

**NATIONAL  
STATISTICAL SERVICE  
OF RA**

**THE WORLD BANK**

## **SOCIAL SNAPSHOT AND POVERTY IN ARMENIA**

**Statistical Analytical Report**

**Based on the Results of the 2004 Nationwide Sample Survey of Households**

**Yerevan 2006**

In present day world which is characterized by the information variety and intensity of informational flows, the possible “combination” of three participants of official statistics such as respondents, users and taxpayers, “occupying the angels of statistical triangle” having different dispositions, is of great importance, especially from viewpoint of perception requirements “communication skills leveling” by national and international levels.

The National Statistical Service of RA (NSS RA) would like to thank all the respondents who have supplied information for this statistical publication and, from the above mentioned considerations, welcomes any comments and suggestions from the respondents and taxpayers, as statistical users, for the future developments of statistical publication.

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This Report is a Volume 6 in a series of reports published annually by the RA National Statistical Service under a common title *Social Snapshot and Poverty in Armenia*. The main objective of the *Snapshot* series is to report, document and analyze developments in social and poverty situation in Armenia. Each of the volumes published so far relied heavily on the findings of the household surveys, introduced in Armenia in 1996 and conducted annually since 2001.

A household survey is among the most important statistical data collection activities of the RA NSS. It provides a wealth of information on households and individuals welfare and allows the RA NSS to inform not only the Government, but the public at large on annual changes in poverty situation. Over the years, the RA NSS, supported by the World Bank, USAID and other donors has made efforts to continuously improve household survey to make it compatible with similar surveys conducted in developed countries. It has also made efforts to keep abreast with developments in the poverty measurement methodology.

This Volume of the *Social Snapshot and Poverty in Armenia* is different from the previous in several aspects.

- ***First, it is based on the improved household survey.*** With technical assistance from the World Bank provided through a series of consultations and hands-on-training over the period September 2003-November 2005: (i) the sample frame for the Integrated Leaving Conditions Survey was updated using the 2001 Population Census data; (ii) the sample size was expanded, so as to make the Survey representative at the regional (*marz*) level; (iii) the Survey questionnaire was revised to account for economic and social changes since 1998/99 and an extensive labour module was added to the survey; and (iv) the staff involved in the Survey implementation was better trained. This improved Survey was launched in 2004 with the actual data collection taking place in the period between April 1, 2004 and March 31, 2005.
- ***Second, it uses adjusted methodology for poverty measurement.*** The methodological changes were done in close consultations and technical assistance from the World Bank. In comparison with the poverty measurement methodology used by the NSS so far, the adjusted methodology has the following new features: (i) it is based on a *broader measure of the consumption* aggregate, which now includes, besides standard food and non-food components, estimates of the rental value of durables—the value of the flow of services from durables owned by a household; (ii) the consumption aggregate is adjusted for differences in the consumption of adults and children, and adjusted for shared household expenditures: the *consumption per adult equivalent* is measured, instead of applying the previously used per capita approach; and, (iii) a *new minimum food basket* is developed based on the 2004 Household Survey, so as to reflect changes in consumption pattern since mid-1990. This new basket is used to calculate the extreme (food) poverty line for 2004. This line, appropriately adjusted for inflation, will continue to be used as a benchmark for poverty measurement over the next several years.
- ***Third, it presents a comprehensive analysis of socioeconomic and poverty trends in Armenia in the period between 1998 and 2004.*** Accordingly, the report includes chapters on macroeconomic developments, poverty, labor markets, and non-income dimensions of poverty. It also presents subjective views on poverty. Surprisingly, in 2004, at 20 percent, the percentage of Armenians who thought that they were poor or very poor was much smaller than the percentage obtained using objective, i.e. consumption based poverty estimate (34.6 percent).

This Report was prepared jointly by a team comprising the specialists and experts from the National Statistical Services and the World Bank. For the World Bank, it is a part of the Armenia Programmatic Poverty Assessment Program whose objective is not only to analyze and monitor socioeconomic and poverty situation in Armenia, but also to help the NSS and the Armenian Government build a robust system of good quality data on households in Armenia and develop national capacity to analyze the data and monitor poverty using modern statistical tools and techniques. The 2004 round of the household survey and this Report are important steps in achieving these objectives. The World Bank Programmatic Poverty Assessment Team is confident that Armenia has built sufficient local capacity to carry on the important work of poverty monitoring.

While the Report is mostly based on the NSS household survey data, it also draws on other sources of the NSS data, as well as statistical information from UN, EBRD and other international organizations. The Report also draws on administrative statistical indicators from various Armenian ministries and agencies, in particular those from the Ministries of Finance and Economy; Labor and Social Issues; Health; Education and Science; RA Central Bank and RA State Social Insurance Fund.

We hope that this Report would be a useful source of information for everyone interested in learning more about socioeconomic developments and poverty in Armenia.

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## **ABBREVIATIONS AND ACRONYMS**

AMD	Armenian Dram
BBP	Basic Benefits Package
BEEPS	Business Environment and Enterprise Performance Survey
CBA	Central Bank of Armenia
CEE	Central and East Europe
CIS	Commonwealth of Independent States
CPI	Consumer Price Index
GDP	Gross Domestic Product
ECA	Europe and Central Asia
EU	European Union
EBRD	European Bank for Reconstruction and Development
FAO	Food and Agriculture Organization
FDI	Foreign Direct Investments
FSU	Former Soviet Union
HFO	Health for All
ICT	Information and Communication Technology
ILO	International Labor Organization
ILCS	Integrated Living Conditions Survey
LFS	Labor Force Survey
MFE	Ministry of Finance and Economy
MLSIA	Ministry of Labor and Social Issues of Armenia
N.A.	Not available
NMS	New Member States
N.S.	Not Significant
NSSA	National Statistical Service of Armenia
OECD	Organization for Economic Collaboration and Development
PFB	Poverty Family Benefit
PRSP	Poverty Reduction Strategy Paper
PSU	Primary Sample Unit
RA	Republic of Armenia
SSIF	State Social Insurance Fund
TIMMS	Trends in International Mathematics and Science Study
UN	United Nations
UNDP	United Nations Development Program
UNFPA	United Nations Food Program of Armenia
US	United States
USA	United States of America
USAID	United States Agency for International Development
WB	World Bank
WHO	World Health Organization

*PART 1: ARMENIA: GROWTH,  
POVERTY AND LABOR MARKETS  
1998-2004*



## CHAPTER I: DEMOGRAPHICS AND MIGRATION

*In little more than a decade between 1994 and 2005, the 'permanent' population of Armenia declined by 141,000 people (4.2% of the 1994 population). This was mainly the result of plunging fertility rates - births per 1,000 population in 2004, at 11.7, are about half of the 1990 rate. Over the same period, however, rural population actually increased by 73,000 people. This reflected a large population shift away from urban areas through internal migration -- as a result of land reform and the relative lack of urban job opportunities for some -- as well as a higher rural fertility rate. Migration to other countries has remained an important phenomenon, although the pace of migration seems to have slowed recently -- 10 percent of households with migrant members surveyed in 2004 reported returned migrants. Most out-migrants (53 percent) went to Russia. Overall, the result of lower fertility and emigration of working-age people has been fewer children and more elderly among the population in Armenia. As a result, the future labor force is going to be smaller, the demand for basic education is going to shrink, and the need for elderly care and pensions expand -- all matters requiring serious attention to policy reforms.*

### 1.1. Population trends

Armenia's population declined in 1990s, reflecting declining fertility and increased out-migration. It is only in 2003 and 2004 that some increase in population was recorded.

According to the National Population Census of Armenia, the first one to be conducted since independence (October 10-19, 2001), the number of the population present in the country (de facto population) was 3,002,600; the number of permanent population (de jure population) was 3,213,000.

**Table 1.1:** Permanent population in Armenia and urban/rural composition 1989-2005

Year	Total population (in 000)	Composition (%)	
		Urban	Rural
1989	3448.6	68.4	31.6
1991	3574.5	69.2	30.8
1994	3356.7	67.8	32.2
1999	3232.1	65.3	34.7
2001*	3213.0	64.3	35.7
2002	3212.9	64.3	35.7
2003	3210.3	64.2	35.8
2004	3212.2	64.2	35.8
2005	3215.8	64.1	35.9

Source: NSSA, population statistics.

Note: 2001 Population Census. The population numbers reflect situation as of January 1 of each respective year.

The de jure population has been updated since then by the NSS on the quarterly basis, using data on natural population growth (a difference between registered births and deaths) and migration balance (a difference between registered population and those who were removed from the population registry). On January 1, 2004 for the first time since 1993, an increase in the de jure population was recorded; similarly, on January 1, 2005, the number of permanent population was reported at 3,215,800 exceeding the previous year by 3,600 people (Table 1.1).

In 2005, the share of urban population was still below and the share of rural population was still above their respective levels in 1991, mostly reflecting both out-migration (as educated urban population was among the first to leave for Russia and other countries in search of

better labor market opportunities) and internal migration (as many urban residents moved to rural areas because of the closure of enterprises in urban areas; land privatization contributed to this trend as well). The data indicate very little change since 2001. At the same time, population estimates based on the 2004 Integrated Living Condition Survey (ILCS)<sup>1</sup> show somewhat lower share of permanent urban population (62.4 percent) and correspondingly higher share of rural population (37.6).

In any country, a change in population is determined by natural population growth (a difference between births and deaths) and migration balance.

*Natural population growth:* During 1990-2002, in Armenia, similar to other transition economies, both absolute and relative indicators of natural population growth were continuously declining. This negative trend was driven mostly by plunging birth rate as death rate, although worsening, was not changing in such a dramatic manner (Table 1.2). Economic, political and social uncertainties of the early 1990s induced changes in reproductive behavior. As a result, total fertility rate measured as number of births per 1 woman in fertile age (15-49 years of age) dropped from 2.62 in 1990 to 1.24 in 2001. It increased subsequently to 1.208; 1.349, and 1.383 in 2002, 2003 and 2004 respectively; however it remains deeply below the level needed even for a mere replacement of the current population. In 2004, total fertility rate was higher in rural than in urban areas (1.493 vs. 1.323).

**Table 1.2:** Armenia: Births and deaths 1990-2004\*

	Births						Deaths					
	In thousands			Per 1,000 population			In thousands			Per 1,000 population		
	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural
		n			n			n			n	
1990	79.9	50.2	29.7	<b>22.5</b>	20.5	27.0	22.0	14.7	7.3	<b>6.2</b>	6.0	6.7
1991	77.8	48.4	29.4	<b>21.6</b>	19.5	26.3	23.4	15.8	7.6	<b>6.5</b>	6.3	6.9
1992	70.6	44.0	26.6	<b>19.9</b>	18.1	23.8	25.8	17.4	8.4	<b>7.3</b>	7.2	7.5
1993	59.0	35.3	23.7	<b>17.3</b>	15.2	21.7	27.5	18.6	8.9	<b>8.1</b>	8.0	8.2
1994	51.1	29.9	21.2	<b>15.5</b>	13.5	19.5	24.6	16.7	7.9	<b>7.5</b>	7.5	7.3
1995	49.0	29.2	19.8	<b>15.0</b>	13.5	18.1	24.8	16.7	8.1	<b>7.6</b>	7.8	7.4
1996	48.1	29.4	18.7	<b>14.8</b>	13.7	17.0	24.9	16.5	8.4	<b>7.7</b>	7.7	7.7
1997	43.9	26.9	17.0	<b>13.5</b>	12.6	15.3	24.0	15.8	8.2	<b>7.4</b>	7.4	6.9
1998	39.4	24.6	14.8	<b>12.2</b>	11.6	13.3	23.2	15.5	7.7	<b>7.2</b>	7.3	7.3
1999	36.5	22.4	14.1	<b>11.3</b>	10.7	12.5	24.1	15.8	8.3	<b>7.5</b>	7.5	7.4
2000	34.3	21.4	12.9	<b>10.6</b>	10.3	11.4	24.0	15.7	8.3	<b>7.5</b>	7.5	7.3
2001	32.1	20.3	11.8	<b>10.0</b>	9.8	10.3	24.0	15.6	8.4	<b>7.5</b>	7.6	7.3
2002	32.2	20.8	11.4	<b>10.1</b>	10.1	10.0	25.5	16.7	8.8	<b>8.0</b>	8.1	7.7
2003	35.8	22.6	13.2	<b>11.2</b>	11.0	11.5	26.0	16.9	9.1	<b>8.1</b>	8.2	8.0
2004	37.5	23.6	18.9	<b>11.7</b>	11.5	12.1	25.7	16.5	9.2	<b>8.0</b>	8.0	7.9

Source: NSSA.

Note: Birth rates are calculated over revised population estimates (based on 2001 Census). For natural population flow by *marzes* see Table A1.1 in Statistical Annex.

Young women—20-24 years of age—had the highest fertility rate. The average age of women giving births in 2004 was 24.1 years; while the average age of those having their first child was 22.5 years. In 1990 these indicators were 25.3 and 22.8 respectively. By the sequence of births, the third and subsequent newborns comprised 14.0 percent of the total number of live births, compared to 30.3 percent in 1990. Another interesting feature of reproductive behavior in contemporary Armenia is a high share of non-marital births; as many

<sup>1</sup> The sample data are extrapolated on general population.

as 36 percent of children were born out of registered marriage in 2004; this share was 9.3 percent in 1990.

Overall, between 1990 and 2004, the Armenian population increased by 357,500 or 11.0 percent on the account of natural growth.

*Migration:* The 2001 Population Census counted permanent population at about 590,000 people less than the population estimates based on the 1979 population census indicated. This significant difference stems from huge migration flows of population during 1990s spurred by difficult political, social and economic situation in Armenia; those flows however were not appropriately accounted for in the population estimates because of inadequate registration and recording of migration. It should be noted that under-registration refers both to emigration and immigration (refugees and displaced persons).

According to the 2004 Integrated Living Conditions Survey, about 20 percent of households reported having a migrant member aged 15 or older (Table 1.3); around one half of households with migrant members reported that they lived in Russia.

**Table 1.3:** Armenia. Households with migrant members 15 years of age and older by destination and reasons for migration (in %)

Destination	% of households with migrant members 15+ years of age	Reasons			
		To search for a job	To work	To study	Other family reasons
Yerevan	9.5	5.5	9.6	45.9	39.0
Other town in Armenia	14.6	1.9	4.2	7.0	86.9
Other village in Armenia	9.3	0.0	9.0	0.0	91.0
Russia	53.3	32.4	50.4	2.2	15.0
Other CIS town	3.0	16.9	29.1	6.3	47.7
European countries	3.3	47.5	29.1	10.1	13.4
USA and Canada	1.7	29.1	26.2	10.0	34.7
Other	5.3	4.2	8.6	3.1	84.1
<b>Total</b>	<b>20</b>	<b>20.9</b>	<b>32.0</b>	<b>7.4</b>	<b>39.8</b>

Source: ILCS 2004.

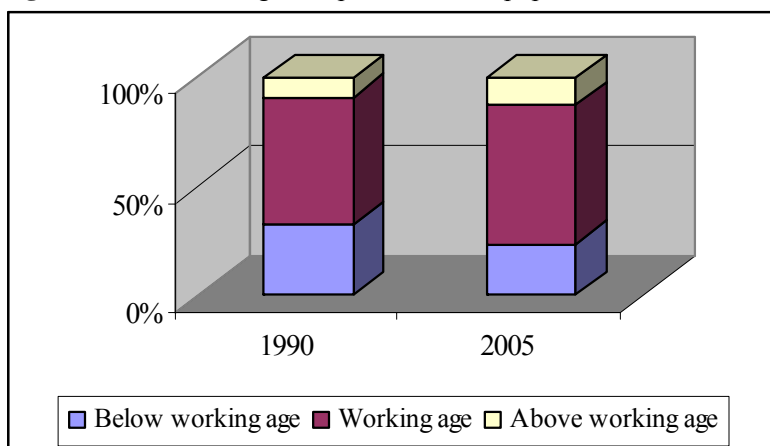
The ILCS also reports that some of the migrants have returned. About 10 percent of households with migrant members reported also having members who have returned back: 4.4 percent had members who have returned from abroad, while 5.4 percent had members who have returned from other parts of Armenia. Unfortunately the ILCS survey questionnaire does not contain questions that would allow further insights into decisions to return back home.

## 1.2. Age composition

A fewer number of births, combined with relatively long life expectancy at birth for both males and females (in 2004, 70.3 and 76.4 years, respectively) have caused substantial change in the age composition of the population in Armenia between 1990 and 2005 (Figure 1.1).

The share of children up to 16 dropped from almost one third to less than one fourth, while the share of the elderly increased almost by 50 percent (from 9.1 in 1990 to 13.1 in 2005), despite moving the working age upwards by 4 years for women and 3 years for men. This change will not only affect the labor force potential in Armenia, but also the demand for social services, in particular health and education.

**Figure 1.1:** Armenia: age composition of the population 1990 and 2005



**Source:** NSSA.

**Note:** For 2005, population on January 1. Working age population defined as population 16+ till retirement age. The retirement age has been increasing gradually and for 2004 it was 63 years for men and 59 years for women.

#### ***Box 1.1: Some facts about Armenian population***

*According to the 2001 Population Census, there were in Armenia 779,300 households, including 778,600 individual households and 700 institutional (group) households. Average number of household members in individual households was 4.1 (4.0 in urban and 4.4 in rural areas).*

*According to the 2004 Integrated Living Conditions Survey estimates, 4-member households were the most common type of households in urban settlements; each fourth household was of that type. In rural areas, 4-member households were also common; however there were many 5-member households as well (22.0 percent). The share of smaller size households is increasing: in 2004, 42 percent of households had up to three members, whereas in 1998/99 this share was 33.7 percent (Table 1.4).*

**Table 1.4:** Armenia: Households by size 1998/99 and 2004  
(%; permanent population)

<i>Household size</i>	<i>1998/99</i>	<i>2004</i>
<i>One member</i>	<i>8.4</i>	<i>10.9</i>
<i>Two members</i>	<i>13.1</i>	<i>16.5</i>
<i>Three members</i>	<i>12.2</i>	<i>14.6</i>
<i>Four members</i>	<i>21.9</i>	<i>21.6</i>
<i>Five members</i>	<i>20.1</i>	<i>17.2</i>
<i>Six and more members</i>	<i>24.6</i>	<i>19.2</i>

**Source:** ILCS 1998/99 and 2004.

*Extended families (7 and more members) were more typical for rural areas: the proportion of such households was twice higher in rural than in urban areas.*

*An overwhelming majority of households was headed by males (68.5 percent). The proportion of female-headed households was higher in urban than in rural areas (32.8 vs. 29.0 percent, respectively). On average, there were 0.4 children per female headed households and 0.6 children per male-headed households.*

**Table 1.5: Armenia: Households by number of children up to 16**  
(as of beginning of 2005; in %)

Composition of Households	Estimates based on	
	2001 Population census	ILCS 2004
Households total	100	100
With one child	20.2	22.3
With two children	23.3	22.9
With three children	9.4	7.2
With four children	2.3	1.8
With five and more children	0.8	0.6
Without children	44.0	45.3

*Source: NSSA, population statistics and ILCS 2004.*

45 percent of households reported not having children younger than 16 years of age. Frequency of household with one and two children was almost equal: 22 and 23 percent respectively. Households with 3 and more children made up about 10 percent of total households, but most of them were households with three children as those with four or more were rare (Table 1.5). As of the beginning of 2005, there were 579 children up to 16 years of age and elderly per each 1,000 people in working age.

In 1990, there were 28,000 marriages and 4,000 divorces. In 2004, the respective numbers were 17,000 and 2,000. The number of divorces was declining till 1999. The trend reversed afterwards and in 2004 there were almost 50 percent more divorces than in 2000.

Among families divorced in 2004, 50.5 percent did not have any children, 19.7 percent had one child and 29.8 percent had 2 and more children.

### 1.3. Conclusions

In 2003 and 2004, after a long succession of years in which population continued declining, some population growth was recorded. There were 3,215,800 permanent residents in Armenia in 2004. Although the number of births has been increasing since 2002, the total fertility rate at 1.4 births per each woman in reproductive age remains well below the rate that would ensure a full replacement of current population. The share of non-marital births is high: 36 percent of births in 2004 (vs. 9.3 percent in 1990).

Declined fertility and intense emigration have caused changes in the age structure of the population. There are fewer children and more elderly. This trend is not only going to influence the supply of labor in the future, but also the demand for health, education and social welfare services and social transfers, in particular pension and other support in the old age.

## CHAPTER II: ARMENIA'S ECONOMIC DEVELOPMENTS 1994-2004

*Prudent monetary and fiscal policies, liberal trade and foreign exchange regimes, rapid and relatively well-sequenced structural reforms and support from the Armenian Diaspora are the key factors behind Armenia's strong growth performance since 1994. It has been particularly strong in 2001-04 when the country recorded double-digit growth rates. As a result, Armenia re-attained its 1990 GDP level and joined the group of middle income economies. The growth brought about an increase in real wages, stabilized employment, and increased spending on social services and transfers, all of which, combined with a growing stream of remittances, contributed to a significant reduction in poverty in Armenia.*

### 2.1. Introduction

After the disintegration of the Soviet Union, Armenia faced numerous problems of socio-economic, geopolitical and demographic nature: gross domestic product declined dramatically in 1992-93, 41.8 percent and 8.8 percent respectively, both external and domestic trade volumes, as well as energy supply, declined sharply, hyperinflation reached 5062 percent in 1994, unemployment became severe and the previously almost unknown phenomenon of poverty became bleak reality for most Armenians. The effects of these developments were exacerbated by the inherited devastation of the 1988 earthquake and engagement in regional conflict.

**Table 2.1:** Armenia macroeconomic indicators 1995-2004

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Nominal GDP (billions of dram)	522.3	661.2	804.3	955.4	987.4	1031.3	1175.9	1362.5	1624.6	1896.4
Real GDP (1998 prices)	...	...	...	955.4	986.5	1044.7	1145.0	1296.1	1477.6	1626.8
Real GDP growth (annual % change)	6.9	5.9	3.3	7.3	3.3	5.9	9.6	13.2	14.0	10.1
Exchange rate (period average)	406	413	491	505	535	540	555	573	579	533
GDP (millions of US dollars)	1,287	1,599	1,639	1,892	1,845	1,912	2,118	2,376	2,807	3,555
Official unemployment rate, %	6.7	9.3	10.8	9.4	11.2	11.7	10.4	10.8	10.1	9.6
Average nominal wage (000 drams)	8.47	11.36	16.30	21.60	24.19	27.25	29.38	32.79	41.74	52.13
Inflation (period average)	176.0	18.7	14.0	8.7	0.6	-0.8	3.1	1.1	4.7	7.0
Public expenditures (% of GDP)	26.3	22.0	21.9	24.5	28.4	24.7	23.6	22.0	22.4	20.7
Fiscal deficit (% of GDP)	-6.0	-3.6	-2.5	-3.7	-5.4	-4.8	-4.2	-2.5	-1.3	-1.5

**Source:** National Statistical Service of Armenia (NSSA).

To overcome economic and social difficulties, and in order to create and maintain a stable macro-economic environment, conducive to socio-economic growth and development, the Armenian authorities initiated structural reforms in practically all sectors of the economy. Armenia was one of the first countries in the CIS to start massive land privatization in 1992; this played an important role in supporting subsistence of many Armenian households. Another major achievement of early reforms was creation of a critical mass of private ownership. Over a period of 4-5 years, most small and medium-size enterprises were privatized, and by the end-90s, some 70-75 percent of the output was produced by the private sector.

Other elements of early reform included price liberalization, removal of consumption and production subsidies, and implementation of tight fiscal and monetary policies aimed at

limiting public expenditures to the level consistent with an affordable fiscal deficit target. All these policy adjustments started yielded positive outcomes in the second half of the 1990s.

Since 1994, the Armenian economy has been growing at an average annual rate of 7.7 percent, which allowed the economy to recover lost ground and surpass the pre-transition GDP level by 5.6 percent by the end of 2004. Armenia's per capita GDP increased from 190 USD in 1994 to 1106 USD in 2004 (Table 2.1). As a result, Armenia joined the group of middle-income countries.

## **2.2. Getting the macro-economic environment right**

Controlling inflation was one of the most critical challenges and a key priority in the mid-1990s. Massive price liberalization and elimination of centralized regulation of prices in the early 1990s was followed by raging inflation: in 1994, the average *monthly* increase in prices reached 27.6 percent, with the highest rates in January and December (82.5 and 60.8 percent, respectively). In response, Armenia resorted to tight monetary policy and as a result the situation was reversed: in 1999 the annual inflation rate was only 0.6 percent (compared with 5062 percent in 1994). Stable prices, sustained at single-digit rates, contributed significantly to macroeconomic stability through the rest of the decade.

Fiscal restructuring and improving fiscal performance by addressing the tax burden and the low level of overall public sector spending have been another tough challenge and a continuing priority. In the mid-90s, the state budget was characterized by a large fiscal deficit, limited domestic revenue generation possibilities, heavy dependence on external financing sources (both grants and loans), and the need to finance not only “core” public services, but also to fill the financial gap of the quasi-fiscal sector<sup>2</sup> and compensate for contingent liabilities. The latter two together accounted for 80 percent of the budget deficit in 1995 (World Bank, 2003).

There was a need to improve fiscal discipline and reverse the fiscal situation by closing leakage to the quasi-fiscal sectors; which to a large extent crowded out public spending on social sectors. In 1999, comprehensive fiscal adjustment brought about by a 20 billion dram supplement to the approved budget in order to repay all outstanding budget arrears and clear the inter-related debts of quasi-fiscal sectors. At the same time: (i) the electricity tariffs were increased (by 46 percent on average) to cost recovery level and (ii) steps were taken to enforce payment discipline and improve revenue collections from customers. In parallel, in order to mitigate the adverse impact of increased tariffs on an already impoverished population and alleviate poverty in general, the safety net system was restructured by consolidating numerous (26) small social assistance payments into a single cash benefit, targeted by means of a proxy-means score. Substantial resources—two percent of GDP—were allocated to this new benefit, heralding a gradual shift in public spending towards a more poverty reduction focused agenda. In addition, households that did not qualify for the benefit, but were close to the cut off score, were allocated a cash subsidy for electricity payments for the duration of one year. This proved to be a winning combination of policies. Higher electricity tariffs and improved collection performance had a significant positive impact on the cash flow of the electricity sector; equally important was the fact that electricity supply became available 24 hours a day all over Armenia, improving living conditions and removing an important obstacle to business development, as indicated in various business surveys. The restructured safety net system enabled smooth implementation of the tariff increase, which

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<sup>2</sup> The quasi-fiscal sector encompasses the utilities (energy, irrigation, water) and state-owned companies.

may otherwise have been much more difficult to implement, as even much smaller increases under normal circumstances tend to be politically controversial.

While the 1999 budget supplement pushed up the cash deficit for that year, it also set the stage for improved performance in subsequent years. Since 2002, Armenia has managed to maintain the fiscal deficit below 2-3 percent of GDP without any further accumulation of budgetary arrears (Table 2.2). Furthermore, the deficit of the quasi-fiscal sectors was eliminated as a result of successful restructuring in the energy sector (in 2002, the electricity distribution companies were privatized).

**Table 2.2:** Armenia: Public revenues, expenditures and fiscal deficit 1994-2004  
(in % of GDP)

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Total revenues	16.6	20.3	18.3	19.4	20.8	22.9	19.9	19.5	19.5	21.2	19.2
Consolidated budget tax revenues	n/a	n/a	n/a	13.3	14.3	16.8	15.4	14.8	15.0	14.4	14.5
Total expenditures	21.9	26.3	22.0	21.9	24.5	28.4	24.7	23.6	22.0	22.4	20.7
Fiscal deficit	-5.3	-6.0	-3.6	-2.5	-3.7	-5.4	-4.8	-4.2	-2.5	-1.3	-1.5

Source: NSSA.

A debt-for-equity swap operation with Russia in 2002 was another significant step towards improving the composition of public expenditures. This operation released the most expensive part of the public external debt, creating additional fiscal space for increasing allocations to core social sectors and for other pro-poor public expenditures (Freinkman *et al.*, 2003).

Since the early 2000s, the government has focused on expanding the tax revenue base and improving tax collection, while taking steps to improve the quality of budgeting and increase efficiency in allocating public expenditures. A policy-based, multi-year budgeting practice of setting clear priorities before making expenditure allocations was introduced. A poverty reduction strategy and a medium term expenditure framework have become key guiding documents for the annual budget process.

**Table 2.3:** Armenia: Consolidated budget spending on social sectors\* 1999-2004  
(% of total consolidated budget expenditures)

	1999	2000	2001	2002	2003	2004
Education and science	8.8	12.2	11.3	10.6	10.5	13.1
Health	4.9	3.9	5.7	5.3	5.4	6.2
Pensions**	10.2	11.3	11.2	11.4	11.1	11.2
Pensions as % of GDP	2.9	2.8	2.7	2.5	2.5	2.3
Social assistance, including the family poverty benefit	9.7	10.0	9.5	8.8	8.7	9.5
Other social programs***	1.9	2.0	2.5	2.7	4.3	2.6
TOTAL	35.5	39.4	40.2	38.8	40.0	42.6

Source: NSSA, MFE and SSIF

Notes: \*Includes allocations from the State Budget, State Social Insurance Fund and consolidated budgets of 930 local communities \*\*Refers to old-age, disability and survivors' pensions financed and administered by the State Social Insurance Fund under the mandatory pension insurance scheme. \*\*\*Includes expenditures on culture, religion, sports and information.

Fiscal restructuring and improved fiscal performance fostered by steady economic growth have made more resources available to the Government, enabling it to focus more on social sectors, and thus better align the composition of state budget expenditures with the poverty reduction strategy priorities. As a result, the social sectors increased their share in total consolidated budget expenditures from 35.5 percent in 1999 to 42.6 percent in 2004 (Table



2.3). Most of the increase can be accounted for by improved budget allocations for the health and education sectors, with the emphases on primary health care and basic education programs, access to which is particularly important for improving the well-being of the poor.

Another important structural change took place in the composition of public expenditures: the share of capital expenditures increased and stabilized at 4-4.5 percent of GDP. Since 2001, public resources channeled to the rehabilitation of basic infrastructure such as roads, and municipal water and irrigation networks, have increased substantially, contributing to the extension of non-income benefits of the population.

Despite stabilization of the overall macroeconomic environment, private sector confidence and investment performance remained rather weak in late 1990s. Many factors explain the vulnerability of Armenia's private sector in that period. First, private ownership was a new phenomenon in Armenia, emerging as a result of the mass privatization in the mid-90s. Second, there were expectations that privatization of state enterprises quickly would generate self-reliant entrepreneurs, that markets would determine "the rules of the game" and there would be no need for the state to play any role. Little emphasis was placed on enterprise restructuring and the establishment of a proper regulatory framework to bolster newly introduced core legislation. Thus, the macroeconomic stability and rapid pace of economic recovery during the second half of 1990s were not accompanied by sufficient progress in the overall business environment or the emergence of a sufficiently rules-based competition atmosphere.

**Table 2.4:** Armenia: Business entities and joint ventures, end of period

	1994	1996	1998	1999	2000	2001	2002	2003	2004
Gross number of registered business entities	5,089	29,836	41,241	43,327	44,196	46,193	48,069	49,984	51,480
Growth rate (%)		40.5	9.4	5.1	2.0	4.5	4.1	4.0	3.0
Gross number of joint-ventures registered	92	685	1,350	1,657	1,916	1,920	2,197	2,482	2,821
Growth rate (%)		72.5	29.6	22.7	15.6	0.2	14.4	13.0	13.7

Source: NSSA.

Export performance remained weak and economic growth had yet to have any significant impact on job creation and poverty reduction. While the increase in the number of registered business entities and joint-stock companies over 1995-99 was substantial (Table 2.4), it was still insufficient to make a difference in terms of employment generation to compensate for the job losses incurred since early 1990s (World Bank, 2002).

Since 2001, in response to the observed weaknesses of the business environment, a number of reforms aiming at its enhancement have been undertaken by the government, including consolidating and reducing business inspections, simplifying administrative procedures, shortening the time for business registration, and streamlining the licensing regime. The government's consultation mechanisms with the private sector were strengthened and a high level Business Council, chaired by the Prime Minister, was established. The Armenian Development Agency's role, as the focal point for promoting investment and exports, and addressing remaining bottlenecks in business environment, was enhanced. In addition, customs clearance procedures and administration of VAT refunds to exporters were improved. Several other measures aimed at reducing the interface between businessmen and state officials were initiated, including the law on electronic signature.

**Table 2.5:** Armenia: Net foreign direct investment in selected FSU and East-European countries (per capita in US\$, 1999 and 2004)

	1999	2004 (preliminary)
<b>Armenia</b>	<b>37.7</b>	<b>64.7</b>
Azerbaijan	104.0	284.0
Czech Republic	339.8	383.4
Estonia	233.3	298.2
Georgia	17.8	110.9
Kazakhstan	53.3	229.6
Kyrgyz Republic	13.9	23.8
Lithuania	108.1	148.6
Slovenia	75.0	-20.9
Tajikistan	4.9	40.6
Turkmenistan	20.8	47.2
Uzbekistan	9.4	7.2

**Source:** NSSA for Armenia. FIAS and WB ECA Regional data for other countries.

There are several synthetic indicators that point to improvements in the business environment. The foreign direct investment (FDI) per capita is one of such key indicators. Data presented in Table 2.5 suggest that per capita FDI almost doubled between 1999 and 2004. Still, the FDI level continues to lag behind those in most other CIS countries with similar income-levels.

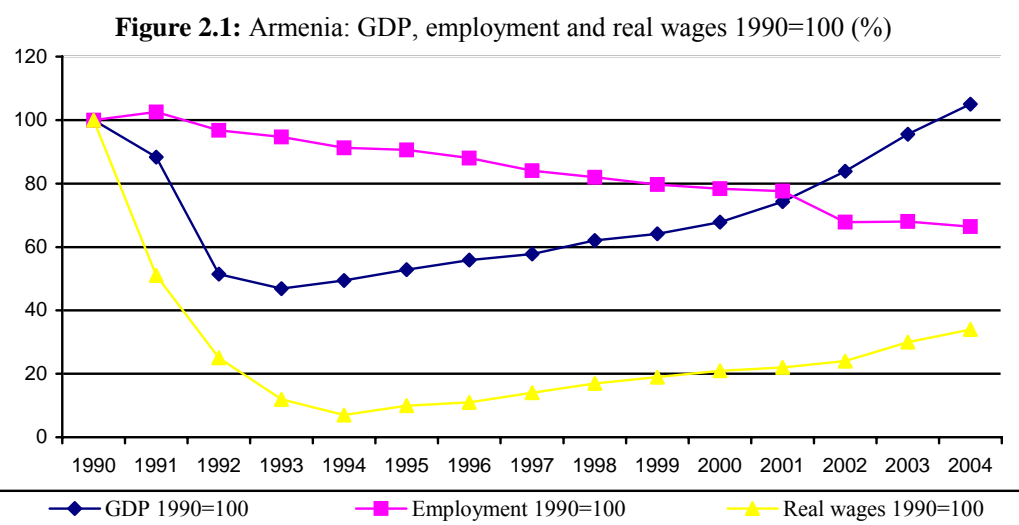
### 2.3. Growth performance 1994-2004

Figure 2.1 illustrates the dynamics of the main macro indicators since 1990: real GDP and wages, and aggregate employment (as officially estimated/recorded by the NSSA). After declining by about 55 percent during 1991-93, real output has grown since 1994 at an average annual rate of 7.7 percent, recovering the 1990 level in 2004.

The real average wage declined even more sharply, plunging in 1994 to barely 7 percent of its 1990 level. Although it has been growing steadily since 1995, the initial decline was so severe that even with a cumulative 425 percent growth over 1995-2004, it reached only 35 percent of its 1990 level. Officially estimated aggregate employment declined slowly and continuously until 2002, when it appeared to stabilize<sup>3</sup>. The trend in employment may reflect labor hoarding at the beginning of transition, as enterprises were reluctant to shed labor, instead adjusting to falling output by lowering wages (or not paying them at all). This was a widespread phenomenon at the time in the transition countries. In Armenia, it was followed by extensive labor shedding towards the middle of the decade, as over half a million employees of the manufacturing and service sectors were shed. This did not show up in official employment figures, because it took the form of labor relocation, as most of those who lost their jobs were given plots as part of the land reform; they continued to be counted as employed, albeit in a different sector of the economy. With the resumption of growth, jobs have been created, but not in sufficient numbers to overcome continued labor shedding.

<sup>3</sup> The employment trend in Graph 2.1 reflects a break in the series between 2001 and 2002, due to the employment levels adjustment based on the population count of the 2001 Population Census. The official employment estimates methodology is based on overall population estimates. The Census counted the Armenian population at slightly over 3.2 million in late 2001, which was way below the estimates (3.8 million) and reflected emigration during 1990s. Thus, the drop in employment between 2001 and 2002 reflects the 2001 population count, not any labor market changes. On the other hand, the household survey based employment data indicate some increase in employment between 1998/99 and 2004. (See: Chapter on Labor Market Developments.)

Finally, stabilization of the official employment rate as of 2003 might indicate that job creation and labor shedding are balancing each other out.



Source: NSSA.

The pace and quality of economic growth over 1995-2000 and 2001-2004 periods differ. During the former period, the period of recovery, the economy grew at an average annual rate of 5.4 percent. Growth was mainly concentrated in construction and trade, while industry and agriculture demonstrated the weakest performance (Table 2.6). Cumulative growth for the period was 37.2 percent, 13.2 percentage points attributed to construction and trade and 10.9 percentage points to industry and agriculture (World Bank, 2002).

**Table 2.6:** Armenia: Real GDP growth 1995-2000 and 2001-2004

	Index: 2000/1994	Average annual growth rate 1995-2000	Index: 2004/2000	Average annual growth rate 2001-2004
Gross domestic product	137.2	5.4	155.7	11.7
Industry	115.5	2.5	139.7	8.7
Agriculture	114.7	2.3	138.3	8.5
Construction	188.1	11.1	244.7	25.1
Transport and communication	145.1	6.4	144.1	9.6
Trade	261.7	17.4	176.9	15.4
Other services	163.4	8.5	145.9	9.9

Source: NSSA.

Growth accelerated starting in 2001, with GDP increasing at double digit rates over the past four years. This reflects not only more rapidly increasing overall growth, but also structural changes over the previous period. First, growth has become more broad-based, and it has become more sustainable, as industry and agriculture together with construction have been the main engines of growth.

During 2001-04, the economy grew at an average annual rate of 11.7 percent; with cumulative growth amounting to 55.7 percent in comparison to 2000. The composition of growth changed with an increasing share for industry, which reached 28 percent in 2004. Several sub-sectors of domestic industry, such as food processing, textile, mining and other labor-intensive branches grew faster than the overall economy. Expansion of domestic production

of construction materials was stimulated not only by increasing public investment needs, but also by growing private sector demand. A larger manufacturing sector not only helped satisfy a growing domestic demand, it also facilitated the expansion of country's external trade beyond traditional regional markets.

**Table 2.7:** Armenia: Structure of aggregate demand, %

	1997	1998	1999	2000	2001	2002	2003	2004
Gross domestic product	100	100	100	100	100	100	100	100
of which:								
Household final consumption expenditure	107.7	103.6	98.8	96.7	89.6	85.6	83.4	80.4
General government final consumption expenditure	11.2	11.1	11.9	11.8	11.3	10.0	10.2	10.7
Gross capital formation	19.1	19.1	18.3	18.7	19.8	21.7	24.3	24.0
Net export	-38.0	-33.8	-29.0	-27.2	-20.7	-17.3	-17.9	-15.1
Exports of goods and services	20.3	19.0	20.8	23.4	25.5	29.3	32.1	27.4
Imports of goods and services	58.3	52.8	49.8	50.6	46.2	46.6	50.0	42.5
Gross domestic savings	-18.9	-14.7	-10.7	-8.5	-0.9	4.4	6.4	8.9

Source: NSSA

Growth financing sources have become more diversified since 2001:

- a) Although donor assistance<sup>4</sup> has been declining, it has continued to be a significant factor in generating economic growth, reflecting Armenia's outstanding performance in utilizing donor assistance, which is regarded as international good practice (World Bank, 2001).
- b) The Armenian Diaspora may be the largest external financing source in recent years. Diaspora-related foundations have in particular supported rehabilitation of physical and social infrastructure, in addition to culture, tourism and other activities in the services sector.
- c) Remittances, which have always been one of the traditional sources for financing growth in Armenia, accelerated after 2000. In 2004, relative to 2003, gross inflow of private transfers and factor income from abroad increased by 81 percent.
- d) Strategic investments into heavy industry following privatization in the mining sector have been a solid growth engine since the early 2000s. Rising international prices for copper and ferromolybdenum stimulated rehabilitation of the sector.
- e) Domestic savings, that turned positive since 2002 (Table 2.7), became an extra source of growth financing. Together with private transfers/remittances, domestic savings financed a major part of housing construction and stimulated additional private consumption.
- f) Domestically funded public investment programs have made a notable contribution to economic growth in recent years. The supplementary budget for 2004 increased public investment spending by 15 percent with additional investment in schools repair and roads rehabilitation.

Growth, employment and average wage dynamics show different sectoral patterns. During the second half of 1990s, transport/communications and services experienced the biggest real average wage increases relative to other sectors, while employment in these sectors declined at a rate that was average for the economy (10-15 percent). Industry and construction recorded sizeable real wage increases as well, while reducing employment by more than 30 percent. Agriculture was the only sector where output growth and pay increases were not accompanied

<sup>4</sup> Armenia is still one of the largest recipients of donor assistance measured on a per capita basis.

by employment reduction. In fact, agriculture absorbed parts of the labor shed by other sectors.

**Table 2.8:** Armenia: Labor productivity 1990-2004 (1990=100)

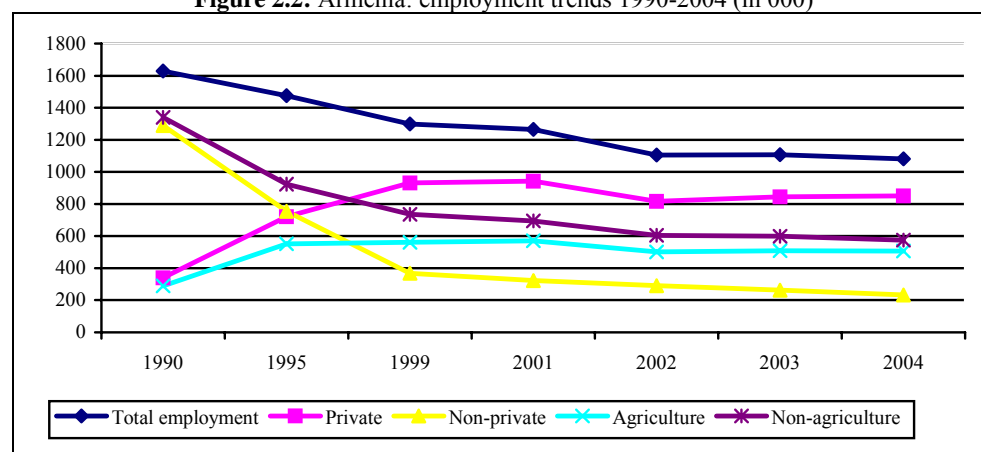
	1990	1991	1993	1995	1997	1999	2001	2002	2003	2004
GDP growth index	100	88.3	46.9	52.8	57.8	64.0	74.3	84.1	95.9	105.6
Employment index	100	102.5	94.7	90.6	94.4	89.7	86.6	67.9	68.0	66.4
Labor productivity	1.0	0.86	0.50	0.58	0.61	0.71	0.86	1.24	1.41	1.59

Source: NSSA.

Note: Labor productivity is defined as an output to employment index ratio.

It should be noted that until 2002 the relation between economic growth and employment was negative, while the average wage response to growth was positive. Recently, in 2003 and 2004 (Figure 2.2), officially estimated employment levels have been stable in all key sectors of the economy. At the same time, output grew at high rates in real terms in both years, and real average wages grew faster than the output<sup>5</sup>. Data presented in Table 2.8 suggest there has been an increase in overall labor productivity in the Armenian economy since 1995; the increase was particularly pronounced as of 2002, facilitating recovery and substantially surpassing the pre-transition level of labor productivity (Armenian European Policy and Legal Advice Center, 2004).

**Figure 2.2:** Armenia: employment trends 1990-2004 (in 000)



Source: NSSA.

Armenia's trade balance remained largely negative in 1990s, although the trade deficit to GDP ratio decreased from 30.5 percent in 1994 to 25.7 percent in 1999. The reduction took place mostly on account of growing GDP and declining rates of imports. Armenia's export performance remained volatile and small in volume (exports to GDP ratio was still below 14 percent in the end 1990s). The export concentration ratio<sup>6</sup> was high at 0.323 in 1999, and diamonds constituted more than 36 percent of total merchandize exports. A large part of non-

<sup>5</sup> In real terms (CPI adjusted) the average wage increased by 22 and 17 percents respectively in 2003 and 2004. The respective GDP growth was 14.0 and 10.1 percent.

<sup>6</sup> UNCTAD uses the concentration index or Hirschman (H) index, which is calculated using the shares of all three-digit products in a country's exports:  $H_j = \sqrt{\sum (x_i/X_t)^2}$  where  $X_{i,t}$  is the value of exports of commodity  $i$  (at the three-digit classification in SITC revision 3) in year  $t$  and  $X$  is the value of total exports receipts in that year. Thus, the maximum value of the index is 1 and its minimum value is zero, for a country with no exports.

diamond exports comprised of waste or scrap of metal, with only a small share representing manufactured products.

**Table 2.9:** Armenia: Export performance 1994-2004

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Total merchandised export, fob, mill US\$	215.4	270.9	290.3	232.5	220.5	231.7	300.5	341.8	505.2	685.6	722.9
Growth rate (%)	...	25.8	7.2	-19.9	-5.2	5.1	29.7	13.8	47.8	35.7	5.4
Export w/o diamonds, mill US\$	...	199.7	156.2	185.2	173.5	147.8	201.8	256.0	307.0	397.7	501.9
Growth rate (%)	...	...	-21.8	18.6	-6.3	-14.8	36.5	26.9	19.9	29.6	26.2

Source: NSSA.

Over the last five years, however, Armenia's export performance demonstrated quite impressive outcomes. Average annual growth of non-diamond exports exceeded 27 percent (Table 2.9). The commodity composition of merchandize exports showed substantial evolution, with non-diamond exports comprising more than 66 percent of total exports, as compared to 55 percent in 1994-96. The geography of Armenia's exports clearly indicates a shift from traditional markets (CIS and Middle-East) towards the European Union.

As a result, the export to import ratio narrowed from 1:4 in 1997 to 1:2 in 2004. Import substitution still continued to play an important role for the revival of domestic industry, as the share of foods and consumer goods continued its declining trend in the total imports. The foreign trade statistics also show that while Armenia's exports substantially diversified since 1997 as the number of exported items doubled in 2004, the export concentration index also increased substantially over the same period.

From its introduction in 1993 until the early 2000s, the Armenian dram was under pressure to depreciate<sup>7</sup>; since 2003 the trend has reversed and the national currency is continuously appreciating. While this is partially explained by recent weakening of the US dollar, high rates of economic growth in Armenia combined with increasing productivity have had a significant impact as well.

## 2.4. Growth and poverty

Recent economic growth has had a significant positive impact on poverty. In contrast to the situation in the second half of the 1990s, when economic recovery was found to have had little impact on poverty (World Bank, 2002), recent accelerated growth has resulted in significant poverty reduction. As presented in the next chapter of this report, in the period between 1999 and 2004 overall poverty incidence declined from 55.1 to 34.6 percent, while the incidence of very poor people decreased from 22.9 to 6.4 percent. Poverty to GDP elasticity coefficients presented in Table 2.10 show that for each percentage point of economic growth recorded over 1999-04, overall poverty incidence declined by 0.57 percentage point. The elasticity was strongest in Yerevan and weakest in other urban areas.

<sup>7</sup> During 1994-2002 period the dram depreciated by 680 percent in nominal terms (2002 end of period compared with 1993 end of period). It appreciated by 17 percent during 2003-2004 (2004 end of period compared with 2002 end of period compared). Real effective exchange rate appreciated during 1995-2002 period by 4.1 percent (2002 period average compared with 1995 period average) and depreciated by 3.7 percent during 2003-2004 (2004 period average compared with 2002 period average).

**Table 2.10:** Armenia: Poverty-to-value-added elasticity estimates, 1999-2004

	1999-2004
<b>Overall poverty reduction-to-GDP elasticity</b>	<b>-0.57</b>
Urban poverty reduction-to-GDP elasticity	-0.58
Yerevan poverty reduction-to-GDP elasticity	-0.73
Non-Yerevan urban poverty reduction to GDP elasticity	-0.44
Rural poverty reduction-to-GDP elasticity	-0.58
Rural poverty reduction-to-agriculture value-added elasticity	-1.02

Source: NSSA and ILCS 2004.

## 2.5. Conclusion

A combination of successfully implemented structural reforms and sound economic policies enabled Armenia's strong growth performance since 1994. It has been particularly strong in 2001-04 when the country recorded double-digit growth rates. As a result, Armenia re-attained its 1990 GDP level and joined the group of middle income economies. The growth brought about an increase in real wages, stabilized employment, and increased spending on social services and transfers, all of which, combined with a growing stream of remittances, contributed to a significant reduction in poverty in Armenia. In 2004, in comparison to the situation in 1998/99, almost 700 thousand people were lifted out of poverty and among them almost half a million people escaped extreme poverty. Poverty became shallower and less severe as well.

## CHAPTER III: POVERTY PROFILE 1998/99-2004

*The pro-poor growth in Armenia has resulted in substantial poverty reduction. Since 1998/99, almost 700,000 people were lifted out of poverty and among them almost half a million people escaped extreme poverty. Poverty became shallower and less severe. Yet, poverty will continue to challenge Armenia as it still affects approximately one third of the population of which about 200,000 are very poor. The engines behind poverty reduction have been steady and accelerating economic performance, more jobs and growing wages, increased pensions and other social transfers, decreased inequality in income and consumption distribution, and robust growth in remittances from the Armenians working abroad. The capital city of Yerevan has benefited from growth the most, while resident in secondary cities gained the least, remaining the poorest segment of the population in Armenia in 2004. Poverty was predominantly urban phenomenon in 1998/99; in 2004 there was no clear distinction between urban and rural poverty.*

### 3.1. Poverty indicators and their trends

*Poverty trends:* Armenia significantly reduced poverty during 1998/99-2004. Almost 700,000 people were lifted out of poverty and the incidence of poor people fell by 37.5 percent: from around 56 to about 35 percent (Table 3.1). Extreme poverty declined even faster, from 21 to about 6 percent, a fall of 70 percent; almost half a million people—out of 700,000—escaped extreme poverty. Poverty has become shallower and less severe, as the poverty gap and severity of poverty have declined significantly as well. In 2004, the poverty gap was estimated at 7.4 percent, down from 17.2 in 1998/99; while severity of poverty was estimated at 2.4 percent (down from 7.2). The shortfall between the consumption of the poor and the

poverty line (in percent of the poverty line) fell from 31 to 21 percent. Despite these remarkable results, poverty still remains an important issue in Armenia as 34.6 percent of the population—over one million people are poor and among them about 200,000 very poor.

**Table 3.1:** Armenia: Poverty indicators, 1998/99 and 2004 (in %)

	1998/99					2004				
	Very Poor	Poor	Share in total population	Poverty gap	Severity of Poverty	Very Poor	Poor	Share in total population	Poverty gap	Severity of poverty
Urban	26.2	62.1	57.1	20.1	8.7	7.5	36.4	62.4	8.4	2.8
Yerevan	24.8	58.4	27.7	18.7	7.9	6.1	29.2	31.8	6.5	2.2
Other urban	27.4	65.5	29.4	21.5	9.4	9.2	43.9	30.6	10.3	3.5
Rural	14.1	48.2	42.9	13.3	5.1	4.4	31.7	37.6	5.7	1.6
<b>Total</b>	<b>21.0</b>	<b>56.1</b>	<b>100.0</b>	<b>17.2</b>	<b>7.2</b>	<b>6.4</b>	<b>34.6</b>	<b>100.0</b>	<b>7.4</b>	<b>2.4</b>

Source: Integrated Living Conditions Survey 1998/99 and 2004.

**Note:** Consumption is measured per *adult equivalent*. Poverty indicators are computed using the 2004 *minimum food basket* and the non-food share estimated in 2004. Poverty lines are adjusted for inflation. *Poor* are defined as those with consumption per adult equivalent below the poverty line, while *very poor (extremely poor)* are defined as those with consumption per adult equivalent below the food (extreme) poverty line. In 1998/99, the overall poverty line and the food line expressed per adult equivalent per month were 17,663 and 11,210 drams respectively. In 2004, the respective amounts were 19,373 and 12,467 drams respectively (Table A3.1; Statistical Annex). The *poverty gap* of 7.4 percent indicates that if the country could mobilize resources equivalent to 7.4 percent of the poverty line for each individual (both poor and non-poor) and if these resources were allocated to the poor, poverty would be theoretically eliminated, assuming that the assistance to the were perfectly allocated. If calculated over the poor population only, the poverty gap indicates *poverty shortfall or deficit*, i.e. it shows how much the average income/consumption of the poor falls short of the poverty line. The *severity of poverty* measures the inequality among the poor; it takes into account that some poor are further away from the poverty line, while some have consumption closer to it. This table with standard errors is presented as Table A3.2 in Statistical Annex.

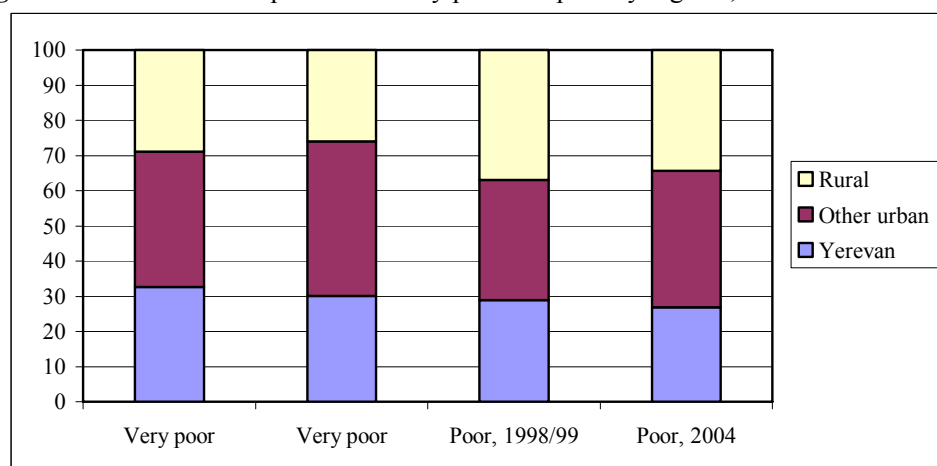
*Factors behind poverty reduction:* The most important factor behind poverty reduction in Armenia is steady and accelerating economic growth. Good economic performance combined with decreasing inequality and a robust stream of remittances from Armenians working abroad has enabled increase in real consumption. As reported by the 2004 ILCS, real average monthly consumption for the entire population increased by 20 percent in comparison to 1998/99; more importantly this increase affected all consumption quintiles and in particular the poorest 20 percent of the population whose average monthly consumption increased by 36 percent.

Economic growth brought about increase in real wages, including wages in the public sector, as well as new job creation. Real average wages increased by 80 percent during the observed period. Household survey based labor market data indicate that the absolute number of employed increased by about 141,500 people or almost 14 percent, while the number of unemployed decreased by 26 percent or about 100,000 people, pushing the unemployment rate down from 27 percent in 1998/99 to 19.3 in 2004. Income from agriculture increased as well, particularly in 2003 and 2004, driven by a combination of increased prices and growing agricultural production. Rising output has brought more resources into the public coffers, allowing the Government to align public spending with its poverty reduction strategy and pursue pro-poor public spending policies more comfortably, focusing on pensions, and health and education services. As a result, average pensions increased by almost 80 percent in real terms. The average family poverty benefit per recipient household increased as well in real terms, but only by 8 percent. Another important factor behind poverty reduction in Armenia has been a steady growth in remittances from Armenians leaving and working abroad, especially in Russia. According to the official estimates, the annual amount of remittances increased from US\$ 143.9 million in 1999 to US\$ 548.7 million, reaching about 180 dollar per capita per year. Finally, a decrease in inequality that is suggested by various estimates throughout this chapter has played a role as well. For instance, inequality in consumption



distribution as measured by the Gini coefficient decreased from 0.301 to 0.260; the ratio between the mean consumption of the richest 10 percent and the poorest 10 percent of the population decreased from 6.7 to 5.1; the share of the poorest 10 percent of the population in overall consumption increased from 3.7 percent in 1998/99 to 4.3 percent in 2004 (Table A3.3 in Statistical Annex).

**Figure 3.1:** Armenia: Composition of very poor and poor by regions, 1998/99 and 2004 (%)



Source: ILCS 1998/99 and 2004.

*Poverty by economic regions:* Poverty in Armenia was higher among the urban than rural population, although the difference has been narrowing and was not strongly pronounced in 2004. Poverty responded more strongly to growth in urban than in rural areas, due to better integration of the urban poor in labor markets (see chapter on labor markets), narrowing substantially urban-rural difference since 1998/99.

The capital city of Yerevan, where most of the economic opportunities were concentrated, has benefited from growth the most, as it experienced the highest reduction in poverty incidence. In contrast, urban areas outside Yerevan, i.e. secondary cities, have recorded the smallest poverty gains, remaining the poorest segment of Armenian population. Most of the poor are urban residents, reflecting the urban/rural composition of total population (Table 3.1), as well as the increased share of urban residents among the poor since 1998/99, due to the increased share of residents in secondary cities among the poor (Figure 3.1).

In 2004, rural areas had the smallest and non-Yerevan urban areas the highest incidence of very poor population (4.4 and 9.2 percent respectively). A similar situation was also observed in 1998/99, indicating that subsistence agriculture played an important role in protecting people from falling into extreme poverty. The growth in agricultural production translated into increased real farm incomes, especially for poor households and had a positive effect on rural poverty reduction. Also, food prices increased much more than non-food prices between 1999 and 2004 (29.3 percent and 6.1 percent respectively). As food production is the dominant source of income/consumption for rural households (mainly in the form of own consumption), the relative price increase of food products had a favorable impact on rural population. Yet, it should be noted that rural poor were mostly employed in agriculture, with a negligible share working in the non-farm sector. Employment in the non-farm sector, as shown by empirical evidence from Europe and Central Asia country case studies (Alam *et al.*, 2005) has become, on average, far more rewarding than any type of farm employment and a major correlate of income growth for the rural poor and consequently of rural poverty reduction.

The poverty trends by economic regions in Armenia are similar to those observed in other countries in the Europe and Central Asia Region. Empirical evidence from those countries shows that the capital cities have benefited the most from improved economic performance; rural areas have lagged behind; while urban areas outside the capital cities have benefited the least (Alam *et al.*, 2005).

**Box 3.1: Poverty trends in Armenia 1998/99-2004 based on “old” methodology**

*Poverty measurement results based on the methodology previously used by the National Statistical Service are presented in Table 3.2. As already explained in the introductory section, that methodology was changed and the analysis of the poverty situation in Armenia presented in this report is based on an adjusted methodology. The adjustments include new poverty lines and more comprehensive consumption aggregate measured in pre adult equivalent terms in order to take into account differences in consumption between children and adults and account for welfare effects of family members residing together (see Methodological Explanations).*

**Table 3.2: Armenia: Poverty trends 1998/99-2004; based on “old” methodology (in %)**

	Poverty incidence					Poverty gap	Severity of poverty
	All	Urban	Yerevan	Other urban	Rural		
	<b>Very poor</b>						
<b>98/99</b>	22.9	23.2	21.0	25.2	22.6	5.9	2.2
<b>2001</b>	16.0	18.3	16.8	19.6	11.3	3.3	1.0
<b>2002</b>	13.1	15.0	11.8	18.4	10.2	2.4	0.7
<b>2003</b>	7.4	7.9	3.7	12.2	6.8	0.7	0.1
<b>2004</b>	7.2	8.6	6.2	11.0	5.0	1.5	0.5
	<b>Poor</b>						
<b>98/99</b>	55.1	58.3	54.7	61.6	50.8	19.0	9.0
<b>2001</b>	50.9	51.9	46.7	56.7	48.7	15.1	6.1
<b>2002</b>	49.7	52.6	43.8	61.9	45.3	13.5	5.2
<b>2003</b>	42.9	39.7	29.6	49.9	47.5	8.9	2.8
<b>2004</b>	39.0	38.0	29.4	46.9	40.6	9.9	3.5

**Source:** Integrated Living Conditions Survey 1998/99-2004.

**Note:** Poverty lines were established in 1996 using the basic needs approach (food line is used as a benchmark for very poor population; the complete poverty line comprises non-food consumption allowance as well—about 35 percent of the complete line). The welfare measure is consumption per capita. Consumption aggregate includes nominal expenditures on durables not their rental value. It does not include either rental value of housing or already owned durables. This table with statistical errors is presented in Statistical Annex as Table A3.4.

*These results based on the “old” methodology are similar to those obtained using the adjusted methodology: both the incidence of very poor and poor households decreased significantly; as did the poverty gap and severity of poverty; the capital city of Yerevan experienced the highest reduction in poverty; urban areas outside Yerevan remained the poorest in Armenia; the incidence of very poor population was the lowest in rural areas and the highest in secondary cities. Urban-rural differences in overall poverty incidence were even less pronounced in comparison to the results obtained using adjusted methodology.*

*Poverty by marzes:* Armenia is administratively divided into 11 regions (*marzes*). The 2004 round of the ILCS is the only one conducted so far in Armenia that is representative at the *marz* level. Table 3.3 presents poverty measurement results for 2004 by *marzes*. The results for 1998/99 are included as well, but only as rough illustration of regional poverty (the 1998/99 ILCS was not representative at the *marz* level).

In 2004, in most of the *marzes* the poverty incidence was not significantly different from the national average; furthermore, the regional differences in poverty have narrowed over the last six years<sup>8</sup>. With almost 50 percent of the population below the poverty line, Shirak, a high altitude *marz* devastated by an earthquake in 1988, was still the poorest in Armenia. Other regions, with poverty incidence higher than the national average were Gegharkunik, Kotayk, Syunik, Armavir and Aragatzotn. In contrast, Vayots Dzor and Yerevan experienced the lowest poverty incidence.

**Table 3.3:** Armenia: Poverty measures by regions (*marzes*), 1998/99 and 2004, (in %)

	1998/99		2004					
	Extreme poverty incidence	Poverty Incidence	Extreme poverty incidence	Poverty Incidence	Share in the poor	Share in total population	Poverty gap	Severity of poverty
Yerevan	24.8	58.4	6.1	29.2	26.8	31.8	6.5	2.2
Aragatzotn	22.8	60.5	5.6	35.4	5.5	5.4	6.9	2.1
Ararat	13.3	52.3	6.4	32.7	8.5	9.0	6.8	2.2
Armavir	10.2	41.7	6.6	36.0	8.9	8.6	7.1	2.2
Gegharkunik	11.3	49.9	4.5	41.9	8.3	6.9	8.0	2.2
Lori	30.0	62.6	4.5	31.3	8.7	9.6	6.5	2.2
Kotayk	24.5	61.7	9.2	39.3	10.4	9.1	8.6	2.9
Shirak	33.0	75.8	10.4	48.8	13.1	9.3	11.7	4.0
Syunik	18.7	53.1	5.9	36.5	4.7	4.5	7.6	2.3
Vayots Dzor	12.9	34.7	4.1	28.9	1.4	1.7	5.4	1.5
Tavush	9.3	29.3	3.3	30.5	3.6	4.1	5.6	1.5
Total	21.0	56.1	6.4	34.6	100.0	100.0	7.4	2.4

**Source:** ILCS 1998/99 and 2004.

**Note:** This table with statistical errors is presented as Table A3.5 in Statistical Annex.

*Poverty incidence sensitivity to changes in poverty line:* The number of very poor people appears more sensitive to changes in the poverty line than overall poverty, which indicates higher concentration of individuals around the food line than around the complete poverty line. Table 3.4 presents changes in poverty incidence for a given change in the poverty line. If the poverty line increases by 5 percent, extreme poverty will increase by 22 percent, while overall poverty will increase by 14 percent. However, those changes in extreme poverty and overall poverty are not statistically significant. The same conclusion appears if the poverty line decreases by 5 percent. Significant changes (at the 1% significance level) in poverty incidence appear when the poverty line increases or decreases by 10 percent.

**Table 3.4:** Changes in poverty incidence with respect to changes in poverty line, 2004

Changes in poverty line	Very poor (%)	Poor (%)
Unchanged, 0%	6.4	34.6
+5%	7.8	39.5
-5%	5.2	29.6
+10%	9.7	43.5
-10%	3.9	24.7

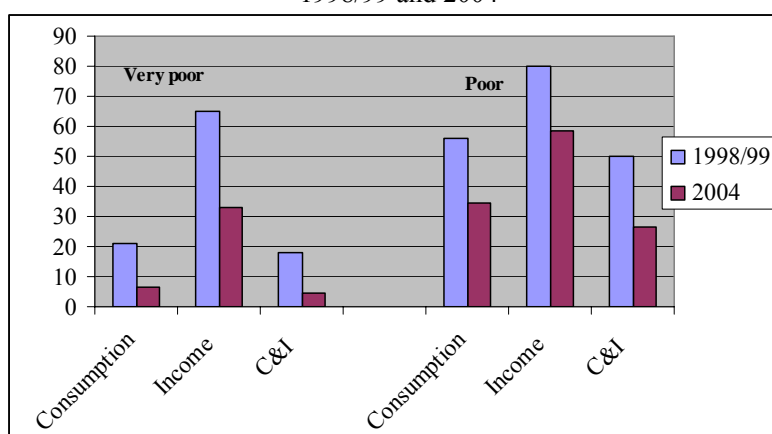
**Source:** ILCS 2004.

<sup>8</sup> The exact period between the 1998/99 and 2004 surveys is 5 years and 9 months, but for simplicity it is referred to as 6 years in the text. However, in calculation of the annual growth rates in consumption the accurate number of years/months (5.75) is used.

*Consumption vs. income poverty:* Figure 3.2 illustrates comparisons between consumption and income poverty in Armenia in 2004 (the results for income based poverty estimates are presented in tables A3.6-A3.8 in Statistical Annex). As expected, income based poverty estimates were higher than those based on consumption as welfare measure. The difference is mostly explained by much higher inequality in income than consumption distribution, as difference between the average income and consumption levels was not particularly high (the income to consumption ratio was 0.83 in 2004).

Looking at the overlapping of consumption and income poverty incidence in 2004, it appears that a large fraction of individuals whose income was below the poverty line had consumption above it: only 14 and 46 percent of individuals who were income very poor and poor respectively belonged to the category of consumption poor as well. The opposite holds for those who were consumption very poor and poor. About three quarters of them were income poor as well. The remaining one quarter had consumption which did not exceed the food or complete poverty lines, while their income did.

**Figure 3.2:** Armenia: Consumption and income poverty incidence in 1998/99 and 2004



Source: ILCS 1998/99 and 2004.

Note: C&I denotes the incidence of those who are both consumption and income very poor/poor.

*How much would it cost to eliminate poverty?* Armenia would need 54.4 billion drams or 2.9 percent of GDP—in addition to resources already spent on social assistance—to eliminate poverty, assuming perfect targeting of assistance to the poor (Table 3.5). Eradication of extreme poverty would require about 5.2 billion drams or 0.3 percent of GDP in addition to social assistance already received by the very poor and assuming perfect targeting. These amounts were significantly smaller than in 1998/99.

**Table 3.5:** Armenia: a monetary magnitude of poverty reduction 1998/99 and 2004

	1998/99		2004	
	Very poor	Poor	Very poor	Poor
Average consumption of the poor (drams per adult equivalent per month)	8,799	12,238	10,340	15,244
Poverty line (drams per adult equivalent per month)	11,210	17,663	12,467	19,373
Additional consumption needed (drams per month)	2,411	5,425	2,127	4,129
Shortfall: % of poverty line needed for the poor	21.5	30.7	17.1	21.3
GDP (billion dram)	987.1	987.1	1,896.4	1,896.4
Budget required (billion dram)	19.4	116.7	5.2	54.4
Budget required in % of GDP	2.0	11.8	0.3	2.9

Source: NSSA and ILCS 1998/99 and 2004.

As perfect targeting is unlikely, and as evidenced by other countries, the actual resources needed to eliminate poverty would be significantly higher. In market economies, they are found to be at least double the minimum costs necessary for eliminating poverty under conditions of perfect targeting. In transition economies (Poland, Hungary, Bulgaria, Estonia and Russia), the cost of providing the equivalent of 1 US dollar of assistance to the poor was found to range from 1.5 US dollar to 8 US dollars (not taking into account administrative costs)<sup>9</sup>. As discussed in the chapter on social protection, social assistance in Armenia is fairly well targeted. However, there is a room for improvements in targeting, as almost 40 percent of the resources allocated to the targeted family poverty benefit appear to be received by non-poor population. By decreasing this error of inclusion, more of the very poor and poor population could be included in the program.

### 3.2. Poverty – economic growth linkages

In principle, changes in poverty are driven by changes in the welfare aggregate and inequality in its distribution. Following a methodology developed by Datt and Ravallion (1992), a change in poverty in Armenia was decomposed into a growth and distribution components. The results suggest that most of the observed decrease in poverty in Armenia between 1998/99 and 2004 can be attributed to growth in welfare, as measured by consumption per adult equivalent (see Table A3.9, Statistical Annex).

**Table 3.6:** Armenia: Rates of pro-poor growth by regions, 1998/99-2004

	Total	Yerevan	Other urban	Rural
Annual growth rates				
Growth rate in the mean (ordinary growth rate)	3.2	5.3	3.9	1.2
Mean percentile growth rate	3.9	5.7	4.4	2.4
Mean growth rate of the lowest quintile	5.4	6.3	5.7	4.7
Mean growth rate for P(0), extreme poverty line	5.6	6.5	5.6	5.1
Mean growth rate for P(0), overall poverty line	4.8	6.3	4.8	3.9

Source: ICLS 1998/99 and 2004.

Notes: Growth rates refer to consumption. P(0) denotes poverty incidence (Foster, Greer and Thorbecke, 1984).

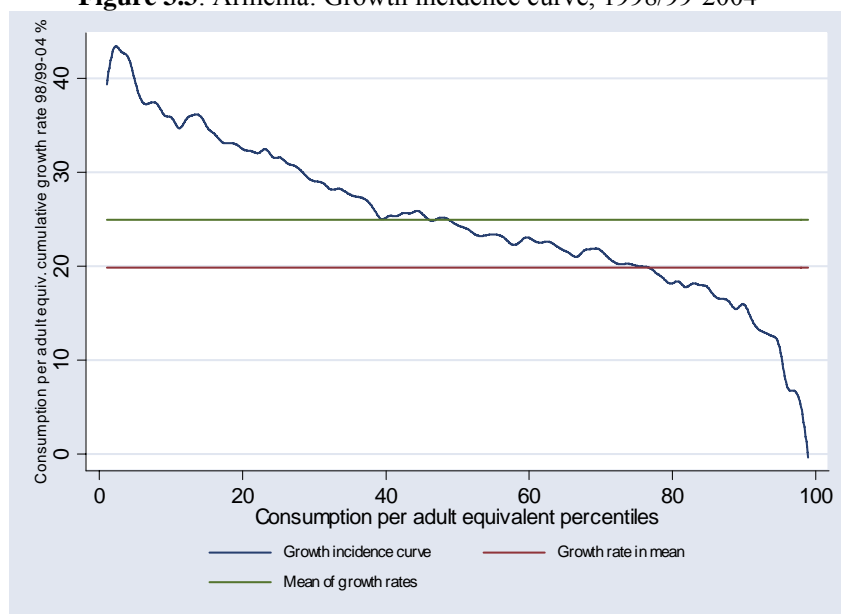
Growth in Armenia was pro-poor. The pro-poor growth can be measured by mean consumption growth at various segments of distribution (Ravallion and Chen 2003). Table 3.6 shows that consumption of the poor grew much faster than overall consumption (4.8 and 3.2 percent per year respectively), suggesting that the distributional shift favored the poor. Moreover, consumption of the very poor has been growing at an even faster pace—5.6 percent per year, indicating the highest relative gains for most vulnerable Armenians and leading to a larger reduction in extreme than overall poverty incidence, as already noted.

As illustrated by the growth incidence curves presented below (Figures 3.3-3.6), growth was pro-poor in all economic regions. The curves that illustrate changes in consumption per adult equivalent (y-axis) across the percentiles of consumption distribution (x-axis) between 1998/99 and 2004 are on average decreasing over all percentiles; thus indicating declining inequality. In other words, while population across all quintiles experienced consumption growth, poor benefited from growth more than the non-poor. This could easily be seen from Figure 3.3, as growth in consumption illustrated by the curve (called growth incidence curve) was higher for poorer than for richer population (left versus right end of consumption distribution - x axis). For example, over 98/99-04, cumulative growth in consumption for the poorest 20 percent of the population was about 35 percent on average (or 5.4 per year), while for the richest 20 percent, it was around 10 percent on average (or 1.7 per year). This could be

<sup>9</sup> J. Braithwaite, C. Grootaert and B. Milanovic, **Poverty and Social Assistance in Transition Countries**, 2000.

mainly explained by increased employment opportunities (as poor relied more on labor income than the non-poor), and increased social transfers and public and private sector wages.

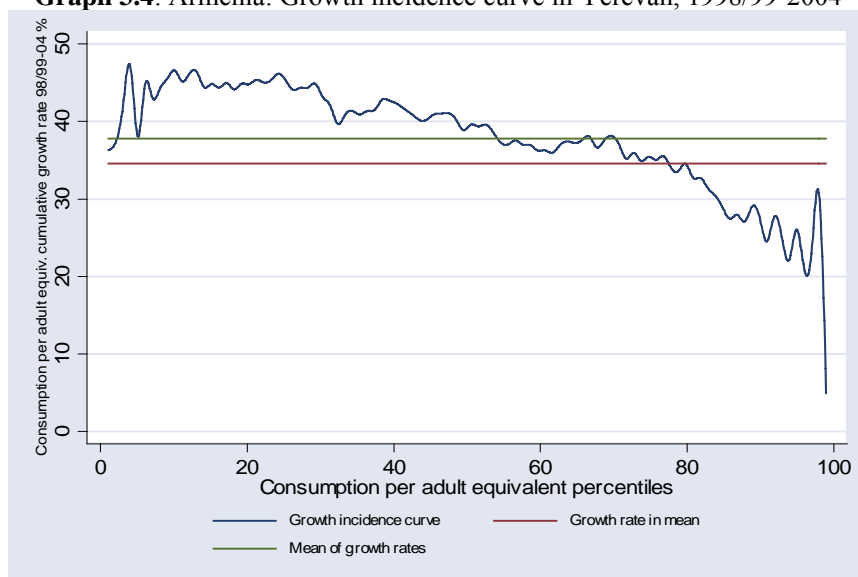
**Figure 3.3:** Armenia: Growth incidence curve, 1998/99-2004



**Source:** ILCS 1998/99 and 2004.

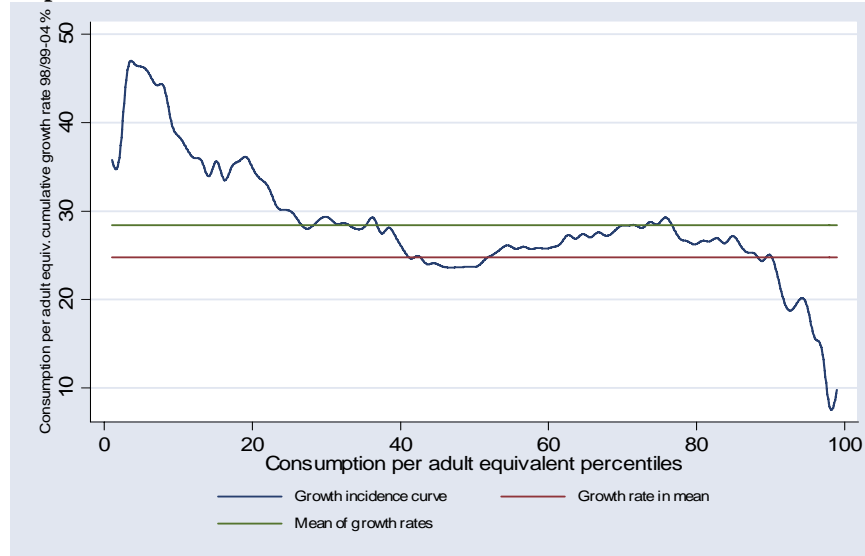
**Note:** The curve refers to the period of 5 years and 9 months.

**Graph 3.4:** Armenia: Growth incidence curve in Yerevan, 1998/99-2004



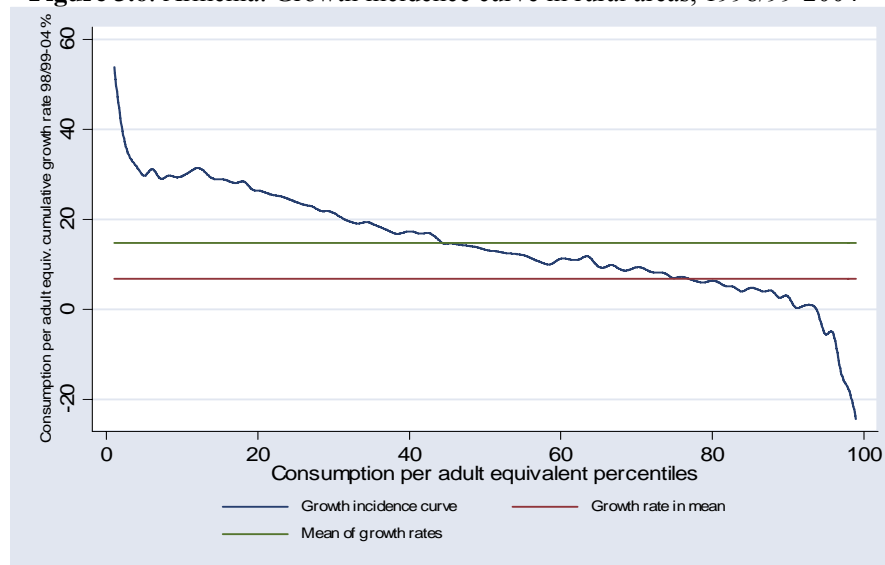
**Source:** ILCS 1998/99 and 2004.

**Graph 3.5:** Armenia: Growth incidence curve in other urban areas 1998/99-2004



Source: ILCS 1998/99 and 2004

**Figure 3.6:** Armenia: Growth incidence curve in rural areas, 1998/99-2004



Source: ILCS 1998/99 and 2004.

The rate of pro-poor growth was the highest in Yerevan and the lowest in rural areas, as consumption of the poor in Yerevan grew much more than in rural areas (6.3 versus 3.9 per year on average). Rural households in the top consumption decile were the only ones experiencing a drop in consumption: they reported spending less on food, alcohol and tobacco, clothing and shoes, as well as on education and health in 2004 than in 1998/99.

### 3.3. The poverty profile and its changes over 1998/99-2004

The poverty profile did not change much over the observed period:

- (a) There were no gender differences in poverty in 1998/99 and 2004 (Table 3.7).
- (b) Children under five were more affected by extreme and overall poverty than other age groups. The poverty incidence decreased with the age of the individual. The elderly who faced higher than average poverty risk in 1998/99 were among those who experienced the largest declines in poverty. This can be explained by increased pensions and elimination of pension arrears. Improved economic conditions of elderly were observed in all transitional countries over the last five years.

**Table 3.7:** Armenia: Poverty measures by gender and age groups, 1998/99 and 2004 (in %)

	1998/99		2004			
	Very poor	Poor	Very poor	Poor	Share in the poor	Share in the population
<b>Gender</b>						
Female	21.1	56.3	6.4	34.3	54.0	54.5
Male	20.9	55.9	6.4	35.0	46.0	45.5
<b>Age groups</b>						
Children 0-5	24.1	63.3	8.0	41.9	8.9	7.3
Children 6-14	17.1	51.6	7.2	36.6	16.3	15.4
Children 15-17	18.4	52.9	6.4	35.7	6.4	6.2
Aged 18-25	25.8	59.7	6.3	35.3	13.2	12.9
Aged 26-45	19.9	54.6	6.7	35.7	27.7	26.9
Aged 46-60	22.0	56.6	5.4	29.8	13.8	16.0
Aged 61+	22.5	58.3	5.5	31.2	13.8	15.3
Total	21.0	56.1	6.4	34.6	100.0	100.0

Source: ILCS 1998/99 and 2004.

- (c) Larger households with children faced higher poverty risk. The relative poverty risk increased with household size (Table 3.8). The important factor in explaining poverty in extended families is the dependency ratio. Larger households have more children and, thus, a lower ratio of income earners than smaller households, which causes their consumption levels to be lower.

**Table 3.8:** Armenia: Poverty measures by household size, 1998/99 and 2004 (in %)

	1998/99		2004			
	Very poor	Poor	Very poor	Poor	Share in the poor	Share in the population
<b>Number of household members</b>						
1	6.8	43.7	1.6	13.2	1.1	2.8
2	16.5	49.8	3.9	20.3	5.0	8.5
3	14.8	49.0	3.8	25.3	8.2	11.2
4	17.0	50.1	5.3	28.5	18.2	22.1
5	17.7	54.1	5.2	36.3	23.1	22.0
6	26.3	63.1	7.7	39.7	19.4	16.9
7 or more	29.0	63.8	11.9	52.8	25.1	16.5
Total	21.0	56.1	6.4	34.6	100.0	100.0

Source: ILCS 1998/99 and 2004.

In Armenia, the presence of children increased the poverty incidence, but only households with three and more children experienced significantly higher poverty risk than the national average in 2004 (Table 3.9). However, these results should be treated with caution since the



outcomes largely depend on the assumptions made regarding the equivalence scales and economies of scale (Lanjouw and Ravallion, 1995).

**Table 3.9: Armenia: Poverty measures by number of children and elderly, 1998/99 and 2004 (in %)**

	1998/99		2004			
	Very poor	Poor	Very poor	Poor	Share in the poor	Share in the population
<b>Number of children</b>						
0 child	20.0	54.2	4.0	24.0	17.2	24.8
1 child	23.6	55.6	5.5	34.5	22.0	22.0
2 children	20.0	56.9	7.4	36.2	33.3	31.8
3 children	21.2	55.8	5.9	41.1	17.5	14.8
4 and more	21.4	58.5	14.7	53.1	10.0	6.6
<b>Number of elderly</b>						
0 elderly	18.2	52.9	6.0	33.3	52.3	54.5
1 elderly	22.9	60.4	7.0	34.4	28.6	28.9
2 and more elderly	28.3	61.0	6.7	39.6	19.1	16.7
Total	21.0	56.1	6.4	34.6	100.0	100.0

Source: ILCS 1998/99 and 2004.

(d) Presence of elderly members did not increase the poverty risk significantly. A typical Armenian household, which consists of two adults and two children, experiences lower than the average poverty risk. If elderly are included in this typical household, the poverty risk increases slightly but this increase is not statistically significant (Table 3.9). Households consisting only of elderly people experienced substantially lower poverty risk than the national average (45 percent lower than the average, Table 3.10).

(e) Female headed households with children were more likely to be poor compared to the national average, and they comprised 21 percent of poor in 2004 (and 17 percent of the population; Table 3.10). The high share of female headed households could be explained by emigration and its patterns—it is normally a father who heads abroad in search of better employment opportunities. Then once he establishes himself, the family would follow. High poverty among those families may be explained by a number of factors including lack of or low wage employment opportunities, the departed spouse may not be able to or unwilling to support the family and others.

**Table 3.10: Armenia: Poverty measures by household composition, 1998/99 and 2004 (in %)**

	1998/99		2004			
	Very Poor	Poor	Very poor	Poor	Share in the poor	Share in population
1 adult, no children	6.2	41.2	0.6	11.9	0.3	0.9
1 adult, with children	23.4	58.1	4.2	21.6	1.8	2.9
2 adults, no children	13.5	42.3	4.6	17.4	1.4	2.8
2 adults, 2 children	10.8	41.8	5.1	28.1	7.1	8.8
2 adults, 2 children, 1 elderly	12.9	53.2	5.7	36.8	4.7	4.4
2 adults, 2 children, 2 elderly	33.8	74.0	7.2	33.5	2.9	3.0
elderly, no children, no adults	12.2	50.7	2.5	19.0	2.5	4.6
Other	23.0	58.2	7.0	37.8	79.3	72.7
Female head, no children	20.5	58.3	5.6	23.5	5.4	7.9
Female head, with children	21.6	63.2	8.3	41.3	21.2	17.8
Total	21.0	56.1	6.4	34.6	100.0	100.0

Source: ILCS 1998/99 and 2004.

(f) More educated people were more likely not to be poor (Table 3.11). Highly educated Armenians had the lowest poverty incidence, around 42 percent lower than the national

average and around two times lower than for those with primary education. Since 1998/99, extreme and overall poverty declined the most for highly educated Armenians (those with specialized secondary education and university degree). However, those with upper secondary education were the largest group among the poor (47 percent). While this reflects their share in the population over 16 years of age, it also indicates difficulties this group is facing in finding jobs.

**Table 3.11:** Armenia: Poverty by education, 1998/99 and 2004 (population 16+), in %

	1998/99		2004			
	Very Poor	Poor	Very poor	Poor	Share in the poor (reference population)	Share in the reference population
Primary or less	23.7	62.3	7.2	37.4	2.8	2.5
Lower secondary	27.8	63.3	8.7	42.6	15.7	12.3
Upper secondary	24.0	58.9	7.2	38.2	47.1	41.3
Specialized secondary	19.4	55.6	5.6	31.9	22.6	23.7
Tertiary education	13.4	44.9	2.6	19.5	11.8	20.1
<b>Total</b>	21.6	56.4	6.1	33.5	100.0	100.0

Source: ILCS 1998/99 and 2004.

(g) Labor market participation played an important role in determining poverty status. Households with no employed members faced the highest poverty risk—13 percent over the national average (Table 3.12). However, in contrast to 1998/99, this difference was not statistically significant, indicating some improvement in the relative position of this group. This could be explained by increased social transfers (pensions, family poverty benefits and others) and remittances, which represented major sources of income for households that reported having no employed member.

**Table 3.12:** Armenia: Poverty by the number of the employed in the household, 1998/99 and 2004 (in %)

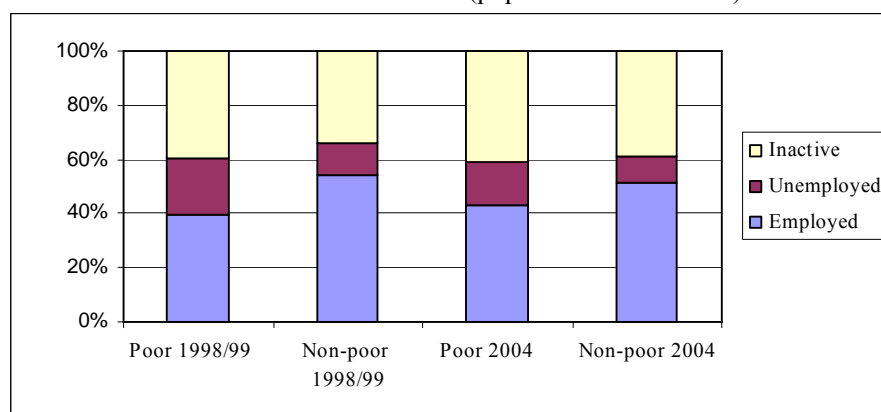
	1998/99		2004			
	Very poor	Poor	Very poor	Poor	Share in the poor (reference population)	Share in reference population
Nobody is employed	36.1	68.9	9.8	38.0	18.4	16.2
1 member is employed	21.2	58.3	6.9	35.0	30.3	29.0
2 members are employed	15.4	48.8	4.5	29.9	29.1	32.5
3 and more members are employed	15.0	50.6	4.5	33.2	22.2	22.4
<b>Total</b>	21.7	56.5	6.1	33.5	100.0	100.0

Source: ILCS 1998/99 and 2004.

Note: Population 16+.

The composition of poor and non-poor by labor market status changed over 1998/99-2004. A majority of the poor were either inactive or unemployed, while a majority of the non-poor were employed (Figure 3.7). The share of the inactive and unemployed among the poor declined between 1998/99 and 2004, primarily due to the decreased number of the unemployed in the population over 16 and among the poor.

**Figure 3.7:** Armenia: Composition of the poor and non-poor by labor market status in 1998/99 and 2004 (population 16 and over)



Source: ILCS 1998/99 and 2004.

The unemployed faced the highest poverty risk among the participants in the labor market (Table 3.13). Moreover, there has been a large deterioration in their position relative to the national average, as their poverty risk increased from 23 to 37 percent in 1998/99-2004. Looking across the regions, the unemployed living in secondary cities retained the highest poverty risk (in 2004 as in 1998/99), and their position even worsened—from 33 to 56 percent above the national average over the observed period.

**Table 3.13:** Armenia: Labor force participation and poverty, 1998/99 and 2004 (population 16 and over), in %

	1998/99		2004			
	Very poor	Poor	Very poor	Poor	Share in the poor (referenced population)	Share in referenced population
<b>All population</b>						
Participants	19.7	54.2	5.7	32.6	58.7	60.3
Salaried worker	15.0	48.7	4.4	27.5	19.8	24.1
Self-employed	13.4	48.6	4.3	31.0	22.1	23.9
Other employment	14.7	45.6	4.3	38.8	0.8	0.7
Unemployed	35.1	69.5	11.4	45.9	16.0	11.6
Non-participants	24.6	59.9	6.6	34.8	41.3	39.7
Pensioners	25.4	64.0	6.2	33.2	14.4	14.5
Students	15.1	49.1	3.1	22.8	4.7	6.9
Other non-participants	27.4	60.3	8.2	40.6	22.3	18.3
<b>Yerevan</b>						
Participants	24.3	57.8	6.1	27.8	53.6	53.8
Salaried worker	16.3	49.4	3.8	23.8	29.2	34.3
Self-employed	12.9	46.2	6.6	20.6	2.5	3.3
Other employment	16.7	50.0	1.0	16.7	0.2	0.3
Unemployed	33.2	67.2	11.1	38.3	21.7	15.8
Non-participants	23.7	58.0	5.2	28.0	46.4	46.2
Pensioners	22.2	59.5	5.8	31.2	19.0	17.0
Students	15.7	49.0	2.5	15.5	4.8	8.6
Other non-participants	28.6	60.4	5.8	30.6	22.6	20.6

**Table 3.13: continued**

	1998/99		2004			
	Very poor	Poor	Very poor	Poor	Share in the poor referenced population	Share in referenced population
<b>Urban areas outside Yerevan</b>						
Participants	27.0	64.4	8.0	40.8	51.4	53.8
Salaried worker	17.9	57.5	6.2	34.7	20.8	25.6
Self-employed	14.1	49.6	5.9	39.4	11.6	12.6
Other employment	27.8	83.3	4.1	40.6	0.6	0.6
Unemployed	39.6	75.1	13.0	52.4	18.4	15.0
Non-participants	30.9	68.8	9.4	44.9	48.6	46.2
Pensioners	33.5	72.8	8.2	39.5	14.3	15.5
Students	19.6	56.3	4.8	32.7	5.4	7.1
Other non-participants	32.3	69.5	11.6	52.2	28.9	23.6
<b>Rural</b>						
Participants	13.1	46.3	4.0	30.6	71.7	72.0
Salaried worker	9.1	35.1	2.7	24.6	10.7	13.4
Self-employed	13.3	48.6	3.9	29.9	51.2	52.7
Other employment	7.9	26.3	5.3	44.0	1.6	1.1
Unemployed	23.2	54.7	8.4	51.7	8.2	4.9
Non-participants	18.6	52.0	4.7	31.1	28.3	28.0
Pensioners	19.6	59.1	4.3	28.7	10.5	11.2
Students	9.5	41.8	2.1	22.6	3.7	5.1
Other non-participants	20.8	50.1	6.2	37.1	14.1	11.7
Total	21.5	56.3	6.1	33.5	100.0	100.0

Source: ILCS1998/99 and 2004.

Among the population not participating in the labor market, while pensioners were more likely to be poor in 1998/99, their standard of living has improved since 1998/99, so that other non-participants (housewives, students, etc.) became most affected by poverty in 2004, particularly those living in secondary cities. Their poverty risk was one half over the national average. They represented almost one third of the poor in secondary cities and 24 percent of their total population.

### 3.4. Determinants of consumption and poverty

This section examines factors that are closely associated with welfare and poverty rather than establishing causal relationships. Identifying these factors is an important step in designing economic and social policy aimed at reducing poverty and preventing households from falling into poverty. The examined factors comprise (i) characteristics of the household including age composition, size, presence of migrant members, labor market status of the household members, and location of the household; as well as (ii) characteristics of the household head such as age, gender, education, labor market status, and disability. These factors are used as explanatory variables in a simple regression model, where consumption per adult equivalent represents dependent variable<sup>10</sup>.

<sup>10</sup> The model is estimated using the standard OLS procedure with robust standard errors. The results for 1998/99 and 2004 are presented in Table A3.10 in Statistical Annex. In addition, quintile regression approach for 2004, which is less sensitive to outliers in the data set, is presented in Table A3.11 in Statistical Annex. Using that approach, effects of different factors (variables) are estimated at different points of the distribution: at the 10<sup>th</sup>, the 25<sup>th</sup>, the 50<sup>th</sup>, the 75<sup>th</sup>, or the 90<sup>th</sup> percentile. The mean and median regression estimates for 2004 appear relatively similar, as there are no significant differences in the estimated coefficients (which are statistically

The following factors were estimated as significantly related to consumption per adult equivalent:

### ***Household demographics***

- *Household size* had a negative impact on household consumption both in 1998/99 and 2004: larger households had lower consumption, being similar in all other characteristics.
- *Household head gender*: female-headed households had lower welfare than male-headed households in both years considered, being similar in all other characteristics<sup>11</sup>.
- *Age composition*: The share of children up to five years old in a household had significant negative effect on consumption. Thus, the larger the share of those children in the household, the lower the consumption of the household relative to the base category (the share of those between 46 and 60 years of age), keeping the household size constant. The share of elderly in the household did not affect consumption.

### ***Education***

- *Consumption was higher for households whose head had higher education*. Households headed by individuals holding university degree on average had consumption level 31 percent above those headed by individuals with primary or lower secondary education (reference category) in 2004.

### ***Migration***

- *Presence of migrant members increased household welfare*, indicating the importance of remittances in improving households' standard of living. In 2004, households whose member migrated out of Armenia (for job reasons) had 11 percent higher consumption, on average, than those with no migrating member. This effect was highly significant across the consumption distribution and it was higher for better-off than for the poor, suggesting that richer households relied more on remittances than the poorer ones, being similar in all other characteristics. In addition, households with migrant members who have returned from abroad during the last 12 months prior the survey recorded higher consumption levels than those with no migrants.

### ***Labor market participation***

- *Non-participating in the labor market had a negative impact on consumption*. In 2004, individuals living in households with a head who was a student, a housewife or other labor market non-participant reported 6 percent lower consumption than wage-employed heads. The labor market status of the household members was important as well. A larger fraction of unemployed, retired or members who did not participate in the labor market had a negative impact on household consumption relative to the fraction of wage-employed in the household. These effects were highly significant across the consumption distribution.

### ***Household location***

- *Location plays an important role* in explaining household welfare in Armenia. The substantial location effects on consumption remain after controlling for all other household characteristics included in the model. The economic situation of households living in the capital city of Armenia relative to other regions improved in

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significant) in both regressions. Therefore, the analysis will be mainly focused on mean regression as it provides a reliable picture of the consumption determinants due to non-existence of outliers.

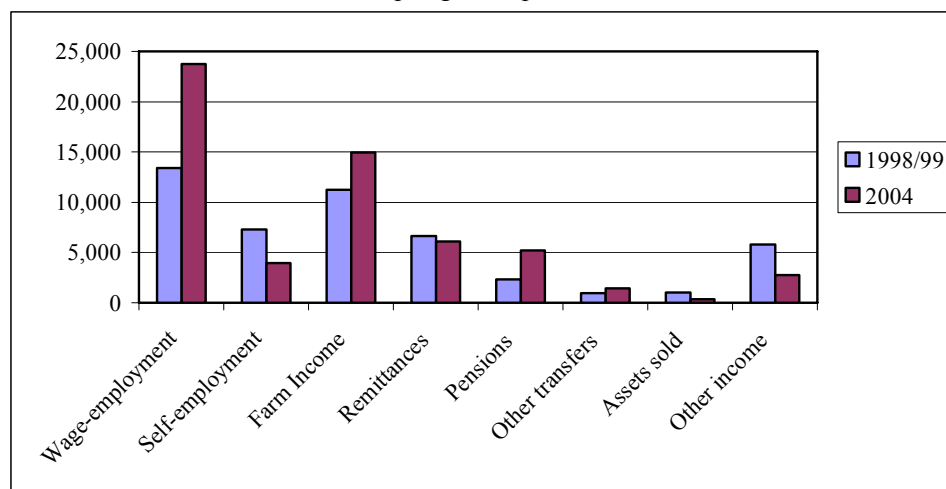
<sup>11</sup> The result appears inconsistent with the one presented in Table 3.11, which show that female headship has no effect on poverty, but it refers to the effect without any controls for other household characteristics.

2004. In 2004, in contrast to 1998/99, the Yerevan residents reported the highest level of consumption, holding everything else constant. Residents of Shirak, a high altitude, earthquake region, reported the lowest level of consumption relative to Yerevan. This difference appears larger for better-off than poorer households.

### 3.5. Consumption<sup>12</sup>, income and inequality in their distribution

Both consumption and income increased in real terms during 1998/99-2004. For all households, consumption per month per adult equivalent increased by 20 percent; while income per month per adult equivalent increased by 30 percent (tables A3.12-3.14 and A3.18-3.19 in Statistical Annex). The poorest quintile recorded both the highest increase in real income (78 percent) and the highest increase in consumption (36 percent). Looking across regions, it was Yerevan where consumption grew the most, while income increased the most in rural areas.

**Figure 3.8:** Armenia: Household income sources, 1998/99-2004; in constant, spring 1999 prices



Source: ILCS1998/99 and 2004.

*Composition of household consumption has changed.* With the increased welfare, the food share in household consumption declined: from 62 percent in 1998/99 to 54 percent in 2004 (Tables A3.12-3.14, Statistical Annex). In 2004, this share was highest in rural areas and lowest in Yerevan (61 and 46 percent respectively). Looking across regions and consumption distribution, the food share ranged from 71 percent for the poorest quintile in rural areas to 38 percent for the top consumption quintile in Yerevan. All categories of non-food consumption increased moving from the poorest to the richest quintiles.

<sup>12</sup> In Armenia, as observed in many other countries, the estimates of private consumption based on National Accounts and those based on household surveys differ significantly. According to the National Accounts statistics, the aggregate private consumption rose by 50 percent in real terms between 1999 and 2004, while the ILCS indicates growth of only 13 percent. This difference has been widening: if in 1998/99 the ILCS captured 60-70 percent of the National Accounts private consumption estimate, in 2004 the capture was only about 50 percent. This is lower than in other ECA countries, where the ratio stands at about 65 percent (World Bank 2005).

*Various income sources had different dynamics.* Survey data recorded strong growth in three major household income sources between 1998/99 and 2004: income from wage-employment, pensions and income from farm activity (Tables A3.15-3.19 in Statistical Annex). Income from remittances remained relatively stable, while income from self-employment outside agriculture, income from selling assets and durables and other income (humanitarian assistance, negative savings, etc.) declined (Figure 3.8). The increase in real income from wages and pensions reported by the ILCS households (77 and 125 percent respectively) is corroborated by statistical evidence from other sources. In the case of real average wage, official statistics reports an 80 percent increase for the same period; while in the case of real average pension, administrative statistics reports an 89 percent increase (the difference to 125 percent could be explained by better capture of pensions in the 2004 than in the 1998/99 ILCS). As far as a 33 percent increase in income from farming is concerned, it can be explained by the observed increase in agricultural prices—both paid by consumers and received by producers—relative to non-farm prices<sup>13</sup> combined with large increase in agricultural output in 2003 and 2004.

Looking at the importance of various sources of household income for all households in Armenia, wage-employment and farm activity have remained dominant sources and social transfers have become the third largest source. The composition of household income sources varied considerably across quintiles and by economic regions (Table A3.17 in Statistical Annex).

For the poor, wage-employment was the major source of income, accounting for 41 percent of the income of the poorest quintile. In Yerevan, this share was 64 percent, other urban areas 42 percent and in rural areas 17 percent. Income from farm activities was the second largest source of income of the poor households. As expected, it was the most important source of household income in rural areas, where about 54 percent of total household income came from farm activities. Social transfers (pensions, social assistance and other) made up the third largest source of income of the poorest households contributing about 17 percent to it.

Remittances, external and internal, constituted 10.5 percent of the average household income in Armenia in 2004. They were most important for the richest quintile (a 16 percent share); with much smaller contribution to the income of the poorest quintile (7.4 percent). Remittances were more important as a source of income in Yerevan and other urban areas (13.9 and 13.3 percent respectively), than for rural households to whose average income they contributed only 5 percent. They were particularly important source of income for the richest households in other urban areas and Yerevan (20.6 and 16.1 percent respectively).

It appears that the household survey poorly captures remittances, as it reports much smaller amounts than the official statistics: in 2004, the ILCS reports remittances of about 150 US\$ *per household* per year, while the official records report about 200 US\$ *per capita* per year. According to the official records/estimates, remittances from abroad have grown rapidly during 1998-2004 at an annual rate of around 30 percent, reaching 15 percent of GDP in 2004. The increase was particularly high in 2004 when the increase was 78 percent relative to 2003.

Income from non-agricultural self-employment represents an almost negligible share of income of the poor households. It was a more important source of income among the better-off than among the poor. The importance of this kind of income was highest in Yerevan and lowest in rural areas. A combined income from wage- and self-employment represented only

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<sup>13</sup> In 1999-2004, agriculture producer's and agriculture retail prices increased by 25 and 20 percent respectively; overall CPI increased 16 percent; food prices rose 19.3 percent and non-food prices grew by 6.1 percent.

23 percent of rural households' income, indicating very small off-farm employment opportunities in rural areas. This highlights the importance of the development of entrepreneurship and self-employment activities in Armenia, as empirical evidence from advanced transition economies of Central Europe indicate that self-employment has been a high-rewarded strategy during transition (Dutz, M. et. al, 2004).

**Table 3.14:** Armenia: Consumption and income inequality 1998/99 and 2004

	Consumption		Income	
	98/99	2004	98/99	2004
Coefficient of variation	0.784	0.596	2.338	1.067
Gini coefficient	0.301	0.260	0.597	0.395
Theil mean log deviation E(0)	0.150	0.111	0.667	0.280
Theil entropy E(1)	0.174	0.125	0.818	0.297

**Source:** ILCS 98/99 and 2004.

**Note:** Both consumption and income are measured per adult equivalent. Income is defined as total disposable income which includes monetary income, income in-kind and taken from savings. Standard errors are computed with PSU adjustments. This Table with statistical errors is presented as Table A3.20 in Statistical Annex.

*Inequality in Armenia declined significantly, playing an important role in poverty reduction.* Similar to other countries in the ECA Region, both income and consumption inequality measured by the Gini coefficient declined significantly (Table 3.14). Other measures of inequality (Theil entropy index E(1) and the Theil mean log deviation E(0) declined, as well. While Armenia has relatively low inequality in consumption distribution in comparison to other ECA countries, it still features one of the highest income Gini coefficients in the Region. For inequality by economic regions see Table A3.21 in Statistical Annex.

### 3.6. Conclusions

Armenia has substantially reduced poverty since 1998/99. Almost 700,000 people were lifted out of poverty and among them almost half a million people escaped extreme poverty. Poverty became shallower and less severe. However, poverty will continue to challenge Armenia as it still affects approximately one third of the population of which about 200,000 are very poor.

Steady and accelerating economic performance, decreased inequality in income and consumption distribution, and robust growth in remittances from the Armenians working abroad have been the engines behind poverty reduction. In Armenia, in 2004 relative to 1998/99, there were 142,000 more employed people and 100,000 less unemployed, people were taking home wages that on average in real terms were 80 percent higher, the average pension increased by 79 percent, income from farming rose by 24 percent in real terms and remittances amounted to 200 dollars per capita. In combination with decreasing inequality, consumption rose for everyone and in particular for the poor.

The capital city of Yerevan has benefited from growth the most, while resident in secondary cities gained the least, remaining the poorest segment of the population in Armenia in 2004. Poverty was predominantly urban phenomenon in 1998/99; in 2004 there was no clear distinction between urban and rural poverty.

Shirak, a high altitude region that was devastated by an earthquake in 1988, was the poorest in Armenia in 2004. Other *marzes* affected by higher than average poverty incidence were Gegharkunik, Kotayk, Syunik, Armavir and Aragatzotn. In contrast, Vayots Dzor and Yerevan experienced the lowest poverty incidence.



The poverty profile became relatively stable in its features. Children under five continued to experience higher poverty risk. The less educated were more likely to be poor. Larger households with children and female headed households with children faced higher poverty risk. Households with no employed members were more affected by poverty. The unemployed and non-participants in the labor market other than pensioners (housewives, students, etc.) in secondary cities faced higher poverty risk and their relative position has substantially worsened during since 1998/99. In contrast, the elderly whose risk of poverty was above the average in 1999/99, experienced lower than the average poverty risk in 2004.

As the groups affected by poverty the most constituted a relatively small share of the total population (except for households with no employed members), they did not make up the largest group amongst the poor. The largest groups of the poor were found to be children up to 18 years old, the inactive, households with no employed members, people with secondary education and those living in urban areas. Six years earlier, this picture was mostly the same, with the exception of inactive individuals which constituted smaller share of the poor than participants in the labor market.

The following factors were identified as being closely related to poverty in Armenia: (a) *household demographics*: the fraction of children under five years old in a household affected consumption adversely; as did the household size; female-headed households had lower welfare than male-headed households, being similar in all other characteristics; (b) *migration*: migrant household members substantially increased consumption, indicating how important remittances are for improving the households' welfare; (c) *education of the household head*: the higher the level of education of the household head, the higher the consumption and lower the poverty risk, (d) *labor market participation of the household members*: consumption decreased with the increased share of unemployed, retired or other labor market non-participant members in the household; and (f) *household location* played important role in explaining consumption; households in Yerevan were better off than households in other marzes in Armenia, while households in Shirak experienced the lowest consumption level in the country.

## CHAPTER IV: RURAL POVERTY

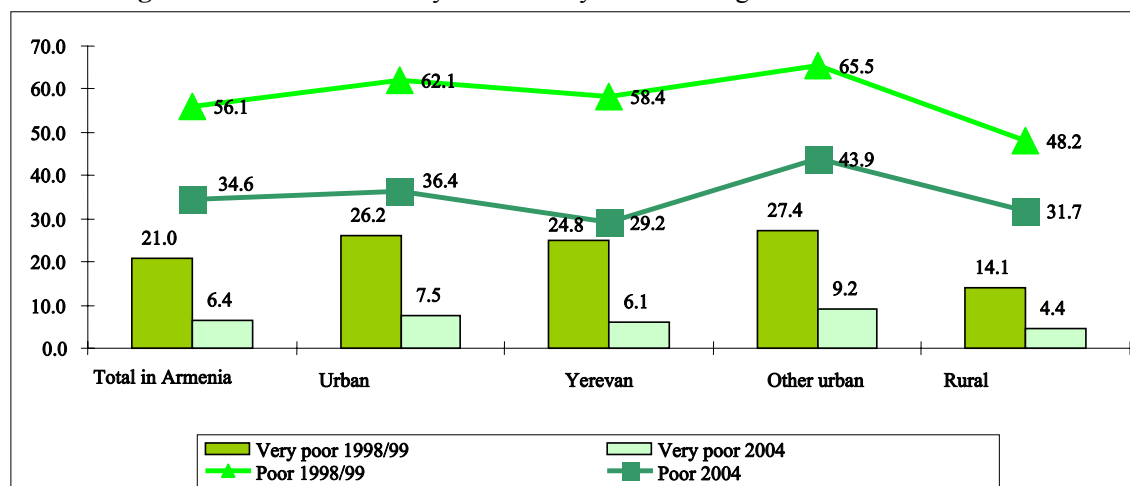
*In the period between 1998/99 and 2004, rural poverty declined by more than one third. Its level continues to be relatively lower than the national average; it is also shallower and less severe than in other economic regions. The year 2004 was exceptionally good for agriculture in Armenia. Good physical performance, combined with significant increase in agriculture produce prices resulted in substantially increased output and productivity, higher incomes of rural population and less poverty. Rural households more likely to be poor in Armenia were households with low production potential: those residing in higher altitude zones; landless and with very small land holdings; with no or very little agricultural equipment and with no access to financing. No significant differences in access to irrigation are observed between very poor, poor and non-poor rural households.*

### 4.1. Rural poverty trends

Robust economic growth recorded in Armenia in recent years resulted in improvements in the living conditions of rural population as well, as rural poverty incidence declined by 34.2 percent between 1998/99 and 2004. In fact, the level of poverty in rural areas continues to be

relatively lower than the national average; it is also shallower and less severe than in other economic regions. In 2004, 31.7 percent of the rural population was poor as opposed to 34.6 percent in Armenia as a whole; rural poverty incidence was only 8 percent lower than in Yerevan (Figure 4.1).

**Figure 4.1: Armenia: Poverty incidence by economic regions in 1998/99 and 2004**



Source: ILSC, 1998/99 and 2004.

In 2004, only 4.4 percent of rural population was very poor and this was the lowest incidence of very poor population in Armenia. Whilst the decline in rural poverty indicators was similar to that in other urban areas, it was well below the decline in Yerevan

#### **Box 4.1: Rural sector in Armenia**

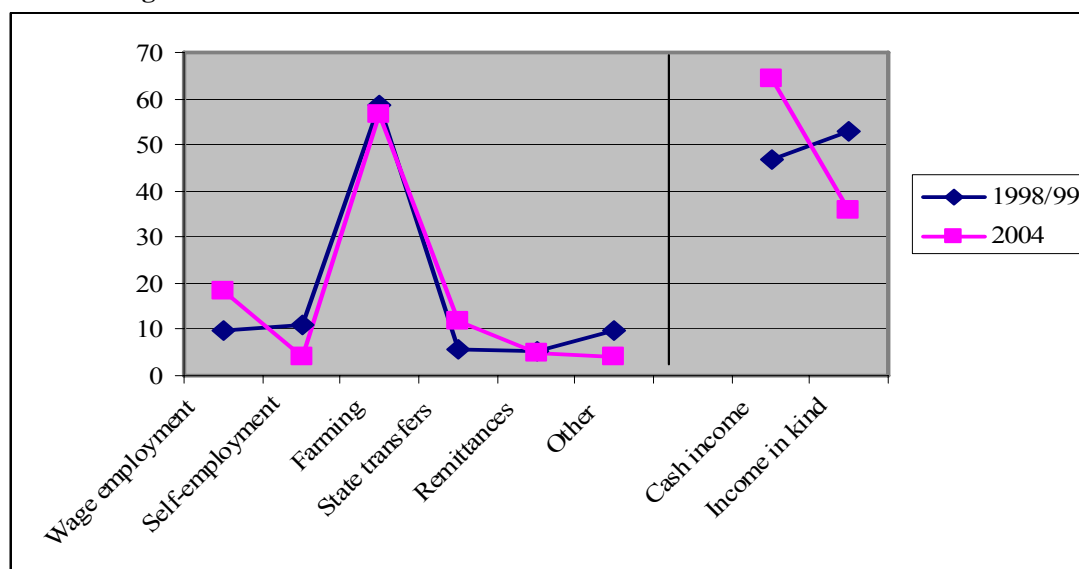
*As of January 1<sup>st</sup> of 2005, there were 338,500 farms in Armenia, with the total number of workers of 550,000 (43.5 percent of rural population). Farms are small; the average land size is 1.38 ha. Three quarters of agricultural production is sold at the farm gate (directly from the farm). The workforce is underemployed. The share of those working in the sector the whole year is 36.1 percent. About 40 percent of the workforce is employed 7 to 9 months of the year. Only 7.0 percent of rural households use hired labor for land cultivation. In 2004, those working in the agricultural sector made up 44.4 percent of the total number of the employed. The share of agriculture in the GDP was 23 percent.*

The year 2004 was exceptionally good for agriculture in Armenia. Harvest was reach and significant growth in gross yield of basic crops such as cereals and legumes, potatoes, berries and grapes was recorded. Production of cattle, poultry, and milk and eggs increased as well. Good physical performance was combined with significant increase in agriculture produce prices. In 2004, compared to 1999, the agriculture producers' price index was 125, while consumer prices index was 116. The outcomes were substantially increased output and productivity, higher incomes of rural population and less poverty. Exceptionally good rural sector performance in 2004 might be difficult to sustain in the future and to that extent, conclusions about developments should be cautious, as rural poverty might be underestimated and might show some worsening in the coming years.

## 4.2. Income and consumption among rural households 1998/99-2004

In the period between 1998/99 and 2004, average income of rural households increased by 39.4 percent in real terms. Farming is the most important source of income for rural households: 80 percent of rural households that had land or livestock reported income from farm activity in 2004 (vs. 63 percent in 1998/99). While this is a sign of increased market participation, still 20 percent of rural households used agricultural products for their own consumption only.

**Figure 4.2:** Armenia. Income sources of rural households in 1998/99 and 2004



**Source:** ILSC 1998/99 and 2004. Income is calculated as total disposable income and is measured per household.

On average, in 2004 farming provided 56 percent of the total income of rural households. It was followed by wage employment (18.4 percent) and income from state transfers—pensions and social assistance: 12 percent. Relative to 1998/99, the share of farm income recorded a small decline; wages almost doubled their share; and the state transfers' share increased more than two times. The share of income from self-employment more than halved. The importance of income in kind as a source of income for rural households declined significantly: from 53 percent in 1998/99 to 35.8 percent in 2004. This is an important change as it indicates increased monetization of rural economy (Figure 4.2). Finally, while income from farming was more or less equally important across all rural households; remittances and self-employment were much more important for the richest than for the poorest households. Opposite holds for state transfers, they were much more important for those at the bottom of consumption distribution, than for those at its top. Interestingly, income in kind was more important for richer than for the poorer households (Tables A3.15-3.17 in Statistical Annex).

Table 4.1 presents data on income and consumption of rural population measured per adult equivalent per month in constant terms. Income increased in all quintiles. This increase reflects good performance of agriculture in 2004, but also better rural income capture by the household survey. Consumption increased as well across all quintiles; however, the increase for the top one was negligible, influencing fairly small change in average consumption for

rural population as a whole and causing the shift of the consumption distribution to the left, which was reflected in the decrease in consumption inequality measured by Gini coefficient (from modest 0.291 in 1998/99 to low 0.217 in 2004).

**Table 4.1:** Armenia: Consumption and income of rural population 1998/99 and 2004; average per month per adult equivalent; in constant drams; spring 1999 prices

	Poorest 20 percent	Q2	Q3	Q4	Richest 20 percent	Average
<i>Consumption per adult equivalent</i>						
<b>1998/99</b>	8,875	12,786	16,483	21,350	38,110	21,149
<b>2004</b>	12,102	16,482	20,417	25,642	38,964	22,590
<i>Income per adult equivalent</i>						
<b>1998/99</b>	6,608	9,219	12,806	13,560	19,310	13,044
<b>2004</b>	11,942	18,162	18,083	20,821	25,964	19,130
<i>Change between 1998/99 and 2004 (%)</i>						
<b>Consumption</b>	36.4	28.9	23.9	20.1	2.2	6.8
<b>Income</b>	80.7	97.0	41.2	53.5	34.5	46.6

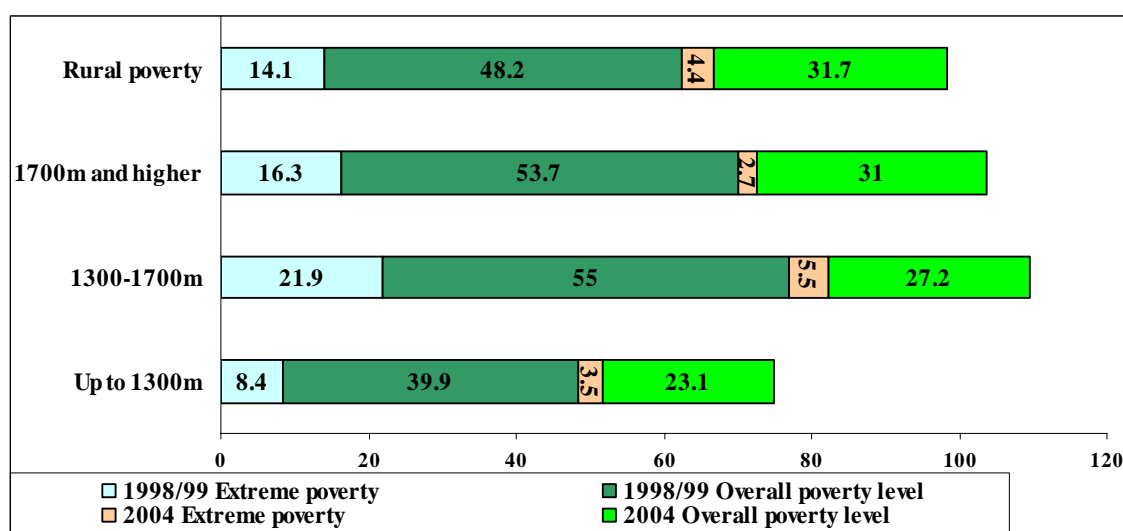
Source: ILSC 1998/99 and 2004.

### 4.3. Which rural households were more likely to be poor?

Rural households more likely to be poor in Armenia were households with low production potential: those residing in higher altitude zones; landless and with very small land holdings; those with less access to irrigation; with no or very little agricultural equipment and with no access to financing.

*Altitude:* In 2004, like previously, rural population was poorer in areas where conditions for agriculture were less favorable. Hence, the poverty incidence was higher in settlements located at 1,700 meters above the sea level and higher, while the plain zones located at altitudes up to 1,300 meters above the sea level had the lowest poverty incidence (Figure 4.2).

**Figure 4.3:** Armenia: Rural poverty incidence by altitude in 1998/99 and 2004



Source: ILCS 2004

*Land size:* Among rural households, landless households experienced the highest risk of being very poor and poor, followed by households with land holdings of up to 0.2 hectares (Table 4.2). The risk then declines with the size of land holdings, but only up to 1 hectare. It increase for households with land holdings above 1 hectare, but it still remains below the overall national average. Higher poverty among households with larger land holdings is explained by the fact that largest plots of land are more concentrated in high altitude areas where climate and other conditions for agriculture are less favorable.

**Table 4.2:** Armenia: Poverty measures by land size in rural areas, in %

Land size (in ha)	1998/99		2004			
	Very poor	Poor	Very Poor	Poor	Share in the poor	Share in rural population
0 hectares	39.1	65.4	10.1	49.5	6.2	4.0
Up to 0.2 ha	23.3	55.7	5.5	37.8	13.9	11.7
0.2 – 0.5 ha	11.9	51.2	2.6	29.2	18.5	20.1
0.5 – 1 ha	15.5	55.1	4.0	27.0	19.5	22.8
More than 1 ha	10.4	39.6	4.7	31.9	41.9	41.5
<b>Rural poverty</b>	<b>14.1</b>	<b>48.2</b>	<b>4.4</b>	<b>31.7</b>	<b>100.0</b>	<b>100.0</b>

Source: ILCS 1998/99 and 2004.

Note: This table containing standard errors as well is presented as Table A4.1 in Statistical Annex.

#### ***Box 4.2: Poverty Reduction Strategy in Armenia and rural poverty alleviation***

*According to the Poverty Reduction Strategy, the main directions for rural poverty alleviation include establishment and development of sales markets and institutions, development of financing and insurance institutions for agricultural production, and provision of wider possibilities for entrepreneurship and non-farm activities.*

*The PRSP envisages that the growth of agricultural production will continue to be the main factor for the reduction of rural poverty in 2003-2015. The value-added in the agriculture sector is projected to increase by 33.1 percent or 2.2 percent per year. The agricultural growth would mainly result from the increase in labor productivity (on average by 2 percent annually). The number of the employed would be growing only 0.22 percent per year. Marketability of agricultural production is envisaged to increase notably: from 54.1 percent in 2002 to 70 percent in 2015. This would substantially increase financial resources available to agriculture and would enable more farms to overcome their subsistence economy.*

*Land quality:* The ILSC does not provide information on land quality; instead *possibility to irrigate the land* is used as a proxy for land quality, as irrigation enables higher level and better quality of yield. No significant differences in access to irrigation by socioeconomic groups are observed.

**Table 4.3:** Armenia. The share of land served by irrigation system (%)

	Non poor	Poor	Very poor	Total
Up to 25%	22.8	29.1	21.2	24.1
25-50%	15.4	10.8	9.6	14.2
50-75%	7.3	6.8	22.2	7.7
75%-100%	54.6	53.3	47.0	54.1

Source: ILCS 2004

According to the 2004 ILCS, 62 percent of rural land in Armenia was irrigated. However, only 55 percent of it was irrigated 75-100 percent (Table 4.3). A proportion of rural land

served by irrigation system was the highest in the fertile Ararat valley (Ararat and Armavir *marzes*)—Table 4.4.

**Table 4.4:** Armenia: Proportion of rural land served by irrigation by *marzes* (%)

	Up to 25%	25-50%	50-75%	75%-100%
Aragatzotn	3.5	15.3	9.4	71.8
Ararat	1.2	5.9	4.7	88.3
Armavir	7.9	7.3	4.9	79.9
Gegharkunik	56.4	16.2	0.0	27.4
Lori	34.5	36.8	8.1	20.7
Kotayk	22.5	18.0	18.0	41.4
Shirak	39.4	12.8	20.2	27.7
Syunik	62.7	15.3	5.1	17.0
Vayots Dzor	50.0	21.3	12.8	16.0
Tavush	60.5	27.9	4.7	7.0
Total	24.1	14.2	7.7	54.1

Source: ILCS 2004.

*Access to agricultural assets:* Poor rural households barely use agricultural equipment. Only 2.6 percent reported using a tractor and 4.8 percent reported using a cart (only). In contrast, 72 percent of non-poor rural population was able to use different types of agricultural equipment. One third of rural households who owned agricultural equipment obtained tractors during the year prior to the survey; 13.9 percent purchased mini tractors. Yet, most of agricultural equipment is reported to be quite old (Table 4.5).

**Table 4.5:** Armenia: Agricultural equipment by age, 2004 (in %)

	Up to 2 years	3-5 years	6-10 years	More than 10 years
Tractors	13.3	9.3	20.5	56.9
Mini tractors	26.4	22.9	16.4	34.4
Trucks	14.0	17.5	6.7	61.8
Plows	6.8	19.4	13.2	60.6
Cultivators	0.0	35.2	29.6	35.2
Seders	14.9	48.3	18.2	18.7
Hay-mowers	11.7	11.7	0.0	76.7
Harvesters	18.9	0.0	18.9	62.1
Cart	10.7	19.3	24.3	45.6
Tank/ cistern	0.0	0.0	0.0	100.0
<b>Total</b>	<b>12.9</b>	<b>16.1</b>	<b>15.5</b>	<b>55.6</b>

Source: ILCS 2004.

*Access to rural sector financing:* In 2004, about 12 percent of households from rural areas and about 3 percent of urban households reported borrowing money to finance their agricultural activities. About 61 percent borrowed from the banks (including loans and credits received under government projects and from international organization), the rest borrowed from parents, friends and relatives (Table 4.6). Opportunity to use financial services differs markedly depending on economic status: 83 percent of households who used bank loans for agricultural activities were non poor, while only 3 percent of poor households were able to get loans from the banks.

**Table 4.6:** Armenia: Use of credits and loans for agricultural activities financing, 2004 (in %)

	Not poor	Poor	Very poor
Households reporting borrowing money for agriculture	10.5	7.8	7.7
Financial sector	65.1	45.5	50.0
Parents	1.7	4.5	0.0
Friends and relatives	31.5	45.4	50.0
Other sources	1.7	4.6	0.0

Source: ILCS 2004.

*Why is agricultural land not cultivated?* In 2004, 5.3 percentage of households owning agricultural land reported not cultivating it. On average, lack of funds and lack of irrigation dominate, accounting respectively for 27 and 22 percent of all the reasons (Table 4.7). In other words, increasing production potential though better financing and irrigation availability would cut unused land by half. Lack of funds is an obstacle that particularly hampers the poor; it is much less pronounced among the rich.

**Table 4.7:** Armenia: Reasons for not cultivating agricultural land, 2004 (in %)

Why households do not cultivate their land?	Total	Households by consumption quintiles				
		Poorest	Q2	Q3	Q4	Top
Too far	5.1	4.3	4.5	3.6	7.4	5.7
Land is of very poor quality	16.0	17.1	16.6	13.6	14.1	19.7
No irrigation is available	21.8	19.6	24.0	23.8	19.9	20.8
Not profitable to cultivate	13.9	7.6	11.4	17.1	14.9	17.1
Lack of funds for cultivation	27.4	38.3	35.2	28.7	23.1	11.9
Poor health of household members	10.7	10.9	5.1	8.4	14.4	15.7
Other	5.1	2.2	3.2	4.8	6.2	9.1
Total	100.0	16.2	21.1	22.9	22.0	17.8

Source: ILCS 2004.

The second two important reasons, “poor land quality” and “not profitable to cultivate”, account for 35 percent of all answers. In this case, households may be behaving rationally by not cultivating their land if it is not going to bring any profit. Interestingly, while only 7.6 percent of the poorest households find the land not profitable to cultivate; this percentage is much higher among the top consumption quintile (17 percent).

### 4.3. Conclusions

In the period between 1998/99 and 2004, rural poverty declined by 34.2 percent. It reflects an increase in consumption and a significant drop in the inequality in its distribution. The level of poverty in rural areas continues to be relatively lower than the national average; it is also shallower and less severe than in other economic regions.

The year 2004 was exceptionally good for agriculture in Armenia. Good physical performance, combined with significant increase in agriculture produce prices resulted in substantially increased output and productivity, higher incomes of rural population and less poverty.

Farming is the most important source of income for rural households. Moreover, the fraction of rural households reporting farming as a source of income increased by one third, indicating increased market participation of rural households. Furthermore, the importance of income in kind as a source of income for rural households declined significantly: from 53 percent in

1998/99 to 35.8 percent in 2004. This is an important change as it indicates increased monetization of rural economy.

Rural households more likely to be poor in Armenia were households with low production potential: those residing in higher altitude zones; landless and with very small land holdings; with no or very little agricultural equipment and with no access to financing. No significant differences in access to irrigation are observed between very poor, poor and non-poor rural households.

## CHAPTER V: LABOR MARKETS AND POVERTY IN ARMENIA

*The labor market is the main channel through which economic growth influences poverty, as income from labor is the key determinant of living standards of poor and 'near poor' households. Economic growth reduces poverty through rising employment, increased labor productivity and higher real wages; all of which occurred in Armenia between 1998/99 and 2004: the employment rate increased by 13 percent, the unemployment rate dropped by almost 1/3, underemployment declined and real wages increased significantly reflecting growing productivity. Notwithstanding this good performance, at the rate of 19 percent, unemployment is still daunting, and the unemployed are more likely to be poor. Overall, the situation could be summarized as one of good performance so far and tough challenges ahead, as Armenia needs not only more jobs to absorb a large pool of unemployed working age individuals, but also better paid jobs.*

### 5.1. Labor market dynamics

*Changes in GDP, employment and wages:* According to **official employment statistics**<sup>14</sup>, economic growth in Armenia over the 1998/99-2004 period was driven by large productivity gains rather than increases in employment, which declined at an average rate of 3.5 percent per year (Figure 5.1). Productivity growth measured by GDP per worker was substantial, averaging 13.2 percent per year. Over the same period, real wage growth averaged 12.9 percent, resulting in a slight decline in unit labor costs over the period. Thus, it appears that the benefits of economic growth have been translated into higher wages and profits, while maintaining international competitiveness of the economy. However, in 2003-4 real wages started to grow faster than labor productivity, increasing unit labor costs; a development, which may affect adversely not only labor demand, but also productivity and the ability of the Armenian economy to compete in the international markets<sup>15</sup>.

Non-agricultural employment became dominated by the private sector. This change was first driven by the privatization of state enterprises and then, in the early years of the new decade, by an emerging private sector. Overall, the share of the private sector in non-agricultural employment increased from 18 percent in 1995 to 60 percent in 2004. Other important changes in the composition of employment reported in the official statistics have been a

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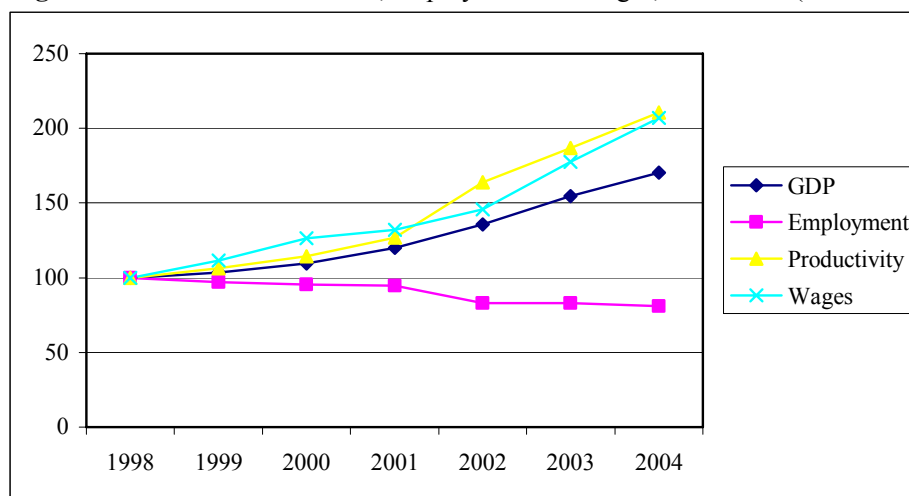
<sup>14</sup> This contrasts with estimates based on statistical surveys; essentially labor force and household surveys. For instance, as discussed in the following sections, the ILCS based employment estimates for the same period show net increase in employment, indicating that economic growth has been translated into more jobs as well.

<sup>15</sup> These findings should be treated with caution, as official GDP covers a significant part of the informal sector, while the official data on wages refer mainly to the formal sector. The NSSA included a significant part of the informal sector in GDP, which accounted for around 30 percent of total GDP (registered and unregistered) over 2000-2003.



decrease in the role of manufacturing and industry, and an increase in the role of services. Recently, there has been a significant decline in employment in education and health as part of a restructuring of those sectors, although real wages in education and health recorded strong growth. Employment in agriculture has stabilized over the past few years, after growing in the early 1990s when it absorbed much of the labor surplus shed from the enterprise sector during that period.

**Figure 5.1: Armenia: Real GDP, employment and wages, 1998-2004 (1998=100)**



Source: NSSA.

*Changes in the labor force:* Estimates based on the **1998/99 and 2004 rounds of the Integrated Living Conditions Survey (ILCS)** indicate some important developments in the labor market in Armenia (Table 5.1):

- *First*, the labor force participation rate, a summary measure of labor supply, declined from 63 percent in 1998/99 to 60.3 percent in 2004. This change reflects mostly the impact of large out-migration (permanent and temporary). As long as the benefits of migration continue to exceed its costs and provided that recipient countries, in particular Russia, do not introduce administrative barriers, the outflow is likely to continue. In addition, some people may have left the labor market altogether; it is likely that in some cases, the presence of alternative sources of income such as remittances, has contributed to that decision.
- *Second*, the number of the employed (aged 16 and over) is estimated to have increased by about 140,000, or 13.9 percent. This differs from the official data, which show a 20 percent decline in comparison to 1998. The difference can be explained by the fact that the ILCS captures employment in the informal sector better than the official data. The ILC Survey based employment rate, a summary measure of the degree of utilization of labor resources, increased by 6 percent: from 46 percent in 1998/99 to 48.7 percent in 2004.

**Table 5.1:** Armenia: Participation, employment and unemployment rates for the population 16+, by economic regions, 1998/99-2004 (in %)

	Total	Urban	Yerevan	Other urban	Rural
<b>Participation rate</b>					
1998/99	63.0	56.3	55.0	57.6	72.7
2004	60.3	53.8	53.8	53.8	72.0
<b>Employment rate</b>					
1998/99	46.0	30.4	28.4	32.3	68.5
2004	48.7	38.4	38.0	38.8	67.2
<b>Unemployment rate</b>					
1998/99	27.0	46.0	48.3	43.9	5.7
2004	19.3	28.7	29.4	27.9	6.7

Source: ILCS 1998/99 and 2004.

- *Third*, the total number of the unemployed is estimated to have dropped by about 100,000 people, pushing the unemployment rate down from 27 to 19.3 percent.

Looking across economic regions, urban areas and in particular the capital city of Yerevan experienced the most pronounced improvements in labor market indicators. In contrast, creation of new employment opportunities in rural areas was limited, which was reflected in a small decrease in the employment rate and a small rise in the unemployment rate.

From an international perspective, the Armenian labor market is still characterized by relatively low participation and employment rates and high unemployment rates<sup>16</sup>. If the participation rate is calculated following OECD practice, where the working-age population includes individuals aged 15 to 64 years, it increases to 65.9 percent (Table 5.2). This rate is still below the OECD average (70 percent). Lower participation rates in Armenia relative to OECD countries are driven by a lower female participation rate (55.6 percent in Armenia vs. an average of 60.1 percent in OECD countries). The participation rate for males is very close to the OECD average, but is also reflected in a high unemployment rate among males. In contrast to the participation rates, employment and unemployment rates in Armenia do not compare well with those in advanced market economies. The employment rate in Armenia is significantly lower and the unemployment rate significantly higher than in OECD countries.

**Table 5.2.** Participation, employment and unemployment rates by gender, 2004 (in %) (population 15-64)

	Armenia	OECD	EU-19
<b>Participation rate</b>	65.9	70.1	69.9
Female	55.6	60.1	62.2
Male	78.9	80.3	77.7
<b>Employment rate</b>	52.2	65.3	63.5
Female	43.5	55.8	55.9
Male	63.4	75.0	71.2
<b>Unemployment rate</b>	20.7	6.9	9.2
Female	21.8	7.2	10.1
Male	19.7	6.7	8.5

Source: ILCS 2004 and OECD Economic Outlook 2005.

In comparison to other countries in the Europe and Central Asia Region, the employment rate for Armenia is at the lower end of the ECA spectrum, where employment rates typically range between 50 and 70 percent; it is similar to the employment rates in Georgia and Poland (Table A5.1 in Statistical Annex). Two main factors contributing to a low employment rate in

<sup>16</sup> Following Armenian practice, participation rates are calculated for the entire population aged 16 and over. Working age population definition varies by countries.

Armenia, besides high overall unemployment, are a low female employment rate (Table A5.2 in Statistical Annex) and a low employment rate of the young—16-24 years of age (Table A5.1 in Statistical Annex). The employment rate of the young in Armenia is two times lower than in advanced market economies. The unemployment rate is among the highest in transition countries where it ranges between 10 and 16 percent and it is the most comparable with other CIS.

*Characteristics of unemployment in Armenia:*

(i) *Unemployment is a long-term phenomenon* (Table 5.3). The incidence of long-term unemployment is very high but it has a declining trend. While almost nine out of ten unemployed were jobless for more than one year in 1998/99, in 2004 it was six out of ten. In contrast to most transition countries, the long-term unemployed in Armenia were less likely to be young and they appear to be slightly better educated than the rest of the unemployed. A feature of long-term unemployment is that the victim loses human capital, as skills tend to become obsolete fast in the modern labor market. International evidence shows that the probability of finding a job decreases with the duration of unemployment, which may lead to permanent labor market exclusion and high poverty risk. Many working age adults reported being discouraged about job search as they believe that there are no jobs available that fit their personal characteristics (discourage worker effect)<sup>17</sup>.

**Table 5.3:** Armenia: Duration of unemployment, 1998/99 and 2004 (in %)

Unemployment spells	1998/99	2004
Less than 1 month	1.1	4.0
1-6 months	7.2	19.6
7-12 months	4.6	13.6
13-24 months	87.2*	17.8
Over 24 months		45.1

**Source:** ILCS 1998/99 and 2004.

**Note:** \* It refers to unemployment duration over 12 months, reflecting the way how the question was formulated.

(ii) *Skills gap appears not to be the main cause of unemployment in Armenia.* The skills gap is revealed when the skills composition of the unemployed is compared with the skill structure required by employers (i.e. available jobs - vacancies). The current design of the ILCS does not contain data on skills of the unemployed (only skills of the employed). Therefore, educational attainment of the unemployed is used as a proxy for their skills. As indicated by estimates presented in Table 5.4., the index of skill mismatch (or rather “educational attainment” mismatch) in Armenia is low and it declined from 9.7 percent in 1998/99 to 5.1 percent in 2004<sup>18</sup>; a 5.1 percent index indicates that 5.1 percent of all unemployed individuals in 2004 did not find a job due to skills differentials – assuming that the number of vacancies equals the number of job seekers.

<sup>17</sup> The current design of the ILCS does not contain information needed to measure this effect.

<sup>18</sup> The skill gap is the sum of the “excess supply” for each level of educational attainment, where “excess supply” is a positive number. “Excess supply” for each educational level is the difference between the percentage shares of each educational level in unemployment and employment.

**Table 5.4:** Composition of employment and unemployment by educational level, 1998/99-2004 (in %)

Educational attainment	1998/99			2004		
	Employment	Unemployment	“Excess supply”	Employment	Unemployment	“Excess supply”
Primary	5.3	1.5	-3.8	1.7	0.2	-1.5
Lower secondary	11.0	8.2	-2.8	12.0	8.5	-3.5
Upper secondary	43.1	51.4	8.3	38.8	42.8	4.0
Specialized secondary	20.2	21.6	1.4	25.9	27.1	1.1
Tertiary education	20.4	17.4	-3.1	21.6	21.5	-0.1

Source: ILCS 1998/99 and 2004.

This index is significantly lower than for instance in Lithuania, Bulgaria and Croatia (Rutkowski 2003a, 2003b, 2003c). Given an unemployment rate in Armenia of 19.3 percent in 2004, the estimated skill gap indicates that only 1 percent of the unemployment rate in Armenia is attributable to the skill gap. Although the estimates in Table 5.4 are a proxy for the skills mismatch, it seems that educational attainment of the unemployed is not a main cause of their unemployment. It appears that increased demand for more skilled jobs was largely matched with increased supply of skilled labor.

*(iii) Other characteristics being equal, people with no or low education, young people, women, single people, disabled and urban residents faced higher probability of being unemployed<sup>19</sup>.*

Among education variables, only tertiary education has a significant impact on incidence of unemployment, controlling for other individual characteristics. Those with tertiary education were 5 percent less likely to be unemployed than those with lower secondary education or below.

There is a strong link between unemployment and age. The young (aged between 16 and 24) faced the highest probability of being unemployed, everything else being equal. In 2004, the unemployment rate of the young was 43 percent, well above the average for transition countries (15 percent; ILO, 2004). While the overall unemployment rate declined substantially (29 percent) between 1998/99 and 2004, the unemployment rate of the young declined only 6 percent (Table A5.3 in Statistical Annex). This highlights that one of the main concerns of the Armenian labor market is relatively large unemployment among the young.

Single persons were more likely to be unemployed than married ones. Women faced a 1.7 percent higher probability of being unemployed than men, *ceteris paribus*. Disabled individuals (disability categories 1-3) experienced higher risk of unemployment. Secondary earners (particularly children) were more likely to be unemployed than primary earners (household heads); this is similar to the situation observed in Bulgaria (see Rutkowski 2003b).

Urban residents were more likely to be unemployed; rural residents were 22 percent less likely to be unemployed than their urban peers. Regional variables suggest that significant regional disparities exist in the probability of being unemployed. Shirak, the poorest region in

<sup>19</sup> A probit model was estimated to determine individual characteristics associated with being unemployed. This exercise allows to determine a net (independent of other variables) impact of different variables on the probability of being unemployed. The dependent variable value is one if an individual is unemployed and zero if not. The explanatory variables include demographic and educational characteristics of the individual (gender, age, marital status, level of education, disability status), and region and location variables (see Table A5.4 in Statistical Annex for the estimate results).

Armenia, faced the highest risk of unemployment, in contrast to Tavus and Armavir, where the risk was the lowest.

This regional dispersion of the unemployment rate in Armenia indicates relatively low territorial labor mobility and a poor investment climate in many parts of the country. A poorly developed housing market and a weak transportation system that makes commuting between some regions difficult and time consuming may have contributed to low territorial labor mobility. The unemployed are often unwilling to move to regions with better job prospects, because of problems related to finding affordable housing, the cost of relocating, the risk of rupturing social support networks, and uncertainty about whether the job would materialize. Improved territorial labor mobility is desirable for better allocation of labor and lower unemployment, and hence further poverty reduction in Armenia<sup>20</sup>.

### ***Box 5.1: Official Labor Market Statistics in Armenia***

*The average estimated number of economically active people in the period January-December 2004 was 1,196,500 of whom 90.4 percent or 1,081,700 were employed in different branches of economy. Most were employed by the private sector - 79 percent.*

*As of January 1, 2005, 142,700 people were officially registered as job seekers; 4 percent more than a year earlier. About 76 percent of job seekers or 108,600 individuals were unemployed, compared to 118,700 a year ago; the rest were people who were employed but wanted to change their job and registered with the employment services. Women dominated among the unemployed constituting 70.3 percent. Most of the registered unemployed were urban residents: 93.7 percent.*

*At the end of 2004, the registered unemployment rate was 9.6 percent, down from 10.0 percent at the beginning of the year. Shirak, Syunik and Lori marzes had unemployment rate above the national average (21.7; 21.1, and 18.7 percent respectively).*

*Secondary education graduates constituted the vast majority of the unemployed: general secondary education - 56.0 percent; and specialized secondary education - 25.5 percent of the total. University graduates made up 13.3 percent and those with incomplete secondary education 5.2 percent. Most of the unemployed left their previous job of their own free will (79.1 percent), followed by those discharged by their employers (18 percent). Registered unemployed looking for a job for the first time comprised only 0.6 percent of the unemployed.*

*The age structure of the unemployed was as follows: individuals up to 18 years - 0.1 percent; 18-22 years of age - 1.6 percent, 22-30 years of age - 18.6 percent; 30-50 years aged individuals - 67.2 percent, and those of 50 years of age - 12.6 percent.*

*Long term unemployed dominated: 82.3 percent were registered as unemployed for more than a year. Those who were registered for 6-12 months comprised 9.9 percent; 5 percent were unemployed for 3-6 months and 2.9 percent were registered for less than 3 months.*

*In 2004, layoffs were mostly recorded in industry and education. 5989 teachers were discharged as part of the education sector rationalization efforts. Less than one third of them (1734 teachers) applied to the regional employment centers for specially designed*

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<sup>20</sup> Estimates from the ILCS indicate that only a very small fraction of the overall reduction in poverty is attributable to migration of population between regions.

programs, including re-training courses, job search assistance, severance (for those over 50 years of age), and financial assistance for the start-up of their own business. Regional employment centers were informed about layoffs by 61 employers; 3,348 individuals were discharged from their jobs. At the same time, 158 employers announced 865 vacancies through regional employment centers, the majority of which—670—were temporary jobs while their permanent holders were on vacation.

In 2004, the State Employment Service of Armenia carried out a range of programs some of which were open exclusively for the registered unemployed (mostly cash assistance), some were available to all job seekers (for instance job search assistance) and some, such as work fare programs, were available to everyone willing to participate. For instance, 7,200 unemployed received cash unemployment benefits (3,900 drams per month throughout most of 2004; 7,800 drams as of December, 2004). 512 unemployed and 50 job seekers with disabilities passed through vocational training courses in computer literacy, accounting, commerce, sewing, carpet making, etc. The insertion rate for the unemployed undergoing training was 52 percent, while it was 60 percent for trainees with disabilities. About 10,100 unemployed individuals participated in the UNFPA “Food for Training” projects at 37 Regional Employment Centers. The courses were on market economy, small business and civil rights. 10,755 individuals participated in the “Benefits for Work” program providing 507,110 man/days of public works.

## 5.2. Wages in Armenia

*Wages and productivity:* Large productivity gains in Armenia were achieved in the process of privatization and enterprise restructuring when old unproductive jobs were replaced by new, more productive ones. Rapid growth in productivity in formal jobs translated into rising real wages. Over the 1998-2004 period, real wages for formal jobs grew slightly more slowly than productivity. In the last couple of years growth in real wages has been faster than productivity, with a consequent increase in unit labor costs which could have had a negative impact on labor demand (World Bank, 2005b).

Large differences in real wages and productivity across sectors are observed (Table 5.5). Real wages increased most in agriculture and industry. However, data on wages in agriculture should be treated with caution, as it refers only to a small fraction of employed in the agricultural sector (i.e., wage-earners) and does not cover small and micro-sized enterprises. Labor productivity increased substantially in construction, industry and trade; construction and trade were sectors where labor productivity exceeded real wage growth.

**Table 5.5:** Armenia: Average annual growth in labor productivity and real wages by sector, 1999-2004, 1998=100 (in %)

	Labor productivity	Real wages	Difference
National economy	13.2	12.9	0.3
Industry	16.4	16.1	0.3
Agriculture	7.6	17.0	-9.4
Construction	34.0	8.3	25.7
Trade and communication	8.2	9.5	-1.3
Trade	15.2	7.2	8.0
Other services	12.5	...	...

Source: NSSA.

*Inequality in wages distribution:* Wage inequality in Armenia, measured by the Gini coefficient, appears relatively high with respect to most countries in transition (Rutkowski *et al.*, 2005). But, it declined substantially between 1998/99 and 2004—from 0.438 to 0.37

(Table 5.6). This trend can mainly be attributed to contraction at the upper end of the wage distribution and is in contrast to most transition economies, where the wage distribution has widened mainly at the upper end, due to increased rewards for highly skilled workers. There has been a significant deterioration in the position of the top decile of workers relative to median workers in Armenia (P90/P50), while the position of low paid workers relative to median workers (P90/P50) has worsened only slightly. Put differently, the wage gap between top decile workers and bottom decile workers (P90/P10) has decreased over 1998/99-2004. Wage inequality measured by this ratio is more comparable with CEE than with CIS countries, where inequality was highest (Rutkowski *et al.*, 2005).

In 2004, workers at the bottom of the monthly earnings distribution accounted for 43 percent of median earnings, pointing to considerable wage flexibility at the lower end of the earnings distribution. This ratio is lower than in most transition countries, where it ranges from 50 percent in Bulgaria (Kolev, 2002) and Montenegro (Krstić, 2004) to 60 percent in Lithuania (Rutkowski, 2003a). At the same time, 23 percent of all employees in Armenia earned less than two-thirds of the median (low pay), which means that the incidence of low pay is quite high. For comparison, in high income inequality OECD countries the incidence of low pay does not exceed 20 percent of employees (Rutkowski, 1999). A relatively high incidence of low-paying jobs indicates employment opportunities for low skilled and less experienced workers, and it may reflect a construction “boom”. It is interesting to note that the overall incidence of low pay declined over 1998/99-2004, although the incidence of low pay increased in both public and private sectors. This can be explained by the changed structure of employment, as private sector employment increased relatively, and the incidence of low pay is substantially lower in the private sector than in the public sector.

**Table 5.6: Armenia: Summary of earnings distribution, 1998/99 and 2004**

	Monthly wages, 1998/99			Monthly wages, 2004			Hourly wages, 2004		
	All	Public	Private	All	Public	Private	All	Public	Private
P10/P50	0.50	0.48	0.35	0.43	0.44	0.38	0.43	0.42	0.43
P90/P50	3.00	2.50	3.00	2.33	2.22	2.13	2.33	2.26	2.23
P90/P10	6.01	5.21	8.57	5.38	5.00	5.67	5.44	5.36	5.20
Gini									
coefficient	0.438	0.405	0.498	0.370	0.356	0.357	0.382	0.360	0.405
Standard error	(1.2)	(1.0)	(3.4)	(0.7)	(0.6)	(1.2)	(1.1)	(0.6)	(2.3)
<b>Incidence of low and high pay</b>									
Low pay, %	26.7	28.9	9.8	23.3	29.7	12.8	28.1	31.0	22.4
High pay, %	28.7	25.4	54.5	29.8	22.3	41.2	26.1	24.3	29.2

Source: ILCS 1998/99 and 2004.

Notes: P10/P50 (P90/P50) denotes the ratio of earnings of the bottom (top) decile relative to the median. Decile ratio is the ratio of the top decile to the bottom decile, i.e. P90/P10. Low pay is defined as earnings below two-thirds of the median. High pay is defined as earnings over 1.5 times the median. The incidence of low (high) paid workers is a percentage of low (high) paid workers in all wage and salary workers.

On the other hand, Armenian workers at the top decile of the monthly wage distribution earned over two times more than the median worker in 2004, which is comparable with most other transition economies. The incidence of high pay is considerable, as well. Around 30 percent of workers earned more than 1.5 times the median (high pay), which is higher than in Hungary, Poland or Slovenia, where it amounts to about 20 percent.

As in all other transition economies, private sector wages were more unequally distributed than wages in the public sector. In 2004, the decile ratio (the ratio of the top to the bottom decile earnings) was 5.7 in the private and 5 in the public sector. The Gini coefficient, on the other hand, shows similar distributions in both sectors. This can be explained by the fact that Gini measures inequality across the whole distribution and is therefore affected by the shape of the distribution at all percentiles, unlike the decile ratio. In contrast, Gini coefficient for

hourly wages shows significantly higher inequality in the private than in the public sector. The private sector was superior both in terms of low-paying and high-paying jobs; a situation similar to most transition countries. In the private sector, 12.8 percent of workers had low pay, while this share in the public sector was 29.7 percent. Similarly, the private sector offered high pay to 41.2 percent of the employed, as opposed to 22.3 percent in the public sector.

The above results suggest that relatively high labor market flexibility associated with large incidence of low pay might have had positive impact on poverty reduction in Armenia. For many people, those low productivity and low paying jobs might have been a way out of poverty, as two out of three workers in low paid jobs were out of poverty (see next section).

***Factors determining private and public sector wages in Armenia<sup>21</sup>:***

*Returns to higher education:* While the private sector offers a premium to special secondary education and tertiary education, the public sector offers a premium to tertiary education only. In the private sector, employees with tertiary education earned 63 percent more than those with general secondary education or below, keeping all other characteristics constant. In contrast, in the public sector this premium was 48 percent. These findings are comparable to other transition countries, where the private sector usually offers higher returns to education (Rutkowski *et al.*, 2005). It seems that highly educated individuals, and to some extent those with specialized secondary education, gained from transition the most<sup>22</sup>.

*Low-pay industries:* In both ownership sectors, agriculture is the lowest paying industry, keeping everything else constant. Workers in private agriculture earned 21 percent less than those in professional services (reference category); this disadvantage appears even greater in the public sector where the difference was 33 percent. In the private sector, other industries with lower wages were manufacturing and trade. In the public sector, employees in health and education, as well as those in other services experienced significantly lower wages, with only those in manufacturing having a wage advantage (over reference category). All in all, agriculture, the lowest paying industry, accounted for 46 percent of total employment, and 51 percent of the working poor had jobs in agriculture. Thus, the sector of economic activity a person is in has an important role associated with poverty among the wage-earners.

*Labor contract:* Jobs with a contract in the private sector paid better as they were mostly located in the non-agricultural sectors, compared to jobs with no contract, most of which were in agriculture. In addition, in the private sector, workers with second jobs were less paid, which explains a coping strategy of secondary job holders, as largely highlighted in the literature on transition economies. This variable remains insignificant for the public sector.

*Gender and age:* Gender pay gap in Armenia, controlling for other individual characteristics, is significant in both public and private sectors and indicates that women are paid less than their male counterparts. This gap appears lower in the public than in the private sector. Women in the private sector earned on average 32 percent less than men with similar characteristics, while women in the public sector had a pay disadvantage of 18 percent. The gender pay gap in Armenia is comparable with other CIS countries (see Newell and Reilly, 2001). As regards age, younger workers experienced higher wages than older workers in the private sector, while the age variable appears insignificant in the public sector.

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<sup>21</sup> OLS estimates for hourly earnings equation for wage and salary earners between 16 and 65 years are presented in Table A5.5 in Statistical Annex.

<sup>22</sup> It is important to note that differences in returns to higher education between the private and public sectors are not statistically significant. Also, comparable wage regression for 1998/99 and 2004 shows declining returns to higher education over 1998/99-2004 in both private and public sector, but these changes were not statistically significant either. These results may explain relatively stable incidence of high paid jobs over the same period.



### 5.3. Growth, labor markets and poverty in Armenia

This section examines the structure of employment in Armenia by various characteristics in 1998/99 and 2004 as changes may indicate linkages between growth, the labor market and poverty. Empirical evidence suggests that labor markets transmit growth to the poor when unemployment and/or underemployment are reduced and/or the earnings of the poor increase (Box 5.2). In turn, those changes are affected by changes in demand and supply of labor, which is reflected in the structure of employment. The informal labor market is examined as well, as analysis of labor markets in low and middle income countries has emphasized its significance in generating livelihoods for the poor. Moreover there is evidence that informal sector employment is significantly associated with poverty.

In Armenia, informal sector employment<sup>23</sup> still dominates, accounting for 60 and 59 percent of total employment in 1998/99 and 2004, respectively. These estimates appear comparable with the estimates reported for Armenia using data from the Armenia Labor Force Survey (Krstić, 2003; Ghukasyan, 2005). The major constraints to formal job growth that also encourage informal job creation are found to be high taxes, a burdensome tax administration and high costs of financing in the formal sector (see section on investment climate and job creation).

#### ***Box 5.2: Links between growth, labor markets and poverty reduction***

*Empirical evidence indicates that a large majority of the poor in low and, to some extent, middle-income countries are the working poor (Majid, 2001; World Bank, 2005a). It is found that the principal causes of poverty amongst the working poor are underemployment and low returns to labor; in other words, the quantity and quality of employment (Osmani, 2003)<sup>24</sup>. The extent to which growth will reduce poverty will therefore depend on the extent to which it improves the quality and quantity of employment as well as the extent to which the poor are able to take advantage of these improvements. Thus, the unemployed poor benefit from growth through increased employment and the working poor gain from rising productivity and real wages; non-working poor may benefit as well from increased social transfers.*

*Pro-poor economic growth can be conceptualized as a virtuous circle of economic growth leading to poverty reduction via growth of employment with rising productivity, and reduced poverty creating the possibility for further increases in productivity and higher rates of economic growth (Islam, 2004). Empirical evidence from a cross-country analysis for 23 countries identifies the following most significant labor market variables in explaining pro-poor growth: (i) structural transformation of employment toward manufacturing and other non-farm sectors, (ii) education, and (ii) lowering the dependency ratio; i.e. increasing labor force participation (Islam, 2004). Other studies have also emphasized the importance of the structural shift of the economy toward higher productivity sectors capable of generating higher incomes (OPPG Country Case Studies, World Bank, 2005c).*

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<sup>23</sup> The following types of workers are considered employed informally: (a) employees working without a contract; (b) the self-employed (own-account workers and employers) outside agriculture working in non-registered enterprises; or, if hired labor exists, they have no written contract; (c) farmers on own farm; (d) unpaid family workers and others (Young-Ro *et al.*, 2003).

<sup>24</sup> Quality of employment includes returns to labor but also conditions of employment such as for instance employment protection. Quantity of employment refers to the labor intensity-adjusted amount of work and thus reflects the level of underemployment. An improvement in the quality and quantity of labor (or so-called employment potential) will be manifested as an upward shift of the marginal value product curve of labor.

*The analysis based on household surveys for Vietnam and Burkina Faso found that two factors in particular matter for maximizing the effectiveness of employment in transmitting growth to the poor: (i) an increase in labor productivity that is broad based and concentrated in sectors where the poor are disproportionately employed or to which they have access, and (2) a strong demand for goods and services produced by the poor and access to those markets (Bernabe and Krstić, World Bank, 2005).*

*The poor and labor markets in Armenia:* Over half of the poor in Armenia were either inactive or unemployed; indicating that lack of employment is one of the main causes of poverty (Table 5.7). The share of the unemployed was almost two times higher among the poor than among the non-poor. The unemployed were mostly concentrated in urban areas, as rural workers were more likely to engage in subsistence agriculture. Around 40 percent of the poor were inactive. At the same time, about one-third of the non-poor were also inactive, highlighting the importance of alternative sources of income for this group such as pensions, family support and remittances. The share of the unemployed among the poor declined between 1998/99 and 2004, from 21 to 16 percent.

Employment, however, does not protect households from poverty, as a significant and increasing share of the poor were employed, suggesting that, in addition to unemployment, low earnings and underemployment are major causes of poverty. This is corroborated by data on earnings presented in Table 5.7. No large differences are observed in the incidence of low-paid jobs between the poor and the non-poor, especially in 1998/99. This gap has widened since 1998/99, but it is still relatively low, as 41 percent of the poor were low-paid compared to 33 percent of the non-poor in 2004. In addition, many of the poor had middle and even high paying jobs (35 percent and 24 percent respectively), which indicates that even well-paid jobs are not a safe way out of poverty.

In 2004, a lower share of the poor than of the non-poor was formally employed, while informal employment was as common among the poor and non-poor. Obviously, although informal employment usually provides a safety net for those who otherwise would have little or no income, it is not a guarantee against poverty.

**Table 5.7:** Armenia: Labor market characteristics of the poor and non-poor, 1998/99-2004, (%; population 16+)

	1998/99			2004		
	All	Poor	Non-poor	All	Poor	Non-poor
Formally employed	18.7	15.4	22.9	20.2	14.6	23.0
Informally employed	27.4	24.3	31.4	28.5	28.1	28.7
Unemployed	17.0	21.0	11.9	11.6	16.0	9.5
Inactive	36.8	39.2	33.8	39.7	41.3	38.9
Employed:						
Industry formal	3.6	4.4	2.8	7.7	6.5	8.1
Services formal	36.1	33.9	38.3	33.1	27.1	35.6
Industry informal	1.7	2.1	1.3	4.6	6.1	4.0
Services informal	5.0	6.0	4.1	8.4	9.4	8.0
Agriculture (informal)	53.5	53.7	53.4	46.2	50.9	44.3
Earnings category						
Low	32.5	33.5	31.6	35.2	41.1	33.1
Middle	33.0	33.9	32.4	32.8	35.4	31.9
High	34.5	32.6	36.0	32.0	23.6	35.1

Source: ILCS 1998/99 and 2004.

*Labor market categories and poverty risk.* Looking at poverty risk by labor market categories (Table 5.8), the unemployed faced the highest risk of poverty. Those with informal sector jobs were more likely to be poor than those with formal sector employment; among those with

informal employment, hired labor faced the highest risk of poverty. Formal self-employed experienced the largest decline in poverty between 1998/99 and 2004, which suggests that formal self-employment may be an important potential route out of poverty like in many other transition economies. Although the rate of poverty reduction was the lowest in agriculture, it was important for the overall reduction in poverty, since the large majority of the poor were employed in agriculture. Poverty incidence decreased most in formal industry where a small minority of the poor were employed, but also decreased substantially in formal services where the second largest group of the poor was located. These positive changes reflect improvements in productivity and growing earnings in those sectors.

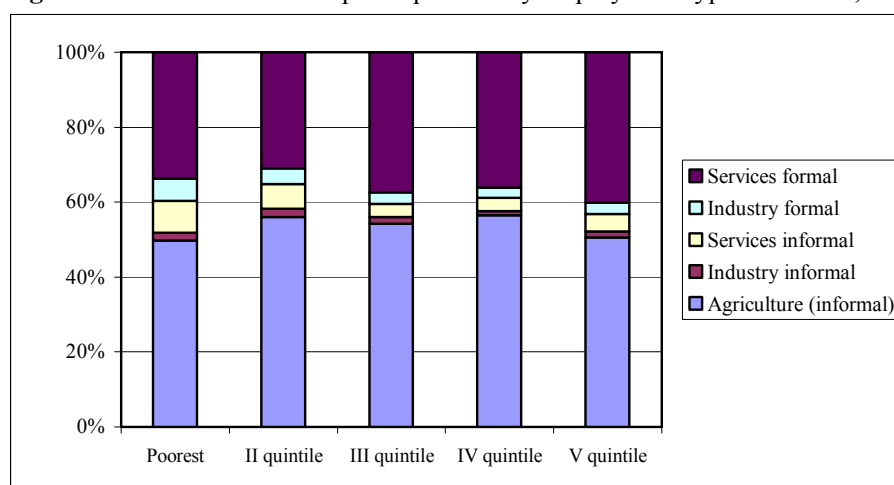
**Table 5.8:** Armenia: Poverty incidence by labor market status, 1998/99-2004  
(Population 16+, %)

	1998/99	2004	Difference, %
<b>Employed</b>	48.6	29.4	-39.5
<b>Formal:</b>	46.5	23.2	-50.1
Employees	46.8	24.6	-47.5
Self-employed	42.9	12.0	-72.0
<b>Informal:</b>	50.0	32.6	-34.8
Employees	60.5	40.1	-33.7
Self-employed	42.6	27.6	-35.1
Farmers	49.1	31.8	-35.2
Others	45.6	38.8	-14.9
Industry formal	59.3	24.9	-58.0
Services formal	45.6	24.0	-47.3
Industry informal	59.5	39.1	-34.3
Services informal	57.9	32.8	-43.3
Agriculture (informal)	48.7	32.3	-33.7
<b>Unemployed</b>	69.5	45.9	-33.9
<b>Inactive</b>	59.9	34.8	-41.9
<b>Total</b>	56.3	33.5	-40.5

Source: ILCS 1998/99 and 2004.

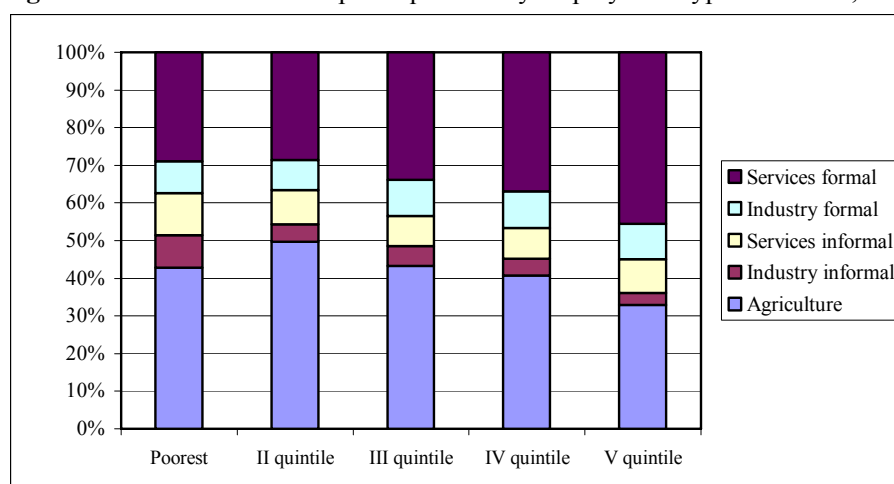
A majority of the working poor were employed in agriculture, which is the lowest paying industry. Figures 5.2 and 5.3 show that the share of non-agricultural employment increases with consumption quintiles; they also indicate that most non-agricultural employment was formal. The share of non agricultural informal employment, although relatively small, increased across all consumption quintiles between 1998/99 and 2004.

**Figure 5.2:** Armenia: Consumption quintiles by employment type and sector, 1998/99



Source: ILCS 1998/99.

**Figure 5.3:** Armenia: Consumption quintiles by employment type and sector, 2004



Source: ILCS 2004.

In 2004, poverty incidence was lowest among high earners for whom it had declined the most since 1998/99, suggesting that high earnings contributed significantly to poverty reduction (Table 5.9). Still, one in five high earners was poor in 2004. While there were no large differences in poverty incidence among low-, middle- and high-paid jobs in 1998/99, the gap widened in 2004, especially between low- and middle-paid earners on the one hand, and high-paid jobs on the other.

**Table 5.9:** Armenia: Poverty incidence by categories of labor market earnings, 1998/99-2004 (population 16+; %)

	1998/99	2004	Difference, %
<b>Labor market earnings</b>			
Low	46.5	31.6	-32.0
Middle	46.2	29.2	-36.8
High	42.6	20.0	-53.1
<b>Total</b>	<b>45.0</b>	<b>27.1</b>	<b>-39.8</b>

Source: ILCS 1998/99 and 2004.

*Growth, employment and underemployment:* Between 1998 and 2004, Armenia's high rates of economic growth were mainly led by exports by capital intensive industries such as diamond processing, brandy and IT services; labor-intensive industries—food processing, textiles, mining, etc., grew at a slower pace, but still faster than the GDP. Within industry, construction recorded the highest growth rates. Overall, exports of industrial goods, which accounted for around two thirds of total exports, grew by an average of 13 percent per year between 1998 and 2004 (Table 5.10)<sup>25</sup>. Consequently, the structure of GDP changed, with the share of industry increasing and agriculture decreasing.

<sup>25</sup> Over the same period, exports of agricultural goods grew fastest, but from a very low base in 1998, when it accounted for only 0.4 percent of total exports.

**Table 5.10:** Armenia average annual growth rates by sectors, 1999-2004 (in %)

	GDP per capita	Employment rate, in % of working age population. (16+)	Exports
Agriculture	5.7	-1.6	44.6
Industry	13.3	16.8	13.2
Services	9.0	1.2	11.2

Source: NSSA.

These structural changes in output were reflected in the changed structure of employment. Employment in industry increased its share (from 5 percent in 1998/99 to 12 percent in 2004), employment in agriculture decreased (from 54 percent to 46 percent), while the share of services remained almost stable (from 41.1 percent to 41.5 percent).

Economic growth was accompanied by a larger increase in the formal than informal employment rate (Table 5.11). The formal employment rate rose 8 percent during 1998/99-2004, or 1.4 percent per year on average, while the corresponding growth in the informal employment rate was two times lower (a cumulative of 4 percent over the whole period, or 0.7 percent per year on average). Furthermore, significant growth in the employment rate in industry was the result of increased employment in both the formal and informal sector. On the other hand, the growth of the service sector employment rate was modest, reflecting a small decline in formal and relatively large rise in informal employment in this sector. Although the growth of informal industry and informal services was relatively large, they contributed very little to overall informal employment growth, due to their low share in informal employment, as agriculture accounted for most of it. As agriculture (informal) recorded a negative growth rate in employment, formal employment increased more than informal employment.

**Table 5.11:** Armenia: Change in employment rate by employment type and sector, 1998/99-2004 (% of working age population; mean annual percentage change)

	Mean annual change in employment rate, (%)
Formal industry	15.2
Formal services	-0.5
Informal industry	20.2
Informal services	10.6
Agriculture (informal)	-1.6
Industry	16.8
Services	1.2
Formal	1.4
Informal	0.7
<b>Total</b>	<b>1.0</b>

Source: ILCS 1998/99 and 2004.

Notes: Refers to primary job. Working age population is population 16+.

Economic growth has been accompanied by a decline in underemployment, particularly in sectors where the poverty incidence declined the most (Table 5.12). Underemployment in 1998/99 and 2004 is measured by the share of employed aged 16 and over, who were willing to work more, as there was no information on hours worked on the main job in the 1998/99 ILCS. For 2004, however, underemployment is also measured by the share of the employed aged 16 and over, who were involuntary working less than 40 hours per week. Both measures give similar results for 2004, except for agriculture.

The incidence of underemployment decreased most in formal industry and formal services and least in agriculture, reflecting the shedding of the labor surplus from industry and services, which was partially absorbed by agriculture. Although the incidence of underemployment decreased most in formal industry and formal services, where the reduction

in the poverty rate was the largest, the decline in agriculture, although relatively small, was very important since majority of the poor were employed in agriculture.

**Table 5.12:** Armenia: Underemployed by sectors of economic activity, 1998/99-2004  
(in % of total employed)

	Underemployed, willing to work more		Difference, %	Underemployment rate, involuntary working less than 40 hrs/week
	1998/99	2004	2004/1998	2004
Industry	64.4	37.9	-41.1	30.2
Services	55.5	36.0	-35.0	39.4
Agriculture	59.8	50.7	-15.3	73.4
Industry formal	58.8	27.5	-53.2	26.9
Services formal	53.7	30.9	-42.5	37.6
Industry informal	76.2	55.1	-27.7	35.6
Services informal	68.0	56.2	-17.4	46.3
Total	58.3	43.0	-26.2	54.0

Source: ILCS 1998/99 and 2004.

*Growth, earnings and poverty:* Increased non-agricultural informal employment was accompanied by faster growth in formal than informal earnings outside agriculture (Table 5.13), which may suggest faster increase in productivity of formal workers. Several factors might have influenced this outcome. It could be that less productive labor was pushed out of formal employment and either laid off and replaced by more productive jobs in privatized or new enterprises, or placed on oral agreements. It could also reflect a greater investment in capital intensive industry in formal sector which was mainly export oriented. Finally, productivity and earnings gains for formal workers were partly the result of decreased incidence of underemployment (or increased hours worked), which was largest for formal workers. This contributed to an increase in output per worker and monthly real earnings.

**Table 5.13:** Armenia: Mean real monthly (net) earnings and annual average change, 1998/99-2004, (in Drams, spring 1999 prices)

	1998/99	2004	Annual average change in real monthly earnings, (%)
Formal industry	21,386	42,067	12.5
Formal services	14,910	34,594	15.8
Informal industry	29,116	39,807	5.6
Informal services	23,219	35,038	7.4
Agriculture (informal)	8,757	15,164	10.0
Industry	22,959	41,230	10.7
Services	15,562	34,677	15.0
Formal	15,688	35,904	15.8
Informal	11,484	22,373	11.0
<b>Total</b>	<b>14,468</b>	<b>29,663</b>	<b>13.3</b>

Source: ILCS 1998/99 and 2004.

As far as agriculture is concerned, an increase in real output accompanied by a decline in employment and an increase in the intensity of employment in this sector led to an increase in agricultural productivity, resulting in a moderate increase in earnings. An increase in agricultural prices relative to non-farm prices influenced the increase in agricultural earnings, as well<sup>26</sup>.

<sup>26</sup> Domestic and foreign demand for agricultural goods increased (World Bank, 2005b). Export of agricultural goods significantly increased over 1998/99-2004 (Table 5.10).

All in all, poverty declined the most in the formal sector, where both earnings and intensity of employment increased the fastest. Among formal workers, the largest impact on poverty was for workers in services, as they were the second largest group among the poor in 1998/99 (34 percent). Despite a slower increase in earnings and slower reduction in poverty, the agriculture sector accounted for the bulk of poverty reduction as the vast majority of the poor were employed in this sector (54 percent)<sup>27</sup>.

## **5.4. Conclusions**

Labor market developments in Armenia between 1998/99 and 2004 exhibit some positive features that have contributed to a significant reduction in poverty. The employment rate increased by 13 percent - in absolute terms, 142,000 more Armenians had jobs in 2004 than in 1998/99. This differs from other countries in the ECA Region where “a jobless” growth has been observed. The unemployment rate dropped by almost 1/3, underemployment declined and real wages increased significantly reflecting growing productivity. Put simply, more Armenians had jobs, and more were better paid than before. As a result, welfare increased and poverty declined.

Notwithstanding this good performance, at the rate of 19 percent, unemployment is still daunting, and the unemployed are more likely to be poor. Unemployment mostly affects young people, those with low educational attainment, women, the single, people with disabilities and urban residents. Young Armenians are in the most unfavorable position of all; they face the lowest chances of finding a job. Unemployment is a long term phenomenon as two out of three unemployed have been jobless for over a year. Underemployment, particularly in agriculture, and low pay persist.

Having employment is not a guarantee against poverty, as almost half of the poor in Armenia are working poor. Many of them have jobs in the informal sector, where wages tend to be low and not sufficient to lift their earners out of poverty.

Overall, the situation could be summarized as one of good performance so far and tough challenges ahead, as Armenia needs not only more jobs to absorb a large pool of unemployed working age individuals, but also better paid jobs.

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<sup>27</sup> It is important to note that linking changes in earnings of workers to changes in the poverty status of a household should be done with great caution, as within a given household there may be individuals employed in different sectors with different earnings. As earnings are assumed to be shared within the household, one cannot entirely attribute a worker's movement out of poverty with his or her changes in earnings. This is especially true for rural households that may be engaged in agriculture as well as other non-farm activities.

## CHAPTER VI: ENTERPRISE RESTRUCTURING, INVESTMENT CLIMATE AND JOB CREATION

*There is a significant potential in Armenia to increase the pace of job creation and formal sector employment growth. Firms are investing and expanding, and are willing to increase employment: most of them consider that their current employment level is below optimal and would like to hire new workers. However, some of them—especially small private firms—seem to encounter various barriers to business operation and growth, which inhibits formal sector job creation. If these investment climate barriers were eliminated, then more jobs would be created in the formal sector and unemployment would be lower. The potential for employment to grow is especially high given that the workforce in Armenia has the necessary skills.*

### 6.1. Enterprise restructuring and job creation

Labor market conditions are largely determined by firms hiring and firing decisions in responses to changing product demand. This section looks at firm level employment dynamics in Armenia and some of the determinants of employment growth. It finds that employment growth closely depends on firm performance. Firms that perform better—invest and expand—increase employment. This means that at firm level capital formation and productivity growth support rather than substitute for job creation. An additional positive factor supporting employment growth in Armenia is that firms do not encounter skill shortages and find it relatively easy to fill job vacancies.

Many firms in Armenia are hiring new workers and increasing employment<sup>28</sup>. According to some estimates, every second firm increased its employment over the last three years, and only one if five reduced it<sup>29</sup>. However, firms increasingly rely on temporary, as opposed to permanent, employees. Temporary workers accounted for some 30 percent of the total increase in employment over the last three years, and their number almost doubled.

Importantly, the bulk of firms claim that their current employment level is below optimal. As many as 40 percent of firms would increase employment if there were no hiring costs (including administrative restrictions), and only 15 percent of firms would eliminate labor hoarding if there were no firing costs. Overall, if there were no hiring or firing cost, employment in Armenia would be about 15 percent higher than its current level, which points to the importance of eliminating existing investment climate constraints to firm growth as a means of promoting employment.

Firms which increased employment the most in Armenia are privatized (as opposed to de novo private), of medium to large size, and either young or mature. For example, firms which are up to 5 years on the market increased their employment on average by 17 workers in the last three years while firms which are on the market for 6 to 10 years increased employment by less than two workers. At the same time “old” firms (established during the communist era) increased employment by nearly 30 workers (Figure 6.1, Panel A).

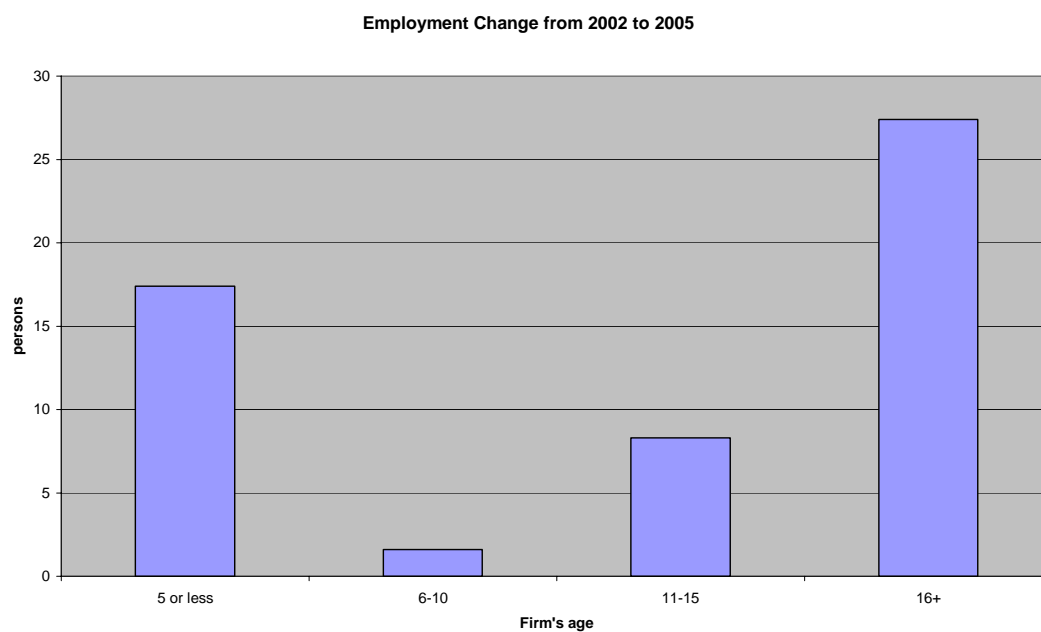
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<sup>28</sup> This does not contradict the earlier quoted result that the average firm size decreased in Armenia in the recent period, as this decrease can be accounted by firm exit (large firms) and entry (small firms).

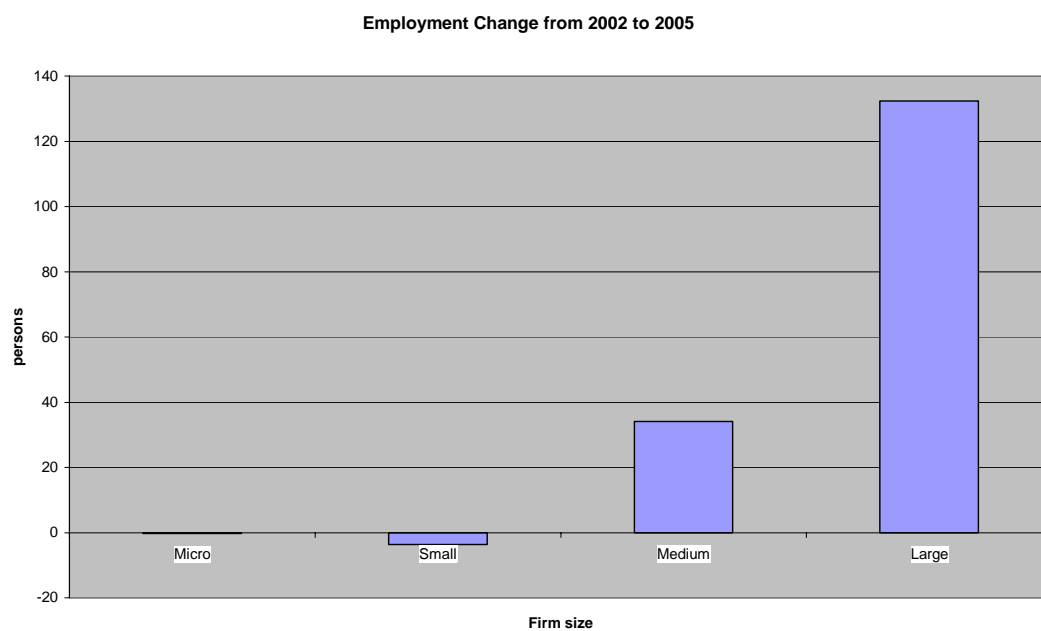
<sup>29</sup> The results come from the EBRD–World Bank Business Environment and Enterprise Performance Survey (BEEPS) III, 2005. The sample is small (201 firms) and not fully representative. Accordingly, the results are subject to a wide margin of error and need to be interpreted with due caution.



**Figure 6.1:** Armenia: changes in employment by firms' age and size  
**Panel A**



**Panel B**



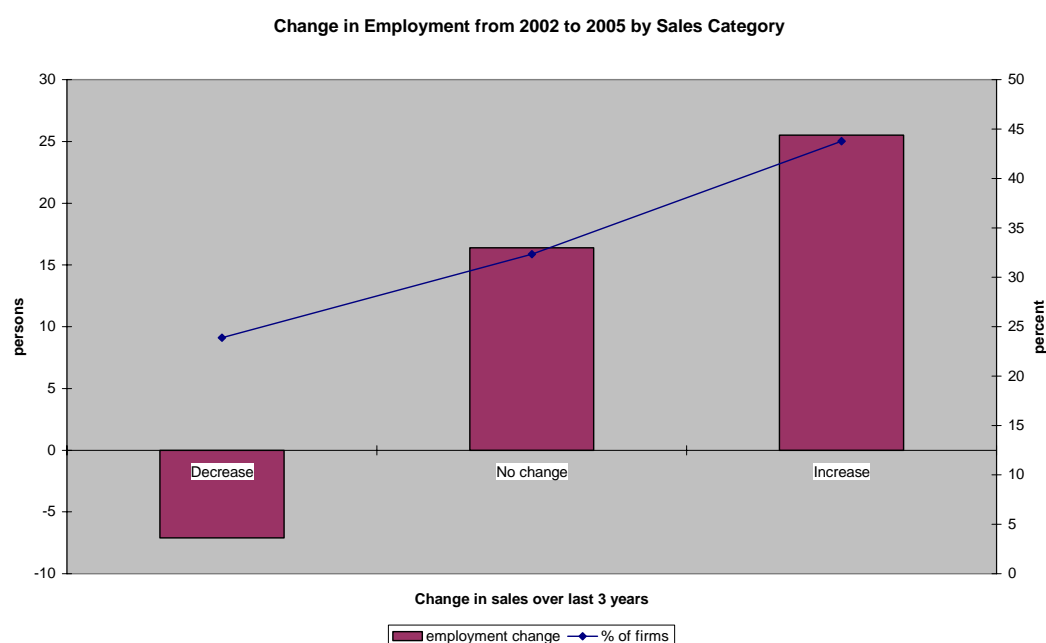
**Source:** EBRD–World Bank Business Environment and Enterprise Performance Survey (BEEPS) III, 2005; World Bank staff calculations.

**Note:** Micro = 1–10 workers; Small = 11–50 workers; Medium = 51–250 workers; Large = over 250 workers

Similarly, small firms on average reduced employment by three to four workers during the last 3 years, while large firms hired a few dozens of new workers (Figure 6.1, Panel B)<sup>30</sup>.

This is a somewhat untypical pattern compared to other transition economies, where it is usually de novo private, small and young firms that are the most dynamic. The pattern of firm dynamic observed in Armenia may indicate that formerly state owned (privatized) and as a rule large firms still enjoy some privileged treatment, while the new private firms (which are usually small) encounter barriers to growth. If so then the leveling of the playing field and improving the environment for small firms would be an important factor in fostering formal sector job creation.

**Figure 6.2:** Armenia: Changes in firms output and employment growth



**Source:** EBRD–World Bank Business Environment and Enterprise Performance Survey (BEEPS) III, 2005; World Bank staff calculations.

At the firm level there is a clear positive correlation between firm growth (in terms of fixed capital and sales) and job creation. Firms that invest in fixed capital and increase sales hire new workers and increase employment, while declining firms shed off redundant labor. For example, firms that in the last 3 years increased their fixed capital, also substantially increased employment (by about 30 workers), while firms that did not invest, increased employment much less (by 9 workers). The relationship between sales growth and employment growth is still stronger (Figure 6.2). Firms that increased sales over the last 3 years also increased employment (by some 25 workers). In contrast, firms that decreased sales reduced employment (by 7 workers). So, at the firm level, output growth brings about employment growth. However, there is a substantial fraction of firms in Armenia (one-third in the sample) which have not increased output level but have nonetheless increased employment. This implies a fall in labor productivity, which is a negative factor, as it increases the unit labor cost and undermines the competitiveness of the affected Armenian firms. This again suggests

<sup>30</sup> While these figures are illustrative of the overall pattern, the actual numbers may differ due to the small sample size.

that some firms in Armenia may be operating in a non-competitive environment. Once the market becomes more competitive, these firms are likely to shed redundant labor.

Firms in Armenia find it easy to fill vacancies and hire workers with adequate skills. This may seem not surprising given high unemployment. However in some transition economies (such as Poland or Slovakia) firms face skill shortages despite high unemployment. So in this respect Armenia compares favorably to other transition economies (Table 6.1). For example, it takes only around two weeks to find a professional worker in Armenia, compared with five weeks in CEE. It is also relatively easy to find a skilled worker. Thus, the shortage of skilled labor is *not* a constraint to job creation in Armenia.

**Table 6.1:** Finding a worker with appropriate skills is relatively easy in Armenia

	Time taken to fill vacancy for:				
	Manager	Professional	Skilled worker	Unskilled worker	Non-production worker*
	<i>Weeks</i>				
Armenia	2.4	2.3	2.1	1.2	1.5
Central and Eastern Europe	5.7	4.9	3.7	2.1	2.8
Southeastern Europe	4.5	3.9	2.6	1.5	2.0
Middle-income CIS	4.3	4.3	3.8	1.8	3.0
Low-income CIS	2.4	2.7	2.2	1.3	1.4
Europe and Central Asia	4.0	3.9	3.2	1.7	2.3

**Source:** EBRD–World Bank Business Environment and Enterprise Performance Survey (BEEPS) III, 2005; World Bank staff calculations.

**Note:** \*Administration, sales, etc.

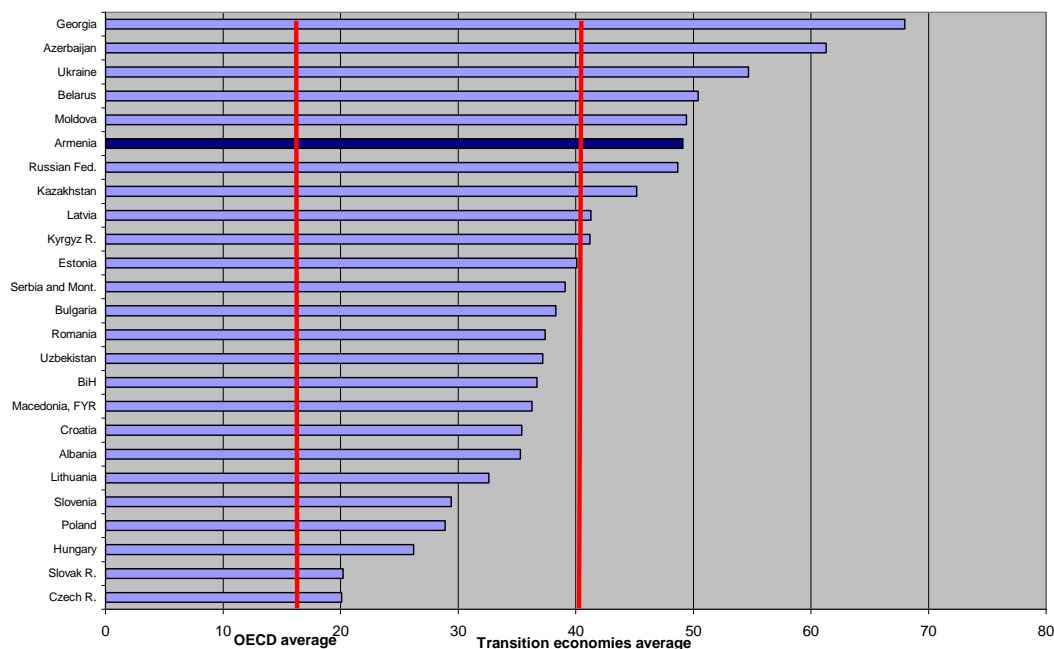
## 6.2. Investment climate and job creation

The investment climate refers to a set of factors which determine firms' decisions whether or not to enter the market, invest, expand production and hire new workers. A favorable investment climate is conducive to firm entry and growth, and thus supports job creation and the increase in employment. Conversely, an inhospitable investment climate discourages job creation and contributes to poor labor market outcomes. Improvements in the investment climate are therefore a key element of policies aimed at increasing employment and reducing unemployment.

A favorable investment climate is particularly important during the periods of intensive enterprise restructuring and massive reallocation of jobs and labor, such as economic transition that is under way in Armenia and other economies of Central and Eastern Europe. First, the transition is associated with high rates of job destruction, which reflect the elimination of old low-productivity jobs. Accordingly, the rates of job creation need to be commensurately high, so that the “new” sector can absorb workers displaced in the “old” sector. Second, transition is associated with downsizing, that is firms shedding off redundant labor and eliminating overstaffing inherited from the communist past. However, if most firms downsize, then the number of firms needs to increase to offset job losses resulting from firms cutting on employment. For example, the average firm size in Armenia decreased from over 200 workers in 1995 to less than 40 workers in 2003 (World Bank 2005). To compensate for this dramatic change in the firm size (which is characteristic of most transition economies) and maintain the earlier employment level, the number of firms would need to increase fivefold. But in reality the number of firms increased only 3.4 times. This is an impressive increase, but not sufficient to provide jobs to all those who are looking for work. The result is

a fall in employment and an increase in unemployment<sup>31</sup>. More firms need to be created and the newly established—usually small—firms need to expand for the economy to recover from the job loss.

**Figure 6.3: Armenia: informal sector role**  
(Shadow economy as % of GDP using the DYMIMIC\* and Currency Demand method, 2002/03)



**Source:** Schneider, 2003.

**Note:** DYMIMIC stands for dynamic multiple-indicator-multiple-cause.

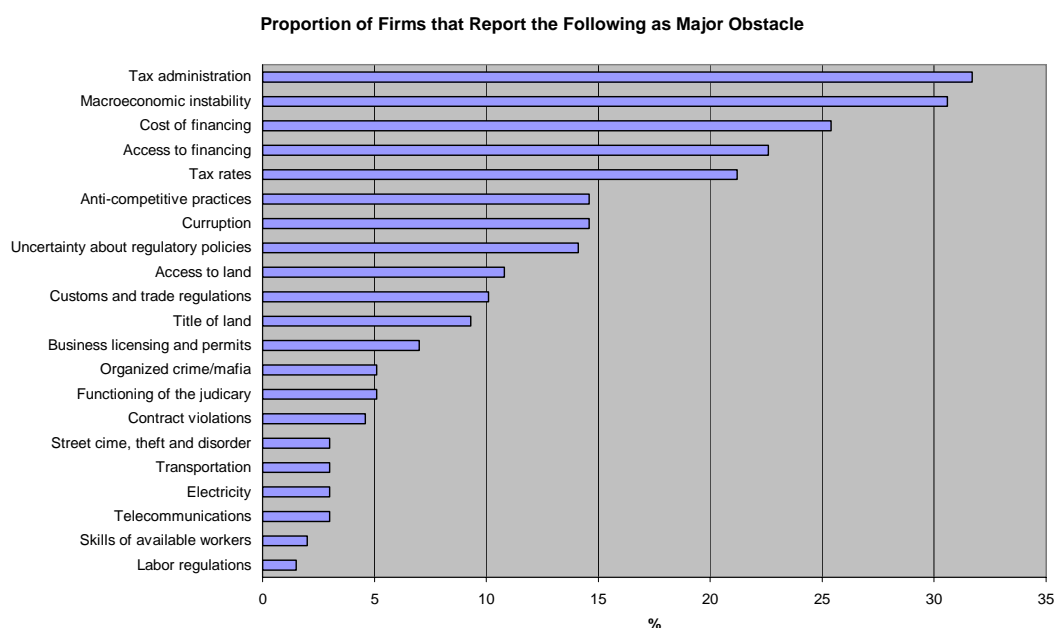
In Armenia employment is still low and unemployment high, despite some increase in employment and decrease in unemployment over 1998/99 and 2004<sup>32</sup> and a relatively long period of strong economic growth. Such “low job content growth” is not untypical of transition economies. In many firms, especially in the “old” sector there has been and often still is ample room for using labor more efficiently and expanding output without hiring new workers. But at the same time, a significant part of economic growth comes from the large informal sector, which provides “hidden” (unregistered) employment opportunities for a large part of the labor force (Figure 6.3). Informal sector jobs are often casual and temporary, and thus are often not captured in official employment data. Also, many among the unemployed find temporary employment in the informal sector.

Why do so many firms in Armenia remain in the informal sector? On the one hand, some of them are discouraged by high perceived costs of going formal: taxes, restrictive regulations and possible bureaucratic harassment. On the other, benefits of formality are low, especially for small firms, which find it extremely difficult to obtain banking credit. The relative importance of these factors is examined by looking at the entrepreneurs’ perception of obstacles to firm operation and growth in the formal sector.

<sup>31</sup> Obviously, some workers who lost their jobs due to restructuring become self-employed or found employment in the informal sector. Others withdraw from the labor force.

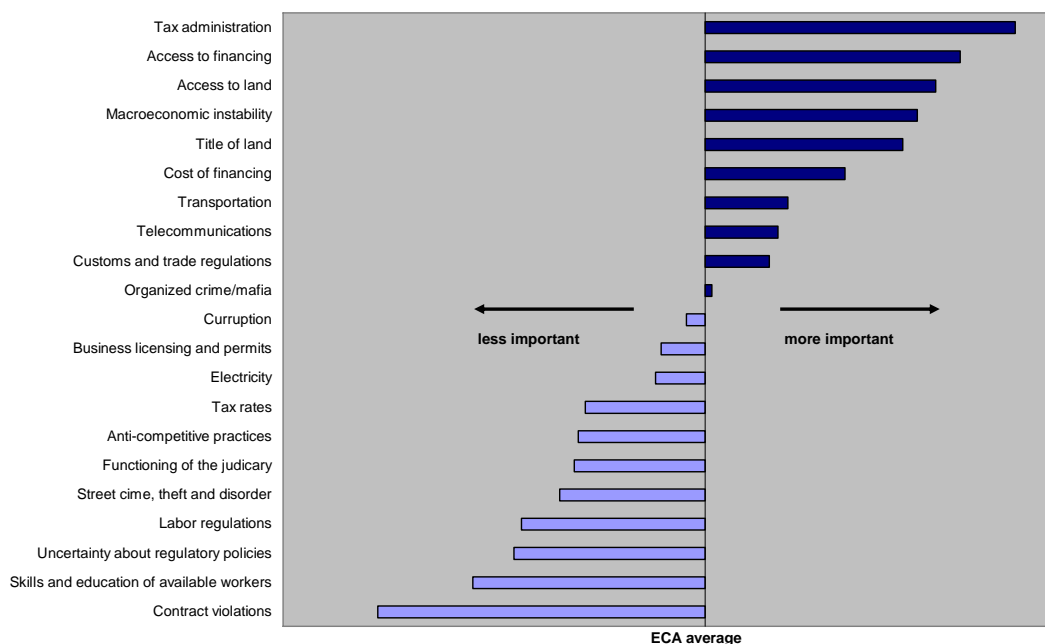
<sup>32</sup> Household survey based estimates.

**Figure 6.4:** Tax administration, taxes, cost of financing and corruption as obstacles for formal sector job creation in Armenia (2005)



**Source:** EBRD–World Bank Business Environment and Enterprise Performance Survey (BEEPS) III, 2005; World Bank staff calculations.

**Figure 6.5:** Armenia: Tax administration, access to financing, and access to land as constraints to business development relative to other transition economies



**Source:** EBRD–World Bank Business Environment and Enterprise Performance Survey (BEEPS) III, 2005; World Bank staff calculations.

As Figure 6.4 demonstrates, the major obstacles to firm growth in the formal sector include burdensome tax administration, high taxes, high cost of financing and corruption. All these

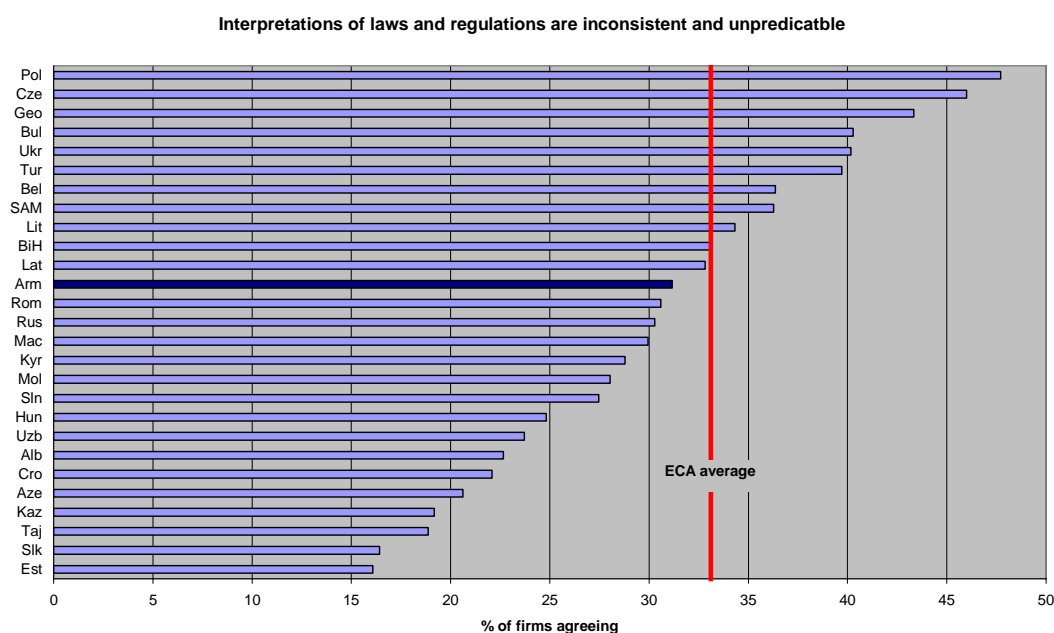
factors raise the cost of doing business in the formal sector, and as such discourage job creation.

Some of the factors—such as taxation—are perceived as a burden on firms in all countries. So, it is important to put the perception of the investment climate obstacles into a comparative perspective. Which investment climate obstacles are more pronounced in Armenia than in other countries in the ECA region? On three dimensions if the investment climate Armenia fares worse than most of other transition economies. These are (a) tax administration, (b) access to financing and (c) access to land (Figure 6.5).

Onerous tax administration as a rule implies bureaucratic harassment, arbitrary interpretation of tax regulations, burdensome tax inspections and often extortion, all of which impose a substantial cost on business and thus discourage business growth. Poor access to financing and its high cost are associated with an underdeveloped banking system, limit investment and firm expansion. Similarly, difficult access to land and insecure land title inhibit firm creation and growth. At the same time, these factors promote the growth of the informal sector by raising the costs and limiting the benefits of formality.

A more detailed analysis of the investment climate reveals that there are additional dimensions where Armenia fares relatively poorly compared with other countries in the Region. Three factors stand out: (a) the quality of regulations, (b) corruption and (c) the access to information and communication technology (ICT).

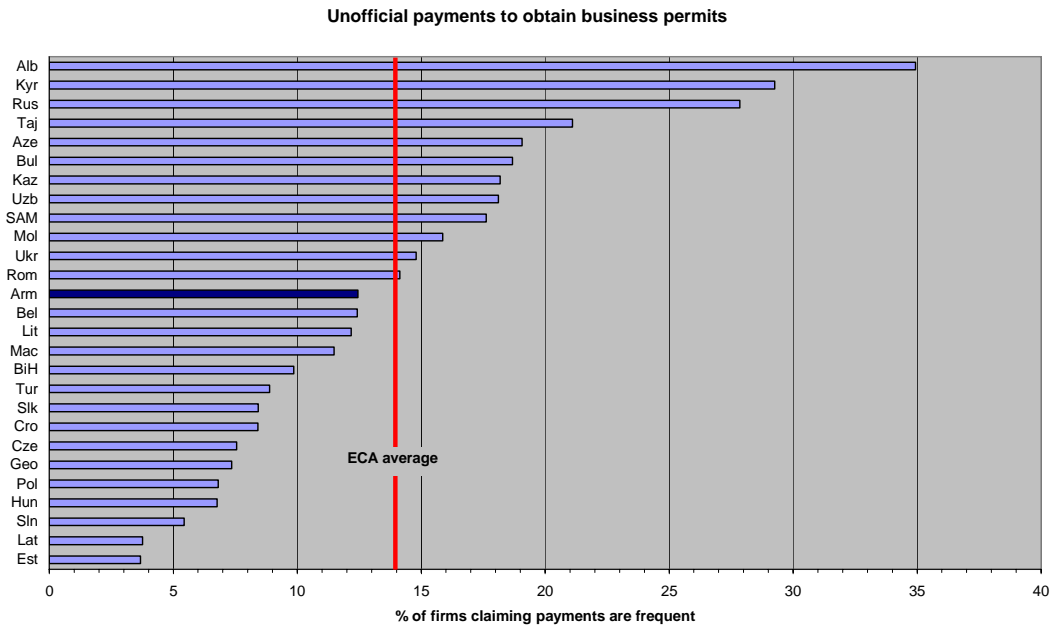
**Figure 6.6:** Armenia: Interpretation of laws and regulations as seen by firms in ECA countries



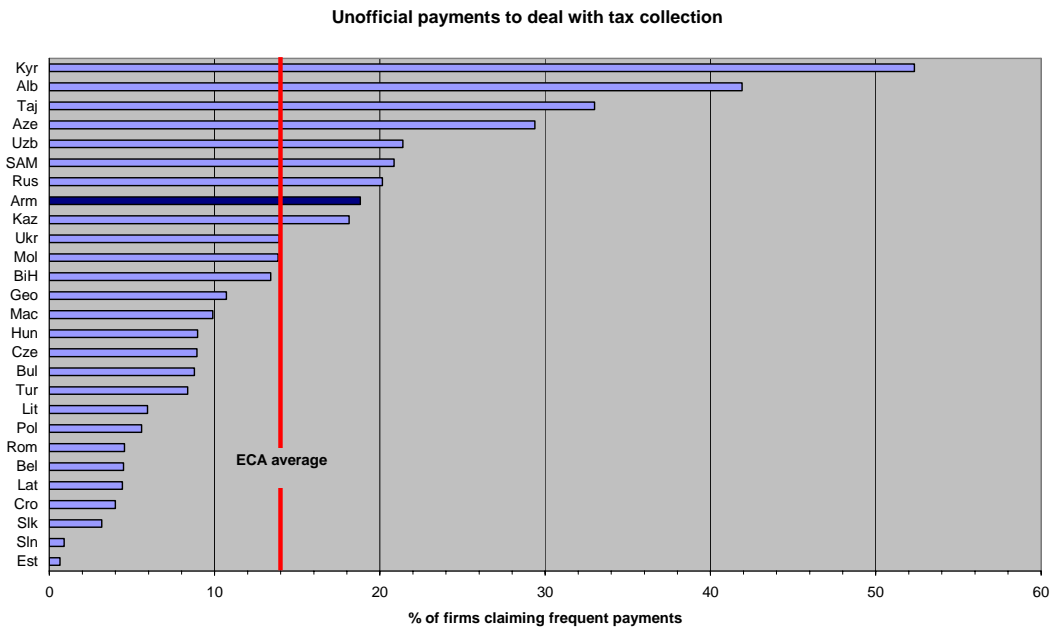
**Source:** EBRD–World Bank Business Environment and Enterprise Performance Survey (BEEPS) III, 2005; World Bank staff calculations.

Arbitrary and unpredictable interpretation of laws and regulations is a problem faced by firms in most transition economies and is a disincentive for firms to move to the formal sector. Although Armenia occupies an average position on this scale, there is substantial room for improvement (Figure 6.6). Every third Armenian firm complains about opaque regulations and their interpretation. This is twice as much as in transition economies which are examples of the best practice in this regard: Estonia and Slovakia.

**Figure 6.7: Unofficial payments in Armenia**  
**Panel A**



**Panel B**



**Source:** EBRD–World Bank Business Environment and Enterprise Performance Survey (BEEPS) III, 2005; World Bank staff calculations.

Firms in Armenia report that they frequently have to pay bribes in order to obtain various permits and to appease tax collectors (Figure 6.7). Again, corruption in Armenia seems to be less prevalent than in some other countries in the Region, but nonetheless it is widespread. For example, nearly 20 percent of firms in Armenia claim that tax collection is associated with extortion, while this proportion is negligible in countries such as Estonia or Slovenia.

Obviously, corruption is a tax on business and as such hampers firm growth of firms and discourages firms from moving to the formal sector.

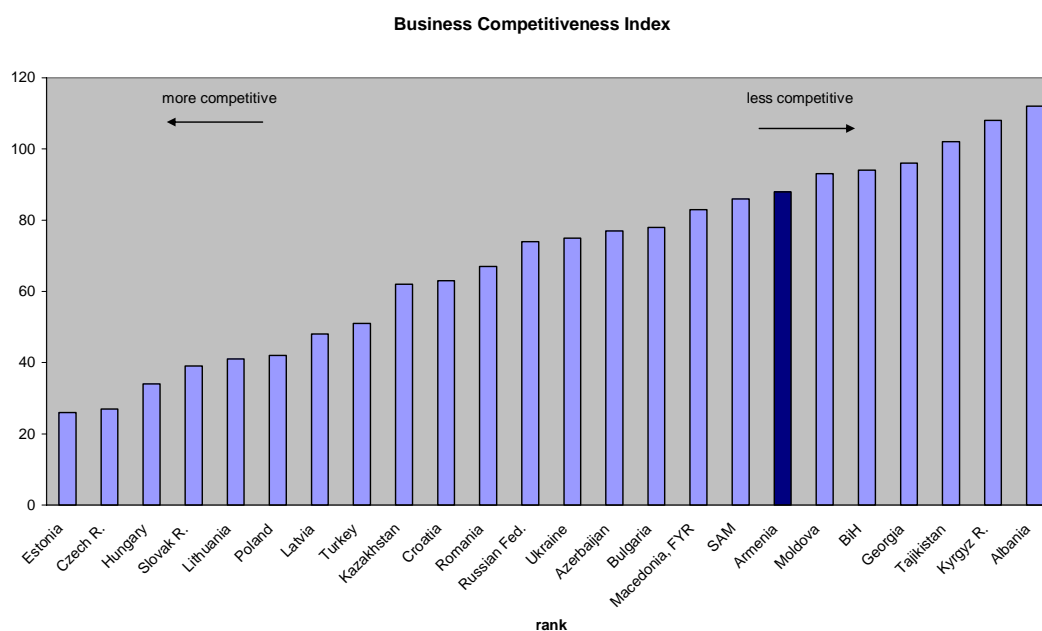
Armenian firms seem at disadvantage when it comes to the access to modern information and telecommunications technology. For example, only 30 percent of Armenian firms use the internet in their interactions with clients and suppliers, which is less than half the average for the whole Region (Table 6.2). An underdeveloped ICT infrastructure may limit the growth potential of firms in Armenia and translate into a lower pace of job creation.

**Table 6.2:** Armenia: use of modern information and communication technology, 2005

Country/Region	Percentage of firms which use internet in their interactions with clients and suppliers
Armenia	30.4
Central and Eastern Europe	78.8
Southeastern Europe	62.8
Middle-income CIS	61.9
Low-income CIS	35.8
Europe and Central Asia	64.0

**Source:** EBRD–World Bank Business Environment and Enterprise Performance Survey (BEEPS) III, 2005; World Bank staff calculations.

**Figure 6.8:** Armenia: business competitiveness relative to other transition economies in the Region (2005)



**Source:** World Economic Forum (2005).

The combination of various investment climate constraints, many of which are more prevalent in Armenia than in other, more advanced transition economies, renders Armenian businesses less competitive. In terms of overall business competitiveness Armenia ranks low: 88 among



116 countries (Figure 6.8)<sup>33</sup>. This is an important factor which accounts for Armenia's relatively poor job creation record in the formal sector.

### 6.3. Conclusions

There is a significant potential in Armenia to increase the pace of job creation and formal sector employment growth. Firms are investing and expanding, and are willing to increase employment: most of them consider that their current employment level is below optimal and would like to hire new workers. However, some of them—especially small private firms—seem to encounter various barriers to business operation and growth, which inhibits formal sector job creation.

According to the latest available Business Environment and Enterprise Performance Survey (BEEPS), conducted by the European Bank for Reconstruction and Development – World Bank, three broad areas identified by Armenian entrepreneurs as crucial for business environment improvements are: (i) *governance*, including onerous tax administration and burdensome inspections, arbitrary and inconsistent interpretations of business related laws and regulations; discretionary power at the hands of bureaucrats, and corruption; (ii) *access to financing*: credit is costly and difficult to obtain, especially for small firms; publicly available information on the creditworthiness of the borrowers that is needed to reduce the lending risk is lacking; business advisory services that would provide assistance to entrepreneurs with producing appropriate business plans and credit applications are almost non-existent; and (iii) *access to land* is difficult and land title is insecure, which hampers investment. In addition, Armenian firms are less competitive since they have poor access to modern **infrastructure**, in particular to information and communication technology.

If these investment climate barriers were eliminated, then more jobs would be created in the formal sector and unemployment would be lower. The potential for employment to grow is especially high given that the workforce if Armenia has the necessary skills. The skills gap or mismatch are not seen by firms in Armenia as a constraint to business growth. Thus, the key to fostering job creation lies in removing existing obstacles to firm operation and growth, that is, in improving the investment climate.

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<sup>33</sup> This is according to the Business Competitiveness Index produced by the World Economic Forum (2005). The summary index is comprised of two components: (a) Company operations and strategy, and (b) Quality of the national business environment. See World Economic Forum (2005) for more details. The World Bank Cost of Doing Business indicators yield somewhat more favorable picture of the business environment in Armenia, especially when benchmarked against CIS and CEE (Kaminski, 2005). But as Kaminski rightly notes, “the frame of reference for Armenia’s regulatory reforms should be at least the best practice in CIS/CEEC-10 region, if not the best international practice”. Also, in the recently published Annual Report of the Wall Street Journal and the Heritage Foundation, Armenia is ranked the 27<sup>th</sup> by the index of economic freedom, among more than 200 countries.

*PART 2: ARMENIA: NON-INCOME  
DIMENSIONS OF POVERTY*

## CHAPTER VII: EDUCATION AND HEALTH

*Armenia has performed well in health and education: it has sustained good indicators in both sectors, with relatively low levels of expenditures as compared to other countries in the ECA Region. Mortality and standardized death rates are low and infant, under-five and maternal mortality rates have all fallen since 1990. Immunization rates are high. Almost the entire population is literate. Access to basic education is universal and equally so for boys and girls; completion rates are very high. The shares of education and health in total public spending have increased and the sectoral composition of expenditures has changed as well, with more emphasis given to basic education and primary health services. However, public spending on health and education is still low and the population bears a significant portion of health and education financing. Public spending on hospitals and in particular on tertiary care facilities favors the better off, as non-poor benefit from it more than the poor.*

*In contrast to basic education, enrollment in upper secondary and in particular tertiary education is much lower and differences between rich and poor are huge. Relatively low returns to education, high opportunity cost and, most of all, affordability are the main reasons explaining why students from poor households drop out of school after basic, and in particular after upper secondary education. Richer and students in urban areas perform better at school, reflecting significant differences in access to good quality education between rich and poor and between urban and rural areas. Health care utilization is generally low, particularly in rural areas and among the poor. Low overall public spending on health and affordability constraints—health services in Armenia are mainly paid out-of-pocket—are the main reasons why the poor either do not seek health care or use informal health services.*

### 7.1. Millennium Development Goals in Armenia

Armenia has performed well in health and education as the country has been able to sustain good health and education indicators (meeting European standards) with relatively low levels of expenditures as compared to other countries in the ECA Region. In 2004, life expectancy at birth was 70.3 years for men (higher than in most of the ECA countries) and 76.4 years for women. Both indicators exceeded their 1990 level.

#### ***Box 7.1: Armenia PRSP and health and education***

*A well educated, healthy population is not only crucial for any country's socioeconomic development, it is also very important for households and individuals well being. Accordingly, Armenia's Poverty Reduction Strategy places human capital protection and development, as well as significant reduction in human poverty among its key priorities. Continuing and deepening the reforms that aim at increasing efficiency, effectiveness and quality of services in health and education, as well as ensuring more public resources for their financing, are two crucial elements of the Government's strategy to accomplish the PRSP's human capital development goals.*

**Figure 7.1: Armenia: Potential for achieving the MDGs**

	MDG1	MDG2	MDG3 Gender Equality at School	MDG4 Child Mortality	MDG5 Maternal Mortality	MDG6 HIV/AIDS And Malaria	MDG7 Access to safe water
Lower Income CIS	Poverty	Enrollment					
Armenia	Maybe	Likely	Likely	Maybe	Maybe	Unlikely	Maybe
Azerbaijan	Likely	Maybe	Likely	Maybe	Maybe	Unlikely	Maybe
Georgia	Unlikely	Unlikely	Likely	Unlikely	Unlikely	Unlikely	No data
Moldova	Maybe	Unlikely	Likely	Unlikely	Maybe	Unlikely	Unlikely
Uzbekistan	Unlikely	Likely	Likely	Likely	Maybe	Unlikely	Maybe
Kyrgyz Republic	Maybe	Maybe	Likely	Maybe	Unlikely	Unlikely	Maybe
Tajikistan	Maybe	Unlikely	Unlikely	Unlikely	Unlikely	Unlikely	Unlikely

Key	
<b>Likely</b>	MDG target likely to be achieved
<b>Maybe</b>	Too difficult to tell whether MDG will be achieved
<b>Unlikely</b>	MDG target unlikely to be achieved
<b>No data</b>	Inadequate data to make conclusions

Source: World Bank, 2004.

Official statistics report declines in child and maternal mortality. In 2004, 430 cases of infant deaths were reported, resulting in an infant mortality rate of 11.6 per 1,000 live births (in 1990 it was 18.5). Under-five mortality rate was 13.0 per 1,000 live births (23.8 in 1990). The rate of maternal deaths per 10,000 live births was 26.7 vs. 40.1 in 1990. Illiteracy is not an issue, as almost the entire population is literate. Access to basic education is practically universal and equally so for both boys and girls; and completion rates are very high. Based on this good performance, the World Bank assessed favorably Armenia's potential to achieve the Millennium Development Goals (Figure 7.1).

## 7.2. Spending on health and education

In 2004, public spending on health and education comprised 1.3 and 2.8 percent of GDP respectively. Although significantly increased in real terms, these allocations are rather low relative to other CIS countries, particularly given Armenia's level of development. Table 7.1 presents data on resources spent on education and health. For 2004, ILCS estimates on private spending on these services are presented as well. On education, Armenian citizens were spending almost as much as the state, so that total resources invested in education were about 5 percent of GDP. Private spending on health was 3.4 times higher than the public: the state allocated 1.3 percent of GDP<sup>1</sup> to the health sector, while citizens invested 4.5 percent. Hence, health sector financing amounted to almost 6 percent of GDP. Given that most of the private spending on health is informal, the Government faces a huge challenge in formalizing the health sector financing.

<sup>1</sup> Public resources allocated to health are mostly used to finance a package of basic health care services (basic benefits package or BBP) that is available to certain social groups defined by Law for a small co-payment. For those households that are benefiting from the family poverty cash assistance program with vulnerability score exceeding 38 the BBP is free of charge.

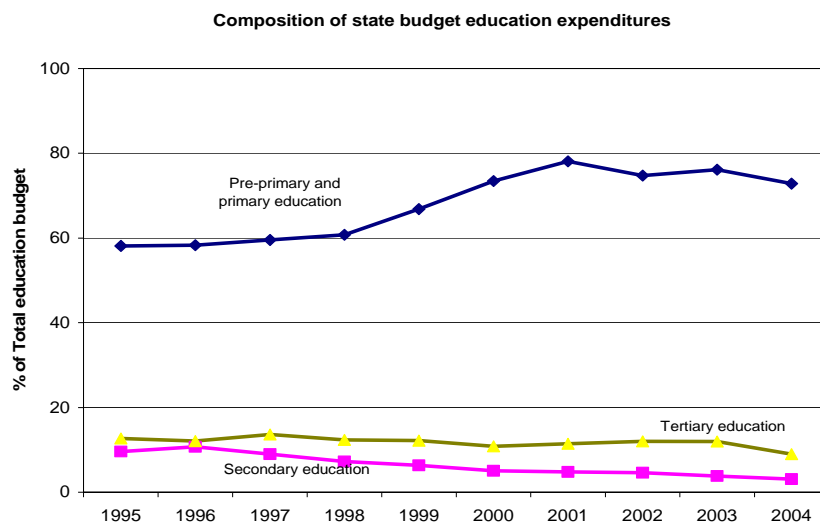
**Table 7.1: Armenia, Public and private expenditures on education and health 1995-2004**

	1995	1997	1999	2001	2003	2004
<b>Education and science</b>						
Public as % of total public budget	10.73	10.1	8.93	11.5	10.53	13.46
Public as % of GDP	2.82	1.97	2.3	2.54	2.16	2.55
Private as % of GDP*	N.A.	N.A.	N.A.	N.A.	N.A.	2.28
<b>Health</b>						
Public as % of total public budget	7.02	6.10	5.35	6.07	5.87	6.86
Public as % of GDP	1.85	1.19	1.38	1.34	1.17	1.30
Private as % of GDP*	N.A.	N.A.	N.A.	N.A.	N.A.	4.55

Source: NSSA and Armenia ILCS 2004.

Note: \*Private expenditures are estimated based on 2004 ILCS and World Development Indicators (WDI) dataset.

Changes in public spending on health and education reflect Government efforts to make overall public expenditures more pro-poor by focusing on social sectors improvements and development. Consequently, the shares of education and health in total public spending increased; this increase has been much higher in the case of education than health. In 2004, public expenditures on education constituted about 13 percent of the overall Government spending (vs. 8.9 percent in 1997), while expenditures on health accounted for 6.2 percent (as opposed to 5.5 in 1997). The sectoral composition of expenditures has been changing as well, with more emphasis given to basic education and primary health services (figures 7.2 and 7.3).

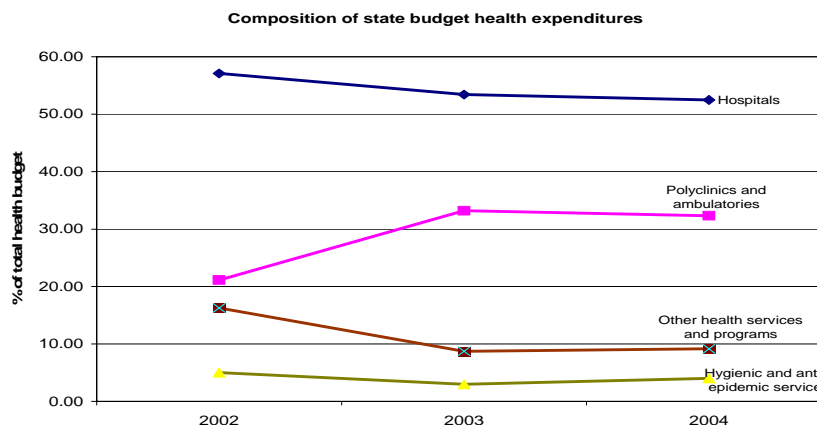
**Figure 7.2: Armenia: Composition of public spending on education 1995-2004**

Source: Armenia, Government Statistics (Administrative data).

Again, the change has been particularly pronounced in education where almost three quarters of all public resources are allocated to basic education. Rising spending on basic education has been driven by capital expenditures to rehabilitate the school stocks (including updating heating infrastructure) and to increase teachers' pay, which in 2005 amounted to AMD 50,500 per month (110 US dollars)<sup>2</sup>. In health, a little bit over a half of public resources (53 percent) is allocated to hospitals.

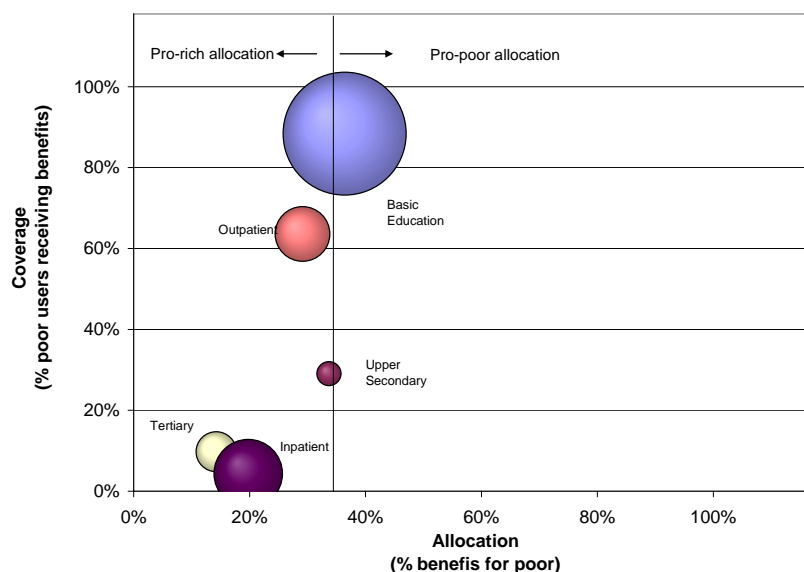
<sup>2</sup> The exchange rate used for this calculation is the 2005 annual average (1 US\$ = AMD 457.69).

**Figure 7.3:** Armenia: Composition of public spending on health 2002-2004



Source: Armenia, Government Statistics (Administrative data).

**Figure 7.4:** Armenia: The poor and public spending on health and education



Source: Angel-Urdinola, Jain, and Prina (2006) using ILCS 2004.

**Note:** Education users are defined as households with at least one member enrolled in public education; the health users are defined as households with at least one member having received treatment at a public health institution. Although the users are defined at the household level, the shares presented in the diagram are population weighted. The size of the bubble is proportional to total per-capita public budget spent in providing the service. If the bubble for basic education is 5 times larger than the bubble for tertiary education, it means that the public budget allocated to basic education is 5 times larger than that allocated to tertiary education on per capita basis.

Figure 7.4 illustrates how much the poor in Armenia benefit from public spending on health and education. The horizontal axis represents allocation of resources, i.e. the percentage of resources allocated to poor users of health and education services; the vertical axis represents coverage of the poor, i.e. the percentage of poor users of health and education services.

**Coverage:** Basic education coverage of poor users<sup>3</sup> is high; more than 90 percent. In contrast, the coverage of poor users by upper secondary and tertiary education is low. Less than 30 percent of all poor users have students attending upper secondary school and only about 10 percent of all poor users have at least one member enrolled in tertiary education. With respect to health, only 60 percent of the poor who use health services benefit from public outpatient services and less than 5 percent (a very low share) of all poor users benefit from public inpatient services.

**Resource allocation:** Since the poor constitute about 34 percent of the population, in order to achieve an equitable allocation, an equal share of public resources should reach the poor. If the poor receive resources in a larger proportion than their population share, the allocation is considered pro-poor, i.e. progressive. If the opposite occurs, the allocation is considered pro-rich, or regressive. As illustrated by the Figure 7.4, the allocation of education resources for basic and upper secondary education is equitable. In contrast, public spending on tertiary education is heavily captured by the non-poor, as poor users receive only 14.2 percent of the public resources allocated to tertiary education. Health services are regressive, but more so in the case of inpatient than outpatient services. About 31 percent of the public resources for outpatient services benefit the poor and only 20 percent in the case of inpatient services.

### 7.3. User perception of health and education services

According to the ILCS 2004, health and education status have an important influence on how households perceive their overall socio-economic status. Households having a sick member are more likely to perceive themselves as poor than similar households with no sick members. On the other hand, households with better educated heads and spouses are less likely to feel poor. Households headed by individuals holding a university degree have higher consumption and experience lower poverty risk (see Tables A7.1 and A7.2 in Statistical Annex). While these perceptions certainly reflect subjective feelings related to health and education status, they also reflect objective conditions, such as quality of the services actually received. Health services in Armenia are expensive and costs are mostly borne by households themselves; as such they represent a shock for the household budget and may push the household back or deeper into poverty.

**Table 7.2:** Armenia: Not being able to ensure good health is a major concern among the health care users

	Poorest quintile	Q2	Q4	Richest quintile	Poorest quintile	Q2	Q4	Richest quintile
	Cannot ensure good education				Cannot ensure good health			
Households having a user								
Main problem	16.0	16.7	19.9	18.5	64.8	61.6	65.1	56.1
Not a main problem	84.0	83.3	80.1	81.6	35.2	38.4	34.9	43.9

**Source:** Armenia ILCS 2004.

**Note:** Users of education are defined as those households with at least one student attending school. Users of health are defined as those households where at least one member has received any kind of health treatment.

<sup>3</sup> Users of public education services are defined as households with at least one member enrolled in public education; the users of public health services are defined as households with at least one member having received treatment at a public health institution.

Users of health services perceive their inability to ensure good health as a major problem. More than 60 percent of all health users claim that not being able to ensure good health constitutes a main challenge. The poor are more concerned than the non-poor. In contrast, not being able to ensure a good education seems to be less of a concern (Table 7.2). The poor appear even less concerned than the non-poor. This difference in perception may reflect differences in access to publicly financed services. While 12 years of general education is free and accessible to all, health services are not, as most of the health care is available only on a fee-for-service basis.

Users dissatisfaction with services is relatively high; much higher for health than education; the poor are more dissatisfied than the non poor (Table 7.3). 40 to 45 percent of all household-heads having a service user claim not to be satisfied with service delivery in health. This proportion is lower (roughly 32 percent) for education services. A larger proportion of users feel that services have deteriorated than improved. Most believe that that the quality of services has remained unchanged. Finally, results suggest that poorer households are less likely to be satisfied with services. This result may reflect the fact that quality and access to health and education services varies considerably between poor and non-poor users. Very few users filed a complaint, which might indicate that they feel powerless to confront the service providers. However, almost half of the users who filed a complaint claim that the service providers took action to solve their problem. Richer households were more likely to complain.

**Table 7.3:** Armenia: Consumer satisfaction with health and education services 2004

	Education				Health			
	Poorest quintile	Q2	Q4	Richest quintile	Poorest quintile	Q2	Q4	Richest quintile
<b>Satisfied with Services?</b>								
% not satisfied	32.7	31.3	31.8	31.4	43.4	45.1	40.9	40.8
% satisfied	59.1	62.2	62.6	62.6	40.5	39.3	42.5	45.7
% don't know	8.2	6.5	5.6	6.0	16.0	15.6	16.6	13.5
<b>Any change in services during the last year?</b>								
% yes, improvement	5.2	4.9	6.5	9.4	3.2	2.8	3.8	6.0
% yes, a deterioration	11.4	9.6	12.6	13.1	13.5	10.3	11.8	10.9
% no change	75.8	79.0	76.1	71.8	69.1	73.0	70.4	68.9
% do not know	7.6	6.5	4.8	5.7	14.3	13.9	14.0	14.3
<b>Did you complain?</b>								
% yes	2.2	3.1	2.9	2.6	4.6	5.0	5.3	6.3
% no	97.8	96.9	97.1	97.5	95.4	95.0	94.7	93.7

Source: Armenia ILCS 2004.

## 7.4. Education and poverty in Armenia

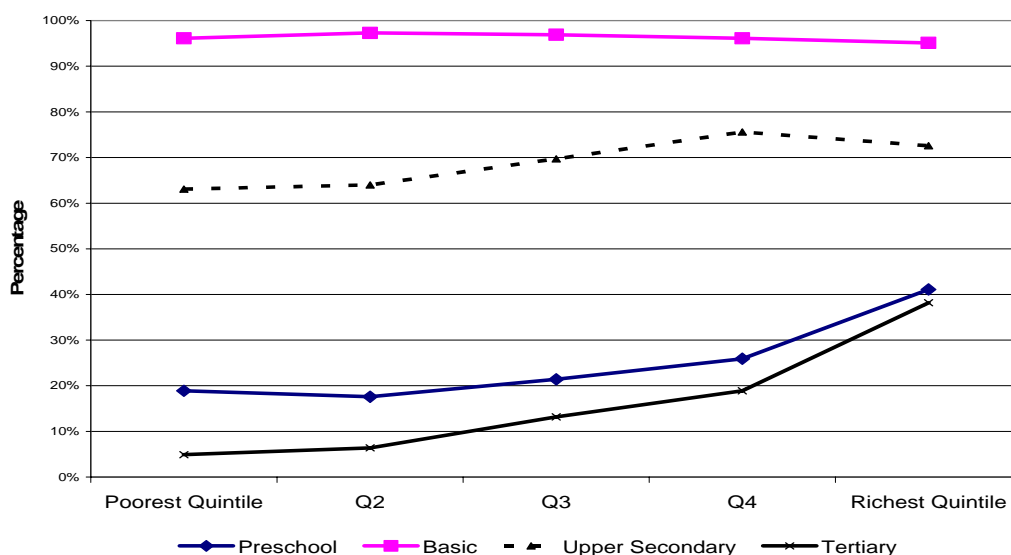
### *Enrollment*

Despite tight budget constraints, Armenia has managed to maintain high enrollment in basic education. Although public spending on education fell from about 8 percent of GDP in the early 1990s to an average of 2.9 percent in the early 2000s, gross enrollment rates have declined only slightly and completion rates have steadily been improving. The enrollment rate estimates presented in Figure 7.5 are based on the 2004 Integrated Living Conditions Survey<sup>4</sup>.

<sup>4</sup> The enrollment rates based on ILSC may differ from administrative statistics. For 2004 ILCS estimates of net and gross enrollment rates by consumption quintiles, gender, and economic regions see Table A7.3 in Statistical Annex.

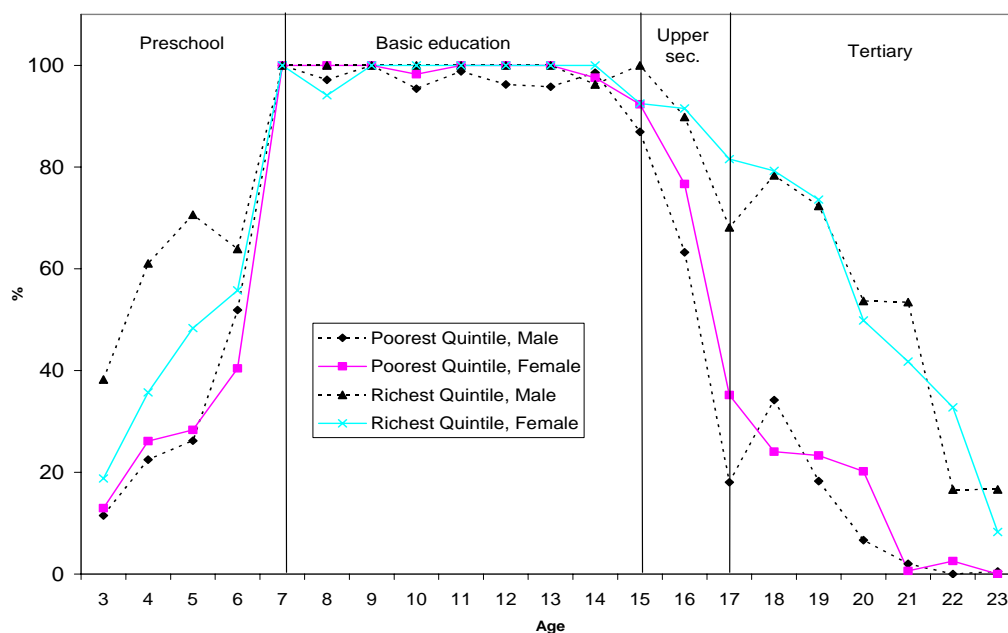


**Figure 7.5:** Armenia: Gross enrollment rates in education by education levels and consumption quintiles



Source: Armenia ILCS 2004.

**Figure 7.6:** Armenia: Gross enrollment rates among the poorest and the richest Armenians, by gender, age and level of education



Source: Armenia ILCS 2004.

The estimates indicate very high enrollment rates in basic education (95 percent) and they do not differ much across consumption quintiles. Enrollment rates in upper secondary education are much lower—about 69 percent nationally, and differences between poor and better off households become notable (there is a 10 percentage point difference in net enrollment rates between the top and the bottom quintile). Enrollment rates in preschool and tertiary education are 16 and 25 percent respectively and the gaps between the poor and the rich are substantial.

While enrollment rates in preschool (tertiary) education are about 41 (38) percent among students in the richest quintile, they are only 19 (5) percent among students from the poorest quintile.

Drop-outs after basic education are substantial, especially among poor students (Figure 7.6). As Figure 7.6 illustrates, differences in early schooling between the richest and the poorest households are substantial up to the age of 6 years. Results suggest that boys below 6 in the top consumption quintile are more likely to be enrolled than girls in the same socio-economic group. There is a drop in enrollment rates for boys in the top quintile between the ages of 5 and 6, suggesting that they are likely to start basic education earlier than children from other socio-economic groups. Between the ages of seven and 14 enrollment rates by age and gender are very similar irrespective of socio-economic status. At age 14 (presumably at the end of basic education) there is a sharp drop in enrollment ratios, especially among the poor. An even steeper drop in enrollment occurs at age 16, presumably once students have finished upper secondary education. This drop is steeper for children in the poorest quintile and particularly among males since they must join the military at age 18. It should be noted that for children 14 and over, in each subsequent year of age, differences in enrollment rates between children in the poorest and the richest quintiles become wider. After military service, some boys return to school and male enrollment rates pick up slightly and then decrease. Figure 7.5 also suggests that after age 14, females from the poorest quintile are associated with slightly higher enrollment rates than boys from the same economic group.

In order to better understand *determinants of preschool enrollment*, parameters of a statistical model were estimated<sup>5</sup>. The results suggest that access to informal child care arrangements, the education level of a spouse, and geographical location constitute more important determinants of pre school enrollment than the socio-economic situation.

(i) *Informal child care and marital status*: Children below age 6 having a family member who can take care of them when the child's mother is not at home are 49 percent less likely to be enrolled in preschool than children who do not have such a possibility. The enrollment probability drops only by six to seven percent if a neighbor or a relative not living in the household are potential care takers. Children under six living in a household whose head is single are 100 percent more likely to be enrolled than children having a married head.

(ii) *Education of the spouse*: While the level of education and the employment characteristics of the household head do not appear as influential determinants of preschool enrollment, households having a spouse with at least upper secondary education are 100 percent more likely to have a child attending a preschool institution than mothers with basic or no education.

(iii) *Socio-economic conditions and geographical location*: Controlling for other characteristics, socio-economic conditions have only a limited impact in the likelihood of children attending a preschool institution. Estimates suggest that children in the poorest quintile are barely 5 percent less likely to be enrolled than children in the richest quintile. However, children in rural areas are less likely to be enrolled than children Yerevan.

Regarding determinants of *tertiary education enrollment*, statistical model estimates indicate that socio-economic conditions, remittances, and employment opportunities have a significant influence on the probability of children being enrolled in tertiary education. Other factors related to the characteristics of the student's household play a less important role. The regression results on determinants of tertiary enrollment in Armenia can be summarized as follows:

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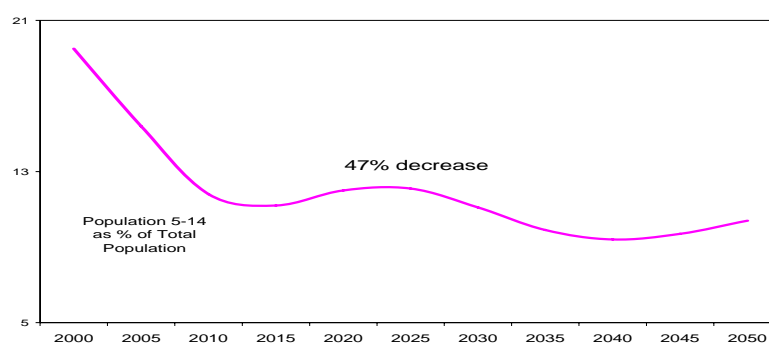
<sup>5</sup> A probit regression model was estimated; the results for both pre-school and tertiary education are presented in Table A7.4 in Statistical Annex.

(i) *Individual characteristics*: After the age of 16, the probability that a student stays in college/university falls by 16 percent per year. Individuals between 16 and 28 years who have a job are associated with a 13 percent lower probability of attending tertiary education.

(ii) *Characteristic of the household head and his/her spouse*: individuals living in a household having a head with tertiary education are only 7.5 percent more likely to be in college/university as compared to individuals living in households having a head with primary school or no education. Individuals in households having a working spouse are associated with 5.7 percent higher probability of being enrolled. In contrast, those in households with a disabled spouse are 4.7 percent less likely to be enrolled.

(iii) *Remittances, socio-economic conditions, and geographical location*: Controlling for the socio-economic situation, individuals living in households receiving remittances are more likely to be in college/university. While it may be that parents invest remittances in the higher education of their children, it may also be that better-off households get more remittances on average and hence can afford to send their children to the university. Children from the top consumption quintile are 10 to 12 percent more likely to be in college/university than children in the bottom quintile, other things being equal. Finally, individuals living in Yerevan are more likely to be enrolled in tertiary education than individuals living in other urban or rural areas.

**Figure 7.7:** Armenia: Population 5-14 years of age 2000-2050



Source: UN Population Database.

Armenian education is facing the challenge of a rapidly declining school age population. Due partly to out-migration and partly to a very low total fertility rate, Armenia's population had been decreasing for a number of years<sup>6</sup>. According to UN population estimates, this trend is expected to continue in the future, i.e. it is estimated that between the years 2005 and 2050, the Armenian population would contract by 24 percent. This trend will have an impact on the future demand for education services. In particular, demand for basic education is expected to shrink rapidly. Estimates suggest that the population in the 5 to 14 age group is expected to decrease annually by 0.83 percent. This would reduce the number of children pursuing basic education by 47 percent between 2005 and 2050 (Figure 7.7).

### ***Box 7.2: Reforms in education in 2004***

*Structural reforms, initiated in the mid 1990s, aiming at improving efficiency, accessibility and quality of education services at all levels are still underway. Some important steps have recently been undertaken.*

<sup>6</sup> Only recently, in 2003 and 2004, according to the official NSS estimates, a small increase in population was recorded.

***Pre-school education:*** Adequate preparation of 5-year olds for basic education is seen as an important input into their school performance and educational attainment. The Government is aiming at increasing the coverage and quality of the public pre-school education system and to that end the Concept Paper and Strategy for Pre-school Education Development in Armenia has recently been approved. Also, a Draft Law on Pre-school Education was developed and submitted to the Government for approval. The Law would regulate legal, organizational and financial bases for operation and development of pre-school education in Armenia.

***General education:*** According to the National Curriculum for General Education and State Standards for Secondary Education, Armenia has moved from an 11- to a 12-year general education system. A new system for evaluation of the quality of education is being introduced. A Center for Evaluation and Testing was established and a New Concept of Knowledge Evaluation was developed. A process of rationalization and modernization of the general education system is ongoing. The results achieved so far include: (i) computers and access to internet were introduced in many schools; (ii) the school management and financing system was decentralized; (iii) the teacher/students ratio was increased to 1:13.2; and (iv) the average class size was increased to 22 students per class. As a significant number of teachers was discharged from their jobs, a redundancy package was developed to help their transition to other jobs.

***Education of children with special needs:*** Armenia is taking steps to move from boarding schools for children with disabilities to their inclusion and integration into the mainstream schools. Accordingly, laws on Education, Child's Rights Protection and Social Protection of People with Disabilities have been amended.

***Vocational education:*** Upgrading and developing vocational education system is identified as one of priorities of the education system development. To that end a number of strategic documents have recently been adopted including the legal framework, the strategy and an action plan for 2005-2008.

***In tertiary education,*** the Government is taking action to make it compliant with international standards. Recently, a two level higher education system—the MA and BA—was introduced and professional standards for higher education were developed. Accordingly, academic programs at universities were adjusted to fit the new standards. In 2004, the RA Law on Higher and Postgraduate Professional Education was adopted and has since become an important tool for development of tertiary education and improvements in its efficiency and quality.

### ***Explaining trends in education in Armenia***

The 2004 Integrated Living Conditions Survey provides a wealth of information that allows insights into various aspects of education in Armenia.

*Why parents do not enroll their children in pre-school education?* A mother at home is the main reason why children under 6 are not attending pre-schools. Affordability is less of a problem and mainly affects poor households in rural areas.

**Table 7.4:** Armenia: Pre-school education – reasons for not attending and accessibility 2004

	Poorest quintile	Q2	Q3	Q4	Richest quintile	All
<i>Why not enrolled in preschool education?</i>						
% too expensive	18.4	16.4	7.9	5.5	4.0	12.3
% kindergarten is closed	14.1	23.4	20.5	17.9	25.3	19.6
% mother does not work	42.0	42.7	38.4	44.2	37.1	41.4
% already at school	10.8	4.7	10.1	9.9	14.9	9.2
% other	13.6	12.5	21.2	19.0	11.1	15.4
% N.A	1.2	0.3	1.9	3.5	7.6	2.1
<i>Distance to the closest preschool facility</i>						
Yerevan						
0-1 km	80.3	80.3	84.4	77.7	82.2	80.9
1-3 km	16.1	16.4	14.0	19.6	14.2	16.1
4-5 km	2.4	2.0	1.0	2.7	2.6	2.2
>6 km	1.2	1.3	0.5	0.0	1.0	0.8
Other Urban						
0-1 km	81.6	75.7	75.5	79.3	79.5	78.4
1-3 km	17.4	22.3	23.3	19.9	18.4	20.3
4-5 km	1.0	1.6	1.0	0.6	0.9	1.0
>6 km	0.0	0.5	0.2	0.2	1.1	0.4
Rural Areas						
0-1 km	37.1	43.8	50.5	48.5	48.1	45.4
1-3 km	16.9	17.3	12.2	17.8	15.7	16.0
4-5 km	4.2	2.9	3.2	3.6	7.0	4.1
>6 km	41.7	36.0	34.1	30.1	29.3	34.5

Source: Armenia ILCS 2004.

Availability of facilities is not a problem either in Yerevan or other urban areas where 80 percent of households have a preschool facility less than 1 kilometer away from their residence (in all quintiles). Pre-school facilities are less accessible in rural areas and particularly so for the poorest households (Table 7.4).

These results may reflect that pre-school education is not clearly distinguished from day care services. During Soviet times most mothers were employed and most pre-school children attended day care prior to entering basic education. Day care institutions performed the function of pre-school education as well. Having this in mind, in order to increase the number of children enrolled in the pre-school education program, which is one of the Government's objectives, a two-pronged strategy could be employed. First, parents should be informed about the program and its importance for educational attainment of their children; second, pre school education should be clearly distinguished from day care services and pre-school education should be provided not only by day care centers, but also by basic education institutions.

*Why boys and girls age 16-20 are not enrolled in education?* Most individuals between 16 and 20 years of age, irrespective of their socio-economic status, consider that having finished basic and secondary education is enough. This result could be linked to low returns to education<sup>7</sup> and high opportunity costs of tertiary education. Affordability is mentioned as a constrained to

<sup>7</sup> A regression analysis of wage rates (hourly wages) among wage earners between 16 and 65 years of age suggests that returns to tertiary education, while statistically significant, are low (for regression results see Table A7.5 in Statistical Annex). Estimates suggest that the hourly wage of two otherwise very similar individuals will be 50 percent higher for the one with some college education as compared to the other who has completed up to basic education. In other words, while a non-educated worker could expect to earn on average 500 drams per hour, a collage educated one can expect 750 drams.

tertiary enrollment by less than 5 percent of individuals. Family reasons such as marriage and pregnancy are more important factors keeping girls out of school than boys and they are more important among the poorer than better off girls (Table 7.5)

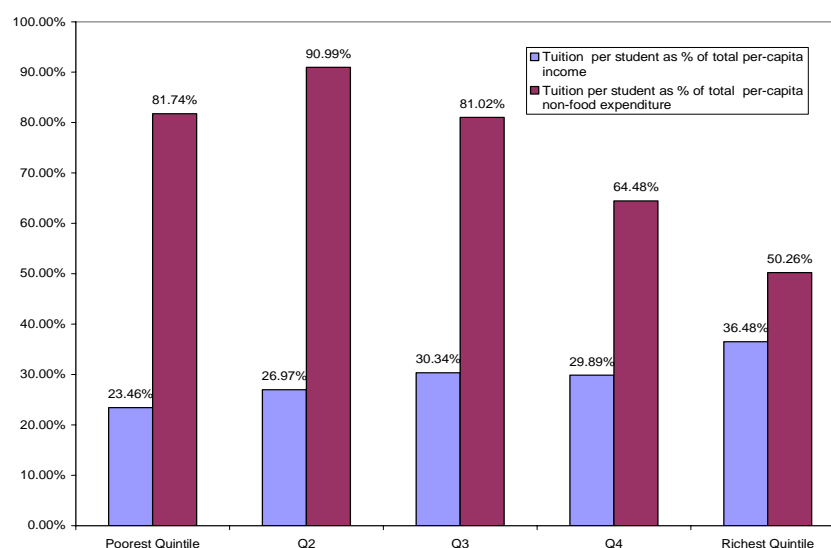
**Table 7.5:** Armenia: Why boys and girls age 16-20 are not enrolled in education?

	Poorest quintile	Q2	Q3	Q4	Richest quintile	All
<i>Why not enrolled in education?</i>						
<b>Males</b>						
% Illness/temporary absent	3.9	5.9	4.4	0.4	6.7	4.2
% too expensive	2.8	2.4	3.5	0.0	3.2	2.3
% don't want to study	6.4	1.6	1.0	2.5	5.9	3.3
% family reasons	3.0	3.8	1.2	0.8	2.9	2.5
% finished main school	36.9	19.5	15.4	24.8	8.3	23.3
% finished secondary school	42.8	63.1	71.8	67.8	71.7	61.0
% other	4.3	3.7	2.8	3.7	1.3	3.5
<b>Females</b>						
% Illness/temporary absent	0.5	1.9	1.3	1.0	2.7	1.3
% too expensive	6.9	2.6	6.1	2.3	8.8	5.0
% don't want to study	4.9	0.7	1.0	1.4	0.0	1.9
% family reasons	8.5	6.9	2.2	1.0	1.4	5.2
% finished main school	11.2	20.3	8.0	7.1	14.6	13.2
% finished secondary school	65.6	67.2	78.9	84.3	66.9	71.0
% other	2.5	0.4	2.5	3.1	5.7	2.3

Source: Armenia ILCS 2004.

Although affordability is not mentioned frequently as a reason for not being enrolled in tertiary education, college tuition is expensive. The tuition for tertiary education is unaffordable for poor households with potential college students. Having a child enrolled in a college would require between 81 and 92 percent of the overall annual non-food expenditures of the households in the 3 bottom quintiles. Paying average college tuition represents a heavy burden even for the better off households: about 50 to 65 percent of their annual non-food expenditure (Figure 7.8).

**Figure 7.8:** Armenia: College tuition affordability across socio-economic groups 2004



Source: Armenia ILCS 2004.

**Note:** The average cost of tuition in each quintile is calculated and divided by the average income (and non-food expenditures) of those households in the quintile who have a potential user of tertiary education (a member between 16 and 29 years).

Moreover, upper secondary education costs per student are not insignificant either. As compulsory education in Armenia is free of charge, tuition for basic and secondary education is not an issue. However, non-tuition costs may constitute an economic burden for the poor and especially for households having students in upper secondary education. Data presented in Table 7.6 suggest that while basic and upper secondary education is easily affordable among better-off households, it constitutes a significant investment for households in the poorest quintiles.

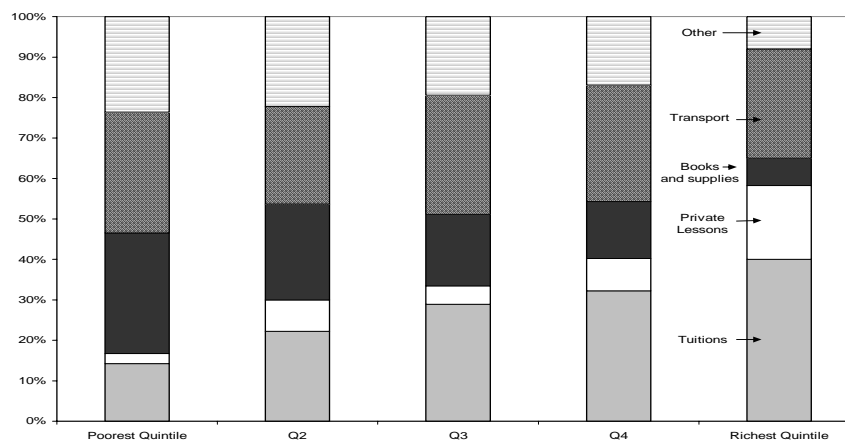
**Table 7.6:** Armenia: Basic and upper secondary education affordability, 2004

	Poorest quintile	Q2	Q3	Q4	Richest quintile
Cost per student as % of total per-capita income					
Basic	6.3	5.7	5.7	6.4	8.2
Upper secondary	13.1	13.1	14.7	15.3	36.4
Cost per student as % of total non-food per-capita expenditure					
Basic	21.7	18.2	15.2	13.2	11.0
Upper secondary	46.6	39.0	39.8	32.1	45.7
Tuition per student as % of total per-capita income					
Vocational	0.0	0.0	0.0	0.1	0.1
Upper secondary	1.1	1.4	2.4	2.8	5.8
Tuition per student as % of total per-capita non-food expenditure					
Vocational	0.1	0.1	0.0	0.1	0.2
Upper secondary	4.0	4.1	6.4	5.9	7.3

Source: Armenia ILCS 2004.

Note: In each consumption quintile, the average cost per student for each level of education is calculated and then divided by the average income (and non food expenditure) of those households in each of the respective quintiles having a potential user of tertiary education (a member between 16 and 29 years).

**Figure 7.9:** Armenia: Composition of total household expenditures on education by socio-economic groups in 2004

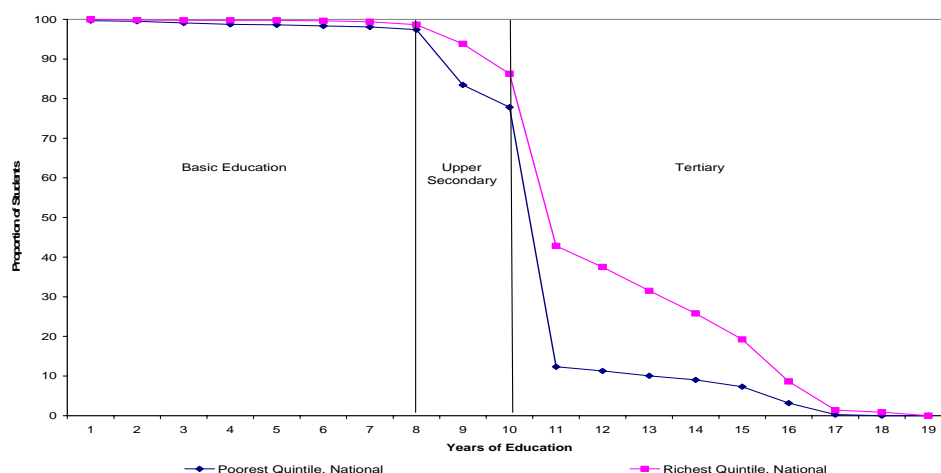


Source: Armenia ILCS 2004.

Note: This figure captures total expenditures per category as a share of total expenditures on education for all households in a quintile having a student (all levels of education are included).

As illustrated by Figure 7.9, transport and school supplies constitute more than half of all expenditures in education made by households in the poorest quintiles. Richer households invest more resources in tuition (mainly for college) and private lessons. Transportation to school represents about 30 percent of the overall education costs in each quintile.

**Figure 7.10: Armenia: Completed years of schooling**



Source: Armenia ILCS 2004.

Finally, there is a strong correlation between affordability and completion rates by level of education. Completion rates for upper-secondary education are significantly lower than for basic education. The decline is more marked among the poor. Declines in completion rates for tertiary education are huge, even among the households in the richest quintile, as college in Armenia represents a significant investment. However, the declines in completion rates for tertiary education are twice as large among individuals from the poorest households as compared to the individuals in the richest quintile (Figure 7.10).

### ***Students, teachers, schools and learning outcomes/student performance in basic education***

In 2003, a sample of Armenian children in the fourth and the eighth grades participated in the TIMMS—Trends in International Mathematics and Science Study. The students took a test in mathematics and science; also other information relevant for learning were collected. Hence, the TIMMS provides data on test outcomes; students (motivation to learn, self-confidence, computer use, and time spent doing homework); teachers (training and experience, and job satisfaction); and schools (physical condition, availability of resources for science and mathematics instruction and safety)<sup>8</sup>.

Overall, Armenian children did not perform poorly. Table 7.7 presents average TIMMS scores for a sample of European and FSU countries. Armenian students performed better than students from Macedonia and Moldova and similar to students from Bulgaria and Romania.

<sup>8</sup> Some caution should be exercised when interpreting the TIMMS results for the Armenia as a whole. The reason is that students included in the TIMMS may not be representative of the overall population. While, according to the 2004 ILSC, only 15 percent of all students in basic and upper secondary education come from households whose heads had a university degree, the equivalent proportion among the eighth graders included in the TIMMS is about 50 percent. Since having a head with tertiary education in Armenia is associated with a lower incidence of poverty, this difference indicates that students in the TIMMS probably come from the middle-upper consumption quintiles. Therefore, observed inequities in the quality of education between the poorest and the richest students presented below are likely to be underestimated.



**Table 7.7:** Average TIMMS scores for a sample of countries

	1995	1999	2003
Czech Republic	546	520	..
Estonia	..	..	531
Hungary	527	532	529
Latvia	488	505	508
Lithuania	472	482	502
Slovak	534	534	508
Slovenia	531	530	493
Bulgaria	527	511	476
Romania	474	472	475
Moldova	..	469	460
Armenia	..	..	478
Turkey	..	429	..
Macedonia	..	447	435
Russia	524	526	508
United States	492	502	504

Source: TIMMS 2003 data base.

The next table presents percentage of the students who did not reach the minimum score (400), as well as of those whose performance was outstanding (a score of 625 and over). Almost one fifth (18 percent) of the Armenian students who participated in the TIMMS failed to reach the minimum score; same as in the case of the students from Bulgaria. Armenian students performed better than their peers from Serbia, Moldova, Macedonia and Romania.

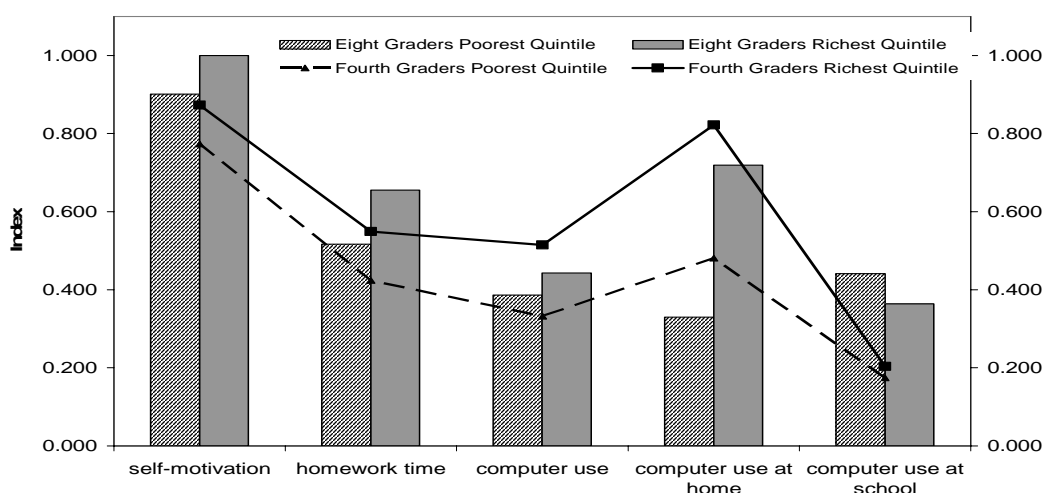
**Table 7.8:** TIMMS: Failure and outstanding performance rates (%)

	Above 625			Below 400		
	1995	1999	2003	1995	1999	2003
Armenia	..	..	2	..	..	18
Bulgaria	17	9	3	10	10	18
Estonia	..	..	9	..	..	3
Hungary	10	13	11	6	7	5
Latvia	4	6	5	13	9	8
Lithuania	2	3	5	19	15	10
Macedonia	..	2	1	..	30	34
Moldova	..	3	1	..	21	23
Romania	4	4	4	21	21	21
Russia	9	12	6	7	7	8
Serbia	..	..	4	..	..	20
Slovak Republic	11	11	8	4	4	10
Slovenia	4	3	3	10	10	10

Source: TIMMS data base.

Overall, the TIMMS data analysis indicates that children's test performance is strongly associated with their location and socio-economic conditions. Those from urban areas and those from better off households performed much better than their rural peers or colleagues coming from poorer households. On the other hand, teachers and schools appear not to influence the differences, as no striking differences across Armenia in teachers' qualification or the physical conditions of schools are observed.

**Figure 7.11:** Armenia: Self-motivation, homework time and use of computers



**Source:** Angel-Urdinola, Jain, and Prina (2006) using TIMMS 2003.

**Note:** For detailed explanation on how each of the indices was constructed see Angel-Urdinola, Jain, and Prina (2006).

**Students:** The TIMMS data for Armenia indicate that students in the richest quintile (both the fourth and the eighth graders) have higher indexes of self-motivation and claim to spend more time doing homework than children from the poorest quintile (Figure 7.11). However, differences are not large. Better-off students have twice as much access to computers at home than poor student do, but students from the poorest quintile (especially the eighth graders) claim to use computers at school slightly more than richer ones. The overall index of computer use (a weighted average of using a computer at home and at school) does not differ much between the richest and the poorest students and is low in general as only 4 out of every 10 students in Armenia use computer. Urban-rural differences are mild.

**Teachers and schools:** Looking at the teachers' qualification and their job satisfaction, as well as the schools' physical condition, the TIMMS data revealed the following:

- Generally speaking, the students who have participated in the TIMMS are taught by well qualified and certified teachers. The fourth-grade teachers in urban areas, especially in Yerevan, feature higher indices of qualification and certification than teachers in rural areas and small towns. The eighth-grade teachers in urban areas outside Yerevan appear better qualified than their peers in rural areas and small towns. However, the eighth grade teachers' qualifications and certification indices in Yerevan are lower than in other urban areas. Furthermore, teachers have extensive teaching experience (on average 16-20 years) and claim to be satisfied with their jobs (70 percent expressed "moderately high" satisfaction with their jobs). These results indicate good potential for high quality instructions<sup>9</sup>.
- School principals are generally more concerned with the lack of physical than the lack of human resources. The physical resource availability appears generally low and does not differ notably between urban and rural schools (although the schools in small towns feature better than the average). The human resource availability, although relatively

<sup>9</sup> According to Alam et al. (2005), lack of incentives such as low salaries and stagnated employment opportunities have led to rapid aging of the teaching force in the ECA (especially in the middle income CIS countries). The authors claim that while the aging of the teaching force is not necessarily a signal of worsening in teaching quality, the lack of funding (and re-training) in most countries may lead to a teaching force that provides services with out-of-date pedagogical tools and methods.

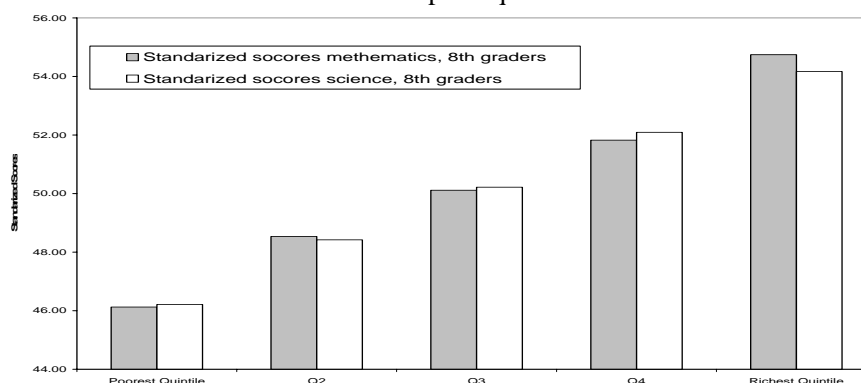
low, is higher relative to physical resources and especially in urban areas and among the fourth-grade schools.

- School facilities are still in poor conditions as one half of all schools lack proper heating, adequate lighting, and computers and internet access. This result holds for rural, urban and Yerevan schools alike and for both fourth-grade and eighth-grade schools.
- Generally, school principals assess the safety of their schools as high, although the level is lower in urban than rural areas, and particularly so in Yerevan. Furthermore, the general levels of safety in fourth-grade schools are higher than in eighth-grade schools.

To conclude, the TIMMS data indicate that basic education in Armenia has a qualified, certified and experienced teaching force. In contrast, the physical plant is in need of improvements, particularly regarding heating, adequate lighting and availability of computers, including Internet access.

**Learning outcomes:** The TIMMS data indicate that student performance is highly associated with socio-economic background and is much higher in urban than in rural areas. Learning performance, as approximated by standardized scores in science and mathematics, is higher among better-off students. In fact, as Figure 7.12 indicates, the students' test performance strongly increases with consumption growth.

**Figure 7.12:** Armenia: Students performance on TIMMS tests by consumption quintiles



Source: Angel-Urdinola, Jain, and Prina (2006) using TIMMS 2003.

#### **Access to out-of-school education instructions/programs**

2004 Integrated Living Conditions Survey indicates that access to private tutoring is an exclusive privilege of the rich. While in the top consumption quintile, one out of every five students in upper secondary education received private lessons, mainly to prepare for the university entrance exam, less than 2 percent of their peers in the poorest quintile had the opportunity to do so (Table 7.9). This is an issue of affordability--private tutoring in Armenia is expensive.

**Table 7.9:** Armenia: Access to private tutoring 2004

	Table 7.7: Annamalai: Access to private tutoring 2004					
	Poorest quintile		Middle quintile		Richest quintile	
	Student receives private lessons?					
	% yes	If yes, % to enter university	% yes	If yes, % to enter university	% yes	If yes, % to enter university
Girls	2.1%	100.0%	9.7%	55.3%	25.7%	80.4%
Boys	0.9%	100.0%	4.4%	0.0%	20.6%	70.1%

Source: Armenia ILCS 2004.

Given high drop-out rates, particularly at upper secondary and especially tertiary education levels, and taking into account very high unemployment rates among the young, training programs outside regular education stream may be an important vehicle for enabling the unemployed school drop outs to acquire some skills and thus improve their labor market performance. Such programs in Armenia are, however, very rare. A negligible fraction of individuals between 16 and 29 years of age that are not in college reported having access to out-of-school (training) programs in 2004. Those attending such programs mostly came from the top quintile. As with the private tutoring, this is an issue of affordability as out-of-school training programs are fee based.

## 7.5. Health and poverty

### *Health status indicators*

Armenia features good health outcomes. They are better than in most of the Former Soviet Union (FSU) countries and compare relatively well with those in developed nations (Table 7.10). Life expectancy at birth is high and mortality and standardized death rates are low. As discussed at the beginning of this Chapter, infant, under-five and maternal mortality rates have all fallen since 1990. Immunization rates are high. Many of Armenia's health status indicators are similar to those in Europe and clearly better than those in Georgia and Azerbaijan or in Central Asia. According to the WHO (2001) indicators, mortality indicators in Armenia are below the European average. Premature mortality (0-64 years) in Armenia fell steadily between 1994 and 2001, mainly due to the decline in male mortality. Smoking and circulatory system related diseases constitute the major causes of mortality in Armenia. Premature mortality occurs mainly as a consequence of diseases of the circulatory system (accounting for 58 percent of all cases in 2003), followed by malignant neoplasms (15 percent).

**Table 7.10: Armenia: Health status indicators in the international context (2003)**

	Armenia	Europe	NMS	CIS	CSEC
Life expectancy at birth, in years	73.1	74.1	74.3	66.9	68.9
Life expectancy at birth, in years, male	70.0	70.1	70.1	61.6	64.4
Life expectancy at birth, in years, female	75.9	78.1	78.4	72.6	73.6
Estimated life expectancy, (World Health Report)	68.0	73.7	74.4	65.3	67.9
Infant deaths per 1,000 live births	11.5	9.0	6.6	14.5	19.8
Maternal deaths per 100,000 live births	19.7	15.6	6.0	31.8	51.5
SDR, diseases of circulatory system, all ages per 100,000	714.9	479.4	452.7	821.4	741.5
SDR, ischemic heart disease, all ages per 100,000	387.3	222.7	176.1	433.8	362.3
SDR all causes, all ages, per 100,000	1083.3	962.6	931.3	1431.2	1311.2
SDR, diseases of the respiratory system, all ages per 100,000	63.4	55.5	42.7	70.1	63.1
SDR, selected smoking related causes, all ages per 100,000	653.2	243.7	370.7	716.4	577.0
Tuberculosis incidence per 100,000	47.9	42.4	26.3	87.3	69.0
Clinically diagnosed AIDS incidence per 100,000	0.3	1.1	0.4	0.7	0.6
Diabetes prevalence, in %	1.0	n.a.	4.9	1.4	1.6

**Source:** World Health Organization (WHO): Health for All (HFA) data base.

**Note:** *Europe:* 52 countries in the WHO European Region. *NMS:* New Member States—10 new member states of the European Union from May 1, 2004. *CIS:* 12 countries of the Commonwealth of Independent States; *CSEC:* 25 countries in the WHO European Region with higher levels of mortality (Albania, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Bulgaria, Estonia, Georgia, Hungary, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Poland, Republic of Moldova, Romania, Russian Federation, Serbia and Montenegro, Slovakia, Tajikistan, FYR Macedonia, Turkey, Turkmenistan, and Ukraine).

### *The health system and its utilization*

Armenia inherited an oversized and overstaffed health care system that is underutilized (Table 7.11). Official figures for 1991 show that there were 853 hospital beds and 370 physicians per 100,000 people. These numbers were above the average for the European Union, but below the average for the CIS. After 1990s, Armenia began to bring down excess capacity by cutting on the number of hospitals (especially in rural areas), hospital beds (mainly in urban areas), and physicians. In relative terms, between 1991 and 2003, the number of hospital beds decreased by 50 percent. In contrast, despite some changes throughout the period, the number of physicians per 100,000 people in 2003 was only slightly below the level in 1991.

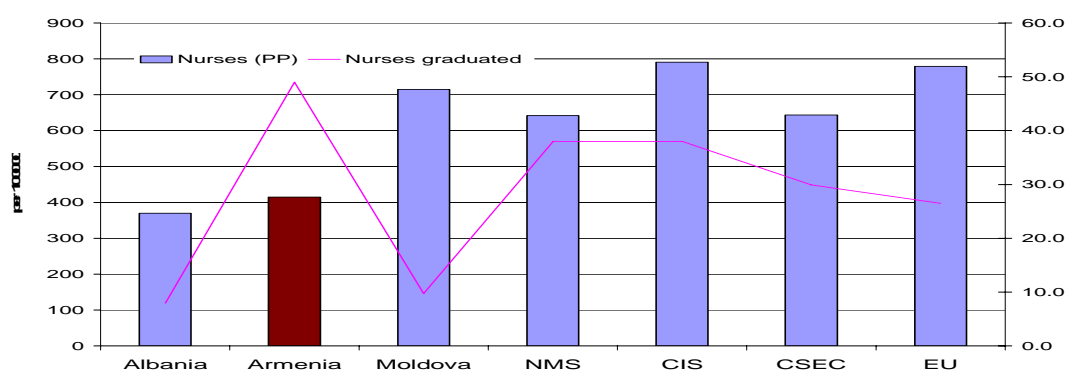
**Table 7.11:** Armenia: Health care system and its utilization 1992-2003

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
<b>Official estimates</b>												
Hospital beds per 100,000 people	837	821	777	764	713	675	666	620	547	425	435	442
Physicians per 100,000 people	360	335	312	304	340	344	343	332	323	303	358	365
Inpatient admissions per 100 people	9.6	8.2	7.6	7.5	7.5	6.6	6.2	5.8	4.9	5.0	6.1	6.9
Outpatient contacts per person per year	5.3	5.5	5.0	4.8	4.6	3.2	2.4	2.3	2.1	1.8	1.9	2.0

**Source:** Health for All (HFO) data base, WHO/Europe, 2005.

Health professionals in Armenia earn wages that are on average 13 to 22 percent lower than wages of other professionals. This result holds particularly in urban areas. Low wages fuel incidence of informal payment for health services and international migration of health professionals. The number of nurses graduating per 100,000 people in Armenia is much higher than in most CIS and FSU countries; it is also higher than the EU average. On the other hand, the number of nurses actually working per 100,000 people is low relative to other countries (Figure 7.13). Nurses are leaving Armenia, probably because of low demand and low returns to education as a nurse in Armenia.

**Figure 7.13:** Armenia: Nurses education and employment



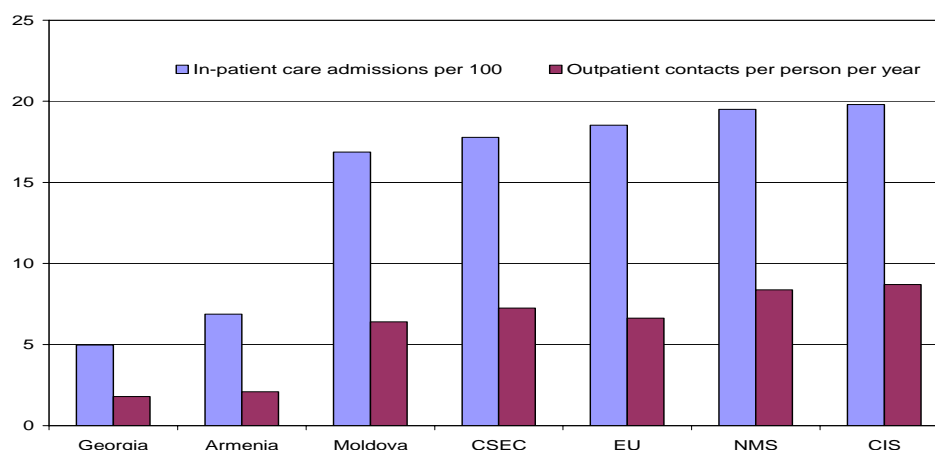
**Source:** World Health Organization (WHO) – Health for All (HFA) database 2004.

The findings of the 2004 ILCS confirm previous evidence that the health system in Armenia is underutilized<sup>10</sup>. Inpatient and outpatient utilization rates are much lower in Armenia as

<sup>10</sup> In Armenia, a package of basic health services (basic benefit package—BBP) is available to certain social groups defined by Law for a small co-payment. For those households that are benefiting from the family poverty cash assistance program with vulnerability score exceeding 38 the BBP is free of charge. The list of services is limited and reflects a small amount of public resources allocated to the health sector. Services outside the package are provided on a fee for service basis.

compared to other countries in the region. In a regional context, Armenia displays very low rates of utilization, especially at the inpatient level. While inpatient care admissions in the region oscillate between 15 and 20 per 100 people, this rate is less than 8 in Armenia. While the average number of outpatient visits in the region stands between 6 and 10 per person per year, it is less than 3 per person per year in Armenia (Figure 7.14).

**Figure 7.14:** Armenia: Health system utilization in international prospective



Source: WHO - HFA database, 2004.

According to the Armenia ILSC 2004 based estimates, there are great inequalities in health services utilization rates across socio-economic groups (Table 7.12). While the fraction of those who reported being sick did not vary much by economic region or consumption quintile, the treatment rates did. Only 45 percent of the sick in the poorest quintile were treated, as opposed to 95 percent in the top quintile. Informal treatment (healers and at home treatment) is quite relevant and constitutes about half of all the treatment provided to patients. Finally, less than 5 percent of all individuals (mainly from the richest quintiles) use any type of preventive health services.

**Table 7.12:** Armenia: Health services utilization in 2004 (%)

	All individuals		If sick	If sick & treated	
	Preventive care	Sick	Treated	Formal treatment (doctor/polyclinic)	Informal treatment (healer/at home treatment)
<b>Economic region</b>					
Yerevan	3.1	20.4	67.3	56.0	44.0
Urban	3.2	17.6	68.6	54.4	45.6
Rural	5.4	19.2	74.0	43.6	56.4
<b>Socio economic group</b>					
Poorest quintile	2.0	18.7	45.5	51.6	48.4
Quintile 2	3.4	18.8	64.0	45.6	54.4
Quintile 3	4.1	18.1	71.0	46.3	53.7
Quintile 4	5.1	19.2	83.1	49.6	50.4
Richest quintile	6.5	20.8	94.2	56.6	43.4

Source: Armenia ILCS 2004.

Most of those who reported receiving treatment informally did so at home (about 90 percent). Few were treated by a physician and even fewer by a traditional healer. At home treatment implies that the sick either self-medicate or are treated by a family member or a neighbor. At home treatment rates did not vary significantly across quintiles as this form of treatment is

commonly used in the cases of not so serious health conditions irrespective of the patients' socio-economic background (Table 7.13).

**Table 7.13:** Armenia: Informal health treatment by type in 2004 (%)

	Traditional healer	Physician	At home
Yerevan	1.0	5.3	93.7
Urban	1.9	10.6	87.5
Rural	3.6	12.9	83.4
Poorest quintile	1.4	5.6	92.9
Quintile 2	2.0	9.7	88.2
Quintile 3	4.4	10.0	85.6
Quintile 4	2.2	9.7	88.1
Richest quintile	1.9	13.3	84.8
<b>Total</b>	<b>2.2</b>	<b>10.2</b>	<b>87.7</b>

Source: Armenia ILCS 2004.

Differences in utilization rates between poor and non-poor users who are severely ill are substantial (Table 7.14). Although the fraction of very ill individuals does not vary much across socio-economic groups, access to health services does. Only 40 percent of very ill individuals in the poorest quintile get any treatment, as opposed to 80 percent in the richest quintile. Similarly, only one quarter of the poorest very ill people visit the doctor, vs. 60 percent of those in the top quintile. Hospitalization rates are generally low: less than 7 percent of individuals who were severely ill reported to have been hospitalized. Across economic regions, the rate is particularly low among rural population. The rich use inpatient services more frequently than the poor, but even among them the hospitalization rate was very low<sup>11</sup>.

**Table 7.14:** Armenia: Utilization of health care services in cases of serious illness 2004

	If ill % very ill	% visiting the doctor	If very ill % hospitalized	% getting any treatment
Yerevan	40.0	41.8	7.3	63.2
Urban	42.6	38.3	5.9	56.8
Rural	24.1	31.7	4.1	64.1
Poorest quintile	34.9	25.5	5.2	41.7
Quintile 2	31.6	26.3	1.3	56.8
Quintile 3	29.9	35.9	4.9	61.7
Quintile 4	35.2	42.8	6.9	67.9
Richest quintile	39.3	58.4	10.8	80.1

Source: Armenia ILCS 2004.

*Family poverty benefit and utilization of health services:* For households receiving cash family poverty benefit, which is a major poverty alleviation program in Armenia benefiting almost 130,000 families in 2004 (see Chapter on Social Protection), the basic benefit package is free of any charge if the families vulnerability score is higher than 38. Results presented in Table 7.15 indicate that although the benefit does not appear to influence the decision to seek treatment, it is associated with higher hospitalization and treatment rates. Nevertheless, once controlling for other individual and household characteristics, regression analysis suggests that those differences in utilization rates are not statistically significant (Table A7.X in Statistical Annex).

<sup>11</sup> This result should be treated with caution, as the ILCS may underestimate the hospitalization rate. The ILSC asks the households to report the hospitalization episodes in the period of four weeks prior to the survey. Preferably, the reporting period would be one year.

**Table 7.15: Armenia: Family poverty benefit and utilization of health services 2004**

	Visited doctor		Hospitalized		Any treatment	
	No PFB	PFB	No PFB	PFB	No PFB	PFB
Yerevan	42.19	39.34	7.68	5.2	63.6	60.65
Urban	39.08	36.39	6.39	4.48	55.6	59.98
Rural	34.42	25.48	5.49	0.75	65.55	60.68
Poor	26.14	26.73	3.37	4.27	46.37	53.04
Non-poor	45.74	39.21	8.38	2.26	69.29	67.67
The poorest quintile	25.5	25.52	4.44	6.69	38.1	49.52

Source: ILCS 2004.

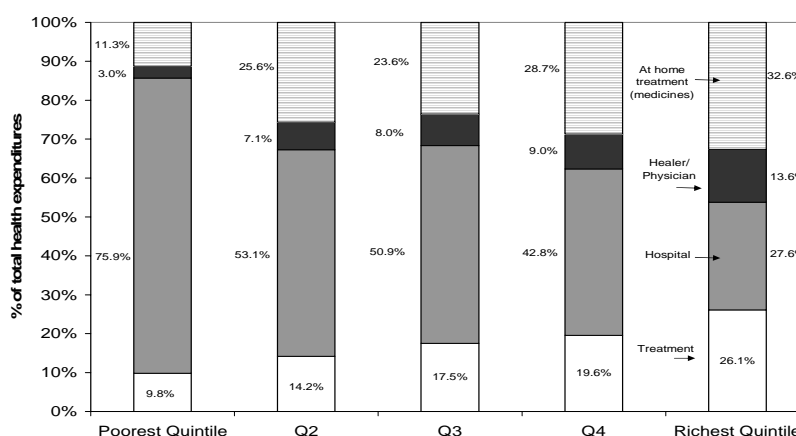
Note: PFB stands for the family poverty benefit. The PFB recipients are entitled to the BBP in health with no co-payment. The rates are presented for the health services users (defined as households with at least one member who received treatment).

### Health services affordability

According to the ILCS, hospitalization and at-home treatment (most likely medicines) constitute the two main expenditure items on health services among the households whose sick members (at least one of them) received some health treatment.

As illustrated by Figure 7.15, hospitalization accounts for three quarters of all health expenditures among the users in the poorest quintile. It drops across quintiles, constituting only 28 percent in the richest quintile.

**Figure 7.15: Armenia: Composition of household expenditures on health services\* by socio-economic groups in 2004**



Source: Angel-Urdinola, Jain, and Prina (2006) using ILCS 2004.

Note: Only "user" households included.

### Box 7.3: Determinants of health services utilization

*In order to better understand determinants of the health services utilization in Armenia, a regression analysis was conducted (for regression results, see Table A7.6 in Statistical Annex). It was found that socio-economic conditions, level of education, gender, and economic region have significant influence on the probability of individuals receiving health treatment when sick.*

- Individual characteristics: Male patients are 7 percent less likely to get formal health treatment if sick, than female patients. Severely ill patients are 13 to 20 percent more likely to visit the doctor and about 30 percent more likely to receive any treatment. More educated individuals (those with at least upper secondary education) are about 20 percent more likely to visit a doctor (or to get any treatment) when sick, than individuals with at most basic education.*



- *Socio-economic conditions: Sick individuals from poor households are 15 to 16 percent less likely than individuals from non-poor households to receive treatment, and 10 percent less likely to be hospitalized when severely ill.*
- *Remittances and geographical location: individuals residing in Yerevan are about 17 percent less likely to receive any treatment than individuals living in other urban areas (although the likelihood of visiting the doctor is not statistically different across economic regions). Controlling for other observables, the estimates suggest that living in households receiving income from remittances from abroad does not impact health services utilization among sick individuals.*

Average spending on health constitutes a heavy burden, especially on the poorer users. Therefore, high cost of health services is likely to be the main cause of low utilization rates among the poor. Health expenditures account on average for slightly less than half of total non-food consumption among households using health services (this proportion is roughly 70 percent for households in the poorest quintile and 47 percent for those in the top quintile). This suggests that having a sick family member in Armenia receiving any treatment is expected to be quite expensive, especially for the poorest households. Expenditure on hospitals represents on average 52 percent of total non-food expenditure among users in the poorest quintiles. This proportion is much lower for the middle class households and only 13 percent for users in the richest quintile (Table 7.16).

**Table 7.16:** Armenia: Relative cost of health services among households having at least one health care user\*, 2004

	Poorest quintile	Q2	Q3	Q4	Richest quintile
	<b><i>Total health expenditure</i></b>				
As % of total income	19.9	13.3	17.8	22.1	32.4
As % of total non-food consumption	69.1	44.2	47.7	47.9	47.2
	<b><i>Expenditure on hospitals</i></b>				
As % of total income	15.1	7.1	9.08	9.4	8.9
As % of total non-food consumption	52.4	23.5	24.29	20.5	13.0

**Source:** Armenia ILCS 2004.

**Note:** \* Those households who have at least one member who claimed to have received medical services 4 weeks prior to being interviewed.

For an average household having a potential hospital user—defined as an individual who has reported having used health care services in the 4-week period prior to the ILCS interview, and thus potentially being a user in the future—hospitalization is not affordable. As presented in Table 7.17, the average expenditure on hospitalization reported to actually be made by the households in the poorest two quintiles, would account for about (45 to 73) 146 to 250 percent of the average total (income) non-food expenditure of the potential users. To pay for the average cost of an episode of formal health treatment (visiting a doctor or a polyclinic) would eat up between 60 to 70 percent of total non-food expenditure amongst the potential users across all quintiles. Even the average cost of informal health care (such as at-home treatment) would constitute a significant burden on potential users.

**Table 7.17:** Armenia: Affordability of health services for households having health users, 2004

	Poorest quintile	Q2	Q3	Q4	Richest quintile
Average cost per patient as % of total per-capita expenditure of households having a user*					
Treatment	62.4	57.0	63.0	70.1	59.3
Hospital	250.6	146.0	67.7	53.8	32.6
Healer	35.9	30.2	26.8	25.8	24.8
Physician	68.7	60.7	59.8	55.0	71.0
At home treatment	46.4	53.7	50.3	57.1	53.1
Post natal care	33.2	20.2	26.0	12.6	8.3
Average cost per patient as % of total non-food income of households having a user*					
Treatment	18.1	17.7	23.6	33.8	43.8
Hospital	72.6	45.3	25.4	26.0	24.1
Healer	10.4	9.4	10.0	12.4	18.3
Physician	19.9	18.8	22.4	26.5	52.5
At home treatment	13.4	16.7	18.8	27.5	39.2
Post natal care	9.6	6.3	9.7	6.1	6.1

Source: Armenia ILCS 2004.

Note: The average cost per patient of actual users for each type of treatment is calculated and divided by the average income (and non-food expenditure) of the households having a potential user of health services (a member reporting to have received some treatment 4 weeks prior to the interview).

Informal fees for health services are large, especially for hospitalization. Official health professionals' pay in Armenia is low, which creates an incentive for charging informal fees. Informal payments constitute about a 10 percent premium for all medical treatment and a 22.5 percent premium for hospitalizations (a very high cost for users). As presented in Table 7.18, informal payment for medical treatment is particularly large in Yerevan and among users from the top quintile. With regards to hospitalization, the relative cost of informal health services fees is the highest among the poor users. Informal payments for hospitalization are larger in Yerevan and in middle-income *marzes* (Aragatsotn, Armavir, and Syunik) as compared to those made in other regions.

**Table 7.18:** Armenia: Informal payment for the health services 2004

	Informal payment as a % of total medical treatment	Informal payment as a % of total hospital bill
<b>Socio-economic group</b>		
Poorest quintile	6.3	39.7
Quintile 2	7.3	23.4
Quintile 4	12.2	25.5
Richest quintile	10.7	26.2
<b>Socio-economic region</b>		
Yerevan	15.5	38.2
Urban	6.5	18.6
Rural	7.7	13.9
<b>Total</b>	9.3	22.5

Source: Armenia ILCS 2004.

*Family poverty benefit recipients and informal payment for the health care services:* ILCS based estimates suggest that recipients of the family poverty benefit, who at the same time are entitled to a free of charge basic benefit package in health care, spend less on informal payments than poor users who do not receive assistance. Table 7.19 indicates that informal payment for medical treatment (hospitalization) is lower by about half (one third) among those users from households benefiting from the PFB. Poor users benefit highly from this tendency: while users

in the poorest quintile receiving social assistance do not pay informal fees at all (both for treatment and hospitalization), users from the same socio-economic group not getting assistance pay very significant fees (8 percent premiums for treatments and up to 43 percent for hospitalization).

**Table 7.19:** Armenia: Family poverty benefit and informal payment for medical services

	Treatment		Hospitalizations	
	Informal payment as % of total		Informal payment as % of total	
	Do not get PFB	Get PFB	Do not get BBP	Get PFB
Total	10.80	4.60	26.60	8.40
<b>Quintile</b>				
Poorest quintile	8.20	0.00	43.30	0.00
Quintile 2	8.30	4.00	27.70	2.40
Quintile 4	12.90	9.70	30.00	4.70
Richest quintile	11.30	0.40	26.90	0.00
<b>Socio-economic group</b>				
Non-poor	11.10	6.30	25.80	9.90
Poor	9.20	0.00	30.90	1.80

Source: ILCS 2004.

These findings indicate the importance of the free of charge access for the poor to the health services basic benefit package. Therefore, given that it is linked to the family poverty benefit, it is important not only to target the benefit well, but also to increase its coverage of the poor and very poor households significantly (see Chapter on Social Protection).

## 7.6. Conclusions

Armenia has performed well in health and education: it has sustained good indicators in both sectors, with relatively low levels of expenditures as compared to other countries in the ECA Region. In 2004, life expectancy at birth was 70.3 years for men (higher than in most ECA countries) and 76.4 years for women. Both indicators exceeded their respective 1990 levels. Mortality and standardized death rates are low and infant, under-five and maternal mortality rates have all fallen since 1990. Immunization rates are high.

Almost the entire population is literate. Access to basic education is universal and equally so for boys and girls; completion rates are very high.

Reflecting Government's efforts to make public expenditures more pro-poor, the shares of education and health in total public spending have increased. The sectoral composition of expenditures has changed as well, with more emphasis given to basic education and primary health services.

At 1.3 and 2.9 percent of GDP respectively (2004), public spending on health and education is still low and the population bears a significant portion of health and education financing. In 2004, private spending on education was 2.3 and on health 4.6 percent of GDP. Given that most of the private spending on health is informal, the Government faces a huge challenge to formalize health sector financing. Public spending on hospitals and in particular on tertiary care facilities favors the better off, as non-poor benefit from it more than the poor.

In contrast to basic education, enrollment in upper secondary education is much lower—about 69 percent nationally, and differences between poor and better off households are notable. The net enrollment rate in tertiary education is 25 percent and the gap between rich and poor is large: 38 vs. 5 percent. Relatively low returns to education, high opportunity cost and, most of all,

affordability are the main reasons explaining why students from poor households drop out of school after basic, and in particular after upper secondary education.

Differences in access to *good quality education* between richer and poorer households and between urban and rural areas are significant. Richer households have more access to better education, training, and complementary school programs than poor households do. Students from better off households are more motivated to learn and have better access to learning tools at home (such as computers). All these factors are ultimately reflected in better school performance of richer students. Performance indicators for both students and teachers are generally better in urban than in rural areas. Lack of proper infrastructure and resources at the school level constitute a more relevant constraint within the compulsory education system than lack of human resources.

Armenian education is facing the challenge of a rapidly declining school age population. Due partly to out-migration and partly to a low total fertility rate, Armenia's population is estimated to continue to decrease. According to the UN population estimates, it will have shrunk by 24 percent by 2050 with the decline being particularly high among the basic education cohort (47 percent).

Although health indicators in Armenia are better relative to other FSU/CIS countries, health care utilization is generally low, particularly in rural areas and among the poor. Low overall public spending on health and affordability constraints—health services in Armenia are mainly paid out-of pocket—are the main reasons why the poor either do not seek health care or use informal health services.

Recipients of the family poverty benefit, who at the same time are entitled to a free of charge basic benefit package in health care, spend less on informal payments than poor users who do not receive assistance. This indicates the importance of free of charge access for the poor to the health services basic benefit package. Therefore, given that it is linked to the family poverty benefit, it is important not only to target the benefit well, but also to increase its coverage of the poor and very poor households significantly.

## **CHAPTER VIII: SOCIAL TRANSFERS IN ARMENIA AND THEIR IMPACT ON POVERTY**

*Social transfers in Armenia, although limited relative to GDP, contribute significantly to reduction in poverty and inequality. Looking across entire population, if social transfers were eliminated and households were not able to compensate for their loss, poverty would deteriorate substantially: overall poverty incidence would increase by 10.2 percentage points (to 44.8 percent), and poverty would become much deeper and more severe. This impact is even more pronounced among the households that receive the transfers. Pensions as the largest transfer component play particularly important role in poverty reduction. Nonetheless, social assistance, and in particular the family poverty benefit as its largest component, play very important role as well. Although the coverage of the family poverty benefit is limited: it covers only one fourth of the poor, it is targeted well as 63 percent of all the recipients receiving 76 percent of resources come from the two bottom consumption quintiles. While this result is good, there is ample room for improvements: about 20 percent of recipients consuming 17 percent of resources come from the top 40 percent of the population. In order to decrease this waste of resources the Government will need to review the targeting formula. Better targeting would enable the increase in the coverage of the poor within the same family poverty benefit budget envelope. However, a significant increase in coverage would require an increase in resources as well.*

## 8.1. The methodology

The poverty impact analysis of social transfers in Armenia is conducted using the 2004 Integrated Living Conditions Survey data set. The analysis focuses on poverty implications of two major social transfer programs in Armenia: pensions and social assistance, with social assistance comprising family poverty benefit and all other non-pension social transfers. Except for the family poverty benefit, the coverage of other non-pension benefits is small; therefore, the number of persons reporting them in the ILCS is low, often not large enough to draw statistically significant conclusions.

The impact of social transfers on poverty is analyzed comparing observed (“post-social transfers”) poverty indicators with those that would be obtained if social transfers were eliminated (“pre-social transfers”). “Pre-social transfers” consumption is calculated by reducing observed consumption by the amount of social transfers (pensions or social assistance or both), and assuming that the total amount of social transfers was converted into consumption (situation most likely in developing countries such as Armenia). Thus, the difference between the poverty incidence measured using the “pre-social transfers” consumption and the poverty incidence that correspond to the “post-social transfers” consumption provides an estimate of the impact of social transfers on poverty. This methodology is especially important for the targeting of social assistance. The population that should be targeted by social assistance is “pre-social assistance” poor, as after having received social assistance some poor households might move out of poverty, thus affecting the validity of using the “post-social transfers” population as targeted population. In the case of pensions, the impact of pensions on poverty incidence is calculated comparing the “pre-social transfers” poverty incidence with the poverty incidence after pensions are paid, i.e., the “post pensions” (but “pre-social assistance”) poverty incidence<sup>12</sup>.

## 8.2. What is the impact of social transfers on poverty in Armenia?

Armenia does not spend much on social transfers. In 2004, total spending on social transfers amounted to AMD 84.4 billion, or 4.45 percent of GDP. Pensions, the largest social transfer program in Armenia, including labor, military and social pensions, comprised 63.1 billion drams or 3.3 percent of GDP<sup>13</sup>. The second largest social transfer program in Armenia— family poverty benefit program—comprised 16.1 billion dram (0.85 percent of GDP).

Social transfers made up 11.3 percent of total average monthly income of the Armenian households in 2004. For the lowest quintile this share was 16.7 percent; while among the households in the top quintile it was only 7.4 percent. Looking across economic regions, social transfers were the most important for urban households outside Yerevan, and the least important for rural households.

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<sup>12</sup> The survey is not an exact picture of the Armenian population, and “pre-social transfers” and “post-social transfers” poverty measurements are calculated with margins of errors. The impact of the transfers on poverty is statistically significant if the confidence intervals around the average “pre-social transfers” and “post-social transfers” poverty rates do not overlap.

<sup>13</sup> Labor pensions (benefits provided under mandatory social insurance) that were received by 489,300 beneficiaries amounted to 50.9 billion drams (2.6 percent of GDP). This is very low in comparison to other countries in the Region.

**Table 8.1:** Armenia: Poverty reduction impact of social transfers, 2004

	Poor			Very poor		
	Incidence %	Poverty gap (P1/P0); %	Poverty severity	Incidence %	Poverty gap (P1/P0); %	Poverty severity
<b>Post-transfers</b> (post pensions and social assistance)	<b>34.6</b>	<b>21.3</b>	<b>6.9</b>	<b>6.4</b>	<b>17.1</b>	<b>4.7</b>
<b>Pre-transfers</b> (pre pensions and social assistance)	<b>44.8</b>	<b>29.8</b>	<b>13.7</b>	<b>15.4</b>	<b>28.2</b>	<b>15.9</b>
<b>Pre-pension</b> (pre pensions; post social assistance)	42.7	27.2	11.5	12.3	25.8	13.9
<b>Pre social assistance</b> (pre PFB and other social assistance; post pension)	37.2	23.9	8.7	8.7	21.3	7.8
<b>Pre-PFB</b> (pre PFB; post pensions and other social assistance)	36.7	23.3	8.3	8.2	20.3	7.0

**Source:** ILCS 2004

**Note:** This table with standard errors is presented in Statistical Annex as Table A8.1. Poverty gap (P1/P0) indicates the average shortfall of consumption of poor (very poor) population relative to the complete (food) line.

According to the ILCS, the family poverty benefit was the source of income for 14.3 percent of households; pension benefits were received by 48.6 percent of households, unemployment benefit by 0.7 percent, and child care allowance by 1.2 percent of households. Additional 4.4 percent of households reported receiving other types of social assistance including monetary compensation for benefits in kind they used to receive.

Empirical evidence from 2004 ILCS suggests that, social transfers, although relatively small in GDP terms, are a very important policy instrument for poverty reduction in Armenia. If social transfers were eliminated and households were not able to compensate for the loss of income with resources from other sources, poverty measurement results would deteriorate substantially (Table 8.1). The overall poverty incidence would increase from 34.6 to 44.8 percent; the poor would become poorer as the shortfall of their average consumption relative to the complete poverty line—the depth of poverty—would increase from 21.3 to 29.8 percent, and the poverty would become much more severe: the severity of poverty index measuring inequality in consumption distribution among the poor would double<sup>14</sup>. These adverse effects would even be pronounced in the case of very poor people (extreme poverty).

Pensions as much larger transfer play more important role in poverty reduction than social assistance. Nonetheless, social assistance, and in particular the family poverty benefit as its largest component, play a very important role as well. For instance, if only the family poverty benefit is eliminated, the overall poverty incidence would increase by 2.1 percentage points, while extreme poverty incidence would increase by 2 percentage points (15 percent); the depth and severity of poverty would increase by 9.3 percent and 20.3 percent, while the depth and severity of extreme poverty would increase by 18.7 percent and 48.9 percent, respectively.

Table 8.2 presents pre- and post-transfer poverty indicators **only** for those households who receive social transfers. The elimination of social transfers would worsen the living conditions of those families significantly; this impact is understandably higher than when looking at the poverty impact of social transfers across the entire population (previous table). If pensions were

<sup>14</sup> *Depth of poverty* measures the gap between the observed consumption levels of poor households and the poverty line. *Severity of poverty* measures the degree of inequality in distribution below the poverty line, giving greater weight to households at the bottom of the consumption distribution.

eliminated and the households receiving them were not able to compensate for their loss from other income sources, the overall poverty incidence among the recipients would increase significantly (48 percent); while the incidence of very poor among this particular cohort would increase about 3 times. The poverty incidence among the households who receive the PFB is higher than the nationwide poverty incidence even after they have received the PFB (47.1 percent vs. the 34.6 percent post social transfers poverty incidence level). The termination of the PFB would increase the overall poverty incidence among this socio-economic group from 47.1 percent to 61.4 percent, while the incidence of very poor people would double.

**Table 8.2:** Armenia: Poverty reduction impact of social transfers on households reporting receiving pensions and/or social assistance, 2004

	Very poor (%)	Poor (%)	Poverty gap (P1/P0)	Poverty severity
<b><i>Households who receive pensions</i></b>				
Post-pensions	7.1	36.6	21.5	7.0
Pre-pension	19.1	53.2	31.1	14.6
<b><i>Households who receive social assistance</i></b>				
Post-social assistance	10.0	45.4	23.0	7.9
Pre-social assistance	21.9	58.8	30.9	13.7
<b><i>Households who receive PFB</i></b>				
Post –PFB	9.9	47.1	22.7	7.6
Pre-PFB	22.0	61.4	30.5	13.1

Source: ILCS 2004.

Note: This table with standard errors is presented in Statistical Annex as Table A8.2. Poverty gap (P1/P0) indicates the average shortfall of the consumption of the poor (very poor) population relative to the complete (food) line.

The elimination of social transfers would significantly increase the gap and severity of poverty. Hence, the social transfers have a significant poverty alleviation effect on households who receive them: the transfers might not lift all of the recipient households out of poverty, but they significantly reduce the poverty gap and severity of poverty among them.

### 8.3. Effectiveness and efficiency of social transfers

*Who receives the social transfers?* To estimate coverage of the population by social transfers using the ILCS data, the population is divided into the “pre-social transfers” poor (as well as very poor) population and non-poor population. The higher the coverage of the poor and very poor and the lower the coverage of the non-poor, the more effective are the social transfers in reaching the needy population. In the case of the family poverty benefit, 25.1 percent of the “pre-PFB” poor received this social transfer in 2004, while the coverage of the very poor was higher—40.6 percent (Table 8.3). At the same time, only 9.3 percent of the “pre-PFB” non-poor were PFB beneficiaries. It should be noted that, pensions, as a contributory social insurance benefit, are not supposed to be paid only to the poor population as is the case with the family poverty benefit, but to all eligible individuals, irrespective of their socio-economic status. However, as the 2004 ILSC estimates indicate, pensions play a very important role in poverty reduction and alleviation in Armenia.

**Table 8.3:** Armenia: Who received the social transfers in 2004? (in %)

	Pre-social assistance	Pre-poverty family benefit	Pre-pensions
<i>Percent of “pre-transfer” population covered by social assistance and pensions</i>			
Poor*	31.6	25.1	62.4
Very poor*	51.1	40.6	79.9
Not poor	12.8	9.3	39.7

Source: ILCS 2004

Note: \*Coverage of the poor and very poor is significantly higher than the coverage of the non-poor

*What proportion of resources is allocated to the poor?* The ILCS estimates indicate that 57.8 percent of the pension payments is received by the “pre-social transfers” poor, while 60.3 percent of the family poverty benefit resources goes to the “pre-social assistance” poor (Table 8.4). This implies that the “leakage” of funds allocated to the family poverty benefit to the non-poor was around 39 percent of the total amount. In other words, 1.7 drams of the family poverty benefit resources have to be spent, on average, for each dram that reaches the “pre-PFB” poor (spending ratio).

**Table 8.4:** Armenia: Efficiency and effectiveness of social transfers, 2004

	Efficiency: percentage of social transfer payments distributed to the poor	Spending ratio (100/column 2)	Effectiveness: percentage of poverty gap eliminated by social transfer
Pensions	57.8	1.7	19.8
Social assistance	59.7	1.7	10.9
Family poverty benefit	60.3	1.7	8.6

Source: ILCS 2004

The extent to which the social transfers reduce the poverty gap represents the *effectiveness of social transfers*. Pensions are more effective than social assistance (or PFB), simply because of their higher levels. Hence, while pensions eliminated 19.8 percent of the poverty gap in 2004, the social assistance and the PFB contributed 10.9 and 8.6 percent, respectively.

*Social transfers and inequality:* The ILCS estimates indicate that social transfers contribute to the reduction of inequality in the distribution of consumption. The pre-social transfers Gini coefficient for consumption distribution is reduced by 10.4 percent when pensions are added to consumption and by a further 3.8 percent when social assistance benefits are added (Table 8.5).

**Table 8.5:** Armenia: The impact of social transfers on consumption inequality (Gini coefficients for consumption aggregate, 2004)

Pre-social transfers (pre-pensions; pre-social assistance)	0.298
Pre-social assistance (post-pensions; pre- social assistance)	0.270
Post-social transfers (post social assistance and pensions)	0.260

Source: ILCS 2004.

#### 8.4. Poverty family benefit

Table 8.6 presents administrative data on poverty family benefit. The number of households receiving the benefit has declined by 37 percent. The coverage of the targeted population is low: even if all the recipient households were coming from the poor cohort, i.e. the targeting was perfect and there was no leakage to non-poor population; the benefit would cover only about one half of poor population (in 2004, about one million Armenians were poor). ILCS estimates, as discussed above (Table 8.3), indicate that the PFB covers 25 percent of the poor (40 percent of very poor population). Resources allocated to the benefit declined dramatically till 2002. The



situation has improved since then; however even the nominal allocation in 2004 remains well below the allocation in 1999.

**Table 8.6:** Armenia: Poverty family benefit 1999-2004 (administrative statistics)

	1999	2000	2001	2002	2003	2004
<b>Beneficiaries</b>						
Regular monthly benefit (as of January 1)						
Number of families	211555	199456	174800	149603	141218	134224
Number of individuals	657071	667897	598616	532014	505560	476495
One-time benefit						
Number of families	66980	11797	15917	10140	14889	7782
Number of individuals	289711	44935	54139	30544	39456	17680
<b>Average benefit (AMD per month)</b>						
Regular benefit per household	7193	7196	7712	6554	7099	8254
In % of the average wage	29.7	26.4	26.2	20.0	17.0	15.8
Regular benefit per family member	2313	2148	2255	1841	1983	2520
In % of the poverty line	13.1	n/a	n/a	n/a	n/a	13.0
In % of the extreme poverty line	20.6	n/a	n/a	n/a	n/a	20.2
In real terms (constant 1999 prices)	2313	2165	2205	1780	1831	2175
One-time benefit (drams per household)	3500	3500	3500	4000	4000	4500
<b>Resources</b>						
Total (nominal in bill drams)	21.08	17.72	16.85	14.85	13.23	16.09
In real terms (1999=100)	21.08	17.86	16.48	11.08	12.22	14.60
In % of GDP	2.14	1.72	1.43	1.09	0.89	0.85

Source: RA Ministry of Social Security.

During 2004, according to the ILCS based estimates, 29.5 percent of all households in Armenia applied for the poverty family benefit. About 60 percent of the applicants (or 18 percent of all households in Armenia) were found eligible and awarded the benefit; the remaining 40 percent (or 11.5 percent of all households in Armenia) were declined the benefit. Among the households who did not apply for the PFB, 61 percent did so because they were not sure they would qualify, while 18 percent believed they were well-off and did not need it.

**Table 8.7:** Armenia: Distribution of PFB and overall social assistance recipients and funds across the “pre-PFB” consumption quintiles in 2004 (in %)

Consumption Quintiles	Q1	Q2	Q3	Q4	Q5
<b>Family poverty benefit</b>					
Recipients	40.0	22.6	18.0	11.2	8.2
Resources	44.8	21.9	16.5	9.6	7.2
<b>Social assistance (including PFB)</b>					
Recipients (%)	45.0	23.7	15.2	9.0	7.1
Resources (%)	51.0	21.3	13.2	8.2	6.3

Source : ILCS 2004.

*What population groups are more likely to be included in/excluded from the PFB program?*  
According to the ILCS estimates, households with 4 and more children and rural landless households have substantially higher poverty risk than other households; yet the former are more likely to be the PFB recipients than the latter (53.8 percent vs. 34.9 percent). Households with no members of working age, which, according to the 2004 ILCS estimates are less likely to be poor than the rest of the population, have coverage that is almost two times higher than their “own” poverty incidence (Table 8.8).

**Table 8.8:** Armenia: Poverty incidence and pre-PFB coverage of specific households types, 2004 (%)

Household type:	Extreme poverty incidence	Poverty incidence	Pre-PFB poor coverage
With 4 or more children	21.5	60.6	53.8
No working-age member	3.6	22.4	44.1
No labor force active member	9.1	37.3	31.7
No declared labor income	10.3	39.4	41.9
Rural landless	10.9	53.6	34.9
No migrant member	9.0	37.7	31.7

Source: 2004 ILCS

*Determinants of poverty family benefits:* In order to better understand the factors that have a decisive influence on the likelihood of a particular household receiving the PFB, parameters of a statistical model were estimated (for regression results see Table A8.3 in Statistical Annex). The examined factors, which may be closely associated with the incidence of the PFB are the following: characteristics of the household (age composition, education and gender of the household head, size and location of the household); economic variables of the household (labor market status of the household members; consumption per adult equivalent); housing conditions and other household characteristics (house/apartment, temporary lodging or other, and car and land ownership)<sup>15</sup>. These factors are used as explanatory variables in a probit model, where incidence of the PFB represents the dependent variable.

The children and elderly appear to be more likely to receive the PFB relative to other age categories. The larger the share of children of all age groups in the household, the higher the probability that the household receives the PFB relative to the reference category (share of adults between 45 and 60), keeping the household size constant. The share of elderly has also significant positive effect on receiving the PFB. Among other household characteristics, household size appears to have positive impact on the household's probability of receiving the PFB—larger households are more likely to be the PFB beneficiaries (by 2 percentage points). In addition, female-headed households are more likely to receive the PFB than male-headed households, being similar in other characteristics.

Highly educated household heads (technical education), have, on average, lower probability of receiving the PFB relative to those with only primary education.

Labor market status of household members is tightly associated with the incidence of the PFB. The larger the share of the unemployed members in the household is, the higher the likelihood of the household receiving the PFB relative to the reference category (fraction of salaried workers). The same conclusion holds for inactive household members. Furthermore, consumption per equivalent adult has significant negative effect on the PFB incidence. An increase in the consumption per adult equivalent of 1 percentage point decreases the probability of the PFB incidence by 3 percentage points.

Other household characteristics which appear to be important in explaining the incidence of PFB are: type of household lodgings, ownership of the car and land ownership. Households residing in temporary lodgings have higher likelihood of receiving the PFB relative to those living in houses or apartments. By contrast, car ownership reduces probability of receiving the PFB. The larger the share of the land holding owned by the household is, the lower the probability of the household receiving the PFB. Households with migrant members were more likely to receive

<sup>15</sup> Most of these factors are included in the proxy-means formula that is applied for the eligibility testing of the applicant households.

PFB than those with no migrant members, while households with migrant members who have returned from abroad or other parts of Armenia during the last 12 months prior the ILCS were less likely to receive PFB.

Finally, location of the household has significant role in explaining the PFB incidence. The location effects on the probability of households receiving the PFB remain relatively large after controlling for all other household characteristics included in the model. The probability of households receiving the PFB is the lowest in Yerevan and the highest in Lori and Shirak *marzes*.

## 8.5. Conclusions

Armenia does not spend much on social transfers: 4.45 percent of GDP in 2004, including all types of pensions, poverty family benefit, birth grant, maternity and sick leave payments, child care allowance and unemployment benefits. Yet, transfers are important source of income for Armenian households, particularly for those from the bottom of the distribution.

Empirical evidence from 2004 ILCS suggests that social transfers, although relatively small in GDP terms, are very important for poverty reduction in Armenia: for each percentage point of GDP spent on social transfers, poverty incidence declines by 2.3 points. Looking across entire population, if social transfers were eliminated and households were not able to compensate for their loss, poverty would deteriorate substantially: overall poverty incidence would increase by 10.2 percentage points (to 44.8 percent), and poverty would become much deeper and more severe.

Pensions as much larger transfer play more important role in poverty reduction than social assistance. Nonetheless, social assistance, and in particular the poverty family benefit as its largest component, play very important role as well.

The poverty impact of social transfers is even more pronounced among households that receive them. If pensions were eliminated and their beneficiaries were not able to compensate for their loss, the poverty incidence among this social group would increase by one half, while the incidence of extreme poverty would increase 3 times. The termination of the PFB would increase overall poverty incidence among the PFB recipients from 47.1 percent to 61.4 percent; their extreme poverty rate would double.

The coverage of the poverty family benefit is limited: it covers 40 percent of very poor and 25 percent of poor population. However, it is targeted well as 63 percent of all the recipients come from the two bottom “pre-PFB” consumption quintiles, receiving 67 percent of the PFB budget. While this result is good, there is ample room for improvements: about 20 percent of recipients consuming 17 percent of resources are coming from the two top pre-PFB consumption quintiles. Reducing the error of inclusion, i.e. decreasing the number of ineligible recipients would allow the Government to increase the coverage of the poor within the same PFB resource envelope. To that end, the targeting formula should be reviewed based on the 2004 ILCS. However, more substantial increase in coverage would require more resources.

## CHAPTER IX: LIVING CONDITIONS

*Increased incomes of the population, on the one hand, and Government efforts, particularly with regards to housing for the families residing in temporary dwelling and safe water supply, on the other, resulted in improved living conditions in 2004 in comparison to 1998/99. Less people resided in temporary dwelling; households had more living space and some built new or refurbished their old homes. The poor were more likely to reside in substandard dwelling than the non-poor. Most of the households had access to safe water and almost equally so for poor and non-poor population. The access was almost universal in urban areas (96.5 percent) and significantly improved in rural (74.0 percent). Service hours improved as well, particularly among the poor. Still, further improvement is needed, as 40 percent of the Armenian households had water only 1-5 hours a day in 2004. While access to a centralized sewerage system improved and it does not vary much across consumption quintiles, urban-rural differences are huge: only 18 percent of rural households were covered by a centralized sewerage system. Solid waste collection and removal leaves a lot to be desired as quite a few of the Armenian households expressed their dissatisfaction with the garbage collection services. The percentage of households heating their homes during winter declined from 99.4 in 1998/99 to 96.2 in 2004, with most of the decline occurring in urban areas and among the very poor. On a positive note, households reported using less wood and more environmentally clean sources of energy for heating (electricity and natural gas). Armenian households are well supplied with durable goods, although most of them were purchased a long time ago. As of lately, the most frequently purchased durables are mobile telephones, personal computers, satellite dishes and TV sets. However, the number of households owning a PC or a mobile phone is still very small, particularly in rural areas.*

### 9.1. Dwelling

Most of the households in Armenia (91 percent) own their homes. Apartments are more common in urban areas: 69 percent of urban population resides in multi-apartment buildings; while individual houses dominate in rural areas: 87 percent of rural population reports residing in a detached house (Table 9.1). The situation has not changed much in comparison to 1998/99. In 2004, about 115,000 people were still residing in temporary dwelling (shelters for the 1988 earthquake victims and hostels/collective centers for internally displaced persons and refugees); however their number decreased by 19 percent since 1998/99. One half of the hostels dwellers were in Yerevan, while one half of the population in shelters was in other than Yerevan urban areas.

No significant differences in poverty level are observed by type of dwelling, except for those in shelters and collective centers as 56 percent of them were poor.

#### **Box 9.1: Housing conditions in Armenia**

*Housing conditions of the Armenian population worsened significantly since late 1980s: the earthquake in 1988 and armed conflict with Azerbaijan in the early 1990s destroyed most of the housing stock in the affected areas. Local residents and internally displaced persons, as well as refugees from Azerbaijan were placed in temporary shelters, collective centers or crowded the dwellings of the people who hosted them. Most of the housing stock has deteriorated enormously because of years of neglect and lack of maintenance.*

*With improved economic performance and more resources available to citizens and the government, the housing has been undergoing gradual rehabilitation and many new houses have been built. The Government focus, with support from the USAID, has been on housing in*

*the earthquake affected areas. In 2004, according to the official statistics, 293,163 square meters of housing were rehabilitated/refurbished/newly built of which 17,329 square meters in towns and rural areas affected by the earthquake.*

**Table 9.1:** Armenia: Dwelling by location, poverty status and consumption quintiles in 2004 (%)

Table 3.1. Armenia: Dwelling by location, poverty status and consumption quintiles in 2004 (%)						
Total		Type of dwelling				
		House	Apartment	Hostel	Temporary shelter	Other
<b>By place of residence</b>						
Urban	100	26.0	68.6	2.2	2.8	0.4
Rural	100	86.8	7.2	0.2	5.3	0.5
Yerevan	100	17.8	79.3	2.3	0.2	0.4
Total	100	46.5	47.9	1.5	3.7	0.4
<b>By level of poverty</b>						
Not poor	100	47.2	48.3	1.2	3.1	0.3
Poor	100	46.7	46.3	1.6	4.8	0.7
Very poor	100	37.5	50.2	5.7	6.2	0.4
<b>By consumption-ranked quintiles</b>						
Poorest	100	41.6	50.0	3.0	4.8	0.6
II quintile	100	50.0	43.4	1.5	4.6	0.6
III quintile	100	51.3	43.9	1.3	3.1	0.4
IV quintile	100	47.9	46.4	1.5	3.9	0.3
Top quintile	100	42.5	54.1	0.8	2.5	0.1

Source: ILCS 2004

Crowding is a problem in urban areas, particularly in Yerevan, and especially in one and two room apartments. It is much more common among the poor: in 2004, there were 3.12 occupants per room in the poorest quintile, and 1.95 in the top consumption quintile. These indicators improved since 1998/99 when they were estimated at 3.48 and 2.15 respectively. Armenian households had more living space available in 2004 than in 1998/99, with households in rural areas fairing much better than those in urban areas (Table 9.2). However, urban housing was much better equipped as almost 60 percent of households reported having a kitchen, a bath, in-house water supply and a sewage system (operating). In contrast, only 8 percent of rural households reported living in a house with all these amenities.

**Table 9.2:** Armenia: Living area in 1998/99 and 2004 (average in square meters)

	Per household		Per household member	
	1998/99	2004	1998/99	2004
Armenia	52.4	56.2	12.2	14.4
Urban areas	42.4	47.1	10.5	12.8
Rural areas	67.9	74.2	14.6	17.1

Source: ILCS 1998/99 and 2004.

Households participating in the 2004 ILSC were asked to self rate their dwelling conditions. Almost one forth (23 percent) rated their dwelling conditions as bad, and 9 percent as very bad. Over one half (56 percent) gave their house a satisfactory mark, and 12 percent considered their dwelling conditions good. Almost no one rated the dwelling as very good. Table 9.3 presents self-assessment of dwelling conditions by economic regions, economic status and consumption quintiles. Urban households were more satisfied with their dwelling than rural. The poor were much less satisfied than the non poor. Among the lowest consumption quintile, 60 percent self-assessed their dwelling as bad or very bad as opposed to 20 percent among the top quintile.

**Table 9.3:** Armenia: Self-assessment of dwelling conditions, 2004 (%)

Housing conditions		Very good	Good	Satisfactory	Bad	Very bad
<b>By place of residence</b>						
Urban	100	1.0	12.2	58.3	20.4	8.2
Rural	100	1.0	9.0	51.1	28.5	10.4
Yerevan	100	1.0	13.5	59.2	19.5	6.8
Total	100	1.0	11.1	55.9	23.1	8.9
<b>By level of poverty</b>						
Not poor	100	1.2	13.2	58.7	20.8	6.1
Poor	100	0.5	6.9	50.7	28.6	13.3
Very poor	100	0.0	3.2	42.1	28.5	26.2
<b>By consumption-ranked quintiles</b>						
Poorest	100	0.2	4.7	47.8	29.3	18.0
II quintile	100	0.7	8.0	53.3	26.5	11.5
III quintile	100	1.1	10.7	58.3	22.5	7.4
IV quintile	100	0.8	12.5	56.3	23.9	6.5
Top quintile	100	1.8	17.0	61.0	16.1	4.1

Source: ILCS 2004.

Note: The poor in this table are defined as the total number of the poor minus the very poor cohort.

Poor and particularly very poor households are more likely to reside in substandard dwelling. While on average, 31 percent of the Armenian households were not satisfied with the size of their dwelling, this percentage was 39 percent among the poor and 46.7 percent among the very poor. Inadequate in house lighting was a reason for discontent among 20 percent of the households (25 percent among the poor and 36.4 percent among the very poor households). Relatively high percentage of households (41.3 percent) cited mold as a problem. This percentage was higher among the poor and in particular the very poor households (48 and 60 percent respectively). Leaking roof was reported by 25 percent of the poor and 37 percent of the very poor households.

In 2004, about 7 percent or 54,000 households reported to have renovated their dwelling in the year previous to the survey; most of them (over 80 percent) were better off households.

## 9.2. Access to safe drinking water, sewerage and waste material disposal

*Access to safe drinking water:* A vast majority of households, both in 1998/99 and 2004 ILCS reported having access to a centralized water supply system: 96.5 percent of households in urban and 74.0 percent in rural areas in 2004 (respectively 96.2 percent and 64.7 percent in 1998/99). Three quarters of households had in-house water supply; 21 percent had water tap in the yard, and 4.4 were using a tap on the street. Rural households had much better access to centralized water supply in 2004 than in 1998/99. Consequently, significantly smaller fraction of rural households reported having to carry water from springs/wells or having it delivered to their settlements (Table 9.4).

### *Box 9.2: Access to safe water*

*Improved access to safe drinking water is among the Armenia's PRSP priorities. The PRSP envisages achieving 24/7 water supply services from centralized systems to 98 percent of urban and 70 percent of rural population by 2015. The planned actions include better maintenance, renovation and expansion of water supply system, its modernization and improved reporting within the system. Increased access to better quality water supply services has been recorded during the recent years, especially in the rural areas. Numerous projects supported by KfW, IFAD, USDA and the World Bank have been implemented. Armenia Social Investment Fund supported by the World Bank has recently reconstructed/built water supply services in 40 villages.*

**Table 9.4:** Armenia: Households access to safe drinking water in 1998/99 and 2004 (%)

Main source of water	Armenia		Urban		Rural	
	1998/99	2004	1998/99	2004	1998/99	2004
Centralized water supply system	83.7	88.9	96.2	96.5	64.7	74.0
Less than one hour	16.3	1.6	4.1	1.6	35.0	1.6
1-5 hours	43.2	39.5	56.4	40.9	23.1	36.0
6-12 hours	15.8	21.5	19.6	22.5	9.9	19.0
12-23 hours	4.1	4.5	4.9	5.2	2.8	2.8
24 hours	20.6	32.9	15.0	29.8	29.2	40.6
Spring water, wells	5.9	3.8	1.2	0.9	13.0	9.4
Own system of water supply	2.0	2.6	0.4	0.2	4.4	7.3
Delivered water	8.3	4.5	2.1	2.3	17.8	9.0
Other sources	0.1	0.2	0.1	0.1	0.1	0.3

Source: ILCS 1998/99 and 2004.

Access to a centralized water supply system is not, however, a guarantee of 24/7 water supply. On average, in 2004, the water was available for about 12 hours per day. Only 33 percent of households reported having water 24 hours a day every day; this is however a significant improvement over 1998/99 when only 21 percent of households had 24/7 supply of water. Still, as much as 40 percent of Armenian households had water 1-5 hours a day in 2004 (Table 9.5).

**Table 9.5:** Armenia: Access to safe water supply by consumption quintiles 1998/9 and 2004 (%)

	Poorest		II quintile		III quintile		IV quintile		Richest	
	98/99	2004	98/99	2004	98/99	2004	98/99	2004	98/99	2004
Centralized water supply	86.6	89.6	84.6	89.1	84.7	89.6	81.7	89.1	81.8	87.6
Less than one hour	13.4	2.1	15.4	1.8	15.2	1.9	18.2	1.4	18.8	1.1
1-5 hours	50.7	44.5	47.0	39.8	43.4	40.3	40.6	38.4	36.4	36.1
6-12 hours	16.0	19.8	15.2	20.7	15.4	22.5	14.5	21.8	17.6	22.3
12-23 hours	4.3	4.0	4.9	4.3	4.8	4.5	3.6	4.1	2.9	5.4
24 hours	15.6	29.6	17.5	33.4	21.2	30.8	23.1	34.3	24.3	35.1
Spring water, wells	4.4	5.2	6.8	4.4	5.5	4.2	6.4	3.0	5.9	2.5
Own water supply system	0.9	0.6	0.7	1.0	2.3	1.8	2.4	3.4	3.3	5.1
Delivered water	8.1	4.5	7.8	5.2	7.4	4.1	9.5	4.4	8.8	4.5
Other sources	0.0	0.1	0.0	0.3	0.0	0.3	0.0	0.1	0.3	0.3

Source: ILCS 1998/99 and 2004

No significant differences across consumption quintiles are observed in access to a centralized water supply system. Moreover, improvements in service hours are more notable among the poor segments of the population. For instance, a fraction of the poorest quintile having water supply 24/7 almost doubled between 1998/99 and 2004 and was not tremendously different from that in the top quintile: 29.6 and 35.1 respectively in 2004 (Table 9.5).

Overall, 55 percent of households were satisfied with the quality of water supply services, while 44 percent said that they were completely dissatisfied. Poor households were even more critical as 59 percent of them expressed their complete dissatisfaction. On the other hand, the assessment of water quality is rather positive (Table 9.6).

**Table 9.6:** Armenia: Water supply services—quality of drinking water in 2004 (%)

	Good	Satisfactory	Bad
Pure, clean water	41.1	43.4	15.7
Smell	40.9	43.7	15.4
Color	41.1	41.8	17.1
Taste	42.2	43.1	14.7

Source: ILCS 2004.

*Access to sewerage system:* More households had access to a centralized sewerage system in 2004 than in 1998/99 (61.6 and 57.9 percent respectively). However, the improvement was limited to Yerevan only; in other urban and in rural areas the access to a centralized sewerage system declined (Table 9.7).

**Table 9.7:** Armenia: Access to sewerage system in 1998/99 and 2004

	Yerevan		Other urban		Rural		Total	
	98/99	2004	98/99	2004	98/99	2004	98/99	2004
Centralized sewerage system	90.6	93.4	81.0	79.0	15.4	12.8	57.9	61.6
Centralized sewerage system is available but it is not operational	3.3	0.1	5.5	2.2	2.0	0.8	3.5	1.0
Have no sewerage system	6.1	6.5	13.5	18.8	82.6	86.4	38.6	37.4

Source: ILCS 1998/99 and 2004.

Urban-rural differences are huge. The Yerevan residents had almost universal access to a sewerage system. Other urban areas followed, with 80 percent of the households covered. In contrast, only 18 percent of rural households were covered by a centralized sewerage system. This is an issue, as an adequate sewerage system is very important for good sanitation conditions.

**Table 9.8:** Armenia: Access to a centralized sewerage system in 2004 by consumption quintiles (% of households)

Availability of the sewerage system	Consumption-ranked Quintiles				
	Poorest	II quintile	III quintile	IV quintile	Top
Centralized sewerage system (operational)	64,3	57,0	57,9	59,9	67,3
Centralized sewerage system (non-operational)	1,2	0,8	1,2	1,1	0,9
No centralized sewerage system	34.5	42.2	40.9	39.0	31.8

Source: ILCS 2004.

As indicated by Table 9.8, access to a centralized sewerage system does not vary much across the consumption quintiles.

**Table 9.9:** Armenia: Solid waste removal in 1998/99 and 2004

	In Yerevan		In other urban settlements		In rural areas		Total	
	98/99	2004	98/99	2004	98/99	2004	98/99	2004
Removed through an organized garbage collection system	98.7	99.3	93.3	90.5	53.9	46.0	79.4	78.5
Burned	0.2	0.5	2.5	6.1	25.1	29.3	10.7	12.0
Buried	0.2	0.0	2.4	1.3	17.3	17.1	7.6	6.2
Other	0.9	0.2	1.8	2.1	3.8	7.6	2.3	3.3

Source: ILCS 1998/99 and 2004.



*Solid waste removal and disposal:* Urban areas and in particular the capital city of Yerevan are much better served by an organized garbage collection and removal system than rural, where households rely more on burning/burying solid waste (Table 9.9). Armenian households are quite dissatisfied with the garbage collection services, as over one half of them expressed their dissatisfaction in the 2004 ILCS. Only 40.7 percent of the households said that they were “somewhat satisfied” with the garbage collection and removal.

### 9.3. Heating

Most of the households, both in urban and rural settlements reported having their dwellings heated. However, the percentage declined from 99.4 in 1998/99 to 96.2 in 2004. Most of the decline occurred in urban areas (Table 9.10). Among the households that did not have any heating in their homes, 20 percent were households of single pensioners, 24 percent had 3 and more children and 53 percent were headed by a female.

Central heating was available to only 3.5 percent of households; this indicator also declined in comparison to 1998/99 and is probably marking the final demise of the old Soviet era heating system. Households with no central heating relied on the following fuel to heat their homes: wood (43 percent), electricity (29 percent) and natural gas (16 percent). This structure is different than in 1998/99 when 61 percent of households reported using wood, 18 percent electricity and only 2.3 percent natural gas. This is a significant positive change, which reflects the Government’s efforts to move towards more clean sources of energy for heating.

**Table 9.10: Armenia: Heating in 1998/99 and 2004 (%)**

	Armenia		Urban		Rural	
	1998/99	2004	1998/99	2004	1998/99	2004
Households						
Total	100	100	100	100	100	100
Not heated	0.6	3.8	1.0	5.5	0.0	0.5
Heated	99.4	96.2	99.0	94.5	100.0	99.5
- central heating	10.0	3.5	16.2	4.9	0.6	0.8
- own heating system	2.9	1.0	3.3	1.0	2.2	1.2
- other sources (electricity, wood, etc.)	86.5	91.7	79.5	88.6	97.2	97.5

Source: ILCS 1998/99 and 2004.

Looking across economic regions, electricity was the most significant source of energy used for heating in Yerevan; it was much less important in other urban areas and insignificant in rural areas. In contrast, wood was a dominating source of heating both in rural and other urban areas. The role of natural gas increased in all regions and in particular in other urban areas (Table 9.11).

**Table 9.11: Armenia: The composition of fuels used for heating in 1998/99 and 2004\* (%)**

	Yerevan		Other urban		Rural areas		Armenia	
	98/99	2004	98/99	2004	98/99	2004	98/99	2004
Oil, diesel oil	7.8	1.2	5.3	0.1	0.7	0.0	4.2	0.5
Electricity	44.2	65.9	15.0	12.8	1.2	1.0	17.7	28.7
Gas	0.2	11.0	3.7	24.6	2.6	12.5	2.3	15.9
Coal	0.2	0.1	0.2	0.1	0.1	0.1	0.2	0.1
Wood	40.5	18.7	69.3	56.3	69.2	57.3	61.3	42.8
Other	7.2	3.1	6.6	6.1	26.3	29.1	14.3	12.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: ILCS 1998/99 and 2004.

Note: \*Refers to households that reported having their houses heated using “other” sources of energy, i.e. not having access to a centralized heating system or their own heating system.

While there were households in all consumption quintiles that reported not having their homes heated during winter, the percentage of such households was the highest among the poorest quintile (Table 9.12).

**Table 9.12:** Armenia: households heating by consumption quintiles (%)

	Poorest		Q2		Q3		Q4		Top	
	98/99	2004	98/99	2004	98/99	2004	98/99	2004	98/99	2004
<b>Not heated</b>	1,6	5,6	0,7	4,4	0,4	3,2	0,4	4,2	0	2,4
<b>Heated</b>	98,4	94,4	99,3	95,6	99,6	96,8	99,6	95,8	100,0	97,6
- central heating	14,0	4,1	10,6	2,7	11,7	3,0	7,2	4,0	7,5	3,4
- own heating system	1,9	0,8	3,8	0,5	1,8	0,8	3,9	1,0	3,0	2,0
- other source	82,5	89,5	84,9	92,4	86,1	93,0	88,5	90,8	89,5	92,2
Average spending on heating during winter (000 AMD)	30,3	36,7	36,0	42,6	38,6	44,3	41,8	45,9	50,8	50,8

Source: ILCS 1998/99 and 2004.

#### 9.4. Availability of durable goods

Armenian households are well supplied with durable goods (Table 9.13), although in most of the cases those goods were purchased a long time ago. As of lately, the most frequently purchased durables are mobile telephones, personal computers, satellite dishes and TV sets. The fraction of households owning a mobile telephone increased four times in two years only (2002-2004); in the case of personal computers that increase was three-fold. However, the number of households owning a PC or a mobile phone is still very small, particularly in rural areas.

**Table 9.13:** Armenia: Availability of durable goods in households 2002\* and 2004 (per 100 households)

	Armenia		Urban		Rural	
	2002*	2004	2002	2004	2002	2004
TV set	91	93	94	93	88	92
Refrigerator	85	82	87	85	81	78
Washing machine	76	70	80	72	71	66
Vacuum cleaner	44	33	50	40	34	22
Sewing machine	70	51	70	50	69	52
Satellite dish	1.5	3.9	1.7	3.4	1.1	4.9
Mobile phone	1.3	5.4	1.8	7.3	0.6	1.6
Video recorder	20	23	24	26	15	16
Video camera	1.7	1.4	2.3	1.9	0.8	0.3
Camera	25	21	30	26	16	12
Music center	20	15	26	19	11	9
Computer	1.2	3.9	1.6	5.5	0.6	1.0

Source: ILCS 2002 and 2004.

Note: \*Data on availability of durables are available only since the 2002 ILCS.

#### 9.5. Conclusions

Increased incomes of the population, on the one hand, and Government efforts, particularly with regards to housing for the families residing in temporary dwelling and safe water supply, on the other, resulted in improved living conditions in 2004 in comparison to 1998/99.

*Housing:* The number of people residing in temporary dwelling—shelters for the 1988 earthquake victims and hostels/collective centers for internally displaced persons and refugees—

decreased by 19 percent, to about 115,000 people. This segment of the Armenian population is among the poorest of all, as 56 percent of them were poor in 2004. Armenian households had more living space in 2004 than in 1998/99, and some households reported construction of new or refurbishment of their old homes. About two thirds of households were satisfied with their dwelling. The poor were much less satisfied than the non-poor as they were more likely to reside in substandard dwelling.

*Access to safe water:* Most of households in Armenia have access to a centralized water supply system: 96.5 percent among urban and 74 percent among rural households. No significant differences are observed across socio-economic groups. The improvement was particularly strong in rural areas where significantly smaller fraction of households reported having to carry water from springs/wells or having it delivered to their settlements. Service hours improved as well, particularly among the poor. Still, as much as 40 percent of the Armenian households had water only 1-5 hours a day in 2004.

*Access to sewerage system:* More households had access to a centralized sewerage system in 2004 than in 1998/99 (61.6 and 57.9 percent respectively). However, the improvement was limited to Yerevan only; in other urban and in rural areas the access to a centralized sewerage system declined. Urban-rural differences are huge: Yerevan had almost universal access to a sewerage system; in contrast only 18 percent of rural households were covered by a centralized sewerage system. Access to a centralized sewerage system does not vary much across the consumption quintiles.

*Solid waste removal and disposal:* Urban areas and in particular the capital city of Yerevan are much better served by an organized garbage collection and removal system than rural, where households rely a lot on burning/burying solid waste. In general, Armenian households were quite dissatisfied with the garbage collection services.

*Heating:* Most of the households, both in urban and rural settlements reported having their dwellings heated. However, the percentage declined from 99.4 in 1998/99 to 96.2 in 2004, with most of the decline occurring in urban areas and among the very poor. Among the households that did not have any heating in their homes, 20 percent were households of single pensioners, 24 percent had 3 and more children and 53 percent were headed by a female. In 2004, households used less wood and more electricity and natural gas for heating. This is a significant positive change, which reflects the Government's efforts to move towards more clean sources of energy for heating.

*Availability of durable goods:* Armenian households are well supplied with durable goods, although in most of the cases those goods were purchased a long time ago. As of lately, the most frequently purchased durables are mobile telephones, personal computers, satellite dishes and TV sets. However, the number of households owning a PC or a mobile phone is still very small, particularly in rural areas.

*PART 3: ARMENIA: SUBJECTIVE  
POVERTY 2004*

## Chapter X: Subjective Poverty and Living Conditions Assessment

*Poverty can be considered as both an objective and subjective situation. Poverty is viewed as objective if it is measured by quantitatively measurable indicators of welfare. Poverty is viewed as subjective if it is measured according to the personal judgment of individuals regarding their own welfare.*

*Poverty estimates based on subjective perceptions are significantly lower than poverty estimates obtained using consumption per adult equivalent as an objective welfare measure. Only 3.3 percent Armenians self-assessed themselves as very poor (vs. 6.4 percent rate based on consumption). Similarly, 20.3 percent thought that they were poor, in contrast to 34.6 percent poverty incidence rate based on consumption). However, basic needs provision is still a priority concern for many Armenians. Furthermore, the population appears quite anomic regarding what to do to overcome their current situation; only a few reported that they might take action to try to change their current conditions. Armenians trust the Army and the Church the most, with the news media ranking fairly high. The Government was trusted by 60 percent of the population. The quality of utilities, transportation, communication and others services leaves a lot to be desired. The electricity supply was the only service that got high customer satisfaction marks. Public transportation came in a distant second, followed by sanitation, water supply and telephone services. Consumers were the least satisfied with garbage collection, water supply and health services.*

### 10.1. Perception of living standards

In the 2004 ILCS, members of the surveyed households age 16 and over were asked to answer a series of questions designed to give insights into their perception of their own welfare.

Asked about what concerned them the most, the following picture emerged: for 41 percent of the population, the primary concern was to satisfy basic non-food needs; for 25 percent it was to provide for basic food needs; for 15 percent, problem number one was housing; 7 percent put difficulties to solve health problems as the most important concern; and for 6 percent, it was the inability to ensure good education for their children.

The self-assessment of living standards gave the following results:

- 39 percent of households assessed their living standards as average;
- 37 percent thought their living standards were below average;
- **17 percent considered themselves poor;**
- **3 percent considered themselves extremely poor;**
- 0.1 percent considered themselves rich; and
- 3.2 percent assessed their living standards above average.

A matrix of objective and subjective poverty estimates was built to show concurrence of the results. It is presented in Table 10.1, where the population is ranked by consumption per adult equivalent and self-assessment of living conditions.

**Table 10.1:** Armenia: Subjective and objective poverty by consumption deciles (in % of each decile)

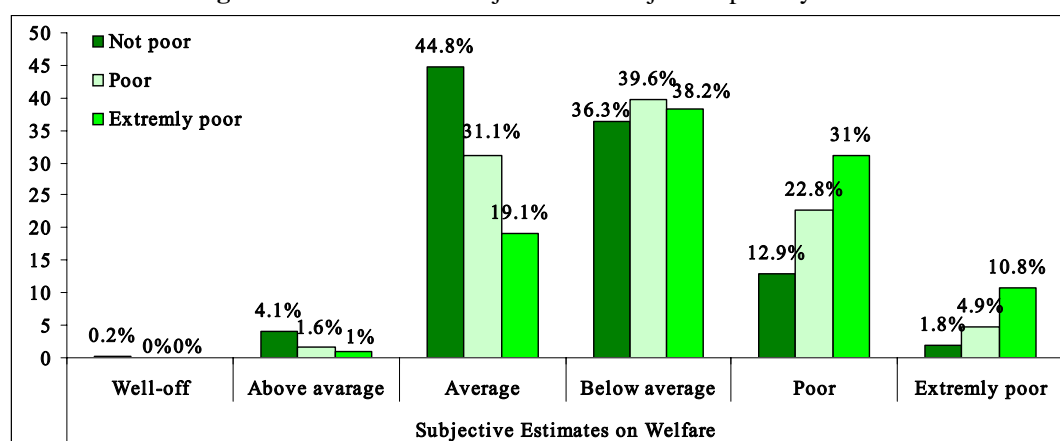
Consumption-ranked deciles	Self-assessment of living standards					
	Very poor	Poor	Below average	Average	Above average	Rich
<b>Armenia total</b>	<b>3.3</b>	<b>17.0</b>	<b>37.4</b>	<b>39.0</b>	<b>3.2</b>	<b>0.1</b>
First/bottom	11.9	29.7	35.9	21.3	1.2	0.0
Second	5.2	24.6	40.2	29.3	0.7	0.0
Third	3.0	28.3	38.9	29.3	0.5	0.0
Fourth	3.7	17.3	42.4	34.9	1.7	0.0
Fifth	2.2	17.0	37.8	40.9	2.1	0.0
Sixth	1.9	13.4	36.7	44.0	3.6	0.4
Seventh	2.0	15.3	42.0	37.6	2.8	0.3
Eighth	1.7	12.2	36.5	46.9	2.7	0.0
Ninth	0.6	8.2	35.8	49.3	6.1	0.0
Tenth/top	1.5	6.6	28.6	53.7	9.3	0.3

Source: ILCS 2004.

Note: Consumption is measured per adult equivalent.

Although the results are broadly consistent, the subjective poverty incidence is much lower than the objective one. Only 3.3 percent self-assessed themselves as very poor, as opposed to 6.4 percent when measured in terms of consumption per adult equivalent. Similarly, 17 percent thought they were poor, vs. the 28.2 percent estimate based on consumption per adult equivalent. Therefore, in 2004, the overall poverty incidence based on self-assessment was 20.3 percent; while the consumption based estimate was 34.6 percent. Interestingly, very few people thought they were above average and almost no one would assess themselves as “rich”.

Figure 10.1 groups the surveyed households by their subjective poverty estimates and the level of poverty measured by consumption per adult equivalent. For instance, 1.8 percent of the non-poor households by consumption per adult equivalent self-assessed themselves as extremely poor; 4.9 of those ranked as consumption poor thought they were extremely poor; and 10.8 percent of the extremely poor by consumption self-assessed themselves as extremely poor. The extremely poor by consumption perceived their socioeconomic situation in the following way: extremely poor, 10.8 percent; poor, 31 percent; below average, 38.2 percent; average, 19.1 percent; and above average, 1 percent.

**Figure 10.1:** Armenia: Subjective and objective poverty in 2004

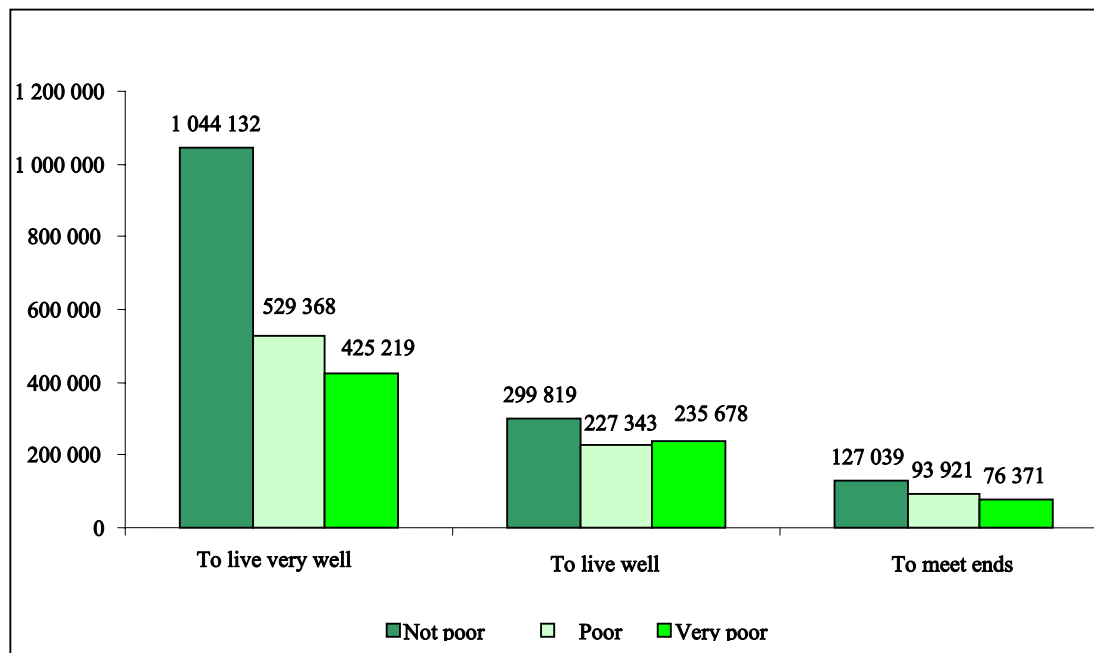
Source: ILSC 2004.

Note: Poor are calculated as difference between overall poor and very (extreme) poor.

The respondents appeared quite anomic regarding what to do to overcome their current situation. Almost 30 percent believed that they could not do anything to improve their situation and that it was the Government's responsibility to guarantee good living conditions and jobs to the citizens; 21 percent said they were not doing anything; 13 percent did not know what to do; and 5 percent did not have any expectations and were planning to leave Armenia. Only 20 percent said they were looking for a better job in Armenia and another 7 percent believed that their living conditions were good and there was no need to change anything.

The households were also asked to assess the amount of money they thought a household would need per month in order to live comfortably. The results are presented in Figure 10.2. It appears that the more households have the more they seem to need in order to have what they perceive as a "normal" standard of living.

**Figure 10.2:** Armenia: The amount of money needed for a comfortable living



Source: ILSC 2004.

Note: Poor are calculated as difference between overall poor and very (extreme) poor

Finally, 2004 ILSC participants were asked to assess their future prospects. It appears that quite a few of them were not sure what to expect. When asked whether their children would have better living conditions: 34 percent said they were having difficulties giving an answer, 18 percent thought that their children would have worse living conditions and 14 percent thought that things would remain unchanged. Only 26 percent expected that their children would live better.

## 10.2. Public trust in institutions

The 2004 ILSC participants were asked to assess a range of Armenian institutions. The results are presented in Table 10.2. The most trusted are the Army and the Church, with the news media ranking fairly high as well. Government was trusted by 60 percent of the

population. The national assembly had the highest negative score, as 48 percent of population over 16 said that did not trust it.

**Table 10.2:** Armenia: Public trust in institutions 2004 (in %)

<b>Institution</b>	<b>Have trust</b>	<b>No trust</b>	<b>No answer</b>
Government	58.3	38.9	2.8
National Assembly	49.3	47.9	2.8
Local government	62.9	33.5	3.6
Army	87.0	10.4	2.6
Police	59.6	35.6	4.8
Justice	52.1	41.1	6.8
Social assistance office	59.7	29.4	10.9
Church	87.1	9.4	3.5
Trade unions	30.8	36.8	32.4
TV and other news media	74.7	22.4	2.9
Direct supervisor			
a) private sector	64.7	16.6	18.7
b) state sector	67.6	15.3	17.1

**Source:** ILCS 2004

### 10.3. Satisfaction with services

Table 10.3 presents results about the level of satisfaction with various services. Generally, services fared quite poorly, except for electricity supply and public transportation. The electricity supply is by far the best ranked, as 95 percent of the 2004 ILSC participants were satisfied with its services. Public transportation came in second with a 67 percent satisfaction rate. Consumers were least satisfied with garbage collection, water supply and health services. Education fared better than the health services.

**Table 10.3:** Armenia: satisfaction with services in 2004 (%)

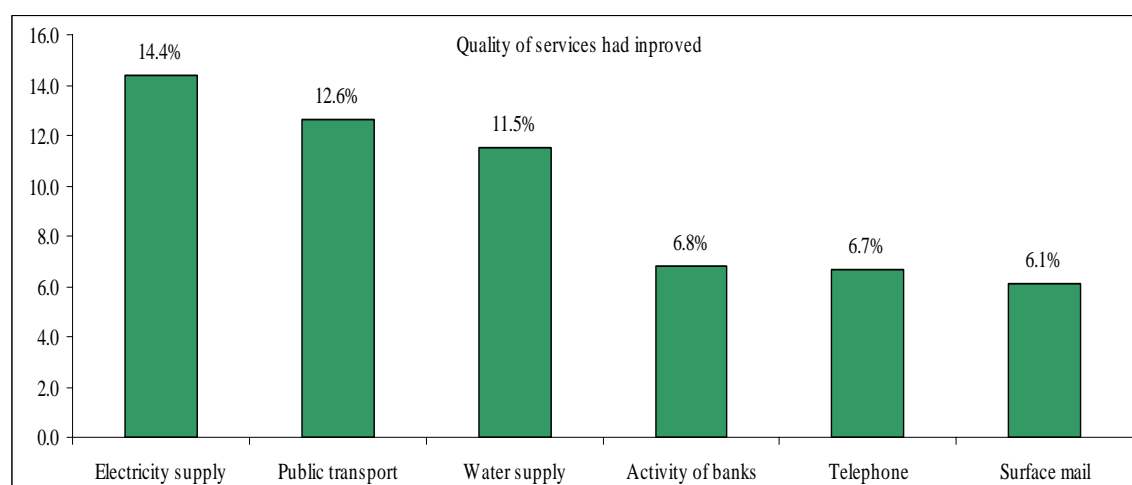
<b>Type of services</b>	<b>Satisfied</b>	<b>Not satisfied</b>	<b>Difficult to answer</b>
Water supply	54.6	44.2	1.2
Sanitation	58.9	32.1	9.0
Garbage collection	40.7	52.8	6.5
Telephone	53.5	30.6	15.9
Electricity supply	95.0	4.3	0.7
Post	53.3	6.4	40.3
Banking	35.3	4.4	60.3
Irrigation services	18.9	20.0	61.1
Health services	40.8	44.0	15.2
Education	50.0	26.3	23.7
Public transportation	67.4	20.1	12.5

**Source:** ILCS 2004

Few people observed any changes for the better in service provision during the year preceding the ILSC interview. A vast majority observed either no change or said it was difficult to answer the question. Only a very small group of users reported some improvements in the quality of services. Figures 10.3 and 10.4 present the ILSC results for the services where either positive or negative changes in the quality of services were noted.

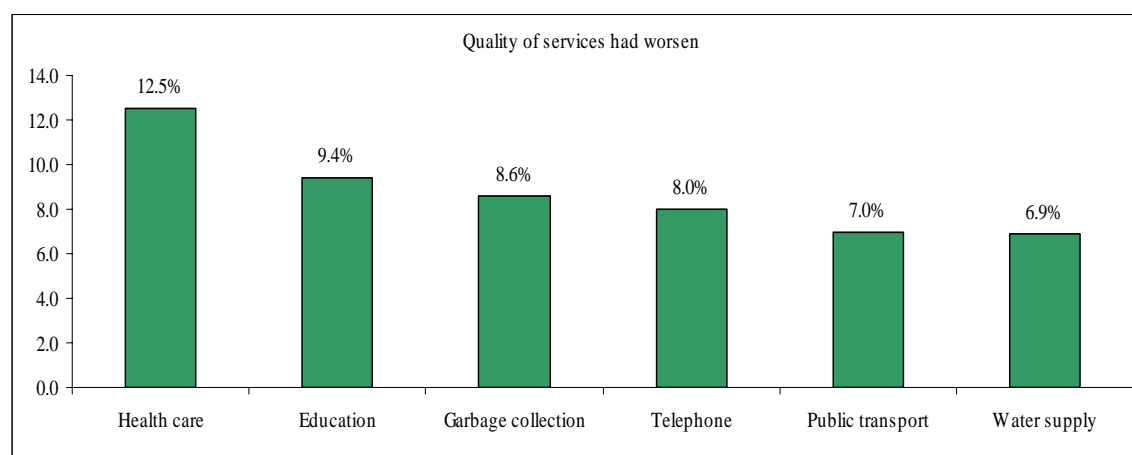


**Figure 10.3:** Armenia: Improvements in the quality of services provided to the population 2004



Source: ILSC 2004.

**Figure 10.4:** Armenia: Deterioration in the quality of services provided to the population 2004



Source: ILSC 2004.

Even when experiencing problems with service provision, people tend not to take any action to have the problem resolved. Table 10.4 presents the 2004 ILSC estimates for the group of the population that reported deterioration in the provision of services. Most of them reported not taking up the issue with the service providers. This may indicate skepticism that anything could be done, which in turn may reflect earlier experience, when service outages were a permanent state of affairs. For instance, only 14 percent of complaints related to irrigation services were satisfied; the situation was not much better with garbage removal and water supply, where the complaints resolution percentages were 28 and 29 respectively. Hence, there is room for improvement in the provision of services, including the service providers' responsiveness to the clients' demands.

**Table 10.4:** Armenia: Resolving problems with services provision in 2004

Type of service	The quality of services deteriorated (%)	Did not contact the service provider	Actions taken by the service provider to resolve the problem (%)
Water supply	6.9	93.5	29.4
Sanitation	3.1	97.8	42.1
Garbage collection	8.6	96.1	28.2
Telephone	8.0	89.6	56.7
Electricity supply	1.7	92.2	86.8
Post	1.0	99.0	74.1
Banking	1.2	99.2	46.4
Irrigation services	3.9	98.2	13.9
Health services	12.5	94.8	34.8
Education	9.4	98.3	45.3
Public transportation	7.0	98.9	28.3

Source: ILSC 2004.

## 10.4. Conclusions

Although subjective perceptions of socio-economic conditions in Armenia broadly coincide with the picture obtained when the consumption per adult equivalent is used as an objective welfare measure, there is a significant difference between the subjective and objective poverty levels. For instance, subjective extreme poverty incidence was only 3.3 percent, as opposed to 6.4 percent when measured in terms of consumption per adult equivalent. Similarly, 17 percent of the population thought they were poor, vs. a 28.2 percent estimate based on consumption per adult equivalent. Hence, in 2004, the overall poverty incidence based on self-assessment was 20.3 percent; while consumption based estimate was 34.6 percent.

A basic needs provision was still a priority concern for many Armenians. Furthermore, the population appears quite anomic regarding what to do to overcome their current situation; only a few reported that they might take action to try to change their current conditions. The population seemed quite uncertain about its future prospects as well, as more than half did not know what to say about their future expectations or expected their children to live lives to be worse than their own.

Armenians trust the Army and the Church the most, with the news media ranking fairly high. The Government was trusted by 60 percent of the population. The National Assembly had the highest negative score, as 48 percent of the population over 16 said that did not trust it.

The quality of utilities, transportation, communication and others services leaves a lot to be desired. The electricity supply was the only service that got high customer satisfaction marks. Public transportation came in a distant second, followed by sanitation, water supply and telephone services. Consumers were the least satisfied with garbage collection, water supply and health services. Education fared better than the health services. Only few people observed changes for the better in overall service provision. Moreover, when experiencing problems with service provision, people would not take any action to have the problem resolved. This indicates low confidence in that something can be or will be done. Hence, there is room for improvements in the provision of services, including the service providers' responsiveness to client demands.

## ***STATISTICAL ANNEX***

**Table A1.1: Armenia: Natural population flows and marriages and divorces by *marzes* in 2004**

	Population at the end of 2004 in 000			Births in 000			Deaths in 000			Marriages	Divorces
	Total	Male	Female	Total	Male	Female	Total	Male	Female		
<b>Armenia</b>	3215.8	1550.6	1665.2	37520	20328	17192	25679	13248	12431	16975	1968
<b>Yerevan</b>	1102.9	514.8	588.1	11972	6391	5581	8894	4574	4320	5961	1025
<b>Aragatsotn</b>	139.1	68.3	70.8	1755	975	780	1128	583	545	691	50
<b>Ararat</b>	273.4	134	139.4	3231	1790	1441	1981	1014	967	1150	94
<b>Armavir</b>	278.2	136.5	141.7	3387	1844	1543	1991	1039	952	1587	109
<b>Gegharkounik</b>	239.1	117.3	121.8	3091	1737	1354	1694	836	858	1661	55
<b>Lori</b>	283.9	139	144.9	3341	1793	1548	2645	1348	1297	1306	176
<b>Kotayk</b>	274.2	134.3	139.9	3347	1778	1569	1911	1045	866	1486	150
<b>Shirak</b>	281.7	137.9	143.8	3387	1808	1579	2513	1287	1226	1333	133
<b>Syunik</b>	153	75.1	77.9	1664	923	741	1220	633	587	758	106
<b>Vayots Dzor</b>	55.9	27.5	28.4	662	384	278	430	228	202	279	25
<b>Tavoush</b>	134.4	65.9	68.5	1683	905	778	1272	661	611	763	45

Source: NSSA, population statistics.

**Table A3.1:** Armenia: Poverty lines, 1999-2004, in drams, per month, per adult equivalent

	1998/99	2001	2002	2003	2004
Extreme (food) poverty line	11,210	10,246	10,441	11,662	12,467
Complete poverty line	17,663	16,989	17,299	18,541	19,373

**Source:** Integrated Living Conditions Survey (ILCS) 1998/99 and 2004.

**Note:** Poverty lines are estimated based on the 2004 ILCS and then adjusted for inflation. They are expressed in drams, per month per adult equivalent.

**Table A3.2:** Armenia Poverty indicators, 1998/99 and 2004, in %  
(Standard errors in parenthesis)

	1998/99					2004				
	Very poor	Poor	Share in total population	Poverty gap	Severity of poverty	Very poor	Poor	Share in total population	Poverty gap	Severity of Poverty
Urban	26.2 (1.8)	62.1 (2.2)	57.1	20.1 (1.1)	8.7 (0.6)	7.5 (0.6)	36.4 (1.1)	62.4	8.4 (0.3)	2.8 (0.2)
Yerevan	24.8 (2.2)	58.4 (2.8)	27.7	18.7 (1.2)	7.9 (0.6)	6.1 (0.8)	29.2 (1.6)	31.8	6.5 (0.5)	2.2 (0.2)
Other urban	27.4 (2.7)	65.5 (2.8)	29.4	21.5 (1.7)	9.4 (0.9)	9.2 (0.8)	43.9 (1.5)	30.6	10.3 (0.5)	3.5 (0.2)
Rural	14.1 (1.9)	48.2 (3.1)	42.9	13.3 (1.2)	5.1 (0.6)	4.4 (0.8)	31.7 (1.9)	37.6	5.7 (0.5)	1.6 (0.2)
Total	21.0 (1.6)	56.1 (2.1)	100.0	17.2 (1.0)	7.2 (0.5)	6.4 (0.5)	34.6 (1.0)	100.0	7.4 (0.3)	2.4 (0.1)

**Source:** ILCS 1998/99 and 2004.

**Note:** Consumption is measured per adult equivalent. Poverty indicators are computed using the 2004 minimum food basket and the non-food share estimated in 2004. Poverty lines are adjusted for inflation (see Table A1). Standard errors computed with PSU adjustments.

**Table A3.3:** Armenia: Consumption per adult equivalent by deciles, 1998/99-2004, in drams in constant Spring 1999 prices

Deciles	1998/99		2004		Average annual change in consumption 1998/99-2004, in %
	Share in total consumption	Mean consumption	Share in total consumption	Mean consumption	
1-poorest	3.7	7,300	4.3	10,141	5.9
2	5.2	10,070	5.8	13,531	5.3
3	6.1	11,874	6.7	15,580	4.8
4	7.0	13,620	7.4	17,342	4.3
5	7.9	15,419	8.3	19,309	4.0
6	8.9	17,448	9.2	21,500	3.7
7	10.1	19,701	10.3	24,024	3.5
8	11.7	22,822	11.7	27,344	3.2
9	14.4	28,102	14.1	32,929	2.8
10-richest	24.9	48,631	22.2	51,870	1.1
Average	...	19,491	...	23,352	3.2

**Source:** ILCS 98/99 and 2004.

**Table A3.4:** Armenia: Poverty indicators using “old” methodology  
(Standard errors in parenthesis)

	Poverty incidence					Poverty Gap	Severity of poverty
	All	Urban	Yerevan	Other urban	Rural		
	<b>Very poor</b>						
<b>98/99</b>	22.9 (1.5)	23.2 (1.7)	21.0 (1.9)	25.2 (2.5)	22.6 (2.6)	5.9 (0.5)	2.2 (0.3)
<b>2001</b>	16.0 (1.5)	18.3 (1.8)	16.8 (0.0)	19.6 (3.2)	11.3 (2.3)	3.3 (0.4)	1.0 (0.1)
<b>2002</b>	13.1 (1.7)	15.0 (2.3)	11.8 (0.0)	18.4 (3.0)	10.2 (2.7)	2.4 (0.4)	0.7 (0.2)
<b>2003</b>	7.4 (1.6)	7.9 (2.7)	3.7 (0.0)	12.2 (2.8)	6.8 (1.3)	0.7 (0.2)	0.1 (0.1)
<b>2004</b>	7.2 (0.5)	8.6 (0.6)	6.2 (0.8)	11.0 (0.9)	5.0 (0.8)	1.5 (0.1)	0.5 (0.1)
	<b>Poor</b>						
<b>98/99</b>	55.1 (1.9)	58.3 (2.1)	54.7 (2.6)	61.6 (2.9)	50.8 (3.1)	19.0 (0.9)	9.0 (0.6)
<b>2001</b>	50.9 (2.4)	51.9 (3.4)	46.7 (0.0)	56.7 (4.1)	48.7 (3.6)	15.1 (0.9)	6.1 (0.5)
<b>2002</b>	49.7 (3.1)	52.6 (5.2)	43.8 (0.0)	61.9 (3.9)	45.3 (4.5)	13.5 (1.2)	5.2 (0.6)
<b>2003</b>	42.9 (4.7)	39.7 (6.2)	29.6 (0.0)	49.9 (5.9)	47.5 (3.9)	8.9 (1.4)	2.8 (0.5)
<b>2004</b>	39.0 (1.0)	38.0 (1.1)	29.4 (1.5)	46.9 (1.5)	40.6 (1.9)	9.9 (0.3)	3.5 (0.2)

**Source:** Integrated Living Conditions Surveys 1998/99-2004.

**Note:** Poverty lines were established in 1996 using the basic needs approach (food line is used as a benchmark for very poor population; the complete poverty line comprises non-food consumption allowance as well—about 35 percent of the complete line). The welfare measure is consumption per capita. Consumption aggregate does not include either rental value of housing or durables; it includes however nominal expenditures on new durables.

**Table A3.5:** Armenia: Poverty measures by administrative regions (*marzes*), 1998/99 and 2004  
(Standard errors in parenthesis)

	1998/99		2004					
	Very poor %	Poor %	Very poor %	Poor %	Share in the poor	Share in total population	Poverty gap	Severity of poverty
Yerevan	24.8 (2.2)	58.4 (2.8)	6.1 (0.8)	29.2 (1.6)	26.8	31.8	6.5 (0.5)	2.2 (0.2)
Aragatzotn	22.8 (6.1)	60.5 (8.8)	5.6 (1.6)	35.4 (4.6)	5.5	5.4	6.9 (1.3)	2.1 (0.5)
Ararat	13.3 (3.6)	52.3 (4.3)	6.4 (1.6)	32.7 (3.4)	8.5	9.0	6.8 (1.0)	2.2 (0.4)
Armavir	10.2 (4.0)	41.7 (6.5)	6.6 (1.4)	36.0 (3.4)	8.9	8.6	7.1 (0.8)	2.2 (0.3)
Gegharkunik	11.3 (3.0)	49.9 (5.0)	4.5 (1.3)	41.9 (4.2)	8.3	6.9	8.0 (1.0)	2.2 (0.3)
Lori	30.0 (4.9)	62.6 (6.7)	4.5 (1.2)	31.3 (3.4)	8.7	9.6	6.5 (0.9)	2.2 (0.4)
Kotayk	24.5 (3.7)	61.7 (4.5)	9.2 (1.7)	39.3 (3.3)	10.4	9.1	8.6 (1.0)	2.9 (0.4)
Shirak	33.0 (3.1)	75.8 (2.5)	10.4 (2.2)	48.8 (3.2)	13.1	9.3	11.7 (1.1)	4.0 (0.5)
Syunik	18.7 (4.5)	53.1 (8.0)	5.9 (1.5)	36.5 (3.9)	4.7	4.5	7.6 (1.1)	2.3 (0.4)
Vayots Dzor	12.9 (4.0)	34.7 (5.9)	4.1 (1.5)	28.9 (4.6)	1.4	1.7	5.4 (1.2)	1.5 (0.4)
Tavush	9.3 (5.7)	29.3 (10.6)	3.3 (1.3)	30.5 (4.1)	3.6	4.1	5.6 (1.0)	1.5 (0.4)
Total	21.0 (1.6)	56.1 (2.1)	6.4 (0.5)	34.6 (1.0)	100.0	100.0	7.4 (0.3)	2.4 (0.1)

Source: ILCS 1998/99 and 2004.

**Table A3.6:** Armenia: Consumption and income poverty, 1998/99 and 2004

	1998/99	2004
Consumption per adult equivalent, in drams, spring 1999 prices	19,491	23,352
Income per adult equivalent, in drams, spring 1999 prices	14,932	19,301
Income/Consumption ratio	0.766	0.827
<b>Consumption poor</b>		
Very poor	21.0% (1.6)	6.4% (0.4)
Poor	56.1% (2.1)	34.6% (0.7)
<b>Income poor</b>		
Very poor	64.8% (1.8)	33.2% (1.0)
Poor	80.2% (1.2)	58.5% (1.0)

Source: ILCS 1998/99 and 2004.

Note: Income is defined as total disposable income and includes cash income, monetary value of consumption in kind and resources taken from savings. Standard errors are in parenthesis.

**Table A3.7:** Armenia: Consumption and income poverty in 2004, in %

	Consumption non-poor	Consumption poor	Total
Very poor: extreme (food) poverty line = 12,467 drams			
Income non-poor	65.0	1.7	66.8
Income poor	28.6	4.7	33.2
Total	93.6	6.4	100.0
Poor: complete poverty line = 19,373 drams			
Income non-poor	33.5	7.9	41.5
Income poor	31.8	26.7	58.5
Total	65.4	34.6	100.0

Source: ILCS 2004.

**Table A3.8:** Both income and consumption poor and very poor in 1998/99 and 2004

	1998/99	2004
Very poor	18.2%	4.7%
Poor	49.9%	26.7%

Source: ILCS 1998/99 and 2004.

**Table A3.9:** Armenia: Poverty incidence change decomposition into growth and distribution components between 1998/99 and 2004 (average effects)

	Total	Urban	Yerevan	Other urban	Rural
Very poor					
Percentage change in poverty incidence	-14.6	-18.6	-18.7	-18.3	-9.7
Growth component	-14.5	-21.2	-20.2	-21.6	-6.6
Redistribution component	-0.1	2.6	1.5	3.3	-3.1
Residual	0.0	0.0	0.0	0.0	0.0
Poor					
Percentage change in poverty incidence	-21.5	-25.6	-29.2	-21.6	-16.5
Growth component	-25.6	-31.0	-33.0	-27.9	-17.0
Redistribution component	4.1	5.3	3.8	6.3	0.5
Residual	0.0	0.0	0.0	0.0	0.0

Source: ICLS 1998/99 and 2004.

**Note:** A change in poverty between two years can be explained by a change in mean consumption (growth) and a change in consumption distribution. The decomposition of change in poverty into a growth and a distributional component (Datt and Ravallion, 1992) allows explaining what would be the impact of growth on poverty, keeping inequality constant and vice versa. The 21.5 percentage point reduction in overall poverty in Armenia was decomposed into a 25.6 percentage points decline in poverty due to increase in mean consumption and a 4.1 percentage point increase in poverty due to increased inequality. Thus, the growth and redistribution components acted in the opposite directions influencing reduction in poverty altogether, with gains from growth slightly offset by the increase in inequality. Looking across regions, decline in rural poverty is almost entirely attributable to consumption growth, as its distribution remained almost unchanged. These results suggest increase in inequality around the poverty line. In contrast, inequality across the whole distribution measured by the Gini coefficient (and other inequality indicators) declined between 1998/99 and 2004.



**Table A3.10:** Armenia: Determinants of consumption, 1998/99 and 2004  
Dependent variable:  $\ln$  (consumption per adult equivalent)

	1998/99	2004 Restricted specification	2004 Full specification
<b>Household characteristics</b>			
Fraction age 0-5	-0.016 (0.213)	-0.107 (0.037)***	-0.112 (0.036)***
Fraction age 6-14	0.370 (0.146)**	0.055 (0.028)**	0.052 (0.029)*
Fraction age 15-18	0.328 (0.192)*	0.050 (0.045)	0.045 (0.046)
Fraction age 19-25	0.122 (0.103)	0.139 (0.091)	0.135 (0.092)
Fraction age 26-45	0.168 (0.055)***	-0.025 (0.042)	-0.029 (0.041)
Fraction age 46-60	$f$	$f$	$f$
Fraction age 61+	-0.088 (0.056)	-0.039 (0.056)	-0.035 (0.057)
$\ln$ (Household size)	-0.265 (0.035)***	-0.244 (0.014)***	-0.243 (0.013)***
<b>Characteristics of the household head</b>			
Age	-0.000 (0.011)	-0.008 (0.004)**	-0.009 (0.004)**
(Age) <sup>2</sup>	0.000 (0.000)	0.000 (0.000)***	0.000 (0.000)***
Female	-0.076 (0.033)**	-0.056 (0.009)***	-0.056 (0.009)***
Disabled	-0.042 (0.029)	-0.018 (0.018)	-0.017 (0.018)
Primary education or below, lower secondary	$f$	$f$	$f$
Upper secondary education	0.050 (0.015)***	0.044 (0.014)***	0.044 (0.014)***
Specialized secondary education	0.153 (0.031)***	0.119 (0.033)***	0.119 (0.033)***
Tertiary education	0.220 (0.017)***	0.270 (0.028)***	0.269 (0.027)***
Wage-employed	$f$	$f$	$f$
Self-employed	0.057 (0.043)	0.030 (0.036)	0.030 (0.035)
Other employment	0.034 (0.198)	-0.169 (0.058)***	-0.167 (0.054)***
Unemployed	0.030 (0.029)	0.073 (0.020)***	0.073 (0.020)***
Pensioner	0.036 (0.032)	0.071 (0.018)***	0.070 (0.019)***
Other non-participants	0.010 (0.027)	-0.064 (0.029)**	-0.065 (0.029)**
<b>Other household characteristics</b>			
Migrant member	0.001 (0.040)	0.117 (0.030)***	0.110 (0.028)***

Migrant returned from abroad	...	...	0.162 (0.086)*
Migrant returned from other place in Armenia	...	...	0.015 (0.034)
% Wage-employed in household	<i>f</i>	<i>f</i>	<i>f</i>
% Self-employed in household	-0.065 (0.065)	0.014 (0.046)	0.011 (0.047)
% Other employment in household	0.169 (0.349)	0.163 (0.165)	0.158 (0.158)
% Unemployed in household	-0.469 (0.045)***	-0.408 (0.036)***	-0.411 (0.034)***
% Pensioners in household	-0.332 (0.069)***	-0.255 (0.039)***	-0.257 (0.041)***
% Other non-participants in household	-0.234 (0.039)***	-0.107 (0.047)**	-0.107 (0.045)**
Yerevan	<i>f</i>	<i>f</i>	<i>f</i>
Aragatzotn	-0.051 (0.023)**	-0.090 (0.024)***	-0.088 (0.024)***
Ararat	-0.035 (0.024)	-0.092 (0.021)***	-0.089 (0.022)***
Armavir	0.156 (0.023)***	-0.108 (0.017)***	-0.107 (0.018)***
Gegharkunik	0.005 (0.028)	-0.142 (0.019)***	-0.141 (0.020)***
Lori	-0.134 (0.020)***	-0.040 (0.011)***	-0.039 (0.012)***
Kotayk	-0.080 (0.016)***	-0.110 (0.014)***	-0.107 (0.014)***
Shirak	-0.261 (0.016)***	-0.193 (0.013)***	-0.199 (0.015)***
Syunik	0.070 (0.015)***	-0.135 (0.012)***	-0.133 (0.012)***
Vayots Dzor	0.090 (0.035)***	-0.036 (0.016)**	-0.037 (0.017)**
Tavush	0.071 (0.036)**	-0.061 (0.018)***	-0.064 (0.019)***
Constant	10.089 (0.383)***	10.689 (0.094)***	10.698 (0.098)***
Adjusted R squared	0.217	0.206	0.208
Root MSE	0.458	0.416	0.415
Number of observations	3600	6816	6816

**Source:** World Bank using Armenia ILCS 1998/99 and 2004.

**Note:** *f* – reference category, \* indicates 10 percent significance; \*\* indicates 5 percent significance; \*\*\* indicates 1 percent significance.

**Table A3.11:** Armenia: Differential effects of determinants of consumption per adult equivalent, 2004  
(estimated coefficients and standard errors for **quintile regressions**)

	10	25	50	75	90
<b>Household characteristics</b>					
Fraction age 0-5	-0.036 (0.086)	-0.098 (0.075)	-0.097 (0.067)	-0.116 (0.104)	-0.190 (0.103)*
Fraction age 6-14	0.086 (0.064)	0.005 (0.058)	0.053 (0.051)	0.029 (0.079)	0.006 (0.077)
Fraction age 15-18	0.058 (0.075)	-0.018 (0.066)	0.025 (0.058)	0.078 (0.090)	0.027 (0.086)
Fraction age 19-25	0.069 (0.060)	0.018 (0.053)	0.122 (0.047)***	0.154 (0.073)**	0.130 (0.074)*
Fraction age 26-45	-0.064 (0.044)	-0.060 (0.038)	-0.020 (0.034)	-0.040 (0.052)	-0.072 (0.051)
Fraction age 46-60	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>
Fraction age 61+	0.037 (0.043)	-0.035 (0.039)	-0.050 (0.034)	-0.058 (0.053)	-0.133 (0.052)**
<i>Ln</i> (Household size)	-0.186 (0.024)***	-0.196 (0.021)***	-0.242 (0.019)***	-0.263 (0.029)***	-0.294 (0.029)***
<b>Characteristics of the household head</b>					
Age	0.001 (0.004)	-0.007 (0.004)**	-0.009 (0.003)***	-0.012 (0.005)**	-0.012 (0.005)**
(Age) <sup>2</sup>	-0.000 (0.000)	0.000 (0.000)*	0.000 (0.000)***	0.000 (0.000)**	0.000 (0.000)**
Female	-0.034 (0.019)*	-0.046 (0.017)***	-0.050 (0.015)***	-0.051 (0.023)**	-0.067 (0.022)***
Disabled	-0.045 (0.023)*	-0.018 (0.021)	-0.016 (0.019)	-0.005 (0.029)	-0.010 (0.029)
Primary education or below, lower secondary	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>
Upper secondary education	0.040 (0.021)*	0.041 (0.018)**	0.046 (0.016)***	0.037 (0.025)	0.020 (0.023)
Specialized secondary education	0.128 (0.023)***	0.117 (0.020)***	0.113 (0.017)***	0.103 (0.026)***	0.118 (0.025)***
Tertiary education	0.230 (0.025)***	0.232 (0.022)***	0.243 (0.019)***	0.270 (0.028)***	0.295 (0.027)***
Wage-employed	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>
Self-employed	-0.013 (0.028)	-0.014 (0.026)	0.005 (0.024)	0.041 (0.038)	0.090 (0.038)**
Other employment	-0.001 (0.130)	-0.053 (0.118)	-0.121 (0.100)	-0.176 (0.154)	-0.113 (0.119)
Unemployed	0.011 (0.038)	0.045 (0.033)	0.097 (0.028)***	0.114 (0.043)***	0.089 (0.039)**
Pensioners	0.042 (0.036)	0.069 (0.032)**	0.067 (0.029)**	0.086 (0.045)*	0.107 (0.045)**
Other non-participants	-0.117 (0.034)***	-0.032 (0.030)	-0.026 (0.026)	-0.092 (0.041)**	-0.108 (0.037)***
<b>Other household characteristics</b>					
Migrant member	0.079 (0.022)***	0.086 (0.020)***	0.098 (0.018)***	0.126 (0.027)***	0.159 (0.026)***

Migrant returned from abroad	0.133 (0.051)***	0.138 (0.047)***	0.142 (0.042)***	0.168 (0.064)***	0.153 (0.058)***
Migrant returned from other place in Armenia	-0.033 (0.050)	-0.009 (0.045)	0.024 (0.040)	0.069 (0.061)	0.024 (0.055)
% Wage-employed in hh.	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>
% Self-employed in hh.	0.043 (0.041)	0.052 (0.038)	0.044 (0.033)	-0.004 (0.053)	-0.068 (0.052)
% Other employment in hh.	-0.164 (0.170)	-0.059 (0.180)	0.181 (0.147)	0.114 (0.205)	-0.008 (0.166)
% Unemployed in hh.	-0.421 (0.049)***	-0.454 (0.043)***	-0.421 (0.037)***	-0.403 (0.057)***	-0.410 (0.054)***
% Pensioners in hh.	-0.260 (0.055)***	-0.253 (0.050)***	-0.227 (0.045)***	-0.281 (0.070)***	-0.300 (0.067)***
% Other non-participants in hh.	-0.171 (0.040)***	-0.180 (0.035)***	-0.123 (0.031)***	-0.073 (0.048)	-0.053 (0.046)
Yerevan	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>
Aragatzotn	-0.008 (0.033)	-0.040 (0.030)	-0.079 (0.026)***	-0.085 (0.041)**	-0.167 (0.040)***
Ararat	-0.067 (0.030)**	-0.057 (0.027)**	-0.050 (0.024)**	-0.087 (0.038)**	-0.186 (0.037)***
Armavir	-0.042 (0.027)	-0.062 (0.025)**	-0.105 (0.023)***	-0.113 (0.034)***	-0.174 (0.034)***
Gegharkunik	-0.034 (0.029)	-0.110 (0.026)***	-0.135 (0.024)***	-0.175 (0.036)***	-0.214 (0.035)***
Lori	0.006 (0.026)	-0.010 (0.024)	0.007 (0.021)	-0.007 (0.032)	-0.116 (0.030)***
Kotayk	-0.061 (0.026)**	-0.076 (0.023)***	-0.109 (0.021)***	-0.075 (0.032)**	-0.141 (0.031)***
Shirak	-0.167 (0.025)***	-0.174 (0.023)***	-0.161 (0.021)***	-0.220 (0.032)***	-0.247 (0.031)***
Syunik	-0.050 (0.031)	-0.094 (0.028)***	-0.111 (0.024)***	-0.141 (0.038)***	-0.273 (0.036)***
Vayots Dzor	-0.049 (0.040)	-0.008 (0.034)	-0.015 (0.029)	-0.032 (0.046)	-0.070 (0.042)*
Tavush	-0.017 (0.032)	-0.051 (0.028)*	-0.037 (0.025)	-0.070 (0.038)*	-0.130 (0.037)***
Constant	9.761 (0.122)***	10.261 (0.110)***	10.595 (0.097)***	10.992 (0.155)***	11.426 (0.156)***

**Source:** World Bank using Armenia ILCS 2004 data.

**Note:** *f* – reference category, \* indicates 10 percent significance; \*\* indicates 5 percent significance;

\*\*\* indicates 1 percent significance.

**Table A3.12:** Armenia: Consumption components by quintiles and regions in 1998/99  
(drams per month; Spring 1999 prices)

	Poorest	2	3	4	5	Total
<b>All households</b>						
Food	6,264	9,001	11,327	14,204	19,476	12,053
Alcohol and tobacco	38	102	149	235	710	247
Clothing and shoes	58	119	367	710	2,989	848
Utilities	266	435	581	672	1,566	704
Transportation and communication	106	195	268	477	1,821	573
Household goods	167	267	402	556	1,393	557
Education	420	716	1,120	1,430	3,005	1,338
Health	104	212	264	694	4,550	1,164
Rental value of durable goods	1,263	1,698	1,956	2,282	2,844	2,009
<b>Average</b>	<b>8,685</b>	<b>12,746</b>	<b>16,434</b>	<b>21,260</b>	<b>38,353</b>	<b>19,491</b>
Consumption in-kind	1,448	2,660	3,628	5,047	7,687	4,093
<b>Yerevan</b>						
Food	5,849	8,222	10,150	12,668	16,924	10,627
Alcohol and tobacco	43	89	172	251	764	264
Clothing and shoes	60	124	362	573	3,495	939
Utilities	493	865	1,204	1,330	2,361	1,236
Transportation and communication	277	496	660	923	2,887	1,052
Household goods	152	260	384	716	1,901	682
Education	418	582	914	1,318	2,569	1,151
Health	119	206	235	739	5,104	1,312
Rental value of durable goods	1,351	1,875	2,271	2,545	3,234	2,228
<b>Average</b>	<b>8,763</b>	<b>12,719</b>	<b>16,351</b>	<b>21,062</b>	<b>39,238</b>	<b>19,488</b>
Consumption in-kind	702	1,069	1,444	1,812	3,159	1,621
<b>Other Urban Households</b>						
Food	6,095	8,651	10,927	13,634	17,529	10,465
Alcohol and tobacco	37	115	175	238	557	185
Clothing and shoes	62	154	494	1,049	3,369	770
Utilities	189	442	609	686	1,495	588
Transportation and communication	24	106	133	278	1,330	277
Household goods	195	317	498	701	1,731	571
Education	446	829	1,239	1,643	4,531	1,432
Health	85	261	291	566	4,124	769
Rental value of durable goods	1,348	1,842	2,071	2,472	2,998	2,017
<b>Average</b>	<b>8,481</b>	<b>12,716</b>	<b>16,436</b>	<b>21,267</b>	<b>37,665</b>	<b>17,074</b>
Consumption in-kind	950	1,463	2,415	3,344	4,402	2,235
<b>Rural Households</b>						
Food	6,966	9,778	12,354	15,219	21,607	14,060
Alcohol and tobacco	31	102	115	226	736	278
Clothing and shoes	49	89	272	607	2,569	843
Utilities	112	149	179	350	1,148	440
Transportation and communication	23	68	131	364	1,404	468
Household goods	146	234	339	408	986	466
Education	388	716	1,155	1,378	2,694	1,394
Health	112	177	262	736	4,395	1,339
Rental value of durable goods	1,049	1,471	1,676	2,062	2,571	1,861
<b>Average</b>	<b>8,875</b>	<b>12,786</b>	<b>16,483</b>	<b>21,350</b>	<b>38,110</b>	<b>21,149</b>
Consumption in-kind	2,976	4,619	5,898	7,433	11,408	6,961

Source: ILCS 1998/99.

Note: Consumption is measured per adult equivalent. Households are ranked by per adult equivalent consumption.

**Table A3.13:** Armenia: Consumption components by quintiles and regions, 2004  
(drams per month; in constant Spring 1999 prices)

	Poorest	2	3	4	5	Total
<b>All households</b>						
Food	7,779	10,466	12,182	14,275	18,204	12,579
Alcoholic drinks and tobacco	93	148	243	361	705	310
Clothing and shoes	238	421	676	1,126	2,680	1,028
Utilities	760	1,009	1,296	1,612	2,690	1,473
Transportation and communication	328	600	919	1,311	3,088	1,248
Household goods	385	576	854	1,099	2,619	1,106
Recreation, culture	2	5	2	12	109	26
Education	176	332	467	825	2,755	910
Health	238	570	819	1,642	4,984	1,650
Rental value of durable goods	1,838	2,334	2,947	3,424	4,575	3,023
<b>Average</b>	<b>11,836</b>	<b>16,460</b>	<b>20,405</b>	<b>25,687</b>	<b>42,408</b>	<b>23,352</b>
Consumption in-kind	1,975	3,358	3,791	4,781	5,499	3,880
<b>Yerevan</b>						
Food	6,920	9,186	10,647	12,620	17,508	12,027
Alcoholic drinks and tobacco	168	140	301	401	690	378
Clothing and shoes	192	292	553	884	2,630	1,083
Utilities	972	1,545	1,827	2,290	3,356	2,142
Transportation and communication	582	1,138	1,563	1,998	4,126	2,110
Household goods	436	629	997	1,220	3,020	1,438
Recreation, culture	3	1	0	12	230	66
Education	300	598	606	1,116	4,495	1,718
Health	274	574	605	1,459	4,429	1,761
Rental value of durable goods	1,875	2,418	3,290	3,682	5,180	3,496
<b>Average</b>	<b>11,722</b>	<b>16,522</b>	<b>20,389</b>	<b>25,684</b>	<b>45,663</b>	<b>26,220</b>
Consumption in-kind	796	981	1,146	1,745	2,847	1,644
<b>Other Urban Households</b>						
Food	7,813	10,116	12,115	14,296	17,875	11,766
Alcoholic drinks and tobacco	60	157	255	427	769	290
Clothing and shoes	239	419	730	1,206	2,846	942
Utilities	763	1,056	1,391	1,554	2,324	1,318
Transportation and communication	169	351	413	742	1,709	593
Household goods	343	603	848	1,158	2,368	947
Recreation, culture	0	9	6	28	22	11
Education	152	353	534	816	1,724	625
Health	215	579	893	1,649	6,788	1,695
Rental value of durable goods	1,987	2,740	3,217	3,884	4,699	3,119
<b>Average</b>	<b>11,740</b>	<b>16,383</b>	<b>20,403</b>	<b>25,760</b>	<b>41,125</b>	<b>21,306</b>
Consumption in-kind	1,489	2,173	2,209	3,355	4,523	2,563
<b>Rural Households</b>						
Food	8,594	11,479	13,259	15,562	19,391	13,707
Alcoholic drinks and tobacco	68	145	195	287	677	267
Clothing and shoes	285	499	727	1,264	2,623	1,051
Utilities	542	657	880	1,118	2,061	1,033
Transportation and communication	317	467	792	1,146	2,714	1,053
Household goods	399	525	762	965	2,264	955
Recreation, culture	5	4	0	0	10	3
Education	87	158	332	602	1,172	458
Health	238	561	919	1,781	4,389	1,518
Rental value of durable goods	1,568	1,985	2,550	2,917	3,663	2,545
<b>Average</b>	<b>12,102</b>	<b>16,482</b>	<b>20,417</b>	<b>25,642</b>	<b>38,964</b>	<b>22,590</b>
Consumption in-kind	3,921	5,635	6,542	8,109	9,816	6,845

**Source:** ILCS 2004.

**Note:** Consumption is measured per adult equivalent. Households are ranked by per adult equivalent consumption. Consumption is divided by official CPI of 1.122 (Spring 1999-Fall 2004).

**Table A3.14:** Armenia: Composition of consumption components by quintiles and economic regions in 2004, in %

	Poorest	2	3	4	5	Total
<b>All households</b>						
Food	65.7	63.6	59.7	55.6	42.9	53.9
Alcoholic drinks and tobacco	0.8	0.9	1.2	1.4	1.7	1.3
Clothing and shoes	2.0	2.6	3.3	4.4	6.3	4.4
Utilities	6.4	6.1	6.4	6.3	6.3	6.3
Transportation and communication	2.8	3.6	4.5	5.1	7.3	5.3
Household goods	3.3	3.5	4.2	4.3	6.2	4.7
Recreation, culture	0.0	0.0	0.0	0.0	0.3	0.1
Education	1.5	2.0	2.3	3.2	6.5	3.9
Health	2.0	3.5	4.0	6.4	11.8	7.1
Rental value of durable goods	15.5	14.2	14.4	13.3	10.8	12.9
<b>Average</b>	100.0	100.0	100.0	100.0	100.0	100.0
Consumption in-kind	16.7	20.4	18.6	18.6	13.0	16.6
<b>Yerevan</b>						
Food	59.0	55.6	52.2	49.1	38.3	45.9
Alcoholic drinks and tobacco	1.4	0.8	1.5	1.6	1.5	1.4
Clothing and shoes	1.6	1.8	2.7	3.4	5.8	4.1
Utilities	8.3	9.4	9.0	8.9	7.3	8.2
Transportation and communication	5.0	6.9	7.7	7.8	9.0	8.0
Household goods	3.7	3.8	4.9	4.8	6.6	5.5
Recreation, culture	0.0	0.0	0.0	0.0	0.5	0.3
Education	2.6	3.6	3.0	4.3	9.8	6.6
Health	2.3	3.5	3.0	5.7	9.7	6.7
Rental value of durable goods	16.0	14.6	16.1	14.3	11.3	13.3
<b>Average</b>	100.0	100.0	100.0	100.0	100.0	100.0
Consumption in-kind	6.8	5.9	5.6	6.8	6.2	6.3
<b>Other Urban Households</b>						
Food	66.6	61.7	59.4	55.5	43.5	55.2
Alcoholic drinks and tobacco	0.5	1.0	1.2	1.7	1.9	1.4
Clothing and shoes	2.0	2.6	3.6	4.7	6.9	4.4
Utilities	6.5	6.4	6.8	6.0	5.7	6.2
Transportation and communication	1.4	2.1	2.0	2.9	4.2	2.8
Household goods	2.9	3.7	4.2	4.5	5.8	4.4
Recreation, culture	0.0	0.1	0.0	0.1	0.1	0.1
Education	1.3	2.2	2.6	3.2	4.2	2.9
Health	1.8	3.5	4.4	6.4	16.5	8.0
Rental value of durable goods	16.9	16.7	15.8	15.1	11.4	14.6
<b>Average</b>	100.0	100.0	100.0	100.0	100.0	100.0
Consumption in-kind	12.7	13.3	10.8	13.0	11.0	12.0
<b>Rural Households</b>						
Food	71.0	69.6	64.9	60.7	49.8	60.7
Alcoholic drinks and tobacco	0.6	0.9	1.0	1.1	1.7	1.2
Clothing and shoes	2.4	3.0	3.6	4.9	6.7	4.7
Utilities	4.5	4.0	4.3	4.4	5.3	4.6
Transportation and communication	2.6	2.8	3.9	4.5	7.0	4.7
Household goods	3.3	3.2	3.7	3.8	5.8	4.2
Recreation, culture	0.0	0.0	0.0	0.0	0.0	0.0
Education	0.7	1.0	1.6	2.3	3.0	2.0
Health	2.0	3.4	4.5	6.9	11.3	6.7
Rental value of durable goods	13.0	12.0	12.5	11.4	9.4	11.3
<b>Average</b>	100.0	100.0	100.0	100.0	100.0	100.0
Consumption in-kind	32.4	34.2	32.0	31.6	25.2	30.3

**Source:** ILCS 2004.**Note:** Households are ranked by per adult equivalent consumption.

**Table A3.15:** Armenia: Household income sources by consumption quintiles and regions in 1998/99  
(drams per month per household, Spring 1999 prices)

Sources	1	2	3	4	5	Total
<b>All households</b>						
Wage-employment	6,709	11,086	11,535	16,600	19,543	13,408
Self-employment	1,224	3,056	5,885	7,593	16,850	7,271
Farm Income	4,217	8,103	10,788	12,780	18,601	11,235
Remittances	3,198	4,187	6,308	6,384	12,212	6,657
Transfers	3,733	4,092	3,151	2,953	2,539	3,262
Pensions	2,314	2,982	2,362	2,131	1,807	2,305
Other transfers	1,419	1,110	789	822	732	957
Assets sold	1,018	1,445	405	1,476	835	1,033
Income from rent, interest,	0	48	0	37	58	30
Other income	4,531	4,351	6,355	7,050	6,328	5,782
<b>Average</b>	<b>24,630</b>	<b>36,369</b>	<b>44,427</b>	<b>54,871</b>	<b>76,967</b>	<b>48,677</b>
Income in kind	5,188	8,535	11,321	15,366	22,614	13,015
<b>Yerevan</b>						
Wage-employment	11,705	20,262	23,336	28,167	36,816	24,583
Self-employment	1,925	7,356	7,041	2,306	33,291	11,316
Farm Income	161	261	370	504	388	339
Remittances	3,813	5,955	8,450	12,737	18,569	10,270
Transfers	4,362	3,557	3,850	4,020	2,932	3,713
Pensions	3,177	2,757	2,998	3,110	2,124	2,805
Other transfers	1,184	800	852	911	808	908
Assets sold	805	413	450	4,867	1,982	1,719
Income from rent, interest	0	69	0	134	184	82
Other income	7,305	6,235	7,787	12,295	8,246	8,378
<b>Average</b>	<b>30,075</b>	<b>44,107</b>	<b>51,283</b>	<b>65,031</b>	<b>102,408</b>	<b>60,400</b>
Income in kind	2,542	3,444	4,235	5,071	9,036	5,039
<b>Other urban households</b>						
Wage-employment	5,280	12,584	11,179	25,843	21,605	14,327
Self-employment	1,058	1,367	6,558	13,561	13,547	6,433
Farm Income	616	1,017	2,460	4,250	3,715	2,222
Remittances	3,788	5,586	8,027	8,805	21,306	8,581
Transfers	3,828	5,454	3,363	2,771	2,841	3,748
Pensions	2,169	3,600	2,121	1,668	1,575	2,295
Other transfers	1,659	1,853	1,241	1,103	1,267	1,453
Assets sold	1,798	3,666	631	388	831	1,559
Income from rent, interest	0	81	0	0	4	18
Other income	3,348	3,430	6,882	3,753	10,611	5,261
<b>Average</b>	<b>19,717</b>	<b>33,184</b>	<b>39,099</b>	<b>59,371</b>	<b>74,460</b>	<b>42,150</b>
Income in kind	3,249	4,348	7,348	9,604	11,974	6,816
<b>Rural households</b>						
Wage-employment	2,780	2,611	3,160	4,022	7,362	4,340
Self-employment	617	1,372	4,456	7,148	7,540	4,913
Farm Income	14,996	20,905	25,592	25,350	36,961	26,478
Remittances	1,492	1,492	3,258	1,089	4,113	2,442
Transfers	2,799	3,198	2,454	2,422	2,151	2,541
Pensions	1,472	2,563	2,100	1,822	1,701	1,939
Other transfers	1,327	635	355	599	450	603
Assets sold	40	112	179	95	87	106
Income from rent, interest	0	0	0	0	0	0
Other income	2,971	3,788	4,850	5,898	3,217	4,254
<b>Average</b>	<b>25,696</b>	<b>33,479</b>	<b>43,949</b>	<b>46,023</b>	<b>61,431</b>	<b>45,075</b>
Income in kind	11,567	16,450	19,939	25,063	36,102	23,858

**Source:** ILCS 1998/99.

**Note:** Income defined as total disposable income.



**Table A3.16: Armenia: Household income sources by consumption quintiles and regions in 2004**  
(drams per month per household, in constant Spring 1999 prices)

Sources	1	2	3	4	5	Total
<b>All households</b>						
Wage-employment	17,324	20,953	23,695	22,501	31,376	23,747
Self-employment	2,013	2,765	2,947	3,780	7,054	3,935
Farm Income	9,555	17,883	15,625	16,132	14,991	14,945
Remittances	3,102	3,690	4,292	5,213	12,286	6,127
Transfers	7,013	7,501	6,507	6,868	5,638	6,633
Pensions	4,898	5,632	5,123	5,533	4,815	5,187
Other transfers	2,115	1,868	1,384	1,335	823	1,446
Assets sold	510	185	334	333	454	367
Income from rent, interest,	39	7	2	31	257	78
Other income	2,404	2,164	2,167	1,792	4,361	2,660
<b>Average</b>	<b>41,961</b>	<b>55,147</b>	<b>55,569</b>	<b>56,651</b>	<b>76,417</b>	<b>58,491</b>
Income in kind	6,765	11,023	11,352	13,338	13,952	11,575
<b>Yerevan</b>						
Wage-employment	25,996	35,217	37,966	32,608	49,918	38,350
Self-employment	1,562	2,039	3,267	5,738	9,165	5,180
Farm Income	1,146	1,016	1,101	1,047	1,353	1,161
Remittances	2,334	4,649	5,181	6,732	16,325	8,446
Transfers	6,669	6,430	5,936	6,863	4,843	5,977
Pensions	5,206	5,636	5,095	6,096	4,329	5,169
Other transfers	1,463	795	841	767	513	808
Assets sold	421	352	295	214	902	491
Income from rent, interest	134	0	0	40	542	195
Other income	2,323	2,206	1,501	1,923	6,695	3,411
<b>Average</b>	<b>40,586</b>	<b>51,909</b>	<b>55,248</b>	<b>55,166</b>	<b>89,743</b>	<b>63,210</b>
Income in kind	2,676	3,028	3,296	4,752	7,361	4,727
<b>Other urban households</b>						
Wage-employment	17,399	17,703	23,923	23,397	23,962	21,126
Self-employment	3,084	4,163	4,073	3,523	5,037	3,948
Farm Income	6,823	8,200	6,650	7,281	10,980	7,992
Remittances	4,748	4,265	6,105	6,211	12,800	6,829
Transfers	6,848	7,184	6,245	5,601	6,007	6,389
Pensions	4,244	5,038	4,517	4,163	4,934	4,567
Other transfers	2,605	2,146	1,728	1,438	1,073	1,822
Assets sold	859	209	348	765	235	500
Income from rent, interest	1	21	5	61	92	36
Other income	2,199	1,971	1,810	1,778	3,011	2,171
<b>Average</b>	<b>41,962</b>	<b>43,716</b>	<b>49,160</b>	<b>48,616</b>	<b>62,125</b>	<b>48,991</b>
Income in kind	5,020	6,720	6,254	8,710	10,336	7,368
<b>Rural households</b>						
Wage-employment	7,571	13,027	11,749	12,501	11,582	11,581
Self-employment	693	1,998	1,844	2,187	5,863	2,670
Farm Income	23,533	40,092	34,302	37,081	38,133	35,462
Remittances	1,154	2,405	2,206	3,019	6,042	3,124
Transfers	7,676	8,627	7,175	7,888	6,439	7,526
Pensions	5,669	6,193	5,598	6,114	5,400	5,799
Other transfers	2,007	2,434	1,577	1,774	1,039	1,727
Assets sold	15	33	356	97	11	114
Income from rent, interest	0	0	0	0	0	0
Other income	2,843	2,315	2,982	1,684	2,248	2,374
<b>Average</b>	<b>43,486</b>	<b>68,497</b>	<b>60,614</b>	<b>64,457</b>	<b>70,319</b>	<b>62,852</b>
Income in kind	14,272	21,280	21,800	24,935	26,657	22,489

Source: ILCS 2004.

Note: Income defined as total disposable income. Income is divided by official CPI of 1.122 (Spring 1999-Fall 2004).

**Table A3.17: Armenia: Composition of household income sources by quintiles and regions in 2004, in %**

Sources	1	2	3	4	5	Total
<b>All households</b>						
Wage-employment	41.3	38.0	42.6	39.7	41.1	40.6
Self-employment	4.8	5.0	5.3	6.7	9.2	6.7
Farm Income	22.8	32.4	28.1	28.5	19.6	25.6
Remittances	7.4	6.7	7.7	9.2	16.1	10.5
Transfers	16.7	13.6	11.7	12.1	7.4	11.3
Pensions	11.7	10.2	9.2	9.8	6.3	8.9
Other transfers	5.0	3.4	2.5	2.4	1.1	2.5
Assets sold	1.2	0.3	0.6	0.6	0.6	0.6
Income from rent, interest,	0.1	0.0	0.0	0.1	0.3	0.1
Other income	5.7	3.9	3.9	3.2	5.7	4.5
Average	100.0	100.0	100.0	100.0	100.0	100.0
Income in-kind	16.1	20.0	20.4	23.5	18.3	19.8
<b>Yerevan</b>						
Wage-employment	64.1	67.8	68.7	59.1	55.6	60.7
Self-employment	3.8	3.9	5.9	10.4	10.2	8.2
Farm Income	2.8	2.0	2.0	1.9	1.5	1.8
Remittances	5.8	9.0	9.4	12.2	18.2	13.4
Transfers	16.4	12.4	10.7	12.4	5.4	9.5
Pensions	12.8	10.9	9.2	11.0	4.8	8.2
Other transfers	3.6	1.5	1.5	1.4	0.6	1.3
Assets sold	1.0	0.7	0.5	0.4	1.0	0.8
Income from rent, interest	0.3	0.0	0.0	0.1	0.6	0.3
Other income	5.7	4.2	2.7	3.5	7.5	5.4
Average	100.0	100.0	100.0	100.0	100.0	100.0
Income in-kind	6.6	5.8	6.0	8.6	8.2	7.5
<b>Other urban households</b>						
Wage-employment	41.5	40.5	48.7	48.1	38.6	43.1
Self-employment	7.3	9.5	8.3	7.2	8.1	8.1
Farm Income	16.3	18.8	13.5	15.0	17.7	16.3
Remittances	11.3	9.8	12.4	12.8	20.6	13.9
Transfers	16.3	16.4	12.7	11.5	9.7	13.0
Pensions	10.1	11.5	9.2	8.6	7.9	9.3
Other transfers	6.2	4.9	3.5	3.0	1.7	3.7
Assets sold	2.0	0.5	0.7	1.6	0.4	1.0
Income from rent, interest	0.0	0.0	0.0	0.1	0.1	0.1
Other income	5.2	4.5	3.7	3.7	4.8	4.4
Average	100.0	100.0	100.0	100.0	100.0	100.0
Income in-kind	12.0	15.4	12.7	17.9	16.6	15.0
<b>Rural households</b>						
Wage-employment	17.4	19.0	19.4	19.4	16.5	18.4
Self-employment	1.6	2.9	3.0	3.4	8.3	4.2
Farm Income	54.1	58.5	56.6	57.5	54.2	56.4
Remittances	2.7	3.5	3.6	4.7	8.6	5.0
Transfers	17.7	12.6	11.8	12.2	9.2	12.0
Pensions	13.0	9.0	9.2	9.5	7.7	9.2
Other transfers	4.6	3.6	2.6	2.8	1.5	2.7
Assets sold	0.0	0.0	0.6	0.2	0.0	0.2
Income from rent, interest	0.0	0.0	0.0	0.0	0.0	0.0
Other income	6.5	3.4	4.9	2.6	3.2	3.8
Average	100.0	100.0	100.0	100.0	100.0	100.0
Income in-kind	32.8	31.1	36.0	38.7	37.9	35.8

**Source:** ILCS 2004.**Note:** Income defined as total disposable income. Households are ranked by per adult equivalent consumption.

**Table A3.18.** Armenia: Income sources by consumption quintiles and regions in 1998/99  
(income in drams per month, per adult equivalent; Spring 1999 prices)

Sources	1	2	3	4	5	Total
<b>All households</b>						
Wage-employment	1,927	3,449	3,637	5,181	6,382	4,115
Self-employment	334	987	1,862	2,359	5,646	2,237
Farm Income	1,172	2,530	3,432	4,218	6,363	3,542
Remittances	840	1,186	1,958	1,947	3,929	1,971
Transfers	1,008	1,172	953	902	817	971
Pensions	617	832	709	636	568	673
Other transfers	391	340	244	266	249	298
Assets sold	266	448	131	422	262	306
Income from rent, interest,	0	14	0	13	19	9
Other income	1,246	1,304	2,013	2,248	2,099	1,782
<b>Average</b>	<b>6,792</b>	<b>11,090</b>	<b>13,985</b>	<b>17,290</b>	<b>25,516</b>	<b>14,932</b>
Income in kind	1,448	2,660	3,628	5,047	7,687	4,093
<b>Yerevan</b>						
Wage-employment	3,390	6,618	7,984	9,727	12,863	7,968
Self-employment	521	2,533	2,458	812	11,850	3,700
Farm Income	45	80	124	185	135	110
Remittances	1,000	1,837	2,842	4,411	6,433	3,242
Transfers	1,171	1,048	1,237	1,335	989	1,150
Pensions	849	800	952	1,021	705	859
Other transfers	323	248	285	314	284	291
Assets sold	218	131	147	1,547	667	514
Income from rent, interest	0	16	0	52	63	26
Other income	1,978	1,982	2,661	4,305	2,982	2,724
<b>Average</b>	<b>8,322</b>	<b>14,246</b>	<b>17,452</b>	<b>22,376</b>	<b>35,983</b>	<b>19,433</b>
Income in kind	702	1,069	1,444	1,812	3,159	1,621
<b>Other urban households</b>						
Wage-employment	1,552	4,315	3,658	8,842	7,663	4,643
Self-employment	310	448	2,229	4,323	5,065	2,057
Farm Income	179	344	791	1,509	1,364	729
Remittances	1,050	1,652	2,546	2,903	7,317	2,629
Transfers	1,088	1,691	1,044	922	1,019	1,172
Pensions	608	1,061	652	538	550	696
Other transfers	481	631	392	384	469	476
Assets sold	493	1,263	216	138	292	512
Income from rent, interest	0	29	0	0	1	6
Other income	980	1,109	2,276	1,289	3,791	1,706
<b>Average</b>	<b>5,652</b>	<b>10,850</b>	<b>12,759</b>	<b>19,926</b>	<b>26,513</b>	<b>13,454</b>
Income in kind	950	1,463	2,415	3,344	4,402	2,235
<b>Rural households</b>						
Wage-employment	774	716	961	1,199	2,298	1,269
Self-employment	155	395	1,215	2,122	2,394	1,416
Farm Income	3,808	5,810	7,488	7,484	11,655	7,684
Remittances	372	403	964	299	1,299	701
Transfers	713	853	709	687	647	717
Pensions	368	677	603	501	499	537
Other transfers	345	176	106	186	149	180
Assets sold	10	28	55	26	25	30
Income from rent, interest	0	0	0	0	0	0
Other income	776	1,013	1,414	1,743	992	1,227
<b>Average</b>	<b>6,608</b>	<b>9,219</b>	<b>12,806</b>	<b>13,560</b>	<b>19,310</b>	<b>13,044</b>
Income in kind	2,976	4,619	5,898	7,433	11,408	6,961

**Source:** ILCS 1998/99.

**Note:** Income defined as total disposable income. Income is measured per adult equivalent.

**Table A3.19:** Armenia: Income sources by consumption quintiles and regions in 2004  
(income in drams per month per adult equivalent; in constant Spring 1999 prices)

Sources	1	2	3	4	5	Total
<b>All households</b>						
Wage-employment	4,980	6,152	7,750	7,913	12,238	7,804
Self-employment	578	820	987	1,377	2,865	1,325
Farm Income	2,819	5,593	5,258	5,827	5,907	5,080
Remittances	860	1,075	1,340	1,760	4,665	1,939
Transfers	1,997	2,193	2,070	2,322	2,076	2,132
Pensions	1,369	1,622	1,604	1,846	1,759	1,640
Other transfers	628	571	466	476	318	492
Assets sold	133	53	104	124	182	119
Income from rent, interest,	11	2	1	11	96	24
Other income	703	634	694	633	1,727	878
<b>Average</b>	<b>12,080</b>	<b>16,521</b>	<b>18,205</b>	<b>19,967</b>	<b>29,756</b>	<b>19,301</b>
Income in kind	1,975	3,358	3,791	4,781	5,499	3,880
<b>Yerevan</b>						
Wage-employment	7,647	11,547	13,386	11,932	19,053	13,326
Self-employment	477	662	1,179	2,205	3,696	1,868
Farm Income	339	334	381	386	523	406
Remittances	666	1,499	1,700	2,273	6,127	2,812
Transfers	1,927	2,005	1,979	2,404	1,760	2,000
Pensions	1,486	1,762	1,686	2,123	1,565	1,718
Other transfers	441	242	293	281	194	282
Assets sold	122	112	86	74	360	169
Income from rent, interest	39	0	0	15	200	65
Other income	684	693	524	685	2,599	1,181
<b>Average</b>	<b>11,901</b>	<b>16,852</b>	<b>19,235</b>	<b>19,974</b>	<b>34,316</b>	<b>21,826</b>
Income in kind	796	981	1,146	1,745	2,847	1,644
<b>Other urban households</b>						
Wage-employment	5,115	5,703	8,513	9,028	10,423	7,354
Self-employment	904	1,344	1,457	1,437	2,261	1,399
Farm Income	2,052	2,678	2,361	2,820	4,687	2,786
Remittances	1,336	1,352	2,068	2,329	5,303	2,266
Transfers	2,005	2,264	2,119	2,009	2,430	2,146
Pensions	1,211	1,568	1,500	1,470	1,983	1,502
Other transfers	793	696	619	539	447	643
Assets sold	223	67	113	324	97	170
Income from rent, interest	0	7	2	24	38	12
Other income	652	618	628	695	1,337	756
<b>Average</b>	<b>12,286</b>	<b>14,033</b>	<b>17,261</b>	<b>18,665</b>	<b>26,576</b>	<b>16,888</b>
Income in kind	1,489	2,173	2,209	3,355	4,523	2,563
<b>Rural households</b>						
Wage-employment	2,075	3,300	3,478	4,017	4,377	3,499
Self-employment	176	526	572	687	2,191	805
Farm Income	6,513	10,847	10,316	12,090	14,100	10,903
Remittances	320	620	654	983	2,210	935
Transfers	2,056	2,251	2,102	2,464	2,241	2,232
Pensions	1,495	1,579	1,613	1,875	1,853	1,686
Other transfers	560	672	490	589	388	546
Assets sold	4	8	111	31	4	35
Income from rent, interest	0	0	0	0	0	0
Other income	800	611	850	550	841	721
<b>Average</b>	<b>11,942</b>	<b>18,162</b>	<b>18,083</b>	<b>20,821</b>	<b>25,964</b>	<b>19,130</b>
Income in kind	3,921	5,635	6,542	8,109	9,816	6,845

**Source:** ILCS 2004.

**Note:** Income defined as total disposable income. Income is measured per adult equivalent. Income is divided by official CPI of 1.122 (Spring 1999-Fall 2004).

**Table A3.20:** Armenia: Inequality statistics for consumption and income, 1998/99 and 2004  
(standard errors in parenthesis)

	Consumption		Income	
	98/99	2004	98/99	2004
Coefficient of variation	0.784	0.596	2.338	1.067
Gini coefficient	0.301 (0.011)	0.260 (0.006)	0.597 (0.020)	0.395 (0.009)
Theil mean log deviation E(0)	0.150	0.111	0.667	0.280
Theil entropy E(1)	0.174 (0.030)	0.125 (0.010)	0.818 (0.002)	0.297 (0.025)

**Source:** ILCS 1998/99 and 2004.

**Note:** Both consumption and income are measured per adult equivalent. Income is defined as total disposable income, which includes monetary income, income in-kind and income taken from savings. Standard errors are computed with PSU adjustments.

**Table A3.21:** Gini coefficient for consumption by economic regions, 1998/99 and 2004  
(standard errors in parenthesis)

	1998/99	2004
<b>Urban</b>	0.304 (0.011)	0.283 (0.008)
<b>Yerevan</b>	0.319 (0.016)	0.293 (0.013)
<b>Other urban</b>	0.286 (0.015)	0.259 (0.006)
<b>Rural</b>	0.291 (0.022)	0.217 (0.007)
<b>Total</b>	0.301 (0.011)	0.260 (0.006)

**Source:** ILCS 1998/99 and 2004.

**Note:** Consumption is measured per adult equivalent. Standard errors are computed with PSU adjustments.

**Table A4.1** Armenia. Poverty measures by land size in rural areas, 1998/99 and 2004  
(Standard errors in parenthesis)

Land size (in ha)	1998/99		2004			
	Extreme poverty incidence	Poverty incidence	Extreme poverty incidence	Poverty incidence	Share in the poor	Share in rural population
0 hectares	39.1 (7.2)	65.4 (8.7)	10.1 (3.8)	49.5 (6.6)	6.2	4.0
Up to 0.2 ha	23.3 (4.7)	55.7 (5.1)	5.5 (2.1)	37.8 (4.4)	13.9	11.7
0.2 - 0.5 ha	11.9 (2.6)	51.2 (4.5)	2.6 (1.0)	29.2 (3.8)	18.5	20.1
0.5 - 1 ha	15.5 (3.0)	55.1 (4.6)	4.0 (1.5)	27.0 (3.2)	19.5	22.8
More than 1 ha	10.4 (2.1)	39.6 (4.4)	4.7 (1.2)	31.9 (2.7)	41.9	41.4
Rural poverty	14.1 (1.9)	48.2 (3.1)	4.4 (0.8)	31.7 (1.9)	100.0	100.0

**Source.** ILCS1998/99 and 2004.

**Table A5.1:** Participation, employment and unemployment rates by age in selected countries

Age	Armenia 2001 population census*	Armenia LFS	Armenia ILCS	Georgia LFS 2003	Hungary	Czech Republic	Poland	Slovakia	EU-15
<b>Labor force participation rates</b>									
15-64	72.0	58.2	65.9	60.5	60.5	70.1	64.2	69.7	70.8
15-24	55.3	34.4	39.6	30.3	27.9	35.8	33.9	39.4	48.2
25-54	83.2	71.1	76.8	69.9	77.9	87.8	82.2	88.9	83.9
55-64	51.2	42.8	60.9	69.6	32.0	45.1	31.7	31.7	44.6
<b>Employment/Population ratios</b>									
15-64	45.6	40.5	52.2	52.5	56.8	64.2	51.9	57.0	65.0
15-24	28.7	14.6	22.6	22.7	23.6	28.5	20.0	26.5	40.7
25-54	54.5	51.0	63.6	61.1	73.6	81.4	68.3	74.7	77.8
55-64	37.2	44.3	52.5	64.7	31.1	42.6	28.0	26.8	41.8
<b>Unemployment rates</b>									
15-64	36.8	33.2	20.7	13.2	6.1	8.4	19.3	18.2	8.2
15-24	48.1	57.6	43.0	24.9	15.5	20.4	40.8	32.7	15.6
25-54	34.5	28.3	17.2	12.6	5.5	7.3	16.9	16.0	7.3
55-64	27.2	31.0	13.7	7.0	3.1	5.4	11.6	15.4	6.3

\* - de jure population

\*\* - employed: including persons temporary absent (up to 6 months) from the republic for work.

Note: in Armenia the 2001 population census was conducted in October; the 2004 LFS was conducted in August.

Source: Word Bank, 2006 (forthcoming) according to: OECD Employment Outlook 2005. Paris. Armenia: LFS 2004; ILCS 2004 ; Georgia : 2003 LFS.

**Table A5.2:** Armenia: Participation, employment and unemployment rates by gender, 1998/99-2004 (population 16 +)

	Total	Male	Female
<b>Participation rate</b>			
1998/99	63.0	73.8	54.3
2004	60.3	73.7	50.1
<b>Employment rate</b>			
1998/99	46.0	54.0	39.5
2004	48.7	60.1	40.0
<b>Unemployment rate</b>			
1998/99	27.0	26.8	27.2
2004	19.3	18.5	20.2

Source: ILCS 1998/99 and 2004.

**Table A5.3.** Armenia: Unemployment rate by age, 1998/99 and 2004 (in percent)

Age groups	1998/99	2004
Total (16+)	27.0	19.3
16-24	45.9	43.0
25-54	26.5	17.2
55-64	20.9	13.7
65+	6.5	5.0

Source: ILCS 1998/99 and 2004.

**Table A5.4:** Probit estimate: Probability of being unemployed, 2004

Variable	unemp
Female	0.017 (0.010)*
25-44	-0.121 (0.011)***
45-54	-0.130 (0.009)***
55-64	-0.115 (0.008)***
65+	-0.148 (0.006)***
Single	0.077 (0.013)***
Divorced/Widowed	0.068 (0.017)***
Disable	0.039 (0.022)*
Spouse	0.022 (0.014)
Son/Daughter	0.044 (0.011)***
Other	0.056 (0.015)***
Upper secondary	0.018 (0.013)
Specialized secondary	-0.006 (0.013)
Tertiary	-0.051 (0.012)***
Rural	-0.216 (0.008)***
Aragatsotn	0.032 (0.019)*
Ararat	-0.029 (0.013)**
Armavir	-0.065 (0.012)***
Gegharkunik	-0.035 (0.013)***
Lori	0.016 (0.013)
Kotayk	-0.022 (0.012)*
Shirak	0.043 (0.015)***
Sjunik	-0.033 (0.014)**
Vayots Dzor	-0.044 (0.023)*
Tavush	-0.059 (0.014)***
Number of observation	11853

Log likelihood	-4810.98
Chi <sup>2</sup> (25)	2003.46
Pseudo R <sup>2</sup>	0.1723

**Source:** World Bank using Armenia ILCS 2004 data.

**Note:** Dependent variable: Unemployed in the labor force: Yes=1, No=0.

Standard errors in parentheses.

\* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

**Table A5.5.** Determinants of wages among wage earners between 16 and 65 years of age, 2004  
(Depent var: log of hourly wage)

	Public sector	Private sector
Female	-0.202 (0.037)***	-0.392 (0.041)***
Age	0.008 (0.011)	0.030 (0.011)***
Age2	-0.000 (0.000)	-0.000 (0.000)***
Single	-0.029 (0.047)	-0.125 (0.055)**
Divorced/Widowed	0.089 (0.053)*	0.059 (0.069)
Feels overqualified	-0.221 (0.048)***	-0.213 (0.041)***
Feels unqualified	0.046 (0.088)	0.032 (0.112)
Worker has a contract	-0.140 (0.065)**	0.092 (0.039)**
Workers works full time	-0.101 (0.064)	-0.067 (0.040)*
Workers has second job	-0.080 (0.050)	-0.171 (0.077)**
Permanent worker	0.117 (0.085)	0.023 (0.039)
Disable worker	-0.248 (0.091)***	-0.070 (0.114)
Upper secondary	-0.079 (0.093)	0.068 (0.054)
Special secondary	-0.029 (0.092)	0.140 (0.060)**
Tertiary	0.389 (0.091)***	0.488 (0.067)***
Agriculture	-0.406 (0.191)**	-0.239 (0.095)**
Manufacturing	0.113 (0.062)*	-0.179 (0.097)*
Construction	0.130 (0.096)	0.066 (0.056)
Commerce	-0.024 (0.081)	-0.094 (0.048)**
Public admin. / police	-0.054 (0.051)	0.002 (0.201)
Health (and education) professionals	-0.214 (0.052)***	-0.063 (0.099)



Other Services	-0.127 (0.064)**	0.096 (0.067)
Rural	0.069 (0.041)*	0.022 (0.055)
Aragatsotn	0.226 (0.080)***	0.144 (0.103)
Ararat	-0.133 (0.076)*	-0.238 (0.075)***
Armavir	0.140 (0.051)***	-0.041 (0.077)
Gegharkunik	0.095 (0.054)*	0.013 (0.102)
Lori	-0.123 (0.056)**	-0.285 (0.067)***
Kotayk	-0.101 (0.056)*	0.095 (0.049)*
Shirak	-0.047 (0.054)	-0.703 (0.074)***
Sjunik	-0.044 (0.055)	-0.272 (0.099)***
Vayots Dzor	0.016 (0.077)	-0.441 (0.074)***
Tavush	-0.086 (0.075)	0.033 (0.070)
Constant	5.165 (0.242)***	4.953 (0.230)***
Observations	2585	1888
R <sup>2</sup>	0.167	0.243
Root MSE	0.647	0.615

**Source:** World Bank using Armenia ILCS 2004 data.

**Note:** Standard errors in parentheses.

\* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

**Table A7.1:** Armenia: Health and education indicators influence perceptions of poverty

	<i>All</i>	<i>Urban</i>	<i>Rural</i>
<b>Health indicators</b>	<i>Change in the Probability of feeling in poverty in %</i>		
Households having a sick member	10.8	11.3	12.6
Households having a head who feels sick	10.6	10.4	13.8
Households having a spouse who feels sick	10.3	9.2	11.1
	<i>All</i>	<i>Urban</i>	<i>Rural</i>
<b>Education indicators</b>	<i>Change in the Probability of feeling in poverty in %</i>		
Households whose head has basic secondary education	N.S.	-9.4	N.S.
Households whose head has upper secondary education	-6.6	-19.6	<u>-8.1</u>
Households whose head has some tertiary education	-10.7	-21.5	-10.1
Households whose spouse has basic secondary education	N.S.	N.S.	N.S.
Households whose spouse has upper secondary education	<u>-7.7</u>	N.S.	N.S.
Households whose spouse has at least some tertiary education	-12.9	N.S.	N.S.

**Source:** ILCS 2004.

**Notes:** Estimates are obtained using a probit model. The model controls for socio economic level and geographical location. The full specification is presented in the next table (Table A7.2).

**Table A7.2:** Armenia: Determinants of subjective poverty [omitted variables: education: primary/no education; socio economic condition: poorest quintile; strata: Yerevan; region: Tavush]

<i>Dependent Variable: head of the household feels the household is poor</i>	<i>All</i>	<i>Yerevan</i>	<i>Urban</i>	<i>Rural</i>
	dF/dx	dF/dx	dF/dx	dF/dx
<b>Health Characteristics</b>				
Household having a sick member	0.11	0.09	0.11	0.13
Head feels sick	0.11	0.08	0.10	0.14
Spouse feels sick	0.10	0.08	0.09	0.11
<b>Education of the Head and Spouse</b>				
Head has basic/secondary education	N.S.	N.S.	-0.09	N.S.
Head has upper-secondary education	-0.07	N.S.	-0.20	<u>-0.08</u>
Head has some tertiary education	-0.11	N.S.	-0.22	<u>-0.10</u>
Spouse has basic/secondary education	N.S.	-0.14	N.S.	N.S.
Spouse has upper-secondary	<u>-0.08</u>	<u>-0.16</u>	N.S.	N.S.
Spouse has some tertiary education	-0.13	-0.19	N.S.	N.S.
<b>Demographic Characteristics</b>				
Number of under-6s in household	N.S.	N.S.	N.S.	N.S.
Square of number of under-6s in household	N.S.	N.S.	N.S.	N.S.
Number of 7-14s in household	N.S.	-0.07	<u>-0.05</u>	N.S.
Square of number of 7-14s in household	N.S.	0.03	N.S.	N.S.
Number of adults in household	-0.11	-0.09	-0.15	-0.10
Square of number of adults in household	0.01	0.01	0.02	0.01
Number of 65+ in household	N.S.	N.S.	N.S.	N.S.
Square of number of 65+ in household	N.S.	N.S.	N.S.	N.S.
Female-headed household	N.S.	N.S.	N.S.	N.S.
<b>Other Characteristics of the Head</b>				
Head of household is single	N.S.	N.S.	N.S.	N.S.
head is disable	N.S.	N.S.	N.S.	N.S.
Age of head	0.01	0.01	0.01	<u>-0.01</u>
Square of age of household Head	0.00	0.00	0.00	N.S.
Head has a job	-0.06	N.S.	-0.06	N.S.
Head is employed as a wage earner	N.S.	N.S.	N.S.	N.S.
<b>Other Characteristics of the Spouse</b>				
Age of spouse	N.S.	0.01	N.S.	N.S.
Square of age of Spouse	N.S.	0.00	N.S.	N.S.
Spouse is retired	N.S.	0.11	N.S.	N.S.
Spouse is disable	N.S.	N.S.	N.S.	N.S.
Spouse has a job	N.S.	N.S.	N.S.	N.S.
<b>Socio Economic Condition</b>				
Second quintile	-0.05	N.S.	-0.05	-0.12
Third quintile	-0.13	-0.11	-0.13	-0.17
Fourth quintile	-0.15	-0.13	-0.17	-0.19
Richest quintile	-0.22	-0.19	-0.23	-0.24
<b>Geographical Location</b>				
Aragatsotn	0.10		N.S.	<u>0.09</u>
Ararat	N.S.		N.S.	N.S.
Armavir	N.S.		0.13	N.S.
Gegharkunik	N.S.		N.S.	N.S.
Lori	N.S.		N.S.	N.S.
Kotayk	-0.07		N.S.	<u>-0.08</u>
Shirak	N.S.		0.17	N.S.
Syunik	N.S.		0.18	N.S.
Vayots Dzor	N.S.		N.S.	N.S.

<b>Strata</b>				
Urban dummy	N.S.			
Rural dummy	N.S.			
Observations	6423.00	1943.00	2846.00	1634.00

Source: ILCS 2004.

Note: NS stands for “not significant”.

**Table A7.3:** Estimates of enrollment ratios by quintile, gender, and economic regions

	<i>Gross Enrollment</i>					<i>Net Enrollment</i>				
	<i>Q1</i>	<i>Q2</i>	<i>Q3</i>	<i>Q4</i>	<i>Q5</i>	<i>Q1</i>	<i>Q2</i>	<i>Q3</i>	<i>Q4</i>	<i>Q5</i>
	<i>National</i>					<i>National</i>				
Preschool	19	18	21	26	41	19	18	21	26	41
Basic	102	101	101	98	98	96	97	97	96	95
Upper Secondary	85	85	98	107	114	63	64	70	76	73
Tertiary	12	17	26	42	67	5	6	13	19	38
	<i>Female</i>					<i>Female</i>				
Preschool	19	15	25	26	50	19	15	25	26	50
Basic	101	103	103	98	97	96	98	96	97	94
Upper Secondary	100	88	105	116	136	71	68	67	80	82
Tertiary	12	17	28	40	60	5	7	16	18	41
	<i>Male</i>					<i>Male</i>				
Preschool	19	20	18	26	34	19	20	18	26	34
Basic	103	99	100	99	99	96	97	98	96	96
Upper Secondary	66	81	92	99	95	53	60	72	71	65
Tertiary	11	18	22	44	77	5	6	10	21	33
	<i>Yerevan</i>					<i>Yerevan</i>				
Preschool	45	32	37	35	64	45	32	37	35	64
Basic	102	98	101	98	103	97	95	98	95	95
Upper Secondary	79	98	97	105	111	54	69	69	77	66
Tertiary	16	34	35	54	80	7	16	14	30	48
	<i>Urban</i>					<i>Urban</i>				
Preschool	17	30	32	34	37	17	30	32	34	37
Basic	100	102	98	98	95	94	97	97	96	93
Upper Secondary	93	92	109	112	119	70	71	79	80	80
Tertiary	13	25	37	42	65	5	8	21	15	37
	<i>Rural</i>					<i>Rural</i>				
Preschool	2	8	9	17	16	2	8	9	17	16
Basic	105	102	103	98	96	98	98	97	97	97
Upper Secondary	77	74	93	107	115	61	58	65	73	75
Tertiary	6	4	13	29	44	2	1	8	11	22

Source: ILCS 2004.

**Table A7.4:** Armenia: Determinants of enrollment by level [omitted variables: sector of employment of the head/spouse: agriculture; type of firm of the head/spouse: public; education of the head/spouse: primary/no education; distance to school facility: less than 1 km; strata: Yerevan; region: Tavush]

	<i>Preschool</i>	<i>Tertiary</i>
	dF / dx	dF / dx
<b>Individual Characteristics</b>		
Male dummy	N.S.	N.S.
Age	-	-0.160
Square of age	N.S.	N.S.
vulnerable child (orphan, disable)	N.S.	N.S.
Individual is employed	-	-0.132
Individual works full-time	-	N.S.
If employed, individual is hired employee	-	0.077
<b>Type of care when mother is not home (preschoolers only)</b>		
Got care free of charge	N.S.	-
Household member takes care of child	-0.486	-
Relative outside household takes care of child	-0.068	-
Neighbor takes care of child	-0.060	-
<b>Household Characteristics</b>		
Logarithm of household size	N.S.	N.S.
Square of logarithm of household size	N.S.	N.S.
Female-headed household	N.S.	N.S.
Age of head	N.S.	-0.004
Square of age of household Head	N.S.	0.000
Head of household is single	1.000	N.S.
<b>Employment status of the head</b>		
Head is disable	N.S.	N.S.
Head has a job	N.S.	N.S.
If employed, head works full time	0.097	N.S.
If employed, head has a job contract	N.S.	N.S.
If employed, head is a permanent worker	N.S.	N.S.
Head is employed as a wage earner	-0.101	-0.029
<b>Sector of employment of the head</b>		
Head works in delivery of water, elect, gas	-0.055	N.S.
Head works in construction	-0.057	N.S.
Head works in commerce	N.S.	N.S.
Head works giving professional svs.	N.S.	N.S.
Head works in public admin./army/police	N.S.	N.S.
Head works on health/education sector	N.S.	N.S.
Head works on other pub./priv. social services	N.S.	N.S.
<b>Type of firm of the head</b>		
Head works in a private firm	N.S.	N.S.
Head works in a semi-private/collective firm	0.497	N.S.
<b>Education of the head</b>		
Head has basic secondary education	N.S.	N.S.
Head has upper/special secondary education	N.S.	N.S.
Head has at least some tertiary school	N.S.	0.075
<b>Characteristics of the spouse</b>		
Age of spouse	N.S.	N.S.
Square of age of Spouse	N.S.	N.S.
Spouse is retired	-0.096	N.S.
Spouse is disable	N.S.	-0.047
Spouse has a job	N.S.	0.057
If employed, Spouse works full time	N.S.	N.S.

If employed, spouse is a permanent worker	-0.071	N.S.
Spouse works in a private firm	N.S.	-0.074
Spouse works in a semi-private/collective firm	N.S.	N.S.
Spouse is employed as a wage earner	N.S.	N.S.
spouse has basic secondary	0.994	-
spouse has upper/specializes secondary	0.987	-
Spouse has at least some tertiary school	0.990	-
<b>Remittances</b>		
Income from Intl. remittances last year (per equiv. adult)	N.S.	0.127
Income from dom. remittances last year (per equiv. adult)	N.S.	0.422
Total non-remittances Income last year (per equiv. adult)	N.S.	N.S.
<b>Distance to nearest preschool/university</b>		
1 to 3 kms	N.S.	N.S.
4 to 5 kms	N.S.	N.S.
More than 5 kms	N.S.	N.S.
<b>Socio Economic Group</b>		
First quintile	-0.054	-0.120
Second quintile	-0.051	-0.109
Third quintile	-0.021	-0.072
Fourth quintile	-0.035	-0.055
<b>Strata</b>		
Urban	N.S.	-0.050
Rural	-0.102	-0.082
<b>Region</b>		
Aragatsotn	-0.056	N.S.
Ararat	-0.058	N.S.
Armavir	-0.065	N.S.
Gegharkunik	-0.072	0.059
Lori	-0.065	N.S.
Kotayk	-0.066	0.077
Shirak	-0.035	0.082
Syunik	N.S.	N.S.
Vayots Dzor	N.S.	dropped
Observations	645	6094

Source: ILCS 2004.

Note: Presented coefficients are significant at the 10 percent confidence interval. N.S: coefficient is not significant.

**Table A7.5:** Armenia: Determinants of wages among wage earners between 16 and 65 years of age [omitted variables: sector of employment: professional services; type of firm: cooperative; education: basic/no education; strata: Yerevan and Aragatsotn in urban areas and Lori in Urban areas]

	<i>Yerevan</i>	<i>Urban</i>	<i>Rural</i>
(Dependant variable: log of hourly wage)			
<b>Individual Characteristics</b>			
Male dummy	0.305	0.327	0.218
Age	0.029	0.028	N.S.
Square of age	0.000	0.000	N.S.
Single	N.S.	-0.058	0.138
Feels overqualified	-0.188	-0.248	-0.194
Feels unqualified	N.S.	N.S.	N.S.
Worker has a contract	N.S.	N.S.	N.S.
Workers works full time	N.S.	-0.173	-0.210
Workers has second job	N.S.	N.S.	-0.167
Permanent Worker	N.S.	N.S.	0.352
Disable worker	-0.269	-0.228	N.S.
<b>Education</b>			
Upper secondary	N.S.	N.S.	N.S.
Special secondary	N.S.	N.S.	<u>0.160</u>
Tertiary	0.482	0.472	0.585
<b>Industry of employment</b>			
Industry = agriculture	N.S.	N.S.	N.S.
Industry = electricity and water	N.S.	0.144	N.S.
Industry = construction	N.S.	0.161	0.351
Industry = commerce	N.S.	-0.133	N.S.
Industry = public admin. / police	N.S.	N.S.	N.S.
Industry = Health (and education) professionals	-0.223	-0.135	N.S.
Industry = Other Services	N.S.	-0.148	N.S.
<b>Type of Firm</b>			
Public firm	<u>-0.094</u>	N.S.	N.S.
Private firm	0.161	0.160	0.243
<b>Region</b>			
Aragatsotn	-	(dropped)	0.702
Ararat	-	N.S.	0.260
Armavir	-	N.S.	0.580
Gegharkunik	-	N.S.	0.569
Lori	-	N.S.	(dropped)
Kotayk	-	0.067	0.453
Shirak	-	-0.156	N.S.
Syunik	-	N.S.	0.227
Vayots Dzor	-	-0.196	0.476
Tavush	-	N.S.	0.447
Constant	4.354	4.451	3.739

Source: ILCS 2004.

Note: Presented coefficients are significant at the 5 percent confidence interval. Underlined coefficients are significant at the 10 percent confidence interval. N.S: coefficient is not significant.

**Table A7.6:** Armenia: Determinants of health care utilization [omitted variables: education of the head/spouse: basic/no education; distance to closest health facility: less than 1 km; strata: Yerevan; region: Tavush]

	<i>Visited a Doctor</i>		<i>Received Treatment</i>		<i>Hospitalized</i>
	All Sick	Poor Sick	All Sick	Poor Sick	If severely ill
	dF / dx	dF / dx	dF / dx	dF / dx	dF / dx
<b>Patient Characteristics</b>					
Male dummy	-0.072	N.S.	N.S.	N.S.	<u>-0.053</u>
Age	N.S.	N.S.	N.S.	N.S.	0.031
Square of age	N.S.	N.S.	-0.001	N.S.	-0.001
dummy if severely ill	0.131	0.206	0.117	0.281	-
Subjective health good	N.S.	N.S.	-0.450	-	N.S.
				0.506	
Subjective health not very good	N.S.	N.S.	-0.283	-	N.S.
				0.443	
Subjective health bad	N.S.	N.S.	-0.283	-	N.S.
				0.359	
Subjective health very bad	N.S.	N.S.	N.S.	-	N.S.
				<u>0.315</u>	
<b>Level of Education of patient</b>					
Upper secondary	0.188	0.181	0.131	<u>0.160</u>	<u>-0.058</u>
Secondary specialized	0.177	N.S.	N.S.	N.S.	<u>-0.054</u>
Tertiary	0.203	0.453	0.202	0.405	N.S.
<b>Characteristics of the household</b>					
logarithm of household size	-0.504	-0.842	N.S.	N.S.	N.S.
Square of logarithm of household size	0.158	0.267	N.S.	N.S.	N.S.
Income intl. remittances (12m) per equiv adult.	N.S.	N.S.	N.S.	N.S.	<u>-0.009</u>
Total income (12m) per equiv adult.	N.S.	N.S.	N.S.	0.007	N.S.
household receives BBP	-0.106	-0.107	N.S.	N.S.	N.S.
Dummy if household is poor	-0.150	-	-0.160	-	-0.102
<b>Characteristic of the head/spouse</b>					
Age of head	N.S.	-0.033	N.S.	-	<u>0.015</u>
				0.068	
Sq. of age of household Head	N.S.	0.000	N.S.	0.001	<u>0.000</u>
Female-headed household	N.S.	N.S.	N.S.	N.S.	N.S.
Head of household is single	N.S.	N.S.	N.S.	N.S.	N.S.
Head has a job	N.S.	N.S.	N.S.	N.S.	N.S.
Age of spouse	N.S.	N.S.	N.S.	N.S.	N.S.
Square of age of Spouse	N.S.	N.S.	<u>0.000</u>	N.S.	N.S.
Spouse has a job	N.S.	N.S.	N.S.	N.S.	N.S.
<b>Level of Education of head</b>					
Primary education	-0.235	N.S.	-0.367	N.S.	N.S.
Basic secondary education	-0.259	N.S.	-0.402	N.S.	N.S.
Upper/special secondary	-0.359	N.S.	-0.524	N.S.	N.S.
Tertiary	-0.317	N.S.	-0.502	N.S.	N.S.
<b>Distance to closest health facility</b>					
1-3 km	0.081	N.S.	0.141	0.176	N.S.
4-5 km	-0.080	N.S.	N.S.	N.S.	N.S.
6-10 km	N.S.	N.S.	N.S.	N.S.	-
more than 10 km	N.S.	0.671	<u>0.203</u>	N.S.	-

<b>Geographical location</b>					
Urban dummy	N.S.	N.S.	<u>0.172</u>	<u>0.274</u>	N.S.
Rural dummy	N.S.	N.S.	N.S.	N.S.	N.S.
region==Aragatsotn	N.S.	N.S.	N.S.	N.S.	-
region==Ararat	N.S.	-0.018	-0.209	N.S.	-
region==Armavir	N.S.	N.S.	N.S.	N.S.	-
region==Gegharkunik	0.268	N.S.	0.283	<u>0.358</u>	-
region==Lori	N.S.	N.S.	N.S.	<u>-0.245</u>	-
region==Kotayk	0.222	N.S.	N.S.	N.S.	-
region==Shirak	N.S.	N.S.	N.S.	N.S.	-
region==Syunik	N.S.	N.S.	N.S.	N.S.	-
Observations	987	396	1003	401	240

Source: ILCS 2004.

Note: Presented coefficients are significant at the 5 percent confidence interval. Underlined coefficients are significant at the 10 percent confidence interval. N.S: coefficient is not significant.

**Table A8.1.** Armenia: Poverty reduction impact of social transfers, 2004, (in %) (standard errors are in parenthesis)

	Overall Poverty	Poverty gap (P1/P0)	Poverty severity	Extreme poverty	Poverty gap (P1/P0)	Poverty severity
<b>Post-transfers</b> (post pensions and social assistance)	34.6 (1.0)	21.3 (0.5)	6.9 (0.3)	6.4 (0.5)	17.1 (0.8)	4.7 (0.4)
<b>Pre-transfers</b> (pre pension and social assistance)	44.8 (1.0)	29.8 (0.5)	13.7 (0.6)	15.4 (0.7)	28.2 (1.2)	15.9 (2.5)
<b>Pre-pension</b> (pre-pension post social assistance)	42.7 (1.0)	27.2 (0.5)	11.5 (0.6)	12.3 (0.6)	25.8 (1.3)	13.9 (2.9)
<b>Pre social assistance</b> (pre PFB and other social assistance post pension)	37.2 (1.0)	23.9 (0.5)	8.7 (0.3)	8.7 (0.5)	21.3 (0.9)	7.8 (0.7)
<b>Pre-PFB</b> (pre PFB post pension and other social assistance)	36.7 (1.0)	23.3 (0.5)	8.3 (0.3)	8.2 (0.5)	20.3 (0.9)	7.0 (0.6)

Source: ILCS 2004

**Table A8.2:** Armenia: Poverty reduction impact of social transfers on households reporting pensions and/or social assistance, 2004 (in %); standard errors in parenthesis

	Very poor (%)	Poor (%)	Poverty Gap (P1/P0)	Poverty Severity
Households who receive pensions				
Post-pensions	7.1 (0.7)	36.6 (1.4)	21.5 (0.6)	7.0 (0.4)
Pre-pension	19.1 (1.0)	53.2 (1.4)	31.1 (0.8)	14.6 (1.0)
Households who receive social assistance				
Post-social assistance	10.0 (1.2)	45.4 (2.1)	23.0 (0.9)	7.9 (0.5)
Pre-social assistance	21.9 (1.7)	58.8 (2.1)	30.9 (1.0)	13.7 (0.7)
Households who receive PFB				
Post-PFB	9.9 (1.3)	47.1 (2.5)	22.7 (1.0)	7.6 (0.6)
Pre-PFB	22.0 (2.0)	61.4 (2.4)	30.5 (1.1)	13.1 (0.8)

Source: ILCS 2004



**Table A8.3:** Armenia: Probability of receiving the family poverty benefits, 2004

Independent variables	dF/dx	Standard Errors
Share age 0-5	0.220	(0.044)***
Share age 6-14	0.302	(0.037)***
Share age 15-18	0.263	(0.037)***
Share age 19-25	-0.035	(0.036)***
Share age 26-45	-0.121	(0.026)***
Share age 61+	0.170	(0.023)***
<i>Ln</i> (Household size)	0.021	(0.012)*
Consumption per adult equivalent	-0.033	(0.008)***
Age of head	0.001	(0.002)
Age of head square	-0.000	(0.000)
Female head	0.058	(0.010)***
Incomplete Secondary (head)	0.058	(0.010)***
Complete Secondary (head)	-0.015	(0.012)
Technical (head)	-0.027	(0.013)**
Higher Education (head)	-0.015	(0.013)
Non participant (head)	0.051	(0.011)***
Unemployed(head)	0.093	(0.015)***
Self-employed (head)	0.058	(0.022)***
Other employment (head)	0.058	(0.016)***
Migrant member	0.075	(0.029)***
Migrant returned from abroad	-0.057	(0.006)***
Migrant returned from other part of Armenia	-0.040	(0.015)***
% Unemployed in household	0.090	(0.020)***
% Self-employed in household	0.062	(0.019)***
% Other employment in household	0.094	(0.019)***
Own car	-0.053	(0.007)***
Temporary lodgings	0.081	(0.021)***
Other lodgings	0.050	(0.067)
Total land used by household	-0.010	(0.003)***
% land owned	-0.016	(0.011)
% land irrigated	-0.003	(0.011)
Received credit. Y/N?	-0.008	(0.013)
Has livestock. Y.N?	0.017	(0.011)
Aragatzotn	0.044	(0.023)**
Ararat	0.118	(0.024)***
Armavir	0.016	(0.017)
Gegharkunik	0.112	(0.025)***
Lori	0.218	(0.025)***
Kotayk	0.049	(0.019)***
Shirak	0.206	(0.025)***
Syunik	0.078	(0.027)***
Vayots Dzor	0.108	(0.044)**
Tavush	0.112	(0.030)***
LR chi2(42)	1389.96	
Prob > chi2	0	
Pseudo R2	0.2484	
Log likelihood	-2103.2058	
Number of observations	6816	

Source: 2004 ILCS

Note: \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

## References

- Armenian European Policy and Legal Advice Center (2004), *Armenian Trends*.
- Alam, Asad et al. (2005), *Growth, Poverty, and Inequality: Eastern Europe and the Former Soviet Union*. The World Bank, Washington, D.C.
- Bernabe, Sabine and Gorana Krstić (2005), “Labor Productivity and Access to Markets Matter for Pro-Poor Growth”, Operationalizing Pro-Poor Growth, The World Bank, Washington, DC.
- Braithwaite, Jeanine, Cristiaan Grootaert and Branko Milanović (2000), *Poverty and Social Assistance in Transition Countries*.
- Datt, G. and Martin Ravallion (1992), “Growth and Redistribution Components of Changes in Poverty Measures: A Decomposition with Applications to Brazil and India in the 1980s”, *Journal of Development Economics* 38, 275-295.
- Dutz, Mark, Céline Kauffmann, Serineh Najarian, Peter Sanfey and Ruslan Yemtsov (2004), “Labour market states, mobility and entrepreneurship in transition economies” *Brazilian Journal of Business Economics*, 4(2), pp. 37-49, 2004.
- Education in Armenia, Information on Education State in Armenia during 2003-2004, Ministry of Sciences and Education of RA
- Foster, James, Joel Greer, and Erik Thorbecke (1984) “Class of Decomposable Poverty Measures”, *Econometrica*, 52, pp.761-66.
- Freinkman, Lev, Gohar Gyulumyan and Artak Kyurumyan (2003) Quasi-Fiscal activities, Hidden Government Subsidies, and Fiscal Adjustment in Armenia, Working Paper No. 16, The World Bank, Washington, D.C.
- Ghukasyan, Hasmik (2005), Informal Sector Profile in Armenia, *Mimeo*, EBRD.
- Government of Armenia (2005), Proposal for Millennium Challenge Account (MCC) assistance, *Mimeo*.
- ILO (2004), *Yearbook of Labor Statistics*, ILO.
- Islam, Rizwanul (2004), “The Nexus of Economic Growth, Employment and Poverty Reduction: An Empirical Analysis”, Discussion Paper 14, International Labour Office, Geneva.
- Kaminski, Bartłomiej (2005), “Real and Formal Ease of Doing Business in Armenia in Comparative Perspective: Implications for Regulatory Reforms”, The World Bank, photocopy.
- Kolev, Alexandre (2002), “Joblessness and Precarious Work in Bulgaria: Addressing the Multiple Aspects of Vulnerability in the Labour Market”, processed, The World Bank, Washington DC.
- Krstić, Gorana (2003), Labour Markets in Armenia, background paper prepared for Armenia: Poverty Assessment, The World Bank, Washington DC.
- . (2004), Labor Markets in Serbia and Montenegro, background paper prepared for Serbia and Montenegro: Republic of Serbia – An Agenda for Economic Growth and Employment, Report No. 29258-YU.

- Lanjouw, Peter and Martin Ravallion (1995). "Poverty and Household Size", *Economic Journal*, Royal Economic Society, vol. 105(433).
- Ravallion, Martin and Shaohua Chen (2003), "Measuring Pro-Poor Growth", *Economics Letters*, 78, 93-99.
- Majid, N. (2001), "The Size of the Working Poor Population in Developing Countries", Employment Paper No. 2001/16. International Labour Office: Geneva.
- Millenium Development Goals: Local Challenges, EDRC, OXFAM Yerevan 2005
- Murrugarra, Edmundo (2002). "Public Transfers and Migrants' Remittances: Evidence of the Recent Armenian Experience". *World Bank Economist's Forum*. Vol (2): p25 - 47
- Newell, Andrew and Barry Reilly, (2001), "The Gender Pay Gap in the Transition from Communism", *Economic Systems* 25, 287-304.
- National Statistical Service of Armenia (2000-2004), *Socio-Economic Situation in Armenia*, Yerevan.
- \_\_\_\_\_. (2003a), *The Results of 2001 Census of the Republic of Armenia*, Yerevan.
- \_\_\_\_\_. (2002, 2003b. 2004) , *Social Snapshot and Poverty in Armenia*, Statistical Analytical Report.
- \_\_\_\_\_. (2004), *Foreign Trade of the Republic of Armenia*, Yerevan.
- \_\_\_\_\_. (2005), *Statistical Yearbook of Armenia*, Yerevan.
- \_\_\_\_\_. (January-December 2004) *Poverty and Food Security*
- OECD (2005), *Employment Outlook*, OECD: Paris.
- Osmani, S.R. (2003), "Exploring the Employment Nexus: Topics in Employment and Poverty", United Nations Development Programme, New York and International Labour Office, Geneva.
- Rutkowski, Jan (1999), "Labor Markets and Poverty in Bulgaria", Social Protection Discussion Paper Series, No.9918, The World Bank, Washington DC
- \_\_\_\_\_. (2003a), "Rapid Labor Reallocation with the Stagnant Unemployment Pool: The Puzzle of the Labor Market in Lithuania". Policy Research Working Paper No. 2946, The World Bank, Washington, DC.
- \_\_\_\_\_. (2003b), "Why is Unemployment so High in Bulgaria". Policy Research Working Paper No. 3017, The World Bank, Washington, DC.
- \_\_\_\_\_. (2003c), "Does Strict Employment Protection Discourage Job Creation? Evidence from Croatia". Policy Research Working Paper No. 3104, The World Bank, Washington, DC.
- Rutkowski, Jan et al. (2005), *Enhancing Job Opportunities: Eastern Europe and the Former Soviet Union*, The World Bank, Washington, DC.
- Schneider, Friedrich (2005), Department of Economics, Johannes Kepler University of Linz, *Mimeo*.

- World Bank (2001), *Armenia: Growth Challenges and Government Policies*. Report No. 22854-AM, The World Bank, Washington, D.C.
- \_\_\_\_\_. (2002), *Armenia Poverty Update*. Report No. 24339-AM, The World Bank, Washington, D.C.
- \_\_\_\_\_. (2003), *Armenia: Public Expenditure Review*, Report No. 24434-AM, The World Bank, Washington, D.C.
- \_\_\_\_\_. (2004), *Millennium Development Goals: Progress and Prospects in Europe and Central Asia*. Edited by Alan Wright. World Bank, Washington, D.C.
- \_\_\_\_\_. (2005a), *World Development Report: A Better Investment Climate for Everyone*. New York, NY: World Bank and Oxford University Press.
- \_\_\_\_\_. (2005b), *The Roar of the Caucasian Tiger: Policies to Sustain Growth in Armenia*, Report No. 32770-AM, The World Bank, Washington, DC.
- \_\_\_\_\_. (2005c), *Operationalizing Pro-Poor Growth (OPPG) Country Case Studies*, *Mimeo*, The World Bank, Washington, D.C.
- \_\_\_\_\_. (forthcoming), *Armenia Public Expenditure Review*. The World Bank, Washington, D.C.
- \_\_\_\_\_. (forthcoming) *Armenia: labor market dynamics*. The World Bank, Washington, D.C.
- World Economic Forum (2005), *Global Competitiveness Report 2005-2006*,  
<http://www.weforum.org/site/homepublic.nsf/Content/Global+Competitiveness+Programme%5CGlobal+Competitiveness+Report>
- Young-Ro, Yoon, Barry Reilly, Gorana Krstić, and Sabine Bernabini (2003) “A study of informal labor market activity in the CIS-7”, Conference Volume, The World Bank, Washington, DC.