
Economic Growth and Income Inequality: Reexamining the Links

KLAUS DEININGER AND LYN SQUIRE

Many economists have long believed that income disparities increase in the early stages of development, making the poor relatively worse off. Recent research suggests that an unequal distribution of income can hamper growth. What does the evidence show?

ECONOMISTS have long sought to understand the links between economic growth and income distribution. The main issues, listed below, have important policy implications for developing countries:

- In countries with low levels of development, does economic growth result in a more unequal distribution of income, and is it necessary for per capita income to reach a certain minimum level before income inequality begins to decrease?
- Do countries with unequal income distributions experience slower economic growth than more egalitarian countries?

• Should governments consider adopting redistributive policies to improve the situation of the poor?

Why the links matter

Different assumptions about the links between growth and inequality produce different outcomes for the poor, as illustrated in Chart 1. The base scenario, represented by the top line, assumes an egalitarian economy where the poorest group's share of total income does not change over a 60-year period. In this case, economic growth (we assume a rate of 4 percent a year) would raise the incomes of the poor.

The second scenario (represented by the middle line in Chart 1) is based on the famous Kuznets hypothesis, first formulated by Simon Kuznets more than 40 years ago. This hypothesis suggests that, at low levels of per capita income, inequality increases with rising per capita income and decreases only in the later stages of development—resulting in an inverted U-shaped relationship between per capita income and income inequality—based on a model where individuals migrate from a low-wage rural sector with little inequality to an urban sector characterized by high income inequality and high average income. In this

scenario, the poorest group's share of total income would decrease as economic growth takes off and would not be restored to initial levels for 60 years; as a result, the poor's per capita incomes are lower by an average of 10 percent over two generations.

Recent research has also identified a negative relationship between initial inequality and subsequent growth (see Deininger and Squire, 1996). The scenario represented by the bottom line in Chart 1 assumes a significantly higher level of initial inequality—20 points higher in terms of the Gini coefficient. (The Gini coefficient, a measure of the extent to which actual income distribution in a country differs from a hypothetical uniform distribution, goes from 0, for absolute equality, with each individual or household receiving an identical share of income, to 100, which indicates that one person or household receives all the income.) In this scenario, the rate of annual income growth would drop to 2.7 percent, and, at the end of our hypothetical 60-year period, the per capita income of the poor would be less than half of what it would be in an economy that had started off with a more egalitarian distribution. This would be true even if the Kuznets hypothesis did not hold.

Such large differences in outcome have far-reaching implications for government

Klaus Deininger,
a German national, is an Economist in the World Bank's Policy Research Department.

Lyn Squire,
a British national, is Director of the World Bank's Policy Research Department.

policies. However, these simulations draw on available empirical analysis, much of which suffers from an important shortcoming—it is based on a very limited amount of data, and these data are often of unacceptably low quality.

The data

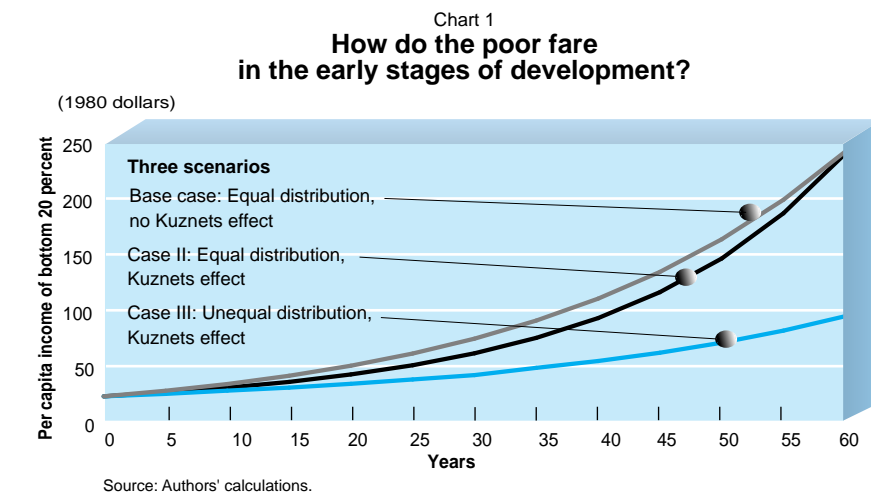
To be acceptable, data on income distribution need to satisfy three criteria.

They should be based on nationally representative surveys rather than synthetic estimates built up from national accounts data and general assumptions regarding the distribution of income across occupations or in other countries at a similar stage of economic development. Such synthetic estimates, prevalent in early studies, are unacceptable, since they presuppose the existence of the relationships that are to be tested in subsequent empirical analysis.

They should cover the entire population rather than subsets, such as urban or rural dwellers. Partial coverage, which is often misleading, is particularly common in Latin America, where many countries collect information only for the urban population. In Peru, for example, the Gini coefficient for rural households is 32, compared with 42 for urban households. In South Africa, the Gini coefficient for the white population is 48, compared with 62 for the whole population.

They should encompass all types of income, including nonwage income and income from household production. As tax records and labor force statistics are more commonly available than detailed data from household surveys, many of the figures used in the literature refer to wage or taxable income. We found that this generally overstates the Gini coefficient by about 15 points and, to the degree that data on wage income in the early years are complemented with data on total income in later years, may give the appearance of a spurious decrease in inequality. Own production is particularly important for low-income groups in developing countries. Even in Greece, in 1974, household production (e.g., of vegetables and clothing) accounted for more than 70 percent of the income of the lowest decile of the population. Whether or not own consumption is included will, therefore, have considerable impact on the inequality measure obtained.

Although the above criteria are easily agreed upon in principle, applying them consistently to the available data reduces the number of “acceptable” observations to



a point where meaningful empirical analysis is no longer possible. To overcome these constraints, we adopted a two-pronged strategy.

On the one hand, we expanded the data set on income distribution by adding new observations from primary survey data, official statistical publications, and research papers. This enabled us to increase the number of acceptable observations. It also yielded 58 countries for which 4 or more consistently defined observations are available, thus for the first time allowing at

**“Unequal distribution of
assets, more than of income,
can be an impediment to
rapid growth.”**

least some inferences regarding changes over time of income distribution within countries. However, it did not solve the problem of limited data availability for the 1960s, which makes it difficult to assess the impact of initial income distribution on subsequent growth.

To deal with this shortcoming, we complemented our data on income inequality with information on the distribution of land holdings, which provides a better measure of initial distribution. Information on the distribution of land in 1960 is available for a much larger number of countries (73) than is information on the initial distribution of income (12). It is attractive also from a conceptual point of view, because it gives us a solid indication of asset distribution and thus enables us to make inferences regarding access to formal credit.

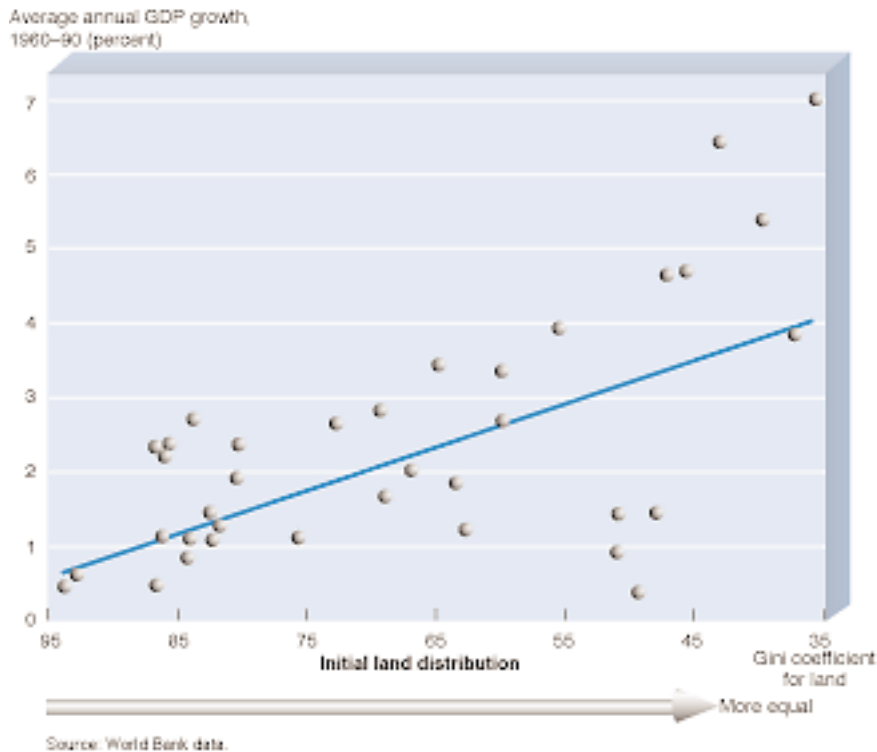
What do the data reveal?

First, income inequality is much greater in Latin America and sub-Saharan Africa, which have Gini coefficients in the upper 40s, than in East and South Asia, which have Gini coefficients in the middle-to-upper 30s. The OECD countries, in general, have relatively egalitarian distributions of income, with Gini coefficients around 30, while the Eastern European countries have historically had very low Gini coefficients. Measures of inequality tend to be quite different across regions but to remain relatively stable within regions and individual countries, regardless of the considerable changes in aggregate income that have taken place.

Second, land distribution and income distribution are not the same. India, Indonesia, and Korea are all characterized by Gini coefficients for income in the 30s, but the coefficients for land distribution are 63, 55, and 35, respectively. Similarly, Thailand, Tunisia, and Peru all have Gini coefficients for income in the 40s, but the coefficients for land distribution are 45, 64, and 93, respectively. This suggests that tests of the negative relationship between initial inequality and subsequent growth may yield different results depending on whether initial inequality is measured in terms of income or land.

Third, aggregate measures of distribution may hide movements in the incomes of different groups. Thus, the observation that overall inequality may remain relatively stable over time can be consistent with considerable change in the shares of total income received by individual groups. And since we are primarily interested in assessing the impact of economic growth on the

Chart 2
Countries with more equal land distributions tend to grow faster



poor, it is important to complement the analysis of overall changes in income with a more detailed assessment of the welfare of the bottom quintiles of the population.

Results

The new data provide a basis for more detailed research on these issues and also allow us to answer the three questions posed at the beginning of this article.

Does inequality increase in the early stages of development and then decline, as predicted by Kuznets? The Kuznets hypothesis has spawned a vast empirical literature, much of it driven by concern that development hurts the poor. Empirical analysis of this issue has been hampered not only by the quality of the underlying data but also because what is really a relationship over time has, for lack of data, usually been tested using cross-country evidence. Researchers have used variations in per capita incomes across countries to represent increases in per capita income over time within a country. Using our data, we are able to test for the Kuznets curve within countries and find no evidence of it in almost 90 percent of the cases. Of course, the 30-year period covered by our data may be too short to produce the full inverted U. If this is the case, we should still expect to

see inequality increasing in low-income countries and decreasing in countries with high per capita incomes, but the data confirm the presence of a linear trend in only a few countries. Even where it exists, the trend rarely conforms to the Kuznets hypothesis.

We can take the analysis one step further to make more direct inferences regarding the relationship between growth and poverty. Examining the relationship between overall growth and changes in the incomes of the bottom quintile of the population during 10-year periods, we find little systematic relationship between overall growth and changes in inequality. Periods of growth are associated with an increase in inequality almost as often (43 cases) as with a decrease in inequality (45 cases). In contrast, we find a strong systematic relationship between overall growth and growth in the income of the poorest quintile; the latter increased in more than 85 percent of 91 cases. This would suggest that even when inequality has worsened, its negative effect on the poor has been more than outweighed by the positive effect of growth.

Do more egalitarian countries grow faster? If economic growth does benefit the poor, then a focus on factors that increase growth would be warranted from an equity perspective as well as from a

development perspective. Recent empirical work indicates that there may be a negative relationship between initial inequality and future growth. If confirmed, this would imply that unequal economies will experience lower rates of growth and, in general, lower rates of poverty reduction.

To investigate the effect of initial inequality on long-term growth, we look at determinants of growth rates for 1960-92. Because acceptable data on income inequality prior to 1960 are scarce, we use country averages of observations for the entire period. We also use the distribution of land, for which more observations of acceptable quality are available before 1960. While the results confirm a negative link between initial *income* inequality and subsequent growth, they suggest that this relationship is not very strong. By contrast, initial inequality of *assets*, as measured by the distribution of land, exerts a significant negative effect on subsequent growth (Chart 2). Only 2 of the 15 developing countries with a Gini coefficient for land distribution in excess of 70 grew more than 2.5 percent annually during 1960-92.

What are the mechanisms through which an unequal initial distribution of assets or income might affect subsequent growth? One possible mechanism is political—that is, poor people may vote in favor of redistributive taxes that reduce investment incentives. If this were the case, one would expect higher taxes and lower investment in democratic—but not in undemocratic—countries with a more unequal distribution of income. The evidence does not support this theory, however. Clearly, other forces are at work.

A second possible mechanism is that the effects of inequality—primarily of assets—are transmitted through financial markets. Access to credit is conditional on ownership of assets—for example, land—that can be used as collateral. If certain investments in physical or human capital (for example, in basic education) are affected by individuals' access to credit markets, then the distribution of assets in an economy, in addition to the mean income, will determine how many individuals are able to undertake such investments. In more unequal economies, fewer individuals would be able to make such investments, resulting in lower stocks of human and physical capital and, as a consequence, lower growth.

Two pieces of evidence provide support for this line of argument. First, although initial (land) inequality is an important factor reducing future growth in developing countries, it does not have a significant

effect in OECD countries. In the latter, poverty is rarely a reason for non-attendance of primary schools; per capita incomes are higher, so that even relatively poor households can finance a broader range of investment without recourse to credit; and land is less important as a form of collateral. Second, we find that initial (land) inequality is significantly and negatively related to the average educational attainment in the population. Thus, the evidence suggests that credit markets, not the political system, should be seriously considered as a mechanism through which inequality slows economic growth.

Should policymakers seeking to reduce poverty redistribute existing assets or create new ones? Our analysis shows that the poor generally benefit from growth-enhancing policies, specifically investment. It also suggests that, given the growth-reducing effect of initial inequality, the poorest groups in a country may benefit from redistribution. What is the relative importance of accumulation compared with redistribution?

Initial land inequality has a significant impact on income growth for all population

groups except the top quintile. But investment, which is associated with significantly higher income growth for all groups, appears to have an even greater impact on the income of the poor. Although increased investment coupled with a redistribution of assets would appear to provide the greatest benefits to the poor, pursuing a redistributive strategy at the expense of investment could actually decrease the income of the poor. Therefore, in situations where redistribution of assets is either not feasible for political reasons or too costly, creation of new assets would be a more promising avenue for improving the welfare of the poor.

Conclusion

Using a new and improved cross-country data set on inequality to examine the dynamics of growth and poverty reduction, we reached three main conclusions. First, while policymakers should certainly pay attention to the distribution consequences of different policy options, the fear that economic growth on its own will have a systematic negative effect on the distribution of income is unfounded. Second, unequal

distribution of assets, more than of income, can be an impediment to rapid growth, implying that redistributive policies that enhance people's access to credit markets and, thus, their ability to invest could contribute to growth. Third, although redistributive policies have the potential to benefit the poor both directly and indirectly, they will do so only if redistribution does not jeopardize investment—this may be one explanation for the observation that, in the past, redistributive policies such as land reform have often failed to help the poor. If countries want to implement redistributive policies, their ability to devise mechanisms that would at the same time maintain or increase investment incentives may well determine whether such policies help with poverty reduction. **F&D**

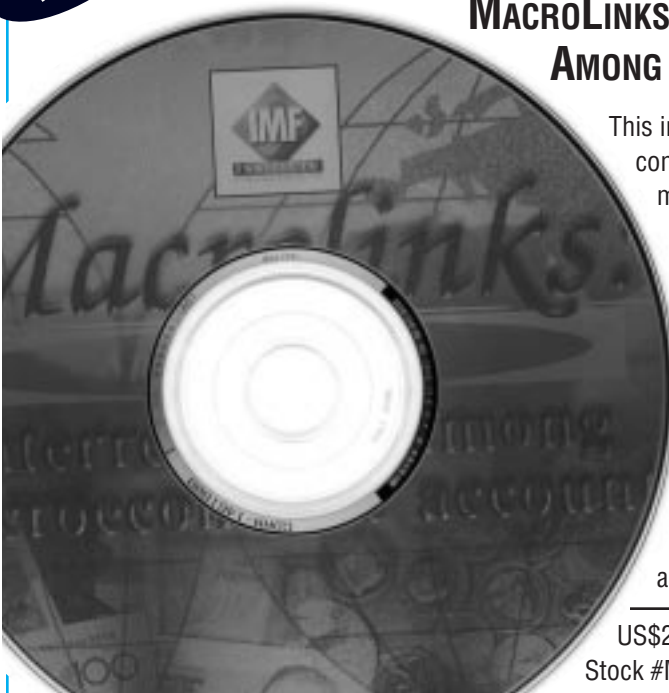
References:

Klaus Deininger and Lyn Squire, 1996, "A New Data Set Measuring Income Inequality," *World Bank Economic Review*, Vol. 10 (September), pp. 565–91.

—, 1996, "New Ways of Looking at Old Issues: Inequality and Growth" (unpublished; Washington: World Bank).

NEW FROM THE INTERNATIONAL MONETARY FUND...reserve your copy now!

MACROLINKS: A PROGRAM ABOUT THE INTERRELATIONS AMONG MACROECONOMIC ACCOUNTS



This interactive computer-based training program provides a comprehensive treatment of the interrelations among macroeconomic accounts and the flow of funds. It is the first CD-ROM produced by the IMF Institute on a core subject. The subject is presented in a variety of ways, using video, audio, and text, and the main points are illustrated with graphics and numerical examples. The program demonstrates how to construct a flow of funds table from available macroeconomic accounts and how to resolve inconsistencies in the data. Then it lets the user exercise these skills on a flow of funds table for an actual case and provides feedback as the task is being completed. The CD-ROM includes a glossary and answers to 40 frequently asked questions.

US\$29.50. Available in English. (CD-ROM) 1996.
Stock #MPIMEI

TO ORDER, PLEASE WRITE OR CALL:

International Monetary Fund • Publication Services • Box FD-197 • 700 19th Street, N.W. • Washington, DC 20431 U.S.A.
Telephone (202) 623-7430 • Telefax: (202) 623-7201 • E-mail: publications@imf.org • Internet: <http://www.imf.org>
American Express, MasterCard, and VISA credit cards accepted.

