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INEQUALITY, POVERTY AND DEVELOPMENT:

WITH AN APPLICATION TO FIJI

by

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Abstract

The object of this paper is to look at the relationship between equality, development and growth for a cross section of countries, and for Fiji, in particular. It is argued that there is no clear cross country relationship, despite the orthodox view that inequality promotes saving and hence growth. In the particular case of Fiji, the quantitative magnitude of this linkage is shown to be small. The paper also looks at the possible growth costs of a strategy of poverty eradication for Fiji. Some illustrative calculations are presented, which indicate that if 100 percent targeting were possible, and if poverty eradication were to be financed entirely out of taxation of the top six deciles, the growth rate would be reduced from its 3.2 percent per annum average over the past two decades to 3.09 percent per annum. If imperfect targeting leads to a 50 percent leakage, then poverty eradication would lead to a reduction of the growth rate to 2.97 percent. In the latter scenario, the tradeoff would be immediate poverty eradication versus an income shortfall, for the top six deciles, of under 5 percent at the end of twenty years. It should be emphasized, however, that these calculations are illustrative and preliminary, and do no more than support the need for careful further research.
1. **Introduction**

Each of the three components of this talk--inequality, poverty and development--could be the subject of a separate seminar, or indeed a series of seminars. Then there is the specific application to Fiji--a detailed evaluation of the performance of the economy with respect to these three components would fill an entire volume on its own. In the time and space available to me, however, I am obviously not going to be able to do full justice to the intricacies of each of these separate areas. What I would like to do, therefore, is to paint a broad brush picture, and to put forward some hypotheses for discussion.

The plan of the talk is as follows. I will start with a brief discussion of the definition of inequality, and then present some figures for a dozen or so countries around the world and ask how inequality relates to the level of development. I will then go on to consider the role of inequality in promoting or in hindering development. My discussion will be general in the main, but towards the end I will briefly touch on the specific case of Fiji. The particular question I wish to pose in this context is: what would be the growth consequences of a strategy of poverty eradication in Fiji? I would like to put forward some tentative hypotheses and suggest some areas for detailed research.

2. **Inequality**

Let us start, then, with a definition of inequality. The two questions we should always ask ourselves in this context are: inequality of what and inequality between whom? In answer to the first question,
economists usually say something like income, consumption, or wealth—or more generally, "welfare." In this they differ from anthropologists and sociologists, for example, who would be more interested in the inequality of social status, which may or may not be correlated with economic variables. In answer to the second question, economists may say individuals, families or households, while sociologists would also be interested in the inequality between classes. While recognizing the importance of non-economic variables, in this talk I will stick to economists' notion of inequality.

There is still a lot of further specifying to do, of course. Which of the three—income, consumption, or wealth—do we choose to focus on, and do we consider the inequality between households or between individuals? If we consider households, is it the inequality of per capita income that we are interested in, or of total household income, or some intermediate which takes account of adult equivalent scales?

An excellent discussion of these issues is to be found in Anand (1983). Essentially what we are after is a measure of "welfare" inequality. Consumption of an individual may be thought to be an adequate proxy for welfare, but there is always the problem of variations in tastes. Income (defined as consumption plus net saving) captures the possibilities for saving or dissaving and hence enhancing or reducing future consumption. Wealth may give utility directly, or as a command over current and future resources. Sen (1985) has argued for broader views of the standard of living, incorporating the notion of "capabilities"—what a person is able to do with his or her resources. Sharing of resources within a household is important if the household is taken as the relevant unit.
Kynch and Sen (1983) have documented a systematic bias against females in the distribution of resources within a household. This is quite different matter from the more conventional issue of adult equivalent scales—the quantification of needs of different members of the household (see Deaton and Muellbauer, 1980). This quantification is valuable only in so far as needs are actually fulfilled or taken into account by the household in distributing its own resources.

Despite these major conceptual problems, and although we should always be aware of their importance, it is data availability which often determines the answers to inequality of what and inequality between whom. As will become clear in the next section, I will look at the inequality of total household income—because the World Development Report of the World Bank produces comparable figures for a sufficient number of countries for this purpose.

Having decided on the definition of income, and of the income receiving unit, we now face the problem of condensing the information available in the entire income distribution into a single index of inequality. There is of course a huge literature on this topic, and it is not my intention to survey that here (this is done in Kanbur, 1984). But suppose that the \( i \)th income receiving unit's income is denoted by \( y \), that there are \( n \) units, and that we arrange these in ascending order as follows:

\[
y_1 < y_2 < \cdots < y_n
\]

Most commonly used indices of inequality can be written as some function of this ranking. A common procedure, for example, is to divide the population into decile groups and look at the share in total income of
the bottom 10 percent, the next 10 percent, and so on. One measure that has become popular in the literature is a measure of equality: the income share of the bottom four deciles, the share of the bottom 40 percent. There is of course no particular justification for this cutoff—it must be arbitrary. But it does seem to reflect concern with the bottom of the distribution, and it is used by international agencies. Thus while there are many other measures one could use, many of which may be better in particular dimensions, I will stick to the income share of the bottom 40 percent of households. Let us turn to some data and see what this income share is for different countries.

3. Inequality, the Level of Development and the Rate of Development

We wish to discuss, in a general way, whether inequality hinders or helps development. But for this we need a definition of development. This is a vexed question, and many authors have argued for an eclectic approach, including many non-economic factors (see Adelman and Morris, 1974). Again, while in sympathy with these arguments I will not have time to take them on board. I will use as the indicator of development that old favourite—per capita GNP. And for the rate of development I shall simply use the rate of growth of per capita GNP.

Table 1 below gives, for a dozen countries, the figures for the income share of the lowest 40 percent, per capita GNP in U.S. dollars for 1982, and the average annual growth rate between 1960 and 1982. The choice of countries is somewhat arbitrary. I have included some countries with which Fiji is sometimes compared but the main object is
### Table 1. Equality of Development in Selected Countries

<table>
<thead>
<tr>
<th>Country</th>
<th>Per Capita GNP (1982 U.S. dollars)</th>
<th>Share of Lowest 40 Percent (In percent; survey year in parenthesis)</th>
<th>Average Annual Growth Rate 1960-1982 (In percent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>India</td>
<td>260</td>
<td>16.2 (1975/76)</td>
<td>1.3</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>320</td>
<td>19.2 (1969/70)</td>
<td>2.6</td>
</tr>
<tr>
<td>Indonesia</td>
<td>580</td>
<td>14.4 (1976)</td>
<td>4.2</td>
</tr>
<tr>
<td>Philippines</td>
<td>820</td>
<td>14.2 (1970/71)</td>
<td>2.8</td>
</tr>
<tr>
<td>Malaysia</td>
<td>1,860</td>
<td>11.2 (1973)</td>
<td>4.3</td>
</tr>
<tr>
<td>South Korea</td>
<td>1,910</td>
<td>16.9 (1976)</td>
<td>6.6</td>
</tr>
<tr>
<td>Hong Kong</td>
<td>5,340</td>
<td>16.2 (1980)</td>
<td>7.0</td>
</tr>
<tr>
<td>Trinidad</td>
<td>6,840</td>
<td>13.3 (1975/76)</td>
<td>3.1</td>
</tr>
<tr>
<td>Japan</td>
<td>10,080</td>
<td>21.9 (1979)</td>
<td>6.1</td>
</tr>
<tr>
<td>Australia</td>
<td>11,140</td>
<td>15.4 (1975/76)</td>
<td>2.4</td>
</tr>
<tr>
<td>Canada</td>
<td>11,320</td>
<td>14.5 (1977)</td>
<td>3.1</td>
</tr>
<tr>
<td>United States</td>
<td>13,160</td>
<td>13.5 (1978)</td>
<td>2.2</td>
</tr>
</tbody>
</table>


Note: The income share figures refer to the distribution of total disposable household income accruing to households ranked by total household income.
to provide a reasonable range of experience while keeping the number of countries down to a manageable level.

So what does the table tell us about the relationship between equality and the level of development? The answer is that there seems to be no clear relationship at all. Japan has the highest equality but is among the higher income countries. The United States and Trinidad have about the same level of equality but the U.S. has almost twice the level of per capita GNP. Malaysia and South Korea are almost identical in terms of per capita income but the level of equality is more than 50 percent greater than in Malaysia. One could go on. For those more quantitatively minded, the "eyeballing" method can be confirmed by calculating, for example, Spearman's rank correlation coefficient between the first two columns of Table 1—it turns out to be insignificantly different from zero.

Now, of course, it could be argued that there is a relationship between equality and development but that the relationship is more complex than can be revealed by simple correlation. Kuznets (1955), for example, hypothesized that there could be an "inverse-U" relationship between inequality and development, with inequality first increasing and then decreasing as development proceeds. There is also the point that Table 1 only looks at 12 countries, while the situation may be changed if more countries are included. The existence or otherwise of an "inverse-U" is controversial, and I will only refer you to the work of Ahluwalia (1976) which supports it, and the work of Anand and Kanbur (1984) which does not. Needless to say, I am more convinced by the latter paper, but I will not go into the details here.
What about the relationship between equality and growth? Here again, simple inspection reveals that there is no clear relationship. Japan, Hong Kong, and Korea, the three fastest growing countries, have a high level of equality, but Sri Lanka, which has the second highest level of equality out of the twelve, has a low growth rate. Indonesia and the Philippines have roughly the same level of equality but the growth rate of the former is 50 percent above that of the latter. Hong Kong and India have the same level of equality but Hong Kong's growth rate is more than five times that of India's. It should be clear that there will be no statistical association between growth rates and equality. In fact the rank correlation coefficient turns out to be insignificantly different from zero.

The burning question of course is where does Fiji fit into this table? Well, the World Development Report reveals that Fiji's per capita GNP in 1982 was $1,950 and that the average annual growth rate between 1960 and 1982 was 3.2 percent per annum. The report does not present any figures for income shares of the bottom 40 percent. However, we can get some idea of the estimate based on the work of Stavenuiter (1983), who derives a distribution of households ranked by total income from the 1977 Household Income and Expenditure Survey. In Table 2.4 (page 24), the income share of the bottom 40 percent is shown to be 12.4 percent. However, the income concept here is that of gross household income ("household income before income tax and employees' social security payments, including subsistence consumption and subsistence gifts received (valued at prices prevailing in the nearest market) as well as the imputed rental value of owner-occupied and rent free
housing"). No estimate of this share for the post tax income distribution is given, Stavenuiter (1983, p. 18) does indicate that the Gini coefficient for unadjusted income is 0.424 and 0.421 post tax. Although not strictly legitimate, if we apply this scaling to the share of the bottom 40 percent we would get an estimate of around 14 percent. Fiji thus would rank in the middle of the dozen countries in Table 1. It should be noted that the addition of Fiji to the table would not alter the basic conclusion that there seems to be no clear relationship between equality and development across countries.

4. **Savings, Equality and Growth**

On the face of it, the lack of relationship between equality and growth is a puzzle since orthodox theory suggests that there should indeed be a clear relationship. Since as a rule the rich save a higher proportion of their incomes than the poor, a greater degree of inequality would raise the overall savings ratio and hence promote growth. But how important is this factor in quantitative terms?

In appears that in Fiji, by and large it is the top six deciles which save. The bottom four deciles dissave—consumption was almost twice as much as income in the bottom decile (Stavenuiter, 1983, Table 2.9 on p. 34). To get some idea of the orders of magnitude involved, suppose the income share of the top six deciles was reduced from 85 percent to 80 percent, which would put Fiji in the top brackets of the equality league. Thus the incomes of the top six deciles, the saving classes, would be reduced by one seventeenth and, to a first approximation, the savings ratio would decline in the same proportion. The proportional impact of the growth rate would be to reduce it from 3.2
percent per annum to 3.0 percent per annum. It should be realized of course that this is an overestimate of the decline since (i) private saving is only one component of total saving, (ii) we have to consider uses of the income removed from the top six declines; if it were given to the bottom four deciles, for example, it would reduce their dissaving, and (iii) we have assumed that the lower savings ratio translates itself into a lower growth rate in the same proportion. However, even the reduction from 3.2 percent to 3.0 percent is small relative to the range of growth rates in Table 1—it can hardly explain the difference between Hong Kong and India, for example, or even between Sri Lanka and India.

Thus whatever the theoretical case for a positive relationship between inequality and growth via the savings link, the quantitative magnitudes are likely to be small. Of course the exercise here has been purely illustrative, but it is suggestive, and argues for more detailed research for Fiji (Cline, 1972, presents an analysis for Latin American countries). We now move to a discussion of the growth consequences of a poverty eradication strategy for Fiji.

5. **Poverty Redressal in Fiji**

The question of what constitutes poverty is of course a very deep one. The distinction between relative and absolute concepts of poverty is well debated (see Sen, 1983, for a recent interesting contribution). Even nutritionally based poverty lines are open to objections if the body can adjust to different levels of nutrition. Moreover, it can be argued that poverty is a spectrum, not adequately captured by a single line which divides the poor from the non-poor.
Quite separate from the question of defining the poverty line is the question of defining a poverty index given the poverty line and the distribution of income. Again, this is a huge literature to which I cannot do justice here (see Kanbur, 1984), but we can usefully delineate the task of an index as combining the answers to two questions: (a) how many of the poor are there and (b) how poor are the poor? The answer to the first question gives us the famous "head count ratio"—the fraction of the population below the poverty line. Thus if the poverty line is $z$ and we have the configuration

$$y_1 < y_2 < \ldots < y_h < z < y_{h+1} < \ldots < y_n$$

the head count ratio, or the incidence of poverty as it is sometimes known, would be $h/n$. It was the problems with the use of incidence as a poverty measure, a use which is still common today, which led Sen (1976) to propose his new measure of poverty, which does indeed take into account how poor the poor are.

A simple measure of how poor the poor are is the gap between the mean income of the poor and the poverty line. But this does not take into account inequality of income among the poor. An "equally distributed equivalent" level of income for the poor can be calculated if the social welfare function is specified—this is the "representative" income level of the poor conditional on the degree of inequality aversion (see Atkinson, 1970). The difference between this income and the poverty line is thus the poverty gap. If the social welfare function is of the "rank order weights" variety, a product of the head count ratio and the poverty gap as a proportion of the poverty line gives us the Sen (1976) index of poverty (see Anand, 1983). An alternative
approach is to specify the representative gap as some function of all the gaps, rather than as the difference between the representative income and the poverty line. Foster et al (1984) take this approach, and produce an index which is decomposable between population subgroups, a convenient property which is used in Kanbur (1985), for example.

While taking into account the inequality of income among the poor is important for deriving an index of poverty, what is important for calculating the cost of eradicating poverty is simply a sum of the income gaps of all the poor:

\[ C = \sum_{i=1}^{h} (z-y_i) = n[h/n][z-\bar{y}_p] \]

where \( \bar{y}_p \) is the mean income of the poor. Thus the cost of eradicating poverty is given by incidence multiplied by the mean poverty gap, multiplied by the total population.

For Fiji, Stavenhuijer (1983) takes the annual poverty line nationally to be 1480 Fijian dollars (F$) in 1977 prices. There is some debate on this figure, of course, particularly around the question of aggregation across household sizes, across regions, and across racial groups. Stavenhuijer gives a detailed discussion of the problems, but we will take his figures for purposes of illustration. This poverty line compares with a national household mean income of F$5398, and leads to 17,300 households, 15 percent of the total, being in poverty. The mean income of the poor is F$814, so that the mean poverty gap is F$666. It follows, therefore, that the budgetary cost of completely eradicating poverty in Fiji, in 1977 prices, is F$11,521,800. An annual injection of around 12 million Fijian dollars in 1977 prices
would therefore have been sufficient to eradicate poverty if there were no leakages and the money went to the poor. The question of leakages will be taken up presently.

How large is the sum of F$12 million? One way of answering this question is to suppose that it was raised entirely by taxing the saving classes—the households in the top six deciles. Since these classes get 87.7 percent of all household income, the amount required for poverty eradication can easily be seen to be of the order of

\[
\frac{(666 \times 15)}{(5398 \times 0.877 \times 60)} = 0.035
\]

In other words, a removal of 3.5 percent of the incomes of the top 60 percent would raise enough revenue to eradicate poverty. To a first order of approximation the growth rate would fall from a baseline of 3.2 percent per annum (the performance over 1960-1982), to 3.09 percent per annum. This is the tradeoff that we are faced with and, as argued in the previous section, this is likely to be an overestimate of the growth costs of poverty eradication.

To give a further illustration of the orders of magnitude involved, suppose that growth occurs at 3.2 percent per annum, the realized rate over the past twenty years. At the end of a five year plan period, starting from 1977, the average income of the poor would increase to F$953, leaving an average gap of F$527. Over a ten year period the average gap would be reduced to F$365. In fact it would take almost four five-year plan periods (nineteen years to be precise) for growth at 3.2 percent per annum to "trickle down" to eradicate poverty. Yet the growth costs of immediate eradication are a reduction of the growth
rate from 3.2 percent to 3.09 percent per annum; comparing the incomes of the top six deciles under the two growth scenarios, immediate poverty eradication would leave them with an income lower by 0.05 percent at the end of five years, by 1 percent at the end of ten years, by 1.6 percent at the end of fifteen years, and 2.2 percent at the end of twenty years. Another way of stating the trade off, under these growth assumptions, is that choice is between eradicating poverty now, at the cost of a 2.2 percent shortfall in the incomes of the top six deciles at the turn of the century, or to wait till the turn of the century for trickle down to eradicate poverty.

It has already been argued that the growth costs of poverty eradication are an overestimate because of non-private sources of saving, the reduction of dissaving by poor households, and because of the assumption that a shortfall in saving translates itself proportionately into a shortfall in the growth rate. But there is an important sense in which the total budgetary costs of poverty eradication, as calculated here, are a severe underestimate. It has been assumed that the transfer of resources from rich to poor takes place without any leakages. In other words, the money goes directly to the poor: there is one hundred percent targeting. This opens up the question of the operational design of income transfer and income support programs. Apart from the administrative costs of these programs, it is extremely difficult to "fine tune" programs so as to target transfers efficiently to the poor, and extreme fine tuning may itself be prohibitively expensive from the administrative point of view.
In the absence of direct methods of identifying the poor, a number of indirect methods are necessary. Examples are giving price support to growers of particular crops (small scale sugarcane growers in the case of Fiji), increasing unemployment benefit and other income support provisions, increasing tax allowances for children, etc. Each of these will involve "leakages" of benefits to those above the poverty line. The next stage of the analysis is to estimate budgetary costs of poverty eradication in such a setting, and to analyse what the "budgetary stance" should be towards different target groups in the population.

A theoretical start is made in Kanbur (1985). Empirical implementation is an extremely important area for further research, but as an illustration, suppose the leakages were such that twice the perfect targeting budget would be required. The growth rate would then decline from 3.2 percent per annum to 2.97 per annum. Then, repeating the previous exercise, the income shortfalls of the top six deciles at five year intervals would be 1.1 percent, 2.3 percent, 3.4 percent, and 4.6 percent. The cost of poverty eradication now would therefore be a maximum shortfall of the top six deciles of under 5 percent, over a twenty year period.

6. Conclusion

The object of this paper has been twofold. First, to look at cross country relationships between equality, the level of per capita GNP, and the rate of growth. The exercise has been illustrative, but enough has been said to warn us not to expect any simple relationship. Theory would seem to predict a positive relationship between inequality and growth via the savings link. But the quantitative impact of this may
not be large, and there may be other factors, related to the use of savings, which may break the link. An illustrative exercise is provided for Fiji which suggests a small quantitative impact, but the analysis needs to be done in much greater detail, and extended to other countries.

The problem of poverty is related to but quite separate from that of inequality. The link is that in a society with relatively low poverty but relatively high inequality, the growth costs of poverty eradication may be relatively modest, since the aggregate poverty gap is a small fraction of the income accruing to the saving classes. Fiji appears to be such a society. Some illustrative calculations have been provided. But it must be stressed that more detailed analysis is required to confirm these results, perhaps using the latest household income and expenditure survey. It must also be stressed that the results need not carry over to other countries. Each country's income distribution has special characteristics which may or may not lead to high growth costs of poverty eradication. In a country like India, for example, with high poverty but relatively low inequality, the savings and hence growth costs may be quite high. Much more work is needed along the lines suggested in this paper.
References


