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## RESEARCH ARTICLE

# Analysis of subjective wellbeing in low-income transitional countries: evidence from comparative national surveys in Armenia, Azerbaijan and Georgia

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Drawing on the comparative household surveys, this article examines subjective wellbeing in Armenia, Azerbaijan and Georgia, three low-income transitional countries located on the Caucasus. We found that economic factors explain a considerable part of the variation in subjective wellbeing. The results are significant and robust across all countries. Having a higher level of household income, university education and a larger number of people in household along with salary as a major income source positively affect subjective wellbeing. On the contrary, being unemployed or a migrant along with having social transfers as a major source of income negatively affect subjective wellbeing. Besides, subjective wellbeing is strongly associated with disagreement with the current direction of countries' development and withdrawal from discussing policy. We argue that analysis of subjective wellbeing can be used to enrich and validate the process of poverty analysis in the countries of the region.

**Keywords:** poverty; inequality; living standards; welfare; social policy; Armenia; Azerbaijan; Georgia

## Introduction

Interest in the study of subjective wellbeing and poverty in countries that have experienced transition from a centrally-planned economy to a market economy has grown during the past 10 years. A number of recent studies have investigated various dimensions of subjective wellbeing and poverty in the transitional countries. Verbič and Stanovnik (2006) evaluated changes in subjective poverty over time in Slovenia by asking respondents to rate how their household ends were met, on a range from “with great difficulty” to “ends met with ease”. Ravallion and Lokshin (2001) analyzed subjective wellbeing in Russia as a general satisfaction with life as measured from “fully satisfied” to “not at all satisfied”, while Hayo and Seifert (2003) examined subjective poverty in several Eastern European countries by asking respondents to rank the economic situation of their families on the scale from “very unsatisfactory” to “very satisfactory”.

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In this study, we follow a similar path by analyzing the response to the following question about subjective wellbeing: “How would you describe the current economic condition of your household?”. The respondents may choose among several answers: “very poor”, “poor”, “fair”, “good”, and “very good”. The wording of the posted question has two important ramifications for our analysis (Ravallion & Lokshin, 2001). On the one hand, by using words “economic conditions” rather than “income” or “costs of living”, the question does not overemphasize income or expenditures as the only relevant variables for defining wellbeing. The concept of economic condition is fairly open and the definition of it is left up to the respondent. On the other hand, by using word “poor” the question focuses on a narrower concept of wellbeing than is often used in other studies: for instance, “satisfaction with life” or “happiness”. At the same time, asking about poverty makes this question very relevant to the current studies on poverty in the region.

It must be underscored that the previous studies on subjective poverty have focused almost exclusively on data from the high-income or middle-income countries in transition located in Eastern Europe and western countries of the former Soviet Union, due in large part to the lack of adequate data on the low-income transitional countries.

However, the low-income countries of the former Soviet Union located on the Caucasus and in Central Asia have required particular attention as they have faced especially unfavorable conditions since the beginning of the transition (Sheills & Sattar, 2004). The process of transition in these countries was accompanied by ethnic conflicts, civil unrests, refugee crises, and the collapse of economic cooperation between the former republics of the Union. After transition began, the countries of the region experienced a longer period of economic depression and the depth of economic depression was much more profound than in high-income and middle-income transitional countries. As a result, nearly 20 million people – or up to one-half of the entire populations of these countries – are currently living in extreme poverty, consuming less than US\$1 per day (World Bank, 2002).

Against this background, the purpose of this study is to fill the existing gap in the literature by examining subjective wellbeing and poverty in three low-income transitional countries on the Caucasus: Armenia, Azerbaijan and Georgia. Using comparative micro-data from these countries, this study seeks answer the following questions:

- (1) How do citizens of these countries assess their own wellbeing?
- (2) What are the specific factors that influence subjective wellbeing and poverty in these countries?
- (3) Are these factors overlapping in all countries under investigation and the same as in other transitional countries of the former Soviet Union and Eastern Europe?

By answering these questions, this study contributes to ongoing discussion about models of subjective wellbeing and poverty in transitional countries, especially in low-income ones.

In addition to theoretical contribution, this article seeks to inform the current poverty reduction efforts in Armenia, Azerbaijan and Georgia. Presently, these countries are implementing a broad range of poverty reduction measures in the

framework of Poverty Reduction Strategy Papers (PRSPs) (Government of Armenia, 2003; Government of Azerbaijan, 2004; Government of Georgia, 2003). Public participation through town-halls, open forums and mass-media is a build-up component of developing and updating PRSPs. Nevertheless, a recent study has reported “disappointment that in the processes the direct consultation with the key stakeholders (namely the poor) on a significant scale did not take place” and concern with the “lack of motivation on the part of the people to engage in the PRSP review process” (Mukherjee, 2007, pp. 6–7). In light of this, survey data about subjective poverty can be used to cross-validate objective poverty analysis and provides valuable information to calibrate more effective poverty reduction policies (Lokshin, Umapathi, & Paternostro, 2006).

Finally, subjective wellbeing and poverty are important from a political economy perspective. The countries of the region are currently undergoing dramatic reforms in political, economic and social sectors. The extent of support for democracy and market reforms may be influenced by subjective assessment of poverty (Fidrmuc, 2000). Since public support is crucial for the success of ongoing reforms, the factors affecting subjective poverty worth detailed investigation.

The article is organized as follows. The next section discusses the socio-economic background of the countries under investigation, while the third section describes the dataset used in the study. The subsequent section presents a descriptive comparison of subjective wellbeing and poverty across the countries under investigation. The fifth section presents the conceptual framework, describes statistical approaches used and presents findings of the study, while the sixth section discusses the results of the findings. The last section concludes with policy implications.

### **Background: the countries of Caucasus during transition**

The transition in the countries of Caucasus started earlier than in other countries of the former Soviet Union or Eastern Europe and was manifested by bloody ethnic conflicts since 1987. Armenia and Azerbaijan became involved in war over the Nagorno–Karabakh region, while Georgia was involved in wars for Abkhazia and South Ossetia. These conflicts caused a mass movement of population trying to escape violence (Table 1, row 1). In all countries of the region, the group of conflict-induced displaced persons comprised more than 5% of the total population, while the proportion of conflict-educed population to the total population in Azerbaijan is the highest in Europe except Bosnia and Herzegovina (Holtzman & Nezam, 2004). The ethnic conflicts, civil unrests and wars, followed by break-up of economic cooperation with republics of the former Union, made transitional processes much more difficult in the region. Thus, the economic recession was profound and recovery was prolonged (Table 1, rows 2–3). Even now, more than 15 years after the beginning of transition, the countries of the region are still significantly lagging behind the western republics of the former Soviet Union in terms of economic development (Table 1, rows 4–5). As a result, the countries of the region have experienced much higher poverty as compared with Belarus, Russia or Ukraine (Table 1, rows 6–9). In addition, countries of the region have demonstrated poor performance in non-maternal poverty such as health and education indices (Table 1, rows 10–14). Finally, countries have been ranked fairly low in terms of democratic

Table 1. Background of the countries of Caucasus during transition.

Indicator	Armenia	Azerbaijan	Georgia	Belarus	Russia	Ukraine
1 Displaced population as % of total population (1990–2002) <sup>a</sup>	7	13	5			
2 Cumulative drop of real GDP from 1989 (%) <sup>b</sup>	53.3	42.6	78.8			
3 Year of the first positive real GDP growth (1989 = 100%) <sup>b</sup>	1994	1996	1996			
<i>Selected macroeconomic indices</i>						
4 GDP growth (2002–2003) <sup>c</sup>	13	11	11	5	5	9
5 GDP per capita USD PPP adjusted (2002–2003) <sup>c</sup>	3019	3417	2445	5043	7993	5188
<i>Poverty indices, US\$2.15 per day PPP adjusted (2002–2003)</i>						
6 Poverty rate <sup>c</sup>	50	4	52	4	9	1
7 Poverty gap <sup>c</sup>	14	1	21	1	2	1
<i>Poverty indices, US\$4.30 per day PPP adjusted (2002–2003)</i>						
8 Poverty rate <sup>c</sup>	90	70	85	21	41	22
9 Poverty gap <sup>c</sup>	46	17	46	5	13	5
<i>Selected health and education indicators</i>						
10 Changes in pre-school enrolment from 1989–2002 (%) <sup>d</sup>	–47	–11	–31			
11 Changes in basic education enrolment from 1989–2002 (%) <sup>d</sup>	–7	2	2			
12 Infant Mortality Rate <sup>e</sup>	36	74	42			
13 Recent pregnancies that ended in a live birth which received no prenatal care (%) <sup>e</sup>	8	30	9		4	10
14 Births delivered outside a medical facility (%) <sup>e</sup>	9	26	8		2	1
<i>Political indicators</i>						
15 Democracy Index Ranking <sup>f</sup>	110	129	104			

Note: GDP = Gross Domestic Product; PPP = purchasing power parity.

Sources: <sup>a</sup>Holtzman and Nezam (2004). <sup>b</sup>Loukoianova and Unigovskaya (2004). <sup>c</sup>Alam et al. (2005). <sup>d</sup>Falkingham (2005). <sup>e</sup>Centers for Disease Control (2003).

<sup>f</sup>The Economist Intelligence Unit's Index of Democracy (Kekic, 2007): a lower value of the index indicates more democracy; therefore, according to the Index of Democracy, Georgia is more democratic than Azerbaijan.

development, with Georgia ranked only 104th, followed by Armenia and Azerbaijan (Table 1, row 15).

It must be emphasized, however, that the objective indicators can be inconclusive. For instance, Azerbaijan has a much lower poverty rate and gap and higher Gross Domestic Product per capita than Armenia and Georgia, but the country “leads” in infant mortality rate and percentage of births delivered outside of medical facilities.

### The dataset

The information base of this study is a cross-country comparable household survey conducted in 2006 by the Caucasus Research Resource Centre in the framework of the Data Initiative (DI), which was developed and implemented under the supervision of international experts (Caucasus Research Resource Center, 2007). The survey used multistage stratified clustered sampling with probability proportional to size. Using sampling weights contained in the data allows one to make the result of estimations nationally representative. To ensure comparability of collected data across countries, the survey uses unified procedures for sampling and questionnaire design, interviewers training and field procedures, and data coding and archiving. The number of respondents in the survey was 2065 in Armenia, 2400 in Azerbaijan and 2400 in Georgia. The data were collected through face-to-face interview, with an 80% response rate on average. The survey covers several important areas on household and individual levels such as demographics and employment, education and health, and political attitudes and economic behavior.

All together, the cross-country comparability, representativeness and richness of the data and relevancy of the questions asked make DI the best available source to study subjective wellbeing and poverty in the region. Nevertheless, the major disadvantage of DI is the omission of several important explanatory variables that can be associated with subjective wellbeing. For instance, the amount of income received from different sources (labor income, social transfers, etc.), information about self-rated health status and social capital are among unfortunate omissions.

### Descriptive comparison of subjective wellbeing in the countries of Caucasus

The descriptive analysis of wellbeing in the region as whole and in separate countries is shown in Table 2. In the region as a whole, the majority of the people (approximately 48%) self-rate their own wellbeing as fair. However, a significant

Table 2. Comparison of subjective poverty in the countries of Caucasus (%).

Degree of wellbeing	Coding	Region as whole	Armenia	Azerbaijan	Georgia
Very poor	1	14.62	13.61	14.15	15.92
Poor	2	32.17	25.81	35.66	34.54
Fair	3	48.37	53.03	45.25	47.14
Good	4	4.35	6.54	4.56	2.27
Very good	5	0.49	1.02	0.37	0.13
Total		100	100	100	100

Note: Data are rounded up.

Source: Own estimation based on Caucasus Research Resource Center (2007).

number of people (approximately 32%) consider themselves poor. Furthermore, a considerable number of people (about 15%) consider themselves very poor. On the contrary, a much smaller proportion of respondents (only 4%) perceive their own wellbeing as good, and less than 1% as very good. The same tendency in the proportions in distribution of wellbeing ranking can be observed in each country under investigation. In all countries the majority considers their own wellbeing fair, followed by a significant number of poor and very poor. A very small number of respondents evaluate their own wellbeing as good or very good.

Cross-country comparison reveal that Georgia leads with the number of very poor, followed by Azerbaijan and Armenia. By contrast, poor status is more common in Azerbaijan and Georgia (36% and 35%, respectively) than in Armenia (25%). Likewise, Armenia has more respondents that rated their own wellbeing as fair than Georgia and Azerbaijan (53% vs. 47% and 45%). Also, Armenia has more people with good and very good subjective wellbeing, followed by Azerbaijan and Georgia. Overall, it seems that subjective wellbeing in Armenia is more positive, with more respondents identifying themselves as the fair, good and very good and less people identifying themselves as poor and very poor than in other countries of the region.

## **Explaining subjective wellbeing in the countries of Caucasus**

### ***Conceptual framework of the study***

This article incorporates demographic, economic, social and political factors that may be relevant to understanding subjective wellbeing in the countries of the region based on the previous literature. A useful starting point for selecting these factors is a conceptual framework suggested by Ravallion and Lokshin (2002). According to this framework, these factors can be classified into three broader categories: (1) objective indicators of wellbeing, (2) supplementary objective indicators of wellbeing, and (3) attitudinal variables. We use this framework in our article and discuss it in detail below.

- (1) An important objective component of subjective wellbeing is household monetary income. To adjust income for the number of people in a household, we divide the total income by the number of members in the household to receive the per-capita total income. Per-capita measurement of wellbeing is used in the computation of monetary poverty in all three countries under investigation (Government of Armenia, 2003; Government of Azerbaijan, 2004; Government of Georgia, 2003). To compare incomes across countries we normalize them by adjusting to purchasing power parity. Adjusting income in different countries using purchasing power parity exchange rates helps to avoid the bias caused by different purchasing powers of currencies in the three countries.
- (2) Supplementary objective indicators of wellbeing include a wide range of household and personal characteristics. A recent study on wellbeing found that household head variables reflect the overall wellbeing of a household (Bookwalter, Fuller, & Dalenberg, 2006). Thus, in our study, household size, proportion of children in household, and education reflect the different needs of households, while the importance of various sources of income for



households reflects a response to those needs.<sup>1</sup> In addition, the age of the household head and education attained serve as proxies for place of the household in its life-course and human capital of the household.

Several personal characteristics found to be associated with subjective wellbeing in transitional countries are also included. These variables include gender, age, and marital status, employment and occupational status, as well as geographical characteristics and place of residence. We also control for ethnicity in each country (Armenians in Armenia, Azeri in Azerbaijan and Georgians in Georgia), as the region was a scene of ethnic conflicts in the 1990s, and experienced mass movement of people fleeing the violence. The use of titular ethnicity also allows us to control for possible systematic discrimination of minorities in each country. Likewise, we control for migration status where the variable “migrated” means that the person was not born in the current place of residence and relocated there later. The reasons for moving may include war and ethnic conflicts, job searching, receiving education and a change in marital status. Household assets and durables constitute another set of supplementary objective characteristics. The use of these characteristics permits us to control for past income that may influence the current perception of wellbeing.

- (3) Attitudinal variables are the last category of variables we use as covariates of wellbeing. To directly examine perception of the current situation in each country, we include the questions about whether one perceives the “country moving in wrong or mainly in wrong direction”. Likewise, to account for possible social exclusion of the low-income population from the policy process we include the variable “never or rarely have policy discussions”. Finally, we include two questions that reflect perceived changes in subjective wellbeing during the past three years and expectations about future changes in wellbeing for the next year.

### *Statistical methods*

An obvious concern with the selected variables is that their endogeneity may lead to severe collinearity in the multivariate analysis of subjective wellbeing (Hayo & Seifert, 2003; Ravallion & Lokshin, 2001, 2002). Therefore, we begin with a bivariate analysis. Given that subjective wellbeing is represented by five ranked ordered categories, Kendall’s  $\tau$  is the proper measure of correlation, examining the degree of correspondence between ordinal-level variables and assessing the significance of this correspondence (Newson, 2002). Kendall’s  $\tau$  measures the strength of the tendency of two variables to move in the same direction. The value of  $\tau$  lies on a scale from  $-1$  to  $+1$ , where  $-1$  indicates a perfect negative correlation, zero indicates no relationship at all, and  $+1$  indicates a perfect positive relationship. Unlike the more frequently used Spearman correlation, Kendall’s  $\tau$  does not assume that the distances between scale points are the same for all points; for example, it does not assume that the distance between very poor and poor is the same as between fair and good. In addition, since  $\tau$  has a known sampling distribution, we can compute and report its significance.

To conduct multivariate analysis we use ordered probit regression. As mentioned above, collinearity is a common problem in the analysis of subjective wellbeing



and poverty. Our study is no exception. In fact, we encountered a severe form of collinearity when the sign of the regression coefficients changed to the opposite. To deal with collinearity, we employ the following strategy. We estimate regression values one-by-one for all independent variables separately in all three countries and record the sign of coefficient. Following this, we keep in the final model only those variables whose sign remains the same as the one-by-one regression estimations. After fitting the model, we use the regression estimates to predict the probabilities of individuals with a particular set of characteristics to be in any one of the five outcome categories.

### *Findings*

The results of bivariate analysis are reported in Table 3. Most results are the same for all countries under investigation with a high significance level. The increase in household total income and university education of the household head is associated with improvement in subjective wellbeing. Similarly, having a salary as the main source of income in a household and ownership of a car, mobile phone or satellite dish correlates to an increase in wellbeing. Likewise, some interest in politics as well as having the perception that economic conditions had become better over the past three years, or will improve over the next year, correlate with an increase in subjective wellbeing. On the contrary, having a high proportion of children in a household and obtaining social benefits and other sources of income as the main source of income correlate with a decrease in wellbeing. Being divorced, separated, widowed or unemployed and working in agriculture also correlate with a decrease in wellbeing. Likewise, an increase in respondent age correlates with a reduction in wellbeing. In addition, considering that the country is moving in the wrong direction as well as having a belief that economic conditions have become worse over the past three years, or will be worse over the next year, are correlated with a decline in subjective wellbeing.

In contrast, some variables are important only for one or two countries. An increase in household age and household size, and being a migrant are significant factors in Armenia and Georgia, being female and never married is critical in Armenia, and working in science and education are significant in Armenia and Azerbaijan. Likewise, living in urban versus rural places is a noteworthy correlate in Azerbaijan and Georgia, while owning a flat in Armenia and Georgia is important, and having no or rare policy discussion is weighty in Azerbaijan.

The results of the multivariate analysis are reported in Table 4. After accounting for collinearity, our multivariate model of determinants of subjective wellbeing contains nine independent variables that have the same direction for all three countries under investigation. All the variables in the model except for one, "never or rarely have discussion", are highly significant at  $p < 0.05$  or higher for all three countries.

In all countries an increase in household total income and household size predict a significant increase in wellbeing. Likewise, having a university-educated household head and salary as the main source of income strongly predict a higher level of wellbeing. By contrast, having social benefits as the main source of income or being unemployed leads to a significant decrease in wellbeing. Similarly, being a migrant from another location is associated with a considerable reduction in subjective wellbeing.

Table 3. Results of bivariate analysis.

Variable	Armenia	Azerbaijan	Georgia
Household total income (US\$ PPP)	0.1563*	0.1779*	0.1278*
Household characteristics			
Household size	0.0873*	0.0283	0.1585*
University education of household head	0.1620*	0.1696*	0.1146*
Household head age	-0.1269*	0.0027	-0.1300*
Proportion of children in household	-0.0474*	-0.0741*	-0.0579*
Salary is the main source of household income for past year	0.2399*	0.1956*	0.2505*
Social benefits are the main source of household income for past year	-0.2632*	-0.1778*	-0.3091*
Other sources are the main source of household income for past year (alimony, financial help of relatives or friends, and income from lease or renting households good or property)	-0.039	-0.0295	0.0422
Personal characteristics			
Titular ethnicity in each country (Armenians in Armenia, Azeri in Azerbaijan, Georgians in Georgia)	0.0166	-0.0062	0.0156
Female	-0.0507*	-0.0472	-0.0004
Age	-0.1174*	-0.0332*	-0.1394*
Never married	0.1032*	0.0271	0.0379
Married	0.0399	0.0707	0.0354
Divorced/separated/widow/widower	-0.1522*	-0.1102*	-0.1712*
Migrated	-0.0732*	-0.0381	-0.0571*
Occupational characteristics			
Unemployed	-0.0515*	-0.1023*	-0.0306
Trade/service	0.0461	0.0368	0.0121
Transportation/communication	0.0410	0.035	0.0253
Industry	-0.0065	-0.0355	0.0099
Construction	-0.0408	-0.0979	0.0232
Science/education/high-tech	0.1107*	0.1084*	0.0214
Culture/sport	0.0188	-0.0131	-0.0224
Healthcare	-0.0045	0.0142	-0.0054
Banking/finance	0.0840	0.0726	0.0791
Agriculture	-0.1994*	-0.1098*	-0.0974*
Media	0.0466	N/A <sup>a</sup>	-0.0355
Public administration	0.0705	0.0204	0.0017
Non-profit	0.0714	0.0424	0.0158
Geographical characteristics			
Urban (excluding capital cities)	0.0030	0.0606*	0.0580*
Rural	0.0008	-0.0601*	-0.0692*
Capital cities	-0.0037	0.0068	0.0213
Regions of residence <sup>b</sup>	Not significant	Not significant	Not significant
Assets and durables			
Own flat or house	0.0818*	0.0596	0.0868*
Own car	0.2476*	0.2064*	0.2789*
Own mobile phone	0.2875*	0.2563*	0.3387*
Own satellite dish	0.1266*	0.1635*	0.1306*

(continued)

Table 3. Continued

Variable	Armenia	Azerbaijan	Georgia
Own land plot	0.0411	0.05	0.0298
Own livestock	0.0526	0.0606	0.0418
Attitudinal characteristics			
Country moving in wrong or mainly in wrong direction	-0.1261*	-0.1395*	-0.0882*
Never or rarely have policy discussions	-0.0427	-0.0828*	-0.0236
Very interested in politics	-0.0023	0.0393	-0.0383
Somewhat interested in politics	0.0745*	0.0728*	0.0869*
Not very interested in politics	-0.0056	0.0261	-0.0062
Not at all interested in politics	-0.0056	0.0261	-0.0062
For the past three years economic conditions of household became:			
Significantly better	0.2037*	0.1742*	0.1062*
A little better	0.1965*	0.2457*	0.2638*
Remain the same	0.0255	0.0974*	0.1032*
A little worse	-0.1303*	-0.2353*	-0.1263*
Significantly worse	-0.3081*	-0.2570*	-0.3022*
In one year, economic conditions of household will become:			
Significantly better	0.1587*	0.1287*	0.1317*
A little better	0.1730*	0.2103*	0.2162*
Remain the same	-0.0128	-0.0580	-0.0187
A little worse	-0.1069*	-0.1466*	-0.1413*
Significantly worse	-0.1069*	-0.1466*	-0.1413*

Note: PPP = purchasing power parity. Significance: \* $p < 0.05$ . <sup>a</sup>There are no representatives of the media in the Azerbaijan sample. <sup>b</sup>To conserve space, no figure is presented for regions of residence since correlations are found to be not significant for all regions in Armenia, Azerbaijan and Georgia. Source: Own estimation based on Caucasus Research Resource Center (2007).

In all countries, people with a low level of subjective wellbeing believe that the country is moving in the wrong or mainly the wrong direction. However, only in Azerbaijan is a low level of wellbeing significantly associated with a reduction in discussing policy. This is the only independent variable in our model whose effect is not significant for all three countries.

To further illustrate the magnitude of the independent variable effects, we predict the probability of individuals to be in one of the five outcome categories as a vector of independent variables. We consider the predicted probabilities for three scenarios (types of individuals). Our first scenario is an "average individual", for which values of all independent variables are held at their means. The second scenario is an individual in a household with a university-educated head. The main source of income for this household is labor-market income. This individual resides in a place where he or she was born (i.e. not migrated), participates in political discussions and thinks that the country is mostly moving in the right direction. Other independent variables are held at their means. Conversely, the third scenario is an individual who lives in a household without a university-educated head. The main source of income for this household is social benefits. This individual migrated to a place of current

Table 4. Results of multivariate analysis.

Variable	Armenia	Azerbaijan	Georgia
Household total income (US\$ PPP)	0.0014851*** (0.0002)	0.0029717*** (0.0003)	0.0010965*** (0.0001)
Household size	0.0404961** (0.0134)	0.0709112*** (0.0130)	0.0862227*** (0.0124)
University education of household head	0.3091309*** (0.6327)	0.2992481*** (0.0659)	0.1513256* (0.0590)
Salary is the main source of household income for the past year	0.2249293*** (0.0585)	0.2041168*** (0.0618)	0.2247058*** (0.0572)
Social benefits are the main source of household income for past year	-0.4952328*** (0.0765)	-0.1706581** (0.0628)	-0.5943119*** (0.0628)
Unemployed	-0.1617588* (0.0702)	-0.2219061** (0.0748)	-0.1475051* (0.0577)
Migrated	-0.1766823*** (0.5279)	-0.1742633** (0.0554)	-0.1973941*** (.0508)
Country moving in wrong or mainly in wrong direction	-0.2247655*** (0.0499)	-0.7617368*** (0.1040)	-0.222466*** (0.0474)
Never or rarely have policy discussions	-0.0830672 (0.0558)	-0.1733628* (0.0775)	-0.0069 (0.0501)
Number of observation	2065	2148	2380
Likelihood ratio $\chi^2(9)$	338.25	347.60	423.66
Probability > $\chi^2$	0.0000	0.0000	0.0000

Note: PPP = purchasing power parity. Standard errors in parentheses. Significance: \*\*\* $p < 0.001$ , \*\* $p < 0.01$ , \* $p < 0.05$ .

Source: Own estimation based on Caucasus Research Resource Center (2007).

residence, never or rarely has policy discussions, and thinks that the country is moving in the wrong or mainly in the wrong direction. Other independent variables are again held at their means.

The results of these predicted probabilities are reported in Table 5. The effect of independent variables is strong. Consider, for instance, the case of Azerbaijan. An "average individual" has an 11% probability of living in very poor economic conditions and 14% of living in fair economic conditions. Under the second scenario, an individual has a much lower probability of being very poor (just 3%), while the probability of living in fair conditions considerably increases up to 62%. By sharp contrast, under the third scenario, the probability of being very poor is significantly increased to 44%, while the probability of experiencing fair conditions plummets to 15%. The same effect can be observed in other countries under investigation.

### Discussion

Our findings concerning the determinants of subjective wellbeing in low-income transitional countries need to be discussed in the context of the broader literature on subjective wellbeing, especially available literature on other transitional countries. From this perspective, the serious impact of objective monetary indicators on subjective wellbeing is well documented. The positive effect of monetary indicators is reported in many transitional countries; see, for example, Abbot and Sapsford (2006) for middle-income countries, Russia and Ukraine, and Hayo and Seifert (2003) for high-income transitional countries of Eastern Europe. This effect is also found to be

Table 5. Predicted probabilities of subjective wellbeing.

Country/scenario	Probability for outcome category				
	Very poor	Poor	Fair	Good	Very good
<b>Armenia</b>					
Scenario 1 (an "average individual")	0.11	0.27	0.55	0.05	0.00
Scenario 2	0.03	0.15	0.65	0.12	0.02
Scenario 3	0.31	0.35	0.31	0.01	0.00
<b>Azerbaijan</b>					
Scenario 1 (an "average individual")	0.11	0.37	0.47	0.03	0.00
Scenario 2	0.03	0.23	0.62	0.10	0.00
Scenario 3	0.44	0.4	0.15	0.01	0.00
<b>Georgia</b>					
Scenario 1 (an "average individual")	0.13	0.37	0.48	0.01	0.00
Scenario 2	0.06	0.28	0.61	0.03	0.00
Scenario 3	0.35	0.42	0.22	0.01	0.00

Notes: Data are rounded up. Predicted probabilities derived from regression estimates in Table 3. Scenario 1: values of all independent variables are held at their means. Scenario 2: not migrated, participates in political discussion, country moving in right direction, university-educated household head, labor market income, all other independent variables are held their means. Scenario 3: migrated, does not participate in political discussion, country moving in wrong direction, no university-educated household head, social benefits, all other independent variables are held at their means.

Source: Own estimation based on Caucasus Research Resource Center (2007).

robust over time in spite of the dramatic socio-economic changes that have occurred in transitional countries; see for instance, Ravallion and Lokshin (2001) for Russia, and Verbič and Stanovnik (2006) for Slovenia.

The positive effect of household size on wellbeing in transitional countries has two major explanations. First, Young and O'Keefe (1997) stress the importance of transfers among members of households for their survival strategies. These transfers may be in the form of: giving money, lending money free of interest, or not charging for services to members of the extended family. Therefore, larger households may have a higher rate of such transfers that positively affects their wellbeing. Second, low-income transitional countries have experienced dramatic reductions in public expenditures for health, education and social services (Bonilla-Chanin, Murrugarra, & Temourov, 2005). Under these circumstances, an additional household member can play an important role by substituting services formerly provided by the state: for instance, caring for children, elderly, the sick and disabled.

A negative effect of being divorced, separated or losing a spouse on subjective wellbeing can be explained by the interplay of two factors. On the one hand, unattached respondents may feel more economically insecure, especially in the volatile economic environments of transitional countries (Ravallion & Lokshin, 2002). On the other hand, the non-economic, positive psychosocial effect of marriage on subjective wellbeing should not be underestimated (Hayo & Seifert, 2003).

The negative impact of age on self-rated wellbeing can be explained by differences in survival strategies of younger and older households. In exploring the different survival strategies *vis-à-vis* transitional shocks of households, Young and O'Keefe (1997) classified the full spectrum of household responses into three categories: reductive and depletive strategies. such as reducing consumption or using up

household resources and selling assets; maintaining strategies, such as transfers among extended families and humanitarian assistance; and regenerative strategies, such as increasing the production from one's own land plot and involvement in the informal sector. The authors concluded that regenerative strategies were the only sustainable approaches in the long term. They describe various regenerative strategies such as small trade, private tutoring, and using one's own car as a taxi. At the same time, Lokshin and Yemtsov (2004a) explored which socio-economic characteristics affected the selection of household survival strategies. They report that younger households are significantly more likely to implement regenerative strategies than older households.

The strong positive effect of education is not surprising. Prior to transition, centrally planned economic systems in the former socialist countries imposed a strict wage grid that reduced the returns from education for the purpose of a more egalitarian distribution of income (Ferreira, 1999). Since the transition began, the wage grid was abolished, and enterprises could begin to assign wages without constraints, leading to a significant increase in the return of education.

Having a salary as a major source of household income exerts a strong positive influence in increasing subjective wellbeing as compared with the strong negative effect exerted by having social transfers as a major source of income and being unemployed. Indeed, the system of social transfers in low-income transitional countries is ineffective (Habibov & Fan, 2007). The amount of the benefits is too small to significantly change the welfare of recipients, and they are paid in arrears. Furthermore, the targeting mechanism is inefficient, coverage of the neediest and the amount of benefits reaching them is inadequate, while a considerable proportion of the non-poor are still covered by social transfers and receive a significant share of the benefits.

In addition to the obvious shortfall of income, the negative effect of unemployment is associated with losing in-kind benefits provided by the employer such as childcare and housing and losing the status of an employed person. This may explain why so many workers in transitional countries continue to work in spite of wage arrears (Pavlovskaya, 2004). Also, the negative effect of unemployment can be demonstrated by the strong feelings of unhappiness among unemployed persons (Winkelmann & Winkelmann, 1998).

Geographical differences are important, as living in rural areas and working in agriculture have negative effects on subjective wellbeing and can be linked to a lack of public infrastructure. For instance, in Azerbaijan 100% of households are connected to the electricity grid and the price is more affordable than in other transitional countries (World Bank, 2005). Nonetheless, the supply of electricity in winter varies from eight to 18 hours per day between regions, with only the capital region receiving a more or less stable supply. The reason is the lack of investment in infrastructure outside the capital. The effects of improving infrastructure on wellbeing have been highlighted by research studies in transitional countries. In Georgia, for example, improvement in school and healthcare infrastructure, and road and bridge rehabilitation projects have been found to have a significant positive impact on subjective wellbeing in communities and have increased feelings of empowerment (Lokshin & Yemtsov, 2004b).

Another important factor affecting wellbeing is migration. Migration from other regions is associated with low subjective wellbeing. Against this backdrop it is



interesting to notice that we find no effect of ethnicity on subjective wellbeing. Taken together, this evidence shows that low subjective wellbeing is not related to ethnicity but rather to the fact that a person (even a person of titular ethnicity) migrated from another place. This result is in line with the findings of Lokshin and Ravallion (2005), who reported that, in the Russian Federation, Russians (titular ethnicity) do not perceive themselves as having higher subjective wellbeing than non-Russians.

The attitudinal characteristics also provide interesting insights. One may say that people take into consideration past experience and future expectations while evaluating current wellbeing. We find that most people with low subjective wellbeing believe that they held the same status three years ago and do not believe that their situation will improve in the near future. This finding is alarming. It may imply a strong tendency of low mobility of respondents and chronic poverty. However, more research, preferably with panel data, is needed to reach a firm conclusion on this issue.

We also found that support for current policies in all countries falls with a decrease in subjective wellbeing. Finally, for Azerbaijan but not other countries, a decrease in wellbeing is linked to a low level of participation in politics, which implies the social exclusion of the poor. This finding is in line with results outlined in previous sections of the article, which demonstrated that Azerbaijan has lagged considerably behind Georgia and Armenia in terms of democratic development (Table 1, row 14).

### **Conclusion and policy implications**

In this article we present the analysis of subjective wellbeing in Armenia, Azerbaijan and Georgia, three low-income transitional countries located on the Caucasus. Drawing on a newly available comparative survey, we compare self-assessment of wellbeing across all three countries of the region. The findings of the study provide several interesting insights.

First, the empirical evidence presented in this article suggests that, in all three countries under investigation, economic factors greatly influence one's self-rating of wellbeing. Factors affecting subjective wellbeing are strongly linked to well-known objective problems of transitional societies such as consumption poverty, unemployment and inefficiency of the social protection system. The impact of objective factors on subjective wellbeing is much stronger in the region than is typically found in the West or in middle-income transitional countries such as Ukraine or Russia. One explanation for this phenomenon is that, since the beginning of the transition, the population of the region experienced a dramatic decrease in wellbeing due to a prolonged and profound economic recession that led to widespread poverty and severe deprivation. Under these circumstances, satisfaction with objective measures of economic survival has become the most important factor influencing perceived wellbeing. Therefore, from this theoretical perspective, it can be concluded that the model of determinants of subjective wellbeing in the countries of the Caucasus is similar to Ukraine and Russia, but the effects of economic factors are stronger than in the middle-income countries of the former Union.

Second, from a practical perspective, this study reveals priorities for future reforms, as identified by the determinants of subjective wellbeing. As the return to higher-level education is an important determinant of wellbeing, one of the challenges faced by the countries in the region is to ensure equal access to high-quality education



regardless of income, location of residence or migration status. Similarly, strengthening the social protection system through development of an efficient targeting mechanism is another priority, while economic growth and the generation of new jobs are keys to alleviating unemployment. As shown in this article, the determinants of subjective wellbeing are significant and robust across all countries under investigation. This provides evidence in favor of region-wide cooperation towards the alleviation of common problems. The countries of the region must share their successes and difficulties to identify the “best practices” in addressing their common challenges.

Third, non-economic factors are important. Thus, our findings suggest that marital and migration statuses also significantly affect self-rated wellbeing. Also, special attention should be paid to the fact that low subjective wellbeing is strongly associated with having a negative perception of the past and future welfare. This may imply low upward mobility and chronic poverty. Also alarming is the evidence of the strong association between low subjective wellbeing and withdrawal from discussing politics in Azerbaijan, which may suggest social exclusion of the poor. These trends may indicate the emergence of a disenfranchised underclass. In turn, the existence of a large share of the population that is unsupportive of the transition to democracy and market economy may hamper reforms and undermine politically unstable regimes in the region.

Finally, taken together, the findings of this article demonstrate the necessity of regular monitoring and analysis of subjective wellbeing. Together with town halls and roundtables, the quantitative analysis of subjective wellbeing should be part of the public participation process in current poverty reduction efforts. The discovery and analysis of the factors affecting subjective wellbeing will enrich and validate the process of poverty analysis that is conducted regularly in all countries of the region using the framework of PRSPs.

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### **Note**

1. The dataset does not include data about income reported by sources. Instead, the respondents indicate the main source of their household income for the past year. Therefore, several broader categories of main sources of income were constructed. The labor-market income category includes incomes from primary and additional places of employment. The social benefits category encompasses income from all types of social transfers, comprising pensions, poverty reduction benefits, children's benefits, scholarships, all types of compensations and discounts for utilities and the like. Other sources of income encompasses alimony, financial help of relatives or friends, and income from selling or renting households, goods or property are similarly included in our analysis.

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