

Report No. 47770-AM

# Armenia Implications of the Global Economic Crisis for Poverty

September 2009

Human Development Sector Unit  
Europe and Central Asia Region



Document of the World Bank

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### **CURRENCY EQUIVALENTS**

(Exchange Rate Effective as of March 23, 2009)

Currency Unit = AMD (Armenian Dram)

AMD 1.00 = 0.0027 US\$

US\$1.00 = 365 AMD

### **FISCAL YEAR**

January 1 to December 31

### **ABBREVIATIONS AND ACRONYMS**

AMD	Armenian Dram
CBA	Central Bank of Armenia
CPI	Consumer Price Index
ECA	Europe and Central Asia
DDP	Development Data Platform
FB	Family Benefit
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
ILCS	Integrated Living Conditions Survey
IMF	International Monetary Fund
NSS	National Statistics Service
ODA	Official Development Assistance

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## Table of Contents

Acknowledgements .....	i
Executive Summary .....	1
1. Introduction .....	10
2. Economic Growth and Poverty Reduction .....	13
A. The Financial Crisis and Growth .....	13
B. Implications of the Slowdown for Poverty .....	15
3. Labor Market and Employment .....	17
4. Price Changes .....	21
5. Migration and Remittances.....	23
A. Remittances to Armenia have Important Peculiarities .....	26
B. Remittances and Poverty Projections.....	28
6. Conclusions and Implications for Mitigation Measures.....	30
A. Implications for Measures to Mitigate the Impact.....	30
Annex A: Additional Figures and Tables.....	33
References .....	36

### Figures

Figure 1.1: Changes in GDP (1989 = 100) and Poverty Incidence .....	11
Figure 2.1: Armenia’s Main Trade Partners and the Financial Crisis.....	14
Figure 2.2: Remittances and Capital Flows to Armenia and Projections, 1995–2010.....	15
Figure 5.1: Armenian Households with Migrant(s) Family Member and Receiving Remittances from (%) .....	23
Figure 5.2: Incidences of Remittances in Urban and Rural Areas .....	24
Figure 5.3: Share of Remittances in Household Income .....	25
Figure 5.4: Share of Households with Non migrant Remittances .....	26
Figure 5.5: Share of Non migrant to Migrant Remittances .....	27
Figure 5.6: Share of Poor and Non poor Receiving Remittances.....	28

### Tables

Table 1.1: Armenia has made significant gains in poverty reduction .....	11
Table 2.1: Growth Elasticity of Poverty and Poverty Headcount Projections .....	16
Table 3.1: Poverty Projections under Alternative Sectoral Growth and Employment Scenarios.....	20
Table 4.1: Poverty projections Based on the Combined Effect of the Financial Crisis through the Labor Market and Price changes.....	22
Table 5.1: Migrant Workers Destinations outside Armenia.....	24
Table 5.2: Projected Poverty Rates with 25% Decline in Remittances and 50% Decline in Non migrant Remittances .....	29



### **Annex Figure**

Figure A.1: Remittances as Percent of GDP, Selected Countries, 2007 .....	35
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### **Annex Tables**

Table A.1: Change in the Average Monthly Nominal Salary, by Ownership and Sector (AMD) .....	33
Table A.2: Sectoral Composition of GDP .....	33
Table A.3: Structural Changes in Employment, by Sector.....	34
Table A.4: Input Data for Poverty Projections .....	34



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## ACKNOWLEDGEMENTS

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This note on the potential poverty implications for Armenia of the global financial crisis is a product of the Armenia Programmatic Poverty Assessment TA. The note is prepared by Lire Ersado with critical inputs from Robert Taliercio and Aghassi Mkrtchyan, who assembled the relevant macroeconomic data and sectoral output and employment projections. Mohamed Ihsan Ajwad, Robert Taliercio, and Aghassi Mkrtchyan have read and provided useful comments on an earlier draft of the note. The Armenia National Statistics Services has kindly provided the 2007 Integrated Living Conditions Survey data that formed the foundation for the micro simulations. The task was undertaken under the guidance of Donna Dowsett-Coirolo (former Country Director, ECCU3), Asad Alam (Regional Director, ECCU3), Tamar Manuelyan Atinc (Sector Director, ECSHD) Aristomene Varoudakis (Country Manager, Armenia), and Gordon Betcherman (former Sector Manager, ECSHD). Carmen Laurente provided able assistance with formatting and production of the note.





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## EXECUTIVE SUMMARY

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### **Introduction**

1. *The global economic crisis seriously threatens the economic growth and poverty reduction that Armenia achieved in recent years.* The most recent data indicate that the economy is now shrinking, with prospects worsening in 2009 and 2010 when the full impact of the crisis is expected to unfold. These developments are a setback for Armenia after a decade of nearly double-digit growth and substantial poverty reduction. Depending on the depth of the crisis in Armenia, in its main trading partners, and in its migrant workers' host countries, and depending on the effectiveness of policy responses, the crisis could have a protracted negative effect on Armenians' living standards. The economic downturn, coming on the heels of the food and fuel price increases last year, will have particularly difficult consequences for the poor and vulnerable who have limited coping means to deal with these successive shocks.

2. *The note identifies the main channels of transmission to households of the current global economic crisis and estimates its potential impact on poverty in Armenia.* Given uncertainties regarding the scale of the crisis and how households are likely to cope, the note is intended to provide indicative estimates of the poverty impact of the crisis, rather than precise estimates. These estimates are made by simulating the effects of the anticipated slowdown on household consumption using data from the 2007 Integrated Living Conditions Survey (ILCS). The key messages that come out of the analysis are that the crisis will have potentially serious implications for poverty and that this calls for significant responses by the Government of Armenia and its development partners. The government is taking a number of steps to provide protection to the poor, including the protection of public spending on social protection and other pro-poor programs and to improve the targeting efficiency of the programs. These measures should help lessen the impact of the crisis on the poor and the vulnerable.

### **How will the crisis affect households?**

3. *There are multiple channels through which the economic crisis could affect household welfare and poverty in Armenia.* The most important are through: (a) labor markets (via decreased employment and wages); (b) price changes (exchange rate adjustments; utility tariff increases; and consumer price inflation); (c) remittances (stemming from economic slowdown in source countries); and (d) reduced government (and non-governmental) spending on social services such as education, health, and social protection. The impact through financial markets (e.g., reduced access to credit, erosion of savings and asset values) and product markets (via lower growth, relative price changes) can also be substantial but are not directly considered in this note.

4. *Labor Market.* One of the main channels for transmission of the economic crisis is loss of employment and earnings. Job losses and the pool of unemployed have increased and will likely continue to increase in the months to come not only because of job losses within Armenia but

also because of large flows of returning migrants from Russia and other countries that are facing their own economic downturns. Migrants who would normally head to Russia during the spring are expected to stay home and swell the ranks of the unemployed. Employed workers will face reduced wages and working hours. The effects of unemployment and decreased earnings on households will vary according to sector of employment and on household characteristics such as demographics, educational attainment, and location. For Armenians, the impact of the crisis on construction and export-oriented industries is more severe than on other sectors and is projected to get worse. Reduced labor demand in these sectors could spur costly labor reallocation, including movement into subsistence activities.

5. *Price Changes.* Armenia abandoned the fixed exchange peg of the dram to the US dollar on March 3, 2009. This led to an immediate depreciation of the exchange rate by more than 20 percent. The prices of basic imported consumption goods have increased accordingly. In fact, the initial price hikes for key imported goods were observed to be as high as twice the rate of exchange rate depreciation. While imported final consumption goods constitute only 20 percent of the consumption basket, as much as 40 percent of the local production of the consumer goods is directly affected by the exchange rate adjustment as their production relies on imported inputs. However, in March, the consumer price index (CPI) increased by only 1.4 percent compared to the previous month. This rather tame price response to the exchange rate adjustment reflects the decline in domestic demand due to the economic crisis. In addition, the planned increase in utility tariffs, although not directly linked with the crisis, is expected to increase inflation by at least 2 percentage points. As a result, the CPI inflation could increase by about 3-4 percentage points in 2009. On the other hand, it should be noted that the exchange rate depreciation could benefit households receiving remittances from abroad, usually in US dollars, by increasing their local currency value.

6. *Remittances.* The flow of remittances to Armenia increased rapidly during the last several years. About 21 percent of households in Armenia now receive some income from this source. For recipient households, remittances account for 55 percent of income so any decreases will have important welfare effects. The global economic crisis is likely to reduce remittances for several reasons. First, a significant share of remittances to Armenia comes from individuals outside the immediate family who may be less committed in difficult times to maintaining transfers than are migrants who are immediate family members. Second, almost 80 percent of Armenia's migrant workers are in Russia which is facing a severe economic slowdown, including in the construction sector, where many Armenian migrants were employed. Finally, about 20 percent of remittances goes into investment (mainly in construction) and is therefore likely to be procyclical. This portion is therefore sensitive not only to economic conditions in sender countries but also to returns on investments in Armenia. After a steady increase since 2000, recorded remittances are expected to decrease from estimated US\$ 2 billion in 2008 to less than US\$ 1.6 billion in 2009.

### **Growth and Poverty Linkages**

7. Economic growth in Armenia has led to substantial poverty reduction but these achievements are now at risk. Between 2004 and 2007, for each percentage point of growth, the

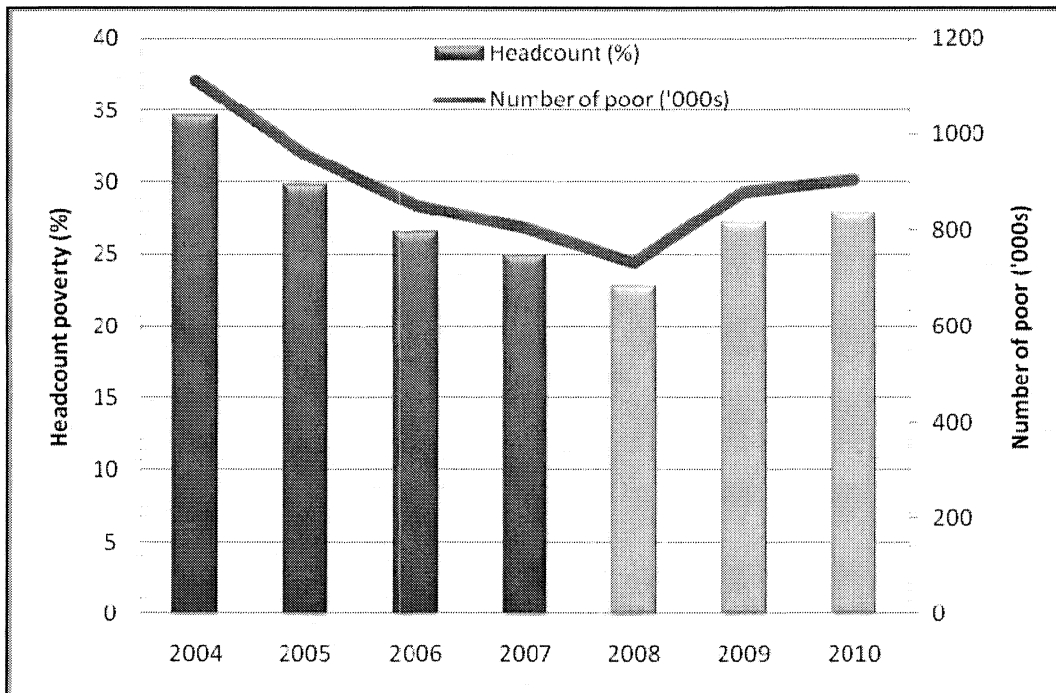
overall poverty incidence declined by 0.60 percentage points. As long as GDP growth remained strong, further gains against poverty could be expected. However, when the economy stops growing, as it has in 2009, there is a lost opportunity to lift more people out of poverty. Based on the recent relationship between growth and poverty reduction, the pre-financial crisis growth path of 9.2 percent, assumed in the 2009 budget, would have led to about another 176,000 currently poor people rising above the poverty line. This would have reduced the poverty incidence by about 5.5 percentage points. Without growth, these potential gains against poverty are lost. Furthermore, in a protracted crisis scenario, with the economy contracting by 8 percent in 2009 and by 2 percent in 2010, the poverty impact of the crisis is not only this lost opportunity but also a large number of currently non poor who will fall below the poverty line, as presented below.

### **Poverty Projections for 2008—2010**

8. The poverty simulations are based on the assumptions that: (1) real GDP declines by 8 percent in 2009 and 2 percent in 2010; (2) remittances from immediate family sources decline by 25 percent and by 50 percent from non immediate family sources; and (3) the exchange rate depreciation and planned utility tariffs lead to 3 percentage points increase CPI inflation. These assumptions are then applied to the household level data from the 2007 ILCS. The key results of the simulation exercise are presented below in Figures 1 and 2. Figure 1 presents trends in overall poverty indices (based on the overall poverty line of AMD 23,168 per adult equivalent per month in 2007 prices) along with the predictions for 2008—2010, while Figure 2 does the same for extreme poverty indices (based on the extreme poverty line of AMD 15,573 per adult equivalent per month in 2007 prices).

9. *Simulations of the impact of the crisis suggest that Armenia could see an increase in poverty rates in 2009 and 2010.* The overall poverty incidence could increase by about 5.2 percentage points between 2008 and 2010 (Figure 1, left axis). That means 147,000 people could fall below the poverty line in 2009 and another 25,000 in 2010 (Figure 1, right axis). The projected poverty incidence in 2010 of about 28 percent is higher than the 2006 level of 26.5 percent, implying that the poverty reductions recorded between 2006 and 2008 would be more than fully offset by poverty increases due the crisis. The increase in the poverty gap would be more pronounced as the already poor become poorer.

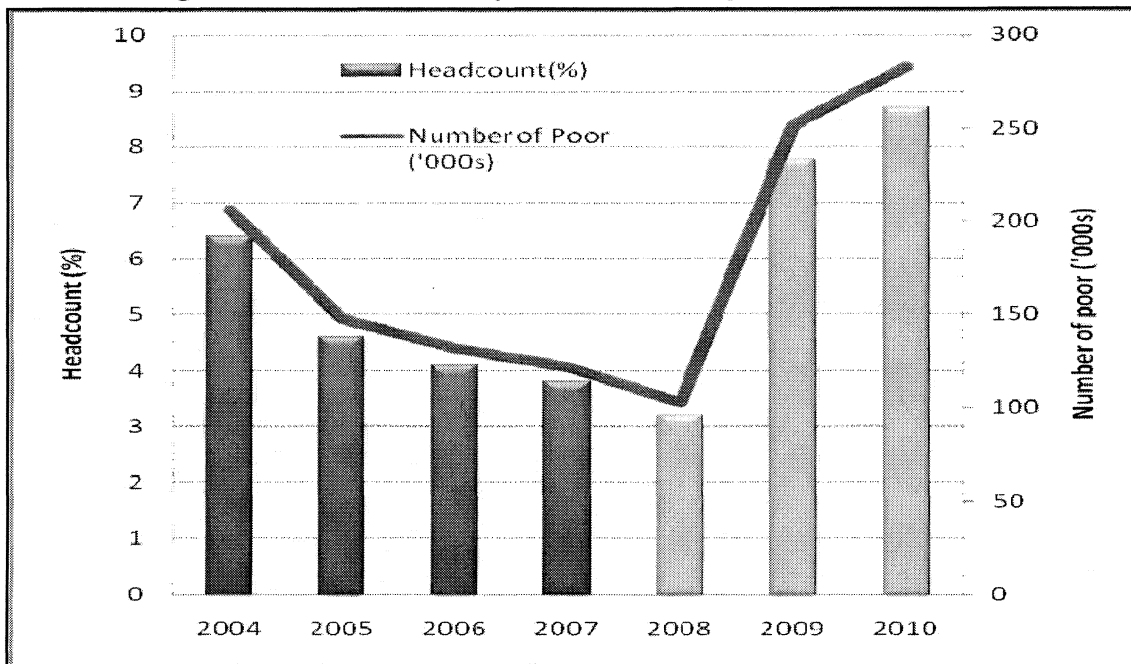
**Figure 1: Overall Poverty Trends and Projections, 2008—2010**



Sources: National Statistical Services of the RA; World Bank staff estimates based on ILCs 2007 and growth and employment, remittances, and price change projections.

10. *The extreme poverty incidence and poverty gap would increase by a substantially larger margin.* Extreme poverty in Armenia is highly responsive to shocks due to concentration of the poor just above the extreme poverty line. The levels of extreme poverty indices in 2009 and 2010 could easily surpass their corresponding levels in 2004 (Figure 2, left axis). As a result, an estimated 149,000 people could fall below the extreme poverty threshold in 2009 and another 31,000 would be added in 2010 (Figure 2, right axis). The size of extreme poor in 2010 could outnumber that in 2004 by about 77,000 people.

**Figure 2: Extreme Poverty Trends and Projections, 2008—2010**



Sources: National Statistical Services of the RA; World Bank staff estimates based on ILCS 2007 and growth and employment, remittances, and price change projections.

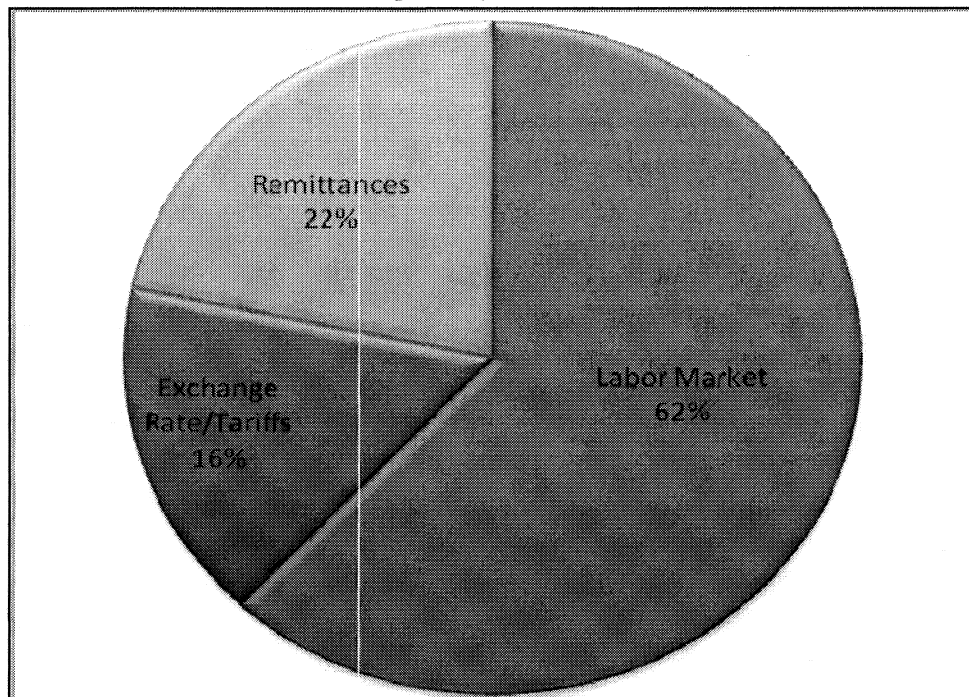
### What will drive the increases in poverty?

11. *The labor market will be a major channel for transmitting the effects of the economic crisis to households.* Out of the projected 5.2 percentage points increase in the poverty headcount between 2008 and 2010, about 3.2 percentage points (or 62 percent) would be due to increased unemployment and reduced earnings. These labor market effects would be especially strong in the construction sector, where output and employment are projected to decline by about 32 and 45 percent, respectively, in 2009 alone. Other industrial sectors such as mining are projected to slow down significantly and also contribute to the projected decline in output and employment and to increases in poverty.

12. *Price changes due to exchange rate adjustment and planned utility tariffs will account for 0.9 percentage points increase in poverty incidence (or 16 percent of total increase).* More than half of this increase would be due to changes in tariff regime. The effect on poverty gap would be slightly larger at over 20 percent.

13. *The projected decline in remittances would have larger impact on poverty gap than on the number of poor.* While declines in remittances account for about 22 percent of the overall poverty increase, they would account for half of the increase in poverty gap. Moreover, the impact on those households depending on remittances would be very large. Households that depend on remittances from non immediate family sources could see poverty incidence rising up to 27 percent from about 18 percent before the crisis.

**Figure 3: The contribution of the different transmission channels to increase in overall poverty in 2010**



Sources: National Statistical Services of the RA; World Bank staff estimates based on ILCS 2007 and growth and employment, remittances, and price change projections.

### **Implications for Measures to Mitigate the Impact**

14. *The poverty projections, albeit indicative estimates, highlight the need for robust mitigation measures to lessen the burden on households vulnerable to the crisis.* How much additional spending on social protection programs would be needed to offset the poverty impact of the crisis? Table 1 presents the projected additional poverty gaps created due to the crisis, which roughly approximate the additional resources that would be needed to cushion the impact. The estimates are based on the poverty incidence and gap simulation exercise presented above. Accordingly, about AMD 22.4 billion (or 0.8 percent of the projected 2009 GDP) would be needed to mitigate the impact of the crisis on the overall poor. The corresponding figure for mitigating the impact on the very poor alone would be about AMD 9.0 billion (0.3 percent of 2009 GDP).

**Table 1: Additional Resources Needed to Mitigate the Poverty Impact of the Crisis, 2009**

<b>Poverty Status</b>	<b>(AMD billion)</b>	<b>Percent of projected 2009 GDP</b>
Poor	22.4	0.8
Very Poor	9.0	0.3

Source: World Bank staff estimates based on ILCS 2007 and projected increase in poverty incidence.

15. *What kinds of measures can effectively avert or lessen the impact of the crisis? How best should available additional resources be allocated?* The note does not advocate policy responses solely based on these simulations. However, international experience, considered within the current context facing Armenia, does suggest certain policy instruments that could usefully help vulnerable households withstand the economic downturn and that could be reversed when the economy recovers. These include expansion of the existing social safety net instruments, such as the Family Benefit; active labor market programs, including public works; and the expansion of unemployment benefit.

16. *Armenia's poor already rely substantially on government transfer schemes, particularly on the targeted Family Benefit (FB) program.* Given the likelihood of significantly higher poverty in 2009 and 2010, and the accelerated rate at which this will occur, one option would be to consider increasing resources for the social safety net programs. The FB program can be a good vehicle for delivering such support to existing program beneficiaries as well as to those households that may become eligible due to the economic crisis. Armenia has other instruments at its disposal such as unemployment insurance, public works programs and social pensions that could also be used effectively to reach at a wider group of affected families.

17. *While the Family Benefit is fairly well targeted at household level, additional resources for the program would need to be combined with further improvements in targeting.* Based on the ILCS data, the FB's targeting accuracy worsened in 2007, compared to 2006. In 2007, about 6 percent of the program's spending went to families in the top quintile, compared to only about 3 percent in 2006. About 49 percent of the FB benefits went to families in the poorest quintile in 2007, compared to over 57 percent in 2006. The leakage of the FB resources to non poor families is estimated at 47 percent of the program resources in 2007, compared to about 40 percent in 2006. The Government has taken some measures in 2008 to reduce leakage in the FB program to the non poor by better integrating existing household registry data and personalized income information. This has resulted in some savings and reallocation of resources to poor families. However, there is still substantial scope for improving the targeting accuracy. Key steps in this direction would involve:

- a. Better integration of the 2008 survey of the FB beneficiaries, the household registry and the nationally representative ILCS data, as well as better screening of applicants with readily available filters and categorical variables such as utility bills, car ownership, military family and single mother status.

- b. Experimenting with a regression-based Proxy Means Test based on observable characteristics. This will address the problem of underreporting of income used in the current FB formula. To ease this reform and not to compound its potential unintended adverse effect with the impact of the economic crisis, policy makers could consider a transition period during which the existing beneficiaries are gradually retargeted.
- c. Improve the coverage of the FB through outreach campaigns targeted to poor communities, with mandatory visit to applicant households to collect information necessary for the PMT score calculation.
- d. Simplify the application process and the annual re-certification in order to enhance outreach and lower transaction costs to households and authorities.
- e. Improve the FB administration by upgrading the MIS into a live data base and by re-introducing cross-checks and stepping up electronic data verification.

18. *An additional response measure would consist of increasing funding for the public works scheme.* Current funding for public works is modest (AMD 700 million) but this intervention could directly address the problem of increasing unemployment as well as provide some income for those needing support. The Government is accelerating the implementation of World Bank funded projects under the new IDA Fast Track Facility. However, the announced postponement of AMD 30 billion (US\$ 81.1 million) in capital spending may further increase unemployment. The public works program, which so far funds proposals prepared by communities largely for renovation of community social infrastructure, could be scaled up to generate more jobs and incomes for the poor. According to existing estimates, only part of community designed public works projects is currently funded. Thus absorptive capacity exists, and the scheme could be ramped up quickly by allocating more funds to foster employment at the community level.

## **Conclusions**

19. *The global economic crisis seriously threatens the robust poverty reduction momentum that Armenia enjoyed in recent years.* The overall poverty incidence could increase by about 5.2 percentage points between 2008 and 2010, with an estimated 172,000 people falling below the poverty line and reductions recorded between 2006 and 2008 more than fully offset by the increases due the crisis. The increase in extreme poverty and poverty gap could be more pronounced as the already poor become poorer. The labor market is the main channel for transmitting the impact of the economic crisis to households, accounting for 62 percent of the increase in overall and extreme poverty between 2008 and 2010. The projected decline in remittances accounts for 20 percent of the increase and the remaining is attributable to price changes due to exchange rate adjustment and planned utility tariffs.

20. *There are existing social protection programs that can be leveraged to provide support for those most at risk.* International experience, considered within the current context facing Armenia, suggests certain policy instruments that the government can implement to help



households avert or lessen the impact of the crisis. These include expansion of the existing social safety net instruments, such as the Family Benefit; active labor market programs, including public works; and the expansion of unemployment benefit. However, while the Family Benefit is fairly well targeted, additional resources for the program would need to be combined with further improvements in targeting. A good mix of these programs to reach different affected groups of the population will be a key. The government has taken a number of steps to provide protection to the poor, including the protection of public spending on social protection and other pro-poor programs in health and education and to improve the targeting efficiency of the programs.



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## 1. INTRODUCTION

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1. *Armenia immediately felt the impact of the global financial crisis; trade and export demand fell sharply and private capital flows slowed down.* Despite a relatively small economy with limited integration of its banking sector into the world markets, the global crisis is harming the Armenian economy through decreases in trade, foreign direct investments, and remittances (stemming from economic slowdown in source countries), as well as domestic credit market contractions in response to external credit market pressures. The financial crisis triggered a serious slowdown in Armenia's main trading partners beginning in the final quarter of 2008. A prolonged slowdown in Western Europe, Russia, and other main trade partners has reduced demand for Armenia's exports.<sup>1</sup> Remittances from abroad, which are significant contributors to consumption and investment for Armenia, are likely to slow down in 2009 after robust growth in recent years. The financial crisis has also tightened the credit markets, restricting access to credit for large firms that rely on greater capital and labor complementarities and foreign direct investments.

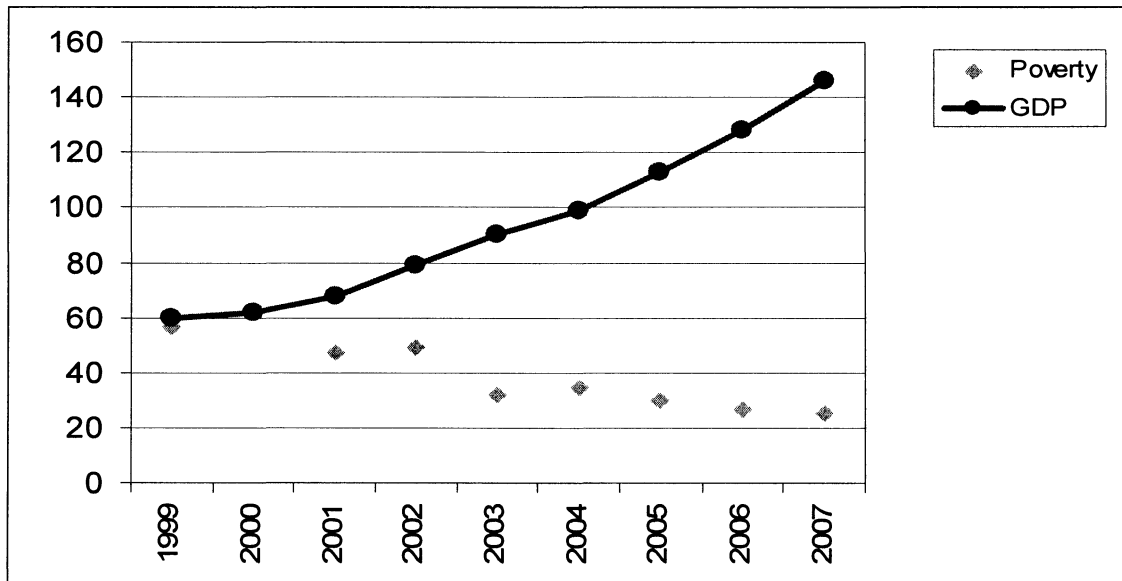
2. *As a result, the global financial crisis has posed serious challenges for maintaining the robust economic growth and poverty reduction that Armenia enjoyed for much of the 2000s.* Most recent data indicate that growth in the fourth quarter of 2008 against the same period in 2007 was negative, and prospects are worsening for 2009 and 2010 when the full impact of the crisis is expected to unfold. These developments present a setback for Armenia after a decade of nearly double-digit growth and substantial poverty reduction (Figure 1.1). Depending on the depth of the crisis in Armenia, its main trading partners, and its migrant workers' host countries and on the effectiveness of policy responses, the crisis could have protracted negative effect on Armenians' living standard. The financial crisis, which is coming at the heels of the food and fuel price increases, could have a wide-ranging impact on the poor and vulnerable.<sup>2</sup>

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<sup>1</sup> Demand for some of Armenia's key export products such as chemicals has already slowed down. (See "Global Crisis Results in Suspension of Production at Vanadzor Chemical Complex," Arminfo news agency, November 4, 2008.)

<sup>2</sup> The steep increases in international food and fuel prices have already increased poverty in many developing countries (see, for example, Ivanic and Martin 2008).

**Figure 1.1: Changes in GDP (1989 = 100) and Poverty Incidence**



Sources: World Economic Outlook database, 2008 and Integrated Living Conditions Surveys for 1989/99 through 2007.

**Table 1.1: Armenia has made significant gains in poverty reduction**

Population group	1989/99		2007			Decline, between 1989/99 and 2007 (%)	
	Very poor (%)	Poor (%)	Very poor (%)	Poor (%)	Share, total population (%)	Very poor	Poor
Urban	26.2	62.1	4.6	24.7	64.5	82.4	60.2
Yerevan	24.8	58.4	3.2	20.0	33.6	87.1	65.8
Other urban	27.4	65.5	6.1	29.8	30.8	77.7	54.5
Rural	14.1	48.2	2.3	25.5	35.6	83.7	47.1
Total	21.0	56.1	3.8	25.0	100	81.9	55.4

Source: Integrated Living Conditions Survey (ILCS) 1998/99 and 2007.

3. *The slowdown in external and internal demand for Armenia's goods and services combined with reduced access to credit reduced labor demand.* Unemployment rose sharply in the last quarter of 2008, as numerous gold and molybdenum mines closed, putting further pressure on the economy, social safety nets, and tax receipts. Armenia's main trading partners, particularly Russia, are also countries that account for most of Armenia's foreign remittances and sluggish growth there may thus slash the crucial remittances sent home by thousands of Armenians. The loss of income and employment opportunities will lead to declining consumption and ability to smooth consumption and further depletion of productive assets.

4. *The financial crisis could worsen the purchasing power of the population and hit hard those below and not far above the poverty line.* Informal risk management and coping strategies are likely to be ineffective against a risk affecting every region and every individual all at once.

The ability of the poor to maintain their consumption during economic shocks is often more limited than the ability of the non poor (World Bank 2000). Declining demand for labor at home and abroad means reduced scope and effectiveness of increasing labor supply and migration as coping strategies. In the worst case, households may face the possibility of their children's declining school attendance and reduced investment in health and nutrition as families have to cut back on spending. Thus the financial crisis could be transformed into setbacks for future generations.

5. *There are multiple channels through which the financial crisis could affect poverty developments in Armenia.* The note identifies the following as the main ways through which the poverty impacts are transmitted to households: (a) price changes (devaluation of the local currency, utility tariff increases, and consumer price inflation); (b) labor markets (via decreased employment and wages); (c) remittances (stemming from economic slowdown in source countries) and (d) government (and non-governmental) spending on social services such as education, health, and social protection. The impact through the financial markets (e.g., reduced access to credit, erosion of savings and asset values) and product markets (via lower growth and production, relative prices changes) can also be substantial. The note undertakes micro simulations that attempt to provide poverty impacts through most of these transmission channels.

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## 2. ECONOMIC GROWTH AND POVERTY REDUCTION

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6. Armenian economy has experienced robust growth since the early 2000s when it was just a fraction of its level at the beginning of the transition. Between 2001 and 2007, it averaged a double digit GDP growth rate, catapulting Armenia to the ranks of low middle income economies. The country's real GDP has grown at an annual rate of over 11 percent since 2002 and was at 13.8 percent in 2007. The growth and subsequent improvements in living conditions were attributable to successful reform efforts, including stabilization and structural reform programs to transform the economy to a market-oriented one and steps taken to create an improved business climate (IMF 2008a).

7. *Economic growth in Armenia has generally been associated with poverty reduction.* Therefore, the momentum of poverty reduction could suffer during this economic downturn. Armenians have had a substantial reduction in poverty, driven largely by increase in wages, private transfers from abroad, and social transfers through a well targeted family benefit program. The incidence of poverty fell from around 56 percent in 1998/1999 to 25 percent in 2007, according to comparable data from the Integrated Living Conditions Survey (Table 1.1) (NSS 2008a).

### A. The Financial Crisis and Growth

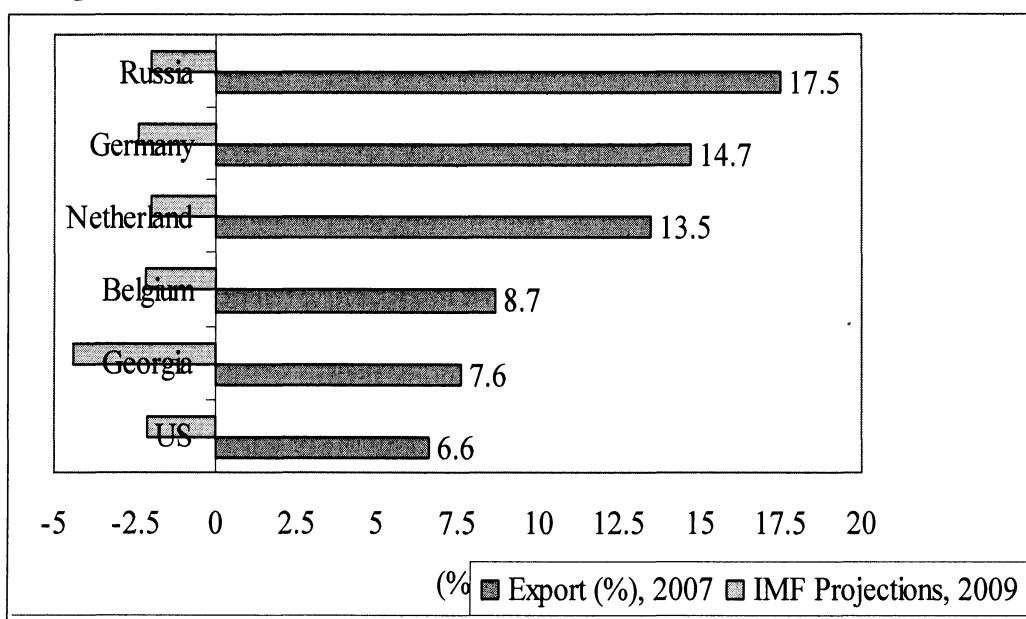
8. *For at least three reasons, the global economic slowdown and financial crisis could impair Armenia's growth prospects.* First, the slowdown of world economic growth, particularly among Armenia's main trading partners, will cut demand for Armenia's exports. The Armenian economy, with its main export markets in the European Union and Russia, has significantly slowed down as these countries feel the full impact of the financial crisis. Moreover, because only six countries, most of them likely to face the brunt of the financial crisis, account for nearly 70 percent of Armenia's exports, Armenia faces increased vulnerability in its export earnings (Figure 2.1).<sup>3</sup> The IMF cut its 2009 real GDP growth projections for each of Armenia's main trading partners by about 2 percent for Netherlands, Russia, and United States to more than 4 percent for Georgia, from their average for 2006–2008 (IMF 2008b). And subsequent further downward revisions have been common for most countries. The export slowdown has been particularly sharp in the construction sector, a key driving force behind Armenia's recent economic growth. Another major sector of the Armenian economy, mining, has been hit even harder by the plunge in international prices of copper and other metals. The slowdown of demand for chemical products, another key sector of Armenia's economy, is already visible.<sup>4</sup>

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<sup>3</sup> Based on the IMF World Economic Outlook database 2008, they include, in the order of their importance: Russia, Germany, Netherlands, Belgium, Georgia, and United States.

<sup>4</sup> Arminfo News Agency, "Global Crisis Results in Suspension of Production at Vanadzor Chemical Complex," November 4, 2008.

**Figure 2.1: Armenia's Main Trade Partners and the Financial Crisis**



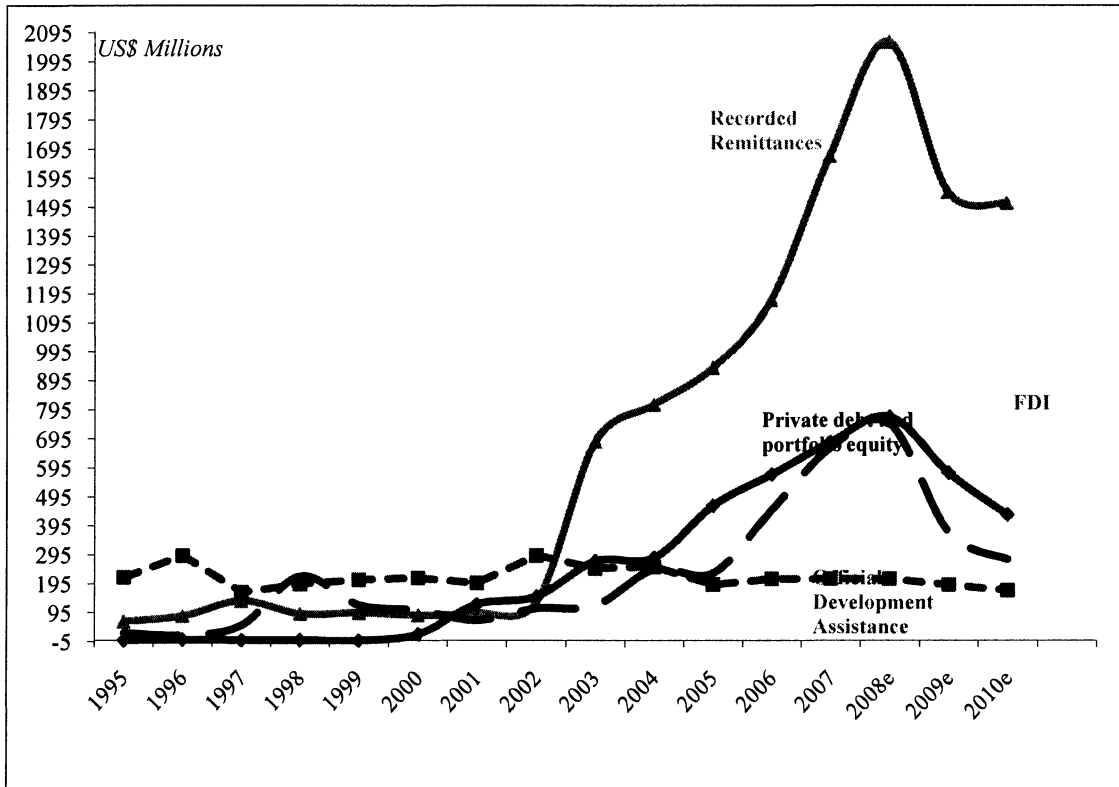
Source: IMF 2008b.

9. *Second, Armenia's main trading partners, particularly Russia, are also countries that account for the bulk of foreign remittances.* The sluggish economies abroad may thus slash the crucial remittances sent home by thousands of Armenians. According to the Central Bank of Armenia, remittances account for 20 percent of GDP (CBA 2006). The high influxes of foreign remittances have played an important role in Armenia's robust economic growth and poverty reduction (Atoyán and Oomes 2006). Because 80 percent of remittances go straight into consumption, the impact on poverty incidence and depth can be significant.

10. *Third, the global slowdown has reduced foreign direct investment and private capital flows to Armenia, putting a brake on economic growth.* Armenia's economy has in the past benefited from significant capital inflows (Figure 2.2). With a sharp slowdown in most source countries (most notably Russia<sup>5</sup>) and the higher cost of financing (due to tightened credit conditions in the international capital markets), foreign capital inflows to Armenia are likely to slow down. The resulting slowdown in growth and domestic and foreign investment will raise unemployment and shrink the tax base for government revenues.

<sup>5</sup>Signs are visible that the crisis is putting a strain on Russia's economy (*Financial Times*, "Putin Unveils Tax Cuts in \$20bn Stimulus Deal," November 20, 2008).

**Figure 2.2: Remittances and Capital Flows to Armenia and Projections, 1995–2010**



Sources: Development Data Platform (DDP), Global Economic Prospects 2008, IMF Balance of Payments Statistics database 2008, and World Development Indicators 2008.

11. Finally, although Armenia's private sector is not considered highly leveraged, some companies are export-oriented and directly exposed to foreign financial institutions. The decline in their export earnings due to the global financial crisis could further slow down the economy. In response to foreign banks that are tightening credit and charging higher rates, most local commercial banks have followed suit, reducing lending and also charging higher rates on loans to stay competitive.

## B. Implications of the Slowdown for Poverty

12. Poverty reduction in Armenia is strongly correlated with economic growth, as shown in Figure 2.1. Further evidence of the impact of growth on poverty can be seen in the decomposition of poverty reduction into a growth and distributional components (Datt and Ravallion 1992). According to a series of annual poverty profile updates by the National Statistical Services of the Republic of Armenia, since 2005, growth has driven poverty reduction. Although both growth and redistribution components worked toward poverty reduction for much of the 2000s, most of the observed poverty decline was attributed to growth (NSS, 2005, 2006, 2007 and 2008). For example, between 2004 and 2006, the very poor benefited more from the



growth process than the average population, indicating the most vulnerable Armenians were not left out of the growth process.

13. *The Growth Elasticity of Poverty.* Analysis of the elasticity of poverty to GDP between 2004 and 2007 shows that, for each percentage point of growth recorded, the overall poverty incidence declined by 0.60 percentage points.<sup>6</sup> Consequently, if real GDP growth were reduced by significant margin from the pre-crisis projected rate. Poverty incidence would, at best, stagnate or likely increase if economic growth gravitates to negative territories. As a result, Armenia would not only lose the opportunity to lift some of its poor above the poverty threshold but would also see some of its non poor population fall into poverty. Simple poverty projection simulations under different downward projections of GDP growth at national and urban-rural levels are presented in Table 2.1.

14. *Accordingly, with the 2009 real GDP growth projection cut to 0, from the 9.2 percent assumption underling the 2009 budget, Armenia would lose the opportunity to further reduce national poverty by 5.5 percentage points.* That means that an estimated 176,000 poor, who might have been lifted out of poverty, will remain poor due to the slowdown in economic growth. The impact in the urban areas would be slightly worse at a poverty reduction opportunity loss of about 6.3 percentage points. If growth turns negative in 2009, poverty would increase, reversing the recent impressive poverty reduction momentum (Table 2.1). For instance, if GDP were to shrink by 8 percent, as currently projected, Armenia can expect poverty to increase 4.8 percentage points assuming the underlying relationship between growth and poverty observed between 2004 and 2007 stays the same.<sup>7</sup>

**Table 2.1: Growth Elasticity of Poverty and Poverty Headcount Projections**

Location	Elasticity, 2004–2007	Opportunity lost with growth projected at 0 compared with 9.2% pre- crisis	Increase in poverty with negative growth		
			0	-2%	-5%
Urban	-0.69	6.3	1.4	3.5	5.7
Yerevan	-0.68	6.3	1.4	3.4	5.4
Other urban	-0.69	6.3	1.4	3.5	5.7
Rural	-0.42	3.9	0.8	2.1	3.4
Total (Armenia)	-0.6	5.5	1.2	3.0	4.8

Source: National Statistics Service, ILCS 2004–07, and World Bank staff stimulations.

<sup>6</sup> Although crude, the growth elasticity of poverty is a useful aggregate index to summarize the growth-poverty relationship (see Bourguignon 2003; Lopez and Serven 2004; Ravallion 1997). The total growth-elasticity of poverty is defined as the relative change in the poverty headcount between two periods for a one percent growth in mean income (assuming that the poverty line remains constant in real terms).

<sup>7</sup> Due to the financial crisis, the relationship may change. Moreover, there is some evidence that poverty increases faster in the event of a GDP decline than it declines with a GDP growth.

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### 3. LABOR MARKET AND EMPLOYMENT

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15. A main channel for transmission of the financial crisis is loss of employment and wage earnings. Past crises offer several lessons on the nature and magnitude of the impact of the crisis on the labor market and wages. For example, during the East Asian crisis, unemployment increased from 2.6 percent to 6.8 percent in Korea and from 2.2 percent to 5.2 percent in Thailand. Similarly, during Argentina's crisis in the late 1990s, unemployment increased from 11.7 percent to 15.9 percent (Development Research Group, 2008). In some countries such as Indonesia, reductions in working hours helped hold down unemployment (Beegle, Frankenberg, and Thomas 1999). Adjustment could also take the form of reduced wages, as well as working hours, as in Indonesia during the East Asian crisis where median wages declined between 20 percent and 30 percent, and in Mexico during the 1994 Tequila crisis when real wages dropped 21 percent. Preliminary evidence suggests that all of these adjustments are taking place, to some degree, in Armenia.

16. The global financial shock could have heterogeneous impacts across households, depending on, on the one hand, the sector of employment and the degree of the sector's exposure to external markets, and, on the other hand, on household characteristics such as demographics, educational attainments, and location. The financial crisis is likely to affect different sectors of the economy differently. For Armenia, the impact of the crisis on construction and export-oriented industries is more severe than on other sectors and projected to get worse. Reduced labor demand in these sectors could spur costly labor reallocation, including movement into subsistence activities and sectors. During the 1997 Asian crisis, for example, between 30 percent and 40 percent of displaced urban workers moved back to agriculture. Crude and aggregate poverty projections based on growth elasticity of poverty do not account for these phenomena and thus cannot tell the whole story.

17. In this section, poverty indices are simulated under alternative growth scenarios, taking into account sectoral patterns of growth and employment using the PovStat tool (see Box 1). Household data from the 2007 ILCS and projections of sectoral GDP and employment growth rates for 2008-2010 are used to simulate the poverty implications of the financial crisis for Armenia. The survey data provide the distribution of household living standards in 2007; the projection parameters attempt to capture the effect of the financial crisis on various sectors of the Armenian economy.

18. The basic assumption of the methodology is that the rate and sectoral patterns of growth and employment determine how poverty measures evolve over time. In Armenia, nearly every sector of the economy experienced growth and contributed to overall growth. The construction sector's share in GDP expanded from 15.5 percent in 2004 to 24.7 percent in 2007 and accounted for more than 57 percent of GDP growth in 2006 (Annex Table A.2). In terms of employment, the agricultural sector accounted for the largest share of employment, but its role is declining (Annex Table A.3), as employment grew in the industrial and construction sectors as well as every other sector. For example, industrial employment grew to double digits in 2007 from only 7 percent in 2004, while agricultural employment shrank from 46 percent in 2004 to 36.5 percent in 2007.

### Box 1. PovStat Methodology

**What is Povstat?** PovStat is an Excel-based program designed to simulate poverty measures under alternative growth scenarios, and to forecast or project various poverty measures over a future projection horizon, or more generally, beyond the current household survey period. The need for making such projections naturally arises in the context of assessing poverty implications of expected growth scenarios. Therefore it enables to project poverty levels beyond the most recent available national household survey data.

Poverty projections are generated using country-specific (unit record) household survey data and a set of user-supplied projection parameters for that country. While survey data provide the distribution of household living standards in the country at a point in time, the projection parameters characterize a particular projection scenario. The program is designed to process data at the country level, but can also be used at higher and lower levels of aggregation.

**Povstat Methodology.** To calculate poverty indices, PovStat uses per capita consumption as the measure of welfare. The basic methodology underlying PovStat is that the rate and sectoral pattern of growth determine how poverty measures evolve over time. In particular, PovStat starts with the initial assumption that household per capita consumption grows at the same rate as that of per capita output in the sector of employment of the household head. This assumption implies constant relative inequalities *within* sectors. The assumption can however be relaxed at the user's discretion by specifying a rate of increase/decrease in inequalities within any sector over the projection horizon.

However, PovStat does not capture heterogeneity within households with multiple income earners in different sectors. This is mainly on account of the nature of data availability. If such data were available, PovStat could be easily run with individual rather than household level data. PovStat allows poverty projections to be further conditioned by a number of projection parameters. Besides the rate of output growth by sector, the additional projection parameters relate to: (i) employment shifts across sectors, (ii) changing terms of trade reflecting differential prices faced by consumers and producers, (iii) changes in the relative price of food that is a prominent part of the poor's consumption bundle, (iv) changes in inequality within sectors, (v) changes in the average consumption-income ratio, and (vi) statistical drift in consumption growth between the national accounts and the surveys. By allowing these adjustments to be built into the projections, PovStat offers a flexible approach to poverty projection that could help avoid the biases typically associated with the simple back-of-the-envelope forecasts relying only on per capita GDP growth and an empirical elasticity of poverty measures with respect to growth. For detailed specification of these projection parameters and their implementation within PovStat, please refer to the User Manual by Datt and Walker (2006).

*Source:* Datt and Walker, 2006.

19. The structure of the economy has implications for the likely impact of the financial crisis, which will affect different sectors at varying intensities. The more severe impact on the construction sector and the mining industries is already visible.<sup>8</sup> For example, the Kapan,

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<sup>8</sup> The construction sector has been one of the main engines of Armenia's recent economic growth. It contributed 57 percent of 13.3 percent growth in real GDP in 2006 and a third of the growth in 2007 (National Statistical Service, 2007).

Kajaran, and Agarak Mining companies began to shorten working hours in November 2008 to avoid loss of jobs. All three smelters reduced output and downsized the workforce, a serious threat to the economy of Syunik marz where there are no significant employment alternatives. Mining industry employers, already feeling the effects of the financial crisis, are also contemplating reducing wages of the remaining workers.

20. The poverty indices are generated using per adult equivalent consumption as the measure of welfare and the same poverty lines used in the earlier discussions, with the initial assumption that household per adult equivalent consumption increases or declines at the same rate as that of per capita output in the sector of employment of the household head (see input data on Table A.4 in Annex). Besides the rate of output growth by sector, also accounted for employment shifts across sectors, the changes in terms of trade reflecting differential prices faced by consumers and producers, changes in food prices, the share of food in consumer price index and poverty line, and changes in the average consumption-income ratio. Poverty projections are presented in Table 3.1.

21. *According to poverty projections based on sectoral growth and employment projections underlying -8 percent and -2 percent overall GDP growth in 2009 and 2010, respectively, Armenia will not only lose the opportunity to lift some of its poor above the poverty threshold but would also see about 3.2 percentage points' increase in poverty between 2008 and 2010 through the labor market transmission channel alone.* The increase is driven by the disproportionately higher impact of the financial crisis on the construction subsector, where output and employment are projected to decline by about 32 and 45 percent, respectively. Other industrial subsectors such as mining are projected to slowdown significantly and have thus contributed to the projected increase in poverty in 2009 and 2010. While small increase in agricultural output and employment is assumed, the micro simulations assumed about 7 percent decline in service sector employment. As a result, nearly all of the gains made in poverty reduction between 2007 and 2008 are likely to be reversed, and an estimated 107,000 people could fall into poverty in 2009 (Table 3.1) due to loss of jobs and associated earnings. The poverty gap is expected to be worse than it was in 2007.

22. *The conditions of the extreme poor are predicted to be considerably worse with extreme poverty headcount of 6.5 percent in 2010 (vs. 3.2 percent in 2008)—a more than 100 percent increase.* As a result, the number of extreme population could jump from 103,000 in 2008 to about 211,000 in 2010. The very poor thus appear to be more vulnerable to the financial crisis than the overall poor, and an estimated 108,000 people could fall below the extreme poverty threshold during 2010.

**Table 3.1: Poverty Projections under Alternative Sectoral Growth and Employment Scenarios**

	2007	2008	2009	2010	Change, 2010-08	Change, 2010-08 (%)
<i>Actual</i>						
<i>Overall poverty</i>						
Headcount	25.0	22.7	25.2	25.9	3.2	14.2
Poverty gap	4.9	4.5	5.7	6.2	1.7	36.7
Poverty severity	1.5	1.3	1.8	2.0	0.7	52.0
Number of poor (thousands)	804.0	734.0	814.0	841.0	107.0	14.6
<i>Extreme poverty</i>						
Headcount	3.8	3.2	5.6	6.5	3.3	103.2
Poverty gap	0.7	0.6	0.9	1.0	0.4	70.4
Poverty severity	0.2	0.2	0.3	0.3	0.1	43.3
Number of extreme poor (thousands)	122.0	103.0	182.0	211.0	108.0	104.9

Sources: World Bank staff estimates based on ILCS 2007 and growth and employment projections.

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## 4. PRICE CHANGES

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23. Armenia abandoned the fixed exchange peg of the dram to the US dollar on March 3, 2009. This led to an immediate depreciation of the exchange rate by more than 20 percent. The prices of basic imported consumption goods have increased accordingly. In fact, the initial price hikes for key imported goods were observed to be as high as twice the rate of exchange rate depreciation. While imported final consumption goods constitute only 20 percent of the consumption basket, as much as 40 percent of the local production of the consumer goods is directly affected by the exchange rate adjustment as their production relies on imported inputs. However, in March, the consumer price index (CPI) increased by only 1.4 percent compared to the previous month. This rather tame price response to the exchange rate adjustment may reflect the decline in aggregate demand due to the economic crisis. In addition, the planned increase in utility tariffs, although not directly linked to the crisis, is expected to increase inflation by at least 2 percentage points. As a result, the CPI inflation could increase by about 3-4 percentage points in 2009. On the other hand, it should be noted that the exchange rate depreciation could benefit households receiving remittances from abroad, usually in US dollars, by increasing their local currency value.

24. *The increase in poverty attributable to the price changes would thus be about 0.9 percentage points between 2008 and 2010.* If the price change effect is added while keeping all things the same as in the previous simulation of the impact through the labor market, as reported in Table 3.1 above, the poverty incidence would increase from 22.7 percent in 2008 to 26.1 percent in 2009 and further increase to 26.8 percent in 2010. The impact of the financial crisis through both channels would erase nearly all the gains made in poverty reduction between 2006 and 2008, and an estimated 135,000 people could fall into poverty in 2010 (Table 4.1). The projected poverty gap of 6.7 percent in 2010 would be higher than the 2005 level of 5.4 percent and only 0.7 percentage points shy of the 2004 level.

25. *The extreme poverty indices would increase relatively by a substantially larger margin than the overall poverty incidence in 2009 as it could surpass the 2004 level of 6.4 percent.* In 2010, the extreme poverty gap would also double its level in 2008. An estimated 145,000 people could fall below the extreme poverty threshold in 2010 due to the combined effect of the labor market and the price change transmission channels.

**Table 4.1: Poverty Projections Based on the Combined Effect of the Financial Crisis through the Labor Market and Price Changes**

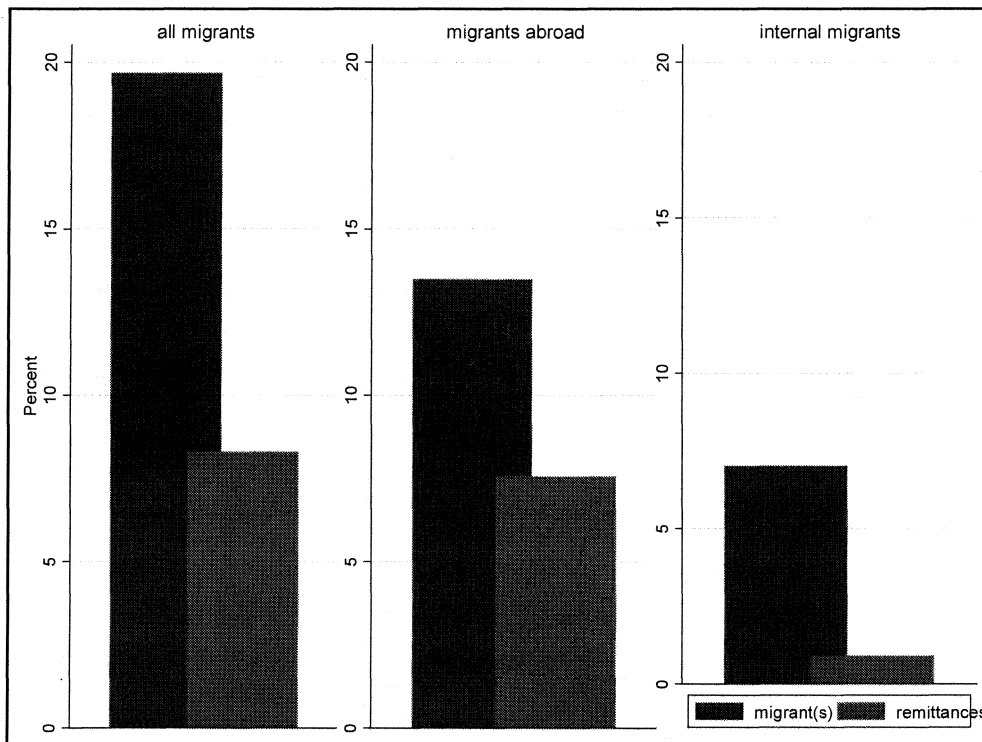
	2007	2008	2009	2010	Change, 2010-08	Change, 2010-08 (%)
<i>Actual</i>						
<i>Overall poverty</i>						
Headcount	25.0	22.7	26.1	26.8	4.1	18.0
Poverty gap	4.9	4.5	6.2	6.7	2.2	48.2
Poverty severity	1.5	1.3	2.0	2.2	0.9	69.3
Number of poor (thousands)	804.0	734.0	845.2	869.1	135.1	18.4
<i>Extreme poverty</i>						
Headcount	3.8	3.2	6.6	7.6	4.4	138.7
Poverty gap	0.7	0.6	1.0	1.2	0.6	96.7
Poverty severity	0.2	0.2	0.3	0.3	0.1	64.0
Number of extreme poor (thousands)	122.0	103.0	215.2	247.8	145.0	140.6

Sources: World Bank staff estimates based on ILCS 2007 and price changes due to exchange rate adjustment and planned utility tariff increases.

## 5. MIGRATION AND REMITTANCES

26. About 20 percent of all households in Armenia, representing more than a half million people, reported having a migrant member aged 15 or older living abroad or elsewhere within Armenia (Figure 5.1). External migration was almost twice as large as internal migration. Of the households surveyed, 13 percent had a migrant member outside Armenia, and 7 percent had an internal migrant. More than half the households with migrant member(s) abroad reported receiving remittances from their fellow family member. Remittances from internal migration are limited because internal migrations could occur for reasons other than gainful employment (such as study).

**Figure 5.1: Armenian Households with Migrant(s) Family Member and Receiving Remittances From (%)**

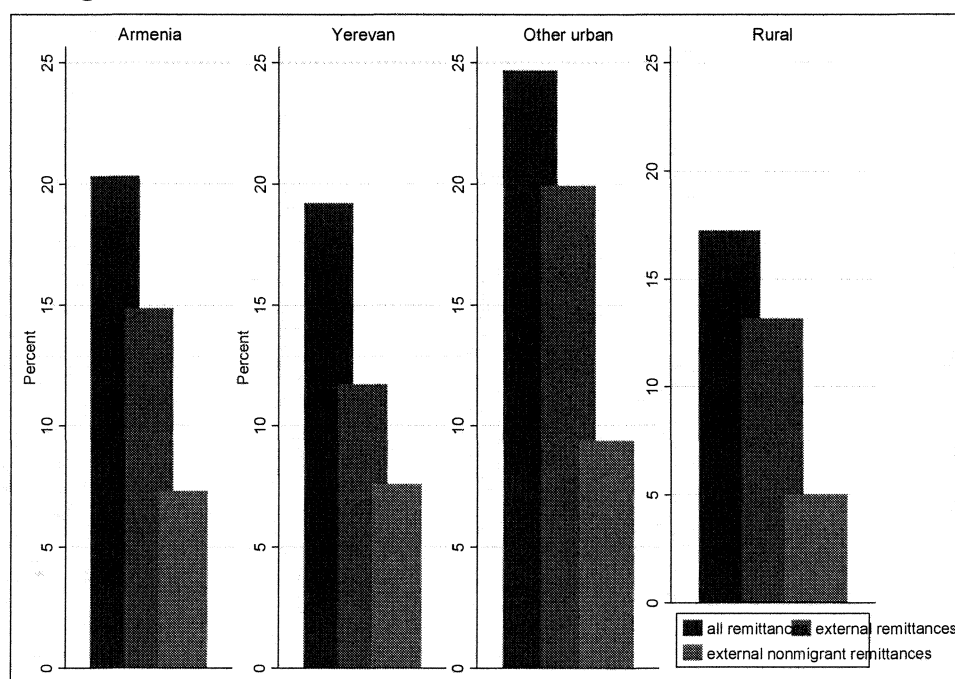


Source: ILCS 2007

27. Non Yerevan urban areas have highest incidence of remittances. About 25 percent of households in urban areas outside Yerevan reported receiving remittances, compared to 19 percent and 17 percent for Yerevan and rural areas, respectively.



**Figure 5.2: Incidences of Remittances in Urban and Rural Areas**



Source: ILCS 2007

28. Most migrants went to Russia, which accounted for nearly 80 percent of all migration outside Armenia (Table 5.1). The main reasons given for migration to Russia were to work (74 percent) or to look for a job (15 percent) in 2007. Since 2004, the proportion of members moving for work (50 percent) has thus increased appreciably. As the main destination for migrant labor, Russia is also the source of most remittances.<sup>9</sup> With remittance from abroad accounting for a significant share of GDP and household income, the impact of the financial crisis through declining remittances would be substantial for government revenues and transfer-reliant family incomes. The magnitude of the decline remains uncertain and depends on the outlook for growth in host countries, exchange rates, and commodity prices.

**Table 5.1: Migrant Workers Destinations Outside Armenia**

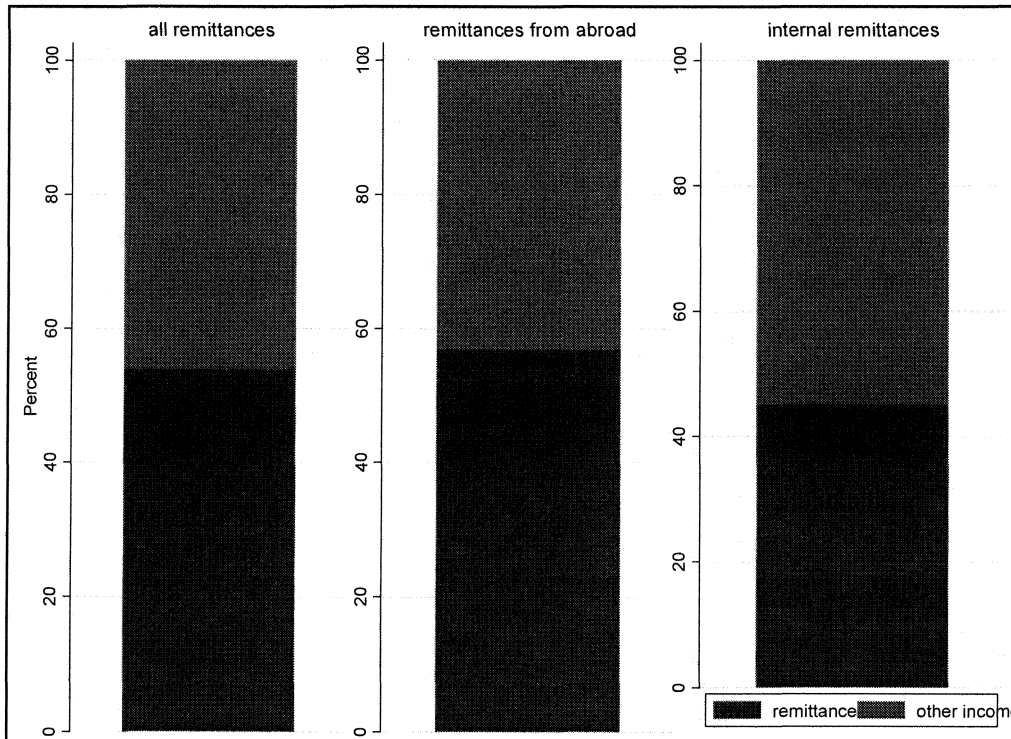
Destination	Households with migrant abroad (%)	Reasons for migration			
		Job search	Work	Study	Other
Russia	78.6	14.5	74.3	1.5	9.7
Other CIS	4.6	8.7	39.0	3.5	48.8
European Union	6.7	10.4	55.6	13.3	20.7
North America	3.3	6.1	37.0	32.1	24.8
Other	6.8	0.0	17.1	1.0	81.9
Total	100	9.1	48.8	7.2	34.9

Source: ILCS 2007

<sup>9</sup> According to CBA (2006), Russia is the source of 75 percent of the remittances to Armenia.

29. *Remittances constitute 55 percent of income for households reporting internal or external migrants (Figure 5.3). External remittances accounted for almost 60 percent of the income. In terms of the national economy, in 2007 remittances accounted for 13.5 percent of GDP (IMF 2008), one of the largest proportions in the ECA Region and well above the Regional average of 1.8 percent (Annex Figure A.1). The size of remittances to Armenia has grown substantially in the last several years and reached over \$1.3 billion in 2008.*

**Figure 5.3: Share of Remittances in Household Income**



Source: ILCS 2007

30. *Continued deepening of the Russian financial crisis will reduce remittance flows to Armenia.* According to anecdotal evidence, about 90 percent of Armenians in Russia work in the construction sector, which is seriously affected by the crisis, reducing employment and income for Armenian migrants. To the extent that remittances contribute to economic growth by boosting consumption or investment, their likely reduction will dim growth prospects. Reductions in remittances would not only dampen household consumption and poverty reduction, but also threaten businesses by squeezing people's purchasing power and investment activities.

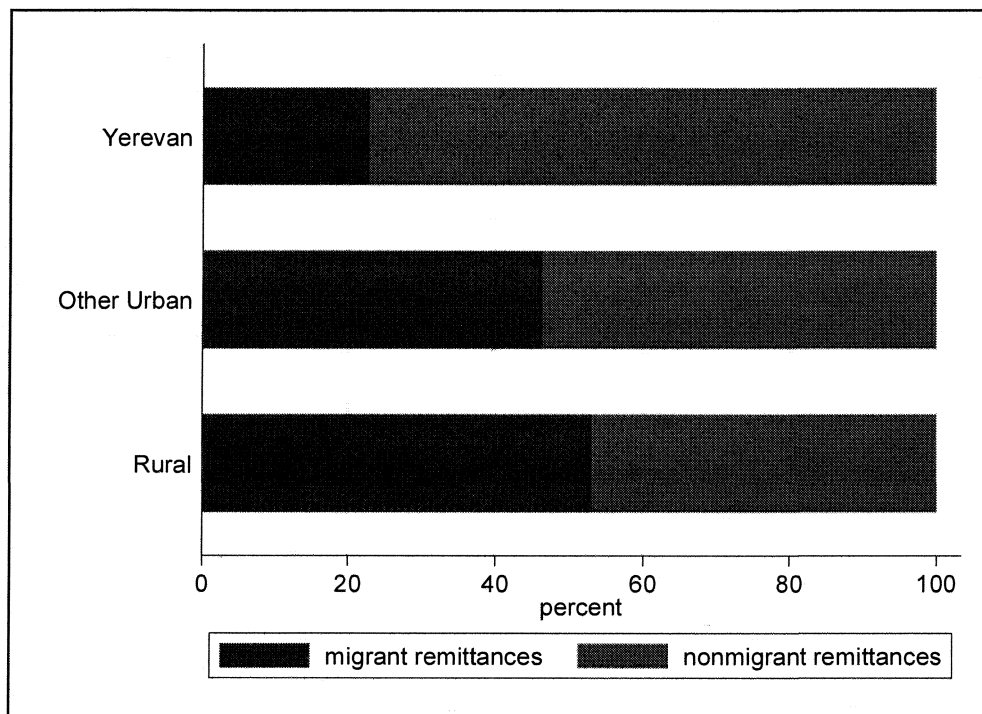
## A. Remittances to Armenia have Important Peculiarities

31. At least three features of Armenia's remittance flows have important implications for Armenian households and the economy:

- A significant share of the remittance transfers comes from individuals outside the immediate family.
- The destination for a disproportionately large share of migrants is Russia, which accounts for a correspondingly large share of Armenia's remittance income.
- A sizable share of total remittances flows is directed toward investment (mainly in construction) and, therefore, is likely to be procyclical.

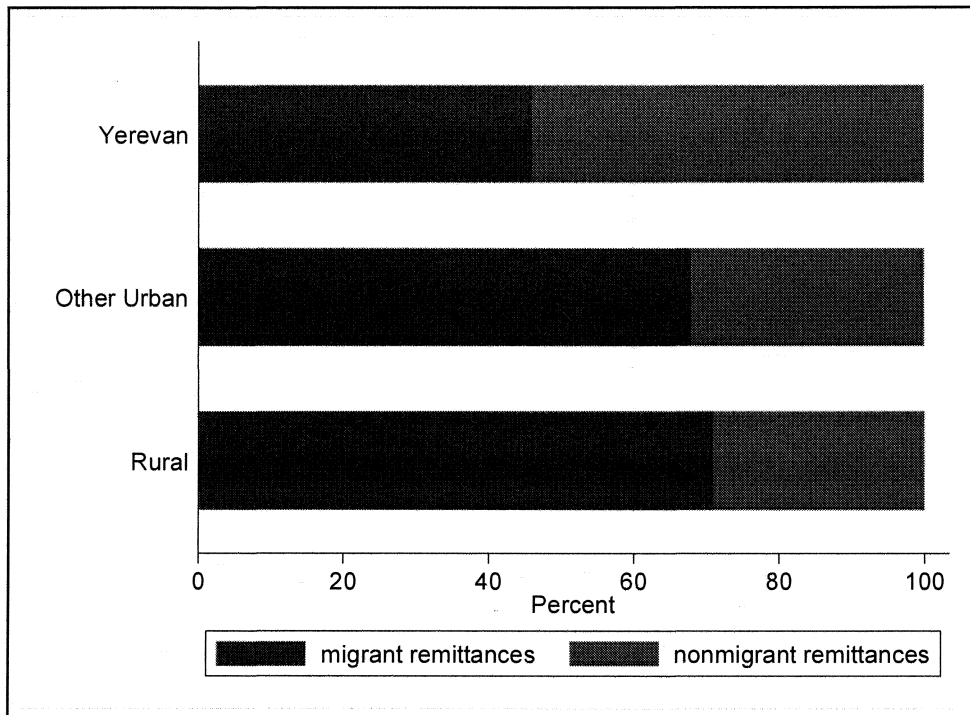
32. *Non family Remittances.* The number of households reporting remittances from abroad is significantly larger than those reporting remittances from a migrant family member abroad (ILCS 2007). The share of households reporting receipt of non migrant remittances is particularly large in the urban areas, accounting for almost two thirds of the incidence of remittance cases in Yerevan and more than half that in other urban areas (Figure 5.4). As a result, although only a third of a million Armenians reported having a migrant family member abroad, more than 700,000 Armenians receive remittances from abroad. In terms of actual amounts, more than half the remittances from abroad received in urban areas comes from non migrant sources. The reverse holds for rural areas, which rely more on transfers from migrant household members (Figure 5.5).

**Figure 5.4: Share of Households with Non migrant Remittances**



Source: ILCS 2007

**Figure 5.5: Share of Non migrant to Migrant Remittances**



Source: ILCS 2007

33. *The main reason for this significant non migrant remittance could be that remittances for Armenians originate not only from immediate migrant family sources but also from a large diaspora, many of whom may not have immediate family members living in Armenia.* This observation may also suggest that migrants remit money to distant relatives or friends in households of which they are not a member.<sup>10</sup> The implication of this peculiarity is that remittances to Armenia could be more vulnerable to the sender's financial condition than is usually the case. In global experience, remittances have been stable or countercyclical during an economic downturn in the recipient economy and resilient in the face of a slowdown in the source country. The financial crisis has hit every country at once and will test the resilience of remittances, particularly from non immediate family sources. It is likely that remittance flows from outside the immediate family could dry up more quickly than those from immediate family members.

34. *Remittances from Russia.* Almost 80 percent of Armenia's migrant workers are in Russia (Table 5.1), working mainly in construction, which is already slowing down.<sup>11</sup> Remittances will therefore depend heavily on developments in Russia, and especially in its construction sector. Furthermore, earlier work showed that Armenia's remittances originating in Russia are strongly correlated with Russia's GDP growth.<sup>12</sup>

<sup>10</sup> Alesina and Giuliano (2007), using data from World Value Surveys, observed that Armenians exhibit some of the strongest and extended family ties in the world.

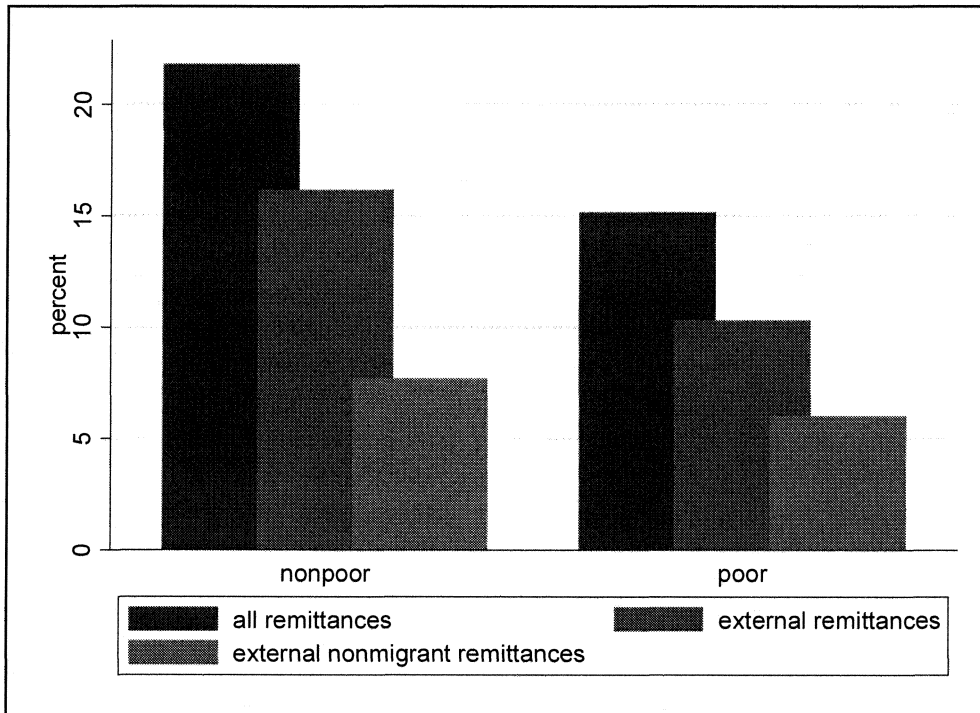
<sup>11</sup> "Crisis Devastates Businessmen," A1plus.am, November 25, 2008.

<sup>12</sup> See, for example, Atoyan and Oomes (2006).

35. *Remittances for Investments.* About 20 percent of remittances are invested (CBA 2006b). The strong linkage between recent increases in remittances and the surge in real estate prices further reinforces the hypothesis that a sizable part of remittances may have been used for investment in Armenia (IMF 2006). This portion thus will not only depend on economic conditions in sender countries but it will also be responsive to returns on investments in Armenia. Slowdowns in sectors where these transfers are invested are likely to reduce the inflows, creating a vicious cycle.

36. *More important for poverty, the remaining 80 percent of these remittances are spent on consumption.* Therefore, the impact of a reduction in remittances on the incidence and depth of poverty can be significant, considering that a sizable portion that directly finances subsistence-level consumption. Although a significantly large share of non poor household receives remittances, more than 10 percent of the poor live on remittances alone (Figure 5.6). A decline in remittances to those poor households would push them to the brink of survival.

**Figure 5.6: Share of Poor and Non poor Receiving Remittances**



Source: ILCS 2007

## B. Remittances and Poverty Projections

37. For the following discussion, poverty and extreme poverty estimates were simulated under different scenarios for remittances to Armenia. Of particular importance is the sizable number of households depending on remittances from non immediate family sources, which are expected to

slow down more heavily than those from immediate family members. The simulations below reflect these scenarios. Additional scenarios are presented in annex A.

38. *If all total remittances declined by 25 percent, a highly likely scenario, given that the bulk of the remittances originate in Russia and in its construction sector, poverty rates among recipients of remittances would increase from 18 percent to more than 21 percent (table 5.2). The poverty gap and severity, respectively, would increase by 87 percent and 117 percent. Extreme poverty is highly responsive to a decline in remittances, and its increase would be more pronounced, more than doubling from 1.7 percent to 4.5 percent. Households dependent on non immediate family source remittances will suffer a projected decline of 50 percent in their remittances, and the poverty incidence for this group could rise to 27 percent from 18 percent pre-decline. The poverty gap and severity would increase, respectively, 130 percent and 217 percent. Even worse, the extreme poverty, poverty gap, and severity would skyrocket in multiples of their pre-shock levels. Geographically, rural areas stand to lose the most from declining remittances, followed by Yerevan.*

**Table 5.2: Projected Poverty Rates with 25% Decline in Remittances and 50% Decline in Non migrant Remittances**

	Base	Poverty under declining remittances		Increase in poverty (%)	
		Decline in total remittances by 25%	Decline in non migrant remittances by 50%	Decline in total remittances by 25%	Decline in non migrant remittances by 50%
<b>Overall poverty</b>					
Headcount	18	21.1	26.9	17	49
Gap	2.3	4.3	5.3	87	130
Severity	0.6	1.3	1.9	117	217
<b>Extreme poverty</b>					
Headcount	1.7	3.8	4.5	124	165
Gap	0.3	0.7	1.6	133	433
Severity	0.1	0.3	0.7	200	600

Source: ILCS 2007

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## 6. CONCLUSIONS AND IMPLICATIONS FOR MITIGATION MEASURES

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39. The global economic crisis seriously threatens the robust poverty reduction momentum that Armenia enjoyed in recent years. The note identified the main channels of transmission to households of the current global economic crisis and estimated its potential impact on poverty in Armenia. These estimates are made by simulating the effects of the anticipated slowdown on household consumption using data from the 2007 Integrated Living Conditions Survey (ILCS). The overall poverty incidence could increase by about 5.2 percentage points between 2008 and 2010, with an estimated 172,000 people falling below the poverty line and reductions recorded between 2006 and 2008 more than fully offset by the increases due to the crisis. The growth in the poverty gap would be more pronounced as the already poor become poorer.

40. The labor market will be a major channel for transmitting the effects of the economic crisis to households. Out of the projected 5.2 percentage points increase in the poverty headcount between 2008 and 2010, about 3.2 percentage points (or 62 percent) would be due to increased unemployment and reduced earnings. These labor market effects would be especially strong in the construction sector, where output and employment are projected to decline by about 32 and 45 percent, respectively, in 2009 alone. Other industrial sectors such as mining are projected to slow down significantly and also contribute to the projected decline in output and employment and to increases in poverty. Price changes due to exchange rate adjustment and planned utility tariffs will account for 0.9 percentage points increase in poverty incidence (or 16 percent of total increase). Finally, the projected decline in remittances would account for about 20 percent of the overall poverty increase and half of the increase in poverty gap.

### **A. Implications for Measures to Mitigate the Impact**

41. The poverty projections, albeit indicative estimates, highlight the need for robust mitigation measures to lessen the burden on households vulnerable to the crisis. How much additional spending on social protection programs would be needed to offset the poverty impact of the crisis? The estimates based on the poverty incidence and gap simulation exercise presented above show that about AMD 22.4 billion (or 0.8 percent of the projected 2009 GDP) would be needed to mitigate the impact of the crisis on the overall poor. The corresponding figure for mitigating the impact on the very poor alone would be about AMD 9.0 billion (0.3 percent of 2009 GDP).

42. What kinds of measures can effectively avert or lessen the impact of the crisis? How best should available additional resources be allocated? The note does not advocate policy responses solely based on these simulations. However, international experience, considered within the current context facing Armenia, does suggest certain policy instruments that could usefully help vulnerable households withstand the economic downturn and that could be reversed when the economy recovers. These include expansion of the existing social safety net instruments, such as

the Family Benefit; active labor market programs, including public works; and the expansion of unemployment benefit.

43. Armenia's poor already rely substantially on government transfer schemes, particularly on the targeted Family Benefit (FB) program. Given the likelihood of significantly higher poverty in 2009 and 2010, and the accelerated rate at which this will occur, one option would be to consider increasing resources for the social safety net programs. The FB program can be a good vehicle for delivering such support to existing program beneficiaries as well as to those households that may become eligible due to the economic crisis.

44. While the Family Benefit is fairly well targeted at household level, additional resources for the program would need to be combined with further improvements in targeting. Based on the ILCS data, the FB's targeting accuracy worsened in 2007, compared to 2006. In 2007, about 6 percent of the program's spending went to families in the top quintile, compared to only about 3 percent in 2006. About 49 percent of the FB benefits went to families of the poorest quintile in 2007, compared to over 57 percent in 2006. The leakage of the FB resources to non poor families is estimated at 47 percent of the program resources in 2007, compared to about 40 percent in 2006. The Government has taken some measures in 2008 to reduce leakage in the FB program to the non poor by better integrating existing household registry data and personalized income information. This has resulted in some saving and reallocation of resources to poor families. However, there is still substantial scope for improving the targeting accuracy. Key steps in this direction may involve:

- a. Better integration of the 2008 survey of the FB beneficiaries, the household registry and the nationally representative ILCS data, as well as better screening of applicants with readily available filters and categorical variables such as utility bills, car ownership, military families and single mothers.
- b. Experimenting with a regression-based Proxy Means Test based on observable characteristics. This will address the problem of underreporting of income used in the current FB formula. To ease this reform and not to compound its potential unintended adverse effect with the impact of the economic crisis, policy makers could consider a transition period during which the existing beneficiaries are gradually retargeted.
- c. Improve the coverage of the FB through outreach campaigns targeted to poor communities, with mandatory visit to applicant households to collect information necessary for the PMT score calculation.
- d. Simplify the application process and the annual re-certification in order to enhance outreach and lower transaction costs to households and authorities.
- e. Improve the FB administration by upgrading the MIS into a live data base and by re-introducing cross-checks and stepping up electronic data verification.

45. An additional response measure would consist of increasing funding for the public works scheme. Current funding for public works is modest (AMD 700 million) but this intervention



could directly address the problem of increasing unemployment as well as provide some income for those needing support. The Government is accelerating the implementation of World Bank funded projects under the new IDA Fast Track Facility. However, the announced postponement of AMD 30 billion (US\$ 81.1 million) in capital spending will further increase unemployment. The public works program, which so far funds proposals prepared by communities largely for renovation of community social infrastructure, could be scaled up to generate more jobs and incomes for the poor. According to existing estimates, only 40 percent of community-driven public works projects are currently funded. Thus absorptive capacity exists, and the scheme could be ramped up quickly by allocating an additional US\$ 2.8 million to foster employment at the community level.



## ANNEX A: ADDITIONAL FIGURES AND TABLES

**Table A.1: Change in the Average Monthly Nominal Salary, by Ownership and Sector (AMD)**

Ownership / sector	2004	2007	Increase, 2004–2007 (%)
Public	36,332	60,985	167.9
Private	56,303	90,969	161.6
<i>Economic</i>			
Agriculture, hunting, forestry, fishing, fishery	30,473	58,697	192.6
Industrial	60,854	94,519	155.3
Construction	59,121	97,569	165
Trade, vehicles renovation, hotels and restaurants, transport, and communication	50,760	68,927	135.8
Financial activity, real estate operations, rental and services to consumers	68,263	132,773	194.5
Other services	31,670	58,109	183.5
Total	43,445	74,227	170.9

Source: NSS 2008.

**Table A.2: Sectoral Composition of GDP**

Sector	Share of GDP (%)		Contribution to GDP growth, 2007(percentage point)
	2004	2007	
Agriculture, hunting and forestry, fishery and fish breeding	22.7	18	1.9
Industry, including energy	22.1	15.1	0.5
Construction	15.5	24.7	4.4
Trade, repair of vehicles and housing devices, hotels, restaurants, transport, and communication	18.0	17.5	2.1
Banking and credit, real estate operations, rental and services to consumers	5.1	6.4	1.6
Others	16.6	18.3	3.3
Total (i.e., GDP)	100	100	13.8

Source: NSS 2008.

**Table A.3: Structural Changes in Employment, by Sector**

Sector	Share (%)		2007 / 2004 (+ / -)
	2004	2007	
Agriculture, hunting and forestry, fishery and fish breeding	46.2	36.5	-9.7
Industry, including energy	7.0	11.3	4.3
Construction	5.2	7.7	2.5
Trade, repair of vehicles and housing devices, hotels, restaurants, transport, and communication	14.9	16.8	1.9
Banking and credit, real estate operations, rental and services to consumers	1.7	2.6	0.9
Others	25.0	25.1	0.1
Total employment	100	100	

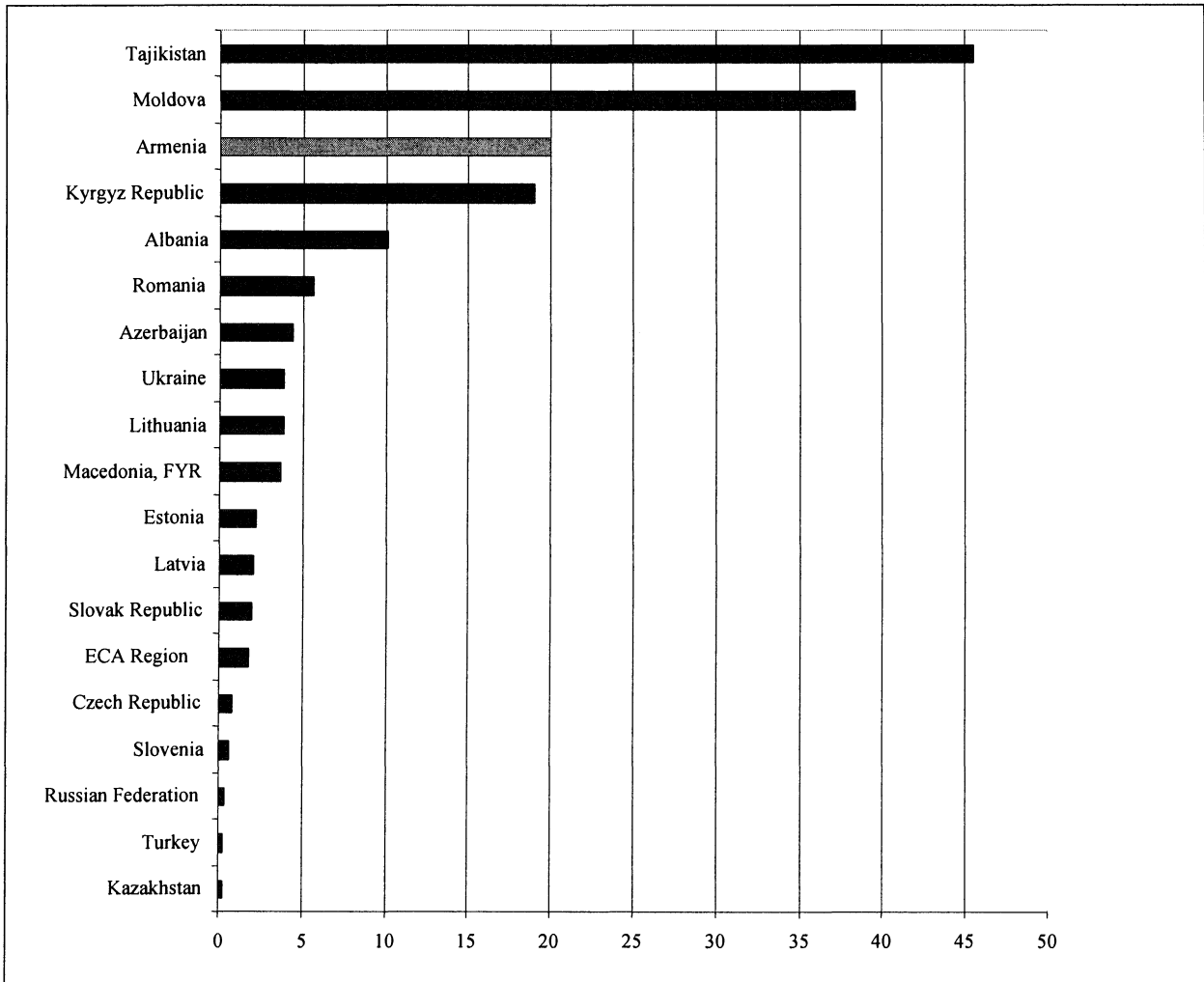
Sources: ILCS 2004, 2007.

**Table A.4: Input Data for Poverty Projections**

General			
Total poverty line			23,168
Extreme poverty line			15,753
Survey year population (thousands)			3,223
Food weight in poverty line			0.62
Food weight in CPI			0.54
Survey year sectoral labor shares			
Agricultural sector			36.87
Industrial sector			19.19
Services sector			43.94
<i>Output (annual percentage change)</i>			
	2008	2009	2010
Agricultural Sector	1.400	2.500	2.500
Industrial sector	5.800	-20.200	-5.280
Services sector	9.100	1.000	-1.800
GDP growth at factor cost	6.100	-8.030	-2.210
<i>Employment (annual percentage change)</i>			
Agricultural sector	-0.500	1.000	0.500
Industrial sector	-2.560	-21.000	-9.800
Services sector	-0.800	-7.200	-6.800
Population growth	0.220	0.220	0.220
CPI (2007 = 100)	105.00	110.25	114.12
GDP deflator (2007 = 100)	103.79	108.16	112.49

Source: ILCS 2007; IMF World Economic Outlook; PREM Growth and Employment Projections.

**Figure A.1: Remittances as Percent of GDP, Selected Countries, 2007**



Source: World Bank Development Data Platform (DDP) and International Migration and Remittances, 2008.



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