

Natural changes in the population. *Crude birth rates* vary widely in the transition region (*Table 6*). The NFSU countries have the lowest crude birth rates worldwide, while the Muslim-majority countries have birth rates comparable to most of the developing countries. In 1999-2002, the NFSU countries had an average annual crude birth rate of 8.8 births per 1,000 persons. Only the advanced industrial economies have birth rates almost as low: 11.9 births in 1999-2002 for the high income economies; 10.4 for the EMU, a subset of the high income economies. The Muslim-majority transition countries had a crude birth rate of 20 per 1,000 in 1999-2002, which is higher than such rates in the developing countries in East Asia and the Pacific (17 births), roughly comparable to birth rates in Latin America and the Caribbean (21.5 births), though well below birth rates in Sub-Saharan Africa (39.2 births).

Fertility is the prime determinate of the crude birth rate. Hence, trends in **fertility rates** mirror closely the trends in crude birth rates. The fertility rate represents the number of children that would be born to a woman if she were to live to the end of her childbearing years and bear children in accordance with prevailing age-specific fertility rates. For a man and woman to “replace” themselves, the couple must have two or more children; hence, the fertility replacement rate is 2.1 births per woman.

The fertility rates in the EE region are well below replacement rate overall and in fact are lowest worldwide (*Table 7* and *Figures 6-8*). In 1999-2002, the average fertility rate in EE was 1.4 children per woman. As with crude birth rates, only the advanced industrial economies have fertility rates comparably low: 1.7 in the high income economies; 1.5 in the EMU. A notable distinction, however, is that these low fertility rates in the advanced industrial economies have been maintained since at least the 1980s, while the fertility rates in the EE region have dropped dramatically since the 1980s, and particularly with the onset of the collapse of communism (*Figure 6*).

While fertility rates have been falling across the transition countries, there remains wide variation in the rates between transition countries: they are lowest in CEE and in the NFSU (1.2 children per woman in each country group); and highest among the Muslim-majority countries (2.4 children per woman, which is comparable to fertility rates in parts of the developing world, though nowhere near the rates in Sub-Saharan Africa, 5.2). The Muslim-majority countries are the outliers or exceptions to the general EE trend, with fertility rates which are much higher than in the rest of the transition countries, even though the rates have been falling even more significantly than in the rest (*Figure 7*). In fact, the only transition countries which have fertility rates above replacement rates are the six Muslim-majority countries. *Figure 8* shows the range of fertility rates in a select group of transition countries, ranging from relatively high rates in Tajikistan to among the lowest rates worldwide in Georgia, Russia, Armenia, Slovenia.

In virtually all the transition countries, the decline in fertility rates since 1990 has been very significant. These declines no doubt reflect a variety of causes, including at least in some cases (as will be examined later in this paper), very high numbers of emigrants of child-bearing age. This appears to be particularly so in the case of Armenia and Georgia. An examination of the proportion of populations by age groups and how these proportions have changed from 1990 to 2004 supports this conclusion (*Figures 9* and *10*). In both countries, the age groups which showed a decline from 1990 to 2004 were the youngest populations (children less than 10 years of age) and the child-bearing age group (20 to 39 years of age). Other age categories in Armenia and Georgia had a proportionate increase in their numbers.

Table 9 and *Figures 11-14* provide trends in the **proportion of the young and elderly populations**. Consistent with the fertility trends, the Muslim-majority countries have the highest proportion of youth among the transition countries; 34% on average in 2002 vs. a transition region average of 20%. The proportion of youth in the Muslim-majority transition countries is roughly comparable to that found in Latin America and the Caribbean (31%), though well below the percentage of youth in Sub-Saharan Africa (44%). The proportion of youth in the CEE countries

(17% in the Northern Tier CEE and 19% in the Southern Tier CEE) is comparable to that found in the high-income economies (18%) and close to that found in the EMU (16%). The percentage of youth across all regions of the world has fallen from 1990 to 2002, though only slightly in Sub-Saharan Africa (*Table 9* and *Figure 11*). It is forecast that the transition region will continue to have proportionately fewer youth over the coming years (*Figure 12*).

The trends in the proportion of the elderly mirror the youth trends (*Table 9* and *Figures 13 & 14*). The Muslim-majority transition countries have the lowest percentage of elderly: 5% of the population was greater than 65 years of age in 2002, an increase from 4% in 1990. This is roughly comparable to the proportion of the elderly in much of the developing world (6% in East Asia and the Pacific and Latin America and the Caribbean; 5% in South Asia; 4% in the Middle East, and 3% in Sub-Saharan Africa). The proportion of the elderly in the CEE countries (15% in the Southern Tier CEE and 14% in the Northern Tier CEE) is comparable to that found in the high income economies (14%). However, the increase in aging has been greater in the CEE than in most of the high income economies since 1990.

The proportion of the elderly and the young to the total population has significant economic implications. The higher is the proportion of the elderly and young, the greater is the burden for society at large for the working age population to support the elderly and the young. This concept is often captured in the dependency ratio: the ratio of the number of elderly and young to the number of persons of working age. A similar calculation of **dependency** is provided in *Table 10*, the percentage of the total population that is young and old. Several key observations emerge. Again, wide variation exists within the transition region. The “dependent” proportion of the population in the Northern Tier CEE countries was 30% in 2002. This is less than the proportion elsewhere in the world; closest to that is 32% in the high-income countries as well as in the East Asia developing countries. The Muslim-majority countries had a dependency proportion of 39% in 2002, which is comparable to most such proportions in the developing countries, including South Asia and the Middle East (both 39%) and Latin America and the Caribbean (37%). The dependency proportion is far higher in Sub-Saharan Africa (47% in 2002).

All but one transition country witnessed a decrease in the dependency proportion from 1990 to 2002, as did most regions of the world. In the transition region, this decline stemmed from a net effect; the decline in the proportion of youth was greater than an increase in the proportion of the elderly. The salient country exception to the trend of a declining dependency is Serbia & Montenegro. In 1990, 33% of Serbia & Montenegro’s population was either over the age of 65 years or under the age of 14 years. By 2002, this had increased to 44%, due to an increase in both the proportion of the elderly and youth.

The range in **crude death rates** across the transition countries is almost as high as global extremes: the Muslim-majority transition countries have among the lowest crude death rates worldwide (6.0 deaths per 1,000 in 1999-02), while the NFSU countries have among the highest crude death rates (15 in the same years), though not as high as Sub-Saharan Africa (17) on average (*Table 11* and *Figure 15*). Crude death rates held steady or decreased in the rest of world (outside the transition region) from 1990 to 2002, with the salient exception of Sub-Saharan Africa. Within the transition region, all eight of the Northern Tier CEE countries witnessed a decrease in crude death rates during this period, as did five of the six Muslim-majority countries (all except Albania). Crude death rates increased from 1990 to 2002 in all the Southern Tier CEE countries, and in four Eurasian countries (Russia, Ukraine, Belarus, and Kazakhstan).⁴

Trends in **adult mortality rates** shed significant light on trends in mortality in the transition region, and more broadly in natural changes in the population (*Table 12*). Male adult mortality rates are higher than female rates across the world. However, this **adult mortality rate gender**

⁴ As noted in written comments from the E&E Health team, it is difficult to reconcile the relatively low crude death rates found in Turkmenistan, Tajikistan, Azerbaijan, Uzbekistan, and Kyrgyzstan with the relatively low life expectancies in these same countries.

gap is the highest worldwide in the transition region. Within the transition region, it is among the highest in the NFSU countries. In 2002, the male adult mortality rate in the NFSU countries was 432 deaths per 1,000 adults; for females, it was 157 deaths. This means that roughly 43% of 15 year old males in the NFSU countries will die before reaching 60 years of age. Only in Sub-Saharan Africa is the male adult mortality rate higher: 519 deaths per 1,000 in the year 2000. The male adult mortality rate in the transition region is highest in Russia (464 deaths in 2002), followed by Kazakhstan (426 deaths).

The highest female adult mortality rates in the transition region are in Central Asia: Kazakhstan had the highest rate in 2002 (195 deaths), followed closely by Turkmenistan (193). Overall, female adult mortality rates in the Central Asian Republics (189 deaths on average) are higher than those rates in most other parts of the world, both in the developing and developed worlds. The salient exception is Sub-Saharan Africa, where female adult mortality rates are extremely high (461 deaths), almost as high as male adult mortality rates there.

The trends in adult mortality rates from 1990 to 2002 suggest a growing divergence between such rates in CEE and Eurasia. These rates fell in the Northern Tier CEE countries, generally held steady from 1990 to 2002 in the Southern Tier CEE, and fell in Eurasia during this time. In most parts of the rest of the world, adult mortality rates fell during this period, Sub-Saharan Africa, again, the salient exception to this favorable trend.

Maternal mortality rates are high in a number of transition countries, certainly by OECD standards. 2000 UNICEF estimates show maternal mortality rates to be highest in the transition region in Kazakhstan (210 deaths per 100,000 live births), Kyrgyzstan (110 deaths), Tajikistan (100), Azerbaijan (94), Russia (67), Estonia (63), and Armenia (55).⁵ Most maternal mortality rates in the advanced OECD economies are below 20 deaths per 100,000 live births. These rates are much higher among the poorest countries of the world; there may be 15 of the least developed countries where maternal mortality rates exceed 1,000.

Unsafe abortions may be a leading cause of maternal mortality. In fact, in several transition countries, the **abortion rate** may still actually exceed the number of live births. According to UNICEF, the abortion rate per 100 live births in Russia was 139 in 2002; it was 118 in Romania, 101 in Estonia, 96 in Belarus, 89 in Ukraine, 75 in Hungary, 76 in Bulgaria, and 73 in Latvia.

Life expectancy estimates include trends in birth and death rates, and may be the most basic indicator of the natural changes in a population. Life expectancy at birth indicates the number of years a newborn infant would live if prevailing patterns of age-specific mortality at the time of his or her birth were to stay the same throughout his or her life.

The average life expectancy in the transition region in 2002 was 68 years (*Table 13*). This is ten years lower than the average in the high income economies (and in the EMU). It is also less than the average of most developing country regions (including Latin America and the Caribbean, 71 years, East Asia and the Pacific, 70 years, and the Middle East and North Africa, 69 years). Only among the poorest developing country regions does the EE region compare favorably on this indicator. Life expectancy was 63 years in South Asia in 2002 and 46 years in Sub-Saharan Africa.

The transition country average masks some diversity. Life expectancy is highest in the Northern Tier CEE countries (74 years on average, highest in Slovenia at 76 years). It is lowest in Central Asia (65 years, and lowest within the Central Asian Republics in Kazakhstan, 62 years).

⁵ These numbers are drawn from the UNDP's *Human Development Report 2004*, and represent adjustments from officially reported figures. Most though not all of the adjusted figures are higher than the official numbers.

All but two regions in the world experienced an increase in life expectancy from 1990 to 2002. Only the EE region and Sub-Saharan Africa witnessed a decline; from 70 years to 68 years in EE, and from 50 years to 46 years in Sub-Saharan Africa. The drop in life expectancy in the EE region stemmed from pronounced declines in Eurasia; in fact, life expectancy in the CEE countries increased during this period.

The transition country average of life expectancy also masks considerable diversity by gender. In fact, the highest **life expectancy gender gaps** in the world are found in EE, among the NFSU countries where males on average live almost 12 years less than females (*Table 14* and *Figure 16*). In other parts of the world, the life expectancy gender gap increases with income: females live only 2 years more than males in the low-income developing countries; 4 years in the middle-income developing countries; and 6 years in the high-income economies.

The life expectancy gender gap has been generally stable from 1990 to 2002 in most of the world. It is roughly what it was in 1990 vs. 2002 for the low-income and high-income developing countries, and one year less in the case of the middle-income countries. In contrast, the gap has increased since 1990 by one year in the EE region, and by almost two years in the NFSU countries.

There are more women than men in the transition region (*Table 15*). The gender ratio, or the **percentage of the population that is female**, was 52.3% in 2002 in the transition region, virtually what it was in 1990 (52.2%). Within the transition region, the highest gender ratio is found in the NFSU countries (53.3%), while the lowest is predominantly found among the Muslim countries and Southern Tier CEE. Of all 27 transition countries, Albania has the lowest gender ratio (48.9%); Latvia has the highest (54.1%).

EE has the highest gender ratio in the world. The next highest country group is the EMU (51% in 2002), followed closely by Latin America and the Caribbean (50.8%). The lowest gender ratio worldwide is found in South Asia (48.5%).

Table 6: Average Crude Birth Rate (Births per 1000)				
	1991-94	1995-98	1999-02	1991-02
Uzbekistan	32.1	27.1	21.6	26.7
Turkmenistan	33.2	25.3	21.2	26.1
Tajikistan	33.1	24.4	20.2	25.6
Kyrgyzstan	27.1	23.6	20.3	23.6
Albania	22.9	20.3	17.2	19.9
Azerbaijan	24.5	18.1	15.5	19.1
Kazakhstan	19.4	16.0	14.6	16.5
Macedonia	17.6	16.0	13.8	15.6
Armenia	17.6	12.3	10.3	13.3
Bosnia and Herzegovina	13.5	13.8	11.8	13.1
Serbia and Montenegro	13.7	12.8	12.1	12.8
Moldova	15.7	11.9	9.4	12.1
Slovak Republic	13.9	11.4	10.4	11.8
Poland	13.3	11.1	9.6	11.2
Lithuania	13.3	10.7	9.3	11.1
Georgia	13.6	10.6	8.4	10.9
Romania	11.4	10.6	10.4	10.8
Croatia	10.3	11.2	9.8	10.5
Hungary	11.7	10.5	9.5	10.5
Belarus	11.8	9.5	9.3	10.1
Czech Republic	11.6	9.2	8.9	9.8
Estonia	11.0	9.2	9.2	9.8
Russia	10.4	9.0	9.0	9.4
Slovenia	10.1	9.4	8.9	9.4
Ukraine	11.1	9.1	8.0	9.3
Bulgaria	10.2	8.5	8.9	9.1
Latvia	11.2	8.3	8.3	9.1
Europe and Eurasia	13.8	11.8	10.8	12.1
NT CEE	12.7	10.6	9.5	10.8
Baltics	12.2	9.6	9.0	10.2
ST CEE	12.6	11.7	11.1	11.8
Eurasia	14.4	12.1	11.0	12.4
N. FSU	10.8	9.1	8.8	9.5
Muslim Majority	30.0	24.4	20.0	24.6
European Monetary Union	10.9	10.4	10.4	10.6
East Asia and Pacific	20.7	18.7	17	18.8
Latin America and Carib.	24.8	23	21.5	23.1
Middle East and North Afr.	30	27.5	25.2	27.6
South Asia	30.5	28.8	26.8	28.7
Sub-Saharan Africa	42.9	41	39.2	41
Low-Income Economies	33.2	31.4	29.5	31.3
Middle Income Economies	20.5	18.6	17.3	18.8
High Income Economies	13.1	12.3	11.9	12.4

World Bank *World Development Indicators*

Table 7: Average Total Fertility Rate						
	1981-85	1986-90	1991-94	1995-98	1999-02	1991-02
Tajikistan	5.6	5.3	4.2	3.5	3.1	3.6
Uzbekistan	4.8	4.3	3.9	3.2	2.6	3.2
Turkmenistan	4.9	4.5	4.0	3.2	2.4	3.2
Kyrgyzstan	4.2	3.9	3.4	2.9	2.5	3.0
Albania	3.3	3.0	2.8	2.5	2.2	2.5
Azerbaijan	3.1	2.8	2.7	2.1	2.1	2.3
Kazakhstan	3.1	3.0	2.4	2.1	1.9	2.1
Macedonia	2.4	2.2	2.2	1.9	1.8	2.0
Serbia-Montenegro	2.2	2.2	2.0	1.8	1.7	1.8
Moldova	2.8	2.6	2.2	1.7	1.4	1.7
Armenia	2.5	2.6	2.2	1.5	1.3	1.6
Poland	2.3	2.1	1.9	1.5	1.3	1.6
Slovakia	2.3	2.1	1.9	1.5	1.3	1.6
Bosnia-Herzegovina	2.0	1.8	1.6	1.6	1.4	1.5
Croatia	1.9	1.7	1.5	1.6	1.4	1.5
Lithuania	2.0	2.1	1.8	1.4	1.3	1.5
Hungary	1.8	1.8	1.8	1.5	1.3	1.5
Belarus	2.1	2.0	1.7	1.3	1.3	1.4
Georgia	2.4	2.2	1.8	1.3	1.1	1.4
Ukraine	2.0	2.0	1.7	1.3	1.2	1.4
Romania	2.3	2.2	1.5	1.3	1.3	1.4
Czech Republic	2.0	1.9	1.7	1.2	1.2	1.4
Estonia	2.1	2.2	1.6	1.3	1.2	1.4
Latvia	2.0	2.1	1.6	1.2	1.2	1.3
Russia	2.0	2.1	1.5	1.3	1.2	1.3
Bulgaria	2.0	1.9	1.5	1.2	1.3	1.3
Slovenia	1.8	1.6	1.3	1.3	1.2	1.3
Europe and Eurasia	2.3	2.2	1.8	1.5	1.4	1.6
NT CEE	2.0	1.9	1.6	1.4	1.2	1.4
ST CEE	2.1	2.0	1.7	1.4	1.4	1.5
Eurasia	2.4	2.3	1.9	1.5	1.4	1.6
N. FSU	2.1	2.0	1.7	1.3	1.2	1.4
Muslim Majority	4.1	3.8	3.4	2.8	2.4	2.9
European Monetary Union	1.6	1.5	1.40	1.40	1.50	1.4
East Asia and Pacific	2.8	2.7	2.30	2.20	2.10	2.2
Latin America and Carib.	3.7	3.2	3.00	2.75	2.55	2.7
Middle East and North Afr.	5.9	5.1	4.40	3.80	3.20	3.7
South Asia	4.9	4.3	3.80	3.55	3.25	3.5
Sub-Saharan Africa	6.5	6.2	5.90	5.55	5.20	5.5
Low-Income Economies	5.2	4.7	4.2	4.0	3.6	3.9
Middle Income Economies	3.0	2.8	2.4	2.3	2.1	2.2
High Income Economies	1.8	1.8	1.7	1.7	1.7	1.7

World Bank, *World Development Indicators* (2004).

