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**14**

**The Nexus of Economic Growth, Employment and  
Poverty Reduction: An Empirical Analysis**

**By**

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As sustainable employment is one of the best routes out of poverty, assistance in designing and implementing strategies and programmes for job creation can contribute to the objective of poverty alleviation in situations of low income and high unemployment and underemployment.

The challenge of poverty reduction is made tougher by crises of some form or the other (e.g., those resulting from economic turmoil, armed conflicts or natural calamities) which tend to aggravate the poverty situation. Special attention, therefore, needs to be devoted to countries emerging from crises of various types.

**The Recovery and Reconstruction Department (EMP/RECON)** of the International Labour Office has the dual function of (i) responding to the reconstruction and rehabilitation needs in various post-crisis situations, and (ii) contributing to an employment-focussed development agenda by providing direct assistance in the creation of poverty-reducing jobs. The first function is undertaken through the InFocus Programme on Crisis Response and Reconstruction which assists in formulating and implementing employment-focussed reconstruction programmes. The second function is undertaken by the Employment Intensive Investment Branch of the Department which demonstrates how employment-intensive investment in infrastructure can contribute to the objective of job creation for poverty reduction.

The work of the Department also includes analytical and policy-oriented research on employment and poverty reduction.

The main results of work in progress will be published in the Issues in Employment and Poverty Discussion Paper series. These papers disseminate the analysis and empirical information generated by ILO staff, at the Headquarters or in the field, and consultants working on development issues and are circulated in order to stimulate discussion and to elicit comments.

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## Preface

The experience of countries that succeeded in reducing poverty significantly indicates the importance of high rates of economic growth in achieving this. High growth, however, is not a sufficient condition for poverty reduction; the pattern and sources of growth as well as the manner in which its benefits are distributed are equally important from the point of view of achieving the goal of poverty reduction. And employment plays a key role in that context. Indeed, countries which attained high rates of employment growth alongside high rates of economic growth are also the ones who succeeded in reducing poverty significantly.

In view of the importance of employment as a route out of poverty, the ILO and SIDA agreed to collaborate in undertaking a series of studies to examine the linkage between economic growth, employment and poverty reduction. The country level studies covered Bangladesh, Bolivia, Ethiopia, India, Indonesia, Uganda and Vietnam. The main purpose of these studies was to contribute to an understanding of the linkage mentioned above, and to the identification of policies that could be used to engender higher rates of economic growth and employment generation, and thus achieve a faster reduction in poverty.

The present paper makes an attempt to conceptualise pro-poor growth in terms of the employment outcome of growth and employment serving as the link between economic growth and poverty reduction. It then undertakes an empirical analysis of the nexus of growth, employment and poverty reduction, which is based on cross-country data as well as a synthesis of the in-depth country studies mentioned above.

The key to the analytical framework presented in the paper is a virtuous circle of economic growth leading to poverty reduction via growth of employment with rising productivity, and reduced poverty creating the possibility of further increases in productivity and higher rates of economic growth. Growth of employment with rising productivity is seen to take place through a shift in the structure of employment towards occupations/sectors with higher levels of productivity, and improved productivity within sectors and occupations.

Using cross-country data, the paper empirically demonstrates the link between poverty reduction and employment intensity of growth. Cross-country analysis is also employed to examine the impact of employment and labour market related variables on poverty reduction. Developments that are found to make a positive contribution to poverty reduction include structural transformation of employment towards manufacturing and other non-farm sectors, education, and lowering of the dependency burden (i.e., increase in labour force participation).

Based on the experience of growth and poverty reduction in selected countries (viz., Bangladesh, Bolivia, Ethiopia, India, Indonesia, Uganda, and Vietnam), the paper demonstrates that there is no invariant relationship between growth and poverty reduction. Similar growth rates can be associated with different outcomes on poverty reduction. Patterns of growth, especially in terms of developments in employment and labour markets that take place as a result of growth, play an important role in producing such varying results regarding poverty reduction.

For example, Indonesia's experience in the 1970s and the 1980s can be considered to be a case of 'good growth' leading to high rates of employment growth and poverty reduction.

The experiences of Uganda and Vietnam during the 1990s are other examples of high rates of economic growth resulting in impressive achievements on poverty reduction. On the other hand, in Ethiopia moderate economic growth during the 1990s did not have any significant impact on poverty; output growth was not accompanied by expansion in employment. Bolivia's economic growth during the 1990s was also not pro-poor in character; growth did not take place in sectors where the poor are concentrated.

The experiences of countries mentioned above bring out a few interesting points regarding the ingredients of pro-poor growth. The first concerns the role of agriculture. While a structural shift of employment away from agriculture (towards higher productivity sectors) is important for poverty reduction, given the concentration of the poor in agriculture, what happens within this sector is also important. Policies in support of the growth of smallholder agriculture, product diversification, and of raising the productivity and real wages of agricultural labourers are important for achieving pro-poor growth. In addition, it is also important to have a structural shift towards higher productivity non-farm sectors through rapid growth of labour intensive manufacturing and other sectors. From the supply side, education and skills can have a significant influence on poverty. Investment in human capital plays a major role in boosting economic growth that could benefit the poor.

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Earlier versions of this paper were presented at seminars organized by SIDA and the International Fund for Agricultural Development (IFAD) respectively at Stockholm and Rome. Comments received from the participants of those seminars helped in revising the paper. Likewise, helpful comments were received from Rashid Amjad, A.R. Khan, and M. Muqtada. Nina Torm provided good computational assistance. While I thank all of them, I alone remain responsible for the views expressed in this paper and deficiencies that may have remained in it.

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## 1. Introduction

If one were to cite one problem, which poses a challenge for world leaders, development practitioners (at the global as well as national levels), and policy makers alike, it is the stubborn persistence of poverty in many parts of the world. It is only in countries of East and South East Asia (ESEA) that real success in poverty reduction has been achieved, although that achievement also looked rather fragile during the economic crisis of the late 1990s. Progress in poverty reduction outside that region has been rather disappointing. This has been especially so in the low-income countries of sub-Saharan Africa and South Asia. While two-thirds of the world's poor live in Asia, South Asia is home for most of them.

Although some projections (e.g., those by the World Bank, 2003) indicate that the Millennium Development Goal of reducing poverty by half by 2015 (from the benchmark level of 1990) would be attained at the global level, doubts remain about certain regions (e.g., sub-Saharan Africa) and certain countries. In sub-Saharan Africa, for example, the percentage of people living on less than US\$1 per day increased from 47.4 per cent in 1990 to 49.0 per cent in 1999, and is projected to decline only to 46 per cent by 2015. And if China is excluded, the percentage of people below poverty for the rest of the world is projected to decline from 28.5 per cent in 1990 to 15.7 per cent by 2015 – thus remaining over half of the 1990 level (World Bank, 2003).

The experience of countries, which succeeded in reducing poverty significantly, indicates the importance of sustained high growth in achieving this result. However, studies on poverty are replete with an equally important finding that high growth alone is not adequate; the pattern and sources of growth as well as the manner in which its benefits are distributed are extremely important from the point of view of achieving the goal of poverty reduction. And in that regard, the importance of employment as the key link between growth and poverty alleviation is often pointed out. While this proposition has strong intuitive appeal, there is some scattered empirical support for it too. For example, a comparison between the experience of pre-crisis East and South East Asia on the one hand and South Asia on the other clearly shows much higher employment elasticity of economic growth in the former where the record of poverty reduction was also much more impressive (Islam 2001). This kind of evidence, however, needs to be compiled and analysed more systematically in order to make a case for an employment-intensive growth strategy. In other words, the nexus between economic growth, employment and poverty alleviation needs to be fully articulated and empirically substantiated. While this would involve some analytical work, a good deal of empirical work is required to monitor the labour market outcomes from the perspective of raising the incomes of poor households, and to identify policies, programmes and interventions that could have a positive, poverty alleviating impact on such outcomes.

The kind of work mentioned above is especially important because a large number of developing countries are currently engaged in formulating poverty reduction strategies; and yet policies for using employment as a route out of poverty are not often integrated into such strategies. Likewise, the Millennium Development Goals relating to poverty reduction do not explicitly mention employment as a means for achieving them. But given the challenge ahead, it will be necessary to mobilize and effectively employ all possible mechanisms for achieving those goals. And employment could be critical in that respect.

It is against the above background that the present paper undertakes an empirical analysis – based on cross-country data – of the nexus of economic growth, employment and

poverty reduction. And the purpose behind this is to argue that for economic growth to be pro-poor, it has to be accompanied by employment growth with rising productivity. The paper starts (in section 2) by providing a brief overview of the literature on growth-poverty linkage, and pointing out a gap therein – in terms of the role of employment in that linkage. Section 3 presents an analytical framework for examining the linkage between economic growth, employment and poverty reduction.<sup>1</sup> Section 4 provides an empirical analysis of the linkage between poverty and employment related variables. Section 5 presents some empirical evidence to argue that there is no invariant relationship between growth and poverty reduction, and that developments in employment and labour market are critical variables influencing the poverty reducing outcome of growth. The major ingredients of pro-poor growth are recapitulated in Section 6.

## **2. Linkage between Economic Growth, and Poverty Reduction: A Gap in the Literature**

Analysis of the relationship between economic growth and poverty reduction has gone through various phases in the literature on development. For example, an important premise of the very early theories of development was that the benefits of economic growth would trickle down to the poor. Since then, questions have been raised on the assumption of an automatic link between growth and poverty reduction, and attempts have been made to understand the mechanisms through which the benefits of growth may get transmitted to the poor. Some of the latter categories of studies do also refer to the role of employment; and yet, a rigorous analysis of the role of employment in the linkage between economic growth and poverty reduction appears to be missing.

Following on the Kuznets (1955) hypothesis of an inverted U shape of the relationship between economic growth and income inequality, Adelman and Morris (1973) was one of the earlier studies to question the automaticity of the relationship between economic growth and benefits to the poor. And then came the influential contribution by Chenery, et al. (1974), focusing on the importance of redistribution alongside economic growth.

Economic growth, however, came back to fashion once there were studies casting doubt on the suggestion that higher growth could be associated with increased poverty, and re-asserting that growth, almost always, reduced poverty.<sup>2</sup> The decade of the 1980s witnessed renewed emphasis (especially on the part of the international development partners) on economic growth; but studies on growth contributing to poverty reduction again came in good numbers during recent years.<sup>3</sup>

While growth continued to occupy the centre stage in development literature, there have been studies, especially in recent years, arguing that although growth is necessary for poverty reduction, it is not sufficient.<sup>4</sup> Some studies point out that the pattern of growth is important from the point of view of its effectiveness in reducing poverty (World Bank, 1990; Lipton and Ravallion, 1995; Squire, 1993; McKay, 1997; DFID, 1997; Goudie and Ladd,

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<sup>1</sup> A somewhat different and more detailed analytical framework is provided by Osmani (2002). Khan (2001) is another rich empirical-analytical exercise on employment policies for poverty reduction.

<sup>2</sup> In that regard, mention may be made of Ahluwalia, et al. (1979) and Fields (1980).

<sup>3</sup> A widely quoted recent study is Dollar and Kray (2001). See, also, Demery and Squire (1995), and Ravallion (1993).

<sup>4</sup> See, for example, Dagdeviren, et al. (2002), Goudie and Ladd (1999), McKay (1997) etc. Ravallion (2001) reminds one of the importance of country-specific research on factors determining “why some poor people are able to take up the opportunities afforded by an expanding economy - ... while others are not”.



1999). And while talking about the pattern of growth that could be more effective in reducing poverty, some studies mention explicitly the importance of labour-intensive growth – World Bank (1990), Squire (1993), McKay (1997), and DFID (1997), ILO (2003) for example.<sup>5</sup> However, none of these studies explicitly examine the employment nexus in the linkage between economic growth and poverty.<sup>6</sup> Squire (1993), for example, recognizes that “economic growth that fosters the productive use of labour, the main asset owned by the poor, can generate rapid reductions in poverty” (p. 381); and yet, his empirical analysis does not include this aspect.

Thus, a gap in the literature on the linkage between economic growth and poverty reduction is the absence of an analysis of the role of employment in the working of this link. Such analysis becomes particularly important in the current context where the rate of poverty reduction needs to be accelerated, and all possible means need to be found to make economic growth more pro-poor. The primary motivation behind the present paper is to make a contribution towards filling the gap in the literature mentioned above. And in doing so, the paper also makes an attempt to identify possible elements of pro-poor economic growth in terms of output growth coupled with growth of employment and rising productivity.<sup>7</sup>

### **3. Linkage between Output Growth, Employment and Poverty: In Quest of Elements for Pro-Poor Growth**

Conceptually, the linkage between output growth, employment and poverty can be analysed at both macro and micro levels. At the macro level, the linkage between poverty in its income dimension and output growth can be conceptualized in terms of the average productivity of the employed work force which in turn gets reflected in low levels of real wages and low levels of earnings in self-employment. At the micro level of a household, the same linkage between poverty and employment operates through the type and low productivity of economic activities in which the earning members of a household are engaged, the low level of human capital of the members of the workforce, the dependency burden that limits participation in the workforce, and the mere availability of remunerative employment.

A low average productivity of the work force can be due to the deficiency of capital relative to labour and the use of backward technology. When high rates of economic growth lead to sustained increase in productive capacity, employment opportunities with rising productivity are generated. This in turn allows for a progressive absorption and integration of the unemployed and the underemployed into expanding economic activities with higher levels of productivity. In the process, the poor may be able to achieve higher productivity and increase their incomes in their existing occupations, or shift to new occupations involving higher level skills and/or better technology. The results of the process described above could be reflected in: (i) improved productivity of various sectors and occupations, (ii) a shift in the structure of employment towards occupations with higher levels of productivity, and (iii) increases in real wages, earnings from self-employment, and earnings from wage employment.

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<sup>5</sup> It may be noted that while World Bank (1990) points out the importance of labour-intensive growth in reducing poverty, World Bank (2000) does not put the same emphasis on labour incomes as its earlier counterpart.

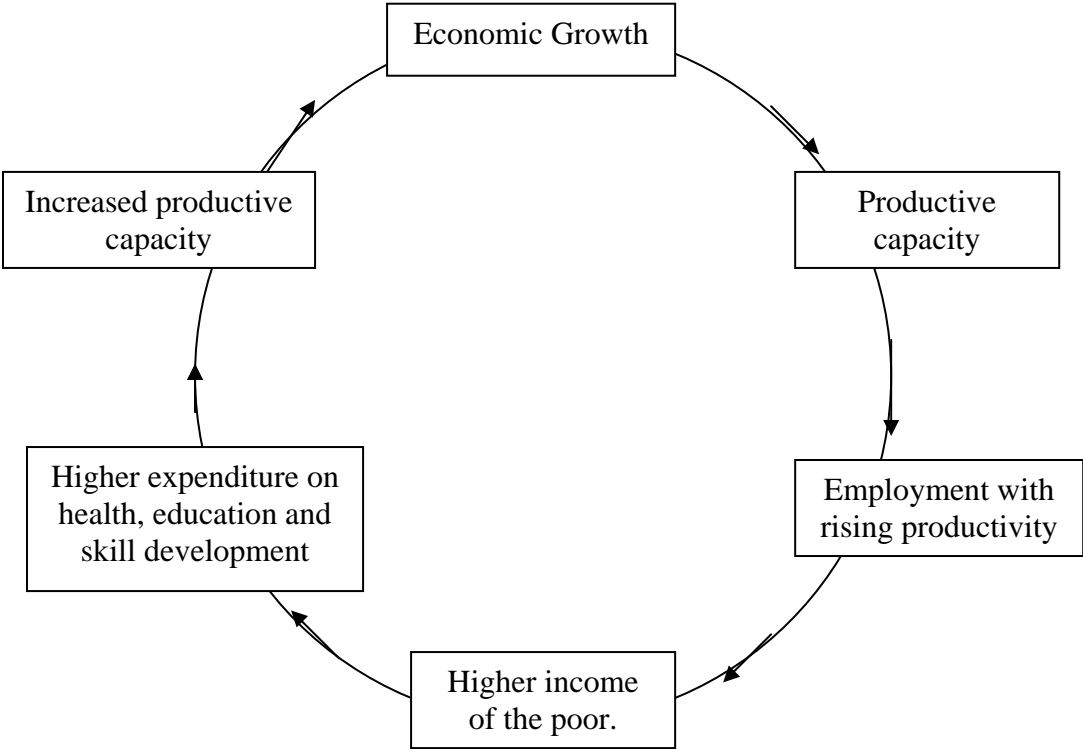
<sup>6</sup> ILO (2003) argues the case for ‘decent work’ as the foundation for poverty reduction, and within that framework, points out the importance of employment.

<sup>7</sup> Although the term “pro-poor growth” is used frequently in the current discourse on development, there have been few attempts to define it. One exception is White and Anderson (2001).

Higher levels of earnings resulting from the process mentioned above would enable workers to spend more on education and skill formation of their children, thus raising the productive capacity of the future workforce, and creating necessary conditions for achieving higher levels of economic growth. The process would thus complete the virtuous circle of economic growth leading to poverty reduction via growth of employment with rising productivity, and reduced poverty creating the possibility of further increases in productivity and higher rates of economic growth (see Figure 1). The kind of growth with such a virtuous circle in operation can be termed as pro-poor growth.

Indeed, the conceptual framework outlined above for analysing the linkage between economic growth, employment and poverty basically follows a demand-supply approach. The variables that are expected to influence incomes of the poor from the demand side include employment intensity of growth, shifts in the employment structure towards higher productivity sectors, technology, creation of assets for the poor, etc. From the supply side, an important factor is the ability of the poor to integrate into the process of economic growth and get access to the jobs that are created. Levels of education and skills of the workforce are amongst the key variables that determine the ability of the poor to integrate into and benefit from the growth process.<sup>8</sup>

**Figure 1: Virtuous circle of links between growth, employment and poverty reduction**



A summary indicator of the employment growth that is associated with a given output growth is provided by the employment elasticity of output growth (for overall GDP, measured

<sup>8</sup> See, also, ILO (2003), for promoting such an approach to poverty reduction. There are, of course, other factors that influence the ability of the poor to participate in the growth process; access to capital and productive assets is important in that respect.

as the proportionate change in employment divided by the proportionate change in GDP during a given period). This implies that employment elasticity could be taken as a surrogate for employment intensity of growth. But employment elasticity reflects the inverse of labour productivity. While an elasticity higher than unity implies decline in productivity, a lower than unity elasticity means that employment expansion is taking place along with an increase in productivity. A rise in productivity would lead to a reduction in employment elasticity. Therefore, raising employment elasticity in individual activities cannot be the objective as that would mean a further lowering of productivity in economies that may already be characterized by widespread low-productivity employment.

Two further questions need to be raised in the context of levels as well as changes in employment elasticity. Regarding the level, the desirability of an elasticity of lower than unity has been mentioned above. How much lower than unity it should be (i.e., the right order of magnitude for the elasticity of employment) depends on the level of development and the relative factor endowment of the country concerned. The magnitude would also have a good deal of sectoral variation. The overall elasticity being a weighted average of sectoral elasticities, greater allocation of investment in more labour-intensive sectors and higher growth rates in such sectors could yield a situation where the overall employment elasticity increases (even with declining elasticities in some sectors). And the result could be higher employment growth with given GDP growth or employment-intensive growth.

A simple illustration may be useful in indicating the magnitude of employment elasticity (and output growth) that may be desirable for an economy in order to quickly absorb its surplus labour. With a labour force growth of 2.5 per cent per annum and an overall employment elasticity of 0.4, a GDP growth of 6 per cent would be required merely to absorb the annual additions to the labour force. And in order to have an employment growth so as to enable the economy to absorb its backlog of the unemployed and surplus labour, the required GDP growth would be of the order of 7 per cent. On the other hand, if this hypothetical economy could achieve a high growth of its more labour intensive sectors (e.g., labour-intensive manufacturers, construction, and services), the overall employment elasticity could perhaps be raised (say, to 0.6) and a lower GDP growth (say, of six per cent) could enable it to achieve the same objective (viz., the absorption of surplus labour in modern sectors).

A couple of words about the estimation of employment elasticities may be in order. The overall employment intensity of growth should be measured by the GDP elasticity of employment: the proportionate change in employment divided by the proportionate change in GDP. It is, however, very difficult to obtain reliable estimates of aggregate employment in many developing countries - particularly where there are large unorganized sectors for which estimates of employment at constant intensity of employment are difficult to come by. In such situations, it may be practical to focus on sectors (e.g., manufacturing industries) for which estimates of output and employment would be more reliable and more easily available. Of course, whenever possible, employment elasticities of other major sectors should be estimated in order to gauge the direction of the employment intensity of growth.

Regarding methodology of estimating the elasticities, it is important to note the availability of alternatives, ranging from the simple measurement of arc elasticity (i.e., using data from two points in time) to more rigorous econometric estimates. The choice of a particular method is often dictated by the availability of data. But whenever necessary time series data are available it would be advisable to use the econometric method in order to avoid problems caused by fluctuations in the data.

Even after employment elasticities are estimated, their links to poverty remain to be examined. In a cross-section study with data from a reasonable number of countries, it may be possible to examine such linkage. Doing this for a single country may not be so straightforward, especially if data on the incidence of poverty as well as estimates of employment elasticities are not available for an adequately long period of time. What should be possible, however, is to see if the level and direction of change in this statistic is appropriate from the point of view of its level of development, incidence of poverty and the existence of surplus labour. Such an analysis can be done against the benchmark of countries which are regarded to have demonstrated success in achieving employment-intensive pro-poor growth and in either abolishing poverty altogether or in reducing it substantially.

The analysis of the summary indicator of the employment-intensity of economic growth as indicated above would need to be supplemented by a more detailed examination of whether and how growth has led to structural changes in an economy which has benefited the poor. In that regard, the first important thing to examine would be the sectors and occupations where the poor are concentrated and what the trends in productivity and earnings in various occupations are like. The second important task would be an examination of whether there are discernible shifts in the structure of employment towards occupations with higher productivity. The third important element in the channel of transmission of benefits of growth to the poor would be real wages and earnings of wage-paid workers and real earnings of the self-employed. An examination of the linkage between real wages and productivity would enable one to examine whether the benefit of growth has reached the poor.

The above discussion focussed basically on a macro level analysis of how economic growth could contribute to poverty reduction through increases in employment in higher productivity sectors/occupations and a rise in real wages. A similar analysis could be carried out at the micro (household) level to examine the impact of employment and labour market related variables on poverty. Conceptually, it is possible to think of a number of such variables which could influence the probability of a household being poor in terms of inadequate income. The variables could be asset-related (e.g., the possession of income-generating assets), human capital related (e.g., education and skill levels of the working members of a household) or employment related (e.g., the sector and quantity of employment of the workers, wages, productivity, etc.). Once necessary data are available for quantifying variables of the kind mentioned above and for identifying whether a particular household belongs to the poor or non-poor category, standard econometric methods (e.g., the estimation of a PROBIT model) can be applied to examine the influence of employment and labour market related variables on the probability of a household being poor.

In the above discussion, pro-poor growth is conceptualised in terms of the employment outcome of growth and employment serving as the link between growth and poverty reduction. However, a critical element in this link is the income of the poor resulting from growth and employment. Hence, pro-poor growth can also be conceptualised in terms of the share of the poor in the additional output that is produced. Based on this criterion, growth can be characterised as pro-poor only when the share of the poor in the additional output increases, or in other words, when the distribution of income improves. Of course, it is possible for the income of the poor to increase (and the incidence of poverty to decline) even when the distribution of income does not change or worsens. But the poverty reducing effect of economic growth in such cases would be lower than in the case of growth with improved income distribution (i.e., lower inequality).

## 4. Employment and Poverty: A Cross-Country Empirical Analysis

### 4.1 The methodology

The methodology employed in the present paper involves a macroeconomic analysis of the linkage between the incidence of poverty and employment intensity of growth as well as a comparative analysis of micro (household) level data from a number of country studies. For the former, employment elasticity in manufacturing has been used as an explanatory variable along with GDP growth to explain the variation in annual change in the incidence of poverty (using a headcount measure). In other words, an attempt has been made to estimate the following function by using cross-country data:

$$ACPI = f(GDPG, EETY) \quad \dots(1)$$

Where ACPI represents annual change in the incidence of poverty,

GDPG represents GDP growth,

and EETY represents employment elasticity with respect to output.

If the initial level of poverty is included as an explanatory variable,<sup>9</sup> a second formulation would be:

$$ACPI = f(GDPG, EETY, IPOV) \quad \dots(2)$$

where IPOV represents the initial level of poverty.

Cross-country data have also been used to test the hypothesis concerning the impact of employment and labour market variables on the incidence of poverty. Although it is not easy to define such variables at the macro level exactly in the same way as can be done at the household level, an attempt has been made to identify several variables, at least in surrogate form. Since employment in non-farm activities is found to influence the income of the poor, employment in agriculture and manufacturing have been used as explanatory variables. Likewise, dependency ratio has been used as an indicator of the extent of labour force participation. Level of education and skill of the workforce is hypothesised as exerting a positive impact on the income of the poor. However, at the macro level it was not easy to define this variable; and hence a surrogate in the form of adult literacy rate has been used as an indicator of the education variable. The postulated model was thus:

$$POV = f(EAG, EMA, EDU, DEP) \quad \dots (3)$$

POV = headcount measure of poverty

EAG = percentage of workforce employed in agriculture

EMA = percentage of workforce employed in manufacturing

EDU = adult literacy rate (in percentage)

DEP = dependency ratio

Estimating a model of the kind mentioned above can involve problems, especially if the independent variables are correlated. And that is actually the case here, especially with employment in manufacturing, education, and dependency rate. In such a situation, results obtained from an OLS regression would need to be interpreted carefully.

As mentioned in the previous section, the poverty reducing effect of economic growth can also be affected by the degree of inequality in the distribution of income. This can be

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<sup>9</sup> The sign associated with this variable can be taken as an indicator of whether income inequality is worsening or improving in the process of development. A positive sign in our formulation would be an indicator of poorer countries performing better (i.e., inequality not worsening). See, also, Squire (1993).

tested by regressing the incidence of poverty on per capita income and the index of income inequality. However, for many countries, instead of income distribution, data are available for expenditure distribution. In order to allow for differences in Gini coefficients based on income and expenditure distribution, the use of a dummy variable would be in order. The regression model would thus be:

$$POV = f(GPC, GIN, D) \dots (4)$$

Where POV represents the headcount measure of poverty, GPC represents GDP per capita, GIN represents Gini coefficient of income or expenditure distribution, and D a dummy variable with a value of '0' for expenditure Gini and '1' for income Gini.

## 4.2 The results

It was possible to compile figures on employment elasticities and poverty incidence for roughly similar periods for 23 countries (see Appendix Table A.1). Figure 2 shows a scatter of the data. Although the sample is not large, it was possible to use this data set to run OLS regression for estimating equation (1). And the following result was obtained:

1.  $ACPI = -2.04 + 0.42 GDPG^* + 1.18 EETY^{**}$   
(2.71) (1.91)  
 $R^2 = 0.27$  ;  $F(2,20) = 5.08$
  
2.  $ACPI = -5.20 + 0.53 GDPG^* + 1.33 EETY^{**} + 0.07 IPOV^*$   
(3.72) (2.45) (2.72)  
 $R^2 = 0.45$  ;  $F(3,19) = 6.95$

where

- \* represents significant at 99% level
- \*\* represents significant at 95% level
- \*\*\* represents significant at 90% level

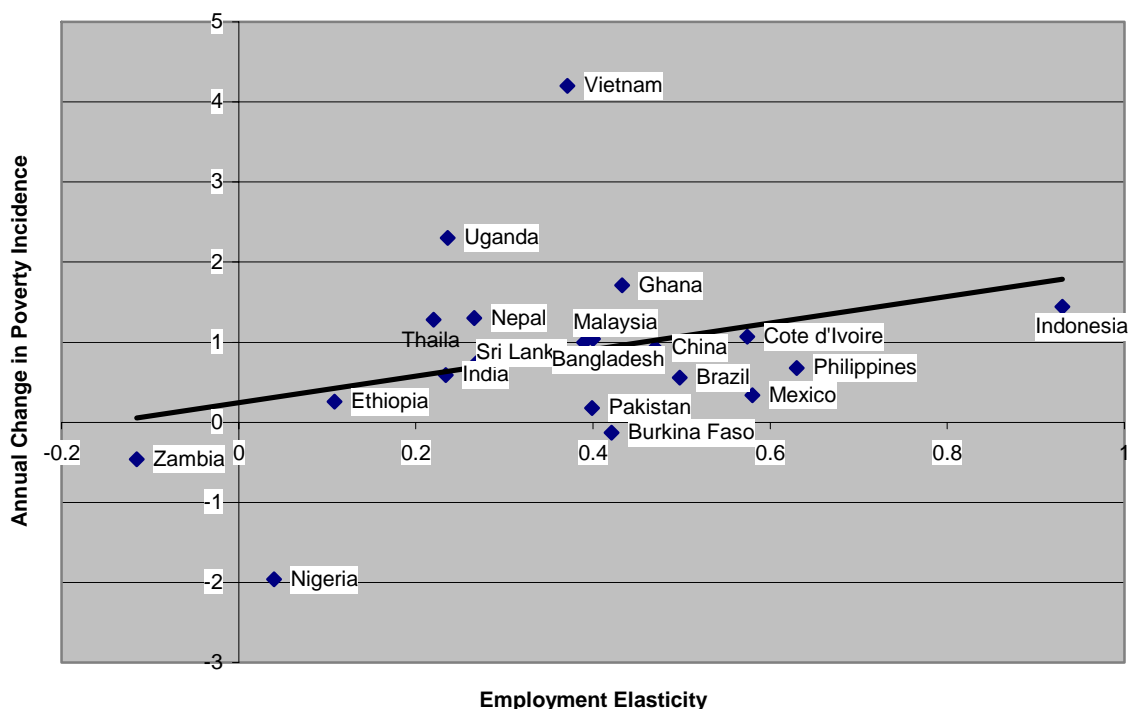
Figures within parentheses represent values of the t-statistic.

It is clear from the results that the model involving GDP growth and employment elasticity as explanatory variables for annual change in poverty incidence performs quite well in terms of the sign and level of significance of the variables as well as the strength of the overall relationship<sup>10</sup>. Where it does not perform so well is in terms of the percentage of variation explained by the two selected variables. This is not surprising because in the analytical framework outlined in section 3, it is the overall employment intensity of growth of an economy that is expected to influence change in poverty, but in estimating the regression model we could only have employment elasticity for manufacturing. The fact that the coefficient of this variable has the right sign and is statistically significant despite its limitation as an indicator of overall employment intensity should be taken as support for the hypothesis of employment intensity of growth influencing the rate of poverty reduction.

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<sup>10</sup> It should be mentioned that an alternative specification with per capita GDP growth rather than overall GDP growth was also tested, but produced results which are not as good as the ones reported here.

Figure 2: Percentage Decline in Poverty and Manufacturing Employment Elasticity



It has been possible to estimate the model (equation 3) involving various employment and labour market variables using data on a larger number of countries than was the case for equations 1 and 2. The results are presented in tabular form in Table 1. As mentioned already, estimation of this model by OLS method faced the familiar economic problem of multicollinearity – especially as some of the variables, viz., employment in manufacturing, education, and dependency were correlated with each other.<sup>11</sup> Regressions were therefore run separately with each of the explanatory variables to examine their significance and explanatory power. And all of them showed the right signs and had statistically significant coefficients. In fact, dependency ratio by itself explains over 50 per cent of the variation in poverty incidence. Likewise, employment in agriculture and education also explain – individually – over 40 per cent of the variation in poverty. When the complete model was estimated, all the variables (except employment in manufacturing) had the right sign, but only dependency ratio emerged as statistically significant. Comparison of this with the results obtained by running simple regressions raises the suspicion that the problem of multicollinearity is masking the combined effect of the selected variables in the multiple regression model.

Based on the regression results mentioned above, the hypothesis of the impact of employment and labour market variables on poverty reduction seems to remain strong. It can be broken down into several components: (i) concentration of workers in agriculture causes poverty, (ii) a shift of workers to manufacturing reduces poverty, (iii) education of the workforce (or population as a whole) contributes to poverty reduction, and (iv) higher dependency burden causes poverty.

<sup>11</sup> The correlation matrix is presented in Appendix Table A-3

Econometric exercises based on household survey data in several countries (viz., Bangladesh, Bolivia, Ethiopia, India, and Vietnam) provides stronger support to the hypothesis mentioned above. Apart from asset-related variables, employment and labour market variables, e.g., the sector of employment, diversification of the sources of income, receipt of remittance income, dependency ratio, and education of the workforce, are found to be significant in explaining either the probability of a household being poor or the actual income of the poor households.<sup>12</sup>

For the purpose of estimating equation (4), i.e., to examine how the degree of income inequality affects the poverty reducing effect of economic growth, use has been made of the poverty measure based on a dollar a day poverty line, GDP per capita measured in PPP, and Gini coefficient of income or expenditure distribution. All these figures have been taken from the World Bank's World Development Indicators 2003. The result obtained was:

$$\text{Ln POV} = 7.24 - 0.66 \text{ Ln GPC}^* + 2.17 \text{ Ln GIN}^{***} - 0.37D$$

(4.25)                      (1.76)                      (1.30)

Adjusted R<sup>2</sup> = 0.50, F (3,40) = 14.31

n = 41

\* represents significant at 99% level;

\*\*\* represents significant at 90% level.

It is clear from the estimated regression that the degree of inequality has a statistically significant influence on the incidence of poverty. And the positive sign associated with the inequality variable indicates that an increase in inequality leads to an increase in the incidence of poverty. In other words, an increase in inequality can counteract the poverty reducing effect of increase in per capita income. The coefficient of the dummy variable turned out to be statistically insignificant – thus implying that the impact of the distribution variable is not sensitive to the measure employed (i.e., income or expenditure).

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<sup>12</sup> This conclusion is based on the country studies referred to at the bottom of Table 3



**Table 1: Results of Regression Exercise with the Incidence of Poverty as the Dependent Variable**

Notes: Incidence of poverty is defined as the percentage of population below \$ 1 a day poverty line.

Specifications								
Independent Variables	(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)	(viii)
<b>Eag</b>	0.43 (5.34)				0.12 (0.98)		0.38 (3.42)	0.07 (0.57)
<b>Ema</b>		-1.84 (-3.17)				0.30 (0.05)	-0.35 (-0.53)	-0.15 (-0.25)
<b>Edu</b>			-0.53 (-5.23)		-0.20 (-1.26)	-0.25 (-1.81)		-0.21 (-1.31)
<b>Dep</b>				90.29 (6.75)	56.19 (2.60)	68.92 (3.12)		65.95 (2.88)
<b>Adjusted R<sup>2</sup></b>	0.42	0.2	0.42	0.54	0.57	0.59	0.39	0.58
<b>N</b>	39	37	38	35	37	35	37	35

The data used in the regression are presented in Appendix Table A-2  
 Figures within parenthesis represent values of the respective t-statistic

## 5. Economic Growth, Employment and Poverty: Some Insights on Pro-Poor Growth from Selected Country Experiences

### 5.1 Different combinations of growth and poverty reduction

Sustained high rate of economic growth is by now widely recognized as a necessary condition for poverty reduction. However, it is possible to demonstrate empirically that there is no invariant relationship between the rate of economic growth and the rate of poverty reduction. The poverty reducing impact of growth depends on a variety of factors that characterise the pattern of growth. As mentioned in section 3 of the present paper, an important factor is the degree of employment intensity of the growth process, while the other is the ability of the poor to benefit from the employment opportunities that are created.<sup>13</sup> Relevance of these two broad sets of factors for poverty reduction have already been demonstrated in the previous section. Given the importance of such factors in poverty reduction, it is quite possible to see in reality different experiences of growth and poverty reduction. While on the one hand high rates of growth can be accompanied by moderate or slow rates of poverty reduction, it is also possible to have rapid rates of poverty reduction with moderate rates of growth – if the pattern of growth is sufficiently employment-intensive and the poor can readily integrate into the growth process and benefit from the income-earning opportunities that open up.

Using data from in-depth studies of growth employment-poverty linkages in seven countries,<sup>14</sup> six different combinations of growth and poverty have been identified<sup>15</sup> (see

<sup>13</sup> Osmani (2002) provides an analytical framework to bring together these two factors along with the growth factor in linking poverty reduction with growth and employment.

<sup>14</sup> The countries are: Bangladesh, Bolivia, Ethiopia, India, Indonesia, Uganda, and Vietnam. The major criteria used in selecting them were (i) at least moderate (preferably high) economic growth during the 1990s, (ii)

Table 2). High growth leading to rapid rates of poverty reduction is only one of these six combinations. What is also interesting is that the same country can have different growth-poverty outcomes in different periods – depending on the nature of policies pursued. For example, in Indonesia during the 1970s and the 1980s, high growth was associated with high rates of poverty reduction; but the rate of poverty reduction slowed down during the 1990s, although output growth rates remained high. In India, high growth during the 1990s was associated with a slow rate of poverty reduction in rural areas and a moderate rate of poverty reduction in urban areas. Given the problems involved in comparing data from different surveys in India, it is difficult to arrive at a definite conclusion as to whether higher GDP growth has produced better results on poverty reduction during the 1990s compared to the earlier decade. Sundaram and Tendulkar (2002), for example, concludes that the rate of poverty reduction during the 1990s has been faster than during the 1980s. Using an alternative approach for producing comparable estimates, Datt, et al. (2003) arrives at a different conclusion. According to the latter, the rate of poverty reduction during the 1990s has been “slightly lower than India experienced during the 1980s”. Deaton and Dreze (2002) regards the decline of poverty in the nineties “as an example of *continued progress*”; they conclude: “There is, at any rate, no obvious pattern of ‘acceleration’ or ‘slowdown’ in this respect” (p. 3743). The literature on poverty in India, thus, does not indicate any consensus on whether higher GDP growth during the 1990s was associated with a faster rate of poverty reduction compared to the 1980s. The answer seems to depend on how the rate of progress is measured.

Bangladesh experienced a decline in the annual rate of poverty reduction from 1995/96 to 2000, compared to the period of 1991/92 to 1995/96, although the rate of economic growth was higher during 1996-2001, compared to 1991-96. Ethiopia provides another example of moderate growth producing very little reduction in poverty.

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representation from the three developing continents (Africa, Asia, and Latin America). Countries that attained moderate to high rates of economic growth were selected because the purpose was to examine the contribution of growth to poverty reduction.

<sup>15</sup> This is slightly different from the classification suggested by Osmani (2002), but follows the basic idea suggested therein.

**Table 2: Varying Rates of GDP Growth and Poverty Reduction: Some Examples**

Rates of GDP growth	Rates of poverty reduction		
	High	Moderate	Low
<b>High</b>	Indonesia (1970s and 1980s) Vietnam (1990s) Uganda (1990s)	India (1990s) <sup>a)</sup> India (1990s – urban) <sup>c)</sup>	India (1990s) <sup>b)</sup> India (1990s – rural) <sup>c)</sup> Indonesia (1990s)
<b>Medium</b>	Bolivia (1990s)	Bangladesh (1991-96)	Ethiopia (1990s) Bangladesh (1996-2000) India (1980s) <sup>a)</sup>

Notes: The cut-off points used in this table to categorise countries by ‘high’ and ‘medium’ growth, and various rates of poverty reduction are rather arbitrary. An annual GDP growth of 6 per cent and over has been regarded as ‘high’. For poverty reduction, the following cut-off figures have been used: ‘high’ – 2 percentage points and over per annum; ‘moderate’ – 1-2 percentage points per annum; ‘low’ – less than 1 percentage points per annum.

<sup>a)</sup> based on Sundaram and Tendulkar (2002)

<sup>b)</sup> based on Datt, et al. (2003)

<sup>c)</sup> based on Deaton (2003)

Sources: Bangladesh: Rahman and Islam (2003); India: Sundaram and Tendulkar (2002), Deaton (2003); Datt, et al. (2003); Indonesia: Islam (2002); Vietnam: Huong, et al. (2003); Ethiopia: Mulat, et al. (2003); Uganda: Kabann (2003); Bolivia: Jemio and Choque (2003).

**Table 3: GDP Growth and Poverty Reduction in Selected Countries**

Country	GDP growth (% per annum)	Incidence of poverty (% of population below poverty line)	Annual percentage point change in poverty
(1)	(2)	(3)	(4)
<u>Bangladesh</u>			
1986-91	2.46	51.7 (1985/86) <sup>a</sup>	
1991-96	4.50	58.8 (1991/92)	+ 1.18
1996-01	5.29	53.1 (1995/96)	- 1.43
		49.8 (2000)	- 0.83
<u>India</u>			
1970-80	3.8		
1980-90	5.8		
1990-98	6.1		
		<b><u>Sundaram and Tendulkar<sup>b</sup> (2002)</u></b>	
		46.5 (1983:URP)	
		37.3 (1993-94: URP)	-0.92
		35.5 (1993-94: MRP)	
		27.6 (1999-2000)	-1.32
		<b><u>Deaton (2003)</u></b>	
		37.2 (1993-94: rural)	
		30.2 (1999-2000: rural)	-0.70
		32.6 (1993-94: urban)	
		24.7 (1999-2000: urban)	-1.32
		<b><u>Datt, et al. (2003)</u></b>	
		39.1 (1993-94)	
		34.3 (1999-2000)	-0.80
<u>Indonesia</u>			
1970-80	7.5	40.1 (1976)	
1980-90	5.7	28.6 (1980)	- 2.88
1990-96	7.3	15.1 (1990)	- 1.35
		11.3 (1996)	- 0.63
<u>Vietnam</u>			
1990	5.1	58 (1993)	
1995	9.5	37 (1998)	-4.2
2001	6.8	32 (2000)	-2.5
2002	7.0	28.9 (2002)	-1.5
<u>Ethiopia</u>			
1980/81-1991/92		45.4 (1995/96)	
1992/93-2000/01	2.3	44.2 (1999/2000)	- 0.33
	4.6		
<u>Uganda</u>			
1990	6.5		
1995	11.5	56.0 (1992/93)	
1999	7.4	44.0 (1997/98)	- 2.4
2000	6.0	35.0 (2000)	- 3.0
2002	6.0	38.8 (2002/03)	- +1.9
<u>Bolivia</u>			
1987-90	3.45	57 (1989) <sup>c</sup>	
1991-98	4.36	65 (1996)	
1999-2001	1.34	56 (1999)	- 3.0
		64 (2001)	+ 4.0

### **Table 3 (cont'd)**

Notes: <sup>a</sup>Using the 'cost of basic needs' method.

<sup>b</sup>URP in this study refers to 'uniform recall period' and MRP refers to 'mixed recall period'. The first figure (37.3) for 1993-94 is comparable to 1983, while the second (35.5) is comparable to 1999-2000.

<sup>c</sup>Percentage of households; and hence, this figure is not comparable to the subsequent ones.

Source: Bangladesh: Rahman and Islam (2003); India: Sundaram and Tendulkar (2002), Datt, et al.(2003), and Deaton (2003); Indonesia: Islam (2002); Vietnam: Huong, et al. (2003a, and 2003b); Ethiopia: Mulat, et al. (2003); Uganda: Kabann (2003); Bolivia: Jemio and Choque (2003).

## **5.2 Good growth**

An understanding of the different growth-poverty combinations as mentioned above requires an in-depth examination of the factors underlying the different growth regimes, and especially the employment and labour market aspects of such regimes. Some illustrations may be helpful. First, let us look at a few of cases of high growth resulting in high rates of poverty reduction (which can be called 'good growth' – or using the currently fashionable term, pro-poor growth). **Indonesia's** experience of the 1970s and the 1980s is notable in this context. To recall, the incidence of poverty started declining rapidly only in the second half of the 1970s. And although output growth in manufacturing was already high during the 1970s, employment elasticity in that sector remained rather low.<sup>16</sup> Much of the growth in employment during that period came from construction and services. Reduction in rural poverty was helped by high rates of growth in agriculture and rural non-farm activities. Manufacturing employment started growing at a high rate during the 1980s (reaching 7.2 per cent per annum during 1985-90). Employment elasticity in manufacturing increased from 0.33 during 1975-80 to 0.76 during 1981-85. Real wages and earnings increased after 1978 in all sectors – although there was a reversal for a few years (1986-89). Thus the experience of Indonesia during the second half of the 1970s and the 1980s provides a good example of high output growth associated with high rates of employment growth and growth of real wages and earnings. Moreover, growth in real wages roughly followed growth in labour productivity. That was, thus, a good example of 'pro-poor growth' as outlined in section 2 of this paper<sup>17</sup>

**Uganda's** experience, during the 1990s, of high rates of GDP growth accompanied by a rapid reduction of poverty, also provides a good example of economic growth of the type that can lead to poverty reduction. In order to get a good understanding of the process, it is necessary to examine the structure of the economy, the sources of its growth as well as the institutional framework within which growth in the major sectors has been achieved. In the early 1990s, over half of Uganda's GDP and nearly three fourths of the labour force were accounted for by agriculture. Agriculture was dominated by crop production; and for a third of those engaged in agriculture cash crop was the main activity. Coffee growing was widespread, although other cash crops, e.g., tobacco, tea and cotton were also grown.

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<sup>16</sup> Observations made in this paragraph are based on data available in Agrawal (1996), Islam (1990), Islam (2002).

<sup>17</sup> This, however, is not to ignore the weaknesses that remained in the Indonesian economy and the continued existence of high rate of underemployment and informal sector employment till the mid-1970s; see Islam (2003b) for an assessment.

Growing of coffee is primarily a smallholder-based activity, and the distribution of landholding is also quite egalitarian. Tobacco is grown mainly on small and medium scale farms, while tea is produced primarily on large scale estates.

Agriculture as a whole played a prominent role in the high growth that Uganda achieved during the 1990s. And within agriculture, cash crops did especially well. Coffee, in particular, benefited from the boom in prices that took place in the world market. Being an activity based on smallholders, and with the liberalisation of marketing, its growth and the rise in prices benefited the producers and raised their incomes significantly. There is concrete data (from the Bank of Uganda) to show that the share of farmers in the world prices of coffee increased by at least 50 per cent between 1991 and 1997. The same conclusion cannot, however, be drawn about tea which is dominated by large estates using hired labourers for harvesting. In the absence of hard data on real wages of workers in that sector, it is difficult to say anything with confidence as to whether the poor have benefited from the rise in prices to the same extent as their counterparts engaged in coffee growing. Tobacco farmers also do not seem to have benefited from the growth in production because of their weak bargaining position vis-à-vis the buyers of their products who are large enterprises enjoying monopoly power.

Another aspect of Uganda's pattern of growth and poverty reduction is that the latter was not achieved through a change in the structure of employment towards manufacturing. Indeed, the share of this sector in total employment has remained virtually unchanged despite healthy growth of output in the sector and an increase in its share in GDP. The only notable change that has taken place in the structure of employment is a shift away from food crop to cash crop.

The above raises an important question about the sustainability of the present rate of poverty reduction in Uganda. Agriculture, of course, is relatively more labour-intensive, and this sector (especially, food crop sector) still has the highest incidence of poverty. As long as this sector can continue its healthy growth without any increase in inequality (which should be possible in a smallholder based production), poverty reduction can continue. It is, however, necessary to look at the important factor that contributed to the impressive growth and poverty reduction in agriculture: sharp increases in the prices. How long such price increases will continue is a question; the price of Ugandan coffee in the export market has already declined after the boom of the early to mid-nineties (World Bank, 1998). And it is the cash crop sector that achieved the most impressive rate of poverty reduction during the 1990s.

Indeed, in the wake of the decline in coffee prices during the late 1990s, the incidence of poverty has registered an increase between 2000 and 2002-03. The degree of income inequality also has increased during that period – the Gini coefficient of income distribution rising from 0.395 in 1999/2000 to 0.428 in 2002/03. It thus appears that the question (raised above) about the sustainability of the rates of growth and poverty reduction achieved by Uganda during the 1990s is a real one.

Another case of high growth leading to poverty reduction at rapid rate is that of **Vietnam**. In rural areas of that country, incomes of households increased mainly due to improvements in farm productivity which was made possible by intensification and diversification away from low-value outputs (e.g., staple crops) to higher-value ones (e.g., livestock, aquaculture, fruits, and perennial crops). While the shift to higher value crops generated additional employment, the linkage effects of higher agricultural income helped

create non-farm employment. During 1993-98, rural non-farm self-employment increased at 6.7 per cent per annum. In the urban areas, private sector grew rapidly (in response to reforms that included strengthening of property rights, and an overall supportive policy environment), and created jobs that could (at least to some extent) absorb workers made redundant by the reform of state-owned enterprises (Huong, et al. 2003). Thus the pattern of growth was, on the whole, quite conducive to poverty reduction.<sup>18</sup>

It needs to be noted, however, that the rate of poverty reduction in Vietnam has declined in recent years (a little over 2 percentage points per annum during 1998-2000, and 1.5 percentage points per annum during 2000-02, compared to over 4 percentage points per annum during 1993-98) – although it remains higher than in many developing countries. The distribution of income has also been worsening, albeit slowly. And these developments took place despite some positive changes on the employment side. For example, the structure of employment (i.e., the sectoral composition) has changed more noticeably – towards manufacturing – in recent years (especially since 2000). Second, job creation in the private sector has become an important factor contributing to poverty reduction. The decline in the rate of poverty reduction and a worsening of income distribution (Gini coefficient of expenditure distribution increased from 0.33 in 1993 to 0.35 in 1998) despite positive developments in the area of employment shows the nature of the challenge that lies ahead for Vietnam despite the good quality of growth. It seems that the period of high growth leading to rapid increases in the income of the poor is coming to an end. Several aspects with regard to the quality of future growth will need attention. First is the spatial distribution of investment. Unless new investment goes beyond urban areas, the rural-urban divide is likely to grow, with all its accompanying consequences (e.g., migration to urban areas and an increase in urban poverty). Second, an increase in employment alone may not be an effective route out of poverty, unless the quality of jobs also improves. For example, wages in the formal private sector are lower than in the state sector; and the situation is worse in the informal segment of the private sector.

### **5.3. Not-so-good growth**

Turning to the cases of growth not producing high rates of poverty reduction, one can contrast Indonesia's experience in the 1990s with that of the earlier decades. Poverty did continue to decline after 1990, but the rate slowed down substantially compared to the 1980s. And that is consistent with several findings on employment. Growth of employment in manufacturing declined from 7.2 per cent per annum during 1985-90 to 4.5 per cent during 1990-93. And overall employment growth declined from 4.1 per cent during 1980-85 to 2.5 per cent during 1985-90, and further to 1.5 per cent during 1990-93 (Agrawal, 1996). Employment elasticity in manufacturing declined from 0.76 during 1981-85 to 0.66 during 1986-92 (Islam 2001). Indeed, employment elasticity for major manufacturing sub-sectors (e.g., textiles, garments, furniture, and food manufacturing) during 1993-97 was lower compared to 1985-88 (Islam 2002).

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<sup>18</sup> The estimated employment elasticity for the manufacturing sector (ref. Fig. 2) is, of course, rather low, and does not reflect the overall employment outcome of growth – especially in the rural areas. There could be several possible explanations for this. First, a large part of the manufacturing is still in the state sector which, given its background and composition, is characterized by a high degree of capital intensity. Second, recent reforms in state owned enterprises have been associated with a good deal of labour retrenchment, thus resulting in a rise in output per worker and a fall in employment per unit of output.

A reduction in employment growth and employment elasticity may not be unusual when an economy develops and surplus labour gets exhausted. But in the case of Indonesia, it seems to have happened earlier than warranted, because it was only in the 1990s that agriculture started shedding labour, and the structural shift in employment away from agriculture started in a noticeable manner. And even in the year before the country was hit by economic crisis, underemployment and employment in the informal sector remained high (Islam 2003). Thus, although the economy continued to grow at a high rate, the rate of decline in poverty slowed down.<sup>19</sup>

The experience of **Bangladesh** during the 1990s can also illustrate how with similar economic growth rates, different rates of poverty reduction can result. Indeed, during 1996-2000, despite higher growth, the rate of poverty reduction slowed down (compared to 1991-96). Again, several employment-related observations are relevant in that context.<sup>20</sup>

First, the sectoral composition of employment in the country is not changing in a direction that could support a high rate of poverty reduction. Indeed, the share of the manufacturing sector in total employment has been declining continuously since 1989; and although the trend got reversed after 1996, the figure for 2000 (10.3 per cent) remained well below that of 1989 (15.5 per cent). Second, employment elasticity for the manufacturing sector as a whole declined during the 1990s compared to the 1980s (0.69 for 1990-98 compared to 0.75 for 1980-89). Third, open unemployment increased during 1996-2002 (from 2.5 per cent to 4.0 per cent). Fourth, higher output growth in agriculture during 1996-2001 (5.07 per cent per annum, compared to 1.50 per cent during 1991-96) has not been translated into higher rate of poverty reduction in rural areas. Decline in moderate poverty during 1996-2001 was 0.82 percentage point per annum compared to 1.13 percentage point per annum during 1991-96. Fifth, the rate of real wage increase has been slower in agriculture compared to other sectors. More importantly, there has been a decline in real wages in agriculture after 1996/97;<sup>21</sup> and that implies that agricultural workers (who form the bulk of the rural poor) have not benefited to the extent they could have from growth in agriculture that has taken place during the second half of the 1990s. Finally, inequality in the distribution of income has increased between 1991/92 and 2000 – at the national level as well as for rural and urban areas separately (the increase being greater for urban areas) (Government of Bangladesh, 2002; Osmani, et al. 2003). Comparison between the two sub-periods of the 1990s – 1991/92 to 1995/96 and 1995/96 to 2000 – indicates a faster rise in rural income inequality in the second sub-period and the opposite for urban income inequality (Osmani, et al. 2003).

On the whole, the figures on employment and labour market developments in Bangladesh mentioned above are consistent with a slower rate of poverty reduction during the second half of the 1990s, although the rate of economic growth was slightly higher. And that leads one to suspect (if not conclude) that growth in Bangladesh may have become less pro-poor in the second half of the last decade; and developments in the employment and labour market situation played a role in that.

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<sup>19</sup> That was before the economic crisis. During the crisis (especially in 1998), the incidence of poverty increased sharply. For a good analysis of the vulnerability of the Indonesian people at the lower end of the income scale, see Dhanani and Islam (2002).

<sup>20</sup> The figures quoted in the rest of the paragraph, unless otherwise mentioned, are from Rahman and Islam (2003).

<sup>21</sup> Part of that decline, especially in 1998 and 1999 may have been due to the severe floods that affected the country in 1998. But it remains to be seen whether real wages demonstrated a sustained increase after 1999. Although there was an increase in 1999-2000, the level of 1996/97 was not reached.



An example of moderate economic growth not producing any significant reduction of poverty is provided by **Ethiopia's** experience during the 1990s. After the introduction of economic reforms, the performance of Ethiopia's economy (as reflected in the growth of GDP) improved during the 1990s. GDP growth per annum averaged 4.6 per cent during 1992/93 – 2000/01, compared to 2.3 per cent during 1980/81 – 1991/92. But the incidence of poverty (anchored on a national poverty line defined in terms of a minimum calorie requirement for subsistence and basic non-food expenditure) at the national level remained at 44.2 per cent of the population in 1999/2000 compared to 45.5 per cent in 1995/96. Indeed, poverty in urban areas increased, while rural poverty registered a slight decline.

As far as overall employment is concerned, there has been a decline (0.6 per cent per annum) during 1994-99. Thus, output growth during the 1990s was achieved through higher productivity alone, and there was no employment expansion. In manufacturing employment increased by 1.8 per cent during 1992-99 while output increased by 5 per cent per annum – thus indicating a low employment intensity of growth in the sector. The source of output growth was mainly productivity growth. Although real wages in manufacturing also registered a healthy growth, given the small size of the sector relative to the overall economy and the low rate of employment growth, this sector does not appear to have contributed much to poverty reduction. Indeed, manufacturing in Ethiopia remains dependent on outdated technology, and yet is capital intensive in character. Its linkages with the rest of the economy appear to be weak.

Employment in agriculture in Ethiopia appears to have declined during the second half of the 1990s, although output increased (except for years of drought like 1997/98). So, labour productivity should have risen. It is, however, difficult to say anything with confidence in this regard, because in the absence of time series data on employment, estimates of labour productivity in the sector are based on projections, and appear to be highly volatile. Be that as it may, it can perhaps be said that the slight reduction of rural poverty in Ethiopia may have been due to an improved performance of agriculture where growth is relatively more employment intensive. Nearly 80 per cent of the workforce is still accounted for by agriculture. And the poor peasant households appear to have benefited from the termination of the unfavourable policies (i.e., collectivisation, and unfavourable compulsory procurement) of the earlier regime.

**Bolivia's** experience during the 1990s provides an example of a brief period of moderate growth associated with a fairly rapid rate of poverty reduction. But neither economic growth nor poverty reduction could be sustained after 1999. And an examination of the pattern of economic growth that took place indicates that it did not take a pro-poor character.

What is striking about Bolivia is its high level of income poverty (about 60 per cent of the population) for a country of its per capita income (US\$950). In fact, there has been a reversal of the decline in poverty after 1999; and the level in 2001 was only a shade below that of 1996. Non-income dimensions of poverty also indicate high levels of poverty despite some improvement in recent years. The observed high levels of poverty coexisting with the per capita income of a lower middle-income country could be understood in terms of a number of factors, e.g., high degrees of inequality in incomes (in both rural and urban

areas),<sup>22</sup> a large percentage of the workforce (about 45 per cent) still engaged in agriculture, and a rather slow transformation of the structure of the economy.

Several aspects of the pattern of Bolivia's economic growth are relevant in the context of poverty reduction. First, while the rate of overall GDP growth has been moderate, the sectors that achieved high rates of output growth (e.g., financial services; electricity, gas and water, and transport and communication) are those with low degrees of employment intensities of output. And sectors with high employment intensity (e.g., agriculture, commerce, etc.) achieved low rates of growth. As poverty is much higher in rural areas, growth in agriculture and other rural economic activities has to play an important role in reducing poverty in Bolivia. But that does not appear to have happened even when overall GDP growth picked up.

Second, although the gap between the average real earnings in rural and urban areas narrowed a little during the mid 1990s, the gap widened later; and in 2001, it was higher than in 1996.

Third, the sectoral composition of employment does not show any structural shift towards sectors with higher productivity. The share of agriculture in total employment has remained between 40 and 44 per cent during 1988-2001. And the share of manufacturing registered a small increase during 1992-99, only to decline in 2001. Indeed, the recent increase in agricultural employment was at the cost of declining productivity. Thus, agriculture appears to have acted as the sponge to absorb labour for whom the alternative would have been unemployment.

Fourth, the annual increase in real wages in manufacturing far outstripped the rise in labour productivity during 1991-98 (a real wage increase of 3.8 per cent per annum compared to 0.4 per cent per annum growth in labour productivity). And as a result of this, the manufacturing sector found itself in a weak competitive position at the end of the 1990s. When economic growth slowed down sharply during 1999-2001, the labour market adjusted mainly through the quantity mechanism – with a sharp decline in employment. Labour productivity, thus, went up; and it is during this period that real wage and labour productivity rose in tandem.

On the whole, it thus appears that although economic growth in Bolivia during the 1990s was associated with poverty reduction, the real pattern of growth cannot be termed pro-poor. With the continuation of a high degree of income inequality, widening rural-urban income gap, output growth taking place mostly in the relatively more capital-intensive sectors, and very little change in the sectoral composition of employment, neither the rate of output growth nor the pace of poverty reduction could be sustained. Moreover, real wages increased in manufacturing without a corresponding rise in productivity. And the increase in agricultural employment came at the cost of reduced productivity. The basic ingredients of a pro-poor economic growth were thus absent.

**India** provides another interesting case. While it is difficult to say whether higher economic growth in India during the 1990s has resulted in a faster rate of poverty reduction, it is useful to go beyond simple headcount measures of poverty (reported earlier) to an examination of the employment and labour market characteristics. There is, of course, no

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<sup>22</sup> According to ECLAC (2002) data, in 1999, Gini coefficients of income distribution in rural and urban areas were 0.64 and 0.50 respectively. These are rather high figures.

clear consensus among researchers on these aspects either. Sundaram and Tendulkar (2002), for example, concludes: “Our overall assessment is one of improvement in the employment situation in India over the 1990s” (p. 16). They arrive at this conclusion after noting and arguing the following. First, growth of employment in manufacturing was positive during the 1990s, compared to a net decline in the 1980s. Second, the reduction in the average number of days worked per person per year (for the usually employed persons on principal plus subsidiary status) is placed against the observed rise in real wages of agricultural workers to argue the possibility of a tightening of the labour market.

On the other hand, Bhalla (2003) presents data, which show a clear decline in overall employment growth during the 1990s (1.05 per cent per annum during 1993-94 to 1999-2000) compared to the 1980s (2.07 per cent per annum). The decline in rural areas was much sharper than in urban areas. Estimates presented in that study also indicate a decline in the employment elasticities with respect to output – overall as well as for major sectors like agriculture and manufacturing. Based on data on differences in employment and income growth, the study also points to a deepening of the rural-urban divide in India.

Data on real wage rates in agriculture in India presented by Deaton and Dreze (2002) shows a substantial decline in the rate of real wage growth during the 1990s (2.5 per cent per year compared to 5 per cent per year during the eighties). The same study points to an increase in income inequality during the 1990s that offset some of the poverty reducing effects of growth. Indeed, that study (like Bhalla’s mentioned above) also talks about rising rural-urban disparity in the 1990s.

Datt, et al. (2003) argues that the sectoral pattern of growth in India during the nineties has not been particularly pro-poor : the states with higher growth in agriculture yields were not the states with initial high levels of poverty. They also point out that growth in the non-farm sector in the 1990s has generally not been any higher in the states where it would have had the most impact on poverty nationally.

An examination of the pattern of growth in India during the 1990s and of developments in the employment and labour market situation would thus point to the possibility that growth could have been more employment-friendly and pro-poor than it has been.

## **6. Concluding Remarks**

The present paper started by attempting to identify elements of pro-poor economic growth, and argues that this can be conceptualised in terms of a virtuous circle of economic growth leading to poverty reduction via growth of employment with rising productivity, and reduced poverty creating the possibility of further increases in productivity and higher rates of economic growth. Using cross-country data, the paper empirically demonstrates the link between poverty reduction and employment intensity of growth (defined in terms of employment elasticity with respect to output). Cross-country analysis is also employed to show the impact of employment and labour market related variables on poverty reduction. Developments that are found to make a positive contribution to poverty reduction include structural transformation of employment towards manufacturing and other non-farm sectors, education, and lowering of the dependency burden (i.e., increase in labour force participation).

Based on the growth and poverty reduction experience in selected countries (viz., Bangladesh, Bolivia, Ethiopia, India, Indonesia, Uganda and Vietnam), the paper argues that there is no invariant relationship between growth and poverty reduction. It has been demonstrated that similar growth rates can be associated with different outcomes on poverty reduction. And an examination of the experiences indicates that the patterns of growth, especially in terms of developments in employment and labour markets that take place as a result of growth, play an important role in producing such varying results regarding poverty reduction.

The experience of countries reviewed in this paper also gives rise to a number of questions concerning the ingredients of pro-poor growth. The first relates to the role of agriculture. Given the large size of the population relying on this sector in many of the developing countries with high incidence of poverty, and the facts that labour productivity is lower and the incidence of poverty higher for those engaged in this sector relative to others, it has to have a prominent role in a strategy for pro-poor growth. Within the overall framework of the present paper, this strategy/process has been couched in terms of a structural shift of the economy (including its employed labour force) towards higher productivity sectors capable of generating higher incomes. The empirical finding that a shift away from agriculture to higher productivity sectors is associated with a reduction of poverty does validate the importance of structural shift.<sup>23</sup> This, however, does not mean that agriculture itself cannot contribute to the pro-poor growth process. Indeed, the experience of countries like Uganda and Vietnam does point out the important role that this sector can play in reducing poverty. This is particularly the case where the distribution of landholding is relatively egalitarian and crop production is based primarily on smallholders. Where production is based on large estates and hired labourers, an important factor would be the productivity and real wages of workers. Another important factor would be the relative prices of agricultural products, especially in relation to purchased inputs, but also relative to non-agricultural products. Uganda, for example, benefited from the rise in the prices of its major crops during the 1990s; and Vietnam's agriculture also benefited from a favourable movement in its terms of trade. Structural shift within agriculture in terms of move to higher value products can also contribute to poverty reduction. Thus, policies in support of the growth of smallholder agriculture, product diversification, and of raising productivity and real wages of agricultural labourers are important for pro-poor growth.

Having recognized the importance of growth in agriculture, it is essential to point out the importance of a structural shift of employment towards higher productivity non-farm sectors. In countries with an abundance of labour, such structural shift should involve growth of the relatively labour intensive sectors and sub-sectors, e.g., labour intensive manufactures and other non-farm activities (in both urban and rural areas). The experience of Indonesia before the Asian economic crisis (of 1998) provides a good example of high growth of the non-agricultural sectors that helped reduction of poverty. In contrast, Uganda does not appear to have achieved any noticeable shift in its employment structure (except for a slight shift towards commercial agriculture) during the period of its high growth. Likewise, Bangladesh, Bolivia, and Ethiopia are countries for whom the challenge is not just one of moving to a higher growth path, but also towards achieving a shift in their employment structures towards higher productivity non-agricultural sectors. But given the low base of modern manufacturing in many developing countries, rural non-farm activities need to be looked at as possible sources of higher productivity employment

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<sup>23</sup> A structural shift within agriculture can also contribute to poverty reduction.

Variables on the supply side of the labour market that can have significant influence on poverty include education and skills. Investment in human capital formation plays a major role in boosting economic development that could benefit the poor. One of the principal means of enhancing their ability to integrate into the growth process and their productivity is to endow them with education and skills. Analysis based on household level data does show that poverty and education are inversely correlated. Also, a comparison of the experience of the East Asian countries who were more successful than their South Asian counterparts in terms of growth and poverty reduction shows that the former, in general, performed better in terms of human capital as well (Islam, 2003a). Investment in human capital, both in terms of education and skill training, therefore, needs to be an important ingredient in a country's strategy for pro-poor growth.

The above analysis has important implications for development strategies and policies for accelerating growth and poverty reduction. While employment and labour market variables emerge as significant in making growth pro-poor, it needs to be borne in mind that if treated separately from the overall development strategy, employment cannot serve as an effective route out of poverty.<sup>24</sup> Employment outcomes of alternative strategies and policies must be considered as one of the major criteria in formulating them (i.e., the strategies and policies). This is particularly important when it comes to the formulation of macroeconomic policies and policies relating to specific sectors. It should be possible to integrate employment concerns into the process of formulating such policies. A pro-employment macro policy regime would take into account the possible effects of tariffs, exchange rate, and taxation policies on the growth of sectors and sub-sectors that are by nature more labour-intensive than others. Integration of employment concerns should be associated with the adoption of measures to track the employment intensity of growth to see whether growth is taking a pro-poor character.

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<sup>24</sup> This, of course, is not to deny the role of employment creation programmes in providing safety nets to the poor in specific situations (e.g., to combat chronic seasonal unemployment, provide support in crisis-affected situations, etc.).



Appendix

**Table A-1**

**Data Used for the Regression with Employment Elasticity as an Independent Variable**

Country	Annual Average Poverty Change	Years	Initial Poverty Incidence (%)	Employment Elasticity in manufacturing	Years	Annual Average GDP Growth (%)	Years
Bangladesh	1	(1991-00)	58.8	0.39	(1991-98)	4.7	(1990-98)
Brazil	0.56	(1990-95)	46.3	0.498	(1991-98)	1	(1991-99)
Burkina Faso	-0.13	(1994-98)	44.5	0.421	(1991-98)	3.8	(1990-99)
China	0.93	(1980-95)	20	0.47	(1980-85)	10	(1990-2001)
Cote d'Ivoire	1.07	(1995-98)	36.8	0.574	(1991-98)	3.7	(1990-99)
Ethiopia	0.26	(1995-00)	45.5	0.108	(1991-98)	4.8	(1990-99)
Ghana	1.71	(1991-98)	52	0.433	(1991-98)	4.3	(1990-99)
India	0.59	(1993-00)	35.6	0.234	(1991-98)	6.1	(1990-98)
Indonesia	1.44	(1976-96)	40.1	0.93	(1981-92)	6.1	(1980-90)
Kenya	0.41	(1992-98)	44.78	1.401	(1991-98)	2.2	(1990-99)
Malaysia	1.04	(1984-95)	19.9	0.4	(1981-92)	5.3	(1980-90)
Mexico	0.34	(1989-94)	21.4	0.58	(1991-98)	1.3	(1991-99)
Nepal	1.3	(1995-00)	44.6	0.266	(1991-98)	5	(1990-98)
Nigeria	-1.96	(1985-95)	47.3	0.04	(1980-90)	1.6	(1980-90)
Pakistan	0.18	(1984-90)	24.9	0.399	(1981-90)	6.3	(1980-90)
Philippines	0.68	(1991-00)	39.9	0.63	(1992-97)	3.3	(1990-98)
Sri Lanka	0.74	(1991-96)	30.4	0.268	(1991-98)	5	(1990-98)
Tanzania	0.36	(1992-00)	38.6	2.67	(1991-98)	2.9	(1990-98)
Thailand	1.28	(1990-00)	27	0.22	(1992-97)	7.4	(1990-98)
Uganda	2.3	(1992-97)	55.5	0.236	(1991-98)	7.2	(1990-99)
Vietnam	4.2	(1993-98)	58	0.371	(1990-00)	7.6	(1990-2001)
Zambia	-0.46	(1991-98)	69.7	-0.115	(1991-98)	1	(1990-99)
Zimbabwe	-7.4	(1991-96)	25	-0.546	(1991-98)	2.4	(1990-99)

Notes: Figures on annual average change in poverty are in percentage points. Negative sign denotes an increase in poverty. The initial poverty incidence is defined as a percentage of the population.

Sources: (i) for manufacturing employment elasticities Khan (2001)

(ii) for annual average poverty change ILO-EMP/RECON data base on employment and poverty compiled from various country level studies and other national sources

(iii) for GDP growth World Bank, *World Development Reports* 1999/2000, 2000/2001 and 2003

## Appendix

Table A-2

### Data used in the Multiple Regression Exercise Involving Poverty and Employment Related Variables

Country	Poverty Incidence (%)	Annual Average GDP growth (%)	GDP per Capita (PPP) for same years as Poverty Incidence	Employment in Agri. (%)	Employment in Manu. (%)	Adult Literacy Rate (%)	Age Dep.	Gini Index (for same years as Poverty Incidence)
Argentina	16.5 (1991)	0.4 (1980-90)	8'388	0.6 (2000)	14 (2000)	96	0.6	0.44 (I)
Bahamas	7.6 (1993)	n/a	14'108	3.5 (1998)	3.7 (1998)	98	0.53	0.45 (I)
Bangladesh	29.1 (1996)	4.1 (1990-95)	1'290	62.1 (2000)	7.3 (2000)	38	0.7	0.43 (I)
Bolivia	14.4 (1999)	4.2 (1990-1998)	2'255	5 (2000)	15.3 (2000)	83	0.77	0.55 (I)
Botswana	33.3 (1985-86)	10.3 (1980-90)	2'857	19.7 (2000)	8.8 (2000)	70	0.8	0.56 (I)
Brazil	11.6 (1998)	3.3 (1990-98)	6'702	24.2 (1999)	11.6 (1999)	83	0.51	0.6 (I)
Burkina Faso	61.2 (1994)	3.6 (1980-90)	763	92 (2000)	2 (2000)	19	1	0.48 (E)
Chile	2 (1998)	7.3 (1990-95)	8'504	13.6 (2001)	n/a	95	0.55	0.56 (I)
Colombia	19.7 (1998)	4.6 (1990-95)	5'873	1.1 (2000)	20.2 (2000)	91	0.59	0.57 (I)
Costa Rica	12.6 (1998)	5.1 (1990-95)	7'496	15.1 (2001)	15 (2001)	95	0.6	0.47 (I)
Cote d'Ivoire	12.3 (1995)	0.7 (1990-95)	1'488	60 (2000)	10 (2000)	40	0.85	0.38 (E)
Dominican Rep.	3.2 (1996)	3.9 (1990-95)	4'475	19.9 (1997)	18.2 (1997)	82	0.61	0.49 (I)
El Salvador	21 (1998)	6.3 (1990-95)	4'232	21.4 (1999)	18.8 (1999)	72	0.67	0.52 (I)
Ethiopia	31.3 (1995)	1.1 (1980-90)	557	86 (2000)	2 (2000)	36	0.97	0.39 (I)
Gambia	51 (1998)	1.6 (1990-95)	1'512	82 (2000)	8 (2000)	39	0.86	0.48 (E)
Ghana	44.8 (1999)	4.2 (1990-98)	1'834	59 (2000)	13 (2000)	65	0.85	0.33 (E)
Guatemala	10 (1998)	4 (1990-95)	3'606	26.1 (1993)	n/a	65	0.86	0.6 (I)
Honduras	24.3 (1998)	3.5 (1990-95)	2'428	32.8 (2001)	15.2 (2001)	73	0.82	0.59 (I)
India	44.2 (1997)	4.6 (1990-95)	2'027	61.7 (2000)	15.8 (2000)	52	0.63	0.38 (E)
Indonesia	12.9 (1999)	5.8 (1990-98)	2'841	43.2 (1999)	13 (1999)	84	0.54	0.3 (I)
Jamaica	3.3 (1996)	2.9 (1990-95)	3'526	21 (1998)	8.9 (1998)	85	0.61	0.36 (E)
Kenya	26.5 (1994)	4.2 (1980-90)	967	80 (2000)	7 (2000)	78	0.86	0.58 (E)
Madagascar	49.1 (1999)	1.3 (1990-98)	775	78 (2000)	7 (2000)	46	0.93	0.38 (E)
Mali	72.8 (1994)	0.9 (1980-90)	609	86 (2000)	2 (2000)	31	1	0.54 (E)
Mexico	15.9 (1998)	1.1 (1990-95)	7'825	17.7 (2001)	18.9 (2001)	90	0.61	0.53 (I)
Nepal	37.7 (1995)	4.6 (1980-90)	1'101	n/a	n/a	28	0.8	0.37 (E)
Nigeria	70.2 (1997)	1.6 (1990-95)	799	43 (2000)	7 (2000)	57	0.87	0.51 (E)
Pakistan	31 (1996)	4.6 (1990-95)	1'758	48.4 (2000)	11.5 (2000)	38	0.82	0.4 (I)
Panama	14 (1998)	6.3 (1990-95)	5'600	16.3 (1999)	9.8 (1999)	n/a	0.58	0.58 (I)
Paraguay	19.5 (1998)	3.1 (1990-95)	4'496	5.2 (1996)	14.3 (1996)	92	0.74	0.48 (I)
Peru	15.5 (1996)	5.3 (1990-95)	4'353	8.1 (2001)	12.6 (2001)	89	0.63	0.46 (I)
Rwanda	35.7 (1983-85)	2.2 (1980-90)	816	92 (2000)	3 (2000)	n/a	0.83	0.27 (E)
Senegal	26.3 (1995)	3.1 (1980-90)	1'251	n/a	n/a	33	0.91	0.41 (E)
Sierra Leone	57 (1989)	0.3 (1980-90)	774	67 (2000)	15 (2000)	31	0.91	0.63 (E)
Sri Lanka	6.6 (1995)	4 (1980-90)	2'695	41.6 (1998)	15.4 (1998)	90	0.48	0.5 (I)
Tanzania	19.9 (1993)	3.8 (1980-90)	445	84 (2000)	5 (2000)	68	0.92	0.34 (I)
Thailand	2 (1998)	8.4 (1990-95)	5'652	48.8 (2000)	14.5 (2000)	94	0.44	0.42 (I)
Uruguay	2 (1989)	0.4 (1980-90)	9'628	4.2 (2001)	15.5 (2001)	97	0.6	0.42 (I)
Venezuela	23 (1998)	2.4 (1990-95)	5'727	10.8 (1997)	13.5 (1997)	91	0.62	0.5 (I)
Zambia	63.7 (1998)	0.2 (1990-95)	729	75 (2000)	8 (2000)	78	0.9	0.52 (E)
Zimbabwe	36 (1990-91)	3.6 (1980-90)	2'249	68 (2000)	8 (2000)	85	0.89	0.57 (E)

**Notes:** The numbers in brackets indicate the years. Poverty incidence represents the percentage of the population living on less than US\$ 1 a day. The literacy rates are all for 1995. Age Dependency refers to the number of dependents to the working-age population in 2000. For the Gini index (I) indicates Income inequality and (E) indicates Expenditure inequality.

**Sources:** UNDP Human Development Report 1998, United Nations University (2000), World Income Inequality Database. World Bank World Development Indicators 2002 and World Bank World Development Report 2003. World Bank African Development Indicators 2000.



Appendix

**Table A-3**

**Correlation Matrix of Variables used in the Multiple Regression Exercise**

	Poverty	Eag	Ema	Edu	Dep.
Poverty	1				
Eag	0.620582	1			
Ema	-0.53929	-0.73073	1		
Edu	-0.6739	-0.73236	0.591592	1	
Dep.	0.744778	0.685476	-0.69917	-0.70855	1



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