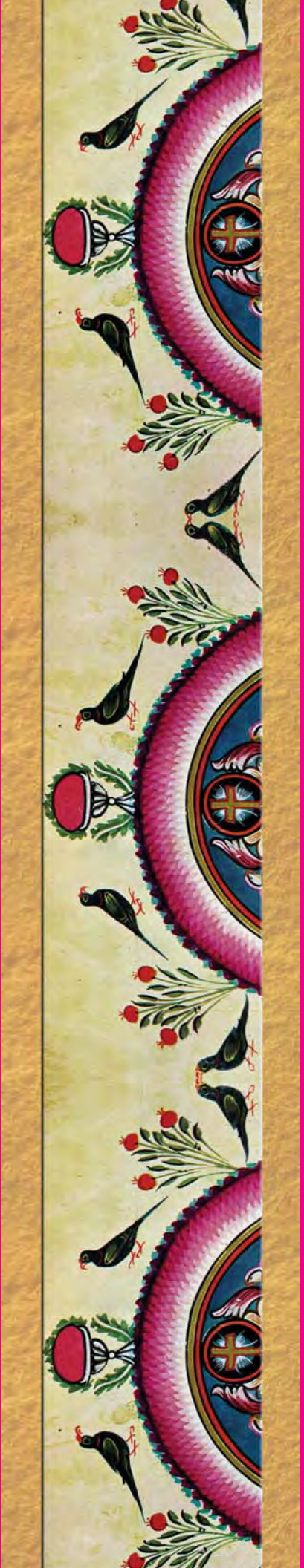

ARMENIA TREND REPORT

Migration, Economy and Policy: Recent Changes in Armenia's Demographic and Health Indicators

Further Analysis of Demographic and Health Surveys Data

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Migration, Economy and Policy: Recent Changes in Armenia's Demographic and Health Indicators

Further Analysis of Data from Armenia Demographic and Health Surveys

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Calverton, Maryland, USA

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This report presents findings on trends in migration, economy, and policy in Armenia based on data from the 2000 and 2005 Armenia Demographic and Health Surveys. Funding for the project was provided by the U.S. Agency for International Development under the MEASURE DHS program implemented by Macro International Inc. Additional information about the DHS project may be obtained from Macro International Inc., 11785 Beltsville Drive, Calverton, MD 20705; Telephone: 301-572-0200, Fax: 301-572-0999, Internet: www.measuredhs.com.

For information on the 2005 ADHS, contact the National Statistical Service, 3 Government House, Republic Avenue, 375010 Yerevan, Armenia. Telephone: (37410) 524-326; Fax: (37410) 521-921; e-mail: armstat@sci.am.

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Executive Summary

Although only five years elapsed between the 2000 and 2005 Armenia Demographic and Health Surveys (ADHS), the country underwent considerable social and economic changes during this period. These changes, including population movement and increased disparities between poor and rich households, are associated with demographic and health outcomes for the population. Policy changes also produced measurable impacts on health and demographic outcomes.

Many of the trends between the 2000 and 2005 ADHS surveys reflect the impact of considerable population movement. For example, in Armenia as a whole, children are nearly three times more likely to have a non-coresident father in 2005 as they were in 2000. In the same vein, the proportion of currently in-union mothers without a husband coresident has increased. This absence of husbands is related to the decrease in contraceptive use since 2000: the proportion of discontinuations ascribed to infrequent sex or husband absence doubled over the five-year period.

In terms of economic disparities, it is important to note that even if selected health or education indicators demonstrate no change, or even improvement—at the national level—the distribution of respondents according to wealth quintiles indicates an increase in inequality over time: poorer households are becoming more disadvantaged over time, relative to wealthier households, in both educational and health-related outcomes.

There is no evidence of change in overall levels of fertility in Armenia; however, the data suggest that child mortality has decreased significantly over the past 15 years. Despite this decrease, there is mixed progress in terms of maternal and child health indicators.

A positive trend is that, while overall usage of antenatal care services and proportion of deliveries attended by a medical professional has not changed, there has been a small shift in providers of care: maternal care by a doctor has increased, although almost all of this change has been in rural areas.

The percentage of all children born in the five years preceding the survey who were ever breastfed has increased. However, fewer babies under 4 months of age are exclusively breastfed in 2005 compared with 2000, and twice as many infants were weaned by 4 months of age.

By focusing on economic, migratory, and political changes that occurred in the five-year period between surveys, this report provides policymakers with an overview of these recent changes in Armenia and their associated health and demographic impacts on the Armenian population.

1 Introduction

Since establishing independence from the former Soviet Union in 1991, Armenia has been a nation in flux: picking up the pieces after a devastating earthquake (1988), fighting a war over the Nagorno-Karabagh region (officially ending in 1994 with no settlement and continued sporadic fighting), enduring a tremendous economic shift from a state-run economy to a predominantly privatized one, accommodating waves of refugees and workers flowing into and out of the country, and enduring annual natural vagaries that have resulted in significant crop losses due to freezing and flooding. Given the considerable changes that have occurred in Armenia over a compressed period of time, it is of interest to determine the impact of such changes on Armenia's national demographic and health profile.

This report compares Demographic and Health Survey (DHS) data from 2000[1] and 2005. Although only five years elapsed between the surveys, Armenia underwent considerable economic growth during the specified period: the gross domestic product (GDP) grew 13.2 percent in 2002, 14 percent in 2003, 10.1 percent in 2004, and 13.9 percent during 2005, when Armenia recovered to its Soviet-era GDP level. Migration patterns particularly marked the national landscape during this time, as did numerous governmental policy changes.

The economic, migratory, and policy changes that characterized the years between the 2000 and 2005 Armenia DHS (ADHS) surveys also conditioned changes in demographic and health outcomes for the population as a whole. For this reason, economic, migratory, and political change will be the primary organizing themes of this report. It is hoped that this report will provide policymakers with an overview of recent changes in Armenia and their associated impacts on the Armenian population.

[1] It should be noted that the analyses of men's data for this report restricts the sample from 2000 to only men age 15-49, rather than including all men surveyed (15-54), in order to allow a strict comparison between both surveys. Therefore, the numbers presented in this report for men from the 2000 ADHS may not exactly match those reported in the 2000 ADHS Final Report.

2 Migration

Many of the trends between the 2000 and 2005 Armenia Demographic and Health Surveys (ADHS) reflect the impact of considerable population movement between the two surveys. Changes include an increase in migration specifically to Yerevan, a greater feminization of internal migration, and more husbands and fathers living away from home. This section describes recent trends in some aspects of migration in Armenia. Furthermore, with increases in migration, it is expected that there will be change in associated demographic and health outcomes. Therefore, this section also assesses selected outcomes that vary between the two surveys, likely as a result of migration.

2.1 Increased migration to Yerevan and the feminization of migration from the countryside

Data from the two surveys indicate that there has been a recent increase in migration to the capital of Armenia (Yerevan): in 2000, only 1.4 percent of female respondents reported moving to Yerevan in the past five years, while in 2005, 3.4 percent reported doing so (Table 2.1). In 2000, 50 percent of those who had migrated to Armenia's largest city came from a smaller city, 29 percent came from a town, and 21 percent came from the countryside (Table 2.2.1). In 2005, the proportion of newcomers from the countryside increased considerably: 35 percent came from the countryside and 15 percent came from a town, while the proportion coming from a smaller city remained constant at 50 percent[2].

Men have also participated in the recent increase in migration: in 2000, only 0.9 percent of male respondents reported moving to the capital in the past five years, while the corresponding figure for 2005 was 4.3 percent (Table 2.1). Place of migrant origin among men has not changed over time: in both 2000 and 2005, about 80 percent of men who had recently migrated to Yerevan had come from smaller cities, with the remainder split fairly evenly between coming from towns and countryside (Table 2.2.1).

Respondents are increasingly likely to report having lived in Yerevan their entire lives: in 2000, 25 percent of female respondents reported having always lived in Yerevan, while in 2005, 31 percent reported lifelong residence in Yerevan. For men, the corresponding figures were 28 and 34 percent. The data also indicate that Armenian women are more mobile than Armenian men: about 80 percent of Armenian men report that they have always lived in the same location (same village, town, or city, though not necessarily the same physical building), while only about 60 percent of Armenian women report the same.

Table 2.2.2, which shows the proportion of household members living in Yerevan according to age and sex for the 2000 and 2005 surveys, also demonstrates the effect of migration on the population of Yerevan. There is an increase of 3 percentage points in the proportion of women age 15-49 that are living in Yerevan, and corresponding increases of 4 and 5 percentage points for men age 15-49 and children under age 15, respectively.

[2] It should be noted that data from the ADHS surveys may differ from that of the National Statistical Service (NSS). Exploration of any differences is beyond the scope of this report.

Table 2.1 Percentage of women and men who have always lived in their current place of residence by place of residence, and percentage who have moved to the capital or other large city from their childhood residence by number of years since moving, ADHS 2000 and 2005

Residence/Migration	Women	Men
ADHS 2000		
Always lived in:		
Capital, large city	24.7	27.8
Small city	6.5	6.6
Town	10.1	13.8
Countryside	18.8	36.4
Moved to capital/large city:		
Within past 5 years	1.4	0.9
5-9 years ago	1.1	1.1
10+ years ago	6.9	3.3
Number	6,430	1,593
ADHS 2005		
Always lived in:		
Capital, large city	30.5	34.2
Small city	4.9	5.3
Town	7.9	10.5
Countryside	19.3	30.9
Moved to capital/large city:		
Within past 5 years	3.4	4.3
5-9 years ago	1.8	1.4
10+ years ago	7.2	3.8
Number	6,566	1,447

Table 2.2.1 Percent distribution of respondents who moved to Yerevan in the five years preceding the survey, by residence of origin, ADHS 2000 and 2005

	Women		Men	
Residence of origin	2000	2005	2000	2005
Small city	50	50	(78)	81
Town	29	15	(11)	7
Countryside	21	35	(11)	12
Total	100	100	100	100
Number	87	226	14	62

Note: Figures in parentheses are based on 25-49 unweighted cases.

Table 2.2.2 Percentage of household members living in Yerevan by broad age and sex groups, ADHS 2000 and 2005

Household members	Percentage living in Yerevan	
	2000	2005
Children <15	27.1	32.3
Women 15-49	34.3	37.6
Men 15-49	33.9	37.8

2.2 Describing migrants' economic and occupational situation

Migration occurs as a result of a variety of "push" and "pull" factors. Economic considerations usually play a large role in the decision to migrate: low incomes in the home community may push residents to leave in search of opportunities to earn money. Better-paying jobs in urban areas may offer sufficient incentive for a worker or an entire family to relocate. Migration may occur under desperate circumstances, or it may occur under circumstances of economic growth, such that economic growth draws skilled or educated workers into a particular geographic area. In Armenia, there is also a certain amount of government-sponsored migration taking place in order to develop settlements in the contested territory of Nagorno-Karabagh and surrounding regions under Armenian control. The different "push" and "pull" factors may result in different compositions of migration streams by economic status as well as by age, sex, working status, and occupation type.

2.2.1 Economic status of sending households (non-coresident husband)

One way to assess the character of the recent upswing in migration is to look at the economic status[3] of the sending households. Are households with non-coresident husbands poorer or wealthier than other households? How has the wealth status of the sending households changed over time? While it is not possible to ascertain that non-coresident husbands have left home in search of employment, there is sufficient supporting evidence from the 2000 ADHS[4] to assume that this is generally the case: Table 2.3 presents data indicating that nearly three-quarters of non-coresident husbands are living in Russia, a known source of employment for Armenians looking for work; 92 percent of wives expect their husbands to return home.

[3] The indicator of household wealth status used here is one recently developed and tested in a large number of countries with regard to inequities in household wealth, use of health services, and demographic and health outcomes (Gwatkin et al., 2000). It is an indicator of wealth that is consistent with, though different from, expenditure and income measures (Rutstein and Johnson, 2004). It is best interpreted as an indicator of a household's permanent income status. This wealth index is constructed using household construction, asset, and services data (including country-specific assets) and principle components analysis to assign each household a score for each item; the scores were then summed by household. The sample was then divided into population quintiles; each quintile was designated a rank, from one (poorest) to five (wealthiest), and individuals were ranked according to the total score of the household in which they live. Although the 2005 ADHS wealth index was comprised of more items than the 2000 ADHS wealth index, this factor has little relevance given the way that the wealth index is used in this report.

[4] These data are not available for the 2005 survey.

Table 2.3 Among currently married women with a non-coresident husband, the percent distribution of non-coresident husbands by current residence, and the percentage of non-coresident husbands expected to return, ADHS 2000

Current residence	Non-coresident husbands	
	Percent	Number
Armenia	14.6	59
Russia	73.5	297
Other NIS country	2.7	11
Europe	4.4	18
USA/Canada	3.5	14
Other	1.4	6
Total	100.0	404
Percentage of husbands expected to return	91.7	371

In 2000, households with an absent husband were slightly better off economically than households in which the husband is not absent (Table 2.4); however, this relationship is not statistically significant. By 2005, households with an absent husband were significantly more likely than other households to be in the poorer quintiles (chi-square test; p=0.000). For purposes of comparison, Table 2.4 also shows the percent distribution of women whose husbands are coresident: there is virtually no change in their distribution over time. Sending households are clearly facing increasingly worse economic circumstances.

Table 2.4 Percent distribution of women whose husbands are non-coresident and percent distribution of those whose husbands are coresident, by wealth index quintile, ADHS 2000 and 2005

Wealth quintile	Women whose husbands are non-coresident				Women whose husbands are coresident			
	2000		2005		2000		2005	
	Percent	Number	Percent	Number	Percent	Number	Percent	Number
Lowest	16.0	65	23.0	132	18.9	704	18.2	632
Second	19.0	77	25.6	147	20.0	742	19.1	662
Middle	19.5	79	20.2	116	20.1	748	19.3	670
Fourth	22.9	93	17.8	102	19.8	738	21.3	738
Highest	22.7	92	13.4	77	21.2	787	22.0	762
Total	100.0	406	100.0	574	100.0	3,719	100.0	3,464

2.2.2 Economic status of recently migrated households

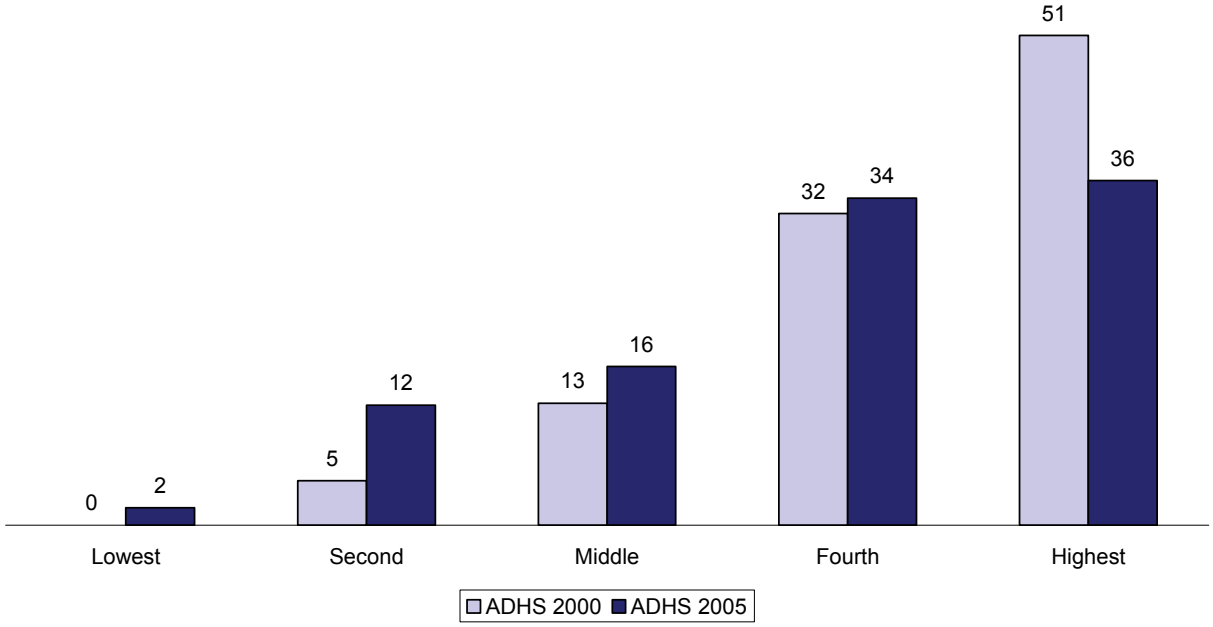
It is also possible to look at changes in household wealth status over time among recently migrated households. Given the general interest in processes of urbanization and the need to limit the scope of this report, the focus here will be exclusively on households that have migrated to Yerevan from other areas in Armenia (in neither 2000 nor 2005 had any respondents in the surveys migrated from outside of Armenia). Table 2.5 demonstrates that while the distribution by wealth of those who have lived in Yerevan for longer than five years has changed little over time, the wealth distribution of recent migrants to Yerevan has become more compressed (see Figure 2.1), and there has been an increase in the proportion of recently arrived households that

fall at the lower end of the wealth distribution with a concomitant decrease in the proportion of households falling into the wealthiest quintile.

Table 2.5 Percent distribution of women residing in Yerevan by household wealth quintiles, according to migration status, ADHS 2000 and 2005

Migration status	Wealth quintile					Total	Number
	Lowest	Second	Middle	Fourth	Highest		
			ADHS 2000				
Moved to Yerevan in past 5 years	0.0	4.6	12.6	32.2	50.6	100.0	87
Moved to Yerevan 5+ years ago	0.6	7.0	25.4	27.0	40.0	100.0	515
Always lived in Yerevan	1.2	4.5	16.1	29.6	48.6	100.0	1,587
			ADHS 2005				
Moved to Yerevan in past 5 years	1.8	12.4	16.4	33.8	35.6	100.0	225
Moved to Yerevan 5+ years ago	0.5	10.9	26.1	29.7	32.8	100.0	589
Always lived in Yerevan	0.4	4.7	19.8	30.3	44.8	100.0	2,003

Figure 2.1 Percent distribution of women who moved to Yerevan from other parts of Armenia in the five years preceding the survey, by household wealth quintile, ADHS 2000 and 2005



2.2.3 Occupations of migrants

Another way to characterize a wave of migration is to consider the occupations of those who are migrating. It is possible to assess this information both from wives who report non-coresident husbands, and from those men and women who have recently migrated themselves. Again, the analysis of the occupations of recent migrants focuses exclusively on those respondents who have moved to Yerevan in the five years before each of the surveys.

Wives reporting non-coresident husbands' occupations

Table 2.6 indicates that in 2000, 10 percent of men were reported as not living at home at the time of the survey; the corresponding figure from the 2005 survey was 14 percent. In both surveys, men who are living away from their wives are considerably more likely to be reported (by their wives) as having an occupation than husbands who are living at home. Proportions of husbands reported as not working have declined over time both for husbands living at home and away.[5] In 2005, only 4 percent of husbands staying elsewhere were reported as not having worked in the past year; this compares with 12 percent of husbands staying elsewhere in 2000.

Husbands staying away from home were increasingly less likely to be doing agricultural work: in 2005, only 2 percent of men living away from home were doing any kind of agricultural work; in 2000, the corresponding figure was 8 percent.[6] The majority (52 percent) of men who were staying elsewhere at the time of the 2005 survey have occupations as skilled manual workers; this is an increase of nearly 20 percentage points over the 2000 proportion of 33 percent. At the same time, there has been a decrease over time in the proportion of husbands staying away from home who do unskilled manual work (7 percent in 2005, as compared with 14 percent in 2000). Fewer migrant men did professional, technical, or managerial work in 2005 than in 2000 (9 percent as compared with 14 percent). Given that three-quarters of Armenian men who were not living with their wives at the time of the 2000 survey were residing in Russia (see Table 2.3), these occupational data suggest that, at least for Armenians, the employment situation in Russia may have qualitatively changed over time (assuming that Russia was still receiving the majority of male Armenian migrants in 2005).

[5] It should be noted that during interviewer training, interviewers are trained according to the following instructions when asking a woman about her husband's occupation: "'Not currently working' is not an acceptable response. If he is unemployed, get a description of his most recent job. If he does more than one job, write down what he does most of the time. If he is not working because he is in school, write 'student.'" Nevertheless, a considerable proportion of female respondents report that their husbands have no occupation/are not working. The data presented here on women reporting on their non-coresident husband's occupation are reported for the potential value of the information; however, it must be kept in mind that the reporting of a husband as not working may not be random (i.e., some interviewers may probe for husband's occupation more than others in order to comply with the interviewer's manual).

[6] The occupation questions were the same in 2000 and 2005; however, it is possible that men's agricultural occupation categories were somehow miscategorized in one of the surveys.

Table 2.6 Percentage of currently married women whose husbands are living at home (coresident) and percentage whose husbands are staying elsewhere (non-coresident); and among those whose husbands are coresident and non-coresident, percent distribution by husband's employment status and occupation, ADHS 2000 and 2005

	2000 ADHS		2005 ADHS	
	Husband living at home	Husband staying elsewhere	Husband living at home	Husband staying elsewhere
All married women	90.2	9.8	85.9	14.1
Number	3,719	405	3,464	574
	Husband not working			
	31.1	11.5	10.8	3.9
	Husband working			
Husband's occupation				
Prof./tech./managerial	14.9	14.3	21.8	8.6
Clerical	1.2	0.8	1.2	1.6
Sales	6.1	8.0	6.7	3.7
Agriculture—self-employed	17.4	8.0	1.1	0.0
Agriculture—employee	0.0	0.0	12.9	1.6
Household & domestic	2.1	1.8	0.0	0.0
Services	2.8	8.5	20.7	16.2
Skilled manual	19.3	33.0	16.9	51.5
Unskilled manual	5.1	14.3	7.4	6.7
Don't know	0.0	0.0	0.6	6.3
Total	100.0	100.0	100.0	100.0
Number	3,698	400	3,457	569

Occupations of recent migrants to Yerevan

In 2000, women who had recently (in the past five years) moved to Yerevan were more likely than women of any other migrant status to not be working (88 percent, as compared with 76 percent or less among those in other categories; see Table 2.7). However, by 2005, the level of employment among recent migrants to Yerevan was almost 10 percentage points higher than in 2000. As befits a city transitioning from a command economy to a market economy, proportions of women in Yerevan working in sales and services have increased over time, regardless of migrant status. However, proportions of recent migrants in these occupations have particularly increased since 2000, with those moving to Yerevan in the five years preceding the 2005 survey looking more like longer-term residents of Yerevan in terms of their participation in sales and services occupations than their counterparts in 2000.

Men's data in corresponding Table 2.8 should be interpreted with caution because the unweighted number of men migrating to Yerevan in 2000 is too small for statistical analysis. In 2000, there were essentially no recently migrated males; yet by 2005, their participation in occupations such as sales and services was indistinguishable from longer-term residents of the capital city.

Table 2.7 Percent distribution of women by current occupation, according to migration status, ADHS 2000 and 2005

Migration status	Not working	Occupation: Prof., tech., manag.	Clerical	Sales	Agric. self-employed	House-hold & domestic	Services	Skilled manual	Unskilled manual	Total	Number
					ADHS 2000						
Moved since childhood, not to Yerevan	60.2	13.0	1.3	1.4	19.7	0.1	0.5	1.6	2.1	100.0	1,968
Moved to Yerevan in past 5 years	88.4	8.1	1.2	1.2	0.0	0.0	0.0	0.0	1.2	100.0	86
Moved to Yerevan more than 5 years ago	67.6	18.6	0.8	4.3	0.8	0.0	1.2	3.5	3.3	100.0	515
Always lived in Yerevan	69.6	19.0	3.2	3.4	0.2	0.1	1.6	2.0	0.9	100.0	1,586
Always lived in small city	76.4	18.1	2.4	1.0	0.0	0.0	0.2	1.9	0.0	100.0	415
Always lived in town	70.5	14.8	4.2	2.2	4.3	0.3	0.5	1.9	1.4	100.0	648
Always lived in countryside	65.4	8.3	1.4	0.5	21.8	0.0	0.2	1.7	0.7	100.0	1,209
Total	66.6	14.5	2.1	2.0	10.7	0.1	0.8	1.9	1.4	100.0	6,427
					ADHS 2005						
Moved since childhood, not to Yerevan	70.2	10.0	0.5	1.8	1.3	11.5	1.8	0.9	2.0	100.0	1,638
Moved to Yerevan in past 5 years	79.3	10.6	2.6	4.0	0.0	0.0	3.1	0.4	0.0	100.0	227
Moved to Yerevan more than 5 years ago	63.4	16.3	2.4	8.6	0.0	0.5	2.4	2.2	4.2	100.0	590
Always lived in Yerevan	68.4	18.3	2.1	4.7	0.0	0.6	3.5	2.0	0.7	100.0	2,000
Always lived in small city	78.7	14.2	1.2	2.8	0.3	0.6	1.5	0.3	0.3	100.0	324
Always lived in town	72.4	14.1	2.1	4.4	0.2	1.3	2.9	1.5	1.0	100.0	519
Always lived in countryside	75.0	8.0	0.7	1.7	1.1	10.9	1.0	0.6	0.8	100.0	1,262
Total	70.9	13.3	1.4	3.6	0.6	5.3	2.3	1.3	1.3	100.0	6,560

Table 2.8 Percent distribution of men by current occupation, according to migration status, ADHS 2000 and 2005

Migration status	Not working	Occupation: Prof., tech., manag.	Clerical	Sales	Agric. self-employed	House-hold & domestic	Services	Skilled manual	Unskilled manual	Total	Number
					ADHS 2000						
Moved since childhood, not to Yerevan	32.5	11.9	0.6	5.0	25.0	3.1	1.9	15.0	5.0	100.0	160
Moved to Yerevan in past 5 years	*	*	*	*	*	*	*	*	*	100.0	14
Moved to Yerevan more than 5 years ago	40.8	18.3	0.0	4.2	0.0	5.6	1.4	22.5	7.0	100.0	71
Always lived in Yerevan	53.0	14.9	1.4	7.0	0.7	2.0	3.6	13.8	3.6	100.0	443
Always lived in small city	52.8	15.1	2.8	6.6	0.0	0.9	1.9	18.9	0.9	100.0	106
Always lived in town	52.1	12.3	0.9	4.1	6.8	1.4	2.7	15.5	4.1	100.0	219
Always lived in countryside	37.0	6.2	0.7	1.4	40.4	1.2	1.4	8.3	3.4	100.0	581
Total	44.5	11.4	1.0	4.1	18.4	1.9	2.3	12.8	3.7	100.0	1,594
					ADHS 2005						
Moved since childhood, not to Yerevan	24.6	13.0	0.0	9.4	4.3	18.8	8.7	10.9	10.1	100.0	138
Moved to Yerevan in past 5 years	40.6	26.6	0.0	10.9	0.0	0.0	12.5	4.7	4.7	100.0	64
Moved to Yerevan more than 5 years ago	22.4	28.9	0.0	9.2	0.0	0.0	14.5	11.8	13.2	100.0	76
Always lived in Yerevan	33.2	22.5	1.4	7.9	0.0	0.8	13.6	14.4	6.1	100.0	494
Always lived in small city	29.5	14.1	1.3	12.8	0.0	1.3	20.5	16.7	3.8	100.0	78
Always lived in town	45.0	12.6	1.3	6.6	0.0	3.3	13.9	12.6	4.6	100.0	151
Always lived in countryside	35.3	9.2	0.7	1.3	2.9	25.5	8.3	12.5	4.3	100.0	447
Total	33.8	16.5	0.9	6.4	1.3	10.4	11.9	12.8	5.9	100.0	1,448

Note: An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.

2.3 Outcomes likely to be associated with migration patterns

This section looks at change over time in outcomes likely to be associated with increased migration, specifically, the proportion of households where husbands and/or fathers are absent, and contraceptive prevalence.

2.3.1 Increase in proportion of mothers who are head-of-household and children whose fathers are absent

At least one study has demonstrated that female-headed households are better off on average than male-headed households, in that more household resources are directed to meeting children's needs in those households (Lloyd and Gage-Brandon, 1993). However, the majority of the literature finds that female-headed households are more often at higher risk for impoverishment: they are disproportionately burdened by child care, household maintenance, and economic production while simultaneously suffering from gender inequities in the labor market (Desai and Ahmad, 1998). Furthermore, the literature demonstrates negative impacts on children's social, psychological, and educational development in the absence of fathers (Comanor and Phillips, 2002; McLanahan and Booth, 1989). In the case of Armenia, only female-headed households without children are economically better off than average: 25 percent of female-headed households with no children are poor, 30 percent of all Armenian households are considered poor, and a full 40 percent of female-headed households with children are classified as poor (ILCS, 2005).

The proportion of currently in-union mothers with a child coresident, but without a husband coresident, has increased over time in Armenia, from 10 percent in 2000 to 14 percent in 2005; correspondingly, 5 percent of children lived in households where the father was alive but absent in 2000, compared with 14 percent of children living in households where the father was alive but absent in 2005. Results for Table 2.9 are almost exactly the same as those for Table 2.4. They demonstrate that in 2000, female-headed households with coresident children but non-coresident husbands were not significantly overrepresented in the poorer wealth quintiles in 2000, but were significantly more likely to be relatively poor in 2005, both relative to the 2000 distribution as well as relative to all women in the 2005 sample.

Table 2.9 Percent distribution of currently married mothers with a coresident child whose husbands are non-coresident, by wealth index quintile, and percent distribution of all women by wealth index quintile, ADHS 2000 and 2005

	Currently married mothers with coresident child and non-coresident husband				All women (%)	
	2000		2005			
Wealth quintile	Percent	Number	Percent	Number	2000	2005
Lowest	16.3	62	23.1	122	16.7	17.7
Second	18.7	71	25.3	134	19.5	19.6
Middle	20.8	79	20.0	106	20.0	19.8
Fourth	23.2	88	17.6	93	21.0	20.9
Highest	21.1	80	14.0	74	22.8	21.9
Total	100.0	380	100.0	529	100.0	100.0

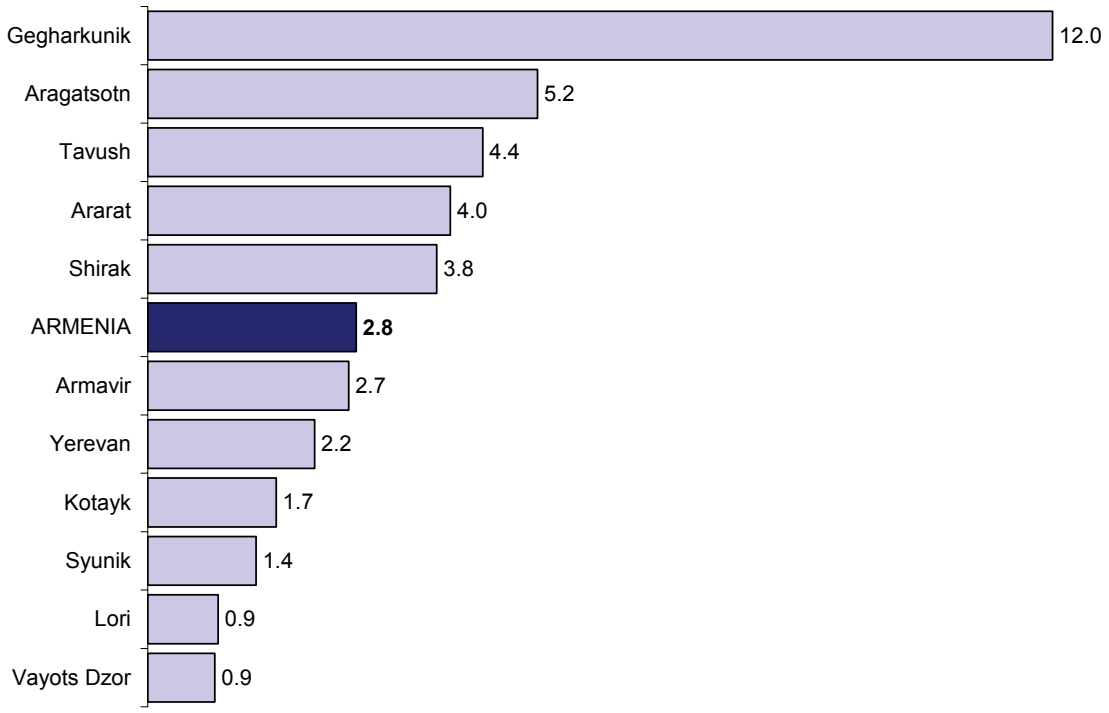
Table 2.10 demonstrates the change in proportion of fathers who are alive but absent from the household over time according to marz. Children living in Gegharkunik suffered the greatest loss of fathers between 2000 and 2005, with the proportion of children with absent fathers increasing by a factor of 12 such that nearly one-third of all children in the marz had non-coresident fathers in 2005. The children of Shirak and Tavush also experienced a considerable increase in non-coresident fatherhood between 2000 and 2005: the proportion of children with absent fathers nearly quadrupled in Shirak over the five-year period, and more than quadrupled in Tavush. Only Lori and Vayots Dzor experienced no net loss in coresident fathers over the given time period.

Table 2.10 Percentage of children under age 18 living with mother but not father (father is alive), by region, ADHS 2000 and 2005

	Child living with mother, father absent			
	2000		2005	
Region	Percent	Number	Percent	Number
Yerevan	6.3	1,747	13.9	2,230
Aragatsotn	1.3	365	6.7	350
Ararat	2.0	784	8.0	615
Armavir	3.8	644	10.1	687
Gegharkunik	2.6	610	31.1	522
Lori	10.2	505	9.5	554
Kotayk	6.3	453	10.7	569
Shirak	5.6	602	21.4	634
Syunik	5.3	276	7.6	304
Vayots Dzor	3.5	130	3.1	119
Tavush	4.2	317	18.6	320
Total	4.9	6,435	13.5	5,356

Figure 2.2 illustrates the difference between 2000 and 2005 in the proportion of children with a living, non-coresident father (proportion with absent fathers in 2005 divided by the proportion with absent fathers in 2000). The figure demonstrates that in Armenia as a whole, children are nearly three times more likely to have a non-coresident father in 2005 as they were in 2000; in Aragatsotn, children are five times more likely to have a living but absent father, while in Gegharkunik, the corresponding factor is 12.

Figure 2.2 Multiple increase over time in proportion of children with living but absent fathers, by region, ADHS 2000 and 2005



2.3.2 Current use of contraception and frequency of intercourse

Table 2.11 demonstrates that current use of any method of contraception has decreased since 2000: 40 percent of currently married women were not using a method in 2000, while the corresponding figure for 2005 is 47 percent. Method use declined more in rural than in urban areas, dropping from 63 percent to 51 percent in rural areas, compared with the smaller change from 59 percent to 54 percent in urban areas (data not shown). The marzes where households have experienced a greater than average loss of men from households, such as Ararat, Shirak, Gegharkunik, and Aragatsotn, also tend to be the marzes showing the greatest decrease in any method use (with decreases in method use of 25, 24, 15, and 9 percentage points, respectively). However, Lori marz, while having consistently high levels of husband absence between the two surveys, also demonstrates a considerable reduction in use of any contraceptive method (17 percentage points). Interestingly, Syunik registers an increase in contraceptive use of 12 percentage points.

Table 2.11 Percentage of currently married women who are not using any contraceptive method, by region, ADHS 2000 and 2005

Region	Percentage of women not using contraception 2000 (a)	2005 (b)	Percentage point difference 2000-2005 (a) - (b)	Number of women 2000	2005
Yerevan	42.9	41.5	1.4	1,291	1,362
Aragatsotn	37.0	46.4	-9.4	193	196
Ararat	33.7	58.9	-25.2	449	307
Armavir	34.7	42.2	-7.5	373	381
Gegharkunik	43.8	59.0	-15.2	341	303
Lori	31.9	48.6	-16.7	323	343
Kotayk	47.5	51.1	-3.6	316	357
Shirak	34.6	58.3	-23.7	388	357
Syunik	50.3	38.6	11.7	173	189
Vayots Dzor	34.1	33.1	1.0	79	65
Tavush	36.2	37.8	-1.6	198	184
Total	39.5	46.9	-7.4	4,124	4,044

Information provided by women who had discontinued the use of a contraceptive method in the five years preceding the survey sheds additional light on the lower levels of contraceptive use found in the 2005 ADHS. Among those who had discontinued a method, the proportion reporting that the reason for the most recent discontinuation was either infrequent sex or that their husband was away increased by 50 percent between 2000 and 2005 (Tables 2.12.1 and 2.12.2). If all discontinuations of method use in the past five years are taken into account, rather than just the most recent discontinuation, the proportion of discontinuations ascribed to infrequent sex or husband absence actually doubled over time (increasing from 7 percent in 2000 to 15 percent in 2005; data not shown). In both survey years, "infrequent sex/husband away from home" was the second most frequently given reason for contraceptive discontinuation, after "became pregnant while using."

Figure 2.3 shows the proportion of women in a random selection of recent DHS surveys who gave infrequent sex as their primary reason for discontinuing their contraceptive method. In 2000, Armenia's level fell near the middle of the range; by 2005, Armenia had the highest level. This demonstrates a considerable change in both sexual activity as well as contraceptive use, with data from other countries serving as comparative context.

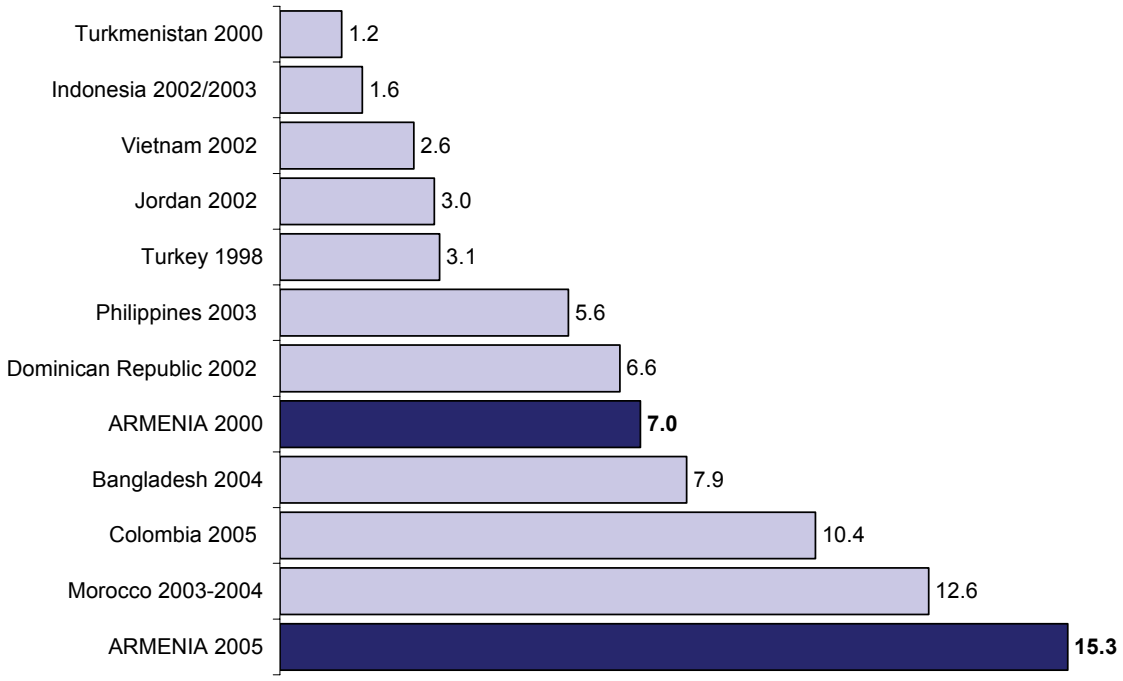
Table 2.12.1 Percent distribution of women who discontinued using a contraceptive method in the past five years, by reason for most recent discontinuation, ADHS 2000 and 2005

Reason	Percentage of women who discontinued using a contraceptive method 2000 (a)	2005 (b)	Percentage point difference 2000-2005 (a) - (b)	Number of women 2000	2005
Became pregnant	44.6	36.5	8.1	813	469
Wanted to become pregnant	10.1	16.3	-6.2	184	209
Husband disapproved	4.4	3.5	0.9	80	45
Side effects	2.2	2.0	0.2	40	25
Health concerns	8.4	6.7	1.7	153	86
Access, availability	0.6	0.2	0.3	10	3
Wanted more effective method	7.2	4.9	2.3	131	63
Inconvenient to use	2.6	2.5	0.1	47	31
Infrequent sex, husband away	11.9	18.0	-6.2	216	231
Cost	0.7	1.0	-0.3	12	12
Fatalistic	0.4	0.5	-0.1	8	6
Difficult to conceive, menopausal	2.1	3.0	-0.9	39	39
Marital dissolution	0.8	1.4	-0.6	15	18
Other	3.9	3.4	0.5	72	44
Total	100.0	100.0	0.0	1,821	1,283

Table 2.12.2 Percentage of women who discontinued using a contraceptive method because of infrequent sexual intercourse or absence or husband and change over time, by region, ADHS 2000 and 2005

Region	Percentage of women who discontinued using a contraceptive method because of infrequent sexual intercourse or absence of husband 2000 (a)	2005 (b)	Percentage point difference 2000-2005 (a) - (b)	Number of women 2000	2005
Yerevan	13.3	9.0	4.3	547	457
Aragatsotn	6.1	7.0	-0.9	99	43
Ararat	7.8	29.3	-21.5	193	41
Armavir	8.9	17.0	-8.1	203	153
Gegharkunik	12.4	38.3	-25.9	170	115
Lori	6.3	36.9	-30.6	128	103
Kotayk	18.4	14.1	4.3	147	142
Shirak	20.4	28.6	-8.2	157	77
Syunik	5.6	9.1	-3.5	54	66
Vayots Dzor	7.7	7.7	0.0	26	13
Tavush	11.5	23.7	-12.2	96	76
Total	11.9	18.0	-6.1	1,820	1,286

Figure 2.3 Percentage of women who reported that infrequent sex was the primary reason for discontinuing their contraceptive method, selected DHS surveys 1998-2005



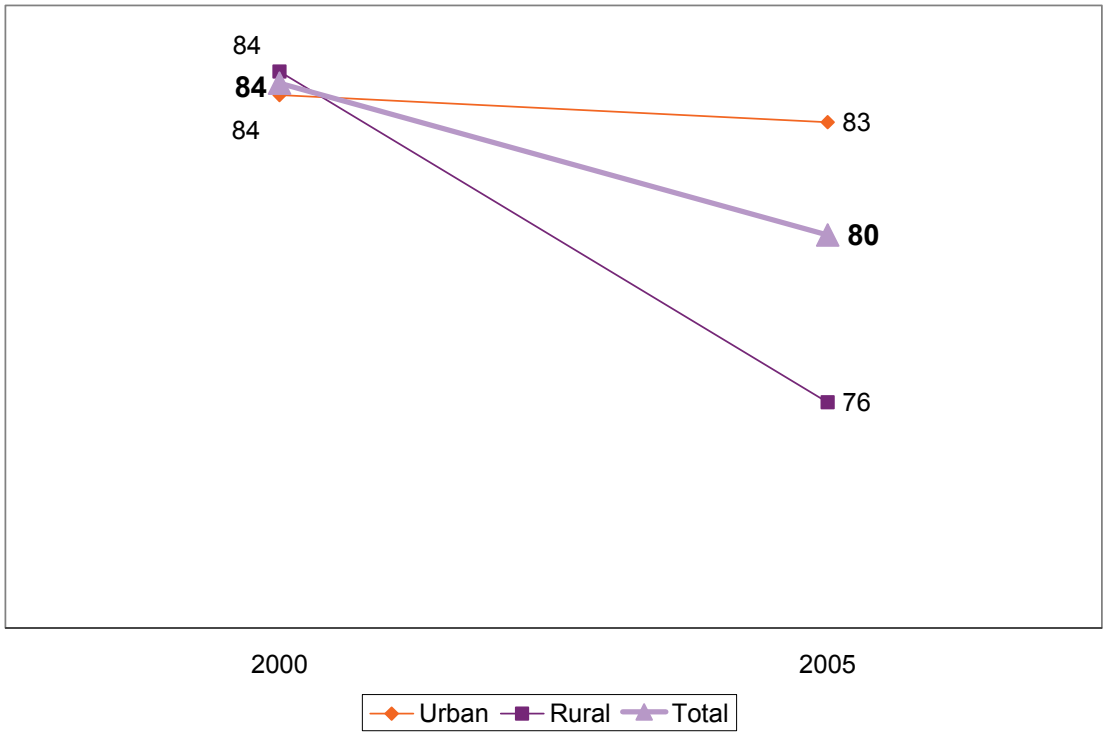
It may also be noted that in 2005, rural women in particular were less likely than in 2000 to have had sex in the past four weeks (52 percent as compared with 58 percent), and slightly more likely to have never had sex (28 percent as compared with 25 percent; data not shown). Although these data reflect small overall changes, they are consistent with the thesis that with increased migration, particularly from the rural areas of Armenia, comes reduced levels of sexual activity and therefore reduced usage of contraception.

Finally, it should be noted that the data from the 2005 survey reflect a decrease in the proportion of currently married women whose demand for contraception is satisfied: in 2000, 84 percent of women had satisfied their need for contraception, while the corresponding figure in 2005 was 80 percent (Figure 2.4). Almost all of the change over time in percent of demand satisfied occurred among rural women, whose apparent level of demand satisfied declined from 84 percent in 2000 to 76 percent in 2005. However, the decline is largely a function of how "unmet need" is calculated; specifically, which women are included among those at risk for pregnancy (women at risk for pregnancy are in the denominator of the unmet need indicator).

The definition of unmet need used by DHS categorizes all women who are currently married as "at risk for pregnancy." However, as discussed in this chapter, in Armenia there is a considerable proportion of currently married women who are in fact not at risk because their husbands are not living at home and they are not having sexual intercourse. This proportion of currently married women who are not at risk because their husband is away has increased over time in Armenia,

especially among rural women; at the same time, contraceptive use has declined among these women, also as discussed in this chapter. As a result, while the proportion of women with a satisfied need for family planning (as defined by DHS) appears to have decreased over time, this apparent decrease is largely an artifact of the methodology used to calculate unmet need, rather than a real change over time.

Figure 2.4 Trend in percentage of demand for contraception satisfied, by residence, ADHS 2000 and 2005



3 Economic Change

While the economy of Armenia grew rapidly during each of the years in between the 2000 and 2005 surveys (Table 3.1), improvement in indicators likely to be associated with economic improvement was uneven. This section looks at change over time in asset ownership; in employment, occupation, and earnings; and in childhood education.

Table 3.1 Armenia macroeconomic indicators 2001-2005

Indicator	2001	2002	2003	2004	2005
Nominal GDP (billions of dram)	1,175.9	1,362.5	1,624.6	1,907.9	2,244.0
Real GDP (1998 prices)	1,145.0	1,296.1	1,477.6	1,632.7	1,861.3
Real GDP growth (annual % change)	9.6	13.2	14.0	10.5	14.0
Exchange rate (period average)	555	573	579	533	458
GDP (millions of US dollars)	2,118	2,376	2,807	3,577	4,903
Official unemployment rate (%)	10.4	10.8	10.1	9.6	8.2
Average nominal wage (1,000 drams)	293.8	327.9	417.4	521.3	624.7
Inflation (period average)	3.1	1.1	4.7	7.0	0.6
Public expenditures (% of GDP)	23.6	22.0	22.4	20.7	21.8
Fiscal deficit (% of GDP)	-4.2	-2.5	-1.3	-1.5	-1.7

Source: NSS (2006)

3.1 Asset ownership

Figure 3.1 shows the percentage of women in each wealth quintile who are living in households with a refrigerator and with a car or truck. This figure also includes the high/low ratio (the proportion in the highest quintile divided by the proportion in the lowest quintile), which demonstrates the economic inequality in asset ownership (i.e., ownership of certain assets is contingent on higher income).[7]

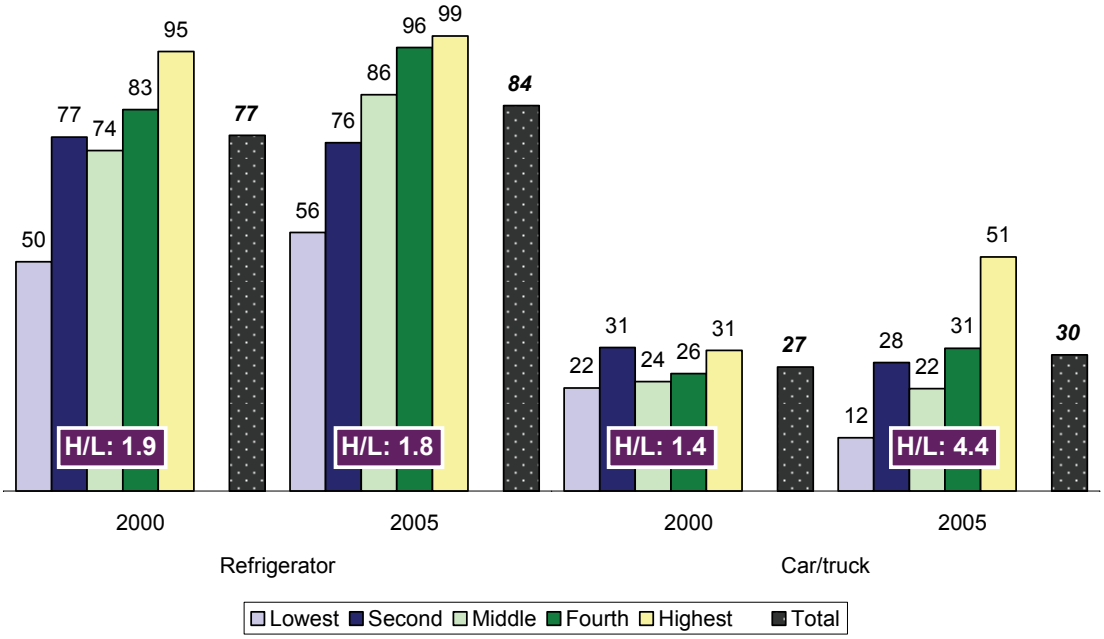
Figure 3.1 demonstrates that for some assets, such as a refrigerator, overall proportions of women living in households with a refrigerator have increased over time from 77 percent in 2000 to 84 percent in 2005. In both years, the high/low ratio indicates that women in the wealthiest quintile were nearly twice as likely as women in the poorest quintile to have a refrigerator in the household. The increase in ownership of this asset was fairly even across wealth quintiles.

However, for other assets, such as cars or trucks, overall proportions of women living in households with this asset have increased by a small amount (3 percentage points), but the high/low ratio demonstrates considerably increased inequality in asset ownership. In 2000, the ownership of motor vehicles was fairly evenly distributed across wealth quintiles; women in the

[7] The high/low ratio does not work as well for assets that have a curvilinear relationship to wealth. For example, a bicycle is an asset the ownership of which is low among the poorest because they cannot afford to purchase one, is low among the wealthiest because they can purchase other modes of transportation such as cars, and is comparatively higher among the middle quintiles because the bicycle is affordable to them whereas a car may not be. The high/low ratio as applied to the example of the bicycle would therefore give an unwarranted impression of economic equality in the distribution of bicycle ownership.

wealthiest households were 40 percent more likely to have a car or truck in their household. In 2005, ownership was much more stratified by wealth quintile, with women in the wealthiest households being nearly 4.5 times more likely than women in the poorest households to have a motor vehicle in their household.

Figure 3.1 Percentage of women living in households with a refrigerator and percentage living in households with a car or truck by wealth quintile, with high/low ratio, ADHS 2000 and 2005



3.2 Employment, occupation, and earnings

Looking at trends in levels of employment, types of work respondents are engaged in, and types of remuneration given in exchange for labor can provide important information about ways in which an economy is changing. Armenia is particularly interesting in this regard as it is a country that is continuing a transition from a command to a market economy; furthermore, the timeframe for which DHS data are available for Armenia is one during which rapid official economic growth (GDP) occurred. As a result, it is possible to demonstrate changes in economic indicators even over the very short period of five years that elapsed between the two ADHS surveys.

3.2.1 Employment and occupation

Table 3.2 shows the percentage of women and men according to their current occupation. While men's participation in the work force increased over time, from 56 percent to 66 percent of male respondents reporting employment within the past year, women's participation in the workforce

actually decreased slightly, from 33 percent in 2000 to 29 percent in 2005. For both men and women, job loss was largely registered in the agricultural sector; men, however, made gains in service occupations as well as professional, technical, and managerial jobs. There were no comparably large gains for women in other occupations.

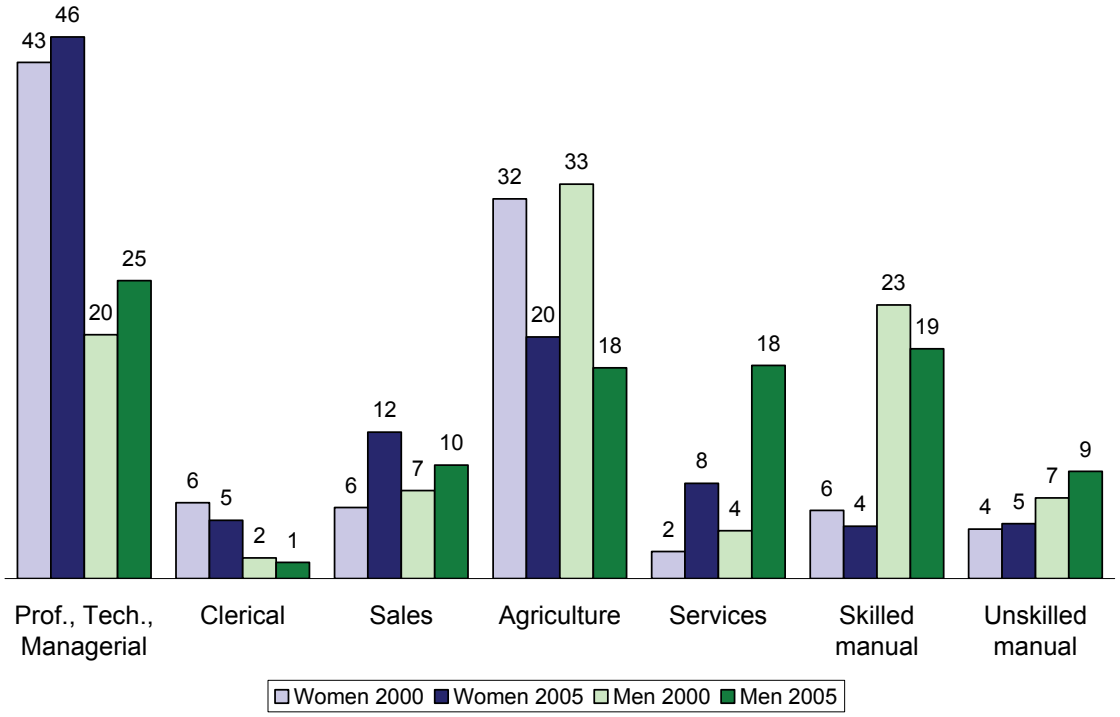
Table 3.2 Percent distribution of women and men by employment status and occupation, ADHS 2000 and 2005

Employment status and occupation	Women		Men	
	2000	2005	2000	2005
	Not working			
	66.6	70.9	44.5	33.8
	Working			
Occupation				
Prof./tech./managerial	14.5	13.3	11.4	16.6
Clerical	2.1	1.4	1.0	0.9
Sales	2.0	3.6	4.1	6.3
Agriculture	10.7	5.9	18.4	11.7
Household & domestic	0.1	0.0	1.9	0.0
Services	0.8	2.3	2.2	11.9
Skilled manual	1.9	1.3	12.8	12.8
Unskilled manual	1.4	1.3	3.8	6.0
Total	100.0	100.0	100.0	100.0

Figure 3.2 shows the occupational distribution among those who report being currently employed. Although only about one-third of women in Armenia are working, Figure 3.2 demonstrates that nearly half of those are working in professional, technical, or managerial occupations; by 2005, one-quarter of employed men were also working in those occupations.

The biggest changes over time for women are reflected in increases in sales and service jobs, and a large decrease in agricultural employment (from 32 percent in 2000 to 20 percent in 2005). The largest changes in men's employment are reflected in an increase in service occupations (from 4 percent in 2000 to 18 percent in 2005) and a decrease in agricultural occupations comparable to that for women (from 33 percent in 2000 to 18 percent in 2005).

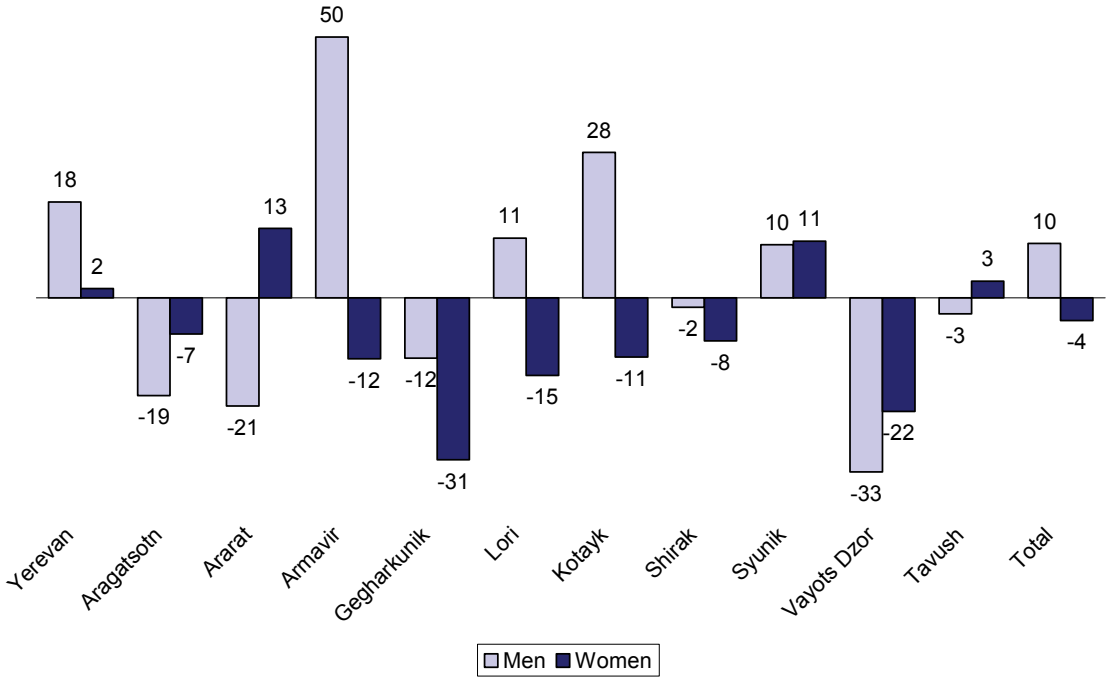
Figure 3.2 Percent distribution of women and men who are working by occupational category, ADHS 2000 and 2005



The sum total of changes in levels of employment over time obscures regional disparities: some marzes had significant declines in employment, while others had large increases. Figure 3.3 shows the change over time in the percentage of women and men who are working, by marz. The graph indicates that for men, the marzes with the greatest absolute loss of jobs are Vayots Dzor, Ararat, and Aragatsotn (a between-survey difference of 33, 21, and 19 percentage points, respectively). For women, job losses were greatest in Gegharkunik, Vayots Dzor, and Lori (a between-survey difference of 31, 22, and 15 percentage points, respectively).

Some marzes registered an increase in employment. Among men, the proportion of men in Armavir who were working increased by a considerable 50 percentage points, from 24 percent of men working in 2000 to 74 percent of men working in 2005. There was also an increase in employment of 28 percentage points among men in Kotayk and 18 points among men in Yerevan. Among women, increases in employment were much smaller where they occurred than among men. Employment among women increased in Ararat and Syunik by 13 and 11 percentage points, respectively.

Figure 3.3 Change over time in percentage of women and men who are working (positive number means more are working), by region, ADHS 2000 and 2005



3.2.2 Type of earnings

A change in the type of earnings that are received in compensation for labor can be indicative of a change in the broader economy. In Armenia, there has been a considerable change over time in type of earnings that respondents report. Table 3.3 demonstrates that in 2000, 64 percent of women earned cash only for their labor; by 2005, 80 percent of women earned cash only. Most of the difference comes from a reduction in the proportion of women who were not paid for their work in either cash or kind, a situation characterizing 31 percent of working women in 2000 and 15 percent of working women in 2005. Men registered an even greater increase in proportions earning cash for their work: in 2000, 60 percent of men earned cash, while in 2005, 84 percent of men did so. By 2005, only 6 percent of working men were not compensated for their labor in cash or in kind, as compared with 28 percent in 2000. The improvement in the provision by employers of cash earnings in exchange for labor is an indicator of the continuing transition to a viable market economy. However, significant proportions of workers remain unpaid, notably women more often than men.

Table 3.3 Percent distribution of women and men who are working by type of earnings received for work, ADHS 2000 and 2005

Type of earnings	Women 2000	Women 2005	Men 2000	Men 2005
Not paid	30.5	15.2	28.4	5.6
Cash only	64.1	80.3	60.0	84.0
Cash and kind	2.6	3.9	6.0	4.3
In kind only	2.8	0.5	5.6	6.2
Total	100.0	100.0	100.0	100.0

3.2.3 Women's participation in household financial decisionmaking

It is also important to consider economic conditions at the level of the household—not only in terms of how economically well off a household is, but also how economic decisions are made within the household. Specifically, women's participation in economic decisionmaking at the household level, insofar as it reflects status and empowerment, is considered critical, not only for the well-being of the woman herself, but also for the well-being of both household and national economies. Women's level of participation in household economic decisionmaking reflects the extent to which gender-equitable relations are achieved within the household. The level of gender equity in turn influences health outcomes for family members by mediating the relationships among factors that ultimately determine health-seeking behavior, service utilization, and desirable health practices. Greater gender equity in the household is associated with improved health outcomes for household members (e.g., Kishor and Johnson, 2006). Therefore, it is of interest to assess change over time in women's participation in the household's financial decisionmaking.

Table 3.4 demonstrates that among currently married women, the proportion who make decisions about large household purchases either alone or jointly with their husbands has increased over time, primarily due to women being more likely in 2005 to make decisions about large purchases alone than they were in 2000. The increase over time in female heads of household in Armenia accounts for some, though not all, of the increase in sole decisionmaking. It is encouraging to note that husbands are less than half as likely in 2005 to have sole decisionmaking authority over large household purchases (28 percent in 2000 as compared with 12 percent in 2005).

Table 3.4 Percent distribution of currently married women by person who has the final say on making large household purchases, ADHS 2000 and 2005

Person who has final say on making large household purchases	2000 Percent	2000 Number	2005 Percent	2005 Number
Respondent alone	9.8	403	23.0	928
Respondent and husband/partner	50.2	2,070	53.9	2,179
Respondent and other person	2.2	91	0.6	25
Husband/partner alone	27.7	1,143	12.3	496
Someone else	10.1	417	10.1	409
Total	100.0	4,125	99.8	4,037

3.3 Influence of economic change on education and ability to pay for health care

This section looks at change over time in indicators of education and ability to pay for health care, with a particular focus on changing inequalities in these two outcomes. It is of particular interest to note that even if the level of the national indicator of education or ability to pay for health care does not change over time, the distribution of respondents according to wealth quintiles does change, in the direction of increasing inequality in both educational and health-related outcomes.

3.3.1 Education

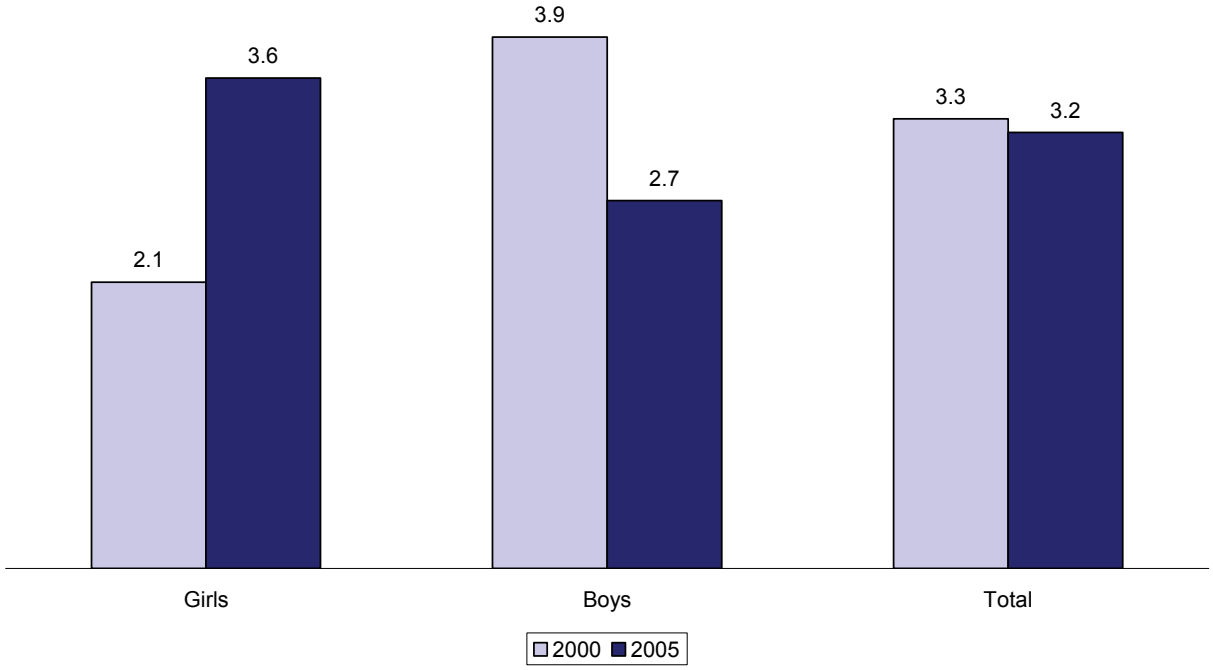
Article 39 of the Republic of Armenia's Constitution, adopted in 1995, states that all Armenian citizens have the right to education; that basic general education is compulsory; that secondary education in public schools is free. However, during the transition to a market economy, children from poor families came to be at particularly high risk of being unable to obtain an equal, adequate education because, as a result of the reduction in state budget funding for the educational system, school-related expenses are passed on to families (National Statistical Service and UNICEF, 2004).

In an effort to assess the impact of economic change during the period between the two ADHS surveys, this section will analyze the proportion of children age 7-15 (in 2000) and age 6-15 (in 2005) who are of school age but not attending school. The age of entrance into school changed between the surveys from 7 years in 2000 to 6 years in 2005, thus the difference in age range used in the analysis.[8] Note that both surveys were conducted at approximately the same time of year (September/October through early December), thus mitigating any potential problems associated with comparing attendance data collected during differing times of the school year.

Figure 3.4 shows that while the total percentage of children of school age who are not attending school effectively did not change between the two surveys (remaining at about 3 percent), the sex composition of those not attending did change: while boys were slightly less likely to be attending in 2000, in 2005 it was girls who were somewhat less likely to be in school.

[8] Regardless of the change in school entrance age, in both surveys wealthier children are more likely than poorer children to have entered school at the currently legal school entrance age.

Figure 3.4 Percentage of school-age children who are not currently attending school, ADHS 2000 and 2005



The ADHS data indicate that in both 2000 and 2005, children of school age who were not attending school were significantly more likely to be living in households that fell into the poorer wealth quintiles (Figure 3.5). Figure 3.5 also shows the high/low ratio. In this case, the closer the ratio is to one, the more equitable the distribution of the phenomenon (in this case, nonattendance at school). The high/low ratio demonstrates that inequality in school nonattendance became more pronounced in 2005 compared with 2000: in 2005, the gap between the poorest and wealthiest quintiles was proportionally larger than it was in 2000.

Figure 3.5 Percent distribution of children age 7-15 (2000) and 6-15 (2005) who are not currently attending school, by wealth quintile, ADHS 2000 and 2005

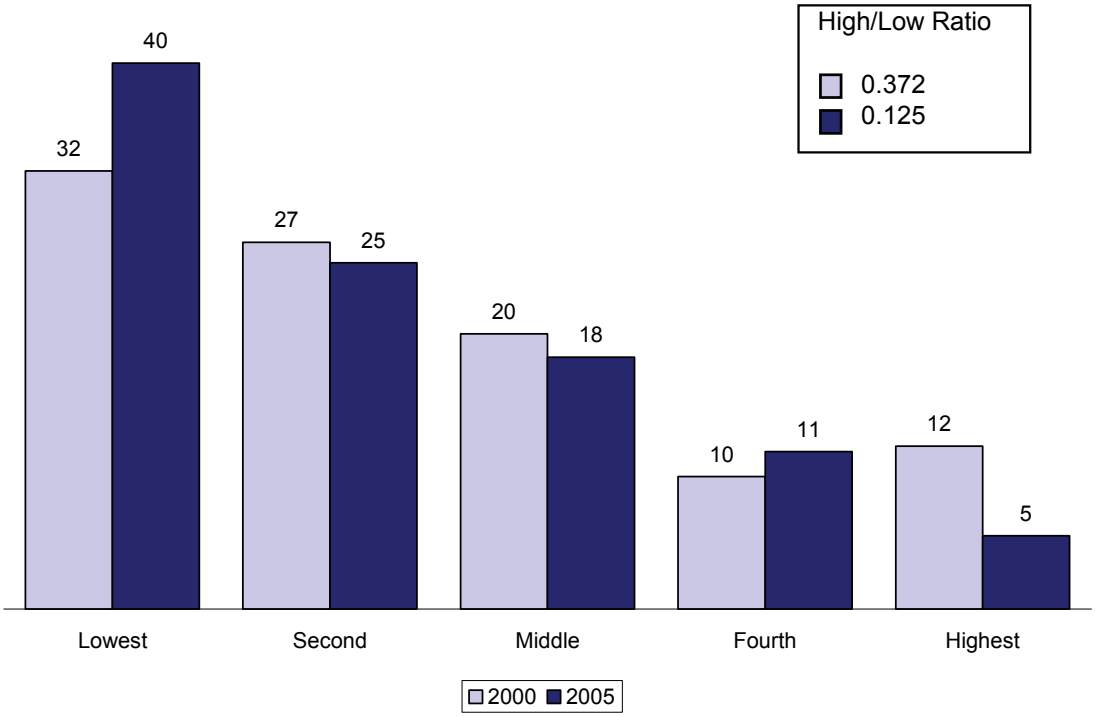


Figure 3.6 shows the relationship between school nonattendance and wealth according to sex. Inequality worsened over time for both boys and girls; however, the increase in inequality was steeper for boys: the high/low ratio for boys went from 0.375 in 2000 to 0.115 in 2005, whereas for girls the ratio declined from 0.368 in 2000 to 0.192.

Figure 3.6 Percent distribution of boys and girls age 7-15 (2000) and 6-15 (2005) who are not currently attending school, by wealth quintile, ADHS 2000 and 2005

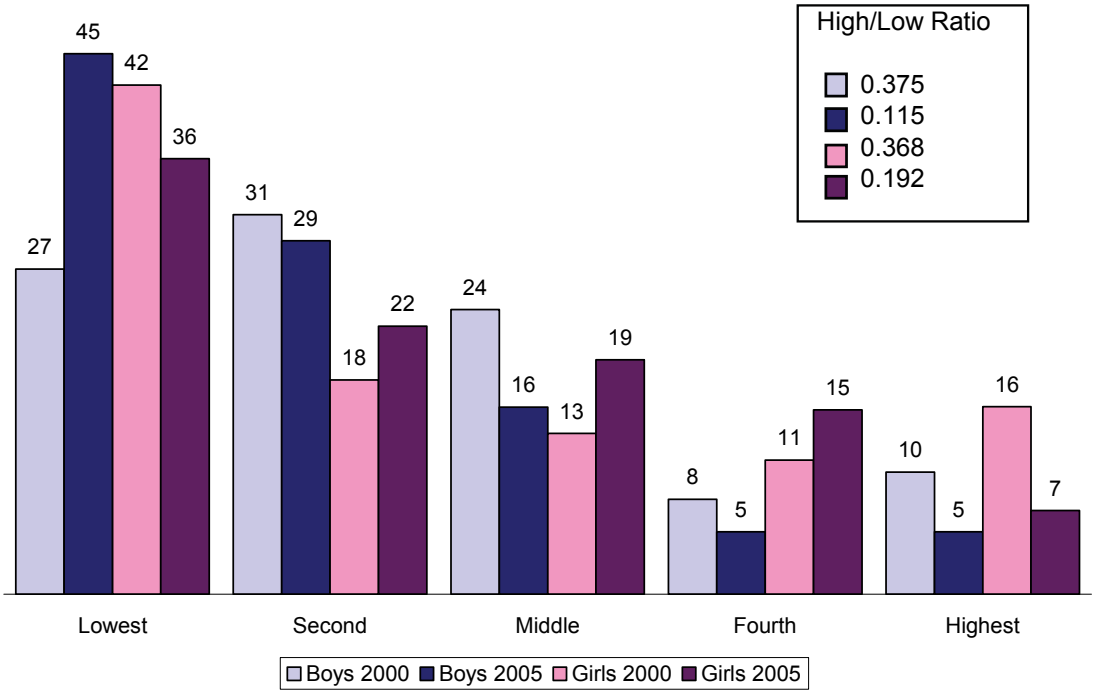


Table 3.5 shows the mean number of years of education among men and women age 15-49 for both surveys. The table reflects again that those in the poorer quintiles have fewer years of education than those in wealthier quintiles. It also reflects that although the mean number of years of education among men has not changed over time (about 11 years), the mean number of years of education among women has declined between the two surveys, from 11.4 years in 2000 to 9.2 years in 2005. Furthermore, the high/low ratio in this table also demonstrates increasing economic inequality in educational attainment over time (in this case, the ratio increases with increasing inequality).

Table 3.5 Mean number of years of education among men and women age 15-49, according to wealth index quintile, ADHS 2000 and 2005

	Wealth quintile						High/Low	
Sex and survey year	Lowest	Second	Middle	Fourth	Highest	Total	Ratio	Number
Women 2000	10.3	10.7	11.5	11.7	12.3	11.4	1.199	6,429
Women 2005	8.2	8.3	9.0	9.4	10.9	9.2	1.329	6,560
Men 2000	10.5	10.9	11.4	11.8	12.2	11.4	1.164	1,593
Men 2005	10.3	10.7	10.7	11.7	13.2	11.3	1.284	1,444

These data on school nonattendance among children in the household and on educational attainment among eligible respondents demonstrate that while total levels of school nonattendance and educational attainment have not changed much, there has been an increase in both gender and economic inequality in educational attainment over time.

3.3.2 Ability to pay for health care costs

The 2000 and 2005 ADHS asked female respondents several questions regarding perceived barriers to accessing health care for themselves. Table 3.6 shows the percentage of women who report that the issues that were asked about in the surveys constituted "a big problem" for them in obtaining health care. In 2000, nearly 80 percent of women reported that getting money needed for treatment was a big problem in getting health care. At the national level, there was some improvement in this indicator, such that by 2005, 66 percent of women reported that getting money needed for treatment was a big problem. While the improvement looks promising, it is important to discern the socioeconomic status of the primary beneficiaries of that improvement.

Turning to Table 3.7, the percentage of women who say getting money needed for treatment is a big problem in 2000 is 92 percent among those in the poorest quintile, compared with 69 percent in the wealthiest quintile. However, by 2005, although there was improvement at the national level in the total proportion of women reporting that getting money for treatment was a big problem, and there were improvements within each quintile, the improvements were greater for those in the wealthier quintiles. There is a reduction of 11 percentage points over time in the proportion of women in the poorest quintiles who report that getting money for health care is a problem, compared with a corresponding reduction of 24 percentage points among those in the wealthiest quintile. The increased inequality over time is further evidenced by the high/low ratio, which shifted from 0.755 in 2000 to 0.560 in 2005.

The increasing inequality in ability to finance health care costs can be put into context against another issue cited as a barrier in obtaining health care, distance to a health facility. Table 3.6 demonstrates that there was also improvement in this indicator over time: in 2000, 30 percent of women reported that the distance to the health facility was a big problem, while the corresponding figure in 2005 was 20 percent of women. Turning again to Table 3.7, it is evident that improvements in the distance to a health facility had the greatest impact among those in the poorest quintile: there is a reduction of 18 percentage points over time in the proportion of women in the poorest quintiles who report that distance to a health facility poses a big problem, while the corresponding reduction among those in the wealthiest quintile is only 5 percentage points. However, the proportion of women in the poorest quintile who report that distance is a problem remains high at 40 percent, compared with only 8 percent among the wealthiest, and the high/low ratio demonstrates that the experience of distance as a big problem is equally inequitable in both 2000 and 2005.

These findings demonstrate first and foremost that financing health care remains a significant obstacle to obtaining health care among the majority of women in Armenia. While there has been some improvement in this indicator over time, a disproportionate amount of the benefit of the improvement fell to those in the wealthiest 20 percent of households.

Table 3.6 Percentage of women who reported that they have big problems in obtaining health care for themselves, by specific problems, ADHS 2000 and 2005

Problem in obtaining health care	2000	2005
Getting permission to go	12.0	19.3
Getting money needed for treatment	79.1	65.5
Distance to the health facility	29.7	20.3
Having to take transport	35.3	17.4
Not wanting to go alone	40.6	39.5
Concern that there is no female health provider	30.7	24.0
Number of women	6,430	6,566

Table 3.7 Percentage of women who reported that they have big problems in obtaining health care for themselves (getting money for treatment and distance to health facility), by wealth quintile, ADHS 2000 and 2005

Problem in obtaining health care	Wealth quintile					Total	High/ Low Ratio	Number
	Lowest	Second	Middle	Fourth	Highest			
Getting money for treatment								
2000	91.9	84.0	77.4	76.4	69.4	79.1	0.755	6,427
2005	81.3	72.8	72.2	60.1	45.5	65.6	0.560	6,562
Distance to health facility								
2000	58.0	43.4	24.1	18.3	12.4	29.6	0.214	6,427
2005	39.6	28.6	16.6	13.0	7.8	20.4	0.197	6,562

4 Policy Change

It is possible to assess change over time in demographic and health outcomes in light of simultaneous changes in policies, the economy, or other nationally influential phenomena. However, it is important to note that any associations demonstrated here are only associations; causality cannot be inferred without further analysis that is beyond the scope of this document. This section looks at the impact of the following influences on demographic and health indicators: increasing privatization, family planning and abortion policy, media coverage of the HIV/AIDS epidemic, implementation of the family medicine approach to health care provision, implementation of a national salt iodization policy, and implementation of criminal law regarding sexually transmitted infections (STIs).

4.1 Privatization/shift to service sector: Provision of modern contraceptive methods

As Armenia continues its transition from a command to a market economy, it is possible to observe how this transition plays out in terms of how contraceptive methods are supplied to the using population.

Table 4.1 indicates that there has been a shift away from provision of contraceptives by the public sector between 2000 and 2005. Public sector providers include hospitals, policlinics, women's health consult centers, and other public providers, while private sector sources of contraception are primarily pharmacies. In 2000, 24 percent of users of modern contraceptive methods obtained their method from a private sector source; by 2005, the corresponding proportion had nearly doubled to 42 percent. Change in contraceptive pill sourcing from public to private more than doubled, increasing from 33 percent in 2000 to 89 percent in 2005. The majority of condoms were provided by the private sector in 2000 (61 percent); however, this proportion increased to 85 percent in 2005. Because IUD insertion needs to take place in a health facility, and because nearly all health facilities in Armenia remain public, there has been no change over time in the proportion of IUDs obtained in the public sector (97 percent for both survey periods).

Table 4.1 Percentage of women who use specific modern contraceptive methods, by source where method was obtained, ADHS 2000 and 2005

	2000				2005			
Source	Pill	IUD	Condom	All modern methods	Pill	IUD	Condom	All modern methods
Public sector	(63.9)	97.2	13.9	67.0	(9.3)	96.6	4.7	52.8
Private medical	(33.2)	2.2	61.3	24.3	(88.6)	1.8	84.7	41.8
Other/DK/Missing	(2.9)	0.6	24.8	8.7	(2.1)	1.6	10.6	5.5
Total	(100.0)	100.0	100.0	100.0	(100.0)	100.0	100.0	100.0
Number of users	47	391	285	850	35	387	337	791

Note: Figures in parentheses are based on 25 to 49 unweighted cases and therefore should be interpreted with caution.
DK: doesn't know
IUD: intrauterine device

4.2 Family planning and abortion policies

Armenia's population is comparatively small, its birthrate is below replacement level, and there is a substantial amount of primarily male outmigration. Although lacking strong pronatalist policies, there is a general desire on the part of the government to increase the number of Armenians living in the country. At the same time, Armenian couples continue to use both abortion as well as modern and traditional methods of contraception to limit their births.

The interests of both the government and Armenian families are best served when couples are provided comprehensive information on and access to safe and effective modern contraceptive methods, while simultaneously reducing reliance on abortion as a method of birth control. This section looks at change over time in abortion as well as trends in exposure to family planning messages.

4.2.1 Induced abortion

Preceding the breakup of the Soviet Union in 1991, a characteristic feature of countries, such as Armenia, that were part of the Soviet Union was their reliance on abortion as a means of fertility control. In these countries, abortion has long been readily available while effective means of contraception have not.

Although standard surgical abortion is remarkably safe when compared to childbirth or other surgical procedures, it has an inherent risk of complications (Warriner et al., 2006). Shortage of equipment, crowded facilities, poor hygienic conditions, and inadequate standards of care may increase the risk of post-abortion complications. Under some circumstances, women may seek an illegal, risky abortion outside a licensed facility. Unsafe abortion carries a high risk of mortality and morbidity. Government mortality statistics in Eastern Europe and Central Asia indicate that between 15 and 50 percent of maternal deaths are abortion-related whereas such deaths account for only 4 percent of the maternal mortality ratio (MMR) in the United States (Chang et al., 2003; Centers for Disease Control and Prevention and Macro International Inc., 2003).

According to official Armenian Ministry of Health (MOH) statistics, in 2002 in Armenia, induced abortions before 22 weeks of gestation accounted for 33 percent of all maternal deaths, a figure that declined to 7 percent in 2005 (MOH, 2006). In an effort to reduce the number of induced abortions, the Ministry of Health, with assistance from the United Nations Population Fund (UNFPA), implemented the Armenian National Family Planning Program in 1997. Then in the latter half of 2004, Armenia adopted legislation regulating abortion, which until then had been considered a minor outpatient procedure as well as the most commonly used family planning method. The legislation was aimed at improving reproductive health as well as encouraging an increase in births (Grigoryan, 2004). The law stipulates several conditions under which a woman might legally terminate a pregnancy: during the first 12 weeks of pregnancy, a woman may choose without question to abort, and up to 22 weeks abortion is allowed in case of disease or by certain social conditions stipulated within the law. Furthermore, under the new law a woman must be counseled about complications of abortion, further regimens of care, and the use of modern contraceptives (Grigoryan, 2004).

According to government estimates, official incidence of abortion has dropped from about 35,000 in 1996 to about 7,000 in 2003. Official numbers reflect only registered abortions; actual numbers are believed to be several times higher. However, it is believed that a decrease in the official numbers reflects a legitimate downward trend in the number of procedures being performed (Grigoryan, 2004).

Data from the 2000 and 2005 ADHS support the perception of a decrease in the use of abortion in Armenia: the 2005 ADHS Total Abortion Rate (TAR)[9] of 1.8 is significantly lower than the 2000 ADHS rate of 2.6, and the decline is evident at every age group except the oldest (see Table 4.2).

Table 4.2 Age-specific induced abortion rates (per 1,000 women), total abortion rates (TAR), and general abortion rate (GAR) for the three-year period preceding the survey, ADHS 2000 and 2005

	2000			2005		
	Place of residence			Place of residence		
Age group	Urban	Rural	Total	Urban	Rural	Total
15-19	6	6	6	5	2	4
20-24	85	124	99	53	73	60
25-29	128	241	175	112	144	123
30-34	99	176	131	75	122	92
35-39	73	96	82	39	73	53
40-44	29	31	30	15	16	16
45-49	7	5	6	9	2	7
TAR 15-49	2.1	3.4	2.6	1.5	2.2	1.8
TAR 15-44	2.1	3.4	2.6	1.5	2.2	1.7
GAR	65	106	81	48	64	54

Note: Total abortion rate (TAR) is expressed per woman. General abortion rate (abortions divided by number of women 15-44) is expressed per 1,000 women.

[9] Total Abortion Rate (TAR): Age-specific rates are calculated as the ratio of the number of abortions to the number of women minus years of exposure in the specified age interval during a specified time period. They are expressed per 1,000 women minus years of exposure. The TAR is the sum of the age-specific rates, expressed on a per woman basis. It is interpreted as the number of abortions that a woman would have during her lifetime if she experienced the age-specific rates observed in the specified period.

Although it is possible that a decline in sexual activity, associated with the increase in the proportion of non-coresident husbands, could have contributed to a lower TAR, approximately the same proportion of women in both surveys reported being sexually active during the one month preceding the survey (data not shown; please refer to National Statistical Service et al., 2006). Thus, the data do not suggest a decline in sexual activity.

Furthermore, even if there were a recent decline in the prevalence of induced abortion, an accompanying decline in lifetime abortion measures would not be expected. For example, whereas more than half (55 percent) of all respondents in the 2000 ADHS had had an induced abortion, just 45 percent reported having an induced abortion according to the 2005 ADHS. Furthermore, according to the 2000 ADHS, women age 40-49 had an average of 2.8 abortions, compared with 1.7 in the current survey.

Detailed analysis is beyond the scope of this report. However, a number of factors could contribute to this anomaly. First, the apparent trend could be due to underreporting of abortions in 2005 compared with 2000. Anecdotal evidence suggests that recently the drug Cytotec—the trade name of a synthetic prostaglandin analogue, misoprostol—became available in Armenia. This drug was originally used for treatment of ulcers, but currently is widely used for induction of abortion in early stages of pregnancy before 49 days of gestation. Typically, a woman whose menstrual period is delayed for a week or more might obtain the drug in tablet form in a private pharmacy. Private pharmacy sales are not regulated in Armenia and Cytotec can be purchased without a physician's prescription or a positive pregnancy test. Combination of the drug taken by mouth and in the vagina for a period of two to three days is effective to induce an abortion. The total cost is approximately 1,000 drams, significantly cheaper than the cost of a medically induced abortion of pregnancy of up to 12 weeks of gestation performed under medical supervision. Thus, compared with an induced abortion performed in a clinic, a Cytotec-induced abortion usually is self-prescribed and can be performed at home, and the woman might consider this as a menstrual regulation procedure and might not report this event as an abortion in the survey (National Statistical Service et al., 2006).

4.2.2 Exposure to family planning messages

The ADHS surveys ask women about whether they have been exposed to family planning messages in the few months preceding the survey through mass media such as radio, television, and newspapers/magazines. In the 2005 survey, women were asked not only whether they had heard family planning messages via the aforementioned three media types, but also whether they had seen a message on a pamphlet/poster/leaflet or booklet, or whether they had heard a family planning message at a community event. Thus, the 2005 questionnaire broadened the opportunities for the respondent to reply in the affirmative, compared with the 2000 survey. Nevertheless, the proportion of Armenian women not having heard a family planning message quadrupled over the five years between the two ADHS surveys, from 12 percent in 2000 to 44 percent in 2005 (Table 4.3). The high level of exposure to family planning messages in 2000 may be attributed to the implementation of the "Green Path" family planning social marketing program, which occurred during the few months preceding the survey.

Figure 4.1 shows that there is considerable regional variation in exposure to family planning messages. In 2005 in Syunik marz, only 15 percent of women had not recently heard a family

planning message, as compared to Gegharkunik where 70 percent of women had not heard a family planning message recently. The biggest change over time occurred in Ararat, where the proportion of women who had not recently heard a family planning message increased by 60 percentage points between 2000 and 2005.

Reducing abortions is a stated goal of the government of the Republic of Armenia. In order to achieve this goal, it is necessary that Armenian families be educated about the benefits, availability, and correct usage of a variety of safe contraceptive methods. An effective way to disseminate such critical information is through the media, as shown by the data from the 2000 ADHS; however, as demonstrated by the 2005 ADHS, such campaigns are reaching far fewer women than they were just five years prior.

Figure 4.1 Percentage of women who had not heard a family planning message in the media recently, by region, ADHS 2000 and 2005

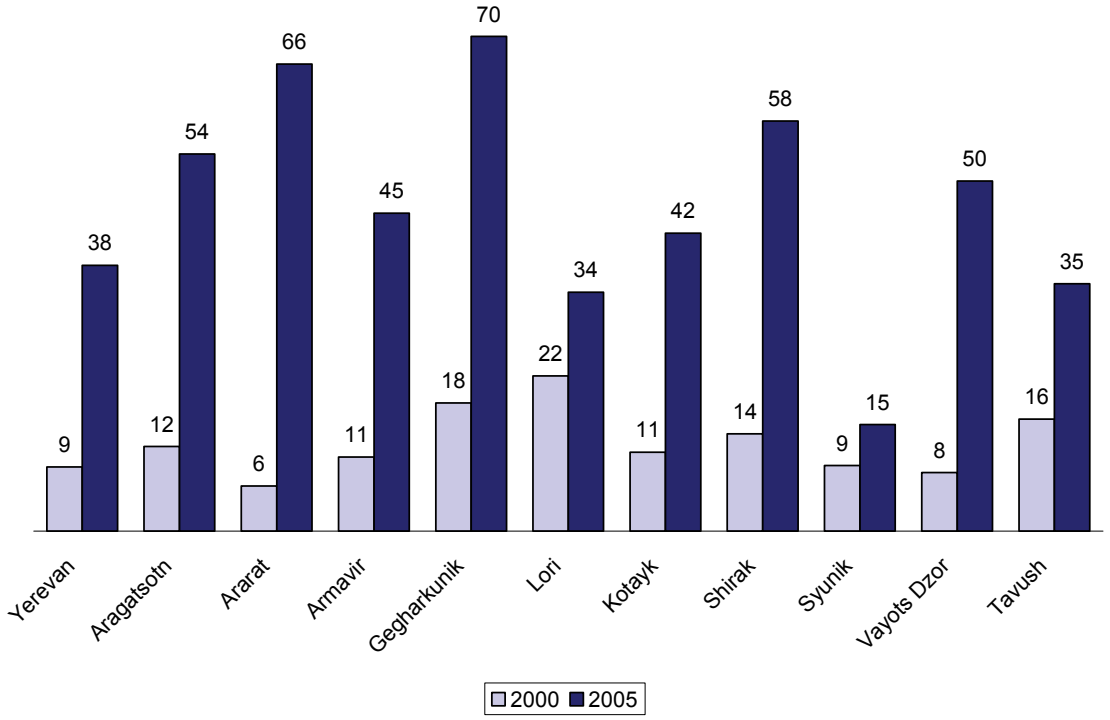


Table 4.3 Percentage of women who did not hear or see a family planning message in the mass media (radio, television, newspaper/magazine) in the few months preceding the survey, by background characteristics, ADHS 2000 and 2005

Background characteristic	Did not hear or see family planning message in mass media 2000 (a)	2005 (b)	Percentage point difference (a) - (b)	Number of women 2000	2005
Age					
15-19	14.6	57.0	-42.4	1,160	1,123
20-24	8.2	40.0	-31.8	1,007	1,131
25-29	8.2	36.2	-28.0	769	929
30-34	11.8	38.3	-26.5	763	749
35-39	12.5	40.3	-27.8	962	711
40-44	13.3	42.9	-29.6	947	965
45-49	11.8	50.7	-38.9	822	958
Residence					
Urban	10.0	39.3	-29.3	3,942	4,194
Rural	14.3	52.9	-38.6	2,488	2,372
Region					
Yerevan	9.1	37.7	-28.6	2,206	2,468
Aragatsotn	12.0	53.5	-41.5	279	292
Ararat	6.4	66.3	-59.9	642	462
Armavir	10.5	45.1	-34.6	553	567
Gegharkunik	18.2	70.2	-52.0	484	443
Lori	22.0	33.9	-11.9	489	537
Kotayk	11.2	42.3	-31.1	505	563
Shirak	13.8	58.2	-44.4	611	563
Syunik	9.3	15.1	-5.8	271	281
Vayots Dzor	8.3	49.7	-41.4	113	107
Tavush	15.9	35.1	-19.2	278	285
Education					
Basic general	28.4	68.0	-39.6	593	529
Secondary general	12.9	51.6	-38.7	2,341	2,440
Specialized secondary	9.3	39.6	-30.3	2,295	1,997
Higher	5.3	30.7	-25.4	1,201	1,600
Wealth quintile					
Lowest	19.9	60.9	-41.0	1,074	1,164
Second	12.7	50.3	-37.6	1,253	1,284
Middle	10.4	46.0	-35.6	1,286	1,303
Fourth	9.1	37.2	-28.1	1,349	1,375
Highest	8.0	30.2	-22.2	1,467	1,440
Total	11.6	44.2	-32.6	6,430	6,566

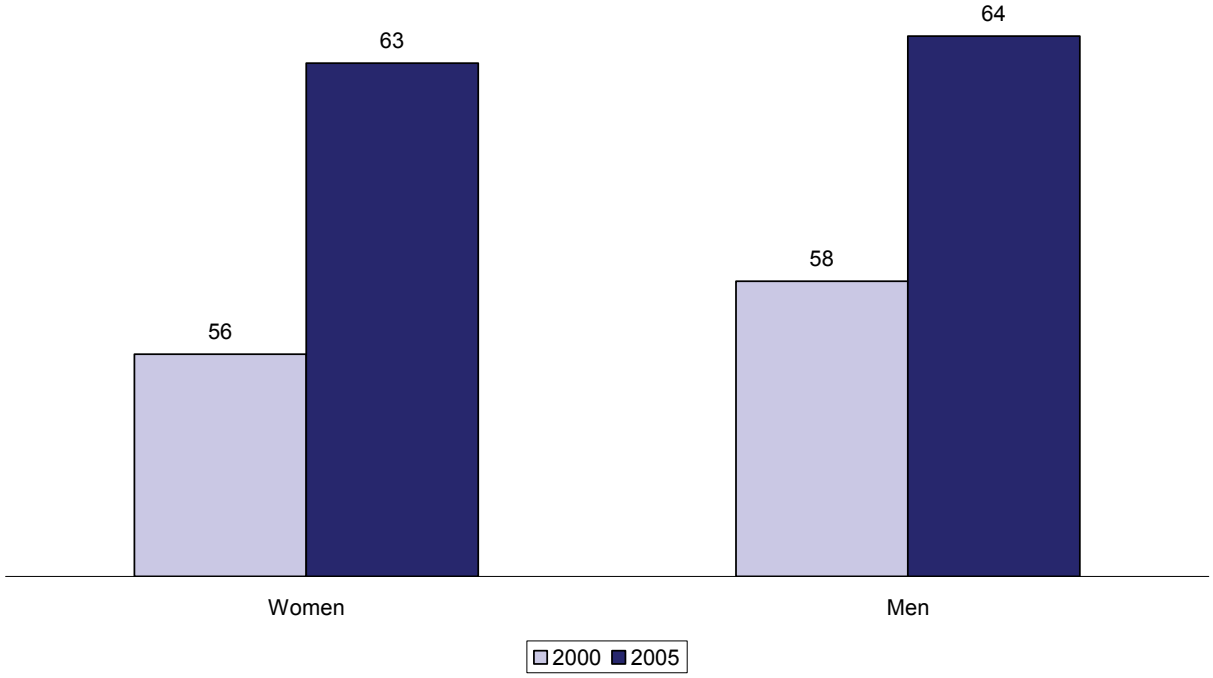
4.3 Knowledge about HIV/AIDS: Has recent media coverage had an influence?

Given the mobile nature of the Armenian population, particularly those who migrate temporarily to Russia and the Ukraine and then return home to their families, the HIV/AIDS epidemic is of grave concern. Therefore, it is critical that people are aware of the disease and know what steps to take to prevent it. The most efficient means of disseminating information to a national population is through the mass media.

A recent analysis of HIV/AIDS-related coverage in the media (Papoyan et al., 2005) revealed that during the time that elapsed between the two ADHS surveys (from 1999 to August 2004), there were 69 print media items directly concerned with HIV and AIDS issues, as well as 16 radio programs and the program of the "Ardzagank" radio station. The radio programs had the aim of raising awareness among the general population about the HIV epidemic and the main means and methods of its prevention. There were eight televised news programs on HIV and AIDS, seven of which were broadcast on World AIDS Day, the first of December. There were also nine non-news televised programs and one TV talk show devoted to the issue, also broadcast on the first of December. It was noted that there were few articles in the press that gave readers information about factors and modes of HIV transmission, means of prevention, and the cause and development of HIV illness (AIDS) (Papoyan et al., 2005). The results of the two ADHS surveys support that assessment.

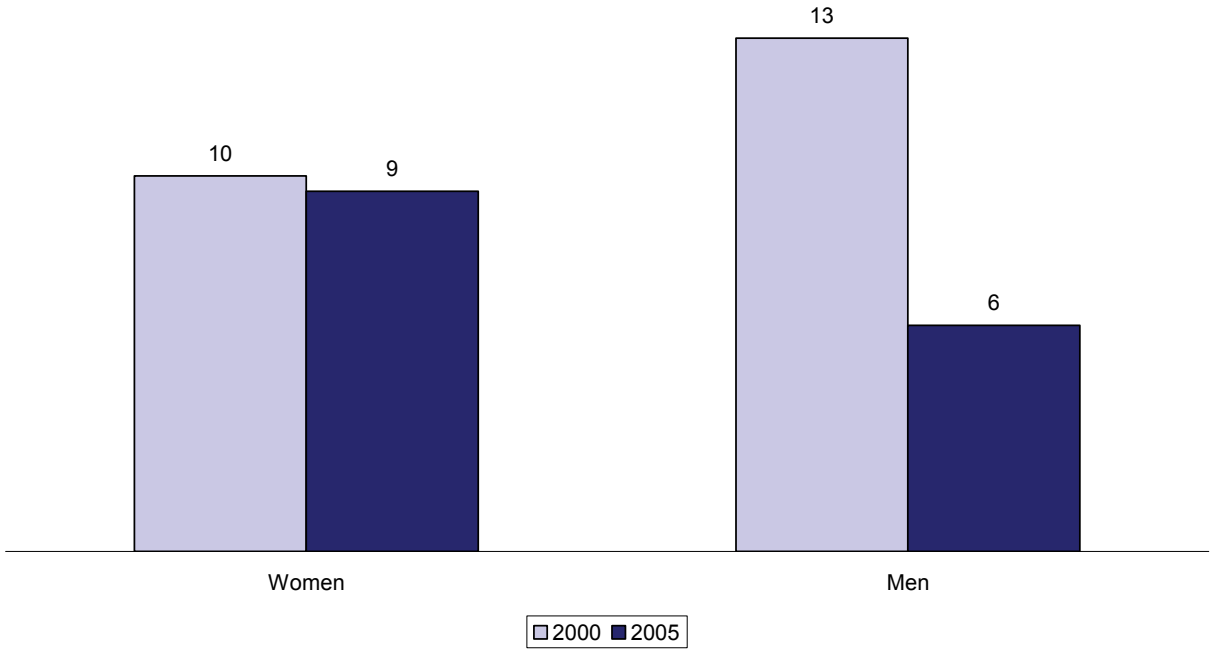
While the questionnaires used to assess respondents' knowledge of ways to avoid HIV/AIDS did not generate data that were comparable for both survey periods, there are some points on which changes in knowledge about HIV/AIDS can be assessed. Figure 4.2 demonstrates that there has been a small increase in the percentage of both women and men who know that a healthy-looking person can still be infected with HIV. In 2000, 56 percent of women and 58 percent of men knew that a healthy-looking person could be infected with HIV. These figures had increased by 2005, such that 63 percent of women and 64 percent of men possessed this important knowledge. Despite this small increase in knowledge, there remains a worryingly large proportion of Armenians who are not aware that a healthy-looking person could be infected with HIV.

Figure 4.2 Percentage of women and men who know that a healthy-looking person can have the AIDS virus, ADHS 2000 and 2005



Knowledge of how HIV spreads and of stigma against those who carry the virus can also be tracked over time: Figure 4.3 demonstrates that women's opinion on whether an HIV-positive female teacher should be able to continue teaching has not changed over time, staying at around 10 percent. However, men are less likely in 2005 than they were in 2000 to think that she should be allowed to continue teaching, dropping from 13 to 6 percent. The low acceptability of allowing an HIV-positive schoolteacher to continue teaching reflects both that the respondents do not fully understand how the virus spreads, and that there is a considerable amount of fear and stigma still associated with HIV infection.

Figure 4.3 Percentage of women and men who say that a female teacher who is HIV-positive should be allowed to continue teaching, ADHS 2000 and 2005



4.4 Sexually transmitted infections: Impact of policy on reporting of STIs and symptoms thereof

It is acknowledged that self-reporting of either clinically diagnosed sexually transmitted infections or symptoms thereof often results in either over- or underestimation of the prevalence of STIs. It is nevertheless remarkable that the levels of combined self-reported STIs and STI symptoms among sexually active women declined sharply, going from 25 percent in 2000 to 8 percent in 2005. While proportions of women reporting a clinically diagnosed STI did not change (about 1 percent of women in both surveys), in 2000, 23 percent of women reported genital discharge, while the corresponding figure in 2005 was 7 percent; 9 percent of women reported a genital sore or ulcer in 2000, while in 2005, only 1 percent of women reported the same.

This decline in reporting over time may be attributable to a criminal law adopted in 2003, according to which a person can be subject to up to two years of imprisonment for avoiding treatment of venereal diseases (von Schoen-Angerer, 2004). It should also be noted that in Armenia, doctors are required to report the names of people with STIs to the relevant authorities; it is likely that these sorts of provisions in the law result in considerable reluctance among respondents to report either diagnosis or symptoms of STIs in a national health survey conducted by the government.

4.5 Family Medicine policy

The structure of the health care system in Armenia during the Soviet era was highly centralized; it guaranteed free medical assistance and access to a comprehensive range of secondary and tertiary care. However, such a system was not sustainable in the post-Soviet era, given the subsequent economic and social devastation, and the health status of the population began to decline (Hovhannisyan, 2004).

In 1999, the government of the Republic of Armenia initiated their Family Medicine program. Still in the process of being implemented, the Family Medicine approach is an effort to expand primary health care to a larger proportion of the population through the introduction of the practice of family medicine. The new system is meant to increase the effectiveness of primary health care as well as reduce health care costs for patients. Rather than directly seeking care from a specialist, it is expected that patients will instead visit a general practitioner who should be familiar with the patient's medical history and encourage the patient to participate in their own health care. Family planning and reproductive health services in particular are meant to be upgraded through this approach. The ADHS surveys have captured a shift in the use of maternal health services; these shifts may be a result of the implementation of the Family Medicine strategy.

4.5.1 Antenatal care

In the five years since the 2000 ADHS, while overall usage of antenatal care (ANC) services has not changed, there has been a small shift in providers of care: ANC by a doctor has increased from 84 to 90 percent, while care by a nurse or a midwife decreased from 9 to 3 percent (Table 4.4). Almost all of this change has been in rural areas. In 2000, 15 percent of rural women reported obtaining their ANC from a nurse or trained midwife; in 2005 the corresponding figure was only 6 percent. Few urban women sought ANC from nurses/midwives in either survey year: 3 percent did so in 2000, and 2 percent did in 2005. The proportion of women who did not receive ANC remained statistically unchanged between the two surveys.

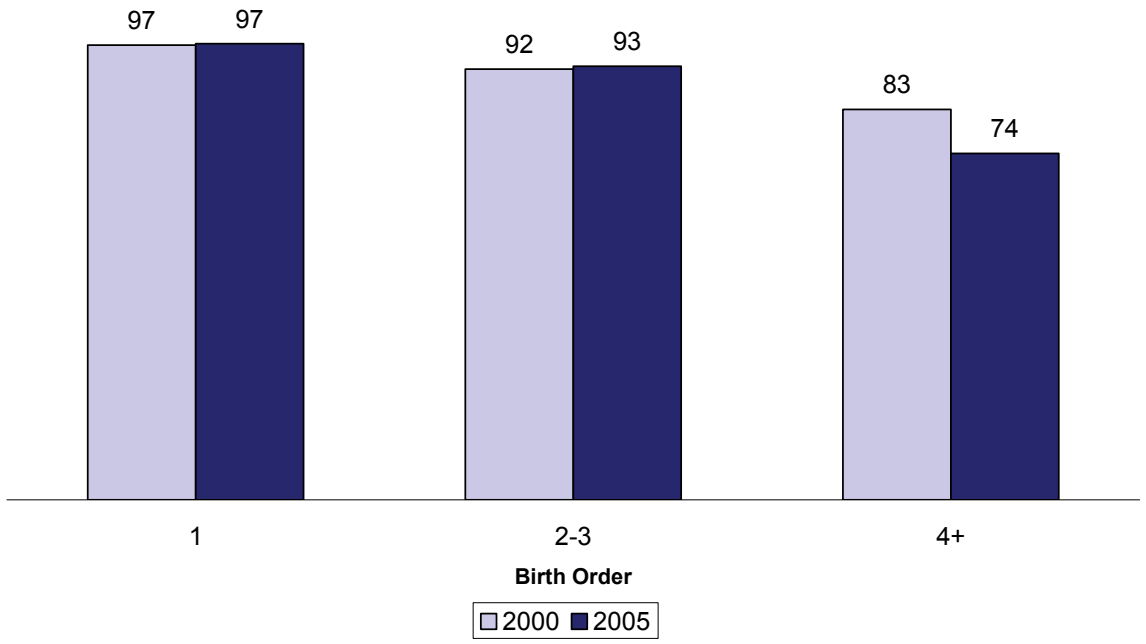
Table 4.4 Percentage of women with a birth in the five years preceding the survey who received antenatal care, by provider of care, ADHS 2000 and 2005

Residence	Doctor	Nurse/ midwife	Total medically trained	No one	Number of women
		ADHS 2000			
Urban	92.3	3.3	95.6	4.1	664
Rural	74.1	14.8	88.9	11.1	583
Total	83.8	8.6	92.4	7.4	1,248
		ADHS 2005			
Urban	93.7	1.9	95.6	4.2	736
Rural	83.4	5.5	88.9	9.9	440
Total	89.9	3.2	93.1	6.3	1,176

Note: For women with more than one birth in the five years preceding the survey, information on the care provider was taken from the most recent birth.

Among women who gave birth to their fourth or higher-order child, the proportion seeking antenatal care dropped from 83 percent in 2000 to 74 percent in 2005 (Figure 4.4). This is a problem from a preventive care point of view, as grand multiparous mothers are at higher risk for complications during pregnancy (e.g., Simmons et al., 2006). Women who did obtain ANC are more likely to have tests done as part of their antenatal care, but less likely to have been informed of signs of complications in 2005 as compared with women in 2000. Figure 4.5 demonstrates that among both urban and rural women there was a considerable decline in the proportion of women who were informed of signs of complications during pregnancy. In 2000, 62 percent of urban women had been informed of complications by their ANC providers; this figure declined to 51 percent by 2005. Similarly in 2000, 50 percent of rural women were informed about pregnancy complications by their ANC providers, but by 2005, only 38 percent of rural women were provided with this essential information.

Figure 4.4 Percentage of women with a birth in the past five years who obtained antenatal care from a medically-trained provider, by birth order, ADHS 2000 and 2005



4.5.2 Attendance at delivery

Although the proportion of deliveries attended by any medically trained personnel has not changed, holding constant at about 97 to 98 percent, the proportion of births attended by a doctor increased, particularly in rural areas. Table 4.5 shows that in 2000, 83 percent of births were attended by a doctor, while the corresponding figure in 2005 was 93 percent. As with ANC, nurses and midwives are being replaced by doctors as attendants at deliveries. In 2000, 21 percent of rural births were attended by nurses or trained midwives, while in 2005 they attended only 9 percent of births.

Figure 4.5 Percentage of women who received specific components of antenatal care during their most recent delivery in the five years preceding the survey, by residence, ADHS 2000 and 2005

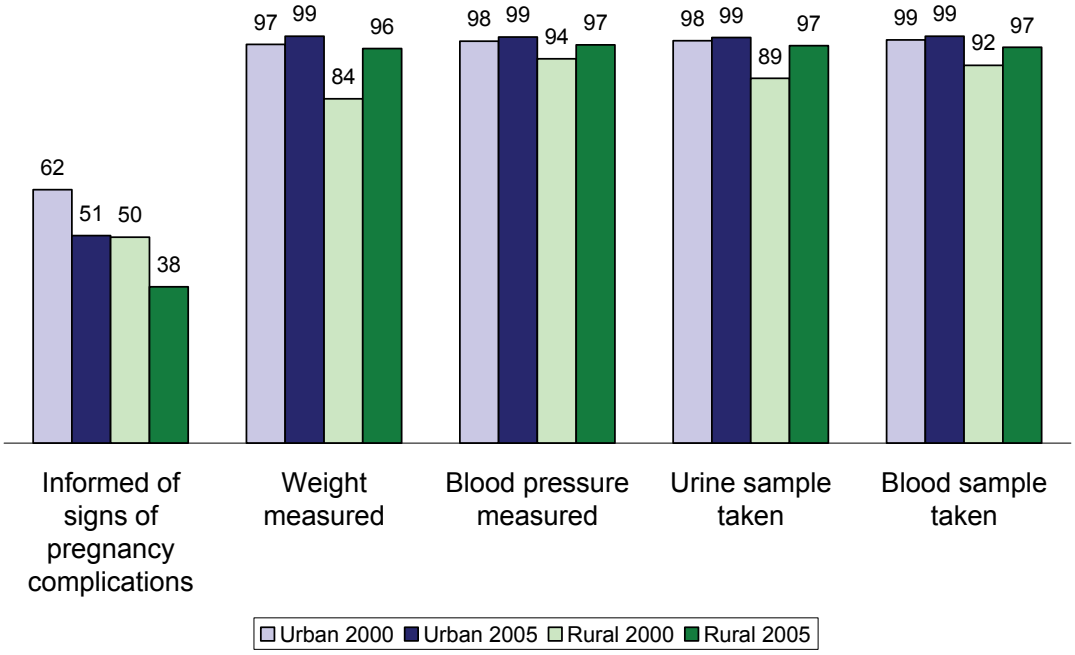


Table 4.5 Percentage of women with a birth in the five years preceding the survey who received assistance at delivery, by provider of care, ADHS 2000 and 2005

Residence	Doctor	Nurse/ midwife/ health worker	Total medically trained	TBA/ other/ no one	Number of women
		ADHS 2000			
Urban	92.1	7.0	99.1	0.8	838
Rural	73.7	20.8	94.5	5.4	819
Total	83.0	13.8	96.8	3.0	1,657
		ADHS 2005			
Urban	96.0	2.6	98.6	0.1	930
Rural	89.2	8.7	97.9	0.7	582
Total	93.4	5.0	98.4	0.3	1,512

Note: For women with more than one birth in the five years preceding the survey, information on the care provider was taken from the most recent birth.
TBA = Traditional birth attendant

4.5.3 Place of delivery

Almost all births in 2005 (98 percent) took place at a health facility. The proportion of births occurring at home has declined from 9 percent in 2000 to 2 percent in 2005. The greatest change occurred at the level of the marz: Gegharkunik showed the largest decline in home deliveries,

from 41 percent of births in 2000 to 14 percent in 2005. In Shirak, births at home were nearly eliminated, declining from 9 percent in 2000 to just 1 percent in 2005. Levels of home births remain comparatively high in both Gegharkunik (14 percent) and Aragatsotn (11 percent).

Table 4.6 Percentage of births that took place at home/outside a health facility, by region, ADHS 2000 and 2005

Region	Percentage of births occurring at home/ outside health facility		Percentage point difference	Number of births	
	2000 (a)	2005 (b)	(a) - (b)	2000	2005
Yerevan	1.5	0.0	1.5	459	584
Aragatsotn	13.9	11.4	2.5	96	83
Ararat	7.7	1.7	6.0	207	127
Armavir	6.8	1.2	5.6	164	125
Gegharkunik	40.8	13.5	27.3	182	120
Lori	2.5	2.5	0.0	142	96
Kotayk	3.2	1.1	2.1	106	129
Shirak	8.5	0.7	7.8	117	90
Syunik	0.9	0.0	0.9	63	63
Vayots Dzor	1.5	0.0	1.5	33	19
Tavush	1.9	0.0	1.9	88	75
Total	8.5	2.2	6.3	1,657	1,512

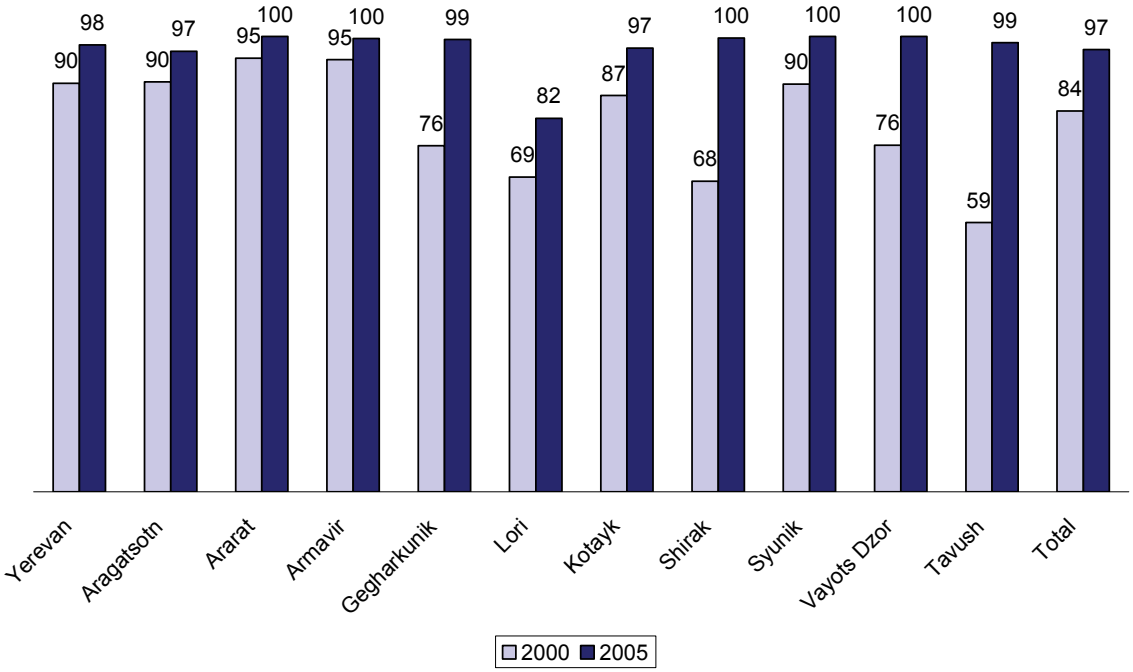
4.6 Salt iodization: 2004 decree mandating iodization of all salt for human consumption

In the wake of the breakup of the former Soviet Union in early 1990s, the production and supply of iodized salt were almost stopped and the Armenian population began using noniodized salt from Ukraine and Iran. Subsequently, an assessment carried out in Armenia in 1995 showed that 50 percent of pregnant women and 40 percent of children below 12 years had endemic goiter (MOH and UNICEF, 2005).

In 1997, production of iodized salt was resumed in Armenia, and by 1998, all salt produced in Armenia for human consumption was iodized, despite a lack of legislation on universal salt iodization. A nutrition survey of women and children conducted in 1998 with assistance from Institute of Nutrition (Rome, Italy) showed that 73 percent of households used iodized salt (MOH and UNICEF, 2005). In 2000, the ADHS demonstrated that 84 percent of Armenian households used iodized salt; however, the national prevalence of iodized salt masked regional disparities in iodization. In some marzes (Lori, Shirak, and Tavush), 31 to 41 percent of households did not possess iodized salt.

In February 2004, the Government of Armenia passed a decree that required mandatory iodization of all salt for human consumption. Import of noniodized salt was also banned (MOH and UNICEF, 2005). As a result, the 2005 ADHS was able to demonstrate that 97 percent of Armenian households had adequately iodized salt. Tavush marz made the largest improvement, increasing the coverage of iodized salt from 59 percent in 2000 to 99 percent in 2005. In 2005, Lori marz had the lowest percentage of households with adequately iodized salt (82 percent; Figure 4.6).

Figure 4.6 Percentage of households with adequately iodized salt (15+ ppm), by region, ADHS 2000 and 2005



5 Other Demographic and Health Changes

While changes in the economy, in national policy, and in migratory behavior are all interrelated, changes in some phenomena such as fertility and mortality cannot be associated with a single influencing factor. Rather, these larger demographic indicators are the result of a confluence of a great many factors. As such, they are discussed separately.

5.1 Fertility

5.1.1 Trends in fertility

According to the 2005 ADHS, the total fertility[10] rate (TFR) is 1.7 children per woman (Table 5.1). This is below replacement-level fertility (which is slightly more than 2.0). The 2005 ADHS rate of 1.7 is the same as the rate estimated by the 2000 ADHS. Thus, there is no evidence of change in overall levels of fertility in Armenia over the past five years.

The data suggest some change in terms of urban-rural differentials. While urban fertility is statistically the same (1.5 in 2000 versus 1.6 in 2005) there is some evidence of decline in rural areas (from 2.1 in 2000 to 1.8 in 2005). Overall, there has been a shift away from childbearing at the youngest ages (15-19) toward higher levels of fertility among women in their late 20s.

Most childbearing takes place when women are in their 20s. The age-specific fertility rates peak at age 20-24 regardless of residence. In fact, in both urban and rural areas, fertility rates in these age groups (20-24 and 25-29) account for three-fourths of the total fertility rate.

Table 5.1 Age-specific and cumulative fertility rates, the general fertility rate, and the crude birth rate for the three years preceding the survey, by residence, ADHS 2000 and 2005

	Residence					
	Urban		Rural		Total	
Age	2000	2005	2000	2005	2000	2005
15-19	33	22	75	43	50	30
20-24	116	140	206	165	149	148
25-29	86	104	91	115	88	107
30-34	32	43	40	26	35	37
35-39	19	15	11	16	16	16
40-44	4	6	1	1	3	4
45-49	0	0	1	0	0	0
TFR	1.5	1.6	2.1	1.8	1.7	1.7
GFR	47	57	69	60	56	58
CBR	12.1	14.5	16.3	14.9	13.9	14.6

Note: Rates are for the period 1-36 months preceding the survey. Rates for age group 45-49 may be slightly biased due to truncation.
TFR: Total fertility rate for ages 15-49, expressed per woman
GFR: General fertility rate expressed per 1,000 women
CBR: Crude birth rate expressed per 1,000 population

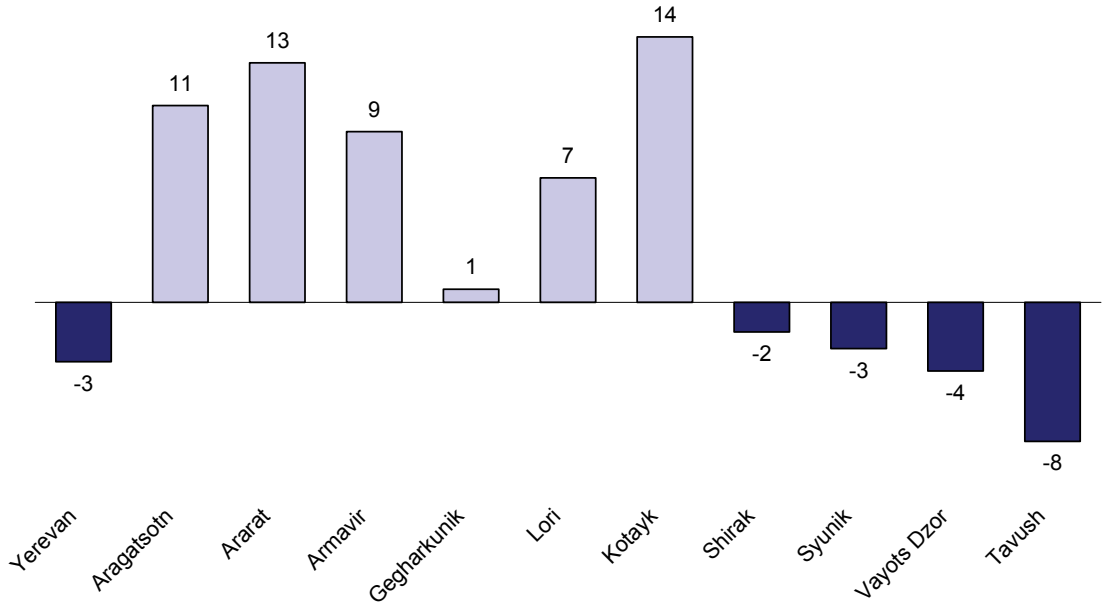
[10] The discussion on fertility is taken from the 2005 ADHS final report.

5.1.2 Birth intervals

Birth intervals in Armenia are lengthening: in 2000, the median birth interval was 31.5 months, whereas in 2005, it was 36.9 months. Sex of the preceding child may be a factor contributing to the length of the birth interval: in 2000, the median birth interval for a previous male birth was 32.9 months, whereas in 2005 it was 34.3 months. However, the median birth interval for a previous female birth was 29.9 months in 2000, but by 2005, the interval after a female birth was 38.5 months—this may indicate that once a woman has had a girl, she is in less of a hurry to have another child.

While median urban birth intervals have not changed over time (37.8 months in 2000 and 37.6 months in 2005), the median rural birth interval has increased considerably to nearly match the urban median birth interval: 27.9 months in 2000 as compared with 35.3 months in 2005. This increase in intervals between births in rural areas may reflect the fact that there is a larger proportion of absent husbands in rural areas. Figure 5.1 demonstrates the change over time in the median length of birth intervals, in months, according to region. The biggest increases in the lengths of birth intervals registered in Kotayk (14 months), Ararat (13 months), Aragatsotn (11 months), and Armavir (9 months). Conversely, Tavush has registered a considerable decrease in median length of birth interval of 8 months.

Figure 5.1 Change over time in median length of birth interval, in months, by region, ADHS 2000 and 2005



5.2 Breastfeeding

5.2.1 Trends in breastfeeding

The percentage of all children born in the five years preceding the survey who were ever breastfed is higher in 2005 (97 percent) than in 2000 (88 percent). However, twice as many infants were weaned by 4 months of age in 2005 (11 percent) as compared with 2000 (5 percent), and fewer babies under 4 months of age are exclusively breastfed[11] in 2005 (37 percent) as compared with 2000 (45 percent). While it is encouraging to note that more women are initiating breastfeeding with their new babies, early weaning and nonexclusive breastfeeding are problematic, not only because babies are healthiest when they have been exclusively breastfed for six months and continue to be breastfed for two years or longer (WHO and UNICEF, 2003), but because problems remain with food and water safety in Armenia, which pose a danger to infants. Another encouraging finding is that children are somewhat more likely to still be receiving breast milk through 23 months of age in 2005 (19 percent) compared with 2000 (12 percent); WHO recommends breastfeeding for at least the first two years of life.

5.2.2 Type of birth attendant and breastfeeding duration

While in some countries the type of birth attendant or the place of delivery has an effect on duration of breastfeeding, this is not the case in Armenia. Those who are attended by doctors report only a slightly shorter duration of breastfeeding than those attended by nurses or midwives, while those attended by traditional birth attendants or other non-formally trained people breastfeed longest; however, none of these relationships are statistically significant in a bivariate analysis of the data.

The mean number of months that a woman reports breastfeeding her most recently born child within the past five years has increased by approximately one month for those attended in birth by doctors and nurses, while it has decreased by approximately one month for those attended by traditional birth attendants (TBA) or others;[12] nevertheless, the small proportion of children whose births are attended by traditional birth attendants are likely to be breastfed for the longest period of time (Table 5.2).

[11] Although this difference could be due to a real decline, it should also be noted that the questionnaire methodology changed slightly between the two surveys. Specifically, the 2005 survey asked mothers about more kinds of complementary foods that could have been given to the child than were asked in the previous survey.

[12] Note that the number of women attended by a TBA/relative/friend/no one in 2005 is small and, therefore, the associated statistics should be cautiously interpreted.

Table 5.2 Results of one-way ANOVA tests comparing the mean number of months the respondent breastfed her most recently born child, by type of attendant at the birth, ADHS 2000 and 2005

	2000		2005	
Attendant at birth	Mean no. months breastfed	Number	Mean no. months breastfed	Number
Doctor	7.5	154	8.5	204
Nurse/midwife	7.8	1,039	8.8	944
TBA/relative/friend/no one	10.2	53	(9.4)	18
Total	7.9	1,246	8.7	1,165
Significance (*p* value)	0.115		0.854	

Note: Figures in parentheses are based on 25-49 unweighted cases and therefore should be interpreted with caution.
ANOVA: ANalysis Of VAriance between groups

5.3 Mortality

Table 5.3 shows infant and child mortality[13] estimates based on data from the 2005 ADHS. For the five years preceding the survey (2001-2005), the infant mortality estimate is 26 per 1,000 live births. The estimates of neonatal and postneonatal mortality are 17 and 9 per 1,000, respectively. The estimate of child mortality (age 1-4) is much lower: 7 per 1,000. The overall under-five mortality rate for the period is 30 per 1,000.

Trends in mortality over the 15-year period preceding the survey can also be examined from Table 5.3. The data suggest that mortality has decreased significantly over the past 15 years. In the case of infant mortality, the estimated rates show a decline by 37 percent over the ten-year interval from the midpoint of the 1991-1995 estimate of infant mortality (41 per 1,000) to the midpoint of the 2001-2005 estimate (26 per 1,000) or by about 3.7 percent per year. The actual pace of the mortality decline was probably greater than this because, as indicated above, the rate estimated for 1991-1995 is likely to be an underestimate. Over the ten-year interval, neonatal mortality was stable at 17 per 1,000 and postneonatal mortality declined by 63 percent (24 per 1,000 to 9 per 1,000).

Table 5.3 Early childhood mortality rates: Neonatal, postneonatal, infant, child and under-five mortality rates for five-year periods preceding the survey, ADHS 2005

Years preceding survey	Approximate calendar period[1]	Neonatal mortaility (NN)	Postneonatal mortality[2] (PNN)	Infant mortality ($_1q_0$)	Child mortality ($_4q_1$)	Under-five mortality ($_5q_0$)
0-4	2001-2005	17	9	26	7	30
5-9	1996-2000	20	10	30	7	36
10-14	1991-1995	17	24	41	7	48

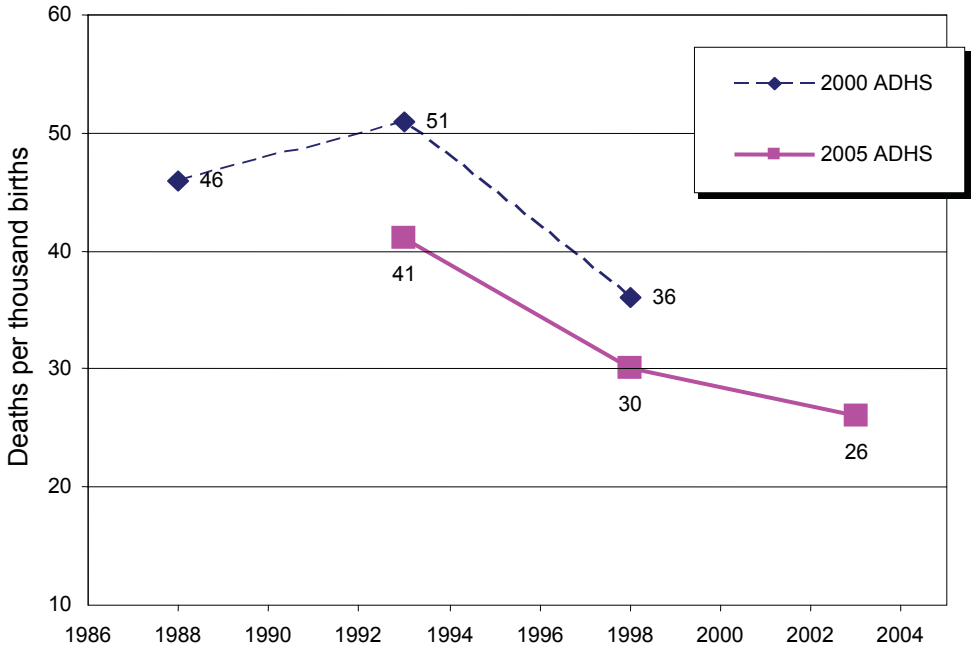
[1] Because survey fieldwork began in early September 2005 and was completed by early December, the rates for the five-year period 2001-2005 actually apply approximately to the calendar period from October 2000 to September 2005. The same applies for the other five-year periods.
[2] Computed as the difference between the infant and the neonatal mortality rates.

[13] The discussion on mortality is taken from the 2005 ADHS Final Report.

No doubt many factors have contributed to the observed mortality decline in Armenia between 1991-1995 and 2001-2005. To some degree, the decline was probably hastened by health interventions initiated by MOH in 1994 (i.e., programs in the case management of diarrhea and acute respiratory infection [ARI] as well as programs in support of breastfeeding). These programs are likely to have had more impact on postneonatal mortality than on neonatal mortality, which is consistent with the observed mortality declines in those subintervals of infancy.

Comparison with the results of the 2000 ADHS also suggests a significant decline. Figure 5.2 shows the infant mortality rates (IMRs) for the 15-year period preceding each survey. Overall, the infant mortality estimates across both surveys show a clear and sustained trend of declining mortality. It should be noted that the 2005 ADHS infant mortality estimate of 41 per 1,000 (1991-1995) and the estimate 30 per 1,000 (1996-2000) are lower than the estimates from the 2000 ADHS for the same periods (51 per 1,000 and 36 per 1,000).[14]

Figure 5.2 Trends in Infant Mortality, ADHS 2000 and 2005



[14] The differences between the 2000 ADHS and the 2005 ADHS in the IMR estimates for 1991-1995 and 1996-2000 are not statistically significant, as is indicated by the fact that the 95 percent confidence intervals of the rates for the same period overlap. For example, for the period 1996-2000, the IMR estimate from the 2000 ADHS is 36, with a 95-percent confidence interval from 25 to 47 and the IMR estimate from the 2005 ADHS is 30 with a 95-percent confidence interval from 21 to 39. Nevertheless, the fact that the estimates for both periods (1991-1995 and 1996-2000) are lower in the 2005 ADHS is convincing evidence of underreporting of deaths in the 2005 ADHS. The large confidence intervals associated with each estimated rate is due to the relatively small number of observed births on which the estimates are based (between 1,500 and 2,500 for the various periods [see Appendix B, Estimates of Sampling Errors, for the number of births on which specific estimates are based]). Indeed, the large confidence intervals associated with infant and childhood mortality rates in most surveys can only be substantially narrowed by considerable increases in sample size, especially in low-fertility countries such as Armenia.

6 Summary and Conclusions

Although only five years elapsed between the 2000 and 2005 Armenia Demographic and Health Surveys (ADHS), the country nevertheless experienced considerable social and economic change during this period. This report demonstrated that these changes, including population movement and increasing disparities between poor and rich households, are associated with demographic and health outcomes for the population. Policy changes also produced measurable impacts on health and demographic outcomes.

Findings of this analysis include an increasing absence of husbands and fathers from Armenian homes as well as increasing economic disparities in education and other outcomes between the poorest and wealthiest Armenians despite overall economic growth in the country. Armenia's salt iodization policies have resulted in clear improvement over time in the prevalence of iodized salt, while the new Family Medicine approach to health care appears to have increased the likelihood that rural women will receive delivery care from a physician.

There is no evidence of change in overall levels of fertility in Armenia, despite a decrease in both contraceptive use as well as an apparent decrease in abortion since 2000. Encouragingly, the data suggest that child mortality has decreased significantly over the past 15 years.

The inability to pay for health care costs remains a significant obstacle to obtaining health care among the majority of women in Armenia. While there has been some improvement at the national level in this indicator over time, a disproportionate amount of the benefit of the improvement fell to those in the wealthiest 20 percent of households.

It is hoped that the analyses presented here will serve as a tool for evaluating the impact of the recent changes in population movement, economic growth, and policy, and guide future decisionmaking around issues of population and health in Armenia.

References

Centers for Disease Control and Prevention (CDC) and ORC Macro. 2003. *Reproductive, maternal and child health in Eastern Europe and Eurasia: A comparative report.* Atlanta, Georgia (USA) and Calverton, Maryland (USA).

Chang, J., L.D. Elam-Evans, C.J. Berg, J. Herndon, L. Flowers, K.A. Seed, and C.J. Syverson. 2003. Pregnancy-related mortality surveillance—United States, 1991-1999. *Morbidity and Mortality Weekly Report, Surveillance Summary*. 52(2): 1-8.

Comanor, W.S. and L. Phillips. 2002. The impact of income and family structure on delinquency. *Journal of Applied Economics* 5(2): 209-232.

Desai, S. and S. Ahmad. 1998. Female headed households. In *Women in the third world*, ed. Nelly Stromquist. New York: Garland Publishing.

Grigoryan, M. 2004. Law on life: New legislation on abortion hoped to improve rights and reproduction. *Armenia Now*. Yerevan. September 24, 2004.

Gwatkin, D.R., S. Rutstein, K. Johnson, R.P. Pande, and A. Wagstaff. 2000. Socioeconomic differences in health, nutrition, and poverty. HNP/Poverty Thematic Group of the World Bank. Washington, D.C.: The World Bank.

Hovhannisyan, S.G. 2004. Health care in Armenia. *British Medical Journal* 329: 522-523.

ILCS. 2005. Integrated Living Conditions Survey. NSS 2006.

Kishor, S. and K. Johnson. 2006. Reproductive health and domestic violence: Are the poorest women uniquely disadvantaged? *Demography* 43(2): 293-307.

Lloyd, C. and A. Gage-Brandon. 1993. Women's Role in Maintaining Households: Family Welfare and Sexual Inequality in Ghana. *Population Studies* 47(1): 115-131.

McLanahan, S. and K. Booth. 1989. Mother-only families: Problems, prospects, and politics. *Journal of Marriage and the Family* 51(3): 557-580.

Ministry of Health (MOH) [Armenia]. 2006. *Health care in the Republic of Armenia, 2005: Annual report of the MOH of the Republic of Armenia*. Yerevan, Armenia: Ministry of Health.

Ministry of Health (MOH) [Armenia] and UNICEF. 2005. *Report on results of national representative survey of iodine nutrition and implementation of universal salt iodization program in Armenia*. Yerevan, Armenia: Ministry of Health.

National Statistical Service (NSS) [Armenia]. 2006. *Social snapshot and poverty in Armenia*. Yerevan, Armenia: National Statistical Service.

National Statistical Service (NSS) [Armenia] and UNICEF. 2004. *Analytical report on the situation of children and young people at the regional level.* MONEE Country Analytical Report. Yerevan, Armenia.

National Statistical Service (NSS) [Armenia], Ministry of Health (MOH) [Armenia], and ORC Macro. 2006. *Armenia Demographic and Health Survey 2005*. Calverton, Maryland: National Statistical Service, Ministry of Health, and ORC Macro.

Papoyan, A., A. Arakelyan, and E. Bakshinyan. 2005. *HIV and AIDS in Armenia: A Socio-cultural Approach.* Paris, France: UNESCO.

Rutstein, S. and K. Johnson. 2004. The DHS Wealth Index. DHS Comparative Reports No. 6. Calverton, Maryland: ORC Macro.

Simmons, D., J. Shaw, A. McKenzie, S. Eaton, A.J. Cameron, and P. Zimmet. 2006. Is grand multiparity associated with an increased risk of dysglycaemia? *Diabetologia* 49(7): 1522-1527.

von Schoen-Angerer, T. 2004. Understanding health care in the south Caucasus: Examples from Armenia. *British Medical Journal* 329(7465): 562-565.

Warriner, I.K., O. Meirik, M. Hoffman, C. Morroni, J. Harries, N.T. My Huong, N.D. Vy, and A.H. Seuc. 2006. Rates of complication in first-trimester manual vacuum aspiration abortion done by doctors and mid-level providers in South Africa and Vietnam: A randomized controlled equivalence trial. *Lancet* 368(9551): 1965-1972.

World Health Organization (WHO) and UNICEF. 2003. *Global strategy for infant and young child feeding*. Geneva: World Health Organization.