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# *WORKING PAPER*

**NR. 30.**

## **THE EFFECT OF ECONOMIC GROWTH ON POVERTY – A CASE STUDY OF AZERBAIJAN**

Elvin N. Afandi

**16 October, 2006**





This paper was prepared within the Economic Policy Institutes Network program.

Economic Policy Institutes Network is a regional project supported by UNDP Regional Center In Bratislava. The project aims to support development of economic policy institutes (EPIs) in the countries in transition, with particular emphasis on low and middle income countries. The principal goal of the initiative is to develop capacity of economic policy institutes so as to provide these countries with independent, sophisticated voices in policy issues. For more information, please visit [www.epinetwork.org](http://www.epinetwork.org)

The analysis and policy recommendations of this working paper do not necessarily reflect the views of the UN Development Programme, its Executive Board or UN member states. This paper is an independent publication commissioned by UNDP. It is the result of a collaborative effort by a team of consultants.



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## INTRODUCTION

Each nation/country evidently aims to improve the welfare of the population and finally poverty by effective economic policies. All directed measures for poverty reduction aim to answer one key question: how to aim the existing as well as predicting economic growth to substantially improve the living standards of the population and how to achieve sound pro-poor growth? All attempts to answer to this question, encouraged many of the economists and sociologists in the world to extensively study the correlation between economic growth and poverty, particularly to make clear the relationship between economic growth and poverty. Research in this field could be interesting for developing economies, particularly for the countries in transition.

The nature of pro-poor growth in the last two economic systems in the world has been different. Correlation between economic growth and poverty in post-socialist countries has been negative: the increase in one indicator was accompanied by a decrease in another. But the relationships between these two categories were not always negative even in market economies. Today, in many market economies, particularly in the countries of transition period it is possible to face economic growth and poverty expansion simultaneously. As economists of transition countries mentioned, economic and social efficiency might be observed at the same time in market economy, but particularly the existence of unemployment problem could destroy this harmony (Qutman and others, 2002). Indonesia between 1996 and 1999 offers another such example (Bourguignon, 2004). All these and other cases have been labeled as “immiserizing” growth (Kakwani and Pernia, 2000).

Researchers focus on the effects of income and wealth distribution. According to this approach the main cause of this problem is unequal distribution of existing wealth/growth among the individuals: in many countries very small fraction of the population highly benefit from the existing economic growth rather than other fraction. For instance, as stated by Wodon (2000) “the poverty reduction impact of growth is obvious enough since holding inequality constant, a rise in living standards must lead to lower poverty. However, inequality needs not to remain constant. When growth is associated with rising inequality, part of the gains from growth for the poor will be offset by the negative impact of rising inequality”. Bourguignon (2002) argues that the relationship between poverty reduction and growth may be obtained from that identity in the case where there would be no change in the distribution of relative individual incomes, or, in other words, if income growth were the same in all segments of society. All these arguments let us argue that economic growth can increase the poverty rate and this can happen when inequality increases so much that the beneficial impact of growth is more than offset by the adverse impact of rising inequality (Kakwani and Pernia, 2000).

In any case, one thing is obvious: lower disposable income leads to higher poverty rate, and this in turn is a negative factor for economic growth. This relationship is manifested in the famous “vicious circle of poverty” (see appendix 1). That is, the experience of high poverty rate or low income in a certain country is one of the main causes of low saving, and low savings is the key reason of low investment, and finally low investment is the main cause of the low productivity as well as insufficient economic growth.

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From the first years of the independence, the government of Azerbaijan has encountered the problem of the deterioration of the macroeconomic indicators. That is why the main objective of all past reforms and programs has been to achieve the stabilization of key macroeconomic indicators (GDP, budget deficit, etc.) up to this day.

Achieving qualitative changes such as the transformation to a sustainable economic development model, the improvement of living standards of the population and poverty reduction were second in importance after the achievement of sustainable economic growth in Azerbaijan. This necessity was an urgent issue on the government level and was endorsed by the State Program called “Poverty reduction and economic development in the Azerbaijan Republic (2003-2005)”<sup>1</sup>. As a result of continuous economic growth and government policies, the level of the poverty has been reduced from 40.2 per cent in 2004 to 29 per cent in 2005.

We assume that as the Azerbaijan Republic is intensively integrated to the world economy, the same tendencies in the correlation between economic growth and poverty should be present in this country as well. But up to now local (country) experience of this issue is not available. All above-mentioned issues indicate the topicality and practical importance of the current research work. Thus, by estimating the impact of economic as well as sectoral growth on poverty and analysing the consequences in the Azerbaijan Republic will produce various kinds of tangible outcomes. Because of not conducting such kind of research work in the given area, these outcomes would be useful for researchers on one hand and for policy and decision makers on another hand.

This research paper consists of two sections. The first section offers an introduction to the nature of the pro-poor growth and main approaches to this issue. The second section covers the analysis of pro-poor growth in Azerbaijan. A short description of the applied methodologies and data is followed by the analysis of our results. A longitudinal model estimates the relationship between growth and poverty from a macro perspective while a cross-sectional model utilizing household survey data assesses the link between sectoral employment and poverty.

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<sup>1</sup> Today the government of Azerbaijan is preparing new strategy called “Poverty Reduction and Sustainable Development” for years 2006-2015



## THEORY AND METHODOLOGY

### 1.1. COMMON POVERTY MEASURES

Various measures of poverty rate are applied in practice, mainly absolute and relative poverty measures. Absolute poverty is more useful in countries of transition, in particular in CIS (Commonwealth of Independent States) members. The relative poverty measure is more used technique in the European countries.

Regarding the absolute poverty measure, common practice starts by identifying a single monetary indicator of household welfare; let the indicator value for the  $i$ 'th household be denoted  $y_i$ . This tends to be either total expenditure or total income over some period. Next a set of poverty lines (or poverty threshold), denoted  $z_i$ , are defined. These estimate the cost to the household of the level of welfare needed to escape poverty, i.e. it is agreed, at least implicitly, that lower values of  $y_i/z_i$  mean that a typical member of household is absolutely poorer.

Finally, an aggregate poverty measure is identified, which summarizes the information contained in the measured  $y$ 's and  $z$ 's. The most common measure is the headcount index, given by the proportion of the population for whom  $y_i/z_i < 1$  (Ravallion, 1996).

So, in our case "poverty" is taken as an absolute poverty headcount index, i.e., the proportion of the population below a particular poverty line as derived from household survey data.

One might wonder why the headcount index has been selected in this paper, as there are some disadvantages of this measure. One of them is related to the calculation of the poverty threshold. Most of the emerging economies that use this headcount index take the poverty level quite low for political reasons. This way these countries could report lower poverty rates, and this conclusion allows the incumbent government to remain in power. Another disadvantage is the applied methodology to measurement of poverty threshold in the countries of transition. That is, almost all countries that uses headcount index measurement has its own methods for calculation of living standards and these methods distinguish among them. This is why usually it is not possible and meaningful to compare the headcount indexes of various countries. Also, there are a lot of differences between the methodology used by World Bank and the governments of transition countries.

Despite these and other disadvantages, we have used the headcount index. Its simplicity is clearly the main reason for selection. Another reason is that this measure is more reliable in transition countries, because this measure, rather than relative poverty measure, mainly seeks to emphasize large share of population under the poverty line (Progress Report, 2005).



## 1.2. THE CONCEPT OF PRO-POOR GROWTH

In the past few years, the term “pro-poor growth” has become pervasive in discussions of development policy. But the term of the pro-poor growth was and is being interpreted differently by various researchers. According to Kakwani and Pernia (2000), growth is pro-poor if the accompanying change in income distribution by itself reduces poverty. But as mentioned by Kraay (2004), this definition is rather restrictive, since it implies that, for example, China’s very rapid growth and dramatic poverty reduction during the 1980s and 1990s was not pro-poor because the poor gained relatively less than the nonpoor. According to his view, a broader and more intuitive definition is that growth is pro-poor if the poverty measure of interest falls. Another broader definition is that growth is said to be pro-poor “when it is labor absorbing and accompanied by policies and programs that mitigate inequalities and facilitate income and employment generation for the poor, particularly women and other traditionally excluded groups” (ADB, 1999). Generally, in this paper, the term of pro-poor growth is mainly being understood as the definition of ADB (1999) and Kraay (2004).

*In the literature* the effect of economic growth on poverty is generally investigated on two common levels/stages. First, through the point estimation of elasticity of poverty to growth which provides a measure of the impact of growth on monetary indicators of poverty and, second, the estimation of the impact of growth on what are known as non-monetary indicators of well-being such as life expectancy, infant mortality and schooling achievements.

The history of the study of this issue is not very old; these kinds of studies have been started in 1950s. Actually, despite the earliest debates concerning about pro-poor growth in 1950s, but the World Bank’s *Redistribution with Growth* set an important milestone. Although the phrase pro-poor growth was not commonly used then, the concept underlay discussions on ways to alleviate poverty in developing countries. Pro-poor growth was also implicit in “broad-based growth” that pervaded the *World Development Report 1990* (Kakwani and Pernia, 2000).

***There are some main approaches to the pro-poor growth according to the literature review. The views of Simon Kuznets and Nanak Kakwani are of greatest relevance to our research.***

Kuznets states that the poor may benefit from economic growth only indirectly and, hence, the proportional benefits of growth going to the poor could be always less than those accruing to the nonpoor. In other words, the positive effects of growth on the poor tend to get offset by the adverse effects of rising inequality emerging, as suggested by Kuznets, in the process of economic growth in the initial stages. However, if economic growth is accompanied by a decline in inequality, the poor benefit more than nonpoor - a situation described in the literature as pro-poor growth (Kakwani and Pernia, 2000). Even when inequality rises, observed poverty may still decline if the growth effect predominates over the inequality effect, that is, the extent of fall in poverty due to growth is larger than the rise in poverty due to rise in inequality (Bhanumathy and Arup, 2004).

So, the Kuznets (1955) hypothesis of inverted U-shaped pattern of income inequality implies that the inequality first increases and then decreases in the course of a country’s economic growth. To compensate for the increase in inequality, these countries will need a very high economic growth to prevent an increase in poverty. Once a country has crossed the Kuznets turning point (when the

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inequality starts decreasing), even a low but steady growth will substantially reduce poverty (Kakwani, 1993).

Another view, more or less similar to Kuznets' thinking, is the "trickle-down" approach of development economics in the 1950s and 1960s. It implies a vertical flow from the rich to the poor that happens of its own accord. The benefits of economic growth go to the rich first, and then in the second round the poor begin to benefit when the rich start spending their gains. Thus, the poor benefit from economic growth only indirectly through a vertical flow from the rich. It implies that the proportional benefits of growth going to the poor will always be less. The incidence of poverty can diminish with growth even if the poor receive only a small fraction of total benefits (Kakwani and Pernia, 2000).

"Trickle-down" occurs when there is reduction in poverty, however small, for any positive growth in per capita income. According to this definition, inequality can even increase as long as its adverse effect on poverty is offset by the poverty-reducing effect of growth. It will be more useful to say that "trickle-down" occurs when the poor are receiving benefits at least equal the growth rate in that case the inequality component of changes in poverty will be non-positive. Thus, the magnitude of this inequality component provides a useful measure of the degree of "trickle down" (Kakwani, 1993).

According to Kakwani, to assess the impact of economic growth on poverty, one needs to measure separately the impact on poverty of changes in average income and in its distribution. In other words, one needs to decompose the total change in poverty into (i) the impact of growth when the distribution of income does not change, and (ii) the effect of income redistribution when total income does not change. Therefore, this pure growth effect concept seems to emphasize the impact of economic growth on poverty, taking the inequality coefficient (Gini index) constant. Hence, the impact of economic growth when distribution of income does not change - may be called "pure growth effect" (Kakwani, 1993).

Take  $G$  as the proportional change in poverty when there is a positive growth rate of 1 percent (the growth elasticity of poverty). This can be decomposed into two components,  $P$  and  $I$  such that

$$G = P + I$$

$P$  (called pure growth effect) is the elasticity of poverty to growth, holding inequality constant.  $I$  (called inequality effect) measures the elasticity of poverty to changes in inequality, holding the mean of real income constant.  $P$  will always be negative because positive growth always reduces poverty, with distribution remaining constant.<sup>2</sup> But  $I$  can be either negative or positive depending on whether growth is accompanied by improving or worsening inequality. This suggests that the degree of pro-poor growth can be measured by a pro-poor growth index

$$\Phi = \frac{G}{P} = \frac{P+I}{P} = 1 + \frac{I}{P}$$

<sup>2</sup> For an algebraic derivation of this result see Kakwani (1993).





$\Phi$  will be greater than 1 when  $I < 0$ . Thus, growth will be pro-poor when  $\Phi > 1$ , meaning that the poor benefits proportionally more than the nonpoor, i.e., growth results in a redistribution in favor of the poor. This would be the first-best outcome. When  $0 < \Phi < 1$ , growth is not strictly pro-poor (i.e., growth results in a redistribution against the poor) even though it still reduces poverty incidence: this is trickle-down growth. If  $\Phi < 0$ , economic growth actually leads to an increase in poverty (such a situation leads to immiserising growth).

If  $I$  is negative, growth has led to a change in the distribution of income in favour of the poor, thereby reducing poverty. Such a growth may be characterized as pro-poor. If  $I$  is positive, the change in income distribution is pro-rich: the rich benefit proportionally more than the poor (Kakwani and Pernia, 2000).

Kakwani's view led the scientific audience to introduce a new concept regarding pro-poor growth and the correlation between growth and inequality. This is the marginal proportionate rate of substitution (MPRS). MPRS equates the proportional change in poverty to zero if the policy intends to compensate the certain increase in inequality. That is, MPRS measures the trade-off between growth and inequality. For instance, for ultra poor, the value is 4.59, when we measure poverty proposed by Watt's (Kakwani, 1993). The implication is that we need an income growth rate of 4.59 percent to compensate for an increase of 1 percent in the Gini index. The smaller the poverty threshold, the greater the relative sensitivity of poverty for changes in income inequality than for changes in the mean income. High values of the MPRS suggest that it crucial to know if there is a systematic tendency for inequality to increase with economic growth (Kakwani, 1993).

Critics of the concept of pro-poor growth would argue that a pro-poor growth strategy gives rise to distortions in the economy, resulting in inefficiencies or loss of growth. Such loss of growth may be so much that the overall well-being of society falls. But according to Kakwani's argument (Kakwani and Pernia, 2000) this depends on the specific policies implemented. Even if these are distortive, then it may also be argued that pro-rich growth policies also creates as many, if not more, distortions, thereby resulting in lower than optimum output. The issue of trade-off is related to the choice of a social welfare function. If the well-being of the poor is of greater importance, then greater weight must be given to those at the bottom of the distribution. Then the contribution of efficiency to social welfare will be small. Thus, it may be reasonable to focus more on the equity aspects of pro-poor growth, although efficiency admittedly plays a critical role in poverty reduction policies. Nevertheless, the size of its impact on social welfare compared with the gains that result from improved equity needs to be assessed.

Empirical evidence of the relationship between growth and poverty is almost unanimous. The effect of economic growth on poverty is positive, and the impact of inequality on poverty is negative (for brevity these results have been summarized in appendix 2).



We now turn to transition countries in particular by analyzing the causes of poverty Based on the book of Qutman (2002). The four main causes of the poverty problem in the countries of transition are the following:

1. Unemployment problem which was the result of transformation process. Most of these unemployed persons are related to cyclical unemployed and underemployed, who have more probability to be poor.
2. Changes in the demographic structure of the population. That is the main fractions of the population belong to children (particularly orphans), sick and disabled men, refugees etc. which have high probability of being poor.
3. Ineffectiveness of government's social policy. The problems which closely relate with social policies include (i) not having a targeted policy, (ii) having a "leaky bucket" expenditures policy, (iii) lack of policy will etc.
4. Psychological problems of population. Most of the people, in particular poor people have insufficient incentives to acquire education or to have a good health, etc. However, these problems result in poverty more often than not.

It is evident that the growth elasticity of poverty can be higher when the main problem of the poverty is a first point, which has been indicated above. With economic growth, employment opportunities increase and wages rise. This certainly leads to the subsequent poverty reduction as well.

But as we mentioned before, the impact of economic growth on poverty rate is a quite small in the countries of transition. We think that the main causes of this are following:

- High rate of social inequality;
- Small share of wages in total income of the population;
- Mono product oriented economy;
- Inefficient mechanism of the minimum wage rate policy;
- Regional or sectoral differentiation between production and migration;
- Shortages and disadvantages in the existing system of legislation;
- Intransparency and inefficiency of institutional framework etc.;

A combination of these factors characterizes almost all countries in transition. Besides these factors, there are a lot of circumstances which illustrate the macro/micro social-economic policies against the poor people. Kakwani and Pernia (2000) emphasize: "(...) in many countries, governments knowingly or unknowingly adopt policies that are biased in favor of the rich. Macro policies that tend to constrain pro-poor growth include such policies as overvalued exchange rates, big city-oriented industrial location policies, and public infrastructure spending biases toward urban areas and against rural areas. According to their view, micro policies that work against the poor's welfare can be: monopoly powers enjoyed by some firms that result in high prices; subsidized public utilities (e.g., low water fees); state universities (low student fees) that benefit primarily the nonpoor; revenue generation that depends much more on indirect than on direct taxes; and housing policy (rent control) that limits housing supply."



This is why, taking into account the viability of pro-poor growth is very important point in the policy making area not only in developed economies, but also in emerging as well as transition economies. Such kinds of policies could be an adequate public spending for basic education, health and family planning services, better access to credit, or the promotion of small and medium enterprises. A properly functioning progressive tax system and relying on income taxation opposed to regressive indirect taxes is also pro-poor (Kakwani and Pernia, 2000).

Economic openness can also help in creating pro-poor growth. If investments come from national resources, the share of GDP allocated to consumption must decrease, so that the short term impact of growth on poverty will be reduced. By contrast, if investments are financed internationally, national consumption as a share of GDP need not decrease, and the immediate impact of GDP growth on poverty will be larger. This approach has been indicated by Wodon (1998) as well.

Efforts of the government and the society as a whole on provision for sustainable economic growth in favor of the poor may be equal to zero, if there is no effective governance. Also it is impossible to solidly solve social conflicts and problems in the society with efforts of one sector. Therefore, the efforts of government on reduction poverty rate and development living standards by using a social contract mechanism (using public finance in poverty reduction) are not effective for transition countries according to past and contemporary world experiences. On the other hand, the efforts of government on reduction poverty rate and development wellbeing of population by using a social partnership mechanism are effective and these efforts lead to new jobs as well as new activities of income generation in countries with transition period.



## ANALYSES AND EVALUATIONS

### 2.1. MAIN METHODOLOGIES

According to broader definitions of the term of pro-poor growth (Kraay, 2004 and ADB, 1999) we could apply standard poverty-decomposition techniques to identify three potential sources of pro-poor growth. These sources are (i) a high rate of growth of average incomes; (ii) a high sensitivity of poverty to growth in average incomes; and (iii) a poverty-reducing pattern of growth in relative incomes.

In order to identify the effect of the first source of pro-poor growth on poverty reduction we simply analyze the comparison of the growth of average nominal income of population and growth of GDP.

Various models are being used to determine the growth sensitivity of poverty. In light of section 1.2, the correlation between economic growth and poverty can be evaluated by taking into account the Gini coefficient or not. We prefer to develop the time series models without Gini coefficient for transition countries such as Azerbaijan. The main reason for this is the lack of data about inequality. Therefore, our proposed growth-poverty time series model is

$$\log(P_t) = c + \gamma \log(W_t) + v_t \quad (1)$$

- $W_t$  : Per capita income in period t.
- $P_t$  : Poverty measure in period t.
- $\gamma$  is the gross elasticity of poverty reduction to growth (Zamora and others, 2005).

A growth in relative incomes, as the third main source of pro-poor growth, will be analyzed by tracking the trend of growth on the income of first quintile for certain years, and then comparing this trend with the GDP growth trend.

What about the correlation between sectoral growth and poverty? How realistic is the assumption of constant inequality within sectors? The answer depends on the nature of the groups or sectors. If the individuals belonging to each sector are fairly homogeneous, the effect of this assumption will be negligible. Since the sectoral growth rates can differ, income inequality in the population may change because of between group inequalities. Therefore, it is also important to take into consideration the sectoral growth and poverty reduction approach in evaluations. We think that at least estimating the effect of sectoral involvement on poverty will shed more light on the nature of pro-poor growth.

For this purpose we chose a binary response (probit) model. Let variable Y denote individual poor/non-poor status, if the  $i$ th individual is among the poor category, then  $Y_i = 1$ , and if it is not, then  $Y_i = 0$ . Now let  $P_i$  be probability that  $Y_i = 1$ , that means that the event occurs, and  $(1 - P_i)$  is probability that  $Y_i = 0$  (the event does not occur). The probit model takes the form

$$P_i = \text{Prob} (Y_i = 1) = F (X_i, \beta/s) \quad (2)$$



Where,  $X$  is a vector of factors that determines  $Y$ . Estimating the probit model is straightforward even though the model is non-linear and no closed-form expression for function  $F$  exists.

In our paper the probit regression measures the association between probability of being poor/non-poor and a whole range of factors including characteristics of the individual. The dependent variable of poor/non-poor status is created based upon the poverty line calculated by the Azeri government for year 2004. The independent variables determining the probability of individuals being poor/non-poor are mainly dummy variables such as gender (equals 1 if individual is male, 0 if female), education (equals 1 if individual has higher education, 0 otherwise), age, sectors of employment (equals 1 if individual involves/works to/for certain sector, 0 otherwise). We are mainly interested in the partial effects of sectoral employment variables; all other variables are introduced as controls for endogeneity.<sup>3</sup>

The study of effect of economic growth on job creation and labor market development is also pervasive issue for broader investigation of pro-poor growth. A measure relating job growth with economic growth is the employment elasticity of output growth. It is mainly measured as the proportionate change in employment divided by the proportionate change in GDP during a given period (Huong and others, 2003). However, the employment elasticity should be interpreted with caution. Thus, elasticities greater than unity imply declining labor productivity, and an elasticity of less than unity means that employment expansion is taking place alongside an increase in productivity. But the distance of elasticity index from 1 should not be large if we consider economic growth a core positive factor for employment growth.

## 2.2. DATA BASE AND ASSUMPTIONS

Indicators such as poverty rate, GDP per capita and per capita money income have been used in the given research work in order to develop time-series models illustrating correlations between economic growth and the poverty rate. It is not possible to get long-time and stable official statistics concerning about poverty in Azerbaijan: the State Statistic Committee of Azerbaijan Republic started to calculate the rate of poverty in year 2001. Furthermore, regarding the previous years data, only a World Bank statistic is available for 1995. We think that it is important to have relevant stable data at least starting from 1995 in order to develop time-series models. So we have used the following assumptions to fill in missing observations for years 1996-2000.

**Assumption 1.** The data for years 1996-2000 has been filled according to average reduction rate of poverty rate in years 2001-2005. This reduction rate was 12 per cent.

**Assumption 2.** The data for years 1996-2000 has been filled according to minimum reduction rate of poverty rate in years 2001-2005. And this number was 4 per cent.

**Assumption 3.** The data for years 1996-2000 has been filled according to relevant reduction rate of poverty rate in years 2001-2005. So poverty reduction rate has been accepted as 12 percent in the years

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<sup>3</sup> For example, education is supposed to correlate negatively with poverty, but the average education level across sectors is not equal, therefore omitting this variable would bias our estimates.



when the growth rate of GDP was 10 or more per cent (these years were 1998 and 2000), another years' poverty reduction rate has been accepted as 4 percent.

**Assumption 4.** The average reduction rate of poverty for years 1996-2000 has been developed according to a trend<sup>4</sup>.

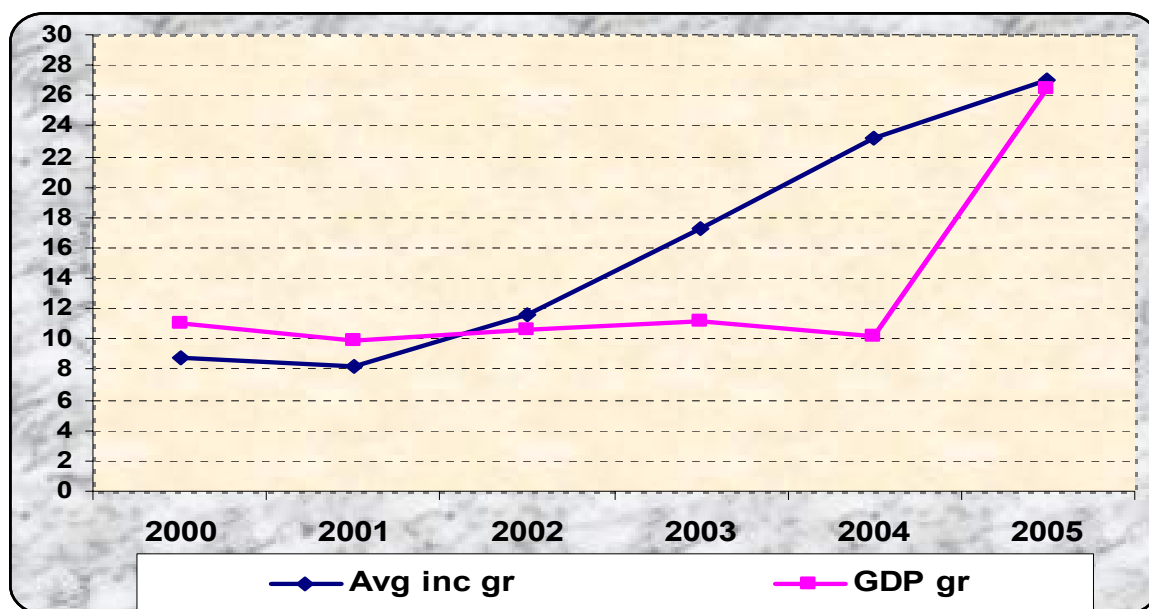
Two main data bases have been used in order to develop cross-sectional models and these models would be used for evaluating the dependence of the welfare of population on the various sectors of the economy. The first database was the Azerbaijan Households' Budget Survey (AHBS) which conducted by State Statistic Committee (SSC) in around the country in 2003 and 2004. Second data base was the Households Survey (HS) which conducted by Caucasus Research and Resource Center, Eurasian Foundation in Baku city in 2004.

In addition, data of SSC as well as of various international organizations including the World Bank, International Labor Organization and International Monetary Fund have been used.

### 2.3. EFFECTS OF ECONOMIC GROWTH ON POVERTY

As mentioned above, there are three main sources of pro-poor growth. The first of them is the growth of average nominal income of population. In order to identify the effect of the average income growth on pro-poor growth we constructed following figure.

**Figure 1. Average nominal income and GDP growth rate (%)**



Source: SSC dataset for years 2001-2005.

<sup>4</sup> See the outcomes of all four assumptions in appendix 3.



According to figure 1, we could argue that the trend of income growth is significantly higher than GDP growth in Azerbaijan starting from year 2002. The gap between two types of growths was very large in year 2004. But in the last year (2005) the growth rate of income and GDP was almost identical. In general, it is possible to argue that the effect of pro-poor growth due to average income growth approach is insignificant. This argument makes sense if we don't assume that this average growth mainly or totally belongs to the income growth of the poorest fraction of population. But anyway, there is almost no big positive impact of economic growth even on average income growth of population.

It is possible to explore the average income growth effect on poverty by analyzing the remaining two main sources of pro-poor growth. One of them is estimation of growth elasticity of poverty. For that purpose we developed several econometric models based on selected methods which have been indicated in paragraph 2.1. These models are longitudinal time series models which cover several years.

Results of the longitudinal growth elasticity estimation are summarized in Table 1. The estimated parameters are significant and robust to various assumptions on missing observations; they range between -0.473 to -0.505 per cent for the per capita GDP and -0.488 to -0.499 per cent for the money income of the population. For example, according to the first assumption the growth sensitivity of poverty rate is -0.47 per cent. That is, a 1 per cent increase in the level of real GDP, *ceteris paribus*, will lead to 0.47 per cent (and not percentage point!) decrease in poverty rate. Under the same assumption the impact of a 1 per cent growth on average money income of the population is a 0.488 per cent reduction in poverty rate.

**Table 1. Economic growth and poverty – time-series models**

Dependent variable	Log(PR1)	Log(PR1)	Log(PR2)	Log(PR3)	Log(PR3)	Log(PR4)
Explanatory variable	Log(GDPPC)	Log(MIPC)	Log(GDPPC)	Log(GDPPC)	Log(MIPC)	Log(GDPPC)
Coefficient	-0.473	-0.488	-0.505	-0.486	-0.485	-0.499
(S.E.)	(0.031)*	(0.023)*	(0.041)*	(0.040)*	(0.053)*	(0.036)*
R-squared	0.962	0.981	0.944	0.943	0.901	0.954

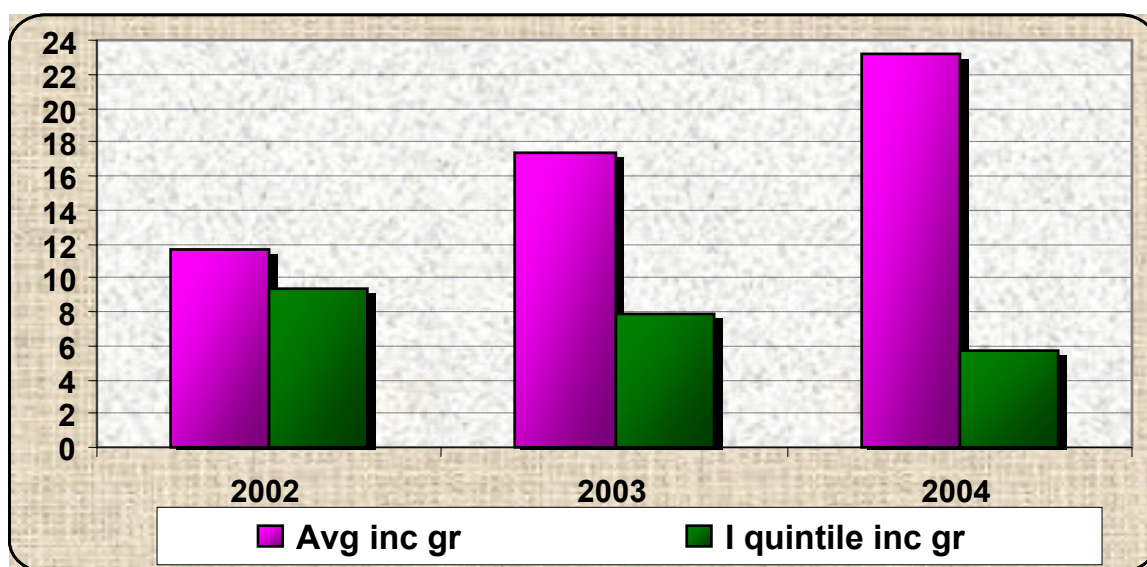
*Note: number of observations: 11 (1995-2005). \*: significant at 1% level.*

When interpreting the results one should remember that the available time series are short and the missing data were filled according to various assumptions. Still, it can be argued that in Azerbaijan one per cent increase in the level of GDP per capita causes approximately 0.5 per cent reduction in poverty rate. This growth elasticity of poverty is very low compared with the experiences of other countries (see appendix 2), and underpins the argument of the previous chapter that the positive effects of economic growth on poverty are insignificant in the countries of transition.



The last main source of pro-poor growth is the poverty-reducing pattern of growth in relative incomes. In order to explore the effect of growth of relative incomes we simply compare the growth of average income and first (lowest) quintile income for years 2002-2004<sup>5</sup>.

**Figure 2. Average income and first quintile income growth rate (%)**



*Source: Author's calculations based on the official database of SSC.*

As we observe from the figure 2, the growth rate of average income of population was higher than growth rate of the income of first quintile, and the gap even increased to the detriment of the first quintile. That is, the shift in average income of population was quite high, but on the other hand a real drop was observed in the growth rate of the income of first quintile. This fact also proves that the observed economic growth in Azerbaijan would not be called pro-poor; it should be called pro-rich growth.

#### **2.4. EFFECTS OF SECTORAL GROWTH ON POVERTY**

We think that the main causes of the low positive effect of economic growth on poverty are a high rate of social inequality and labor market challenges in the Republic of Azerbaijan. The first of these causes is not a subject of a given research work. Therefore, the impact of social inequality on poverty rate has not been investigated in the current paper. But based on the experience of other countries, we could argue that the effect of this factor on poverty rate is quite high (Bourguignon, 2002).

To gain further insight on the effect of growth on poverty, we investigate the effects of sectoral employment on poverty. This approach differs from the longitudinal one as we do not estimate sectoral growth elasticities directly; on the other hand, we can draw stronger inferences from the richer (but

<sup>5</sup> This approach has been tested for Vietnam by Huong and others (2003).





solely cross-sectional) database of the Household Survey. In our estimation the risk of poverty is estimated with the help of sectoral employment variables in a probit model. Since employment is endogenous we control for age, gender and education.

Results are summarized in Table 2. Our estimates are robust to specification in the sense that probit, logit and linear probability models all yield estimates with the same signs and significances. Comparing the three specifications it is evident that initial estimates were significantly biased and the introduction of the control variables is appropriate.

**Table 2. Sectoral employment and poverty**

Sector	No controls		Controls for age and gender		Controls for age, gender and education	
	Coeff.	SE	Coeff.	SE	Coeff.	SE
Agriculture, hunting and foresting	0.296	0.020	0.355	0.022	0.344	0.023
Mining industry and quarry	-0.513	0.089	-0.435	0.090	-0.398	0.091
Processing industry	-0.369	0.053	-0.295	0.055	-0.260	0.055
Electric power and, gas and water supply	-0.346	0.088	-0.264	0.089	-0.195	0.089
Construction	-0.270	0.040	-0.221	0.043	-0.222	0.043
Sale, Repairing	-0.381	0.031	-0.321	0.034	-0.308	0.034
Hotel and Restaurant	-0.633	0.091	-0.577	0.092	-0.548	0.092
Transport, Storehouse and communication	-0.351	0.048	-0.275	0.050	-0.259	0.050
Finance meditation	-0.493	0.106	-0.418	0.107	-0.242	0.110
Income from property	-0.604	0.092	-0.541	0.093	-0.446	0.094
State management and comp. soc. maintenance	-0.463	0.054	-0.387	0.055	-0.232	0.057
Education	-0.456	0.038	-0.359	0.040	-0.139	0.044
Health and social services	-0.452	0.058	-0.347	0.060	-0.263	0.060
Other commercial and individual services	-0.323	0.066	-0.250	0.067	-0.226	0.068
Hired service, private house holdings	-0.267	0.063	-0.195	0.064	-0.200	0.064
McFadden R-squared		0.025		0.030		0.033
Percent correctly predicted		63.7		64.0		64.1

*Note: All coefficients are significant at 5%.*

We cannot interpret the estimated coefficients of the probit model directly. Therefore the marginal effects of all variables must be calculated in order to make appropriate interpretation<sup>6</sup>. The marginal effects of the all variables (sectors) have been indicated in the following table.

<sup>6</sup> This method is readily available in most econometric textbooks including Dougherty (2002), Wooldridge (2002) and Magnus and other (2005).



Table 3. Marginal effects

Variables	No controls	Controls for age and gender	Controls for age, gender and education	
			Male, 40 years old, not educated	Male, 40 years old, educated
<b>Gender</b>	-	-0.0135	-	-
<b>Agriculture, hunting and forestry</b>	0.1108	0.1326	0.1290	0.1067
<b>Mining industry and quarry</b>	-0.1920	-0.1625	-0.1493	-0.1235
<b>Processing industry</b>	-0.1381	-0.1103	-0.0976	-0.0807
<b>Electric power and, gas and water supply</b>	-0.1296	-0.0986	-0.0732	-0.0605
<b>Construction</b>	-0.1012	-0.0825	-0.0833	-0.0689
<b>Sale, Repairing</b>	-0.1424	-0.1199	-0.1154	-0.0955
<b>Hotel and Restaurant</b>	-0.2367	-0.2158	-0.2056	-0.1701
<b>Transport, Storehouse and communication</b>	-0.1311	-0.1026	-0.0971	-0.0803
<b>Finance meditation</b>	-0.1846	-0.1564	-0.0908	-0.0751
<b>Income from property</b>	-0.2258	-0.2021	-0.1671	-0.1382
<b>State management and comp. soc. Maintenance</b>	-0.1734	-0.1445	-0.0870	-0.0720
<b>Education</b>	-0.1706	-0.1341	-0.0521	-0.0431
<b>Health and social services</b>	-0.1689	-0.1296	-0.0985	-0.0815
<b>Other commercial and individual services</b>	-0.1208	-0.0936	-0.0846	-0.0700
<b>Hired service, private house holdings</b>	-0.0998	-0.0729	-0.0751	-0.0621

Source: Author's calculations based on HS 2004 and Table 2.

We could argue that the impact of various sectors on poverty level of population is quite different. Thus, there is a single sector, agriculture, whose impact on poverty is negative (employment in agriculture implies a greater risk of poverty). According to the model's results the chance for a person to be poor is almost 12 per cent higher if he/she works in agriculture sector. Moreover, education has a positive effect on poverty, although this effect is rather small. For example, the chance of an uneducated 40 years old male to be poor is about 1-3 per cent higher than the person with the same age and gender but who has high education background. Education may only play an indirect role by determining whether a person is able to get employed outside agriculture.

All remaining explanatory variables have positive impact on poverty. Sectors or sources of incomes such as hotels and restaurants, income from property and mining sector have higher than average positive effect on the risk of poverty rather than others. Thus, the probability of a person not to be poor is correspondingly 23.7, 22.6 and 19.2 per cent higher in the given sectors. Furthermore, sectors such as finance meditation, state management, education, health and social services have more than 16 per cent positive effect on poverty (correspondingly 18.56, 17.3, 17.1 and 16.9 per cent). Other sectors such as construction, transport, processing industry etc. have low positive impact on poverty comparing with the sectors mentioned before.



According to the table 3 we could argue that the impact of gender on poverty has interesting origin. Thus, the chance of a person to be poor is 1.4 per cent lower for female than male. We think that this magnitude is not significant.

We argue that the impact of different sectors on poverty is related to wages and salaries in these sectors. For year 2005, wages and salaries constituted approximately 20 per cent of average population income (Azerbaijan in Figures, 2006). Therefore, we can argue that the effect of wage/salary incomes on the poverty rate is small. Furthermore, according to ILO's figures, in CIS countries (Azerbaijan is a member of CIS) the main fraction of the employees belongs to the rich strata (see appendix 6). Therefore, we could also mention that the impact of economic growth on poverty in the countries of CIS as well as in Azerbaijan is lowest comparing with other regions. The share of poorest employees in total employees is about 2.6 per cent in year 2005 in CIS countries. Even Sub-Saharan Africa's countries have higher impact of economic growth on poverty because of the employees' social structure (56.3 per cent of the total employees belongs to the poorest fraction of population in Sub-Saharan Africa). But to be mention that the fact illustrating the little dependency of money incomes from salary incomes are turned out in the country level. The situation is not completely the same in Baku city, as salary incomes make up 40 per cent of the money incomes of the population in the capital. This argument is clearly indicated in table 4. According to the table we could argue that besides salary incomes, pensions (16.9 per cent), incomes from agricultural activity (12.2 per cent), and incomes from business (9.4 per cent) play a large role in the total money incomes of population as well. Knowing that more than 25 per cent of total population lives in Baku, we could argue that the salary incomes plays an important role in total incomes of population<sup>7</sup>. In the following we will focus on this issue and investigate the main obstacles of insufficient pro-poor growth by analyzing the sectoral framework of the salary incomes of the country's population.

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<sup>7</sup> According to unofficial information some fraction of the population who registered in various regions of the country do not live there because of the unemployment problem. Most of them unofficially live in the capital or in the neighboring countries, particularly in Russia. This fact strengthens our argument.

**Table 4. First main sources of the income of households in Baku, 2004**

		Number of observations	Frequency
1.	Salary from the main place of employment	598779	39.8
2.	Salary from additional work	30453	2.0
3.	Income from business	141077	9.4
4.	Occasional contracts	137506	9.1
5.	Income from agricultural activity	183412	12.2
6.	Pensions	253467	16.9
7.	Stipendiums	1300	0.1
8.	Social welfare	3416	0.2
9.	Benefits for children	9970	0.7
10.	Compensations	51380	3.4
11.	Aliments	1293	0.1
12.	Financial help of relatives/friends	20198	1.3
13.	Incomes from sales of goods (household items)	10159	0.7
14.	Incomes from letting of property	1416	0.1
15.	Incomes from sales of property	350	0.0
16.	Interest on securities	2269	0.2
-	Don't know	46049	3.1
-	Refuse to answer	11550	0.8
-	Total	1504046	100.0

*Source: Author's calculations based on HS 2004.*

It is possible to observe the dominant share of agricultural sector in total employment of population by the information from a households survey held by SSC in 2004 (see table 5). The share of agriculture in employment is about 37 per cent. The second largest employer is sale and repairing sector (13.8 per cent). As mentioned in the table, other dominant sectors of employment are education (9 per cent), construction (8 per cent), transport, storehouse and communication (5.7 per cent), processing industry (4.7 per cent) etc.



Table 5. Sectors of employment

		Number of observations	Percent of Frequencies	Valid Percent
1.	Agriculture, hunting and foresting	1280015	16,0	36,8
2.	Fishing	17172	,2	,5
3.	Mining industry and quarry	58310	,7	1,7
4.	Processing industry	161946	2,0	4,7
5.	Electric power and, gas and water supply	53200	,7	1,5
6.	Construction	278576	3,5	8,0
7.	Sale, Repairing	481045	6,0	13,8
8.	Hotel and Restaurant	58231	,7	1,7
9.	Transport, Storehouse and communication	198509	2,5	5,7
10.	Finance meditation	37652	,5	1,1
11.	Income from property	55844	,7	1,6
12.	State management and comp. soc. maintenance	158157	2,0	4,6
13.	Education	311596	3,9	9,0
14.	Health and social services	124017	1,5	3,6
15.	Other commercial and individual services	94882	1,2	2,7
16.	Hired service, private house holdings	105387	1,3	3,0
-	Total	3474538	43,4	100,0
-	Persons who were not respondents	4534457	56,6	-
<b>Total</b>		<b>8008995</b>	<b>100,0</b>	<b>-</b>

Source: Author's calculations based on AHBS 2004.

It should be mentioned that there is a big difference between sectors of employment and salary incomes gained from these sectors. As table 5 illustrates, only 43.4 per cent of total employees gain salary incomes. This disparity protuberantly demonstrates itself in the agriculture sector. There, only 5.5 per cent of employees gain they income in the form of salary. Furthermore, the share of this sector's employees who gain salary in total salary gainer's employees is about 4.7 per cent. Moreover, the amount of the average monthly salary in this sector is not sufficient either. Thus, the ratio of this sector in the given area is third from behind, after the education, health and social sectors.

Sale, repairing and construction sectors are other dominant sectors of employment. But there is disparity problem regarding the salary structure. Appropriately 38.6 and 39.4 per cent of employees gain salaries in these two sectors; but the share of these salary gainers in total salary gainers is correspondingly 12.3 and 7.3 per cent.



Table 6. Wages from sectors of employment

Wages and salaries from main job * Sectors of employment	Cases					
	Included		Excluded		Total	
	N	Percent	N	Percent	N	Percent
	1509392	18,8%	6499603	81,2%	8008995	100,0%
Sectors of employment	Number	Share of salary gainers within the sector employees, %	Share of salary gainers within the total employees in the economy (%)	Mean salary, AZN		
Agriculture, hunting and forestry	70486	5.5	4,7	55.2		
Fishing	14176	82.5	,9	57.9		
Mining industry and quarry	56929	97.6	3,8	96.5		
Processing industry	112228	69.3	7,4	70.2		
Electric power and, gas and water supply	48209	90.6	3,2	72.6		
Construction	109840	39.4	7,3	84.1		
Sale, Repairing	185785	38.6	12,3	74.3		
Hotel and Restaurant	33592	57.7	2,2	76.5		
Transport, Storehouse and communication	117325	59.1	7,8	76		
Finance meditation	37012	98.3	2,5	81.8		
Income from property	28727	51.4	1,9	94.4		
State management and comp. soc. maintenance	155582	98.4	10,3	75.7		
Education	306133	98.2	20,3	51.3		
Health and social services	117124	94.4	7,8	40.2		
Other commercial and individual services	52958	55.8	3,5	59.4		
Hired service, private house holdings	63286	60.05	4,2	62.6		
<b>Total</b>	1509392	43.4	100,0	67.0		

Source: Author's calculations based on AHBS 2004.

According to the table 6, we could argue that there are set of sectors where salary payments are satisfactory. More than 90 per cent of employees who work in the sectors such as (i) state management; (ii) health and social services; (iii) education; (iv) finance meditation; (v) electric power and, gas and water supply; (vi) mining industry and quarry gain their main income as a salary. However, sectors such as education, state management, health and social services should be mentioned. These sectors'

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shares among employees who gain their main income as a salary form are 20.3, 10.3 and 7.8 per cents correspondingly. The main problem regarding these sectors is the very low level of average monthly salaries. (particularly in sectors education and health, correspondingly 51.3 and 40.2 AZN or 52 and 41 USD<sup>8</sup>) compared with salaries in other sectors.

As mentioned the main fraction of employees who work in the sectors such as mining industry and quarry, finance meditation gain their income as a salary (correspondingly 97.6 and 98.3 per cent). But the main challenge in these sectors is that the share of these two sectors in total employment is not significant. That is only 6.2 (correspondingly 3.8 and 2.5 per cent) of total employees work in these sectors.

The key to poverty reduction is sustainable growth in employment. We think that one of the main causes of insufficient pro-poor growth trend in the countries of transition as well as in Azerbaijan related with the insufficient relationships between economic growth and new jobs. Another cause is that the observed sectoral economic growth is slower in sectors with large employment.

**Table 7. Share of main sectors' GDP in total GDP and growth rate of these sectors**

	2001		2002		2003		2004	
	Share	Growth	Share	Growth	Share	Growth	Share	Growth
<b>Agriculture</b>	<b>15.8</b>	111.1	<b>14.2</b>	106.4	<b>13.1</b>	105.6	<b>12.1</b>	108.1
<b>Mining and quarrying</b>	<b>28.6</b>	120.8	<b>27.5</b>	111.1	<b>29.8</b>	112.4	<b>30.5</b>	120.3
<b>Manufacturing</b>	<b>4.1</b>	131.8	<b>5.8</b>	136.9	<b>9.3</b>	137	<b>9.2</b>	115.4
<b>Construction</b>	<b>6.2</b>	101	<b>10.8</b>	170	<b>12.1</b>	151.9	<b>13.5</b>	141.2
<b>Sale and paid services</b>	<b>7.9</b>	107.7	<b>7.5</b>	108.3	<b>7.9</b>	111.3	<b>8.0</b>	114.7
<b>Transport and communication</b>	<b>10.9</b>	95	<b>9.8</b>	110.8	<b>9.5</b>	119.5	<b>9.5</b>	111.2
<b>Education</b>	<b>4.9</b>	104.5	<b>4.4</b>	101.9	<b>3.5</b>	94.7	<b>3.2</b>	105.7
<b>Health and social services</b>	<b>1.8</b>	104.3	<b>1.5</b>	90.6	<b>1.7</b>	136.4	<b>1.5</b>	105.9

*Source: Author's calculations based on the official database of SSC.*

As seen in table 7, the largest shares in GDP belong to the mining and quarrying industry, agriculture and construction. As mentioned before, besides the agricultural sector, the employees in these two sectors have not big share in total employment (correspondingly 1.7 and 8 per cent). Furthermore, most of these employees do not gain salary. Also, a person involved in agricultural sector has a higher risk to be poor. The main reason of these facts is related to the legislation of labor. According to the "Employment Law of Azerbaijan Republic" (2001) all citizens who hold own land cannot be considered unemployed. Another cause is related with the in-kind form of the income. More than 50 per cent of food consumption of rural population is driving from the own farming and also, the food consumption makes up more than 65 per cent of rural population's total consumption expenditures

<sup>8</sup> Based on exchange rate for 2004 1 USD=0.98 AZN (National Accounts of Azerbaijan (2005)).



(WB, 2005). Also, we think that the low productivity in agriculture is another cause of the low effect of agriculture involvement on poverty reduction. Although some of relevant papers find the relative productivity in agriculture inessential distributional change measures (Kraay, 2004), we argue that the low level of relative labor productivity in agriculture sector (see more detailed information in appendix 4) is one of the main reasons of the low pro-poor growth effect of this sector. That is, low labor productivity in this sector doesn't allow having high salary and this problem leads to high employment instead of high salaries or vice versa.

On the contrary, other sectors which plays crucial role in new jobs as well as in salary payments have not significant share in the total GDP. So, we could also argue that, because of the dominant share and huge growth of oil sector's GDP (manufacturing industry) in total GDP on one hand, and little share of employment on another hand there is no sound effect of macro economic growth on new jobs.

In general, we could observe similar consequences in the world economy. Thus, there is not high positive effect of economic growth on new jobs in some other economies as well. In recent years there has been a weakening relationship between economic growth and employment growth, meaning that growth is not automatically translating into new jobs. According to the data of International Labor Organization (ILO) we could observe that the rates of world economic growth and new jobs were correspondingly 5.1 and 1.7 per cent in year 2004 (see appendix 5). On the other hand, the biennial study found that for every 1 percentage point of additional GDP growth, total global employment grew by only 0.30 percentage points between 1999 and 2003, a drop from 0.38 percentage points between 1995 and 1999 (International Labor Office, 2006, and IDA and IMF, 2005). So, according to the ILO's report this phenomenon is one of the main causes for ineffective pro-poor growth in the world.

As we mentioned in paragraph 2.1, the effect of economic growth on new jobs could be analyzed by estimating the employment elasticity. We illustrate it in the table 8.

**Table 8. Employment elasticity in certain sectors**

	2001	2002	2003	2004	Average in 2001-2004
1 Education	0.222	0.547	1.053	0.176	0.500
2 Health and social services	0.234	1.122	0.028	0.170	0.388
3 Transport, storage and comm	1.056	0.094	0.054	0.096	0.325
4 Construction	1.009	0.016	0.019	0.026	0.268
5 Agriculture	0.088	0.158	0.179	0.124	0.137
Average in the country	0.041	0.068	0.113	0.289	0.128
6 Wholesale and retail trade	0.137	0.112	0.089	0.069	0.102
7 Mining and quarrying	0.051	0.090	0.081	0.049	0.068
8 Manufacturing	0.031	0.028	0.027	0.069	0.039

*Source: Author's calculations based on the official database of SSC.*

As we can see, the average employment elasticity is quite small compared with the same indicator in the world. That is, this indicator is almost three times lower than world average indicator. Also, there





are some sectors, which this elasticity is lower even within the framework of the country. These sectors are: wholesale and retail trade, mining industry and manufacturing. The evidence regarding the last two sectors proves our argument concerning about low effect of these sectors growth on poverty reduction which has been raised before. But sectors such as, education, health and social services, transport belong to the service sector, and have dominant rank in new job creation. It means that, we could improve the effectiveness of economic growth on employment by developing these sectors. And we have to take into account the necessity of privatization of these services in order to find them more developed and effective sectors in future. To tell the truth, in the short term, the privatization leads to a reduction of employment because of firing unnecessary workers. But in the long term the privatization in certain sectors will lead to higher productivity and effective job creation.

To be mentioned that one of the main factors which provides high positive relationship between economic growth and employment is related with the structure of employment. Thus the chance of economic growth for new jobs is higher in the countries where the main employees belong to the service sector. For instance, in both Western Europe and North America, the services sector has experienced the most robust growth - both in terms of value added and employment growth. Between 1991 and 2003, for every 1 percentage point of growth in the services sector, employment increased by 0.57 per cent in North America and by 0.62 per cent in Western Europe<sup>9</sup>.

So, one of the main reasons of the weak impact of the economic growth on employment in Azerbaijan appears the undeveloped structure of the employment itself. Therefore, the fact that most of the employees belong to the agricultural sector raises the argument considering the effect of economic growth on new jobs should be lower. We think that by the time this problem will obtain its solution. Actually, this trend is observing in our country. That is, service sectors such as finance meditation, social services, transport, communication, hotels and restaurants etc. have high growth trends as well as positive effects on poverty reduction in the country through the new job creation. Also development theory is based on the following assumption: by the time people will move out of agriculture in rural areas into industry and then into services. Thus, the evidence that overall share of agricultural employment has decreased over the ten years between 1995 and 2005 from 44.4 to 40.1 per cent (see appendix 7) proves raised argument.

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<sup>9</sup> For further information see <http://www.ilo.org/public/english/bureau/inf/pr/2005/48.htm>.



## CONCLUSIONS AND RECOMMENDATIONS

There are two main types of conclusions driven from the current paper. The first types of conclusions are theoretical:

- The history of the study of pro-poor growth is quite short.
- Commonly, economic growth plays crucial role in poverty reduction according to world wide experience.
- Economic growth which leads to the improvement in the structure of the income distribution is better than 'simple' economic growth.
- In the first step of the development the inequality seems to decrease the growth elasticity of poverty.
- Sectoral growth and its effect on poverty should be under consideration during the pro-poor growth study.
- The impact of economic growth on poverty is insignificant in the countries of transition.
- Besides some factors, there are a lot of circumstances which illustrate the macro/micro social-economic policies against the poor people.
- The most efficient way of poverty regulation is the mechanism of social partnership in the countries of transition.

The second types of conclusions as well as recommendations are empirical and are based on our analysis of Azerbaijan. These conclusions are the following:

- The effect of macro economic growth on poverty reduction is not significant in the Republic of Azerbaijan. The growth of GDP and average money income of population is almost same. The growth elasticity of poverty is only 0.5 per cent, much lower than in other developing countries (see appendix 2). The rate of GDP growth is quit higher than the growth rate of the income of first quintile.
- The effect of salary incomes on total incomes of the population is not high. It means that the attempts regarding the solution of the poverty problem in the country by increasing the salaries is not unit and effective way. This argument could find its justification from the reports of International Labor Organization (ILO) and our calculations on employment elasticity. That is, the facts that very small fraction of employees belongs to the poor strata and the effect of economic growth on new jobs give us further argument in order to justify our approach. So, our recommendation is that the government of Azerbaijan should force its policy for getting more poor people to be involved in employment.
- The effects of sectoral growth on poverty reduction differ from sector to sector. But mainly, sectors or sources of incomes such as hotels and restaurants, income from property and mining sector have higher positive effect on poverty rate rather than others. Thus the probability of a



person to be not poor is correspondingly 23.7, 22.6 and 19.2 per cent bigger in the given sources of incomes. Furthermore, the sectors such as finance mediation, state management, education, health and social services have more than 16 per cent positive effect on poverty (correspondingly 18.56, 17.3, 17.1 and 16.9 per cent). Other sectors such as construction, transport, processing industry etc. have low impact on poverty comparing with the sectors mentioned before.

- Only agricultural sector plays negative role in poverty reduction. That is, the chance for a person to be poor is almost 12 per cent bigger if he/she works in agriculture sector. The chance of a not educated 40 years old male, who works in agriculture, to be poor is higher than the person with the same age and sex but who has high education background. We should improve the effect of agricultural involvement on poverty by increasing labor productivity in this sector. The government should help to farmers and generally to rural population in provision with (i) accessible finance; (ii) local and foreign resource markets; (iii) local and foreign goods (consumer) markets; (iv) modern technology; (v) advanced infrastructure etc.
- Despite relatively high impact of sectors employment on poverty rate, the effect of high education on poverty rate for the employees in the certain sector is not significant. Only income from property has relatively high sensitivity on education. That is, the chance of 40 years old male, who gains his income from the property, to be poor is 3 per cent lower if he has higher education
- The effect of salary incomes on total incomes of population is higher in the Baku city (the capital of Azerbaijan) than in the whole country.
- Agricultural sector has dominant share in total employment of population. This pie is about 37 per cent. Second dominant sector of employment is sale and repairing sector (13.8 per cent). Other dominant sectors of employment are mainly education (9 per cent), construction (8 per cent), transport, storehouse and communication (5.7 per cent), processing industry (4.7 per cent).
- There is a big difference between sectors of employment and salary incomes gained from thus sectors in the country. There are only 43.4 per cent of total employees who gain salary incomes. This disparity fact protuberantly demonstrates itself in the agriculture sector. Thus, there is only 5.5 per cent of total employees gain they income in the salary form in the agricultural sector. Furthermore, the share of this sector's employees who gain salary in total salary gainer's employees is about 4.7 per cent. Moreover, the amount of the average monthly salary in this sector is not sufficient as well. Thus, the ratio of this sector in the given area is third, from negative point of view, after the education, health and social sectors.
- Sale, repairing and construction sectors have disparity problem regarding the salary structure. Appropriately 38.6 and 39.4 per cent of employees gain salary in these two sectors. But the rate of these salary gainers in total salary gainers is correspondingly 12.3 and 7.3 per cent.



- There are a lot sectors which the system of salary payment is satisfactory. More than 90 per cent of employees who work in the sectors such as (a) state management; (b) health and social services; (c) education; (d) finance meditation; (e) electric power and, gas and water supply; (f) mining industry and quarry gain their main income as a salary. But the sectors such as education, state management, health and social services should be specially mentioned. Because these sectors' employees' share in the total employees who gain their main income as a salary is correspondingly 20.3, 10.3 and 7.8 per cent. But the main problem regarding these sectors is the level of average monthly salary.
- The main fraction of employees who work in the sectors such as mining industry and quarry, finance meditation gain their income as a salary form (correspondingly 97.6 and 98.3 per cent). But the main challenge in these sectors is that the share of these two sectors in total employment is not significant. That is only 6.2 (correspondingly 3.8 and 2.5 per cent) of total employees work in these sectors.
- Another cause of insignificant pro-poor growth trend is that the observed sectoral economic growth is not harmonizing with the needs which directly related with the dominant share of sectoral employment. The main shares in GDP belong to the mining and quarrying industry, agriculture and construction sectors. But as we mentioned before, besides the agricultural sector, the employees in these two sectors have not big share in total employment (correspondingly 1.7 and 8 per cent). Furthermore, most of these employees do not gain salary.
- The sectors which plays crucial role in new jobs as well as in salary payments have not sufficient share in the total GDP. So we could also argue that, because of the dominant share and huge growth of oil sector's GDP (manufacturing industry) in total GDP on one hand, and little share of employment on another hand there is no sound effect of macro economic growth on new jobs.
- The chance of economic growth for new jobs is higher in the countries where the main employees belong to the service sector according to the ILO's reports. Also, this fact proves itself by employment elasticity index in the given sectors. According to this index the sectors such as, education, health and social services, transport etc. have dominant role in new job creation. It means that, we could improve the effectiveness of economic growth on employment by developing these sectors. And the government has to take into account the necessity of successfully privatization of these sectors in order to find them more developed, competitive and effective sectors in future.
- One of the main reasons of the weak impact of the economic growth on employment in Azerbaijan appears the poor structure of the employment itself. Therefore, the fact that most of the employees belong to the agricultural sector raises the argument considering the effect of economic growth on new jobs should be lower. We think that by the time this problem will obtain its solution.



Besides mentioned specific outcomes and recommendations the government of Azerbaijan should also take into consideration following actions in order to insure the effective pro-poor growth policy.

- The inflation (consumer price index) should be the main proxy for stable monetary policy. It is no problem to increase the amount of salaries and social benefits for poor people due to huge oil revenues. But the main problem is, the government shouldn't allow inflation to "eat away" these targeted amounts;
- SME development is one of the main ways of insured and sustainable pro-poor growth policy. Therefore, the development policy and actions of SMEs should be core point in the pro-poor growth policy of the government<sup>10</sup>;
- Development of democracy, transparency, institutional structure, accountability, regulatory quality, political stability, control of corruption, rule of law should be on the focal point of the government pro-poor growth policy.

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<sup>10</sup> You could see wide range of recommendations on SMEs' development on the Elvin (2006).



## REFERENCES

- Asian Development Bank (1999), *Fighting Poverty in Asia and the Pacific: the Poverty Reduction Strategy*, Manila, Philippines.
- Azerbaijan in Figures (2006), *Statistical Issue*, State Statistical Committee of Azerbaijan Republic, Official Publication.
- Bhanumathy, N., Arup, M. (2004), *Economic Growth, Poverty, and Inequality in Indian States in the Pre-Reform and Reform Periods*.
- Bourguignon, F. (2002), *The Growth Elasticity of Poverty Reduction : Explaining Heterogeneity Across Countries and Time Periods*, Delta.
- Bourguignon, F. (2004), *The Poverty-Growth-Inequality Triangle*, Prepared for a Conference on Poverty, Inequality and Growth, Agence Française de Développement /EU Development Network, Paris.
- Deininger, K., Okidi, J. (2002), *Growth and Poverty Reduction in Uganda, 1992-2000: Panel data evidence*, World Bank, Washington DC and Economic Policy Research Council, Kampala.
- Dollar, D., Kraay, A. (2000), *Growth is Good for the Poor*, Policy Research Working Paper of World Bank.
- Dougherty, C. (2002), *Introduction to Econometrics*, Second Edition, London School of Economics, Oxford University Press
- Elizabeth, J. and others (2005), *Economic Growth, Poverty and Institutions: a Case Study of Bolivia*.
- Elvin, A. (2006), *The Ways of the Development of SMEs in order to Reduce Poverty in the Azerbaijan Republic*, EPIN's web portal
- Falkingham, J. (2004). *Inequality and Poverty in the CIS-7 Countries 1989– 2002*. In S. Clinton and S. Sarosh (Eds.), *The Low Income Counties of the Commonwealth of Independent States* (pp.141–170). Washington, D.C.: The International Monetary Fund.
- General Employment Office (2002), *The Collection of Normative Documents on Employment*, Azerbaijan National Encyclopedic, Baku.
- Huong, P., Tuan, B., Minh, D. (2003), *Employment Poverty Linkages and Policies for Pro-Poor Growth in Vietnam*, Recovery and Reconstruction Department, International Labour Office, Geneva.
- International Development Association (IDA) and International Monetary Fund (IMF) (2005), *Joint Staff Advisory Note on the State Program on Poverty Reduction and Economic Development in the Republic of Azerbaijan*.
- International Labor Office (2006), *Global Employment Trends*, BRIEF.
- International Monetary Found, *World Economic Outlook*, September 2005.
- Janvry, A., Sadoulet, E. (2000), *Growth, Poverty, and Inequality in Latin America: a Causal Analysis*, University of California at Berkeley.
- Kakwani, N. (1993), *Poverty and Economic Growth with Application to Cote Divoire*, The University of South Wales, *Review of Income and Wealth*, Series 39, Number 2.
- Kakwani, N., Pernia, E. (2000), *What is Pro-Poor Growth*, *Asian Development Review*, Asian Development Bank, vol. 18, no. 1.
- Kraay, A. (2004), *When is Growth Pro-Poor? Cross-Country Evidence*, IMF working paper WP/04/47.

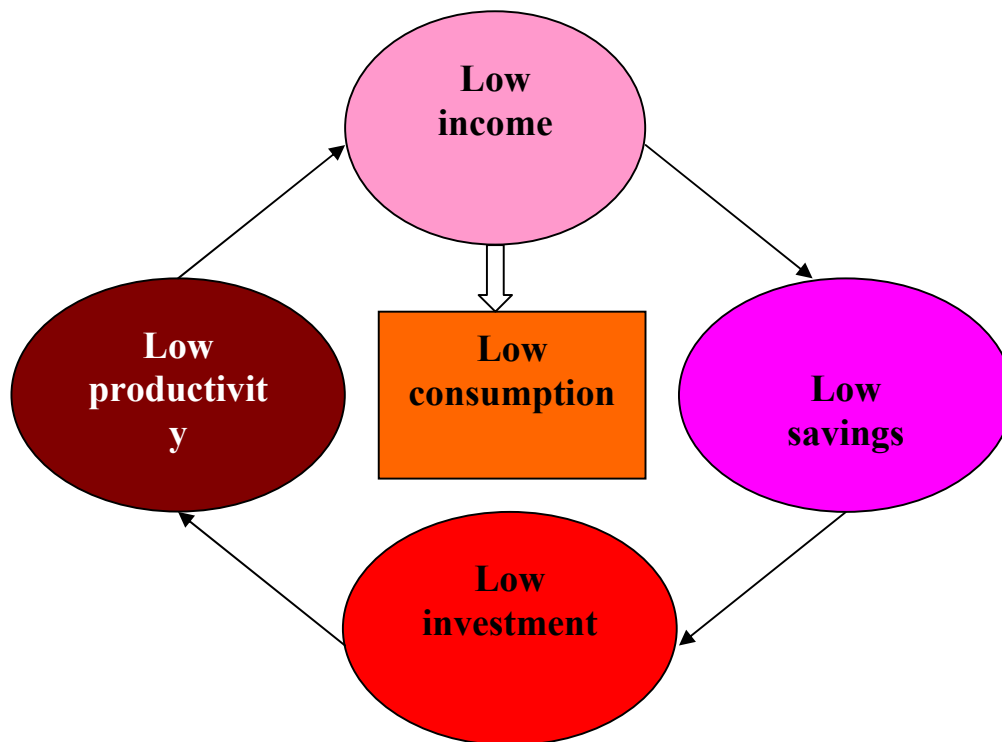


- Magnus, Y., Katishev, P., Peresetskiy, A. (2005), *Econometrics, Basic Course (in Russian) - Seventh Edition*, Moscow, Delo.
- National Accounts of Azerbaijan for 1995-2004 (2005), *Statistical Issue*, State Statistical Committee of Azerbaijan Republic, Official Publication.
- Nazim, H., Lida, F. (2006), *Social Assistance and the Challenges of Poverty and Inequality in Azerbaijan, a Low-Income Country in Transition*, *Journal of Sociology and Social Welfare*, Volume XXXIII, Number 1.
- Progress Report (2005), *Azerbaijan's State Program on Poverty Reduction and Economic Development*, UNDP.
- Qutman, G., Digilina, O., Starostin, B., Chukin, N. (2002), *Economic Growth and Poverty Problems in Region (in Russian)*, Dashkov and Co, Moscow.
- Ravallion, M. (1996), *Issues in Measuring Poverty*, *The Economic Journal*, Vol. 106. No. 438., pp. 1328-1343.
- Ravallion, M. and Chen, S. (1997), *What Can New Survey Data Tell Us about Recent Changes Indistribution and Poverty*, *The World Bank Economic Review*.
- Soubbotine, P. (2004), *Beyond Economic Growth*, Second Edition, THE World Bank Washington D.C.
- Survey of Economic Activity of the Azerbaijan Population: Applied Methodology and Labor Market Analysis (2004)*, State Statistical Committee of Azerbaijan Republic, International Labor Organization and United Nations Development Program, Baku.
- Vagif, R. (2003), *Targeting of Social Assistance to the Most Vulnerable Strata of Population*, World Bank and Center of Economic Reforms of the Republic of Azerbaijan.
- Vagif, R. (2004), *Evaluation of Existing Programs on the Field of Income and Employment Generation and Monitoring of Implemented Programs on Poverty Reduction in Azerbaijan*, United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) and Center of Economic Reforms (CER), Country Report.
- Wodon, Q. (1998), *Growth, Poverty, and Inequality: A Regional Panel for Bangladesh*, Washington DC.
- Wodon, Q. (2000), *Poverty and Policy in Latin America and the Caribbean*, World Bank Technical Paper 467. Washington DC.
- Wooldridge, J. (2002), *Econometric Analysis of Cross Section and Panel Data*, The MIT Press, Cambridge, MA - London.
- Wooldridge, J. (2002), *Introductory Econometrics, a Modern Approach. Second Edition*. Sout-Western, Cincinnati, OH.
- World Bank (1996), *Azerbaijan Poverty Assessment*, Country Report No. 15601-AZ, Baku, Azerbaijan.
- World Bank (2000), *Attacking Poverty*, World Development Report 2000/2001, Oxford University Press.
- World Bank (2005), *Study of Agricultural Markets in Azerbaijan*, Final Report, Baku, Azerbaijan.



## APPENDIXES

### Appendix 1.:The vicious circle of poverty



Source: Soubbotine P. (2004).





### Appendix 2. Some Facts about Pro-Poor Growth

Source	Facts
Ravallion and Chen, 1997	On average on a sample of developing countries, the growth elasticity of poverty, as measured by the number of individuals below the conventional 1\$ a day threshold, was around <b>3</b> .
Wodon T. Quentin, 2000.	There is very much cross-country heterogeneity behind this average figure – which, as a matter of fact was found there closer to <b>2</b> than <b>3</b> .
Francois Bourguignon, 2002	Changes in the mean income of the population only explain <b>26</b> per cent of the variance of observed changes in poverty headcounts. It also suggests that only half of the observed changes in poverty may be explained by economic growth, the remaining half being the result of changes in the distribution of relative incomes.
Alain de Janvry and Elisabeth Sadoulet, 2000.	Income growth is more effective in reducing urban poverty if the levels of inequality and poverty are lower, and the levels of secondary education higher. There is an asymmetry in the impact of growth on poverty and inequality, with recession having strong negative effects on both poverty and inequality.
Dollar and Kraay, 2000	The income of the poor rises one-for-one with overall growth. Economic growth over a period of four decades has not changed the relative inequality; the proportional benefits of growth going to the poor are the same as those enjoyed by the nonpoor.
Nanak Kakwani, 1993.	The income elasticity of head-count poverty in Côte d'Ivoire for 1985 year is <b>2.87</b> .
Nanak Kakwani, 1993	There is no tendency for inequality to increase systematically with economic growth or to decrease either – inequality increases as often as it decreases. We can not conclude that economic growth will always lead to reduction in poverty. In more than 50 percent of the countries observed by Fields, economic growth was accompanied by either decrease in inequality or no change. Poverty must have decreased substantially in these countries because of the elastic nature of poverty measures. However, in the remaining 50 percent of the countries which showed an increase in inequality, it is not possible to deduce the direction of change in poverty.


**Appendix 3. Author's calculation of poverty rate and poverty growth based on four assumptions**

	Poverty rate. % (assum 1)	Poverty rate. % (assum 2)	Poverty rate. % (assum 3)	Poverty rate. % (assum 4)	Poverty growth (assum 1)	Poverty growth (assum 2)	Poverty growth (assum 3)	Poverty growth (assum 4)
1994	-	-	-	-	-	-	-	-
1995	68.10	68.10	68.10	68.10	-	-	-	-
1996	59.93	65.38	65.38	66.00	0.88	0.96	0.96	0.97
1997	52.74	62.76	62.76	62.00	0.88	0.96	0.96	0.94
1998	46.41	60.25	55.23	59.00	0.88	0.96	0.88	0.95
1999	40.84	57.84	53.02	55.50	0.88	0.96	0.96	0.94
2000	35.94	55.53	50.90	52.00	0.88	0.96	0.88	0.94
2001	49.00	49.00	49.00	49.00	0.88	0.96	0.96	0.94
2002	46.70	46.70	46.70	46.70	0.95	0.95	0.95	0.95
2003	44.70	44.70	44.70	44.70	0.96	0.96	0.96	0.96
2004	40.20	40.20	40.20	40.20	0.90	0.90	0.90	0.90
2005	29.00	29.00	29.00	29.00	0.72	0.72	0.72	0.72



## Appendix 4

Years	Labor productivity in certain sectors						
	Agriculture, hunting and forestry	Mining and quarrying	Manufacturing	Electricity, gas and water supply	Construction	Wholesale and retail trade...	Transport, storage and communication
2000	0.031	0.123	0.473	0.281	0.249	0.066	0.269
2001	0.032	0.107	0.363	0.518	0.251	0.054	0.294
2002	0.035	0.119	0.267	0.721	0.195	0.099	0.285
2003	0.037	0.137	0.209	0.747	0.166	0.222	0.306

Source: Author's calculations based on the official database of SSC.

## Appendix 5. Labor market indicators

	Annual labor force growth rate for 1995-2005* (%)	Annual GDP growth rate for 1995-2005* (%)
World	1.6	3.8
Developed Economies and EU	0.7	2.6
Central and Eastern Europe (non-EU) and CIS	0.1	4.0
East Asia	1.0	7.6
South-East Asia and the Pacific	2.2	3.8
South Asia	2.2	5.8
Latin America and the Caribbean	2.5	2.8
Middle East and North Africa	3.5	4.4
Sub-Saharan Africa	2.4	3.9

Source: ILO, 2005; IMF, 2005

Note: \* - are preliminary estimates



## Appendix 6. Working poor indicators

	Share of poor employees in total employment (%)		
	1995	2000	2005*
<i>US\$1 a day working poor</i>			
World	25.7	22.1	18.3
Central and Eastern Europe (non-EU) and CIS	7.5	7.1	2.6
East Asia	24.7	20.2	13.4
South-East Asia and the Pacific	18.6	12.7	11.4
South Asia	55.1	44.3	35.8
Latin America and the Caribbean	12.5	12.9	11.8
Middle East and North Africa	3.1	3.5	2.9
Sub-Saharan Africa	57.8	57.4	56.3
<i>US\$1 a day working poor</i>			
World	55.5	53.1	48.4
Central and Eastern Europe (non-EU) and CIS	32.0	35.0	12.5
East Asia	63.9	56.9	46.5
South-East Asia and the Pacific	67.2	62.1	57.6
South Asia	91.3	89.1	87.3
Latin America and the Caribbean	36.4	33.8	31.8
Middle East and North Africa	40.8	39.6	36.0
Sub-Saharan Africa	86.8	87.6	87.0

Source: ILO, 2005

Note: \* - are preliminary estimates

## Appendix 7. Sectoral shares in employment

	Employment in agriculture as share of total employment (%)			
	1995	2003	2004	2005*
World	44.4	41.9	41.1	40.1
Developed Economies and EU	5.1	4.0	3.9	3.7
Central and Eastern Europe (non-EU) and CIS	27.9	2.39	23.2	22.7
East Asia	54.4	52.6	51.5	49.5
South-East Asia and the Pacific	55.3	46.0	44.3	43.3
South Asia	64.1	62.6	62.1	61.2
Latin America and the Caribbean	23.4	18.2	17.6	17.1
Middle East and North Africa	30.8	27.1	26.9	26.3
Sub-Saharan Africa	70.1	65.8	64.2	63.6

Source: ILO, 2005

Note: \* - are preliminary estimates