the spell.</td>
</tr>
<tr>
<td>Credit/GDP</td>
<td>WDI</td>
<td>Domestic credit to private sector as percentage of GDP at the beginning of the spell.</td>
</tr>
<tr>
<td>Population 15-64</td>
<td>WDI</td>
<td>Population ages 15-64 in percent of total population at the beginning of the spell.</td>
</tr>
<tr>
<td>Telecommunications connectivity</td>
<td>WDI</td>
<td>Telephone lines and mobile cellular subscriptions per 100 people at the beginning of the spell.</td>
</tr>
<tr>
<td>Democratic Accountability</td>
<td>ICRG</td>
<td>Measures how responsive government is to its people (0=not very responsive; 6=very responsive).</td>
</tr>
</tbody>
</table>
# Appendix B: Descriptive Statistics

<table>
<thead>
<tr>
<th>Variable</th>
<th>Units</th>
<th>Observations</th>
<th>Mean</th>
<th>Standard deviation</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>initial mean income</td>
<td>log</td>
<td>299</td>
<td>8.023</td>
<td>1.517</td>
<td>5.659</td>
<td>11.102</td>
</tr>
<tr>
<td>growth of income B40</td>
<td>decimal</td>
<td>299</td>
<td>0.015</td>
<td>0.083</td>
<td>-0.521</td>
<td>0.386</td>
</tr>
<tr>
<td>initial income B40</td>
<td>log</td>
<td>299</td>
<td>7.074</td>
<td>1.553</td>
<td>3.940</td>
<td>10.245</td>
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<tr>
<td>growth of income B20</td>
<td>decimal</td>
<td>299</td>
<td>0.018</td>
<td>0.092</td>
<td>-0.415</td>
<td>0.381</td>
</tr>
<tr>
<td>growth of mean income</td>
<td>decimal</td>
<td>299</td>
<td>0.017</td>
<td>0.072</td>
<td>-0.261</td>
<td>0.394</td>
</tr>
<tr>
<td>life expectancy</td>
<td>years</td>
<td>298</td>
<td>67.255</td>
<td>9.189</td>
<td>40.930</td>
<td>80.780</td>
</tr>
<tr>
<td>School enrollment</td>
<td>percent</td>
<td>272</td>
<td>99.174</td>
<td>17.872</td>
<td>27.880</td>
<td>147.510</td>
</tr>
<tr>
<td>Inflation</td>
<td>percent</td>
<td>265</td>
<td>27.905</td>
<td>113.243</td>
<td>-4.480</td>
<td>1190.230</td>
</tr>
<tr>
<td>Inflation variation</td>
<td>percent</td>
<td>277</td>
<td>31.002</td>
<td>224.715</td>
<td>0.120</td>
<td>3287.571</td>
</tr>
<tr>
<td>Credit/GDP</td>
<td>percent</td>
<td>281</td>
<td>40.875</td>
<td>34.962</td>
<td>1.190</td>
<td>183.910</td>
</tr>
<tr>
<td>Population 15-64</td>
<td>percent</td>
<td>299</td>
<td>60.325</td>
<td>6.230</td>
<td>47.500</td>
<td>71.110</td>
</tr>
<tr>
<td>Connectivity</td>
<td>percent</td>
<td>291</td>
<td>23.492</td>
<td>29.412</td>
<td>0.080</td>
<td>157.150</td>
</tr>
<tr>
<td>Democratic accountability</td>
<td>unit</td>
<td>255</td>
<td>4.422</td>
<td>1.375</td>
<td>0.000</td>
<td>6.000</td>
</tr>
</tbody>
</table>