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Globalization, Poverty and Inequality:
What is the Relationship? What can be done?

by

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Abstract

The paper studies the relation between globalization, inequality and marginalization, within and across nations. It reviews the existing evidence on globalization and global inequality and argues, using a simple theoretical model, that the two are inter-connected. It discusses alternative policies to counter extreme poverty and inequality. The paper takes the view that curbing these, even within one country, requires *global*, cross-country policies that we do not currently have, and advocates the setting up of an international initiative to coordinate such policies.

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1. The Questions

Forbes Online of February 27, 2003[1], offers some information about the world's ten richest people. Much of the information would cause little surprise. The list shows that big money comes from software innovation, retailing scale economies, the business of oil, investment luck, and inheritance. What is, however, really striking—more so as one ponders the matter—is just *how* rich these ten people are[2]. Together they had, in 2002, a net worth of $ 217 billion, ranging from Bill Gates in the lead with $40.7 billion to John Walton (son of Sam Walton, founder of Walmart) at the rear with $16.5 billion.

To understand how staggering this is, let us look at Tanzania in the same year, 2002. In that year Tanzania, with a population of 35 million, had a GDP of $10.15 billion (World Bank, 2004). In other words, if one assumes that the ten richest people earn a return of 5% on their assets,[3] their earning in one year would be roughly equal to the total annual earnings of the entire population of Tanzania. And, of course, Tanzania has its own share of the very wealthy. If we leave them out—say 1% of the richest Tanzanians-- and look at the poorer end of the spectrum, we will get a gap between the world's richest and the poorest that is difficult to comprehend.

If we leave out individuals and turn to nations, the gaps of course shrink but are still striking. Take the richest and the poorest countries (in terms of per capita income) in the list of 152 nations[4] for which detailed data are provided in the **World Development Indicators 2005** (World Bank, 2005). These are, respectively, Norway and (tying at the bottom rank) Burundi and Ethiopia. Ethiopia and Burundi have a per capita income of $90 and Norway $43,400. If we make purchasing power parity (PPP) corrections on

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[1] See http://www.forbes.com/lists/2003/02/26/billionaireland.html
[2] Another striking commonality among these people that should especially interest academics is that three of these ten are university drop-outs (Bill Gates, Harvard; Paul Allen, Washington State University; Lawrence Ellison, University of Illinois).
[3] In reality they earn much more—they would not be among the ten richest if they invested their wealth as poorly as most of us do.
[4] The list is comprehensive if one is interested in countries that have populations of more than one million. The list, therefore, omits some really small nations, like Lichtenstein.

these, they get a bit closer but still the gap is huge. A person picked at random in Norway is expected to be 60 times as rich as a person chosen randomly in Burundi, even with a PPP correction.

I do not present these numbers to advocate any obvious normative proposition, such as how bad governments are in the Third World to leave their citizens so poor or how mean governments are in the industrialized nations not to divert more money to poor nations. Once one takes account of the realities and constraints within which policy makers and politicians in poor and rich nations function, none of these propositions survive—at least not in any obvious way. There are many changes that each of us may want but not one of us may be empowered to do anything about.

The reason I present these statistics is to draw attention to the fact that, even though the debate on whether global inequality has risen or fallen in recent times may be unresolved, the *amount* of inequality is staggering; the *hiatus* between the richest and the poorest people is *too large* and the *extent* of poverty on earth (whether or not it has risen in recent times) is unacceptable. I like to believe that there will come a time when, looking back at today's world, human beings will wonder how primitive we were that we tolerated this.

From this observation to proceed to answering the question, "What should be done?" turns out to be much harder than what persons of action commonly suppose. That is the reason why, despite having so many persons of action, inequities have persisted from the time of the pharaohs, and in fact recorded history, to present times. What has to be recognized is that the intellectual design problem of how to mitigate poverty is a difficult one, and that could be so even if all of us were single-minded in wanting to remove poverty and we had the science and technology at our disposal (as we probably already do) to remove everybody's poverty. This is because, in contrast to a single individual, for a group of persons to translate their preferences into actions can be a very difficult problem, as rudimentary game theory teaches us.

The aim of this paper is to study the relation between globalization, inequality and marginalization and to ask policy questions about what we should do. I shall briefly review the empirical literature on globalization, inequality and poverty, and the possible inter-connections between these (sections 2 and 3), and argue that such analysis ought to

be combined with theoretical analysis (sections 4 and 5), which allows us to explore the realm of the possible—of things that may not have happened as yet but could happen. I shall argue that even if our empirical verdict remains ambiguous, we can think constructively about policy and agency (section 6). While there is a considerable literature on the trade-off between inequality and growth[5], what is unusual in this paper is its attention to the trade-off between poverty and inequality. This allows us to formulate some clear rules about how much inequality ought to be tolerated in society. The paper formalizes the concept of 'poverty-minimizing level of inequality'.

2. **The Facts**

Has globalization led to greater inequality or less? This question has greatly exercised the minds of many analysts. The reason why this question has loomed so large in our debates is that, for many ideologues, how we answer this question amounts to a verdict on globalization. I shall however take the view that seeking a verdict on globalization is a hopeless project. First of all, it is too catch-all a term and therefore it can be good and bad, depending on what aspect of it we are looking at, in which period and at which location. When the Spaniards came into contact with the Incas in the early 16th century that was a step in globalization. And judging by the fact that the native population of the new world rapidly declined under the combined might of the sword and new bacteria, clearly this globalization was not good for the native population. And even if it could be argued that the natives are better off *today* than they would have been had they remained 'undiscovered', it could still be argued that (barring the case where their discount factor were indistinguishably close to one), their welfare, aggregated over the last few centuries, has been adversely affected. On the other hand, when the British came into contact with the Chinese of Hong Kong, that was also a step towards globalization; and it is maintainable that on this occasion globalization benefited all parties involved.

This diversity of experience suggests two things—that a single answer for the effect of globalization is too much to expect, and that globalization is *potentially*

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[5] There is for instance a considerable empirical literature that shows how inequality can hamper growth (see, for example, Birdsall, Sabot and Ross, 1995, and Deininger and Squire, 1998).

beneficial for all[6]. The latter suggests the need for policy design that can convert the potential benefit into actual benefit, and that will indeed be the driving motive behind the policy analysis in this paper.

But let me begin with the facts. Has inequality in the world increased? We will see that the answer is mired in debate. If we take a very long run view, the answer is fairly transparent. Over the last five centuries, the world has become more globalized and much more prosperous, and, if we consider inter-regional inequality (in contrast to interpersonal inequality), it is clear that inequality has grown.

The fact of globalization, as measured by trade volumes and capital flows, has been written about a lot (Basu, 2004a; Bhagwati, 2004; Wolf, 2004). The total value of exports all over the world in the year 2002 was $6,455 billion, up from $3,452 billion in 1990; and the total amount of foreign direct investment globally in 2002 was $631 billion, while it was $202 billion in 1992 (World Bank, 2004).

As far as prosperity and inequality goes, though there is scope for debate about whether global regional inequality has increased or decreased over the last two or three decades[7], the trend, viewed over a long stretch of time and measured as the ratio between the richest and the poorest, seems to be an unequivocal deterioration. According to the calculations of Angus Madison (2001), displayed in Table 1, if we track per capita GDP of large regions of the world, the growing disparity is obvious. The richest region was 1.8 times richer than the poorest region half a millennium ago, whereas, currently, the richest region has a per capita income that is 20 times the income of the poorest region.

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[6] A *potential* benefit for all does not seem to me to be reason for celebration. If it is the case that we expect that the potential will be realized, then of course we should celebrate, but the reason for the celebration is not the potential gain but the fact that we expect an *actual* Pareto improvement. If, on the other, hand, we do not expect the potential to be realized, it is not clear why we should be happy that there has been a *potential* gain.

[7] And debate there has been aplenty: see, for instance, Atkinson (1999), Melchior (2001), Milanovich (2002), and Wade (2004).

Table 1. Levels of GDP Per Capita, 1500-1998,
(In 1990 PPP dollars)

	1500	1700	1913	1998
U.S.A.	400	527	5,301	27,331
Sweden	695	977	3,096	18,685
U.K.	714	1,250	4,921	18,714
Japan	500	570	1,387	20,413
India	550	550	673	1,746
China	600	600	552	3,117
Africa	400	400	585	1,368
Ratio of Richest to Poorest	1.8:1	3.1:1	9.4:1	20:1

Source: Madison (2001).

What has happened in recent times remains more controversial (see, for instance, Melchior, 2001; Milanovich, 2002; Bourguignon and Morrison, 2002; Galbraith 2002; Heshmati, 2004; Naschold, 2004)[8]. A comprehensive way to measure inequality is to compute the Gini coefficient. If we do this for nations, what do we find? Interestingly, the answer depends critically on whether we use population-weighted or -unweighted data, and a part of the controversy is caused by this difference. If we use population-weighted data, this means that we pretend that all Chinese earn the per capita income of China and all Indians earn the per capita income of India and so on, and then compute the Gini coefficient of the world. The use of unweighted data means that each country is treated as one person earning the per capita income of that country. So evidently both methods have their shortcomings. It should be recognized that this problem is encountered in economics at various levels. Even within the household there is often a lot of inequality, and this is especially significant for households that have internal conflicts of interest (Basu, 2005). But thanks to the inadequacy of data we often are compelled to treat the household as a single decision-making unit.

If we go the route of using unweighted data for each nation, then we find that the Gini coefficient of inter-country inequality has grown over the last few decades (Milanovic, 2002). On the other hand, if we use population-weighted data, we find that

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[8] Some of these controversies on global inequality are mirrored in the discussion on global poverty (see Chen and Ravallion, 2001; Reddy and Pogge, 2003; Reddy and Minoiu, 2005).

the Gini coefficient has been declining slowly but almost monotonically since the late 1960s, with the pace of decline picking up a bit in the nineties (Melchior, 2001; Melchior, Telle and Wiig, 2000). The latter is driven in large measure by the strong economic growth in China since the late seventies and India since the early nineties, since population weights of these countries are very high.

It should now be clear that, depending on exactly what one chooses to use as the measure, one can find almost any evidence that one seeks. Is one measure clearly superior to another measure? If we are interested in *individual* well-being, as much of economics is, it may seem right that we use population weighted data. To treat China and Canada as comparable units does not seem right. But there are two possible responses to this. Given the significance of the nation state as a political unit, and given that our political perceptions are shaped by awareness of inter-country situations, there may be a case for trying to find out what is happening to inter-country incomes. Secondly, if we are interested, ultimately, in the individual, we should be looking at neither the population unweighted nor population-weighted inter-country inequality, but global inter-personal inequality. This is because counting all the people of China as one person is to lose vital information and to treat all the people of China as if they each earn the per capita income of China is also to lose important information, especially since inequality in China has been growing. The same is true of India. Fortunately, how this debate is resolved is not critical to what I want to argue here.

If I were to try to associate global inequality to globalization, I would take the longer run view of what has happened, since globalization is a process that has been with us for centuries. It has gone through some brief periods of retreat (Williamson, 2002), but the long-run process has been a slow and steady one of the globe coming together. The long-run regional inequality (and I am not equating this to interpersonal inequality and poverty, though interpersonal inequality has probably moved in tandem with regional inequality) seems also to have increased over the very long run. But no matter what view we take of the trends, it seems easy to argue that there is reason for concern. First, while the Gini coefficient is important, the gap between the richest and the poorest is important as well. If a sizable population feels increasingly marginalized because they find themselves becoming poor relative to global wealth, this is bound to stoke political

volatility and even if that did not happen, this would seem normatively unacceptable to me. And, as we saw, the gap between the poorest and the richest is rising if we take a long-run view of this. Secondly, no matter what has been the trajectory and no matter what its connection to globalization, the level of inequality that we see today, as cited at the start of this paper, is far too large for complacency.

3. The Positive and Negative Fallouts of Globalization

To understand how globalization can have the negative fallout of marginalizing people, consider the case where the world markets for goods and services are suddenly and fully opened up. Given that a disproportionately large share of the world's GDP comes from the industrialized nations, it seems reasonable to predict that the prices of goods in poor nations will converge more rapidly towards prices in industrialized nations than the latter converge towards the former. In other words, international prices of goods and services will move to somewhere between prices in industrialized nations and prices in developing countries but closer to the former.

Labor being less mobile than goods and services, it seems reasonable that for sections of the labor force in poor nations, and especially for the illiterate and unskilled, who are unable to take advantage of the new technology, wages will lag behind prices[9]. Hence, for some of the poorest people there can be a period of increased hardship before the benefits of opening up trickle down. This is one of the important problems of rapid globalization. To a certain extent, the reported increase in inequality within poor nations (see Banerjee and Piketty, 2005, for India) is a consequence of this.

Conversely, it is natural to expect that, with globalization, the skilled end of the labor market in poor countries will benefit disproportionately. Their access to modern technology will increase their pay. Also as their compatriots find jobs in developed countries and move out, the shortage of their skill in the home country will push up the price for their work and make them rich. Banerjee and Piketty's study shows that the

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[9]There can also be increased unemployment among the unskilled. This is possible to explain theoretically once we recognize that employing each person entails some cost on the part of the employer (supervising, conflict mitigation with other employees, breakage of instruments of work) and so, unless the productivity of the worker is above a certain cut-off level, it is not worth employing the person even for a zero wage.

group that has gained disproportionately in India over the last decade is the richest 0.01% of the population. It is not hard to show that as income stretches out in this manner for some, the poorer people are not just poorer compared to the richest, but their absolute welfare may decline because of the rise in the price of goods or by their getting excluded from the 'market'.[10]

During a field visit to the village of Jakotra, in a remote corner of Gujarat, close to the border of Pakistan, I found a palpable concern among the poor villagers about what globalization might do to them (Basu, 2004b). The villagers of Jakotra earn their livelihood largely from handicrafts and mainly embroidery work on textiles. The villagers were concerned that their meager livelihood could get wiped out by competition from some international producer who decides to manufacture embroidered clothing in large factories and export to India. Talking to the villagers I realized what a double-edged sword globalization is. On the one hand, they have benefited in the last decade because of globalization and their ability to sell their product in faraway lands and cities[11]. On the other hand, they rightly feared that this prosperity may not last. Moreover, these people are still poor enough that end of prosperity for them could mean acute poverty, destitution and even starvation. When that happens it would clearly not be good enough to point these people to the *potential* benefits of globalization. The right policy is to craft government interventions that provide a safety net for the poorest people for times of transition.

Something analogous is true for developed countries concerned with the problem of outsourcing. The overall benefits of outsourcing are clear enough. When the US automobile industry began eroding because of competition from Japan, if the US government thwarted competition by blocking Japanese cars from coming into the country, it is likely that there would be many more automobile workers in the US today, but the country would also be poorer for this. In the early nineties it had looked as if the Japanese economy would overtake the US. But it was the openness of the IT sector in the US, drawing talent from all over the world, that prevented this from happening.

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[10] A simple adaptation of Atkinson's model (1995) could illustrate this.
[11] Some recent studies seem to confirm at the level of India what I saw among the artisans of rural Gujarat. India's opening up in the nineties, far from hurting the handicrafts sector, seem to have benefited it. Through the nineties the share of handicrafts exports in the overall manufacturing exports of India has risen from 2% to 5% (Leibl and Roy, 2003).

Something similar is true for the current outsourcing problem. To block outsourcing will mean more people in the US doing call center jobs, data filing work and rudimentary software work, but it will almost certainly mean the loss of competitive advantage for the US and overall loss for the country. But this is not to deny that there are people who are being hurt, certainly in the short run, by outsourcing. The right policy here, as in the case of poor countries facing competition, is not to stop outsourcing but devising policies to soften the consequences of competition for the population that is hurt by it. This policy question is addressed in section 6.

I construct a simple model in section 5 to illustrate some of the policy dilemmas mentioned in this paper and the risks of globalization. But I should emphasize that the message of this must not be read as one against globalization. The potential benefits created by the easier flow of goods, services, software products and labor are enormous and to stop these would be a gross error. At the same time, the fear of these getting stopped must not lead us to praise all aspects of globalization. By pointing to its negative fallout this paper hopes to encourage policies to counter them and to distribute better the spoils of globalization. Not only should this be viewed as a moral imperative, to ignore the marginalizing groups is to risk political instability and war in the long run.

4. The Quintile Axiom

In designing policy it is important to try to spell out clearly what our ultimate objectives are. A new tax, a subsidy or a new restriction on trade is seldom good *in itself*. The goodness or badness of such action depends on what it does to what we value ultimately for society. There may indeed be philosophical difficulties in spelling out, once and for all, ultimate or basic value judgments, as Sen (1970) argued. New situations, new policy conundrums may compel us to abandon some judgement that we had earlier held as fundamental[12]. But keeping in mind that new situations and new choices may

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[12] We may maintain that "one must not kill (a human being)" is a basic value judgment. Then, seeing a friend in terminal condition and suffering from acute pain, we may legitimately revise the basic value judgment to say that "one must not kill except to relieve a person in pain and in terminal condition". Sen had argued that the possibility of having to revise what we think is a basic value judgment will always be there.

make us want to mould our objectives, we must ask what is it that the policy maker should try to maximize.

I have elsewhere (Basu, 2001) suggested a simple normative rule, which has attractive properties, not least of which is simplicity. Where traditionally we associate each country's main objective with its per capita income, the normative criteria that I have proposed elsewhere and am going to maintain here would require us to associate it with the per capita income of the poorest 20% of the population. I call this the 'quintile income' of a country.

More formally, let the income profile of a country with n people be given by $(x_1, x_2, \ldots, x_n)$ and assume, without loss of generality that individuals are so named that

$$x_1 \leq x_2 \leq \ldots \leq x_n.$$

Clearly, this country's per capita income is given by

$$y = (x_1 + x_2 + \ldots + x_n)/n.$$

On the other hand, the country's quintile income is given by

$$q = (x_1 + x_2 + \ldots + x_t)/t,$$

where $t = n/5$.

What is being suggested is that in evaluating a country's well-being we should focus on the country's quintile income. Henceforth, this normative principle will be referred to as the 'quintile axiom.'

The quintile measure should not be confused with a poverty measure (or inverse of a poverty measure) of a society. Hence, the objective of raising the quintile income of a country need not coincide with the objective of lowering poverty. This will certainly be so if we use an absolute measure of poverty (which can become zero and so leave no further target unfulfilled, whereas that can never happen with the target of maximizing quintile income) and may not be true even for most relative poverty measures. The quintile axiom I am recommending is a much more *overall* normative target with which policy makers should be concerned.

At first sight this indicator may seem arbitrary; but, as a rule, any single indicator for measuring a nation's well-being is arbitrary till we get used to it.

There are ways in which the quintile axiom or the general idea behind it can be generalized. We could for instance, give weights to the incomes of people at different

levels of poverty with the poorest people getting the highest weights and then look at the weighted per capita income of society (some of these variants are discussed in Basu, 2001). But I am here interested to suggest a measure that is simple and so easy to understand. The quintile axiom is a suggestion in that spirit.

It is worth seeing how evaluating an economy using the quintile income not only makes a large difference to the absolute numbers, as is only to be expected, but can change the rankings sharply. Table 2 gives the per capita incomes and quintile incomes of a selection of nations. As expected Norway and Japan move up the ranking ladder sharply, the U.S. moves down. At the poorer end Romania, India and Bangladesh make relative gains, whereas China, somewhat surprisingly loses out. The sharpest losses caused by shifting attention from per capita income to quintile income occur in Peru, Guatemala and Sierra Leone.

Table 2: Quintile Incomes of Nations, 2002			
Country	Per Capita Income US #, PPP	% of Income Accruing to Poorest 20%	Quintile Income US $, PPP
Norway	36,690	9.6	17,611
USA	36,110	5.4	9,750
Switzerland	31,840	6.9	10,985
Japan	27,380	10.6	14,511
Finland	26,160	9.6	12,557
Sweden	25,820	9.1	11,748
Korea, South	16,960	7.9	6,699
South Africa	9,810	2.0	981
Trinidad & Tobago	9,000	5.5	2,475
Malaysia	8,500	4.4	1,870
Russian Federation	8,080	4.9	1,980
Romania	6,490	8.2	2,661
Peru	4,880	2.9	708
China	4,520	4.7	1,062
Guatemala	4,030	2.6	524
India	2,650	8.9	1,179
Bangladesh	1,770	9.0	797
Sierra Leone	500	1.1	28

Source: Computed from **World Development Indicators, 2004**.

The quintile income measure, viewed as an equity-conscious measure of welfare has several normative advantages. Unlike a policy that tries to minimize poverty or minimize inequality, the objective of maximizing the quintile income has a natural dynamism, because it is a moving target. In a country with gross inequalities, this measure will suggest that we focus on the conditions of the poorest people. But if the better off people are ignored totally and for too long, they will soon be a part of the bottom quintile of the society and so deserve attention. If there is full equality in society, this measure does not allow the policy-maker to sit back. Since in such a society the quintile income coincides with the per capita income, the aim now will be to raise the per capita income.

Also, a focus on the quintile income does not mean that the growth rate is to be ignored. It is simply that the growth rate should be measured in terms of the growth rate of the per capita income of the bottom quintile of society. And there is the advantage of directness in this new measure. Instead of saying or claiming that we should aim to increase income growth and expect the benefits to reach the poorest sections, this measure says we should aim to increase the growth rate of the quintile incomes.

It is true that, unlike the UNDP's human development index, the quintile income ignores non-income aspects of development. But my defense against this criticism is two-folds: First, what I am recommending is not that we ignore non-income aspects of development but that, where we would have focused on per capita income, we focus on quintile income, instead. Secondly, I would conjecture that, in general, quintile incomes will have a closer a relation to a nation's various standard-of-living indicators, like infant mortality, life expectancy, literacy and so on, than per capita incomes. This is something that will in fact be interesting to investigate later.

The focus on quintile income also suggests how we should view inequality. In general, I would view inequality as undesirable, but poverty as the greater evil. So, the amount of inequality that we should tolerate is the amount 'necessary' to minimize poverty, which will here be equated with maximizing quintile income.[13] It is, for

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[13] I put the word "necessary" within quotes to show awareness that this may itself be malleable. As societal organization changes and our norms and preferences change, the inequality necessary to minimize poverty may itself change. And in a very long run policy exercise one may try to change this parameter. For a

instance, arguable that a society of perfect equality (at least given our contemporary values and preferences) would be crushingly poor. Hence, the focus on quintile income will steer us away from attempting perfect equality. It should be evident that the welfare criteria being suggested here is different from the well-known one in which welfare is equated with $\mu(1 - G)$, where μ is the per capita income of the society being evaluated and G its Gini coefficient (Sen, 1976). In this measure welfare is deflated according to the amount of inequality in the country, whereas in my measure welfare is deflated by the poverty of the poorest quintile of society.

In the next section a model is developed which illustrates the notion of the 'right' amount of inequality. The model will also show how this may depend on the level of globalization. This naturally gives way to the idea of having to coordinate policies across nations, which is what the last section of this paper will be concerned with.

5. An Illustrative Model

I shall in this section develop a simple, highly-stylized model to illustrate some of the principles discussed thus far. In particular, the model will illustrate (1) how the 'quintile axiom' may imply that we have to tolerate a modicum of inequality and (2) how globalization weakens each nation's ability to control poverty and thus directs our attention to the need for inter-country coordination of policy.

Consider a world with 'many' identical countries. Each country has a population of n. And of these n people, p are 'productive' and u are 'unproductive.'

$$n = p + u, \quad p, u \geq 0, \; n > 0.$$

Output in a country occurs because of the work done by productive people. The unproductive live off the externality of other people's work.

The amount of work, $h \in [0,1]$, that a productive person does is negatively related to the (proportional) income tax rate, t, that prevails in the country where he resides. To keep the analysis simple, I shall assume

$$h = 1 - t, \tag{1}$$

recent discussion of the twin objectives of poverty mitigation and the control of inequality see Dagdeviren, van der Hoeven and Weeks (2004).

where $t \in [0,1)$ is chosen by the government and is treated by citizens as exogenous.

The (pre-tax) income, Y, that accrues to a productive person who puts in h units of work is given by

$$Y = Ah, \quad A > 0 \tag{2}$$

If every productive person does h units of work, every unproductive person gets an income, y, given by

$$y = ah, \tag{3}$$

where $A > a > 0$. This captures the externality assumption.

The assumption of linearity, namely, $Y = Ah$ and $y = ah$, is purely for algebraic simplicity. I could just as well have assumed $Y = f(h)$, where $f'(h) > 0$. What is unusual here, and at variance from textbook models of the economy, is the assumption of externality. I am assuming that when productive people in a country work hard, they benefit of course, but also the (non-working) unproductive people of that nation benefits, however little. In a more realistic model, the benefit accruing to the unproductive would depend on *how many* productive people there are, but that will not make any significant change to my model and so will be ignored here.

Government's sole activity in this model is to transfer income, through the choice of a tax rate from the rich to the poor. If the tax rate is t, the post-tax incomes of the productive and unproductive people, denoted by, respectively, $\bar{Y}(t)$ and $\bar{y}(t)$ are given by:

$$\bar{Y}(t) = (1-t)Y \tag{4}$$

$$\bar{y}(t) = y + \frac{ptY}{u} \tag{5}$$

Since each unproductive person receives an equal share of the total amount of tax revenue collected by the government, his total post-tax income is a sum of the externality, y, and the tax subsidy ptY/u.

Using (1) – (3) to substitute for Y and y, (4) and (5) can be rewritten as

$$\bar{Y}(t) = (1-t)^2 A \tag{6}$$

$$\bar{y}(t) = (1-t)(a + \frac{pAt}{u}) \tag{7}$$

A typical picture of how individual (post-tax) incomes vary with the tax rate is illustrated in Figure 1. We use $\hat{t}$ to denote the tax rate t, where $\overline{Y}(t) = \overline{y}(t)$.

A government that is Rawlsian would be focused entirely on the unproductive people as long as $t \leq \hat{t}$. It would focus on the welfare of the productive people if $t > \hat{t}$. Suppose now the government is not exactly Rawlsian but follows the more pragmatic quintile-axiom outlined above. If $u/n \geq 1/5$ and $p/n \geq 1/5$, then it would behave like a Rawlsian. Up to $\hat{t}$, it would equate this society's welfare with the welfare of the unproductive people and, beyond $\hat{t}$, it would equate society's welfare with the welfare of the productive people (who are now poorer).

Let us, for now, assume $u/n, p/n \geq 1/5$ and also assume that

$$t^* = \arg\max \overline{y}(t) < \hat{t} \tag{8}$$

Consider now a government that is committed to the quintile axiom trying to decide what tax rate it should choose. Clearly this government's problem is as follows.

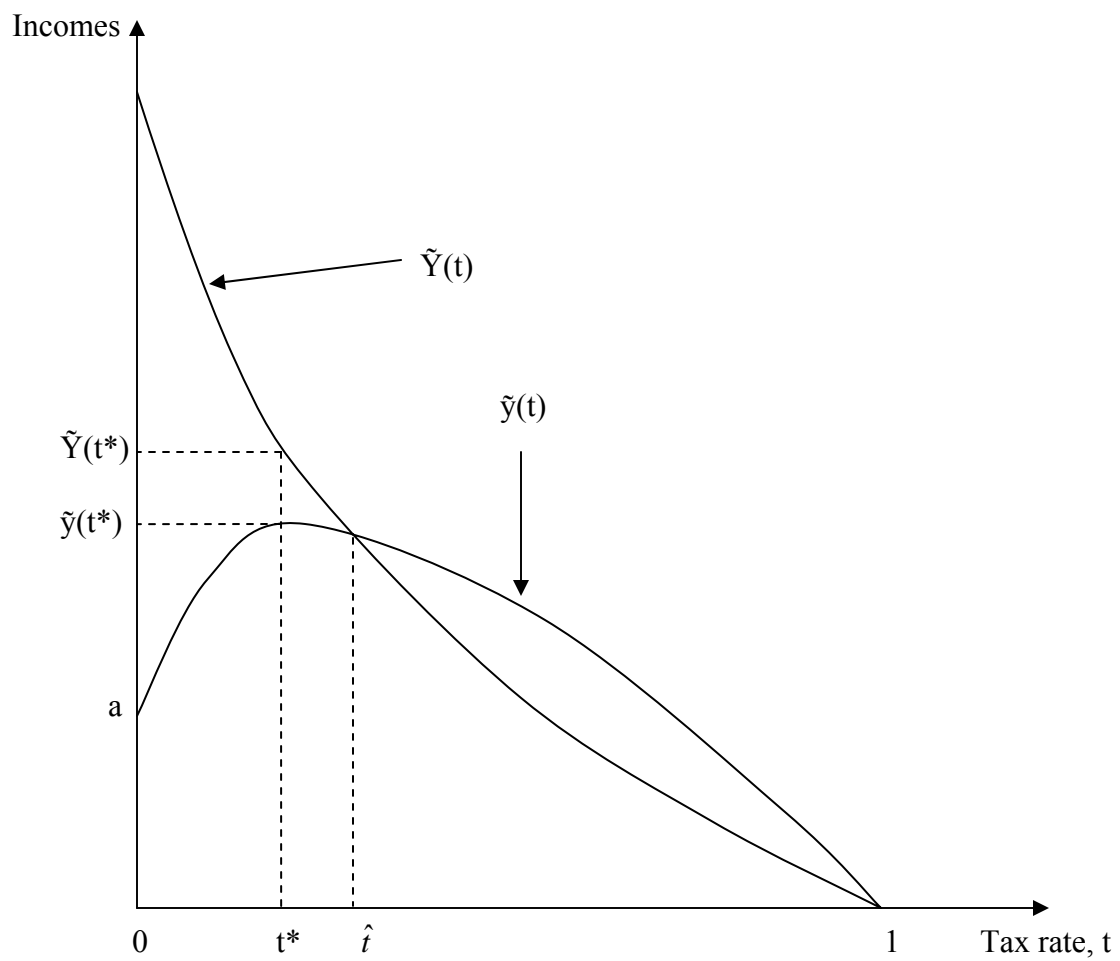$$\underset{t}{Max} \ \min\{\overline{y}(t), \overline{Y}(t)\}$$

Given assumption (8), we know that the solution to this will coincide with $\arg\max \overline{y}(t)$. From the first-order condition of maximizing $\overline{y}(t)$ as described in (7) we get

$$t^* = \frac{1}{2} - \frac{au}{2Ap} \tag{9}$$

It is easy to see

$$\hat{t} = \frac{u(A-a)}{A(u+p)}.$$

Figure 1

It is already evident that being concerned about poverty necessitates tolerating a certain amount of inequality. But to see this more clearly, let us focus on a special case. Assume $a = 1$, $A = 4$ and $u/p = 2$.

This implies:

$$t^* = 1/4 \quad \text{and} \quad \hat{t} = 1/2$$

$$\overline{Y}(t^*) = 9/4 \quad \text{and} \quad \overline{y}(t^*) = 9/8.$$

That is, a government totally focused on the poor would choose a tax rate of 25%. This would mean that some people would be twice as rich as some other people. This is an inequality that has to be tolerated in order to help the poor. This is the 'poverty-minimizing level of inequality'.

If, instead, government was committed to eradicating inequality, it would set the tax rate at 50%. In that case incomes would be

$$\overline{Y}(\hat{t}) = \overline{y}(\hat{t}) = 1$$

In other words the poorest people would find their incomes reduced, if total equality was to be achieved.

To complete the discussion let us see how a government committed to maximizing per capita income would behave. Such a government's aim would be to:

$$\underset{t}{Max} \ \frac{\overline{Y}(t)p + y(t)u}{p+u}.$$

Taking population to be constant, this reduces to the following problem

$$\underset{t}{Max} \ (1-t)^2 Ap + (1-t)(au + Atp).$$

It is easy to see that as t decreases, per capita income rises. Hence, such a government would set $t = 0$ and the incomes of the productive and unproductive people would be 4 and 1, respectively.

Up to now the entire analysis has been done by assuming that there is no movement of workers possible from one country to another. In other words, the economies were treated as if they were closed. To see how globalization complicates the picture let us now assume that economies are open. Since in this simple model, there is only one good and no capital, the only way to model globalization is to allow labor to be mobile across national boundaries.

I shall consider basically a model of 'real tax competition' (Atkinson, 1999). Workers will want to move to a country where post-tax income is the highest, thereby setting off tax competition between governments.

Let us assume that workers will study the tax (and subsidy) structure of different nations and try to migrate to countries where they have the highest (post-tax subsidy) income. Each government sets its tax rate and can decide whom (among all those who so desire) to allow into the country. Let us also assume that, if all countries have the same tax/subsidy rates, then each person stays in his or her home country.

The problems of domestic policy in the event of globalization of the kind just described can be illustrated in many different ways. Let me here consider the case where each country aims to maximize its quintile income. If the boundaries of nations were exogenously closed, we have seen that each nation would set $t = \frac{1}{4}$. Now, let globalization remove the exogenous hindrance to labor movements.

Note that each country setting $t = \frac{1}{4}$ is no longer an equilibrium. Suppose one country lowers t, clearly all productive people from other nations will want to migrate to this country. If the government now decides that it will (1) allow some of the productive people to come in and (2) not allow any unproductive person to come in, it will clearly be able to increase the income subsidy-per capita that it gives to its poorest people. Given the government's aim to maximize the income of its poorest people, clearly this government will be better off.

From the above analysis it should be evident that there is no $t > 0$ such that if all governments choose that t, we have a Nash equilibrium. It is easy to see that in equilibrium every country will set $t = 0$. Real tax competition will result in an erosion of taxation and in equilibrium we will have all productive people earning $A\ (\ =4\ )$ and all unproductive people earning $a\ (\ =1\ )$. Each country ends up behaving *as if* it were interested in maximizing per capita income with no concern for poverty or equity. Globalization erodes each national government's power to have equity-conscious policy. The mobility of labor and, in a more realistic model the mobility of capital compromises a nation's policy efficacy.

Since, from the point of view of governments the equilibrium outcome is sub-optimal (all governments prefer $t = \frac{1}{4}$ to $t = 0$), there is evidently need for the

international coordination of anti-poverty policies. I agree with Atkinson (1999) that re-distributive policies by individual governments are possible; and one must not turn a blind eye to this. But, at the same time, as globalization progresses, there is increasing need for the coordination of policies across nations. When we see the enormous poverty in Ethiopia we tend to blame it on its government.

While most governments have room to improve their performance and the Ethiopian government may have more than its share to do, it would be wrong to overlook that how much control Ethiopia has over Ethiopian poverty depends in part on what happens in Kenya, Tanzania, India, China and the U.S.

6. The Policy Options

From the theoretical construction in the last section to move to real-world policy is not an easy task. Countries are at different levels of development and policy instruments available to a government are more varied than choosing tax rates and immigration rules. How can countries coordinate policies in such a world? Do we need a central coordinating organization, like we have ILO for labor policies and WTO for trade policies, for crafting and coordinating anti-poverty and greater-equity policies? These are matters about which we can only speculate, marshalling the insights gained from abstract theoretical models and wisdom from empirical studies and combining them with commonsense, intuition and guess work.

Much has been written about the nature of pro-poor growth in developing countries (see, for instance, Klasen, 2004) and also about the specific problem of pro-poor growth in the context of globalization.[14] Instead of going over the same ground, I want to concentrate here on two policy suggestions which seem to have few antecedents in the literature.

6.1 Equity for Workers

I had briefly suggested in Basu (2004b) that one way to counter the problem of some workers losing out because of globalization, whether they be workers in developed

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[14] Many of the references already cited in this paper deal with this subject.

countries losing work to outsourcing or laborers in poor countries losing jobs to low-cost high tech imports, is to give workers claims to a fraction of corporate equity income[15]. I do not mean profit sharing in the firm where the worker works but, more radically, that a fraction of equity earnings from all firms should be given to workers in all firms and even laborers who are currently without work. The full details of this will be complex and will have to be worked out carefully, but the broad idea is that a fraction of equity in firms should be owned by government or some governmental organization on behalf of people in the poorest category, for instance, the bottom quintile. Presumably, workers belong to this category and so will be able to partake in the profits earned by firms.

So, when work is outsourced and some workers lose their jobs, a part of the extra profit generated by the outsourcing should be earned by the workers by virtue of their owning equity. This can be an important policy that guards against excessive marginalization of workers. Moreover, it can help diminish some of the antagonism that exists among workers in developed and poor countries to globalization.

Moreover, if it is true that, over time, the share of labor income will decline (see Basu, 2004c, for discussion), then this scheme will have the advantage of automatically softening some of the impact of this on workers, because a part of what they lose out because of dwindling employment and labor income, they will get back in terms of higher equity income.

Among the difficult questions that an actual plan will have to sort out is that of inter-country transfers. The discussion in the above paragraphs is conducted under the implicit assumption that this policy will be implemented by each country, separately. Maybe that is how we have to start. But in today's globalizing world, especially given the huge amount of inter-regional inequality, there is a moral case for extending this, however minimally, to the world as a whole. This will entail developing rules for some inter-country transfer of equity income. In the absence of this, the above economic policy could have the adverse side-effect of heightening nationalism. But our institutions of global governance are so under-developed that the details of how inter-country transfers

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[15] This is derived from a recognition that what is popularly posed as a conflict between laborers in the developing nations and laborers in industrialized countries should, more accurately, be construed as a problem of global capital versus labor (Basu, 2004b; Chau and Kanbur, 2003).

can be worked out will need some radical innovation in our international organizations. This relates closely to the subject matter of the next sub-section.

6.2 A New International Organization for Coordinating Equitable Development

My second suggestion is to urge the need for a new international organization or a new division of an existing international organization that helps coordinate inter-country anti-poverty policies. As we have seen above, achieving greater global equality and reducing global poverty may require the use of policy interventions that are *coordinated across countries.* Unilateral effort by a country is likely to cause the flight of capital and skilled labor from the country and impoverish those who stay behind. Hence, we may get into a Prisoner's Dilemma type of situation where each country would like to take steps to curb inequality or to help the poorest but not be able to do so.

The theoretical possibility of this happening was illustrated in the last section. This is also a very real problem in today's globalized world. Inequality *within* China, India and several other developing countries is on the rise. As argued above, this is closely connected to globalization and this probably explains why China and India—two of the fastest globalizers—are affected by this problem. Yet there is no institutional arrangement or even infrastructure for countering this. The fact that the income gap between the richest and the poorest people in the world as a whole is way greater than the gap that occurs inside any country is a reflection of the fact that we have no global political institution to address this. No government would be able to tolerate this kind of hiatus within its region of control.

That there may be coordination problems in trade is well-recognized and we have the WTO to help mitigate such problems. That labor market policies need coordination is known and we have the ILO to address this. For environmental problems we have the UNEP or the GEF. But there is nothing comparable to these for anti-poverty and anti-inequality policies. Yet, as demonstrated in the previous sections, this is an area where the coordination problem may be no less acute. Hence, there is clearly a perceived need for a coordinating agency.

This ties up with the objective of giving workers an equity stake discussed in the previous sub-section. In an ideal world these stakes should cut across national barriers.

This will once again create a need for a global coordination agency. The same agency that coordinates anti-poverty programs could also have this as a part of its mandate for the future.

To work out the details of this will not be an easy task. My aim here was to float the idea and place it in the public domain.

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