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Does Economic Growth Reduce Poverty? Presentation Paper

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DOES ECONOMIC GROWTH REDUCE POVERTY?

Presentation Paper

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ABSTRACT

This presentation paper reviews a longer paper, CAER II Discussion Paper Number 5, by Roemer and Gugerty that presents new study results and reviews previous evidence on the relationship between economic growth and poverty reduction.

The study examines the question of whether economic growth tends to reduce poverty, where poverty is measured by the incomes of the poorest 20% and 40% of the population. The analysis shows that an increase in the rate of per capita GDP growth translates into a one-for-one increase in the growth of average income of the poorest 40%. GDP growth of ten percent a year is associated with income growth of ten percent for the poorest 40% of the population. For the poorest 20% the elasticity of response is 0.921; GDP growth of 10% is associated with income growth of 9.21%. These results give strong support to the proposition that growth in per capita GDP can be and usually is a powerful force in reducing poverty.

In addition, the paper indicates that sound macroeconomic policies and openness to the world economy may be important in reducing poverty. These policies operate mainly through the effect on economic growth: countries with better macro policies grow faster, and this growth tends to alleviate poverty.

I. THE RELATIONSHIP BETWEEN GROWTH AND POVERTY ALLEVIATION

The persistent problem of poverty in the developing world has led many to question the efficacy of economic growth and development as a means of poverty alleviation. Indeed the lack of convergence in standards of living across countries is one of the great unresolved issues in development and growth economics. This prevalence of poverty may also lead to a pessimism about the effects of market-oriented policies and outward looking development strategies. In response to these views, this paper finds that economic growth is associated with reductions in poverty, and that openness and sound macroeconomic management are associated with higher growth and therefore with reductions in poverty.

Identifying the growth strategies that are particularly effective in reducing poverty is crucial to USAID's mission. If Agency policies are focused on interventionist means to alleviate poverty, rather than on promoting economic growth, the net result could well be less growth and therefore more poverty. The USAID constituency which promotes less market-oriented strategies and more direct interventions to attack poverty has received an increasing share of the Agency's scarce resources in recent years. Thus the effectiveness of the U.S. foreign aid program depends upon reaching an understanding about the extent to which economic growth does reduce poverty in developing and transitional economies.

This presentation paper reviews a longer technical paper, CAER II Discussion Paper Number 5, by Roemer and Gugerty that presents original work and reviews the evidence on the relationship between economic growth and the incidence of poverty. The first section of this presentation paper reviews the analytic arguments connecting growth and poverty alleviation. The second section explores the connection between growth and poverty reduction. The third and final section reports on the relationship between economic structure, growth, and poverty alleviation.

The Debate over Poverty Reduction Strategies

Most economists believe that economic growth benefits nearly all citizens and thus reduces poverty. The extent to which these benefits are realized by various groups in the society will be reflected in changes (or lack of change) in the distribution of income. If economic growth raises the incomes of everyone in a society in equal proportion, then the distribution of income will not change.

Two arguments are often made against the proposition that economic growth reduces poverty. The first is loosely based on the "Kuznets" hypothesis put forward by economist Simon Kuznets in 1955. Kuznets hypothesized that as national income grew, the distribution of income would initially become more unequal, as higher-income individuals benefitted relatively more

from economic growth that lower-income individuals. But this hypothesis does not imply that the poor will become poorer; the poor might gain relatively less than the rich from economic growth, but their incomes could nonetheless increase. The Kuznets hypothesis holds only that the rich may benefit relatively more from growth, and not that the poor will be harmed by growth. This paper demonstrates both that on average the poor do benefit from growth, and that in general, the Kuznets hypothesis does not hold for most countries over time. There is no universal trend toward greater or lesser income inequality in the process of economic growth.

Second, the obvious depth and persistence of poverty has created doubts, especially among development professionals working directly with the poor in developing countries, about the ability of economic growth to reduce poverty. In addition, stabilization and structural adjustment measures that are prescribed to promote growth are widely perceived to deepen poverty, particularly in the short run, casting further doubt on the wisdom of attacking poverty through faster growth. This study shows that while there is little direct evidence on the relationship between structural adjustment and poverty alleviation, the policies promoted by structural adjustment, namely openness to the world economy and sound fiscal and macroeconomic management, do tend to reduce poverty through their effects on growth. Unfortunately, other than through the effect of raising incomes, little data are available to address the relationship between economic growth and the welfare of the very poorest members of society.

The Relationship between Economic Structure, Policy, Growth, and the Initial Distribution of Income

As noted above, for growth to occur **without** a reduction in poverty, income distribution must become more unequal. Could rapid growth take place without any reduction in poverty? It is possible but unlikely, as many studies now show. Moreover, it is possible for income distribution to worsen somewhat, while the incomes of the poor nonetheless increase.

The extent to which a given rate of growth affects poverty depends upon many factors, but particularly on economic structure and economic policies. Growth is more likely to lead directly to a reduction in poverty when the economic assets of a country are distributed relatively equally or when economic growth is based on the intensive employment of abundant factors of production, which for most countries is labor.

In largely rural economies based on small-scale farming, as in many African and Asian countries, most of the poor are engaged in agriculture. When such a country grows through agricultural exports, or when growth in manufacturing increases the demand for food and materials supplied by the rural sector, growth benefits both poor farmers and the even poorer laborers they employ. In land-poor but labor-abundant economies, such as those of East Asia, rapid growth of manufactured or service exports creates a large pool of new jobs, absorbs the

supply of low-productivity workers, and eventually causes a rise in real wages that further reduces poverty.

In contrast, mineral-rich economies typically have very concentrated income distributions; the country's wealth is in very few hands. Thus, when growth comes from mineral exports, the market mechanisms that would involve the lower income groups in that growth are weak. The best means for poverty alleviation in such countries may involve government programs to channel mineral revenues to the poor through education, health, rural works and activities that will attract private employers.

Development strategy and economic policies may also have differential impacts on the reduction of poverty via their impact on growth. Economic strategies and policies also affect distribution by altering the way an economy generates and absorbs economic growth. Outward-looking policies, for example, encourage a country to intensify its production in industries that employ abundant, and therefore low-cost, resources. If these economies are either labor-abundant or both land- and labor-abundant, these policies will enhance the impact of growth on poverty alleviation. But if the economy is mineral-rich, or if it has concentrated agriculture in the hands of a few wealthy landowners, the impact on poverty will be weak.

The market reforms espoused in structural adjustment should enhance the impact of growth on poverty. The reduction in controls reduces rent-seeking, which tends to concentrate income and wealth. More importantly, it opens market access to a wider group of participants, including the powerless and the poor. This effect can be especially strong when the controls that are targeted for elimination have affected the rural economy or when they have restricted entry to the informal sector, especially rural trading and curbside retailing in cities.

Thus the analytic arguments presented here suggest that growth tends to reduce poverty, and that openness and an outward trade orientation decrease poverty through their effects on growth. The data presented below support these assertions.

II. EVIDENCE ON GROWTH AND POVERTY REDUCTION

Economists' ability to answer the question of whether economic growth reduces poverty has been hampered until recently by a lack of data. In 1996, a new database was compiled by Deininger and Squire at the World Bank. This database contains the most comprehensive data that exist on income distribution across countries. The data cover 58 countries, beginning in 1960, and for each country give the distribution of income by quintile. In compiling the database, every effort was made to ensure that only reasonably high quality data based on comprehensive household surveys were included. Of the 58 countries included in the database, 26 are developing countries. The database makes it possible for the first time to test propositions about the Kuznet's curve and the relationship between growth and poverty over time.

We used the Deininger-Squire data set to identify 61 intervals, covering 26 developing countries,¹ for which growth in national average and quintile incomes could be identified. We use relatively restrictive criteria in defining our sample: intervals should be at least 5 years in length and based on consistently defined household surveys.

Our aim in this study was to measure the growth of average income for both the poorest 20% and the poorest 40% of the population, then to compare these to the growth of GDP per capita.² The GDP figures were taken from the Summers and Heston Penn World Tables, which calculates a cross-nationally comparable GDP, adjusted for differences in purchasing power in different countries.³

We then regressed the growth of income for the poorest two groups against the growth of GDP per capita for the entire population. The results are summarized in Table 1 and in Figures 1 and 2 below.

Table 1	Response of Average Income of Lower Income Groups to Growth of GNP Per Capita, 1960 to 1993⁴	
	Poorest 20%	Poorest 40%
Change (%) in average income with a 10% increase in GNP per capita	.921	1.008
<i>t</i> -ratio	5.829	8.4526
Standard error	.15799	.11928
Adjusted R ²	0.3563	0.5486

¹ The countries (and number of intervals) are Bangladesh (4), Brazil (3), Chile (1), China (2), Colombia (2), Costa Rica (3), Dominican Republic (1), Greece (2), Hong Kong (4), India (4), Indonesia (2), Jamaica (1), Jordan (1), South Korea (4), Malaysia (3), Mexico (3), Morocco (1), Nigeria (1), Pakistan (3), Panama (1), Philippines (1), Singapore (1), Sri Lanka (2), Taiwan (3), Thailand (3), Trinidad and Tobago (2) and Venezuela (2).

² For example, to calculate the growth in income for the bottom 20 and 40% of the population we took the share of income held by, for example, the bottom 20% and used the level of GDP for each year to calculate the dollar amount of income held by the poor. The formula used to derive income of the various quintiles is given in the appendix of the main paper.

³These figures are adjusted for “purchasing power parity,” or PPP. Using PPP takes into account the differences in relative prices, and therefore purchasing power, among different countries. One dollar typically buys more calories in India than in the United States, and that should be accounted for when estimating living standards.

⁴These regressions were run including a variable for the initial level of GDP for each episode. The coefficients on GDP (i.e. the responsiveness of changes in the income of the poor to GDP growth) barely changed when initial GDP was held out of the regression, indicating that the elasticity of response of incomes of the poor to increases in per capita GDP does not vary with the initial level of GDP.

The regressions reported in Table 1 show that an increase in the rate of per capita GDP growth translates into a one-for-one increase in average income of the poorest 40%. GDP growth of 10% per year is associated with income growth of 10% for the poorest 40% of the population. For the poorest 20% the elasticity of response is 0.921; GDP growth of 10% is associated with income growth of 9.21%. These regressions indicate that on average the poor do benefit from economic growth.

Figures 1 and 2 below clearly show that there are very few exceptions to the observation that GDP growth is shared by the low-income population. Larger versions of these graphs are given in Appendix A.

Figure 1 shows the data for the poorest 20% of the population. This diagram indicates that there is a clear relationship between growth of the incomes of the poorest 20% and growth in GDP per capita. All the data points in the upper right quadrant are examples of periods where economic growth increased the incomes of the poorest 20%. The cases where economic growth was accompanied by deterioration in incomes of the bottom 20% are found in the bottom right quadrant and are discussed below.

Figure 1
GDP Growth v. Inc. Growth: Bottom 20%

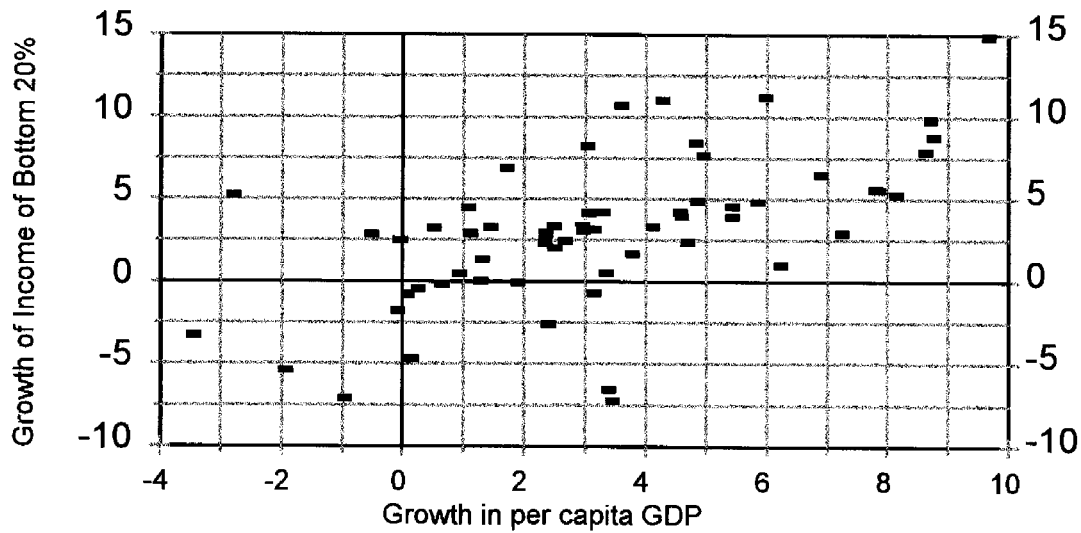
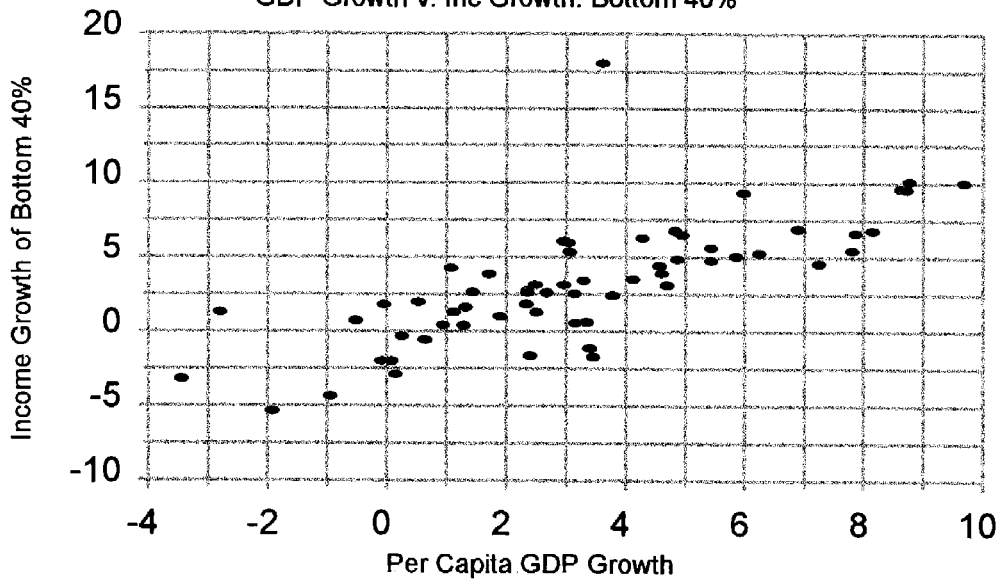


Figure 2 shows a similar story for the incomes of the bottom 40%, which are associated even more strongly with an increase in per capita GDP.

Figure 2
GDP Growth v. Inc Growth: Bottom 40%



The combination of substantial growth in per capita GDP and a significant decline in income for the poorest 20% or 40% occurred in only five out of the twenty-six countries: China (1986-1992), Colombia (1970-8), Costa Rica (1971-77 and 1983-89), the Dominican Republic (1984-89), and Greece (1981-88). And only in the three Latin American countries did this occur for both the poorest 20% and 40%.

In addition to the few adverse observations, however, there are a number of cases in which rapid growth, while not reducing incomes of the poorest, did not raise them much, either. This weak response is observed for the poorest 20% of Hong Kong (1986-91), Korea (1970-76) and Sri Lanka (1973-81 and to a lesser extent 1981-87). The first two cases are curious, because Hong Kong and Korea both experienced rapid growth in several other periods when the poorest 20% did extremely well. For the long period of rapid growth in Hong Kong and Korea, as in other East Asian countries that followed outward-looking strategies, there appears to have been substantial reductions in poverty. The Sri Lanka case is a concern, however, because it coincides with the period when economic liberalization replaced a regime that was notable for protecting the incomes of the poor.

Finally, in four cases, very poor (but not negative) economic growth led to a deterioration in the share of income held by the poor: Chile (1971-89), Mexico (1984-1989), Nigeria (1986-1992), and Pakistan (1970-1979). In all these cases economic growth per person was less than 0.3% per year over the relevant periods.

Of the eight episodes noted above in which incomes of the poorest either reacted adversely to growth or did not respond much, four involve data from the 1970s that may be of questionable quality and comparability. The distribution data from Deininger and Squire on which our analysis is based cover 30 years, a span that is appropriate to deal with questions about growth and poverty. Over that time the resources devoted to household surveys have increased and the standards for acceptable data have been refined and improved. Hence for any country the early data are unlikely to be comparable to more recent surveys and may give spurious results.

These results give strong support to the proposition that GDP growth can be and usually is a powerful force in reducing poverty, whether our concern is with the poorest 20% or 40% of the population. Of the thirty-nine intervals where GDP growth exceeded 2% per capita, the income of the poor fell in only six.

Economic Growth and Income Distribution

The data above demonstrate that the poor benefit from economic growth through rising incomes. Even when the income distribution deteriorated with growth, the poor still had rising incomes in almost all cases. Figures 1 and 2 above show graphically the changes in the share of income accruing to the poorest 20% and 40%. If a 45° line from the origin is drawn on the graph, as it is in Appendix A, any points above that line represent improvements in the income

share of the poor. In Figure 2, showing the poorest 40%, the poor improved their share of total income in more than half the growth episodes. For the poorest 20% shown in Figure 1, the poor overwhelmingly increased their average income, even though in more than half the episodes the poor lost income share.

As discussed above, income distributions tend to change quite slowly over time. Because of this, growth has great potential to raise the incomes of the poor. For example in Thailand, which had the greatest deterioration in income distribution over the last 30 years in our sample, the per capita income of the poorest quintile was 60% higher in 1992 than in 1975, while the incomes of the poorest 40% nearly doubled. Growth is a powerful mechanism for reducing poverty.

Additional Evidence that Growth Reduces Poverty

Using the same data set but including all 58 countries, Deininger and Squire (1996b) identify 91 intervals or episodes for which income growth and changes in income distribution are available. They find that changes in income distribution are generally small, so that growth is clearly associated with increasing incomes in each quintile of the population. In more than 81% of their 91 growth episodes, the incomes of the poorest quintile rose.

Another study by Ravallion and Chen (1996) analyzes a more selective set of household survey results, covering the period since 1980. Their results are striking and give strong support to the hypothesis that growth reduces poverty in developing countries.

Ravallion and Chen have 64 intervals that cover periods from one to seven years. Twenty-one of these intervals are from Eastern Europe and Central Asia (former Soviet or transitional countries), and forty-three are from developing countries. For each episode, Ravallion and Chen calculate the change in the headcount index of poverty and the growth in the mean income for the sample as a whole. They find the following:

- 10% growth in sample income reduces the number of people living below the poverty line by 9.9% with the poverty line defined as 75% of mean sample income.
- 10% rise in sample income reduces poverty by 17.6% for this sample with the poverty line defined as the international standard of only \$1 per day

Growth reduces poverty, and the impact is even stronger when the lower poverty line of \$1 per day is used.

Bruno, Ravallion and Squire (1996), using the same data set,⁵ find that for twenty poor countries, the Foster-Greer-Thorbecke (FGT) measure of the severity of poverty is even more responsive to growth: a 10% rise in average income is associated with a 35% fall in the FGT index. Because the FGT index gives greater weight than the headcount index to the incomes of those well below the poverty line, this result demonstrates that economic growth does reach the very poor.

Regional Data

The data sets described above contain very little data on Africa, where there has been intense concern about the adverse effect of growth-oriented strategies on poverty. A recent study by Demery and Squire (1996) assemble survey data for six African countries for time periods during the 1980s and 1990s: Cote d'Ivoire, Ethiopia, Ghana, Kenya, Nigeria and Tanzania⁶.

The headcount index of poverty rose only in Cote d'Ivoire, where per capita income declined by 2.5% a year over the survey period. The index of poverty fell substantially in Ethiopia, Nigeria, and Tanzania, and fell slightly in Ghana and Kenya. Ghana and Nigeria had per capita growth rates of about 1% per annum over the relevant periods according to their calculations, while Tanzania and Kenya had growth rates of 0.4%. Surprisingly, income declined (by 2.3% a year) in Ethiopia while the index of poverty also fell. When the poverty line is drawn to include only the poorest 10% of the population in the initial survey year, however, poverty increased in four of the five countries for which there are estimates. This is not surprising, given that per capita growth rates were less than one percent a year. For three of these countries, Kenya, Tanzania, and Nigeria, the data quality is rated as "medium" or "poor," and it is notoriously difficult to reliably estimate income or expenditure of the very poor.

Latin America is another region that elicits concern about the impact of growth on poverty. We include eight Latin American countries in our data, representing 15 of the 61 intervals in our sample. Only four of these intervals--from Colombia, Costa Rica, and the Dominican Republic--show results contrary to the general finding that growth reduces poverty. In two countries, Chile and Mexico, very low levels of per capita GDP growth led to slightly lower incomes for the poorest 20%. Morley (1995), using essentially the same data set, has analyzed changes in income distribution for shorter intervals during the 1980s and early 1990s. His findings are consistent with ours. During periods of recession, income distribution worsened and poverty increased; during periods of recovery distributions improved and poverty was reduced. There were two exceptions to this pattern: Guatemala in 1986-9 and Chile in 1987-90.

⁵ The data set is undergoing continual refinement, so it is possible that the data used in Ravallion and Chen is not identical to that used in the slightly earlier work of Bruno, *et al.*

⁶The survey periods are as follows: Cote d'Ivoire (1985-88), Ethiopia (1989-94), Ghana (1988-92), Nigeria (1985-92), Tanzania (1983-91), and Kenya (1982-92).

In these cases income distributions worsened during periods of recovery, but because changes in the income distribution were small, it is still possible that poverty was reduced.

Thus the preponderance of evidence, over both long and short intervals, demonstrates that economic growth reduces poverty. Not only is the tendency strong, but there very few exceptions. These results suggest, unequivocally, that for the vast majority of countries the fear that growth will bypass the poor is misplaced.

III. POVERTY, ECONOMIC POLICY AND ECONOMIC STRUCTURE

The evidence that growth substantially reduces poverty does not rule out the possibility that different growth-oriented policies could have different impacts on the rate of poverty reduction. A companion CAER study by Stryker, *et al.*, looks at these issues in detail. Our purpose here is to bridge these two studies by reviewing some results arising from studies cited above and from our own analysis. The association of economic growth with poverty reduction leads to the expectation that policies promoting growth will also reduce poverty. In addition, there is a growing body of literature showing that countries pursuing certain economic policies tend to grow more rapidly than others. This literature shows that the following policies are associated with higher rates of economic growth:

- low levels of exchange rate distortion
- few quantitative trade restrictions
- low fiscal deficits
- high ratios of liquid financial assets to GDP

These studies are summarized in more detail in the longer paper, but the basic conclusions are as follows. Open economies (as defined by exchange rate management, trade restrictions, and market-oriented management) have annual growth rates up to 2.8 percentage points higher than closed economies. In addition, the evidence indicates the reducing exchange rate variability to the Asian level would add an additional 0.8% to annual growth in Latin America and 0.3% to growth rates in Africa. Short-term macroeconomic variables such as inflation and budget deficits are also associated with growth; one study indicates that low inflation, low deficits and market-based exchange rates are associated strongly and significantly with more rapid economic growth. Thus it would appear that sound macroeconomic management establishes conditions for sustainable growth and should therefore be associated with reduced poverty.

Evidence on Economic Policies and Poverty Reduction

If open, market-oriented policies and sound macroeconomic management lead to growth and growth reduces poverty, then it ought to be possible to observe the impact of policies on poverty directly. We used our calculations of income growth for the poorest 20% and 40% to test the hypothesis that outward-looking policies benefit the poor using a variable first

constructed by Sachs and Warner to represent openness.⁷ We first test the effect of openness on income growth of the poor. We then test the effects of both openness **and** the growth of GDP per capita on the income growth of the poor. The first regression attributes all changes in the incomes of the poor to economic openness; the second tries to distinguish between the effects of growth and the additional effects of openness. Table 6 in the main paper and Appendix B of this paper present these results in detail, but in general we found:

- Openness is strongly associated with growth of incomes of the poorest 20% and 40% of the population.
- When we attempt to account for the effects of both openness and GDP growth on the incomes of the poor, however, the effect of openness cannot be distinguished from the effects of GDP growth.

This suggests that open economies do favor more rapid growth in the incomes of the poorest 20% and 40% of the population and the effect is substantial. However, openness explains very little of the variance of income growth in these regressions. These regressions argue that more open economies do deliver more rapid growth to the poorest, but that the impact works primarily through economic growth: openness contributes to more rapid growth of GDP which in turn reduces poverty.

Poverty and Economic Structure

Countries that are relatively rich in natural resources tend to have slower economic growth.⁸ Furthermore, as discussed above, the distribution of income in resource-rich societies is expected to be more concentrated and market forces alone will be less effective in translating GDP growth into substantial reductions in poverty. For both of these reasons we would expect the growth of income of the poorest groups to be slower in resource-rich economies. To test this proposition, we utilized three indices compiled by Sachs and Warner to represent resource endowment:

- the ratio of natural resource exports to GDP
- the ratio of natural resource exports to total exports
- the ratio of arable, pasture, and forest land to population.

⁷ Sachs and Warner (1995a) measure the effects of openness by creating a variable that incorporates 1) the parallel market exchange rate premium, 2) quantitative import restrictions, 3) number of export restrictions (namely marketing boards for agricultural exports in Africa), and 4) socialist (rather than market-oriented) economic management. To qualify as open, a country must have a low score on all four criteria.

⁸This is demonstrated econometrically by Sachs and Warner (1995b).

All indices are based in 1971, a year predating all but a few of our observations and thus indicative of an initial resource endowment.

Resource exports as a share of total exports and land per person have a negative effect on growth. The coefficients are negative and significant at the 1% level or better.⁹ Growth of incomes for the poor is lower on average in well-endowed economies. But resource endowment does not explain much of the variance in income growth of the poor: adjusted R-squareds are below 25%. And, as with openness, when the growth of GDP is inserted into these regressions, the resource endowment coefficients lose significance, though they retain the expected negative sign. Resource endowments appear to work against poverty reduction through their depressing effect on economic growth, as Sachs and Warner (1995b) have demonstrated.

The role of policy in overcoming resource wealth is borne out by regressions of income growth of the poor against openness and resource endowment, using the share of resource exports in total exports as the indicator of natural resource wealth. The regression results are given in Table 7 of the main paper and in Appendix B of this paper, but in general the analysis indicated that:

- High level of resource exports are associated with lower growth of incomes of the poorest 20% and 40%
- Openness has a positive and significant effect, suggesting that the positive impact of an open economy can offset the negative impact of resource dependence.
- Land per person has a negative effect on growth of incomes of the poorest, though this effect is not as strong.

None of these regressions, however, explains more than a third of the variance in income growth of the poorest. And, as above, when growth of GDP per capita is included, the openness and resource endowment variables lose their significance. Openness and resource endowments appear to have little or no impact on poverty that is statistically separable from their impact on economic growth.

In considering the curse of resource wealth on poverty reduction, it is important to keep in mind a few outliers, resource-rich countries that have enjoyed both rapid GDP growth and dramatic reductions in poverty. Indonesia and Malaysia, both rich in natural resources including petroleum, have had rapid growth in GDP per capita since 1970 and substantially reduced

⁹ The other indicator, resource exports as a share of GDP, gives negative but insignificant coefficients. If natural resource exports have a negative effect on growth of the economy as a whole, then using resource exports as a share of GDP should give significant results. If resource exports as a share of total exports negatively affects growth, then a different mechanism underlies the relationship between resource exports and growth. A large share of resource exports may give officials greater opportunities for extracting rents, and this may have a negative effect on growth. In addition, resource exports may have a Dutch disease affect, appreciating the real exchange rate and thereby slowing growth.

poverty. In Indonesia, for example, average incomes grew by 4% a year from 1970 to 1993 and the headcount index of poverty fell from 60% to under 15%. In Malaysia, per capita income grew by over 3% a year and the headcount index of poverty fell from 18% to 2% over the same period.

These countries avoided the curse of wealth through shrewd government policies. First, both governments maintained sound macroeconomic policies that avoided exchange rate overvaluation and other symptoms of Dutch disease during the resource booms of the 1970s. Second, they invested in the education and health of their people, especially of the rural poor. Third, Indonesia (and to a lesser extent Malaysia) invested in rural infrastructure and agricultural development that benefited agricultural smallholders, especially on densely populated Java. And fourth, Malaysia undertook a determined policy of redistribution of assets and jobs towards the majority Malay population, which included most of the poor. Resource wealth does not condemn a country to entrenched poverty. Instead, resource wealth can be turned to an advantage in the war on poverty, but it takes a determined and skillful government to do so. It is the political economy of resources that drives the growth and poverty results.

Additional Evidence on Poverty and Economic Structure

Additional, intriguing evidence on poverty and economic structure is provided by Deininger and Squire (1996c), who utilize their data set to investigate the impact of both economic structure and economic strategies on the incidence of poverty. Deininger and Squire are interested in the question of whether income growth--for the society as a whole and for the poor as a group--is more affected by initial levels of inequality or by levels of investment. They find that initial income inequality is not a robust determinant of future growth. Initial inequality is far from sufficient to explain the large differences in growth rates across countries. These results are given in more detail in the main paper, but in general they find:

- Higher aggregate investment has a positive and statistically significant impact on income for all quintiles of the income distribution; the impact is higher for the bottom 20% than for any other group.
- The initial distribution of land, as measured by the Gini coefficient, also has an impact on future income growth, and again, the impact is greatest for the poorest.
- The initial distribution of income has no statistically significant impact on the incomes of the poorest 20% and 40% apart from that caused by lower growth rates. The initial distribution of income does affect average income growth, as faster growth is associated with greater initial equality. This result is confirmed by other recent studies, but this work indicates that greater initial inequality may not have a harmful effect on the poor in addition to that caused by lower growth.

These results imply that increases in aggregate investment may have a more powerful impact on poverty than changes in the distribution of land. Thus, if land redistribution is likely to reduce investment rates because of political turmoil, for example, depending on the trade-off the poor may be better served if government forgoes land redistribution and implements policies to raise investment. Given the difficulties involved in redistributing both land and income, it seems quite likely that raising investment rates will be a better mechanism for poverty reduction than redistribution.

CONCLUSION

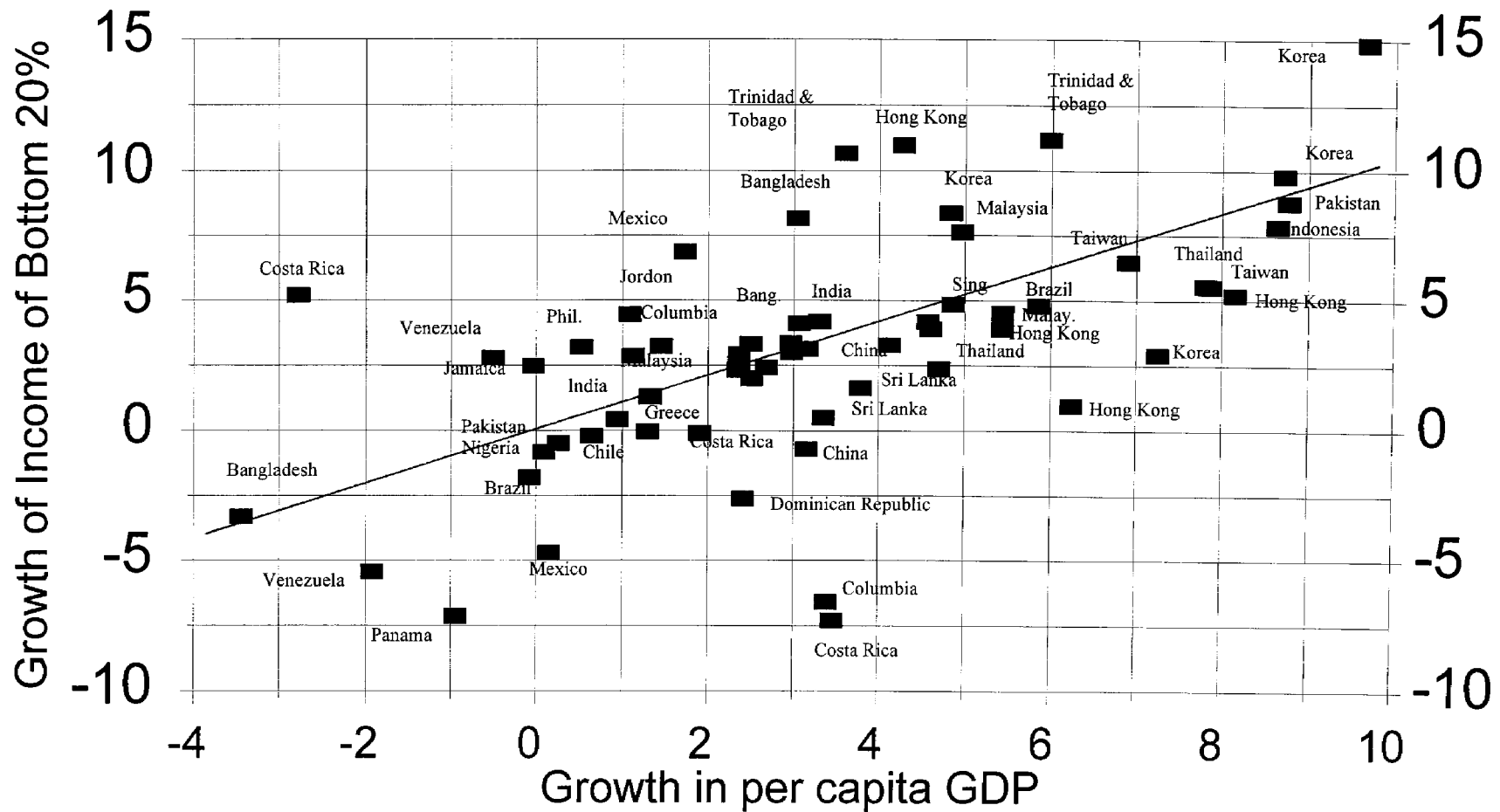
This study demonstrates that economic growth benefits the poor in almost all countries in which substantial growth has taken place. Indeed, economic growth appears to be one of the best ways to reduce poverty. The poor do better in countries that grow quickly, even if income distribution deteriorates slightly. Countries which experienced rapid economic growth over the last thirty years, such as Hong Kong, Korea, Malaysia, and Indonesia, saw the per capita incomes of the poorest 20% and 40% of the population grow significantly. Another conclusion of this study is that income distribution changes only very slowly, and that a policy that aims at redistributing income at the expense of economic growth may have very low payoffs in terms of poverty reduction. While the evidence suggests that countries with more equal income distributions grow more quickly, the evidence also indicates that economic policy can compensate for inferior initial income distributions.

This study indicates that more outwardly oriented countries grow more quickly, leading to greater poverty alleviation. While it is quite difficult statistically to separate the effects of openness on poverty from those of economic growth, the evidence presented here suggests that the poor fare better in open economies. As noted above, this effect does depend on economic structure, and in those countries with more resource-intensive economies where wealth can be more concentrated, governments will have to make a determined effort to distribute the benefits of growth more widely and should have the resources to do so.

Thus there is every reason to believe that economic growth reduces poverty. There is little evidence to support the contention that economic growth and outward-oriented policies will hurt the poor. Countries with higher rates of economic growth over the last 30 years have achieved greater reductions in poverty.

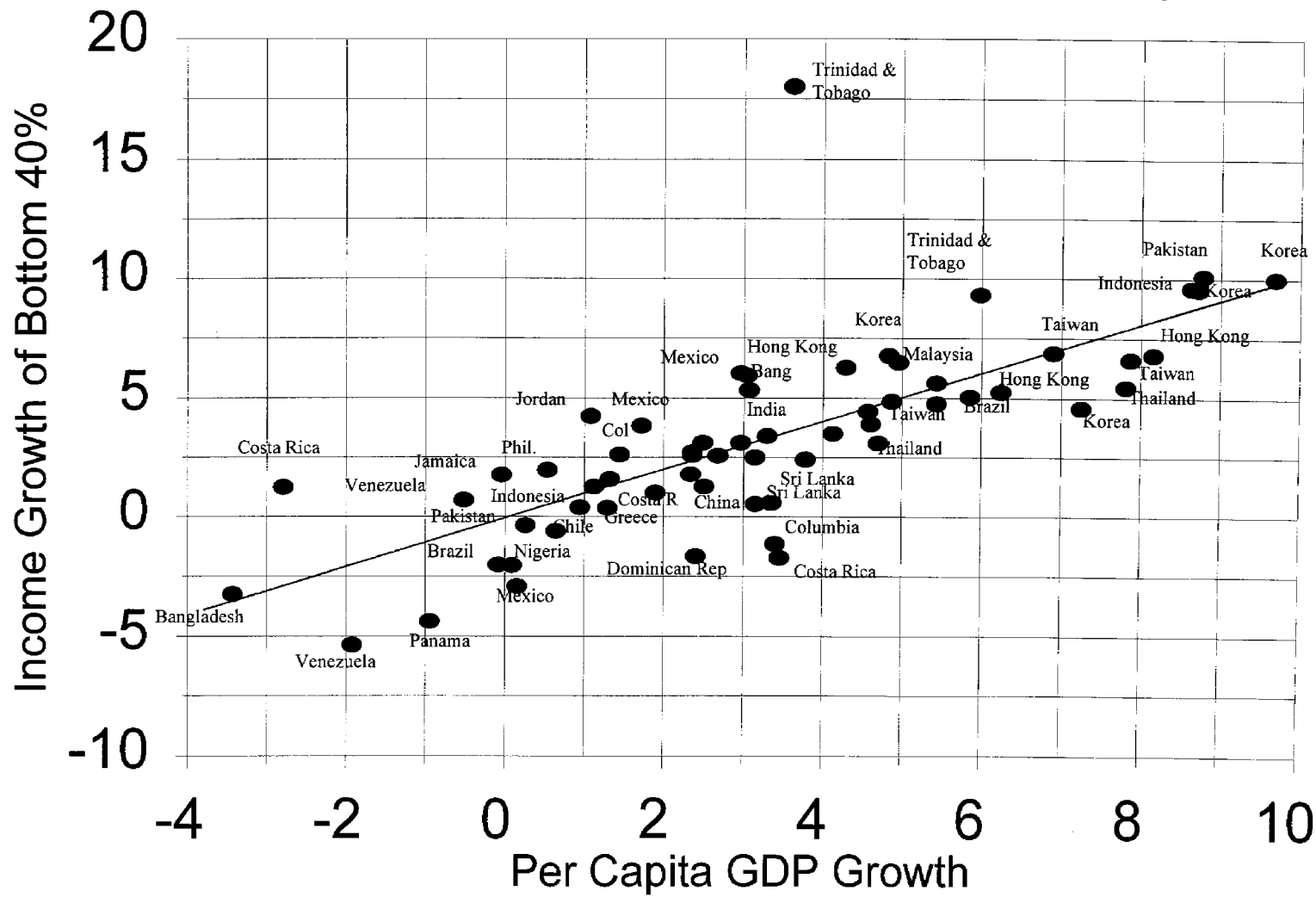
Figure 1

GDP Growth v. Inc. Growth: Poorest20%



Appendix A

Figure 2
 GDP Growth v. Inc Growth: Poorest 40%



Appendix B

Regression Results from main paper: Does Economic Growth Reduce Poverty?

Table 6: Regression for Growth of Incomes of Poorest 20 and 40% on GDP Growth and Openness^a

Regr'n number	Dependent variable= Income growth of bottom 20/40%	Constant	Growth of GDP p.c. ¹	Openness	Adjusted R-squared
1	<i>inc</i> ₂₀	2.047 (2.584)		2.405** (1.991)	.0478
2	<i>inc</i> ₄₀	2.437 (3.337)		1.926* (1.73)	.0326
3	<i>inc</i> ₂₀	-0.2787 (-0.303)	.864 (5.027)	.0557 (.048)	.3213
4	<i>inc</i> ₄₀	-0.5529 (-0.795)	1.038 (7.984)	-1.055 (-1.19)	.5359

^at-ratios in parentheses; coefficients in boldface are significant at 1% level or better. ** indicates significance at the 5% level, * at the 10% level.

¹In regressions 3 and 4 the initial level of GDP is also included to control for differences in starting levels of income. The coefficient is positive, but very small and not significant.

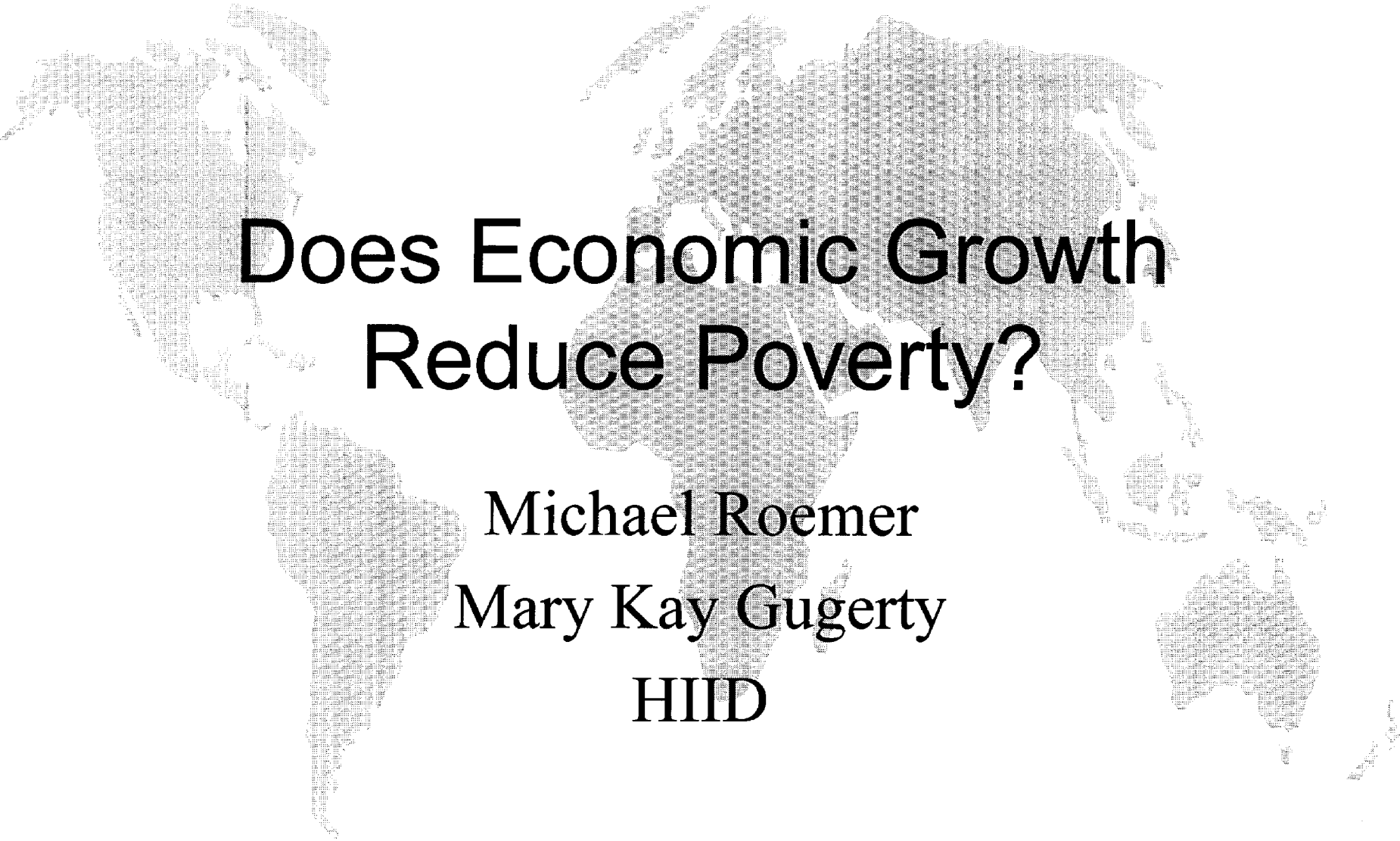
Table 7: Regressions of Growth of the Incomes of the Poorest 20 and 40% on GDP Growth, Openness and Natural Resource Endowment^{a,b}

Regr'n number	Depend. Variable=Income growth of poor	Constant	Openness	Resource exports ^c	Land per person	Adjusted R ²
1	inc ₂₀	1.93 (2.194)	3.222 (2.846)	-8.3099 (-1.371)		.1244
2	inc ₄₀	1.988 (2.998)	3.311 (3.881)	-9.304 (-2.307)		.2349
3	inc ₂₀	.9603 (1.268)	1.843 (1.487)		-.74932 (-2.280)	.1752
4	inc ₄₀	.9588 (1.694)	1.971 (2.128)		-.7229 (-2.94)	.2919

^a *t*-ratios in parentheses; coefficients in boldface are significant at 5% level or better.

^b Regressions run without data from Trinidad & Tobago, which have unusually high natural resource exports and high levels of growth of the bottom 20 and 40%.

^c Natural resource exports as share of total exports.



Does Economic Growth Reduce Poverty?

Michael Roemer

Mary Kay Gugerty

HIID

Study Results

- ◆ Economic growth reduces poverty in the vast majority of cases studied.
- ◆ 10% growth in per capita GDP is associated with:
 - 10% income growth for poorest 40%
 - 9.2% income growth for poorest 20%

Study Methodology

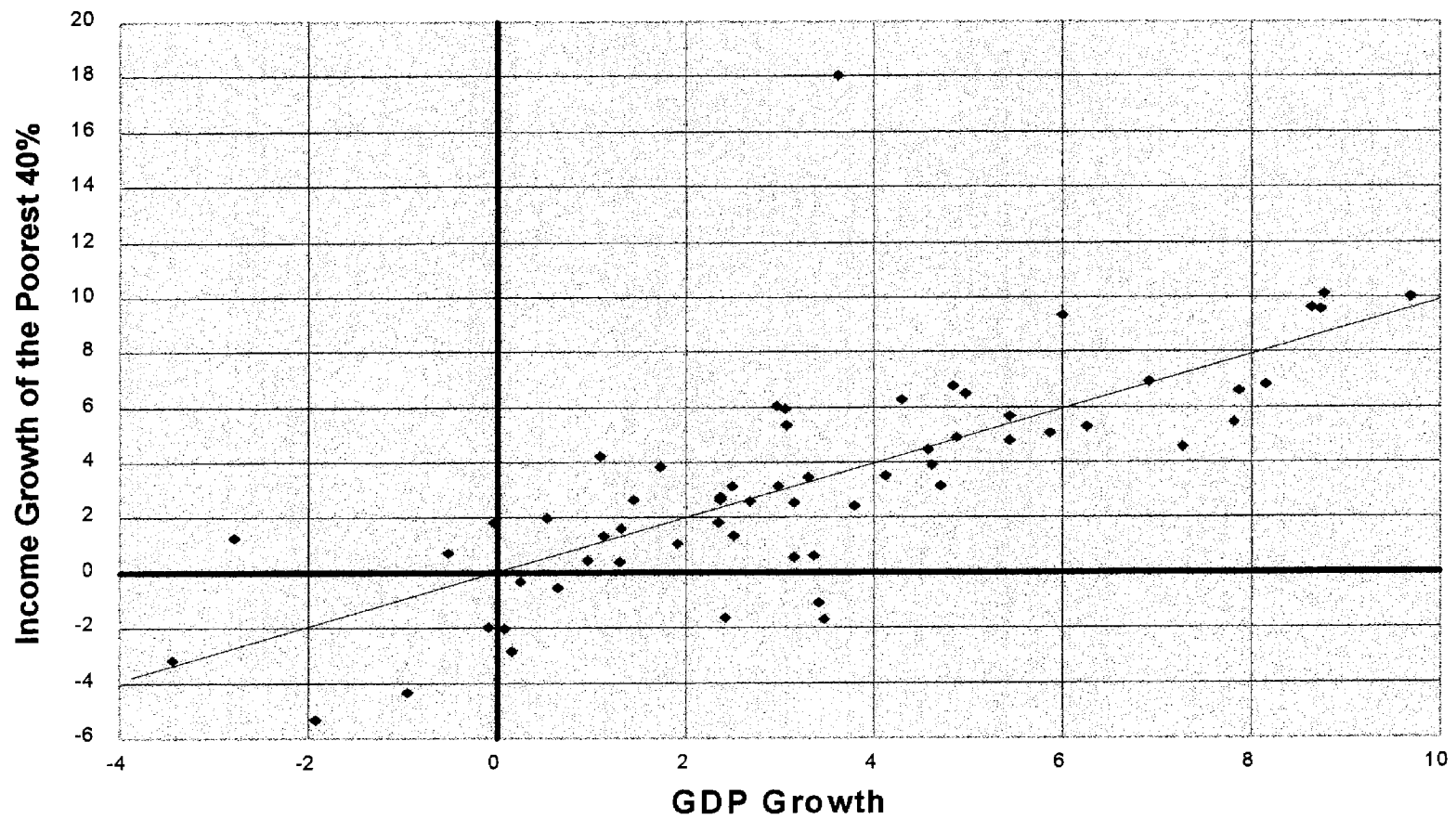


- ◆ New comprehensive database on income distribution
- ◆ Includes 26 developing countries
- ◆ Periods of at least 5 years
- ◆ Data based on comparable surveys
- ◆ GDP adjusted for relative purchasing power.

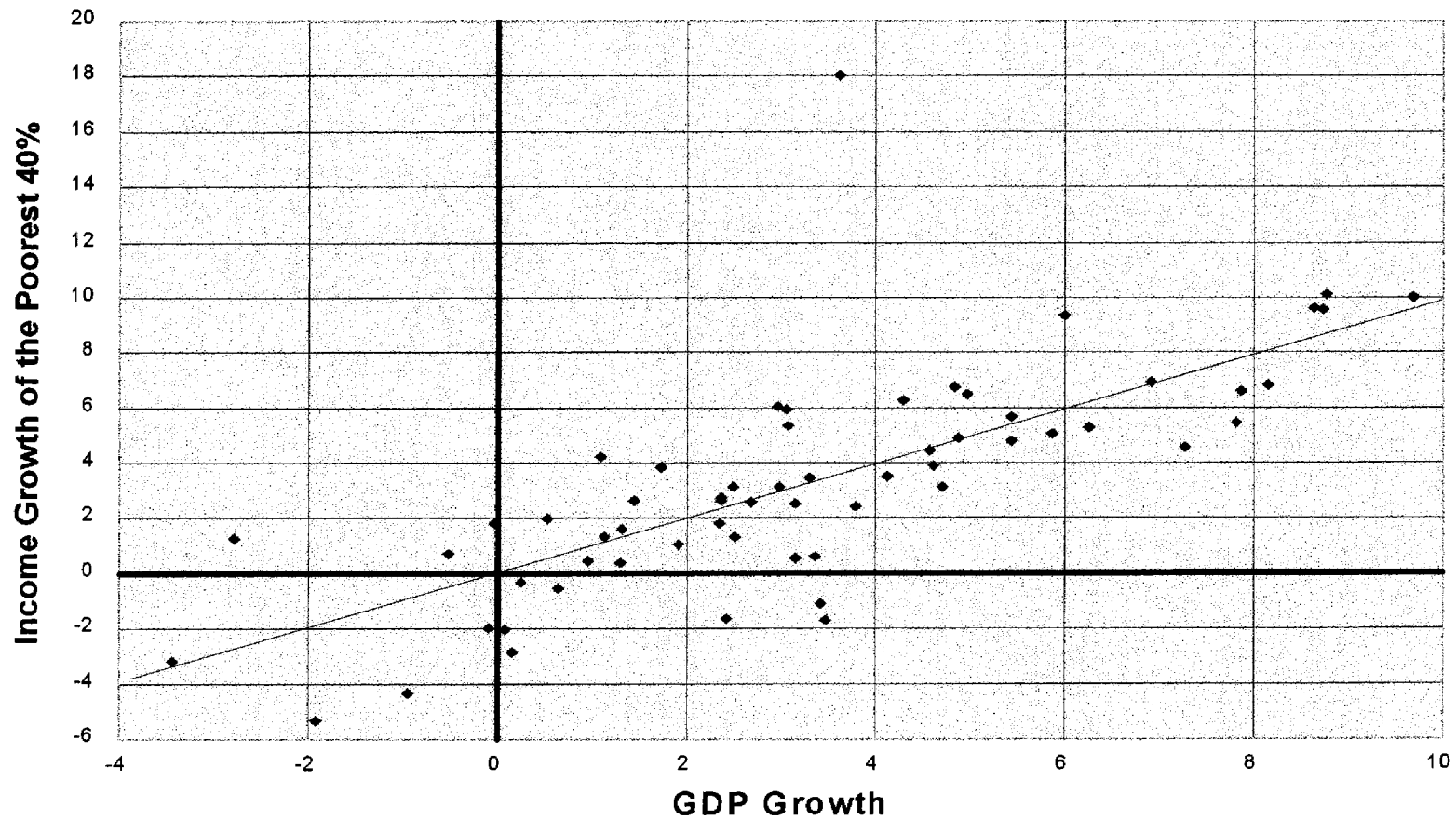
Countries and Number of Growth Periods included in Study

- 
- ◆ Bangladesh - 4
 - ◆ Brazil - 3
 - ◆ Chile - 1
 - ◆ Columbia - 2
 - ◆ Costa Rica - 3
 - ◆ Dominican Republic - 1
 - ◆ Greece - 2
 - ◆ Hong Kong - 4
 - ◆ India - 4
 - ◆ Indonesia - 2
 - ◆ Jamaica - 1
 - ◆ Jordan - 1
 - ◆ Malaysia - 3
 - ◆ Mexico - 3
 - ◆ Morocco - 1
 - ◆ Nigeria - 1
 - ◆ Pakistan - 3
 - ◆ Panama - 1
 - ◆ Philipinnes - 1
 - ◆ Singapore - 1
 - ◆ South Korea - 4
 - ◆ Sri Lanka - 2
 - ◆ Taiwan - 3
 - ◆ Thailand - 3
 - ◆ Trinidad - 2
 - ◆ Venuzuela - 2

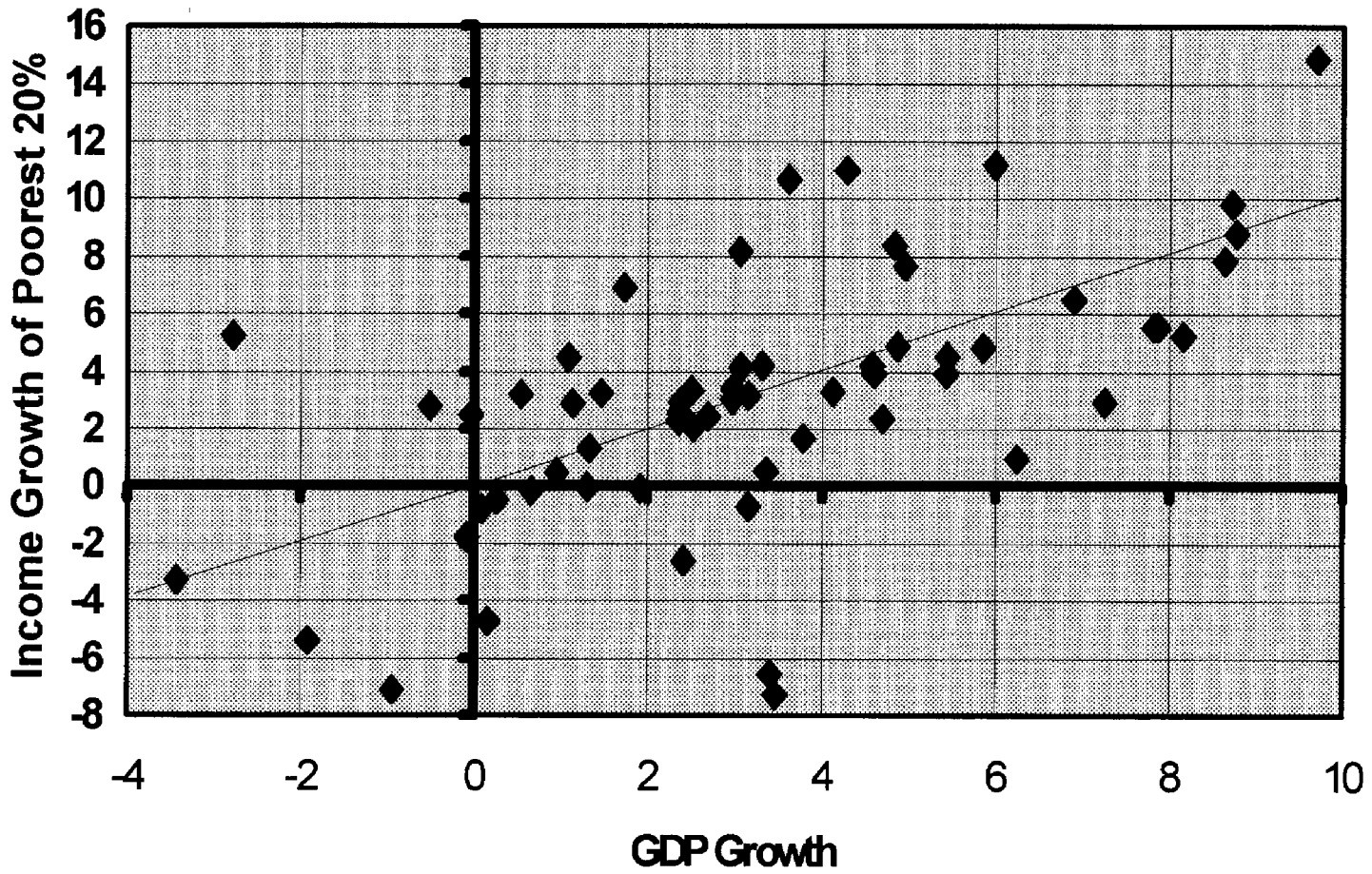
Per Capita GDP Growth against Income Growth of the Poorest 40%



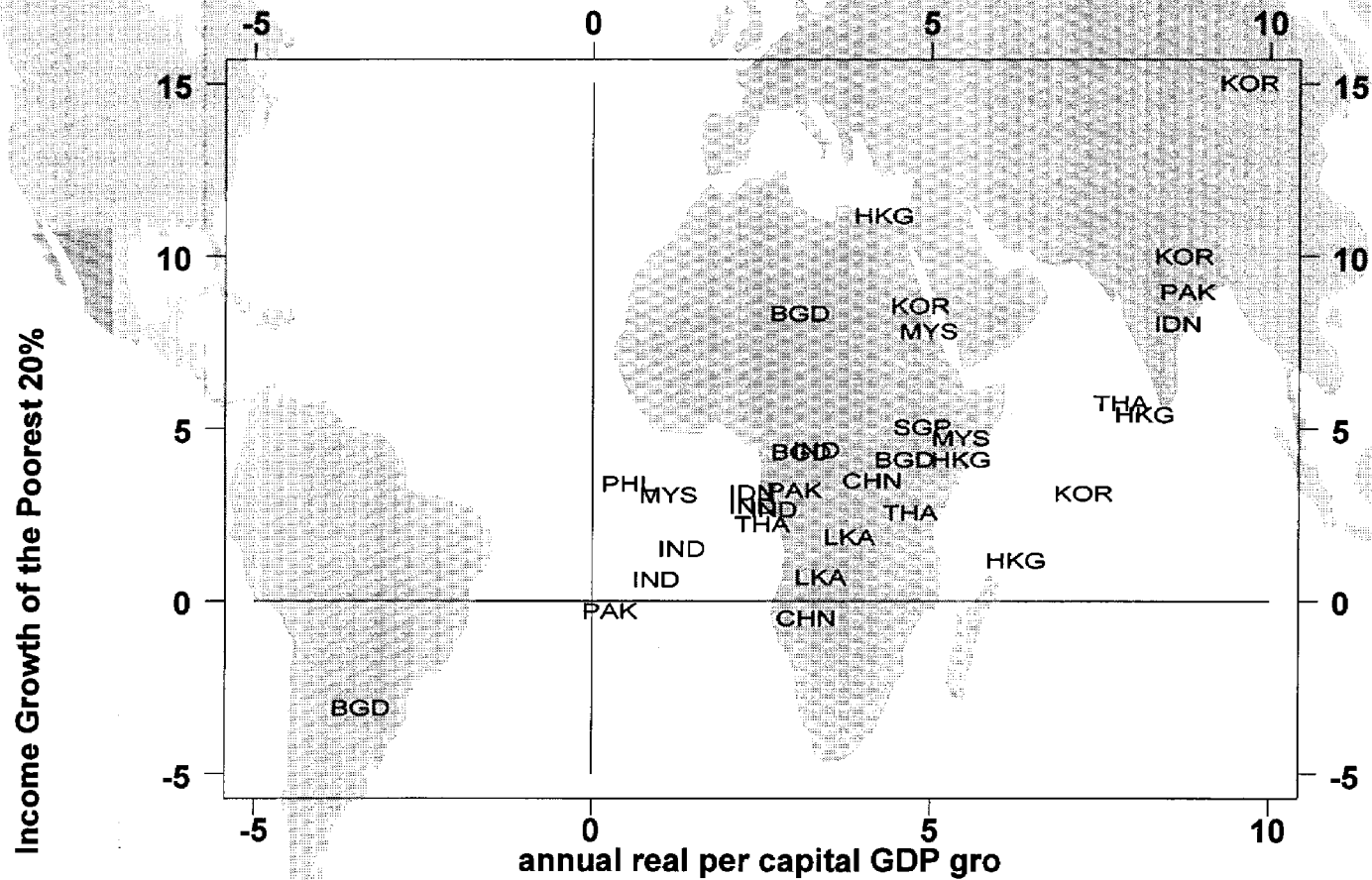
Per Capita GDP Growth against Income Growth of the Poorest 40%



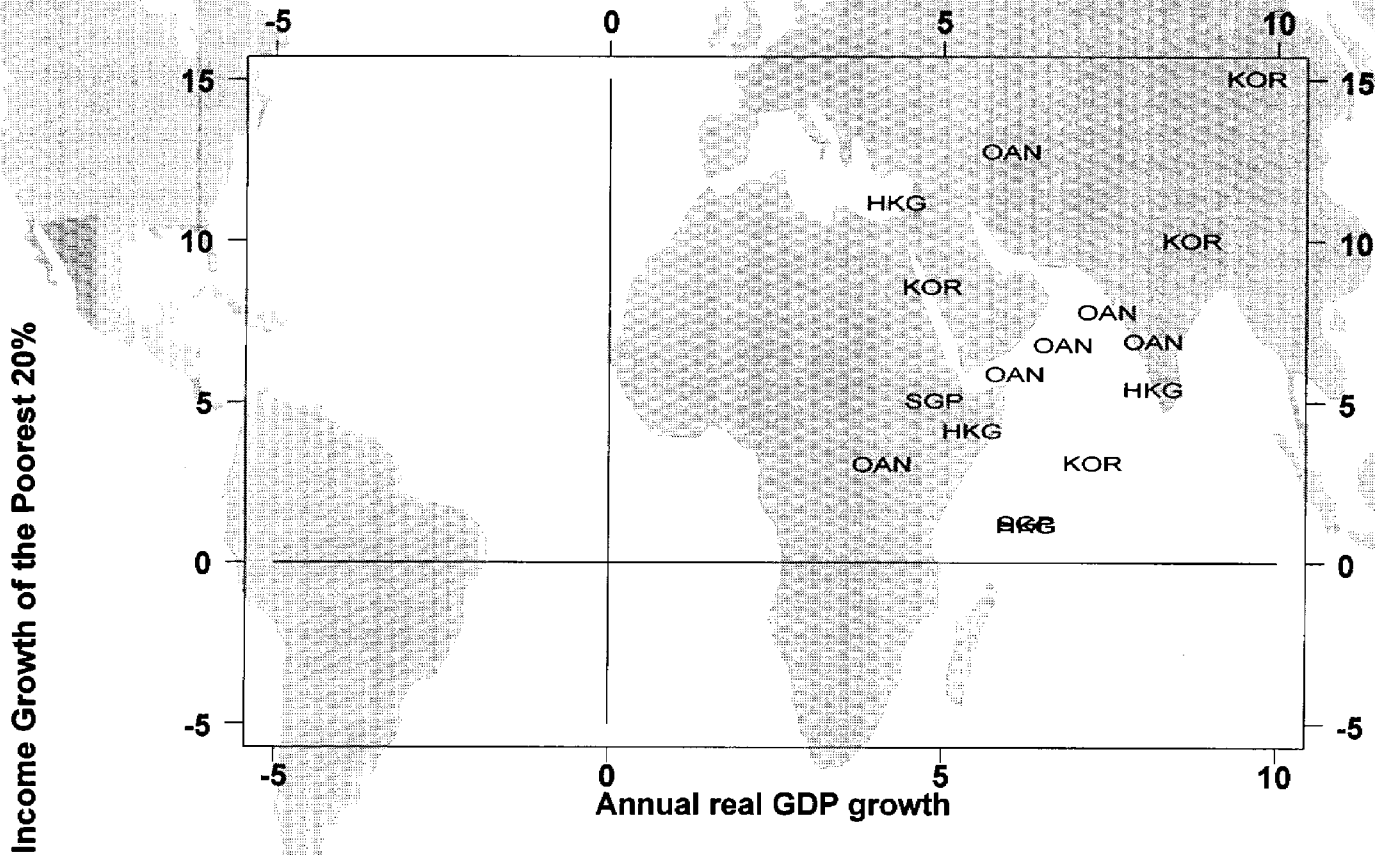
GDP Growth and Income Growth of the Poor



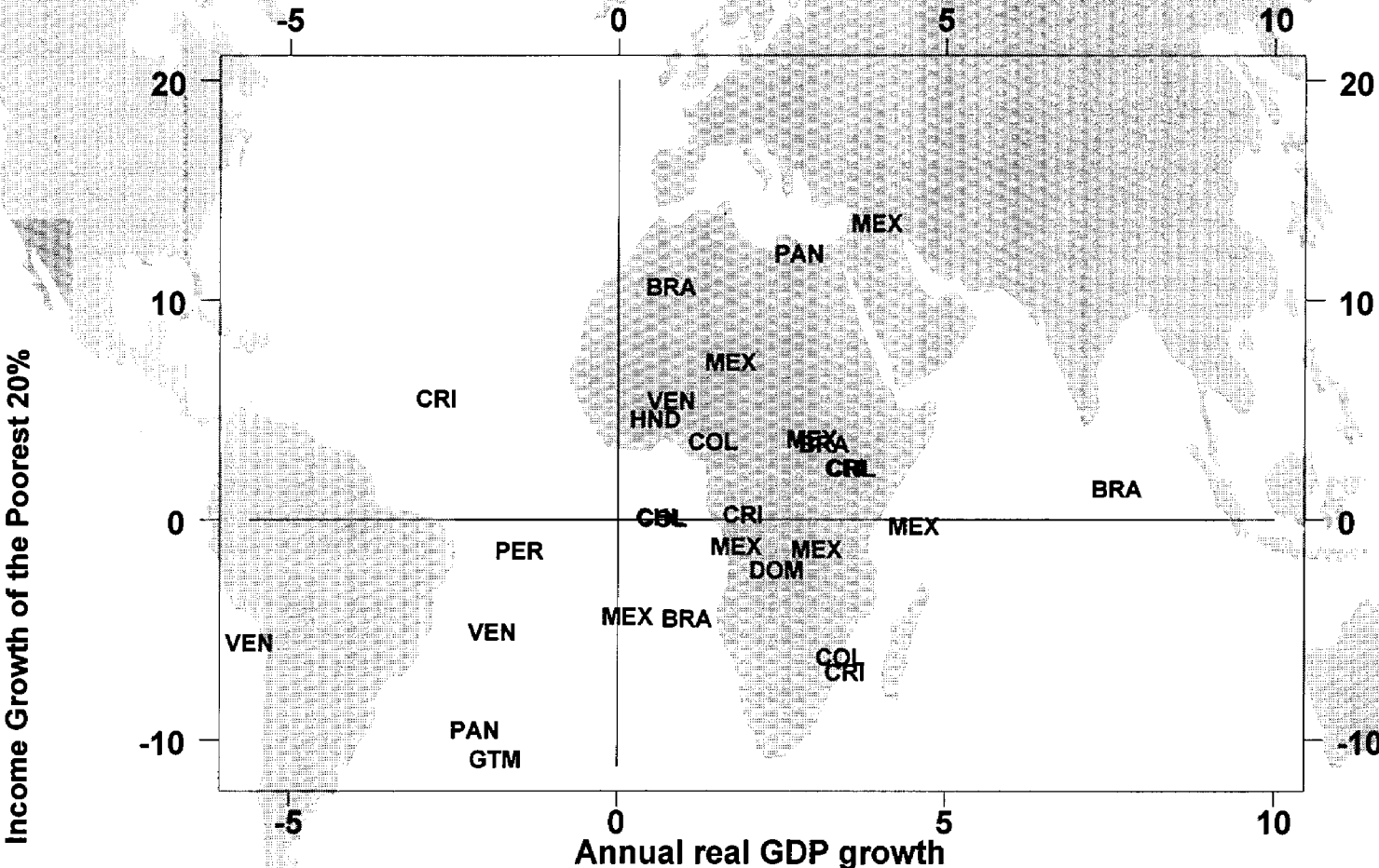
GDP Growth and Poverty in Asia



Growth and Poverty in East Asia

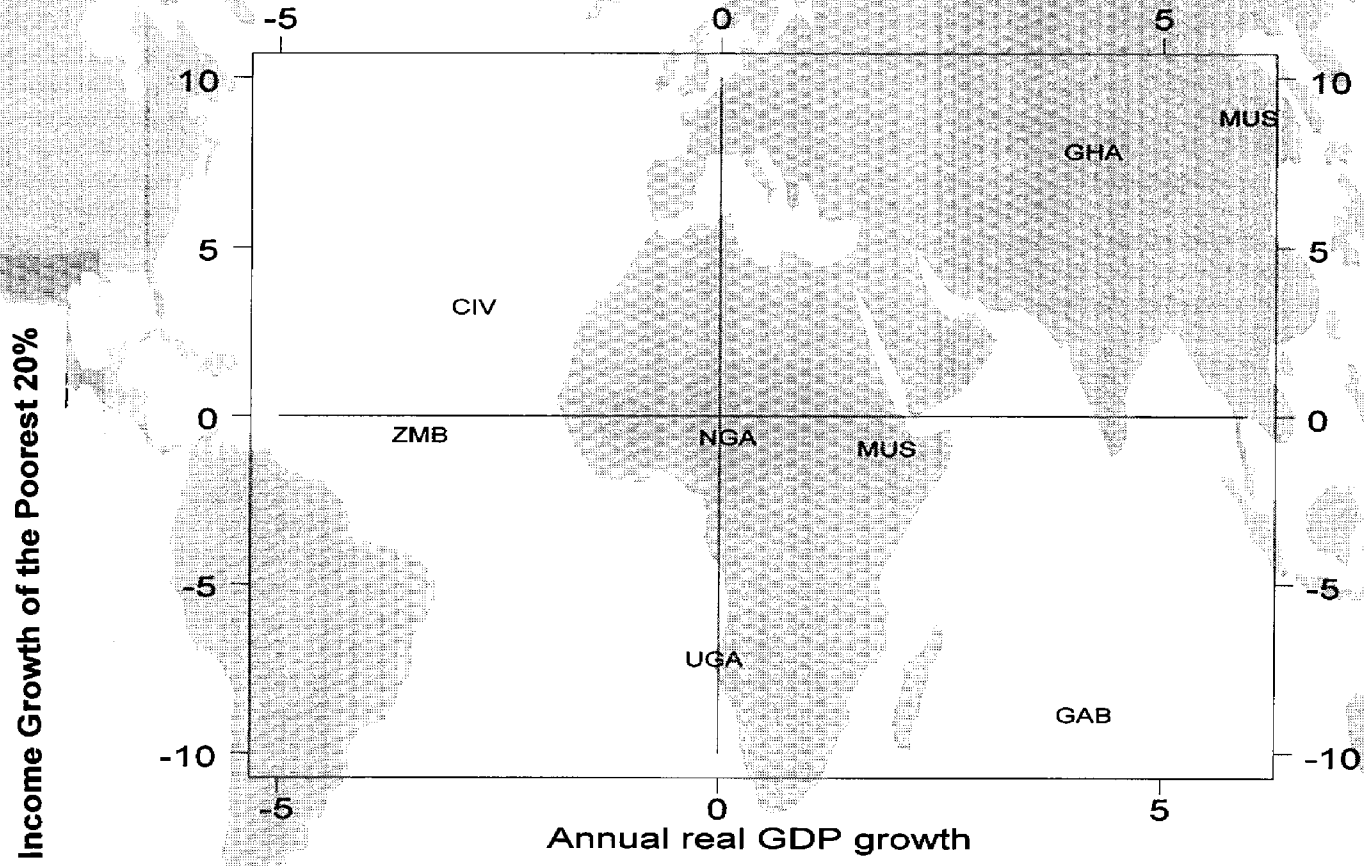


Growth and Poverty in Latin America



Growth and Poverty in Africa*

(*not all African countries are included in the study)





Summary of Results

- ◆ Of 39 growth periods where GDP growth was above 2% per year, the income of the poor rose in 33 of those periods.
- ◆ There is little evidence from this data set to support the proposition that the poor do not benefit from economic growth.



Results of Other Studies: Ravallion and Chen

- ◆ 10% income growth reduces poverty by:
 - 9.9% for poverty line of 75% of mean
 - 17.6% for poverty line of \$1/day

Results of other Studies:

Bruno, Ravallion, Squire

- ◆ Growth does reach the very poor
- ◆ 10% rise in average income associated with 35% fall in ‘severity of poverty’ (or FGT) index

Economic Policies and Growth

Results of other Studies:

- ◆ Open economies have annual growth rates approximately 2% higher than closed economies
- ◆ Improvements in macroeconomic conditions lead to reductions in poverty in six African countries

Poverty and Economic Structure



- ◆ Resource exports and land per person are negatively related to income growth of the poor
- ◆ Openness has a positive effect on income of the poor
- ◆ Suggests that openness can offset the negative effects of resource dependency



Results from Other Studies:

Deininger and Squire

- ◆ Higher aggregate investment increases the income of the poor: this effect is largest for the poorest 20%
- ◆ Initial income inequality may lead to lower growth overall, but does not disproportionately harm the incomes of the poorest 20% and 40%



Conclusions

- ◆ Growth benefits the poor
- ◆ Very few exceptions
- ◆ Open economies grow more quickly, and the poor share in growth
- ◆ Openness and sound macro policies can compensate for effects of resource dependency

