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# Redistribution Matters:
# Growth for Poverty Reduction

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# Acknowledgements

# Preface

This working paper is the outcome of a collaboration between SOAS (School of Oriental and African Studies of the University of London) and the Macroeconomic and Development Policies Group of the Employment Strategy Department. The origins of this paper were a series of discussions between Rolph van der Hoeven and John Weeks last year, who both felt that, despite the fact that poverty reduction has always been a priority of development policy, until recently this often was only at the rhetorical level. Although the end of the 1990s brought increased emphasis on bringing the benefits of growth to the poor, they felt that this was not sufficient to address the poverty issue. Growth alone is a rather blunt instrument for poverty reduction, since the consensus of empirical work suggests that, without any special policy, growth is distribution neutral and hence will not accelerate decline in poverty. They felt that a reflection on the merits of redistributive strategy was needed. This paper is the result of that reflection.

The authors of this paper document that, along with emphasis on poverty reduction, very recently a shift occurred in the literature towards a more favourable view of policies to redistribution income and assets. The authors argue that an integration for distributional concerns and a priority on poverty reduction could be the basis for a new policy agenda to foster both growth and equity.

After having reviewed poverty and distributional outcomes of past policies from a large set of developing countries, the authors suggest a new policy agenda. This new agenda would be based on three analytical generalisations: 1) that greater distributional equality provides a favourable 'initial condition' for rapid and sustainable growth; 2) that redistribution of current income and assets, or redistribution of an economy's growth increment is the most effective forms of poverty reduction for most countries; and 3) the mechanisms to achieve the redistributions are feasible for most countries. Among the feasible instruments, the authors discuss the effects of progressive taxation, transfer payments, consumer subsidies, land reform, human resource development and infrastructure and public works policies for different categories of developing countries.

These generalisations imply that a new development agenda could focus upon specific policies and instruments of redistribution, with the goal of substantial reductions in urban and rural poverty in the medium term.

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# 1.  Introduction

In the late 1990s the bilateral and multilateral development agencies came to place increasing emphasis on poverty reduction in developing countries.[1]  Some agencies even established specific targets for poverty reduction.  The achievement of targets requires policies, and policies are most effective within an overall, coherent strategy.  The central strategy choice is between poverty reduction through faster economic growth and reduction through redistribution, though the two may be complementary.  This paper develops an analytical framework to assess which of strategy would be the most effective, given specific poverty targets, then proceeds to empirical investigation.

We review recent literature on growth and distribution, and suggest that a consensus emerges that discards the previous 'trade-off' conclusion.  Analysts have moved toward the view that an 'initial condition' of greater asset and income equity enhances growth rates. This emerging consensus allows us to reject the hypothesis that a redistribution strategy need necessarily undermine poverty reduction in the long run by reducing per capita growth.  The question then becomes, how effective would redistribution be in reducing poverty?  We argue that this will vary by country, and the analytical framework to assess effectiveness is presented in Section 3.   The framework formulates two abstract possibilities:  poverty reduction through distribution-neutral growth, and poverty reduction through an equal distribution of each period's growth increment.  These are compared to a conventional one-off redistribution of current income.  In Section 4, these possibilities are simulated for a large number of countries.  We find that redistribution at the margin is far more effective in poverty reduction than increases in economic growth that are distribution neutral.  In Section 5, the exercise in simulation is rendered concrete by discussion of specific policies that could be used to redistribute income.

# 2. Growth and Distribution

**Inequality and Poverty**

Of the many issues central to the development process, few have been characterised by the shifts, reversals and re-affirmations that have plagued the analysis of the interaction of growth, poverty and inequality.  Evidence that inequality and poverty have risen in many countries in the 1980s and 1990s,[2] including some of the OECD countries, rekindled ever-smouldering controversies. The mainstream literature has not so much evolved as fluctuated over the past fifty years.[3] It is necessary to revisit briefly the debates, in order to place the empirical discussion of a subsequent section in context.

From the 1950s into the 1970s analytical emphasis was on probable tradeoffs between growth and income distribution. This derived in part from the famous 'inverted-U hypothesis' (Kuznets 1955), which postulated that inequality would rise in the initial phases of development, then decline after some crucial level was reached.  Much research involved estimation of the so-called turning point (Fields 1980, Chapter 4), to test the hypothesis that this might lie at roughly the same per capita income across countries.  Growth theories could

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[1] See, for example, the discussion of targets in DFID (1997).  It would appear that there was some controversy over this emphasis within the World Bank.  In June 2000, the convenor of the World Development Report, Ravi Kanbur, resigned from his participation in the report.  Press reports attributed this to internal disagreements over the relative emphasis to place on growth and redistribution (see *The Financial Times*, 15 And 16 June 2000).

[2] See, De Janvry and Sadoulet (1995), Ravallion and Chen (1997), Flemming (1998), Aghion *et al.* (1999), Cornia (1999), Chu, *et al* (1999), McDonald, *et al*. (1999), Milanovic (1999), and Atkinson (1999).

[3] See Kanbur (1998) for a thorough review.

be cited in support of the hypothesis, such as the Lewis model of 'economic development with unlimited supplies of labour'.[4] However, theoretical inconsistencies in the Lewis make it a weak basis for the 'inverted U' (Weeks 1971).[5] Kaldor's well-known growth model, in which capitalists have higher marginal propensity to save than workers, also implies that redistribution to profits raises the growth rate. This model is most appropriate for developed countries, in which the functional distribution of income largely consists of wages and profits, and of less relevance to developing countries, considered in this paper.[6]

In the 1970s emphasis shifted to the identification of re-distributive mechanisms to reduce poverty without hampering growth.[7] This focus proved to be short-lived, abandoned with the rise of neo-liberalism and the *Washington Consensus* in the early 1980s. In the Consensus approach, growth itself would be the vehicle for poverty reduction, achieved through 'trickle-down' mechanisms not always clearly specified. In the 1990s, both the neo-liberal analysis and the earlier view of a trade-off between growth and equity were challenged by a number of studies. In particular, doubt was cast upon the sanguine view that orthodox macro policies were, by their nature, poverty reducing.[8] While doubt accumulated with regard to the impact of orthodox policies, a consensus emerged that the 'High Performing' Asian countries, prior to the financial crisis of the late 1990s, combined rapid growth of per capita income with relatively stable and low inequality (World Bank 1993). The experience of the 'high performers' suggested, at the least, that there might be policy measures to foster the benign combination of high growth and rapid poverty reduction.

The 1990s literature that challenged the 'trade-off' and 'trickle-down' approaches had roots, not always acknowledged, in the brief flowering of pro-distribution arguments of the 1970s. The Chenery and Ahluwalia model of 'distribution with growth' distinguished social groups by asset ownership or mode of access to assets (1974a and 1974b). The interaction between growth and distribution was modelled through 'income linkages' between the groups; ie., via the labour and commodity markets. In simulation experiments with this model progressive redistribution of income and assets led to substantial improvements in the incomes for poverty households, and non-poverty households as well, via increases in aggregate productivity.[9] On the basis of their model, Chenery and Ahluwalia concluded that poverty *constrains* growth:

> If [a poverty group] is provided with an appropriate mix of education, public facilities, access to credit, [and] land reform…investment in the poor can produce benefits in the form of higher productivity and wages in the organized sectors... In the short-run, there may be a

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[4] The latter predicts that in a 'labour surplus' economy, with 'unlimited supply of labour', the profit share would rise relatively to the wage share until the labour surplus was exhausted. For discussion of the Lewis model and inequality, see Kanbur (1998), and Kanbur and Squire (1999).

[5] The Lewis model assumes that the 'modern' sector wage is a constant multiple of the wage in the 'traditional' sector, so that the constancy of the former in the period of labour surplus requires that the latter be constant. While the transfer of labour out the 'traditional' sector does not decrease output (the marginal productivity of labour in the sector is assumed to be zero), output per worker *does* rise (sectoral output is constant and sectoral employment falls). If output per worker rises in the traditional sector, then wages rise in both sectors. Fei and Ranis recognised this inconsistency in their version of the model, but did not resolve it (Fei and Ranis 1964, pp. 32ff).

[6] For other models that might predict a trade off between growth and inequality see Aghion, *et al.* (1999).

[7] See Chenery, Ahluwalia, *et al.* (1974).

[8] Accumulating empirical evidence suggested no consistent relationship among growth, inequality and poverty across countries and over time. A clear and thorough survey of this issue is found on a World Bank website (Ferreira 1999). In many African and Latin American countries, as well as in countries in transition, stabilisation and adjustment policies appear to have an adverse impact on poverty and inequality, or at best did not improve conditions of the poor (van der Hoeven, 2000).

[9] Two of the experiments are especially worth noting. In the first, redistribution to lower income groups took the form of better nutrition, health, and access to education, which led to an increase in the output-capital ratio in the sectors using wage labour. In this case, consumption and income of all groups increased after redistribution. In the second experiment redistribution directly increased the earning capacity of the poor; e.g. redistribution of the investment share of national income. This simulation led to an increase in the incomes of and the assets owned by the poor, as well as a substantial increase in the aggregate capital stock of the economy.

reduction in the growth of other groups through this re-direction of investment toward the poor, although this is by no means necessary. In the long run…the transformation of the poverty groups into more productive members of society is likely to raise the incomes of all. (1974a, p. 47)

Conceptually it is useful to distinguish between structural and transient causes of poverty. The Chenery-Ahluwalia model referred to the former, and land reform is perhaps the clearest policy measure to relieve a constraint to growth resulting from structural poverty. If the productivity of small farms were higher than that of large farms,[10] this would raise aggregate productivity for the agricultural sector.[11] Not withstanding the controversy of the so-called inverse size rule, statistical exercises, and they are no more than hypothesis tests, indicate that inequality of land distribution has a negative effect on growth.[12]

By definition the transient poor are those affected by economic cycles and growth. Much of the work on the relationship between growth and income distribution in the 1990s is basically empirical, with unclear theoretical foundation. Janvry and Sadoulet (1995) concluded that during recessions inequality rises,[13] while positive growth rates are distribution-neutral. Bruno and Ravallion (1998), using data from forty-five countries each with at least four or more distributional surveys over at least two decades, found that the effect of growth on inequality to be indeterminate. They further concluded that lower initial inequality raises the likelihood that growth will reduce poverty. As shown in our simulations below, this follows automatically from almost all measures of inequality. Indeed, the relative stability of income distributions has been repeatedly confirmed (see, also, Li, Squire, *et al.* 1998).

### Mechanisms and Incidence of Redistribution

Empirical on the impact of different distributive mechanisms on growth, inequality and poverty is of particular importance to our study, because it helps reveal the effectiveness of policy. As pointed out above, productivity-raising redistribution ensures that distribution does not reduce poverty at the expense of growth, and produces sustainable poverty reduction. Enhancing asset ownership for the poor is the clearest way to accomplish this. Investment in infrastructure, credit targeted to the poor, land redistribution and education can all be important mechanisms to make growth 'pro-poor'.

In the 1990s considerable stress was placed on education, perhaps because it was viewed as relatively non-controversial. Typically, education is treated within a 'human capital' framework, which apparently allows the acquisition of skills to be treated on par with ownership of physical assets. This approach is limited for discussions of poverty, for accumulated education as such cannot be sold by the 'asset-holder', while land and other tangible property can. Thus, if a worker loses his or her job during a general fall in aggregate demand, education provides no asset that can serve as a 'safety-net' when sources of livelihood are temporarily lost (i.e., it is not 'liquid'). It may be the case that people could borrow on the basis of their human capital, analogously to physical assets, but physical assets can serve as collateral *and* be sold.

Because poverty and inequality have a transitional component, induced by external shocks such as business cycles and price instability, they can be affected by short-term macro policies, as well as long-term growth. Particularly controversial are the possible adverse

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[10] The study by Ravallion and Sen (1994), for instance, is based on the hypothesis that small farms are more productive than large farms.

[11] The allegation that small farms are more productivity than large units is fraught with analytical and empirical controversy. A thorough and sceptical review of the debate over the 'inverse size rule' is found in Dyer (1997). See also Platteau (1992).

[12] See, for example, Deininger (1999), and Alesina and Rodrik (1994). The work of Ravallion and Sen (1999) suggest that land transfers reduce the poverty of landless and near-landless households.

[13] This is not a surprising conclusion, since recessions generate unemployment.

effects of stabilisation and structural adjustment programs on poverty. While some World Bank studies sought to deny the importance of adverse effects, this sanguine view failed to establish itself.[14] In response to the controversy over the effects of adjustment on the poor, the World Bank and IMF proposed 'social safety nets' and 'social funds' in some countries, to target adjustment-induced poverty, with these programmes typically were designed for a limited period.[15] An evaluation of social safety nets suggest that these programmes, sometimes financed by multilateral lending, had some positive impact on what might be called 'adjustment losers', but did not necessarily reach the poor. Stewart argued that internally funded and locally designed antipoverty programmes proved more effective in reaching the poor than social funds (Stewart 1995).

If redistribution is used to reduce poverty, be it transitory or structural, then key policy issues are redistribution from whom, to whom, and by what mechanism. The loss and gain of distributive programmes on income groups, and their reaction to these losses and gains, will depend on the nature of the programme. Similarly, the administrative burden will vary by programme.

Superficially, land distribution and income distribution would seem to be opposite measures in administrative terms, since one acts on a stock and the other on a flow. It might be argued that re-distributive land reform, from large landowners to landless peasants involves a one-off administrative cost, which, once implemented, can be left to generate a more equal distribution and lower poverty levels. On the other hand, a redistribution of income, without asset redistribution, must be implemented by a continuous application of progressive taxation and equity-biased public expenditure. In practice, the alternatives are not so clear-cut. Land redistribution unaccompanied by rural development expenditure might generate a class of poverty-stricken smallholders. Most of the land redistribution programmes in Latin America, even those that radically changed ownership patterns (as in Peru), proved in practice to be poverty-generating rather than poverty-reducing (Thiesenhusen 1989). Land redistribution that generates sustainable poverty reduction may require substantial current expenditure, which in the medium term could equal or exceed the cost of administering a progressive tax system and pro-poor distribution of expenditures. Perhaps more importantly, the more equitable land distribution may prove to be unsustainable in the absence of permanent administrative restrictions on accumulation of land (ownership 'ceilings').

Like land redistribution, progressive taxation would appear to be an obvious vehicle for redistribution. However, studies of tax incidence and impact reach mixed conclusions. Some indicate that progressive taxation is a limited tool for reducing inequalities in income distribution, usually as a result of evasion by the rich. A study of Latin America concluded that tax systems did not contribute significantly to the reduction of inequality (Alesina 1998). Using hypothetical umbers, Harberger reached the same conclusion, suggesting that the redistributive effects of progressive and moderate taxation systems were quite similar (Harberger 1998). As an alternative, he proposed that broadly based taxes, such as a value added tax, could be modified to increase their equity by exemptions and exclusions. All results are sensitive to the analytical framework made by each researcher, as can be shown by studies that conclude quite the opposite. It would appear that the progressivity of income taxes during 1980-1996 in Taiwan had 'positive influence in restricting the expansion of the income gap [between rich and poor]' (Jao 2000). A cross-country study of thirty-six developing countries that in thirteen cases total taxation was progressive, proportional in

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[14] Referring to adjustment programmes in the sub-Sahara, Demery and Squire concluded, '…*effective reform programs are associated with reduced overall poverty, inadequate ones with worsening poverty*' (1996, 40, italics in original). For a critique, see Weeks (1997), along with their reply (Demery & Squire 1997).

[15] Cornia and Reddy (1999) take issue with the dubious distinction between the 'adjustment poor' and 'chronic poverty', on analytical and practical grounds.

seven, and regressive in six.  Income tax systems were progressive in twelve cases out of fourteen (Chu, *et. al.* 1999). A survey by the ILO reached similar conclusions (ILO 1992).

Studies of public education typically show that expenditure on primary and secondary education reduces inequality, and expenditure on tertiary education has a regressive impact.[16] In this context, Alesina (1998) maintained that subsidising higher education *at the expense of* primary and secondary education reduces the re-distributive impact of public spending, because these subsidies will accrue to the middle or high-income groups.[17] The allegation expenditure on tertiary education is regressive reflects a partial equilibrium, static perspective.  It takes no great insight to point out that the middle and upper classes in almost every country take advantage of tertiary education, and the poor do not.  This is not an argument against public funding of tertiary education, for the scientists, technicians, even entrepreneurs who will be crucial to growth typically require university education;  ie., there are externalities to tertiary education.  Further, a university system that is privately funded may reinforce the power rigidities that are the basic cause of inequality.  That the poor do not go to universities is no more an argument against public funding than the absence of the poor from most legal cases is an argument against public funding of courthouses.

### So-called Targeting

The perceived ineffectiveness of re-distributive measures leads some to advocate targeting public expenditure to the poor, and to judge effectiveness by accuracy of that targeting.[18]   However, targeting of expenditures in developing countries is fraught with difficulty.  Sen (1995) argued against targeting public spending for several reasons:  1) information asymmetries reduce the effectiveness of targeting in the presence of 'cheating'; 2) the prospect of losing targeted subsidies may reduce beneficiaries' economic activities;  3) targeting may negatively effect the self-respect of the poor;  and 4) the sustainability of targeted programs is doubtful, as the potential beneficiaries are politically weak.  To the list can be added the formidable  measurement problem of identifying who qualifies, serious in industrial countries, and virtually intractable in most developing countries.

Targeting involves administrative costs, the burden of which is a matter of considerable dispute (for example, Kanbur 1998). In a study of thirty social service programs in Latin America, Grosh (1995) found a trade-off between administrative costs and the incidence of targeting programs.  That is to say, the more effective the targeting, the greater the cost, implying less expenditure for poverty reduction as such.  Hidden administrative costs can arise from problems of project selection and execution in the presence of imperfect information (Cornia & Reddy 1999), with a major difficulty being the identification of the poor.  Identification of the poor gives rise to what might be called the 'borderline problem'. If one assumes that the poor are identified accurately and programmes are delivered with equal accuracy, it follows by definition that the poor just below the borderline will be raised above the non-poor just above it.  Recognition of this possibility by 'borderline' households can have a negative incentive effect.

Targeting public spending is more likely to be effective if the poor are a small proportion of population;  ie, if poverty is not a major problem. For countries in which poverty is widespread, the administrative cost, identification, monitoring, and delivery of programmes may outweigh benefits.  This is particularly the case if a country is or recently has experienced conflict.  In such countries targeting may serve to accentuate the tensions that generate conflict, since, by its nature, targeting seeks to discriminate among segments of

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[16] See, for instance, Chu, *et al*. (1999), Hammer, et al (1995), Harberger (1998), van de Walle (1995).

[17] He went further and argued that most social welfare and benefit programs favour the middle classes, rather than the poor, because provision of social services is more concentrated in the urban areas.

[18] For example, Milanovic (1995) introduces a concentration coefficient that measures the cumulative rate of social transfers when recipients are ranked by income. The method of estimation is similar to that of Gini coefficient.

the population (Cramer & Weeks 1997).[19]  This problem was a major one in the sub-Sahara in the 1990s, where poverty was both widespread and created or intensified by conflict.

### An Emerging Consensus?

A further strand of theoretical arguments involves so-called political economy arguments against inequality and, by implication, poverty. This analysis predicts a negative relationship between income inequality and growth on the grounds that higher initial inequality would:  a) lead to increased public expenditure, because it prompts a demand for re-distributive policies, and b) incite political instability that undermines growth (Alesina & Rodrik 1994). This excursion into political science is somewhat dubious.  For example, it is not at all clear how a society with the power relationships to generate inequality would, at the same time, produce an underclass with the political power to force re-distributive policies upon a government (see Cramer 2000). On somewhat firmer analytical ground, Aghion, *et al.* (1999) argue that inequality has a negative impact on growth through imperfect capital markets, to which the poor have limited access. In other words, if capital markets discriminate against the poor, potentially profitable activities by the poor are constrained by lack of credit.  This position harks back to Chenery, et. al. (1974), in which it was argued that growth would be enhanced if wealth were redistributed from the rich to the poor, because the marginal productivity of capital is higher for the poor.  The Aghion et. al. version adds arguments of 'moral hazard' and macroeconomic stability to the Chenery et. al. advocacy of redistribution, to reach much the same conclusion.  The imperfect capital markets argument has practical limits, in that it presumes the poor to be self-employed, or to have the option to become so.  While this may applied to a portion of the households in poverty, empirical evidence suggested that during the 1990s those in the lowest income quintile in Latin America, at least, and perhaps elsewhere, were increasingly in wage employment.  The idea that most low-income wage earners could escape poverty through self-employment somewhat challenges the imagination, as well as historical trends.

Overall, the literature of the 1990s was relatively limited in its theoretical contribution, and most striking in that it demonstrated, yet again, the ambivalence of economists towards the issues of inequality and poverty.  On the one hand, the mainstream literature, with its emphasis upon the efficiency of markets, had a predilection to view inequality and poverty as accidental or occasional outcomes of a deregulated growth process.  On the other hand, the persistence and severity of poverty in many, if not most, developing countries brought forth periodic arguments for their alleviation.  The shifts in emphasis in the literature reflect the difficulty of reconciling these two.

From our review of the literature emerge several important points relevant to the empirical presentation below.  Perhaps most important is the growing consensus that countries with an 'initial condition' of relatively egalitarian distribution of assets and income tend to grow faster than countries with high initial inequality.  This is an extremely important conclusion, because it means that reducing inequality strikes a double blow against poverty.  On the one hand, a growth path characterised by greater equality at the margin directly benefits the poor in the short run.  On the other hand, the resulting decrease in inequality creates in each period an 'initial condition' for the future that is growth enhancing.  Thus, any growth path that reduces inequality reduces poverty through redistribution and *via* 'trickle down'.

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[19] To take but one example, attempts at identification of the poor by the authorities may be perceived as having a sinister agenda, identifying the political allegiances of households.

# 3. Analytical Framework

Income and asset redistribution are not necessary conditions for poverty reduction. Aggregate growth can also reduce poverty; and, equally, redistribution can achieve poverty reduction without growth (assuming that a portion of the population has incomes above the poverty line). To develop a poverty reduction strategy, the central issue is the relative effectiveness of growth and redistribution, and whether the one enhances each other. It would seem clear, even on the most superficial analysis, that growth combined with redistribution would be more effective that either on its own. This truism gives no insight into the appropriate balance between the two for a concrete poverty reduction target. In order to determine an appropriate balance, 'growth' and 'redistribution' must be specified rigorously.

To do this, we begin with a definition. Aggregate GDP in period t ($Y_t$) is equal to

(1)     $Y_t = Y_0(1 + y)^t$, where y is the growth rate.

We consider the case of $t = 1$. If we treat each income percentile as a household (implying zero population growth), and note percentiles by i, distribution-neutral growth of per capita income for one time period is equal to

(2)     $Y_1 = \Sigma Y_{0i}(1 + y)$, for i = 1 to 100, and y is the growth rate.

We proceed with the fiction that each household is self-employed, and that growth is ruled by a simple Harrod-Domar equation, so the growth rate is $y_{1i} = \upsilon_{1i}s_{1i}$ , where $\upsilon$ is the capital-output ratio and s is the saving and investment rate of the percentile. On the assumption that the rich have a higher saving and investment propensity than the poor, *ceteris paribus*, greater inequality increases the growth rate. This might be called the 'saving-inequality' effect. On the other hand, if one assumes that the capital-output ratio is a negative function of the level of income, *ceteris paribus*, lower inequality increases the growth rate. Which outweighs the other is an empirical question, governed by the elasticities of the saving rate and output-capital ratio with respect to inequality. Formally, one can write, for any time period, the aggregate growth rate is the product of the aggregate output capital ratio and the aggregate saving rate.

(3)     $y = \upsilon s$

The aggregate output-capital ratio and the aggregate saving rate are functions of the distribution of income (G), and other factors that do not concern us here ($A_\upsilon$ and $A_s$, respectively),

(3a)     $\upsilon = \upsilon(G, A_\upsilon)$, $\upsilon' < 0$,

(3b)     $s = s(G, A_s)$, $s' > 0$,

Let $\varepsilon_\upsilon$ be the elasticity of the output-capital ratio with respect to inequality ($[G/\upsilon]\upsilon'$), $\varepsilon_s$ the elasticity of the saving rate with respect to inequality ($[G/s]s'$), and $\varepsilon_g$ the overall elasticity of growth with respect to inequality. The effect of a change in inequality on growth is summarised below. Figure 1 demonstrates the relationships, for the examples of $\varepsilon_g = 0, .5,$ and -.5.

$\varepsilon_\upsilon < \varepsilon_s$, then $\varepsilon_g > 0$,   redistribution decreases growth rate ('trade-off between equity and growth')

$\varepsilon_\upsilon > \varepsilon_s$, then $\varepsilon_g < 0$,   redistribution increases growth rate

$\varepsilon_\upsilon = \varepsilon_s$, then $\varepsilon_g = 0$,   distribution neutral growth

Figure 1: Alternative growth outcomes when the saving rate and output-capital ratio are functions of degree of inequality
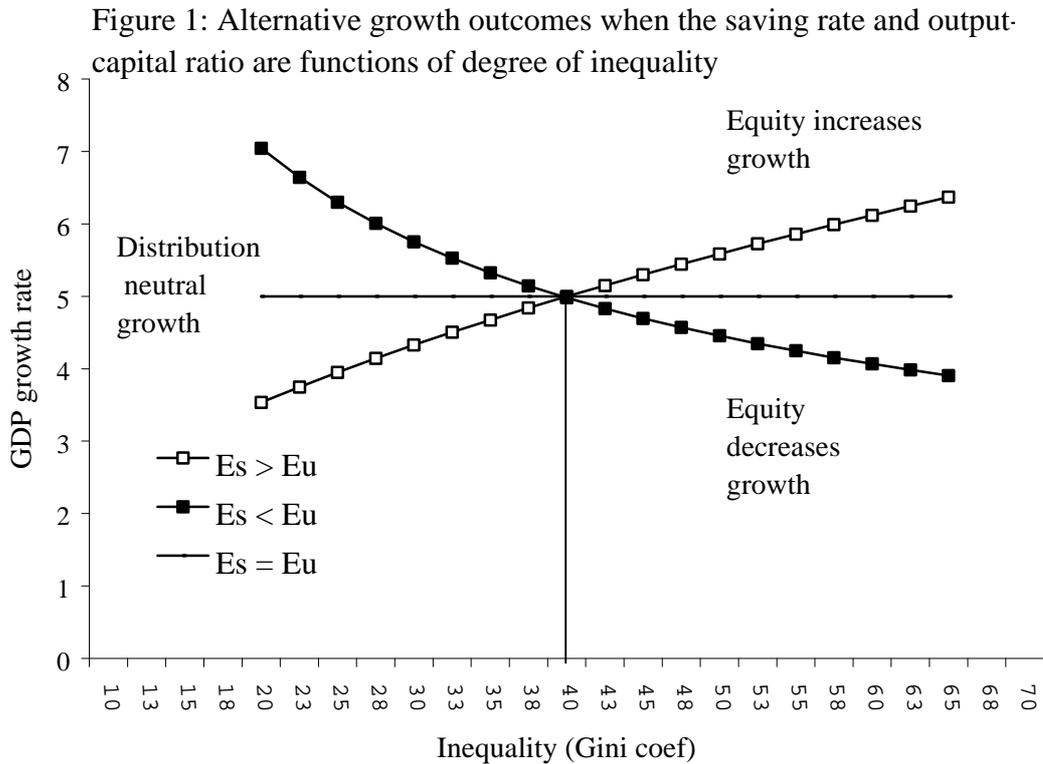


The outcome that characterises a particular country at a particular time is an empirical question. For example, the impact of redistribution on the output-capital ratio is likely to be substantially growth-increasing in a predominantly agrarian society with agricultural production concentrated in large, mechanised estates.

Empirical evidence, to which we refer below, consistently indicates that size distributions of income are quite stable, in the absence of radical changes in institutions and political power. If it is the case that a country's size distribution were stable over some time period when aggregate GDP grew at a given rate of $y_a$, it must be the case, that across percentiles,

(4)     $\upsilon_i s_i = y_a$ ,          for all i.

The output-capital ratio falls (rises) to compensate exactly for the rise (fall) in the saving rate as one moves up (down) the size distribution. Thus, we can ignore variations in $\upsilon$ and s, replace their product with $y_a$, and write, for the *primary distribution of income*:

(5)     $Y_1 = (1 + y_a)\Sigma Y_{0i}$

At different points in the discussion we call this outcome this 'distribution-neutral', 'trickle-down', or 'status quo' growth. As an alternative, fiscal policy and other measures discussed below could be used to make growth biased toward a more equal distribution. Specifically, we consider the case in which the growth generated is equally distributed absolutely across percentiles. In simple algebra, each percentile receives an income increment of $(Y_1 - Y_0)/100$. This post-transfer or *secondary distribution of income* is noted as $Y_i^*$ for each percentile. After substitution, we can write,

(6)     $Y_1 = (1 + y_a)Y_0 = \Sigma[Y_i^*]$

$$Y_i^* = Y_{0i} + \{[(y_a)Y_0]/100\}$$

This formulation provides a simple, but rigorous definition of growth and redistribution in the spirit of the Chenery *et. al.*, *Redistribution with Growth* volume of the mid-1970s (Chenery *et. al.* 1974). The proposed redistribution, equal absolute increments across percentiles, could be viewed as relatively minimalist. Alternative redistribution rules could be used, in which the allocation of the growth increment across percentiles is progressive.

Any change in the primary distribution of income implies a tax. For each percentile ('household'), the implicit redistribution tax rate is the following ratio:

(7)      $T_i = (Y_{1i} - Y_i^*)/(Y_{1i} - Y_{0i})$

The redistribution tax is negative up to the point of average per capita income (positive income transfer), then positive above (negative income transfer). If income were normally distributed, the tax is negative through the fiftieth percentile. It is obvious that the more unequal the distribution, the lower is the percentile associated with average per capita income (the fiftieth percentile being the lower bound). Calculated by percentiles, the redistribution tax is not out of line with rates that have applied in many developed countries. For example, the extremely unequal Brazilian distribution for the 1990s, with a Gini coefficient of 60,[20] implies a *marginal* tax rate on the hundredth percentile of slightly more than eighty percent, well below the maximum ninety-one percent marginal rate in the United States from World War II until the early 1960s.

The proposed marginal redistribution has characteristics that derive automatically from the nature of income distributions. First, and most obvious, the benefits of the equal absolute additions to percentile income increase as one moves down the income distribution. Second, and as a result of the first, the lower the poverty line, the greater will be the poverty reduction. As a corollary to this, if a policy distinction is made between degrees of poverty, with different poverty lines, the marginal redistribution will reduce 'severe' poverty more than less 'severe' poverty. Third, the more unequal the distribution of income below the poverty line, the less is the reduction in poverty for any increase in per capita income, or redistribution of that increase.

Before moving to our empirical investigation of alternative growth paths, it is appropriate briefly to comment on our 'benchmark' path, distribution neutral growth. In a recent paper, Dollar and Kray (2000) reach the conclusion, based on cross-country regressions, that the typical outcome of the growth process in developing countries is to leave the income share of the lowest quintile unchanged; ie., distribution-neutral growth. For some reason that is not clear, the authors characterise this with the phrase, 'growth *is* good for the poor' (italics in the original).[21] This is a rather strange statement, for it challenges the imagination to produce any growth pattern that would provoke the converse phrase, 'growth is *bad* for the poor'; ie., a growth pattern in which the poor become worse off. Strictly speaking, if the elasticity of the income share of the poor with respect to growth is positive, 'growth is good for the poor'. Why an elasticity of unity should be the borderline between growth being 'good' or 'bad' for the poor is not clear; indeed, it would seem arbitrary. The policy issue is not whether growth is or it is not good for the poor (it is except in extraordinary circumstances), but what policy measures can make it *better* for the poor.

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[20] In this paper Gini coefficients will be reported on a scale of zero to one hundred.

[21] The same point, that distribution neutral growth appears to be the norm, is demonstrated empirically in a much simpler way and with less fan-fare in Ferreira (1999).

# 4. Redistribution with Growth:  Empirical Evidence

In this section we inspect the impact on poverty in fifty countries of three simulation exercises, corresponding to different distributional outcomes: 1) a one percent distribution-neutral increase in per capita GDP;  2)  a one percent increase in per capita GDP, distributed equally across income percentiles;  and 3) a one percent redistribution of income from the richest twenty percent to the poorest twenty percent.  The effectiveness of the outcomes in reducing poverty is judged by the time period required to achieve a given target.  In all simulations a 'head count' measure of poverty is used, for reasons discussed below.

The necessary condition for a country to be included in the simulations is that there were statistics on the income share for quintiles,[22] and that the country was included in the World Bank's estimates of absolute poverty.  The World Bank estimates were generated by converting each country's per capita income to constant US dollars for a base year, then setting a poverty line of US one dollar a day.[23]

The specified poverty percentile for one dollar a day is implied by the assumptions made about the distribution of income within each quintile.  To estimate the impact of a change in income on the percentage of households in poverty, it is necessary to make explicit the implicit intra-quintile distribution of income.  It was not necessary to know the intra-quintile distribution for all quintiles, only for the quintile in which the poverty line fell, before and after the three simulations.  The method of estimating intra-quintile distribution is explained in the data appendix.

For an absolute poverty line, one US dollar per day in this case, the percentage of households in poverty is strictly determined by per capita income and the degree of inequality.  This is demonstrated in Table 1.  Moving vertically down the table, the poverty line rises as a percentage of GDP;  and moving across, the Gini coefficient rises.  On the assumption of a continuous distribution function, such as a lognormal function with a given variance and a poverty line expressed as a fraction or multiple of the mean (van der Hoeven 2000), one can generate the implied percentage of households in poverty.  In the table these are the lower numbers in each cell, calculated by substituting the country's Gini coefficient and per capita income into the lognormal distribution.  Since these numbers are generated from a continuous distribution function, the intra-quintile distribution of income for the poverty quintiles is given by the overall distribution function.   The upper numbers in each cell, underlined, are the poverty percentages of the World Bank.  For cells with more than one country, the simple average of poverty percentages is used. The table shows that in most cases the poverty figures generated by the lognormal distribution, with the appropriate Gini coefficient and per capita income figures, compare reasonably well with the 'actual' estimates of the World Bank.

Prior to presenting the simulation results, brief commentary is necessary on the particular definition we use for poverty reduction.  Throughout the discussion, different growth and distribution scenarios will be assessment by their effectiveness in moving households out of poverty;  that is, moving households from below to above the poverty line. This definition has two advantages.  First, it corresponds to the poverty reduction targets of multilateral and bilateral donors.  Second, and no doubt related to the first, it is easily calculated and compared across countries.  However, it has a serious drawback, in that it excludes the improvement for all households whose incomes do not rise above the poverty

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[22] The major source was the WIDER income distribution database.  See appendix for details by country.

[23] The World Bank also provides estimates of the population below two dollars day, but this measure is not used here.

line. This drawback of the approach becomes especially serious for comparing different growth scenarios when considering low-income countries.

**Table 1: Poverty levels by Gini coefficient and poverty line, estimated (underlined) and from functional form, fifty countries**

| Gini coef: | 20 to 29 | 30 to 39 | 40 to 49 | 50 to 59 | 60 & above |
|---|---|---|---|---|---|
| Pov. line, % of PCY | | | | | |
| 10 to 19 | | .7 | .7 | 5.6 | |
| | | .5 | .8 | 4.8 | |
| 20 to 29 | .7 | 2.7 | 7.7 | 18.6 | 23.2 |
| | .7 | 2.6 | 7.1 | 18.8 | 25.4 |
| 30 to 39 | | 9.0 | 27.8 | 33.0 | 41.0 |
| | | 9.7 | 27.5 | 33.9 | 41.5 |
| 40 to 49 | 3.6 | 15.5 | 28.6 | 50.5 | |
| | | 15.1 | 29.1 | 48.9 | |
| 50 to 59 | 12.8 | . | 31.7 | 48.0 | 48.7 |
| | | | 32.0 | 48.3 | 51.0 |
| 60 to 69 | 17.9 | . | . | 54.5 | |
| | 17.0 | | | 54.6 | |
| 70 & Above | | 47.2 | 50.7 | 77.9 | |
| | | 47.0 | 50.4 | 75.0 | |

Note: The underlined numbers are the estimated one dollar poverty percentages from Table 2. The number below these is the poverty level generated from the functional relationship, $P_i = P(G_i, p_i)$ where P is the poverty percentage, G the Gini coefficient, p the poverty line as a percentage of per capita income, and i the the country. The functional form is found in van der Hoeven (2000, pp. 15-17), with a numerical example. The two measures are not the same due to differences across countries in the intra-quintile distribution of income. Empty cells indicate no observations among the fifty countries.

Table 2 provides the basic statistics for the simulation exercises for the fifty countries: per capita income,[24] the Gini coefficient, and the percentage of the population with income per head below one US dollar (the poverty line), as estimated by the World Bank. In Table 3, the results of the simulations are given, for the two growth exercises, distribution-neutral growth (DNG in the table) and equal distribution growth (EDG). Columns one and two report the estimates of the percentile of households lifted out of US one dollar poverty as the result of one percent growth, distribution-neutral and equal-distribution, respectively. Column three reports the 'efficiency of redistribution' ratio. This is defined as the ratio of poverty reduction for equal distribution growth to distribution-neutral growth (column 1 divided by column 2). This ratio is greater than unity for forty-seven of the fifty countries. That is, for ninety-four percent of the countries, the equal distribution growth strategy reduces poverty more in a given time period than a distribution-neutral growth strategy. This in itself is not surprising, for distribution-neutral growth is only more effective in reducing poverty for countries with 50 percent or more of the population below the poverty line. Given our criterion of one dollar a day these countries belong to the group with a very low per capita income. It is surprising how much more effective equally distributed growth proves to be in reducing poverty for most countries. For a large proportion of the countries, the ratio is in excess of three; i.e., equal distribution growth raises three times as many households from poverty than distribution neutral growth over any time period.

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[24] Given the distribution of income by quintiles and the intra-quintile distribution for the quintile in which the poverty level falls, a unique per capita income is implied. If the World Bank source gave a per capita other than this, the implied value was used in the table.

**Table 2: Distribution and poverty statistics for fifty countries, 1980s and 1990s**

| Country by Region | PCY | Gini Coeff | Poverty: % of Pop: US$ 1 |
|---|---|---|---|
| **Latin America (12)** | **1391** | **53.5** | **26.0** |
| Brazil 1995 | 1870 | 60.1 | 23.2 |
| Chile 1992 | 1585 | 50.7 | 15.0 |
| Colombia 1991 | 2400 | 57.2 | 7.8 |
| Costa Rica 1989 | 1350 | 42.0 | 19.0 |
| Dom Rep 1989 | 1390 | 50.5 | 19.9 |
| Ecuador 1994 | 860 | 43.0 | 30.6 |
| Guatemala 1989 | 658 | 59.1 | 53.5 |
| Honduras 1992 | 660 | 52.6 | 46.7 |
| Mexico 1992 | 1620 | 50.3 | 14.9 |
| Nicaragua 1993 | 685 | 50.3 | 43.8 |
| Panama 1989 | 1560 | 56.5 | 26.0 |
| Venezuela 1990 | 2050 | 53.8 | 11.9 |
| **N Africa & ME (5)** | **1563** | **44.0** | **3.0** |
| Algeria 1995 | 1757 | 35.3 | 0.8 |
| Egypt 1991 | 905 | 32.0 | 7.6 |
| Jordan 1992 | 1700 | 40.7 | 2.4 |
| Morocco 1991 | 1845 | 39.2 | 0.8 |
| Tunisia 1990 | 1610 | 40.2 | 3.6 |
| **Sub-Sahara (13)** | **746** | **51.1** | **46.5** |
| Botswana 1986 | 1062 | 54.2 | 33.0 |
| Guinea 1991 | 1073 | 46.8 | 27.0 |
| Kenya 1992 | 750 | 57.5 | 50.5 |
| Lesotho 1987 | 675 | 56.0 | 48.7 |
| Madagascar 1993 | 300 | 46.0 | 73.8 |
| Mauritania 1988 | 690 | 42.4 | 31.7 |
| Niger 1992 | 390 | 36.1 | 61.2 |
| Nigeria 1993 | 840 | 45.0 | 31.1 |
| Rwanda 1984 | 445 | 28.9 | 46.5 |
| Senegal 1991 | 545 | 53.8 | 54.5 |
| South Africa 1993 | 1740 | 62.3 | 23.2 |
| Zambia 1993 | 210 | 46.2 | 82.0 |
| Zimbabwe 1990 | 977 | 56.8 | 41.0 |
| **Asia, not FSU (8)** | **1000** | **40.3** | **21.7** |
| China 1995 | 972 | 41.5 | 22.7 |
| India 1992 | 460 | 32.0 | 47.9 |
| Indonesia 1996 | 890 | 36.5 | 7.9 |
| Nepal 1996 | 437 | 36.7 | 50.7 |
| Pakistan 1991 | 850 | 31.2 | 11.8 |
| Philippines 1994 | 862 | 42.9 | 26.6 |
| Sri Lanka 1990 | 962 | 30.1 | 4.0 |
| Thailand 1992 | 2570 | 51.5 | 1.8 |

| Country by Region | PCY | Gini Coeff | Poverty: % of Pop: US$ 1 |
|---|---|---|---|
| **Former CP (12)** | **1249** | **33.1** | **5.9** |
| Belarus 1993 | 1415 | 21.6 | 0.5 |
| Bulgaria 1992 | 1050 | 30.8 | 2.7 |
| Czech Rep 1993 | 780 | 26.6 | 3.6 |
| Hungary 1993 | 1520 | 27.9 | 0.6 |
| Kazakhstan 1993 | 1900 | 32.7 | 0.7 |
| Kyrgyz Rep 1993 | 881 | 35.3 | 18.9 |
| Lithuania 1993 | 1558 | 33.6 | 0.7 |
| Moldova 1992 | 1233 | 34.4 | 6.7 |
| Romania 1992 | 680 | 25.5 | 17.8 |
| Russian Fed 1993 | 1965 | 31.0 | 0.7 |
| Slovak Rep 1992 | 531 | 27.7 | 12.8 |
| Turkmenistan 1993 | 1480 | 35.8 | 4.6 |

Notes:
PCY, per capita income in indicated year;  poverty measured as percent of population.

Inspection of the efficiency ratios reveals the obvious point that the benefits of equal distribution growth are greater the higher is a country's per capita income, and the higher its Gini coefficient.  The two together account for about sixty percent of the variation in the efficiency ratio, with most of the remainder explained by the distribution of income within the quintile in which the poverty level falls.  The results imply that growth with redistribution would be particularly appropriate for the Latin American countries and those of North Africa and the Middle East.  Its poverty-reducing advantage would be less for the sub-Saharan countries (except South Africa), because of their low per capita incomes.  It would also be less effective for the former centrally planned countries, despite their middle-income status, because of their relatively low inequality.

As the poverty line rises up a country's income distribution, the efficiency of redistribution ratio becomes less and less sensitive to measures of inequality.  However, it is always the case, no matter what a country's per capita income or degree of inequality,[25] that redistribution with growth is more efficient than distribution neutral growth in reducing the intensity of poverty.  This is because the relative benefit of equal distribution growth increases as one moves down the income distribution, independently of a country's per capita income or degree of inequality.

As discussed above, the redistribution with growth outcome implies a tax on all households whose income is above the mean.  In which percentile the mean falls depends on the skewedness of the overall income distribution.  The final two columns (columns 4 and 5) of Table 3 report the implied tax rate for the highest percentile, and the average rate across all percentiles whose income is redistributed towards the poorer percentiles.  These are *marginal* rates, applied to the increase or growth increment in per capita income.  Inspection of the table shows, as expected, the maximum and average rates are positively correlated with the Gini coefficient.  Whether the implicit tax rates should be judged as high depends on the mechanism to bring about the outcome.  If distribution-neutral growth represents the primary (pre-tax) outcome, and equal-distribution growth the secondary (post-tax) outcome, then there is a straight-forward disincentive effect for those taxed, to be weighted against the incentive effect of the beneficiaries. We make the reasonable assumption that if positive tax rates create a disincentive to earn further income, then negative tax rates create an incentive to earn income and contribute to higher national growth.  If the income distribution is

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[25] That is, for any distribution that is not equal.

skewed, then the number of households enjoying an incentive to increase earnings will out-number those suffering a disincentive, and the impact on growth should be positive.

**Table 3: Impact of two growth patterns on poverty, fifty countries**

| Country by Region | Percentile raised from poverty: | | Efficiency of RedisY ratio | Re-distribution Tax Rates: | |
|---|---|---|---|---|---|
| | DNG 1% | EDG 1% | | 100th pctl | Average |
| **Latin America (12)** | **.32** | **1.11** | **3.86** | **77.7** | **45.0** |
| Brazil 1995 | .24 | 1.28 | 5.33 | 82.0 | 38.6 |
| Chile 1992 | .28 | 1.20 | 4.29 | 77.6 | 38.6 |
| Colombia 1991 | .20 | 1.36 | 6.80 | 76.4 | 40.3 |
| Costa Rica 1989 | .27 | .98 | 3.63 | 71.8 | 44.3 |
| Dom Rep 1989 | .35 | 1.34 | 3.83 | 76.7 | 41.6 |
| Ecuador 1994 | .51 | 1.08 | 2.12 | 75.2 | 39.2 |
| Guatemala 1989 | .46 | .83 | 1.80 | 81.7 | 38.0 |
| Honduras 1992 | .41 | .75 | 1.83 | 79.3 | 50.1 |
| Mexico 1992 | .31 | 1.41 | 4.55 | 76.5 | 52.1 |
| Nicaragua 1993 | .38 | .70 | 1.84 | 77.3 | 50.5 |
| Panama 1989 | .17 | .77 | 4.53 | 79.1 | 54.1 |
| Venezuela 1990 | .29 | 1.67 | 5.76 | 78.9 | 52.1 |
| | | | | | |
| **N Africa & ME (5)** | **.23** | **.82** | **3.52** | **67.6** | **43.0** |
| Algeria 1995 | .01 | .03 | 3.00 | 64.7 | 38.2 |
| Egypt 1991 | .55 | 1.37 | 2.49 | 63.7 | 35.2 |
| Jordan 1992 | .30 | 1.39 | 4.63 | 72.6 | 47.9 |
| Morocco 1991 | .01 | .03 | 3.00 | 69.3 | 47.3 |
| Tunisia 1990 | .28 | 1.26 | 4.50 | 67.5 | 46.5 |
| | | | | | |
| **Sub-Sahara (13)** | **.46** | **.87** | **2.05** | **74.3** | **46.8** |
| Botswana 1986 | .40 | 1.13 | 2.83 | 79.1 | 40.2 |
| Guinea 1991 | .20 | .59 | 2.95 | 72.9 | 43.6 |
| Kenya 1992 | .50 | .94 | 1.88 | 82.4 | 50.5 |
| Lesotho 1987 | .37 | .69 | 1.86 | 79.2 | 52.3 |
| Madagascar 1993 | .24 | .20 | .83 | 72.6 | 43.6 |
| Mauritania 1988 | .44 | .84 | 1.91 | 69.1 | 48.4 |
| Niger 1992 | .87 | .93 | 1.07 | 64.9 | 43.6 |
| Nigeria 1993 | .40 | .95 | 2.38 | 71.0 | 50.8 |
| Rwanda 1984 | .90 | 1.10 | 1.22 | 59.0 | 38.8 |
| Senegal 1991 | .75 | 1.13 | 1.51 | 78.8 | 50.4 |
| South Africa 1993 | .30 | 1.48 | 4.93 | 82.1 | 52.7 |
| Zambia 1993 | .24 | .14 | .58 | 73.0 | 42.0 |
| Zimbabwe 1990 | .42 | 1.13 | 2.69 | 81.4 | 51.6 |
| | | | | | |
| **Asia, not FSU (8)** | **.55** | **1.05** | **2.16** | **67.0** | **43.8** |
| China 1995 | .37 | .99 | 2.68 | 69.7 | 44.4 |
| India 1992 | .78 | .99 | 1.27 | 62.3 | 41.7 |
| Indonesia 1996 | .52 | 1.27 | 2.44 | 62.3 | 41.7 |
| Nepal 1996 | 1.00 | .94 | .94 | 66.1 | 39.2 |
| Pakistan 1991 | .47 | 1.11 | 2.36 | 61.8 | 42.3 |
| Philippines 1994 | .40 | .96 | 2.40 | 73.0 | 48.9 |
| Sri Lanka 1990 | .51 | 1.35 | 2.65 | 61.8 | 40.8 |
| Thailand 1992 | .31 | .79 | 2.55 | 79.0 | 51.5 |

| Country by Region | Percentile raised from poverty: | | Efficiency of RedisY ratio | Re-distribution Tax Rates: | |
|---|---|---|---|---|---|
| | DNG 1% | EDG 1% | | 100th pctl | Average |
| **Former CP (12)** | **.29** | **.67** | **2.19** | **57.2** | **37.1** |
| Belarus 1993 | .01 | .01 | 1.00 | 49.3 | 28.8 |
| Bulgaria 1992 | .30 | .86 | 2.87 | 48.8 | 27.2 |
| Czech Rep 1993 | .70 | 1.50 | 2.14 | 56.6 | 30.3 |
| Hungary 1993 | .01 | .01 | 1.00 | 59.6 | 39.8 |
| Kazakhstan 1993 | .01 | .02 | 2.00 | 61.7 | 34.0 |
| Kyrgyz Rep 1993 | .37 | .90 | 2.43 | 64.1 | 45.5 |
| Lithuania 1993 | .01 | .02 | 2.00 | 65.0 | 43.6 |
| Moldova 1992 | .34 | 1.18 | 3.47 | 63.1 | 44.5 |
| Romania 1992 | .45 | .84 | 1.87 | 56.2 | 37.5 |
| Russian Fed 1993 | .01 | .02 | 2.00 | 57.5 | 41.9 |
| Slovak Rep 1992 | 1.00 | 1.46 | 1.46 | 39.3 | 27.0 |
| Turkmenistan 1993 | .30 | 1.22 | 4.07 | 64.9 | 45.5 |

Notes:
Efficiency of RedisY (efficiency of redistributive growth) is the ratio of EDG to NDG.
The average redistribution tax rate is the rate across percentiles with positive tax rates.

These growth simulations can be compared to the more conventional exercise, a direct redistribution from the rich to the poor. This redistribution is simulated in Table 4, where it is assumed that one percentage point of total national income is shifted from the top quintile to the bottom quintile, and distributed equally among those households.[26] The table shows for each country the reduction in the poverty measure for the one percent redistribution in column two, and can be compared to column three in Table 2, where poverty prior to redistribution is given. The outcome is summarised in column three of Table 4, which reports the percentage reduction in poverty as the result of the redistribution. For example, pre-redistribution poverty in Brazil was measured as 23.2 percent of the population, and is simulated to be 18.4 percent after redistribution, for a fall of 20.7 percent (4.8 percentage points). The final column of the table gives the implicit tax rates on the highest twenty percentile resulting from the redistribution. These prove to be quite low, varying from less than two percent to a high of three percent, inversely related to inequality (ie., the share of income accruing to the top quintile before redistribution).

Inspection of Table 4 shows that the poverty reductions associated with redistribution *without growth* vary dramatically across countries. In general, the lower the per capita income of a country, the less is the poverty reduction, demonstrated most obviously for the twelve Latin American countries, among which the reduction for the Central American states and Ecuador is virtually nil. The other obvious influence is inequality. The lower the inequality, holding per capita income constant, the greater the poverty reduction from a redistribution, because those below the poverty line are 'packed' close together. Comparing the middle-income Latin American countries to the former centrally planned countries reveals this.

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[26] At the poverty boundary, this redistribution shifts some households above the ones with slightly higher pre-redistribution incomes, but this does not affect the conclusions reached in the text.

**Table 4:  Impact of income redistribution on poverty by country**
[Note: One percent of national income redistributed from the top 20 percent to the bottom 20 percent]

| Country by Region | Poverty after RY % pop | Pov Red (% initial level) | Tax rate, top quintile, % |
|---|---|---|---|
| **Latin America (12)** | **21.9** | **29.1** | **1.8** |
| Brazil 1995 | 18.4 | 20.7 | 1.6 |
| Chile 1992 | 8.7 | 41.9 | 1.8 |
| Colombia 1991 | 1.0 | 87.3 | 1.8 |
| Costa Rica 1989 | 14.4 | 24.0 | 2.0 |
| Dom Rep 1989 | 14.0 | 29.7 | 1.8 |
| Ecuador 1994 | 30.6 | 0.2 | 1.9 |
| Guatemala 1989 | 53.4 | 0.1 | 1.6 |
| Honduras 1992 | 46.6 | 0.2 | 1.8 |
| Mexico 1992 | 7.1 | 52.3 | 1.8 |
| Nicaragua 1993 | 43.4 | 0.8 | 1.8 |
| Panama 1989 | 23.9 | 8.1 | 1.7 |
| Venezuela 1990 | 1.9 | 84.1 | 1.7 |
| | | | |
| **N Africa & ME (5)** | **0.8** | **55.0** | **2.2** |
| Algeria 1995 | 0.6 | 25.0 | 2.3 |
| Egypt 1991 | 1.0 | 87.4 | 2.4 |
| Jordan 1992 | 0.8 | 65.1 | 2.1 |
| Morocco 1991 | 0.6 | 22.1 | 2.2 |
| Tunisia 1990 | 0.9 | 75.2 | 2.2 |
| | | | |
| **Sub-Sahara (13)** | **45.8** | **2.5** | **1.9** |
| Botswana 1986 | 32.9 | 0.3 | 1.7 |
| Guinea 1991 | 25.8 | 4.3 | 2.0 |
| Kenya 1992 | 50.4 | 0.1 | 1.6 |
| Lesotho 1987 | 48.7 | 0.0 | 1.7 |
| Madagascar 1993 | 73.8 | -0.1 | 1.9 |
| Mauritania 1988 | 31.1 | 2.0 | 2.2 |
| Niger 1992 | 61.1 | 0.2 | 2.3 |
| Nigeria 1993 | 31.1 | 0.1 | 2.0 |
| Rwanda 1984 | 46.4 | 0.3 | 2.6 |
| Senegal 1991 | 53.4 | 1.9 | 1.7 |
| South Africa 1993 | 17.8 | 23.1 | 1.5 |
| Zambia 1993 | 82.3 | -0.3 | 2.0 |
| Zimbabwe 1990 | 41.0 | 0.1 | 1.6 |
| | | | |
| **Asia, not FSU (8)** | **18.8** | **37.4** | **2.2** |
| China 1995 | 19.4 | 14.5 | 2.1 |
| India 1992 | 47.8 | 0.1 | 2.4 |
| Indonesia 1996 | 1.0 | 87.7 | 2.2 |
| Nepal 1996 | 50.3 | 0.8 | 2.2 |
| Pakistan 1991 | 5.3 | 55.0 | 2.5 |
| Philippines 1994 | 25.0 | 6.1 | 2.0 |
| Sri Lanka 1990 | 0.9 | 77.3 | 2.5 |
| Thailand 1992 | 0.7 | 57.7 | 1.7 |

| Country by Region | Poverty after RY<br>% pop | Pov Red<br>(% initial level) | Tax rate, top<br>quintile, % |
|---|---|---|---|
| **Former CP (12)** | **3.2** | **41.8** | **2.6** |
| Belarus 1993 | 0.5 | 0.0 | 3.0 |
| Bulgaria 1992 | 0.9 | 66.3 | 2.6 |
| Czech Rep 1993 | 0.9 | 74.9 | 2.7 |
| Hungary 1993 | 0.5 | 16.7 | 2.6 |
| Kazakhstan 1993 | 0.6 | 21.4 | 2.5 |
| Kyrgyz Rep 1993 | 15.1 | 20.2 | 2.4 |
| Lithuania 1993 | 0.6 | 16.7 | 2.4 |
| Moldova 1992 | 1.0 | 85.7 | 2.4 |
| Romania 1992 | 14.1 | 20.7 | 2.9 |
| Russian Fed 1993 | 0.5 | 23.1 | 2.6 |
| Slovak Rep 1992 | 3.1 | 75.8 | 2.8 |
| Turkmenistan 1993 | 0.9 | 80.4 | 2.3 |

Notes: RY - redistribution of income of one percentage point from highest to lowest quintile. Pov Red - poverty reduction from initial (pre-redistribution) level of poverty

These results suggest a typology of countries differentiated by the general strategy that is most conducive to poverty reduction, and this is done in Table 5.  In this table, we calculate in columns two and three the number of years required for distribution-neutral growth and equal distribution growth to achieve the same poverty reduction as a transfer of one percent of national income from the highest to the lowest quintile.  To take the first country, Venezuela, neutral distribution growth would require over thirty-four years to reduce poverty by the same amount as the one percentage point redistribution, and equal distribution growth would require six years. On the basis of these calculations, the fifty countries fall into three categories.  In category 1, the 'income redistribution countries', both growth strategies require more than one year to reduce poverty as much as a straight redistribution.  The countries are listed in descending order of the number of years required for distribution-neutral growth to match the impact of the one percent redistribution on poverty.  For thirty-four of the fifty countries (sixty-eight percent), straight redistribution is the most effective method of poverty reduction.

In category 2 are thirteen 'redistribution with growth' countries, for which redistribution is not the most effective poverty reduction strategy, and equal distribution growth is more effective than distribution-neutral growth.  For these countries one or both of the growth strategies at least matches the redistribution poverty reduction in less than a year, and the time period for equal distribution growth is the shorter.  The latter point is emphasised by inclusion of the 'efficiency ratio' a final column, taken from Table 3.  These countries are characterised either by low per capita income or relatively equal distribution (or some combination of the two). Finally, there is category 3, three 'trickle down' countries, for which growth as such is the most effective vehicle for poverty reduction.  The defining characteristic of the trickle down countries is that they have more than fifty percent of their population in poverty as a result of their low per capita income.  However, it does not follow that all low income countries would fall into this category.  If low income is combined with a relatively equal distribution, as for Niger, equal distribution growth may be more effective in reducing poverty, if only marginally so in that specific case.

**Table 5:  Growth equivalents of one percent redistribution from highest to lowest quintile**

| | | Years to reduce poverty as much as 1% redistribution | | |
|---|---|---|---|---|
| | | DNG 1% | EDG 1% | Efficiency ratio |
| | **A. Income Redistribution Countries (34)** | | | |
| 1 | Venezuela 1990 | 34.4 | 6.0 | |
| 2 | Colombia 1991 | 34.1 | 5.0 | |
| 3 | Mexico 1992 | 25.1 | 5.5 | |
| 4 | Algeria 1995 | 20.0 | 6.7 | |
| 5 | Brazil 1995 | 20.0 | 3.8 | |
| 6 | South Africa 1993 | 17.9 | 3.6 | |
| 7 | Morocco 1991 | 17.0 | 5.7 | |
| 8 | Dom Rep 1989 | 16.9 | 4.4 | |
| 9 | Russian Fed 1993 | 15.0 | 7.5 | |
| 10 | Kazakhstan 1993 | 15.0 | 7.5 | |
| 11 | Panama 1989 | 12.4 | 2.7 | |
| 12 | Turkmenistan 1993 | 12.3 | 3.0 | |
| 13 | Egypt 1991 | 12.1 | 4.8 | |
| 14 | Lithuania 1993 | 12.0 | 6.0 | |
| 15 | Hungary 1993 | 10.0 | 10.0 | |
| 16 | Tunisia 1990 | 9.8 | 2.2 | |
| 17 | Bulgaria 1992 | 6.0 | 2.1 | |
| 18 | Jordan 1992 | 5.2 | 1.1 | |
| 19 | Philippines 1994 | 4.1 | 1.7 | |
| 20 | Czech Rep 1993 | 3.9 | 1.8 | |
| 21 | Thailand 1992 | 3.3 | 1.3 | |
| 22 | Mauritania 1988 | 1.4 | 0.7 | |
| 23 | Chile 1992 | 22.5 | 5.2 | |
| 24 | Costa Rica 1989 | 16.9 | 4.6 | |
| 25 | Moldova 1992 | 16.9 | 4.9 | |
| 26 | Kyrgyz Rep 1993 | 10.4 | 4.3 | |
| 27 | Romania 1992 | 8.2 | 4.4 | |
| 28 | China 1995 | 8.9 | 3.3 | |
| 29 | Sri Lanka 1990 | 6.1 | 2.3 | |
| 30 | Guinea 1991 | 5.8 | 2.0 | |
| 31 | Pakistan 1991 | 13.8 | 5.8 | |
| 32 | Indonesia 1996 | 13.4 | 5.5 | |
| 33 | Slovak Rep 1992 | 9.7 | 6.6 | |
| 34 | Senegal 1991 | 1.4 | 0.9 | |
| | **B. Equal Distribution Growth Countries (13)** | | | |
| 35 | Botswana 1986 | 0.3 | 0.1 | 2.83 |
| 36 | Zimbabwe 1990 | 0.1 | 0.0 | 2.69 |
| 37 | Nigeria 1993 | 0.1 | 0.0 | 2.38 |
| 38 | Ecuador 1994 | 0.1 | 0.1 | 2.12 |
| 39 | Lesotho 1987 | 0.0 | 0.0 | 1.86 |
| 40 | Kenya 1992 | 0.1 | 0.1 | 1.88 |
| 41 | Nicaragua 1993 | 0.9 | 0.5 | 1.84 |
| 42 | Honduras 1992 | 0.2 | 0.1 | 1.83 |
| 43 | Guatemala 1989 | 0.2 | 0.1 | 1.80 |
| 44 | India 1992 | 0.1 | 0.1 | 1.27 |
| 45 | Rwanda 1984 | 0.1 | 0.1 | 1.22 |
| 46 | Niger 1992 | 0.1 | 0.1 | 1.07 |
| 47 | Belarus 1993 | 0.0 | 0.0 | 1.00 |

| | | Years to reduce poverty as much as 1% redistribution | | |
| --- | --- | --- | --- | --- |
| | | DNG 1% | EDG 1% | Efficiency ratio |
| | **C. Distribution-Neutral Growth Countries (3)** | | | |
| 48 | Nepal 1996 | 0.4 | 0.4 | .94 |
| 49 | Madagascar 1993 | neg | neg | .83 |
| 50 | Zambia 1993 | neg | neg | .58 |

Notes:
Criteria for policy categories:
1. Income redistribution: The poverty reduction achieved by a one percent redistribution requires more than one year of distribution-neutral and equal-distribution growth.
2. Equal distribution growth: EDG in one year reduces poverty more than either redistribution or distribution-natural growth.
3. Distribution-neutral growth: DNG reduces poverty in one year more than redistribution or EDG.

Thus, the simulation exercises demonstrate that for the overwhelming majority of middle-income countries, poverty reduction is most effectively achieved by a redistribution of current income. For these same countries, redistribution with growth would be the second-best option, and distribution-neutral, or *status quo* growth, a poor third. Low-income countries require a growth strategy, and for most redistribution with growth would be more effective than *status quo* growth. With these generalisations in mind, we consider poverty reduction policies in the following section.

## 5. Policy Effectiveness for Redistribution with Growth

The major element required to introduce and effectively implement a re-distributive strategy in any country is the construction of a broad political coalition for poverty reduction. The task of this coalition would be the formidable one of pressuring governments for redistribution policies, on the one hand, while neutralising opposition to those policies from groups whose self-interest rests with the *status quo*. How such a political coalition might come about is beyond the scope of this paper. We focus on a less fundamental, but crucially practical issue: the policies that could bring about a redistribution strategy. To be policy relevant, our consideration of redistribution mechanisms must move beyond a listing of possibilities to an analysis of the likely effectiveness of these.

Perhaps the most important determinant of the effectiveness of the various measures and specifics of each redistribution strategy is the structure of an economy. This structure will depend on the level of development, which will to a great extend condition the country's production mix, the endowments of socio-economic groups, the remuneration to factors, direct and indirect taxes on income and assets, prices paid for goods and services, and transfer payments. These elements of the distribution system are initial conditions that delineate the scope for redistributive policies. In this analytical context, the implementation requirements of redistributive policies can be summarised in a simple theoretical framework (see Hamner et.al. 1997). Define the following terms:

Y denotes the income of a household, V is transfer payments, T is taxes, k is a vector of assets (including human capital), w is a vector of rates of return (including wages), p is the price vector of goods and services, q is the quantity vector of those goods and services, and S is household saving.

Then, by definition it follows,

$$Y = (V - T) + wk = pq + S$$

| (V – T) | wk | pq | S |
|---|---|---|---|
| Transfer payments (unemployment compensation, pensions, child benefits, aid to disabled) & progressive taxes (on income and wealth) | Minimum wages, low-wage subsidies, other labour market regulations, public employment schemes (w); credit programmes for the poor; land reform, education (k); | Subsidies for basic needs goods, public sector infra-structure invest-ment (p); child nutrition programmes (q) | Facilitate future asset acquisition: 'village banks' & other financial services for the poor |
| Effective in middle-income countries | Effective in middle-income and some low-income countries | Effective in most countries | Effective in most countries |

*The effectiveness of tax and expenditure policies* (V and T) to generate secondary and tertiary distributions more equitable than the primary distribution depends upon the relative importance of the formal sector. This is for the obvious reason that governments can most effectively apply progressive income taxes to wage employees and corporations. All empirical evidence shows that the formal sector wage bill and profit shares increase with the level of development. Along with the importance of the formal sector goes a high degree of urbanisation, and working-poor urban households are more easily targeted than either the rural poor or urban informal sector households. The experience of a number of middle-income countries has demonstrated the effectiveness of basic income payments for poverty reduction, with an example being the basic pension paid to the elderly in South Africa.[27]

As shown in the previous section, the redistribution strategy is most appropriate for middle-income countries, because their per capita incomes are high relatively to the absolute poverty line. These are also the countries whose economic structures make taxation and expenditure instruments effective for redistribution. Thus, the thirty-seven 'income redistribution' countries, and others at similar levels of development, qualify for the redistributive strategy via income and corporate taxes, both in terms of its intrinsic effectiveness and the institutional capacity to implement it. Such countries would include the larger ones in Latin America (Argentina, Brazil, Chile, Mexico and Venezuela), several Asian countries (the Republic of Korea, Thailand, and Malaysia), and virtually all former socialist countries of Central and Eastern Europe.

To a certain extent, specific economic structures allow for effective use of taxation for redistribution in a few low-income countries that would typically be relevant only for middle-income countries. If the economy of a low-income country is dominated by petroleum or mineral production, then a large portion of national income may be generated by modern sector corporations. This allows for effective taxation even though administrative capacity of the public sector may be limited. The tax revenue can be redistributed through poverty-reduction programmes, though not through transfer payments if the labour force is predominantly rural. Examples of mineral-rich low-income countries with the potential to have done this, albeit unrealised, were Nigeria, Liberia, and Zambia.

*Interventions to change the distribution of earned income* (wk in the equation above), which alter market outcomes, will also tend to be more effective in middle-income countries.

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[27] While relatively low, the pension in the 1990s was an important income source for the rural poor, especially for female-headed households (see Standing, Sender and Weeks 1996, Chap 6).

The most common intervention is a minimum wage, though there are many other policies to improve earnings from work (see Rogers 1995). Further mechanisms include public employment schemes and tax subsidies to enterprises to hire low-wage labour. It is unlikely that any of these would be effective in low-income countries, because of enforcement problems (minimum wage), targeting difficulties (employment schemes), and narrowness of impact (wage subsidies).

*Land reform might achieve poverty reduction* for rural households, but the relationship between land redistribution and level of development is a complex one. On the one hand, low-income countries are predominantly rural, so if land ownership is concentrated, its redistribution could have a substantial impact on poverty. Further, the more underdeveloped a country, the less commercialised tend to be poor rural households. Therefore, the benefits to the poor from land redistribution in low-income countries are less likely to be contingent on support services. On the other hand, lack of administrative capacity and so-called traditional tenure systems represent substantial constraints to land redistribution in many low-income countries, and especially in the sub-Saharan countries. The usual approach to land redistribution presupposes private ownership, such that it is clear from whom the land will be taken and to whom it will be given. There are few sub-Saharan countries in which private ownership is widespread, making redistribution difficult or impossible without prior clarification of ownership claims (Platteau 1992, 1995). While land redistribution is probably not an effective poverty reducing measure for most low-income countries, a few notable exceptions in Asia (e.g., India and Vietnam) suggest that it should not be ruled out in all cases.

For middle-income countries, experience in Latin America has shown that governments can effectively implement land redistribution. However, the high degree of commercialisation of agriculture in middle-income countries requires that redistribution be complemented by a range of rural support services, including agricultural extension, marketing facilities, and other measures. Perhaps more serious, the relevance of land reform for poverty reduction tends to decline as countries develop and the rural population shrinks relatively and absolutely. For example, at the end of the twentieth century in the five most populous Latin American countries, twenty percent or less of the labour force was in agriculture. Minimum wages may be more relevant than land redistribution in reducing poverty among the landless and near-landless in such countries.

*Interventions that directly affect the prices and access to goods and services* (pq) could potentially be quite powerful instruments for poverty reduction. Subsidies to selected commodities have the administrative advantage of not requiring targeting, only identification of those items that carry a large weight in the expenditure of the poor. While multilateral adjustment programmes typically require an end to such subsidies on grounds of allocative efficiency or excessive budgetary cost, the rules of the World Trade Organisation do not, as long as subsidies do not discriminate between domestic production and imports (FAO 1998). Whether subsidies would generate excessive fiscal strain would depend on the products covered and financing. Again, the level of development of a country is of central importance for the effectiveness of subsidies. In low-income countries with the majority of the poor in the countryside, consumer subsidies are unlikely to have a significant impact on the poor outside urban areas. Basic goods provision in kind can be an effective instrument for poverty reduction even in very low-income countries, by delivering such items as milk to school children. To do so with a non-targeted programme would require a progressive tax system, which would be more likely in a middle-income country.

In all countries the poor suffer from poor health and inadequate education relatively to the non-poor. Expenditures on education and health have the practical advantage that programmes that would help the poor are easily identified, though the specifics would vary by country. However, providing these services to the poor may in some countries be as politically difficult as more obviously controversial measures such as asset redistribution.

The same point applies to infrastructure programmes directed to poverty reduction. To the extent that these would reduce public investment in projects favoured by the non-poor, especially the wealthy, they may be no easier to implement that measures that appear superficially to be more radical.

Table 6 provides a summary of the discussion, with poverty-reducing measures listed by rows, and the three categories of countries across columns. The table indicates that for the 'redistribution' countries, a redistribution of current income and assets is the most effective means of poverty reduction, and the methods to achieve this are feasible. For the 'redistribution with growth' countries, the measures for redistribution of current income and assets are less feasible, but instruments to achieve the more modest goal of redistributing the growth increment would be feasible. Finally, most redistribution instruments would not be feasible, or only to a limited degree, for very low-income countries; but for these countries, a growth strategy with no redistributive mechanisms may be the most poverty-reducing path.

This discussion indicates that implementing an agenda of redistribution involves major problems, but these problems should not be exaggerated. In many countries they might prove no more intractable than the problems associated with implementation of other economic policies. An effective orthodox monetary policy is difficult to implement if a country is too small or underdeveloped to have a bond market. The absence of a bond market leaves the monetary authorities unable to 'sterilise' foreign exchange flows. Similarly, replacing tariffs by a value added tax would be a daunting task in a country whose commerce was primarily through small traders. Lack of public sector capacity would limit the ability to execute a range of so-called supply side policies: privatisation, 'transparency' mechanisms', and decentralisation of central government service delivery (van der Hoeven and van der Geest 1999). The multilateral agencies have recognised these constraints to adjustment programmes, and typically made the decision that constrained implemented was preferable to non-implementation. The same argument can be made for a redistributive growth strategy: to achieve poverty reduction, it might preferable to implement re-distributive growth imperfectly than to implement the status quo imperfectly.

**Table 6:  Summary of Feasibility of Redistribution Instruments by Category of Country**

| Country Category:<br><br>Redistributive Instrument: | Redistribution of current income & assets (middle-income countries) | Growth with redistribution policies (middle & most low-income countries) | Growth without redistribution policies (very low-income countries) |
|---|---|---|---|
| Progressive taxation | Yes | Yes for some countries | No |
| Transfer payments | Yes | Yes for some countries | No |
| Consumer subsidies | Yes | Yes | Yes for some countries |
| Land reform | Yes, but not always relevant | Yes | Not for most countries |
| Education & health | Yes | Yes | Yes |
| Infrastructure & public works | Yes | Yes | Yes |

# 6. Conclusion

Poverty reduction has always been a priority of development policy, albeit sometimes only at the rhetorical level. The end of the 1990s brought increased emphasis on bringing the benefits of growth to the poor. However, growth alone is a rather blunt instrument for poverty reduction, since the consensus of empirical work suggests that it is distribution neutral. Along with emphasis on poverty reduction, a shift occurred in the policy literature towards a more favourable view of policies to redistribution income and assets. An integration of distributional concerns and a priority on poverty reduction could be the basis for a new policy agenda to foster both growth and equity.

This new agenda would be based on three analytical generalisations: 1) that greater distributional equality provides a favourable 'initial condition' for rapid and sustainable growth; 2) that redistribution of current income and assets, or redistribution of an economy's growth increment is the most effective forms of poverty reduction for most countries; and 3) the mechanisms to achieve the redistributions are feasible for most countries. These generalisations imply that the new agenda could focus upon specific policies and instruments of redistribution, with the goal of substantial reductions in urban and rural poverty in the medium term.

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## Annex:  Method and Sources

### Estimation of Poverty Lines

The percentile at which an absolute poverty line lies can be estimated with two parameters, the poverty line as a percentage of per capita income, and the Gini coefficient. Involving as it does the use of the log-normal function, this method is not ideal for our simulations, because of the well-known tendency of that function to distort values at the tails of distributions.  We have used a simpler method, by assuming that in the quintile in which the poverty line falls, and in any quintiles below it, mean  and median income are equal.[28] The income for any percentile or fraction thereof can be estimated as follows:

1. since mean income lies at the mid-point of a quintile, the income for percentiles, $P_{m1}$, $P_{m2}$, etc. (where $P_{mi}$ is the mid-point of quintile 1);  are known ($Y_{m1}$, $Y_{m2}$, etc.); and

2. between each mean income, income was assumed to increase at a constant rate.

For example, the rate of increase of income by percentile between mean income in quintile one ($Y_{m1}$) and quintile two ($Y_{m2}$) would be (they are by definition twenty percentiles apart):

$$Y_{m2} = (1+r)^{20}(Y_{m1})$$

Since $Y_{m1}$ and $Y_{m2}$ are known, r can be calculated.  On the basis of this calculation, the percentile for the absolute poverty line for each country can be found by generating the income for each percentile until $Y_i = US\$ 365$ is reached.

### Data and Statistics

The table below provides the Gini coefficients by country, the definition of the measure, and reference unit.  For most empirical work it would not be acceptable to compare Ginis based on income and expenditure, or ones covering both households and individuals. For our simulations the implied inaccuracies have little practical consequence.

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[28] The authors wish to thank Malte Lubker for pointing out the empirical validity of this assumption for the lowest two quintiles.

| Country | Gini | Definition | Reference Unit |
|---|---|---|---|
| **Latin America (12)** | **52.2** | | |
| Brazil 1995 | 60.1 | Income | Household per capita |
| Chile 1992 | 50.7 | Income | Person |
| Colombia 1991 | 57.2 | Income | Person |
| Costa Rica 1989 | 42.0 | Income | Person |
| Dom Rep 1989 | 50.5 | Income | Person |
| Ecuador 1994 | 43.0 | Expenditure | Person |
| Guatemala 1989 | 59.1 | Income | Person |
| Honduras 1992 | 52.6 | Income | Person |
| Mexico 1992 | 50.3 | Expenditure | Household per capita |
| Nicaragua 1993 | 50.3 | Expenditure | Household per capita |
| Panama 1989 | 56.5 | Income | Person |
| Venezuela 1990 | 53.8 | Income | Person |
| | | | |
| **N Africa & ME (5)** | **37.5** | | |
| Algeria 1995 | 35.3 | Expenditure | Household per capita |
| Egypt 1991 | 32.0 | Expenditure | Household per capita |
| Jordan 1992 | 40.7 | Expenditure | Person |
| Morocco 1991 | 39.2 | Expenditure | Household per capita |
| Tunisia 1990 | 40.2 | Expenditure | Household per capita |
| | | | |
| **Sub-Sahara (13)** | **48.6** | | |
| Botswana 1986 | 54.2 | Expenditure | Household |
| Guinea 1991 | 46.8 | Expenditure | Household per capita |
| Kenya 1992 | 57.5 | Expenditure | Household per capita |
| Lesotho 1987 | 56.0 | Expenditure | Household per capita |
| Madagascar 1993 | 46.0 | Expenditure | Household per capita |
| Mauritania 1988 | 42.4 | Expenditure | Household per capita |
| Niger 1992 | 36.1 | Expenditure | Household per capita |
| Nigeria 1993 | 45.0 | Expenditure | Household per capita |
| Rwanda 1984 | 28.9 | Expenditure | Household per capita |
| Senegal 1991 | 53.8 | Expenditure | Household per capita |
| South Africa 1993 | 62.3 | Income | Person |
| Zambia 1993 | 46.2 | Expenditure | Household per capita |
| Zimbabwe 1990 | 56.8 | Expenditure | Household per capita |

Annex Table (con't)

| Country by Region | Gini | Definition | Reference Unit | Coverage |
|---|---|---|---|---|
| **Asia, not FSU (8)** | **32.6** | | | |
| China 1995 | 41.5 | Income | Household per capita | All |
| India 1992 | 32.0 | Expenditure | Person | All |
| Indonesia 1996 | 36.5 | Income | Household per capita | All |
| Nepal 1996 | 36.7 | Expenditure | Household per capita | All |
| Pakistan 1991 | 31.2 | Expenditure | Household per capita | All |
| Philippines 1994 | 42.9 | Expenditure | Household per capita | All |
| Sri Lanka 1990 | 30.1 | Expenditure | Household per capita | All |
| Thailand 1992 | 51.5 | Income | Household | All |
| **Former CP (12)** | **30.2** | | | |
| Belarus 1993 | 21.6 | Income | Household per capita | All |
| Bulgaria 1992 | 30.8 | Income | Person | All |
| Czech Rep 1993 | 26.6 | Income | Household per capita | All |
| Hungary 1993 | 27.9 | Income | Household per capita | All |
| Kazakhstan 1993 | 32.7 | Income | Household per capita | All |
| Kyrgyz Rep 1993 | 35.3 | Income | Household per capita | All |
| Lithuania 1993 | 33.6 | Income | Household per capita | All |
| Moldova 1992 | 34.4 | Income | Household per capita | All |
| Romania 1992 | 25.5 | Income | Household per capita | All |
| Russian Fed 1993 | 31.0 | Income | Household per capita | All |
| Slovak Rep 1992 | 27.7 | Income | Household | All |
| Turkmenistan 1993 | 35.8 | Income | Household per capita | All |