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 independance (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 previus 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 closeure of enterprises in urbal 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)[1] 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 socials 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
1990	79.9	50.2	29.7	**22.5**	20.5	27.0	22.0	14.7	7.3	**6.2**	6.0	6.7
1991	77.8	48.4	29.4	**21.6**	19.5	26.3	23.4	15.8	7.6	**6.5**	6.3	6.9
1992	70.6	44.0	26.6	**19.9**	18.1	23.8	25.8	17.4	8.4	**7.3**	7.2	7.5
1993	59,0	35.3	23.7	**17.3**	15.2	21.7	27.5	18.6	8.9	**8.1**	8.0	8.2
1994	51.1	29.9	21.2	**15.5**	13.5	19.5	24.6	16.7	7.9	**7.5**	7.5	7.3
1995	49.0	29.2	19.8	**15.0**	13.5	18.1	24.8	16.7	8.1	**7.6**	7.8	7.4
1996	48.1	29.4	18.7	**14.8**	13.7	17.0	24.9	16.5	8.4	**7.7**	7.7	7.7
1997	43.9	26.9	17.0	**13.5**	12.6	15.3	24.0	15.8	8.2	**7.4**	7.4	6.9
1998	39.4	24.6	14.8	**12.2**	11.6	13.3	23.2	15.5	7.7	**7.2**	7.3	7.3
1999	36.5	22.4	14.1	**11.3**	10.7	12.5	24.1	15.8	8.3	**7.5**	7.5	7.4
2000	34.3	21.4	12.9	**10.6**	10.3	11.4	24.0	15.7	8.3	**7.5**	7.5	7.3
2001	32.1	20.3	11.8	**10.0**	9.8	10.3	24.0	15.6	8.4	**7.5**	7.6	7.3
2002	32.2	20.8	11.4	**10.1**	10.1	10.0	25.5	16.7	8.8	**8.0**	8.1	7.7
2003	35.8	22.6	13.2	**11.2**	11.0	11.5	26.0	16.9	9.1	**8.1**	8.2	8.0
2004	37.5	23.6	18.9	**11.7**	11.5	12.1	25.7	16.5	9.2	**8.0**	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

[1] 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
Total	**20**	**20.9**	**32.0**	**7.4**	**39.8**

Source: ILCS 2004.

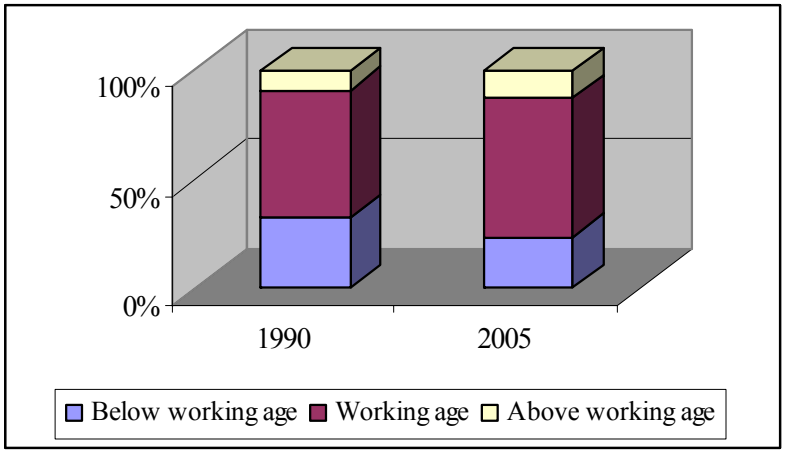
The ILCS also reports that some of the migrants have returned. About 10 percent of households with migrant members reported also having members who have returned back: 4.4 percent had members who have returned from abroad, while 5.4 percent had members who have returned from other parts of Armenia. Unfortunately 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)*

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

***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 cased 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[2] 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

[2] 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)
Armenia	**37.7**	**64.7**
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

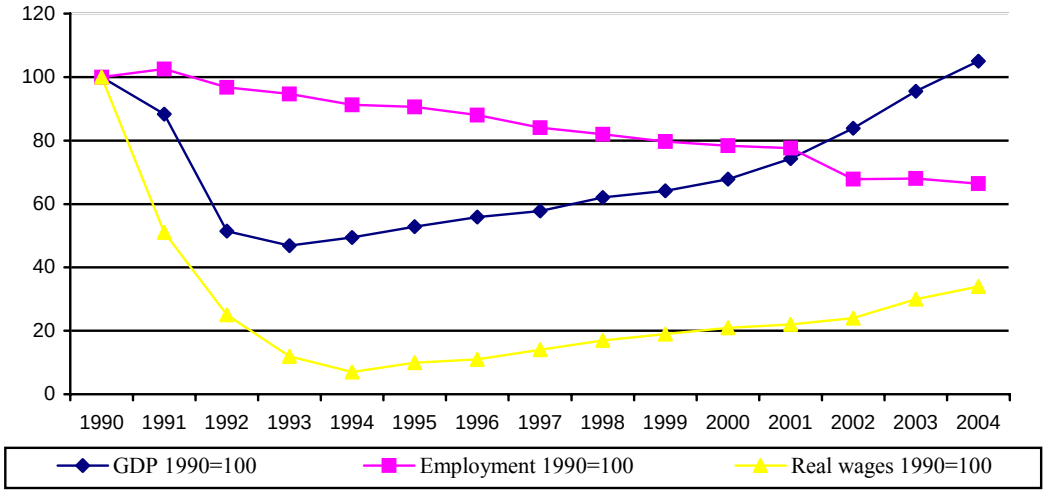
Figure 2.1 illustrates the dynamics of the main macro indicators since 1990: real GDP and wages, and aggregate employment (as officially estimated/recorded by the NSSA). After declining by about 55 percent during 1991-93, real output has grown since 1994 at an average annual rate of 7.7 percent, recovering 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[3]. 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.

[3] 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.

Figure 2.1: Armenia: GDP, employment and real wages 1990=100 (%)



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[4] 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

[4] 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.

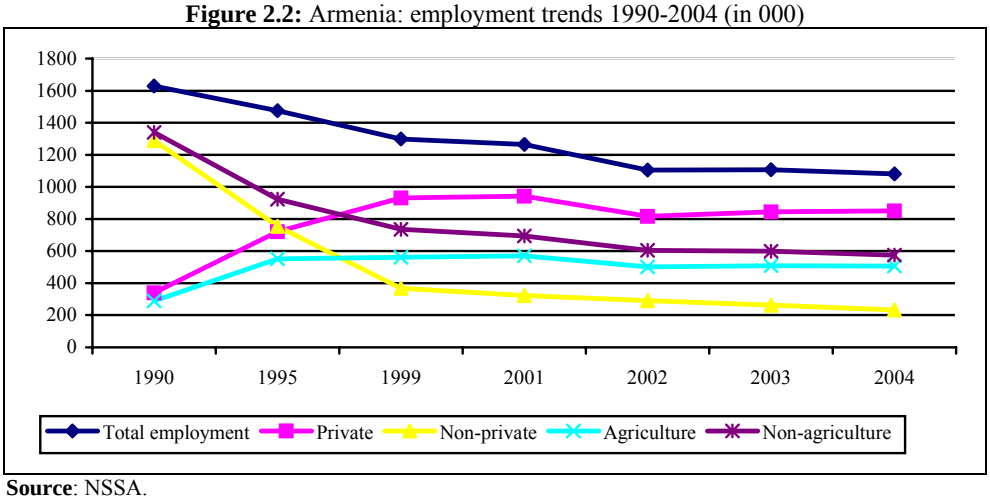
Table 2.8: Armenia: Labor productivity 1990-2004 (1990=100)

	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[5]. 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[6] was high at 0.323 in 1999, and diamonds constituted more than 36 percent of total merchandize exports. A large part of non-

[5] 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.

[6] 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: Hj = sqrt [sum $(xi/Xt)^2$] where Xi,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[7]; 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.

[7] 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
Overall poverty reduction-to-GDP elasticity	**-0.57**
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 form 17.2 in 1998/99; while severity of poverty was estimated at 2.4 percent (down form 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
Total	**21.0**	**56.1**	**100.0**	**17.2**	**7.2**	**6.4**	**34.6**	**100.0**	**7.4**	**2.4**

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

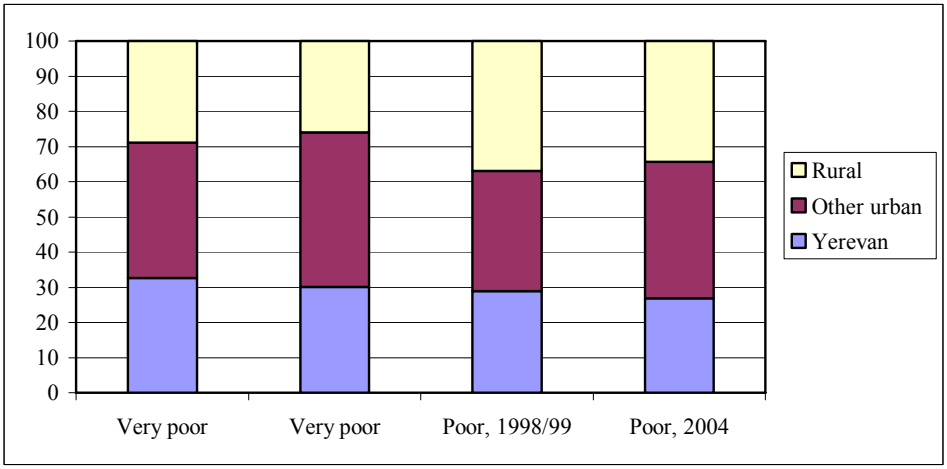
Note: Consumption is measured per *adult equivalent*. Poverty indicators are computed using the *2004 minimum food basket* and the non-food share estimated in 2004. Poverty lines are adjusted for inflation. *Poor* are defined as those with consumption per adult equivalent below the poverty line, while *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		
	Very poor						
98/99	22.9	23.2	21.0	25.2	22.6	5.9	2.2
2001	16.0	18.3	16.8	19.6	11.3	3.3	1.0
2002	13.1	15.0	11.8	18.4	10.2	2.4	0.7
2003	7.4	7.9	3.7	12.2	6.8	0.7	0.1
2004	7.2	8.6	6.2	11.0	5.0	1.5	0.5
	Poor						
98/99	55.1	58.3	54.7	61.6	50.8	19.0	9.0
2001	50.9	51.9	46.7	56.7	48.7	15.1	6.1
2002	49.7	52.6	43.8	61.9	45.3	13.5	5.2
2003	42.9	39.7	29.6	49.9	47.5	8.9	2.8
2004	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[8]. 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

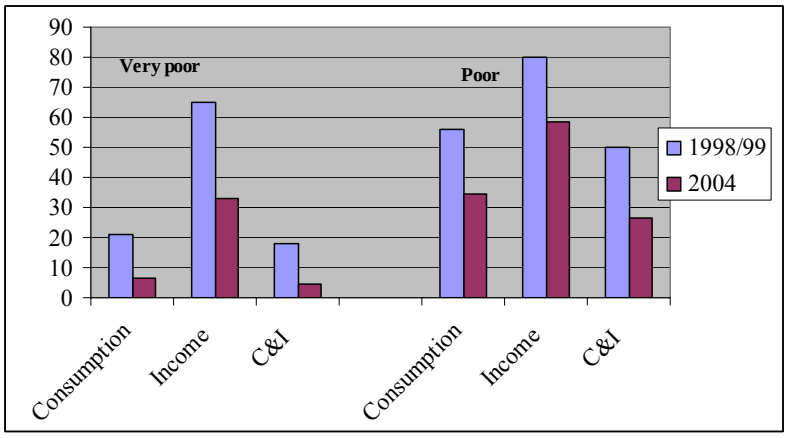
Source: ILCS 2004.

[8] 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 counties, 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)[9]. 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

Annual growth rates	Total	Yerevan	Other urban	Rural
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).

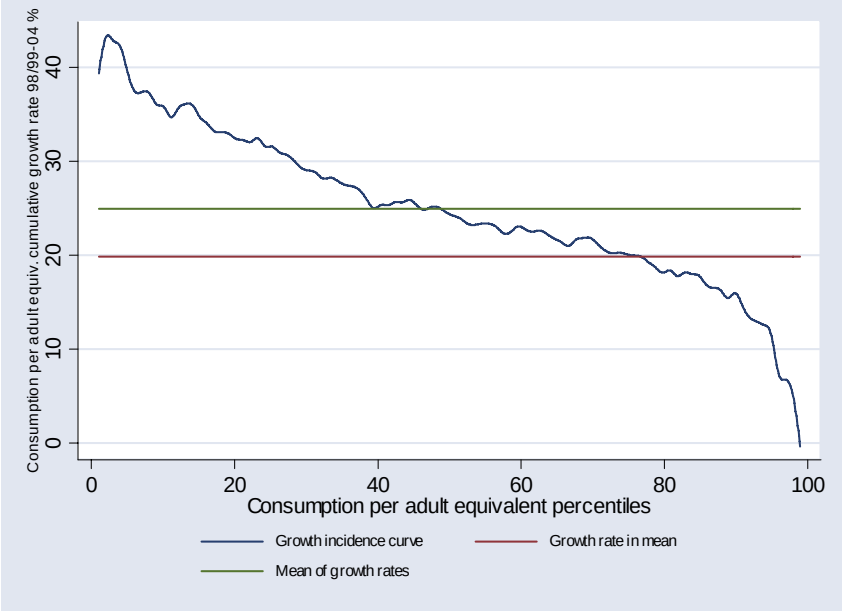
Growth in Armenia was pro-poor. The pro-poor growth can be measured by mean consumption growth at various segments of distribution (Ravallion and Chen 2003). Table 3.6 shows that consumption of the poor grew much faster than overall consumption (4.8 and 3.2 percent per year respectively), suggesting 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

[9] J. Braithwaite, C. Grootaert and B. Milanovic, **Poverty and Social Assistance in Transition Countries**, 2000.

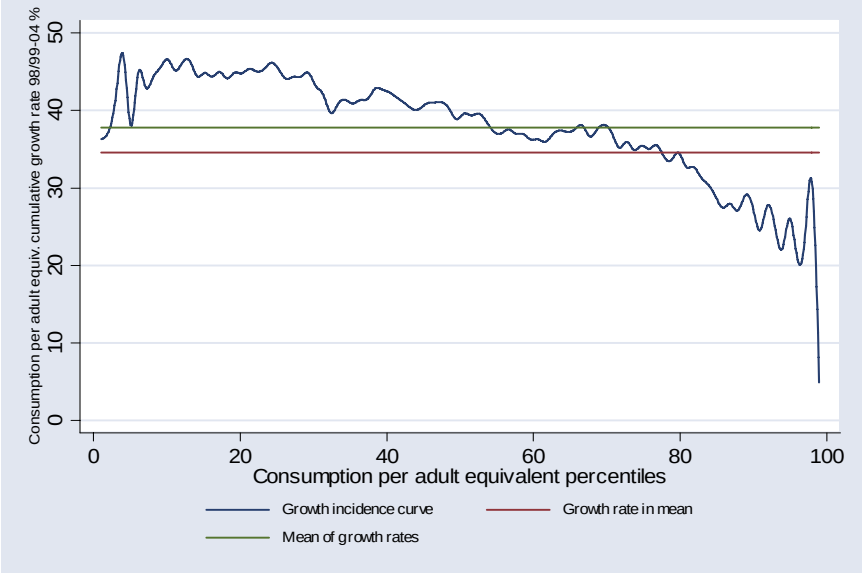
mainly explained by increased employment opportunities (as poor relied more on labor income than the non-poor), and increased social transfers and public and private sector wages.

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



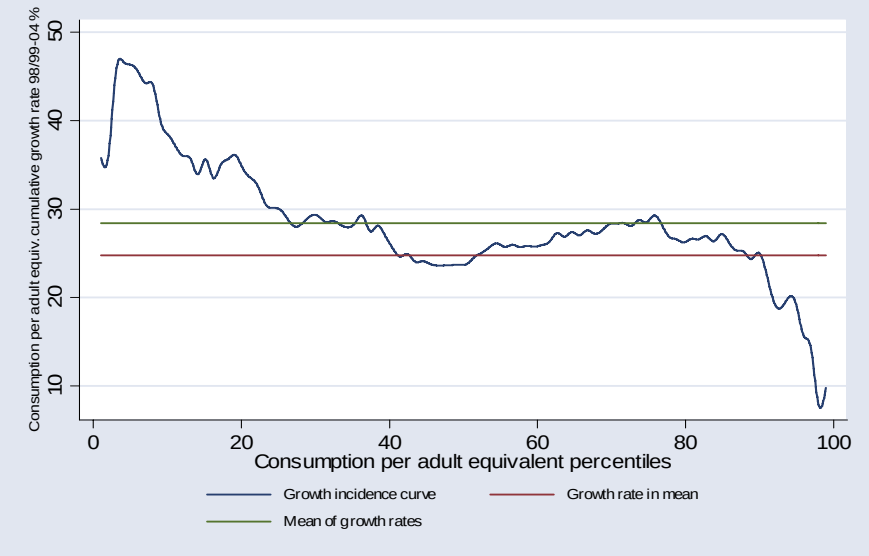
Source: ILCS 1998/99 and 2004.
Note: The curve refers to the period of 5 years and 9 months.

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



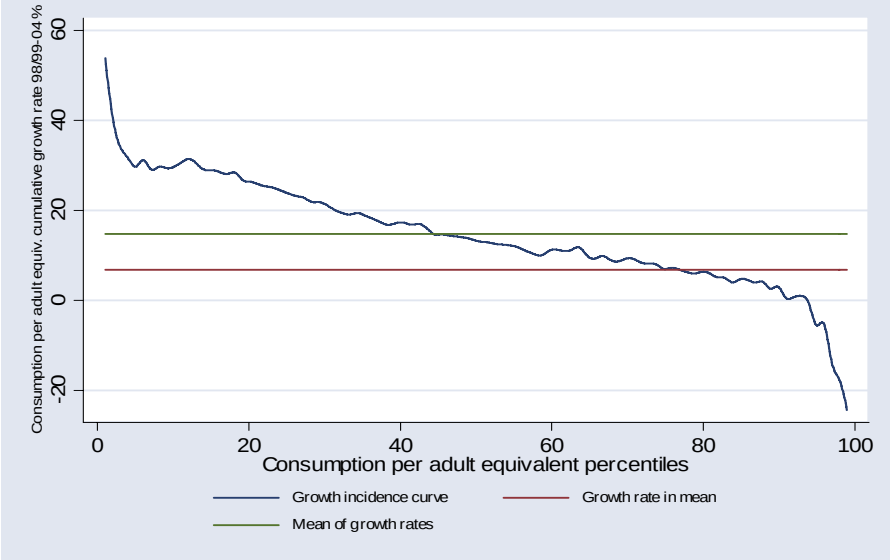
Source: ILCS 1998/99 and 2004.

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
Gender						
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
Age groups						
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
Children15-17	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
Number of household members						
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
Number of children						
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
Number of elderly						
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
Total	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.

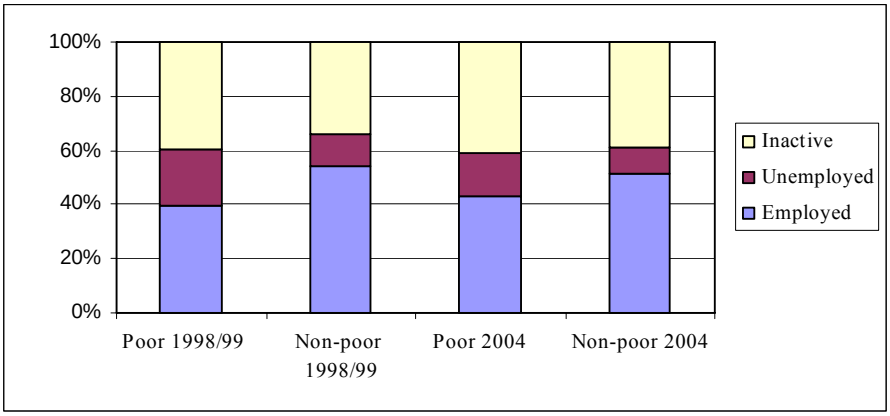
Table 3.12: Armenia: Poverty by the number of the employed in the household, 1998/99 and 2004 (in %)

	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
Total	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
All population						
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
Yerevan						
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
Urban areas outside Yerevan						
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
Rural						
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[10].

[10] 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 10th, the 25th, the 50th, the 75th, or the 90th 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[11].
- *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

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.

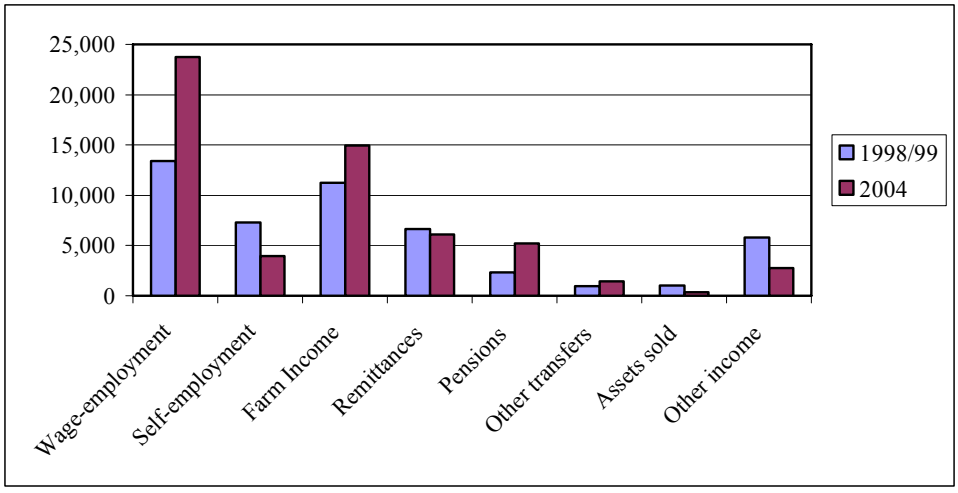
[11] The result appears inconsistent with the one presented in Table 3.11, which show that female headship has no effect on poverty, but it refers to the effect without any controls for other household characteristics.

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[12], 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.

[12] 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[13] 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

[13] 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

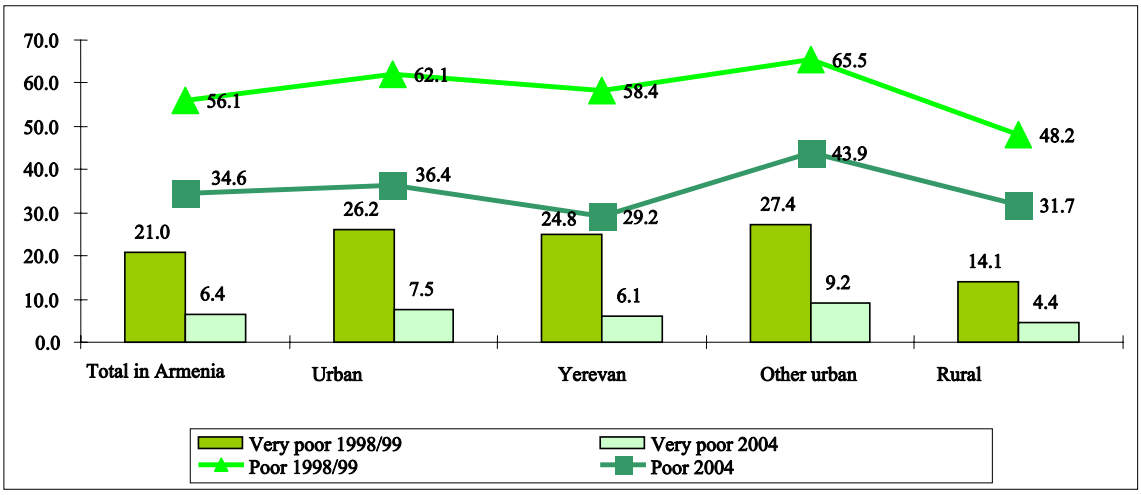
In the period between 1998/99 and 2004, rural poverty declined by more than one third. Its level continues to be relatively lower than the national average; it is also shallower and less severe than in other economic regions. The year 2004 was exceptionally good for agriculture in Armenia. Good physical 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

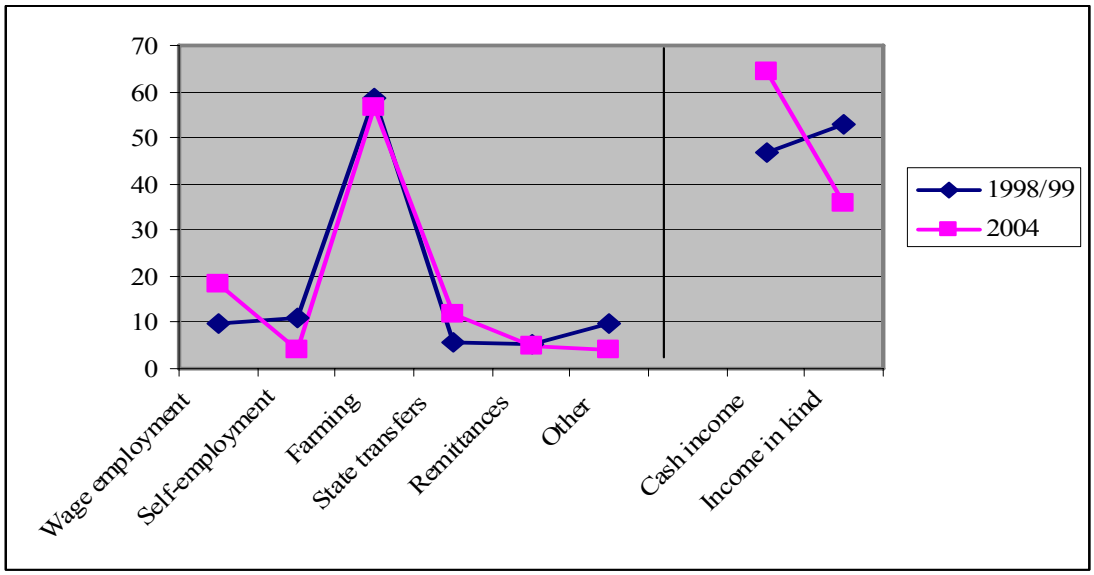
As of January 1st of 2005, there were 338,500 farms in Armenia, with the total number of workers of 550,000 (43.5 percent of rural population). Farms are small; the average land size is 1.38 ha. Three quarters of agricultural production is sold at the farm gate (directly from the farm). The workforce 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
			Consumption per adult equivalent			
1998/99	8,875	12,786	16,483	21,350	38,110	21,149
2004	12,102	16,482	20,417	25,642	38,964	22,590
			Income per adult equivalent			
1998/99	6,608	9,219	12,806	13,560	19,310	13,044
2004	11,942	18,162	18,083	20,821	25,964	19,130
			Change between 1998/99 and 2004 (%)			
Consumption	36.4	28.9	23.9	20.1	2.2	6.8
Income	80.7	97.0	41.2	53.5	34.5	46.6

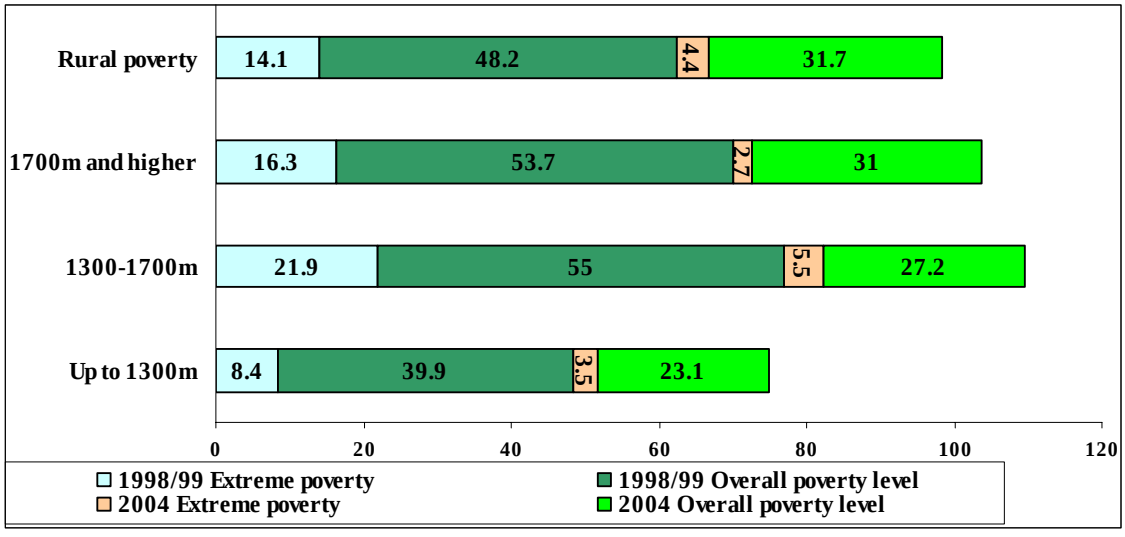
Source: ILSC 1998/99 and 2004.

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 %

	1998/99		2004			
Land size (in ha)	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
Rural poverty	**14.1**	**48.2**	**4.4**	**31.7**	**100.0**	**100.0**

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
Total	**12.9**	**16.1**	**15.5**	**55.6**

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**[14], 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[15].

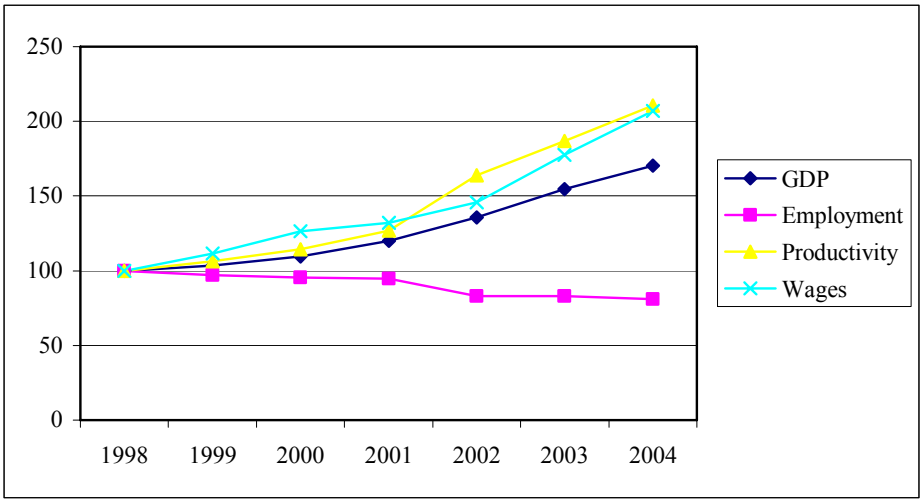
Non-agricultural employment became dominated by the private sector. This change was first driven by the privatization of state enterprises and then, in the early years of the new decade, by an emerging private sector. Overall, the share of the private sector in non-agricultural employment increased from 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

[14] 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.

[15] 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
		Participation rate			
1998/99	63.0	56.3	55.0	57.6	72.7
2004	60.3	53.8	53.8	53.8	72.0
		Employment rate			
1998/99	46.0	30.4	28.4	32.3	68.5
2004	48.7	38.4	38.0	38.8	67.2
		Unemployment rate			
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[16]. 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
Participation rate	65.9	70.1	69.9
Female	55.6	60.1	62.2
Male	78.9	80.3	77.7
Employment rate	52.2	65.3	63.5
Female	43.5	55.8	55.9
Male	63.4	75.0	71.2
Unemployment rate	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

[16] 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 advances 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)[17].

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[18]; 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.

[17] The current design of the ILCS does not contain information needed to measure this effect.
[18] 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 %)

	1998/99			2004		
Educational attainment	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[19].

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

[19] 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[20].

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 fist 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

[20] 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 though 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)
Incidence of low and high pay									
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[21]:

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[22].

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.

[21] 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.

[22] 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[23] 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)[24]. 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).

[23] 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).

[24] 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.

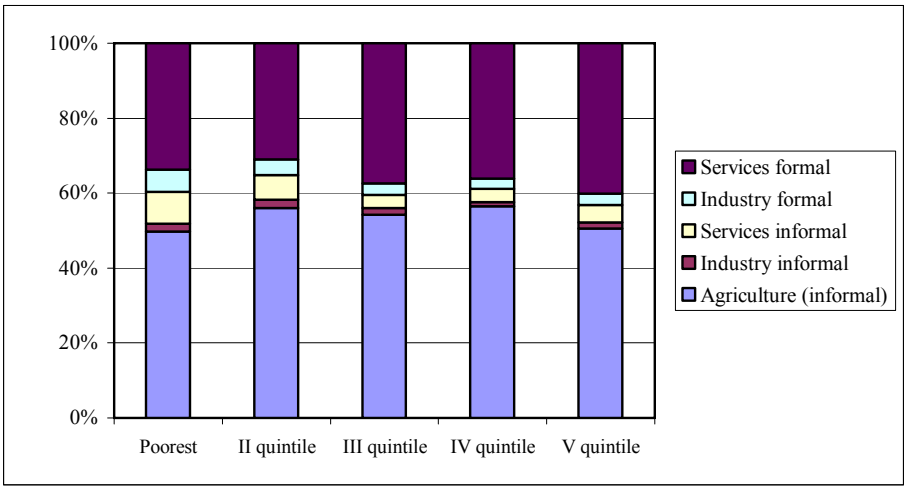
Table 5.8: Armenia: Poverty incidence by labor market status, 1998/99-2004
(Population 16+, %)

	1998/99	2004	Difference, %
Employed	48.6	29.4	-39.5
Formal:	46.5	23.2	-50.1
Employees	46.8	24.6	-47.5
Self-employed	42.9	12.0	-72.0
Informal:	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
Unemployed	69.5	45.9	-33.9
Inactive	59.9	34.8	-41.9
Total	56.3	33.5	-40.5

Source: ILCS 1998/99 and 2004.

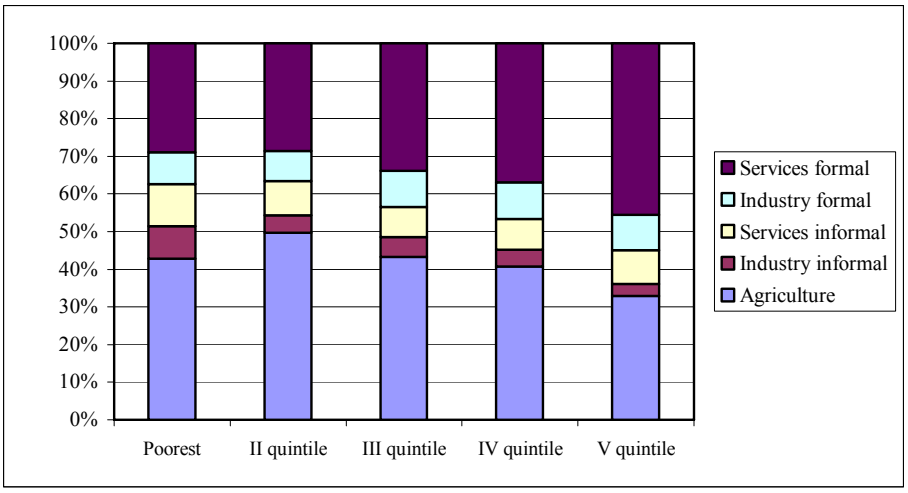
A majority of the working poor were employed in agriculture, which is the lowest paying industry. Figures 5.2 and 5.3 show that the share of non-agricultural employment increases with consumption quintiles; they also indicate that most non-agricultural employment was formal. The share of non agricultural 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, %
Labor market earnings			
Low	46.5	31.6	-32.0
Middle	46.2	29.2	-36.8
High	42.6	20.0	-53.1
Total	45.0	27.1	-39.8

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)[25]. Consequently, the structure of GDP changed, with the share of industry increasing and agriculture decreasing.

[25] 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 where 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
Total	1.0

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
Total	14,468	29,663	13.3

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[26].

[26] 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)[27].

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.

[27] 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 if 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[28]. According to some estimates, every second firm increased its employment over the last three years, and only one if five reduced it[29]. 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.

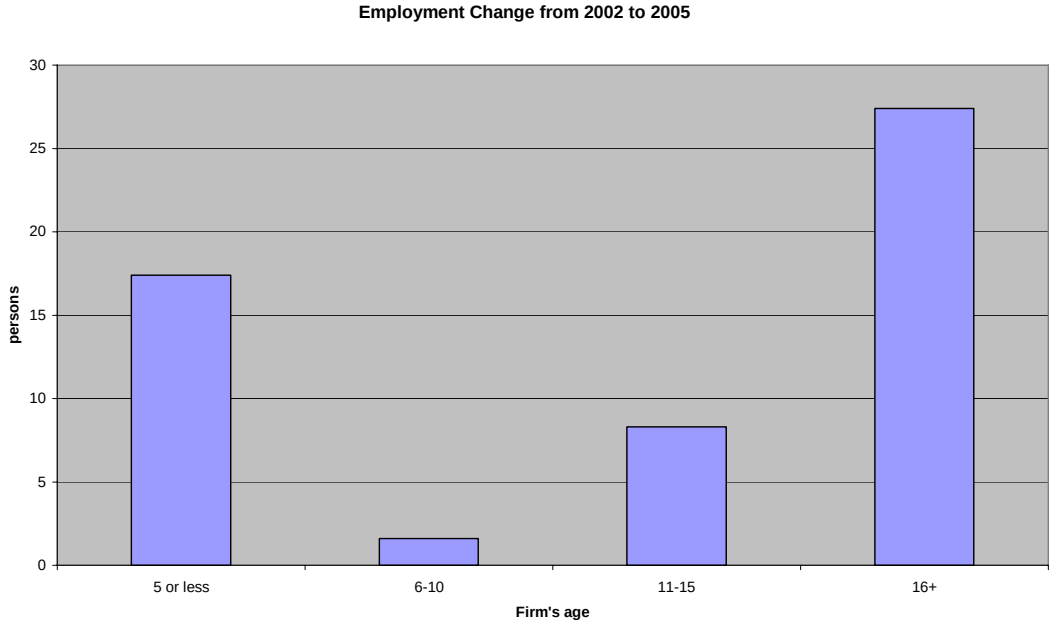
Firms which increased employment the most in Armenia are privatized (as opposed to de novo private), of medium to large size, and either young or mature. For example, firms which are up to 5 years on the market increased their employment on average by 17 workers in the last three years while firms which 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).

[28] 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).

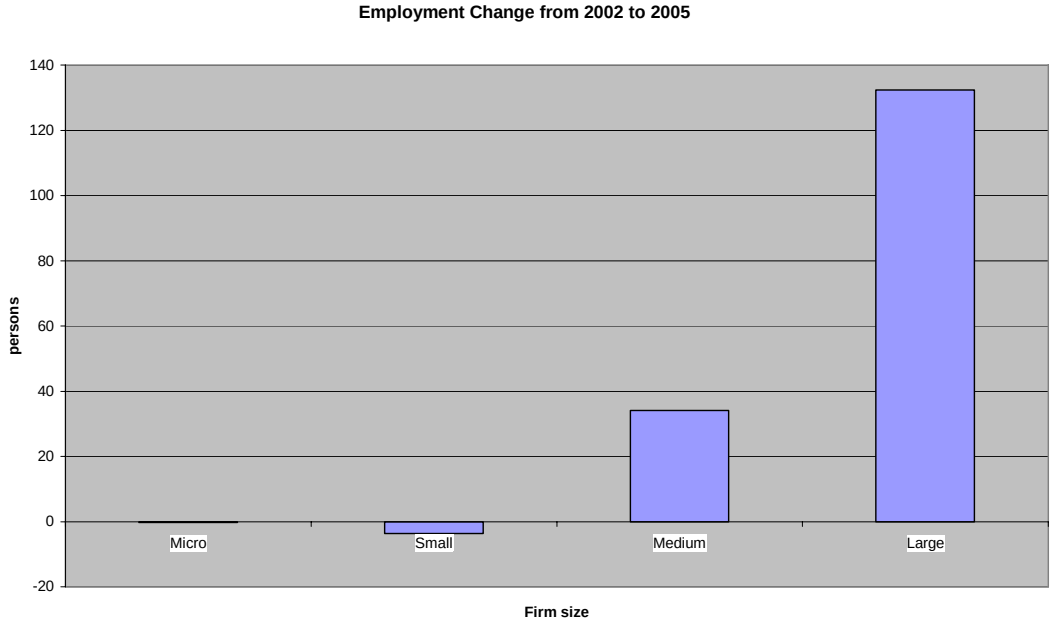
[29] The results come from the EBRD–World Bank Business Environment and Enterprise Performance Survey (BEEPS) III, 2005. The sample is small (201 firms) and not fully representative. Accordingly, the results are subject to a wide margin of error and need to be interpreted with due caution.

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

Panel A



Panel B

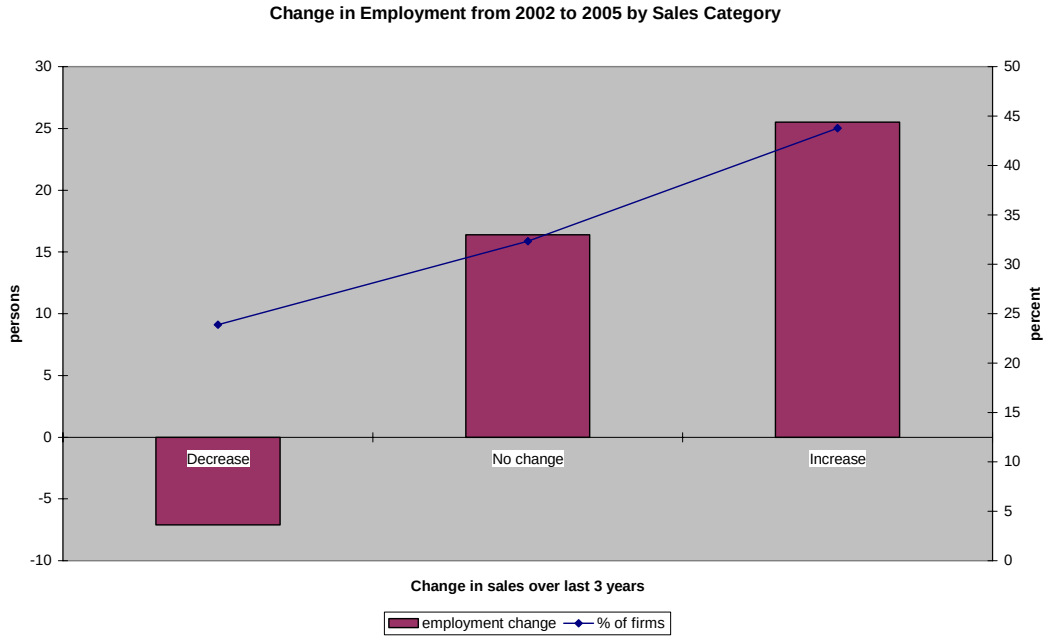


Source: EBRD–World Bank Business Environment and Enterprise Performance Survey (BEEPS) III, 2005; World Bank staff calculations.
Note: Micro = 1–10 workers; Small = 11-50 workers; Medium = 51- 250 workers; Large = over 250 workers

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)[30].

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 filed 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

[30] 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*
	Weeks				
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.

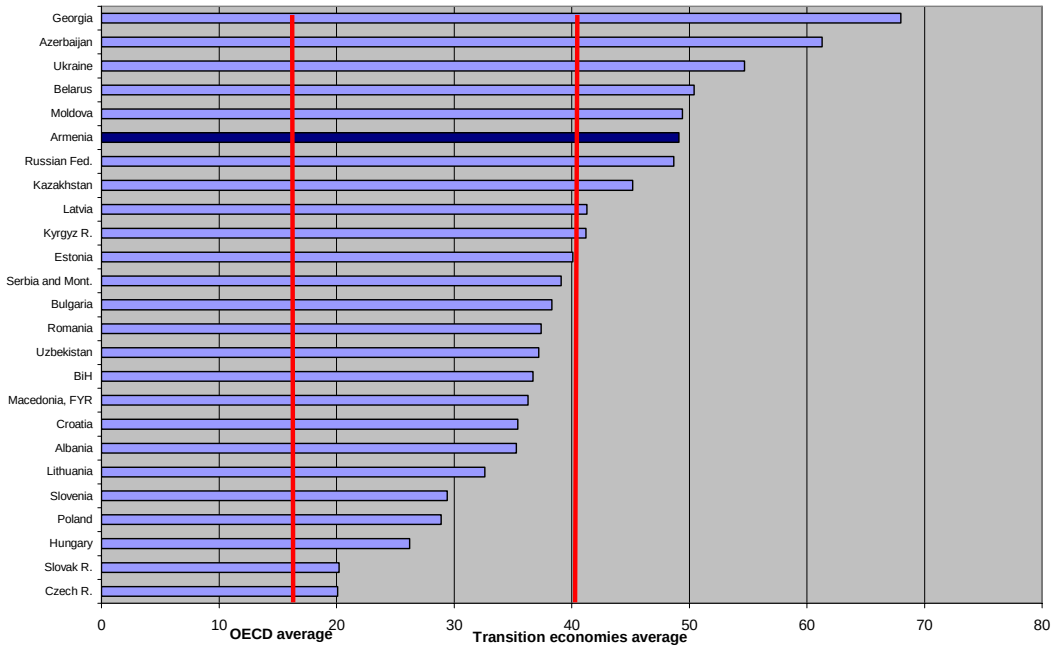
6.2. Investment climate and job creation

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[31]. 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)



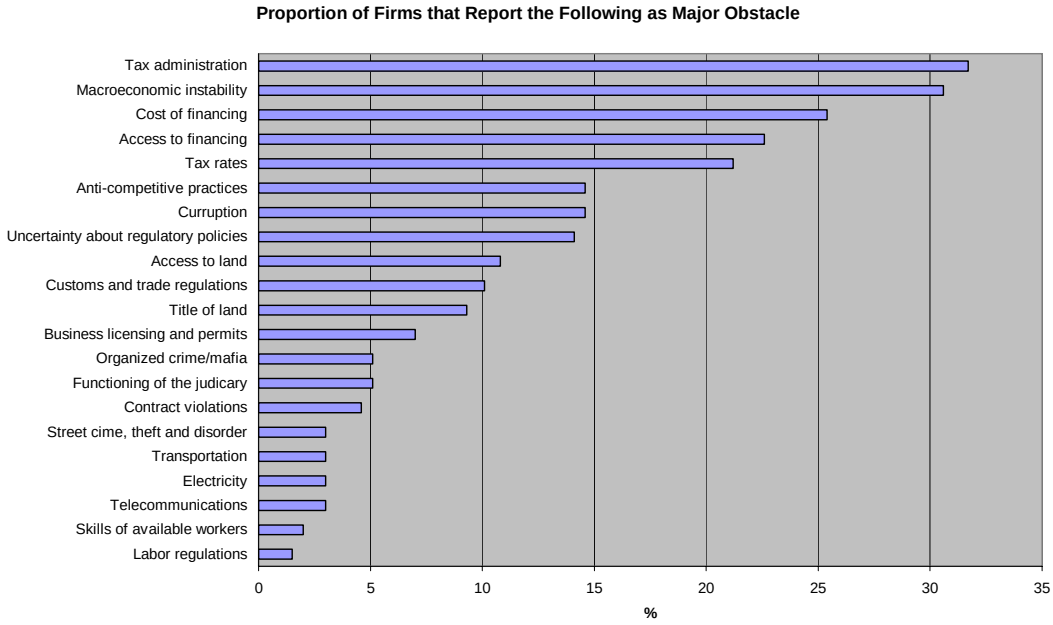
Source: Schneider, 2003.
Note: DYMIMIC stands for dynamic multiple-indicator-multiple-cause.

In Armenia employment is still low and unemployment high, despite some increase in employment and decrease in unemployment over 1998/99 and 2004[32] 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.

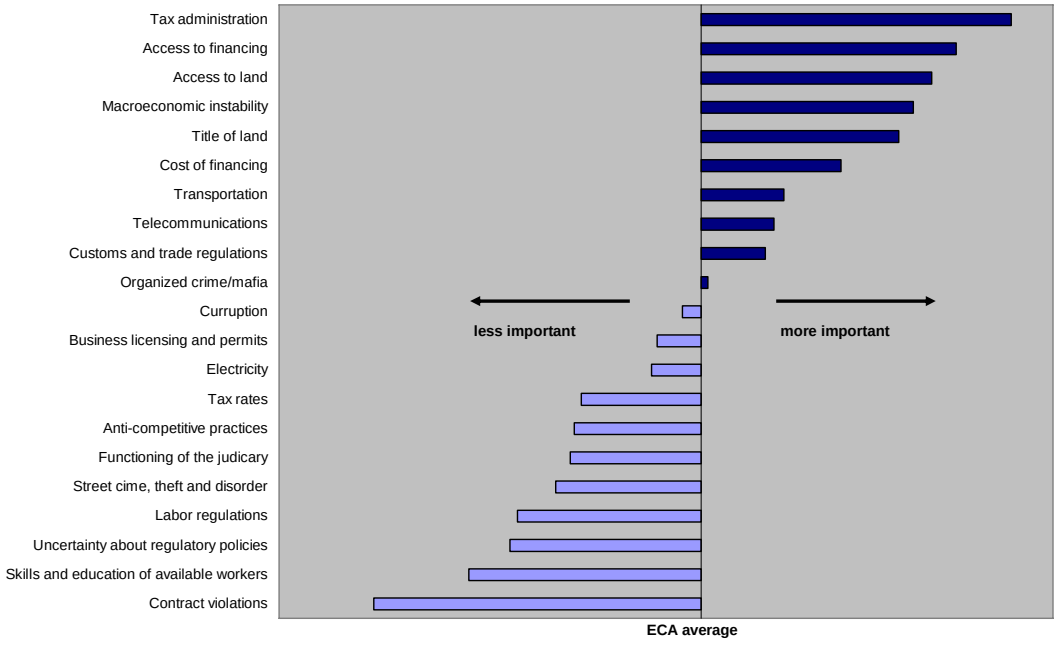
[31] Obviously, some workers who lost their jobs due to restructuring become self-employed or found employment in the informal sector. Others withdraw from the labor force.
[32] Household survey based estimates.

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

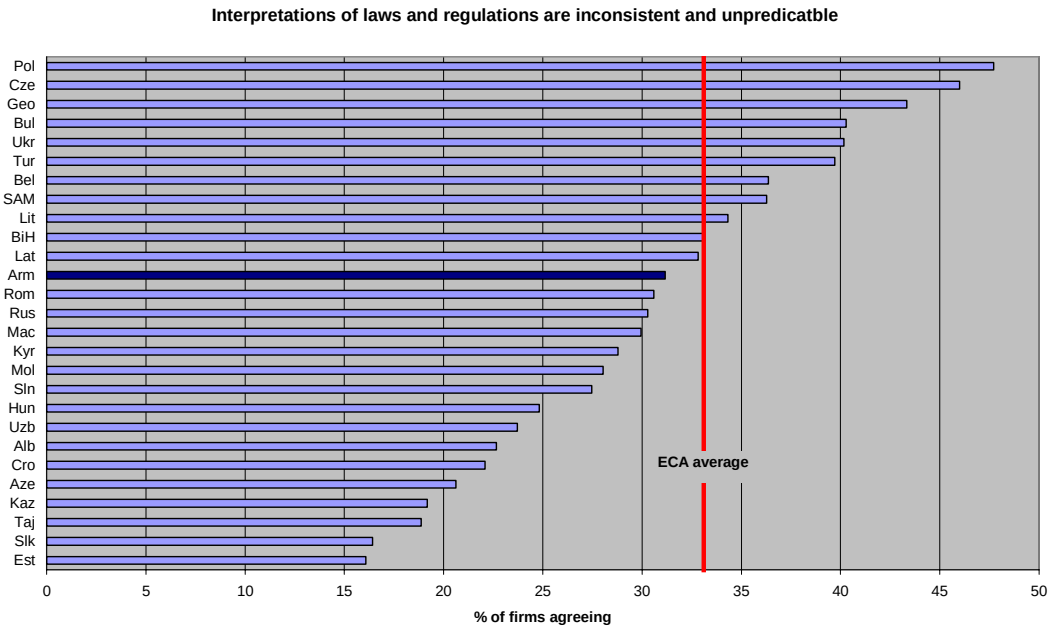
factors raise the cost of doing business in the formal sector, and as such discourage job creation.

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

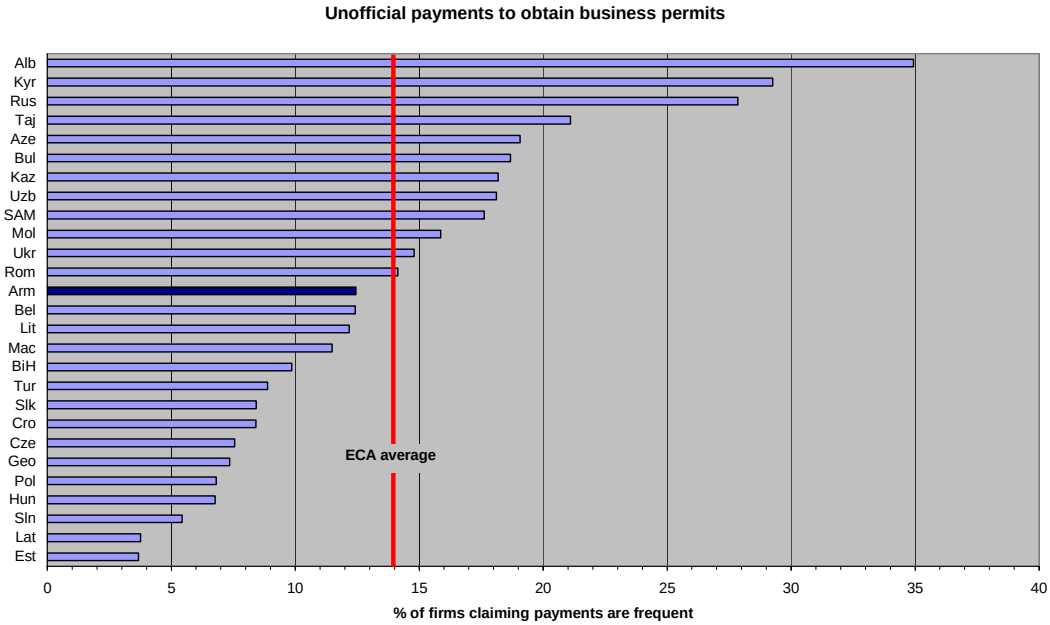


Source: EBRD–World Bank Business Environment and Enterprise Performance Survey (BEEPS) III, 2005; World Bank staff calculations.

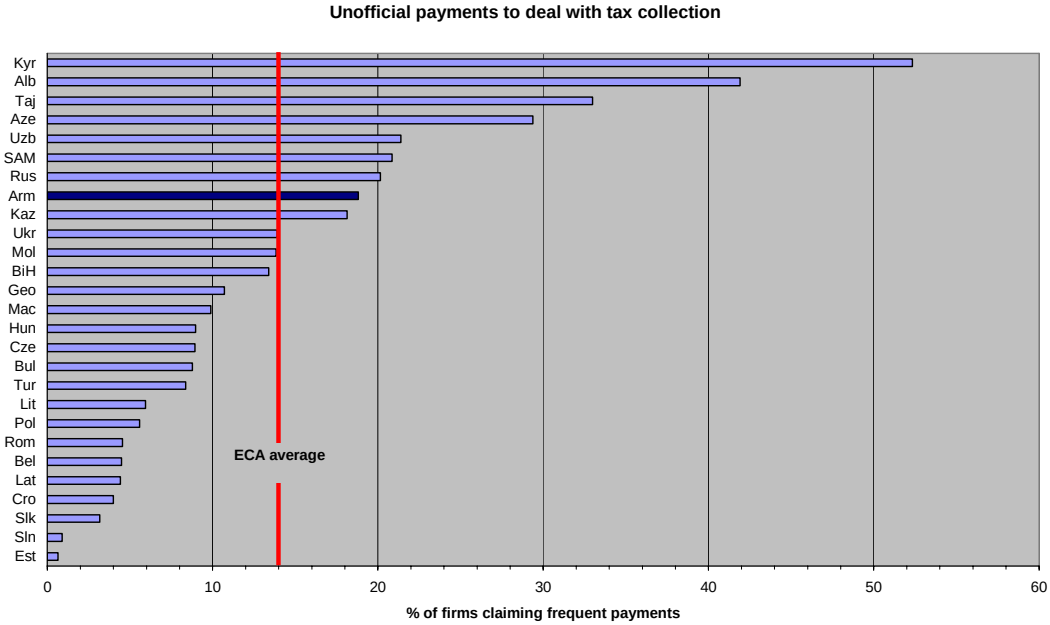
Arbitrary and unpredictable interpretation of laws and regulations is a problem faced by firms in most transition economies and is a disincentive for firms to move to the formal sector. Although Armenia occupies an average position on this scale, there is substantial room for improvement (Figure 6.6). 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.

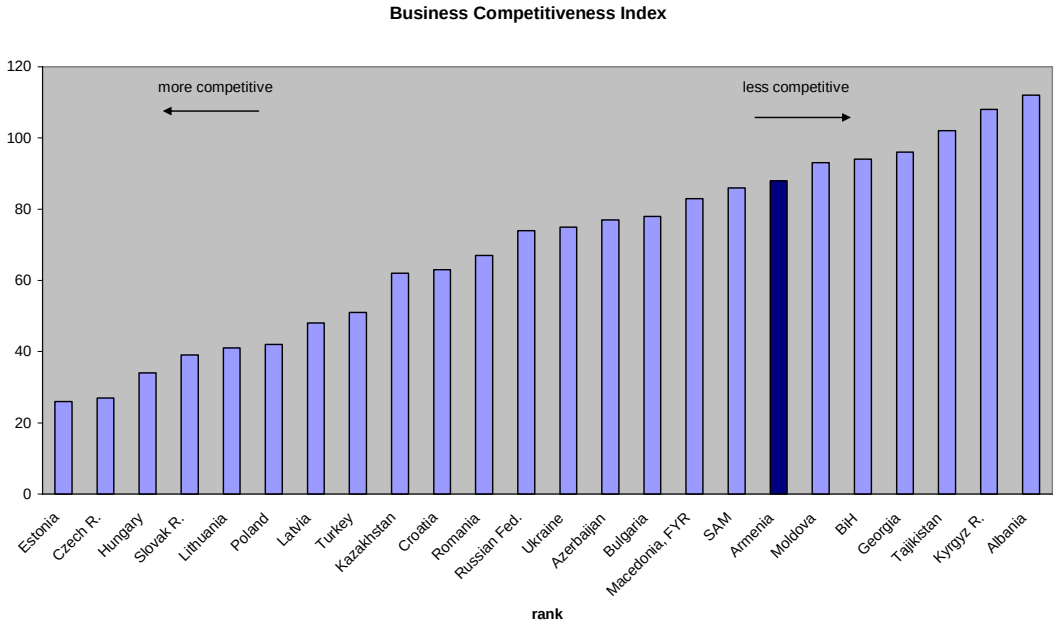
Armenian firms seem at disadvantage when it comes to the access to modern information and telecommunications technology. For example, only 30 percent of Armenian firms use the internet in their interactions with clients and suppliers, which is less than half the average for the whole Region (Table 6.2). 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)[33]. 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.

[33] 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 27th by the index of economic freedom, among more than 200 countries.