CHAPTER 6

FERTILITY DECLINE IN THE TRANSITION ECONOMIES, 1989-1998: ECONOMIC AND SOCIAL FACTORS REVISITED

6.1 Introduction

Fertility declined precipitously during the 1990s in the majority of the central and east European transition economies. In some, including Bulgaria and Romania as well as Belarus, the Russian Federation and Ukraine, the beginning of the decline coincided with the unravelling of the former socialist regimes in 1989 and the early 1990s. In others, for example in several central European economies, it occurred two to three years after the new governments were voted in and the shift to a market economy began. In the republics of the former SFR of Yugoslavia the trends were different: the steady declines of the 1980s continued into the 1990s without being significantly interrupted by the break-up of the country and the change of government. Across large areas of central and eastern Europe, the pace of decline was unprecedented in peacetime. In relative terms, it was faster than the pace at which fertility dropped in western Europe after the postwar baby boom ended there around 1965. The result was a grossly depressed fertility, which left the transition economies as a group with the lowest fertility rate in the world. In 1996, the mean total fertility rate, TFR,[496] for the transition economies was 1.35, that for the western market economies was 1.53.[497] These are some of the findings of the analysis published in the last year's *Survey*.[498]

The previous analysis sought, among other things, to explore in a tentative and speculative manner the causes – political, economic and social – of the fertility decline and the attendant shifts in its age structure and the spread of non-marital fertility. It concluded cautiously that the political events that had led to the fall of the German Democratic Republic and the Romanian regimes in December 1989 caused an immediate and massive fall in fertility. It found evidence, albeit inconclusive, that the unsettled political situation in the former Soviet Union around 1990 had also had a depressing effect on fertility. There was no apparent link between political change and the reduction in fertility elsewhere in the region. The analysis also explored the link between the fertility decline and the economic developments since the beginning of the transition process by looking into the relationship between the total fertility rate and aggregate output. It found a broadly positive, non-linear relationship in the Baltic countries and the European CIS economies after around 1990. The relationship persisted through 1995 in the former and lasted somewhat longer in the latter. The positive relationship was also found elsewhere in the region, although, in a number of countries it came to an end even earlier than in the Baltic states, when the fertility decline continued despite the resumption of economic growth. The question arises as to whether the continuing declines in fertility are due to the possible spread to this part of Europe of the new forms of family and reproductive behaviour favouring smaller families, that have prevailed in western Europe since the middle of the 1960s. The evidence suggests that this was probably the case in central Europe and the Baltic region, but not in the CIS and the south-east European countries.

This chapter is a sequel to the analysis in the 1999 *Survey*. In the following four sections, the first takes a fresh look at the fertility decline of the 1990s and examines changes in the age at which motherhood begins, an important aspect of fertility reduction. The subsequent section examines developments in the economic and social context within which the fertility changes took place. Among other things, the declines in output and employment, in labour force participation and wages, as well as the emergence and the rapid rise of unemployment are considered. These labour market changes are looked at with the view to understanding how the economic

[496] Total fertility rate is the average number of children that would be born per woman if all women lived to the end of their childbearing years and bore children according to a given set of age-specific fertility rates. The age-specific fertility rate is the number of births occurring during a specified period to women of a specified age group, divided by the number of person-years-lived during that period by women of that age group.

[497] The transition countries included in the analysis are all the European countries with transition economies except Albania and Bosnia and Herzegovina, for which the requisite data are not available. The market economies are the 16 west European countries that had populations over 1 million in the 1990s: Austria, Belgium, Denmark, Finland, France, western Germany (i.e. the territory of the Federal Republic prior to unification), Greece, Ireland, Italy, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom. The significance of these rates is the following: if they were to persist for a long time, which is highly unlikely, only two thirds of generations would be replaced in the transition economies as opposed to three fourths in the market economies.

[498] UN/ECE, "Fertility decline in the transition economies, 1982-1997: political, economic and social factors," *Economic Survey of Europe, 1999 No. 1*, pp. 181-194.

conditions of individuals and families were affected. Also examined is the general deterioration in state support for families with children, which also contributed to the decline in family living standards. Relevant social developments, such as the expansion in school attendance by women and the changes in methods of birth control are also considered. Then, in the third section, an attempt is made to explain the decline in fertility in terms of selected social and economic changes that swept the transition economies during the 1990s. In particular, it its proposed that the social and economic crisis of the 1990s was a major driving force behind the fertility decline and a fertility model is developed to articulate the role of the various social and economic changes discussed in the preceding section. A final section draws conclusions and addresses policy implications.

6.2 Falling fertility and later motherhood

The steep fertility decline began in one country or another at different dates but they were concentrated within a few years beginning in 1989 (chart 6.2.1). In the then European Soviet Republics and in Romania, the rapid fall started after a temporary increase in fertility.[499] In much of central Europe – the Czech Republic, Hungary, Poland and Slovakia – the rapid decline, which started in 1992 or later, followed a gradual fall that was already underway during the 1980s. East Germany (the former German Democratic Republic) initially followed the same path as its central European neighbours, but fertility then plummeted immediately after the fall of the regime at the end of 1989. In the former SFR of Yugoslavia, unlike the countries to its north and east – all members of the same economic and military bloc to which it did not belong – there were no major changes in fertility before or after the country disintegrated in 1991.[500]

Once the rapid decline got underway, it generally proceeded without interruption until after the middle of the 1990s. The only exceptions were east Germany, where a recovery began after TFR reached the astonishingly low level of 0.76 children per woman in 1993, and Croatia, where it recovered after the end of the war in 1995. In the majority of the other countries, the decline has appreciably decelerated in recent years or, as the data for 1997 and 1998 suggest, has stopped or even turned into a modest recovery. Where fertility was highest, for example in Slovakia, The former Yugoslav Republic of Macedonia and Yugoslavia, the decline generally appears to have continued. Where, at least for the time being, it appears to have run its course, the TFR, as a rule, has reached levels that by European standards are unprecedently low. In 1998, these were mostly below 1.3 children per woman, with Latvia (1.09) and Bulgaria (1.11) leading the other countries; in east Germany it has recovered to about the same level (1.09). The mean TFR in 1997 for this group of countries was 1.37, only slightly higher than in 1996, but a third lower than in 1988.[501] In brief, during these 10 years, fertility in the transition economies fell on average from a level ensuring the replacement of generations to two thirds of that level. However, in the course of the general decline, intercountry variations increased, the coefficient of variation rising from 11.8 in 1988 to 17.3 in 1997.

The rapid fall in fertility is just one of the most important changes in reproductive patterns since the late 1980s. Others are the spread of extra-marital childbearing[502] and a clear shift towards later motherhood. Like the spread of out-of-wedlock fertility, the postponement of motherhood is firmly established in some transition economies, while barely manifest in others. While the increase in extra-marital childbearing has shown no discernible subregional pattern, the advent of later motherhood is concentrated in central Europe and, to a lesser extent, in the Balkans.

The former socialist countries were well known for their relatively youthful fertility.[503] This reflected early marriage and a relatively swift transition from marriage to the birth of the first child.[504] How early the onset of motherhood was just over a decade ago is illustrated by the mean age of women at first birth for the late 1980s (chart 6.2.1).[505] In some of the most modern and prosperous of the former socialist countries – the Baltic states, the former Czechoslovakia and Hungary – motherhood started on average around the age of 23 or just below. The mean age of women at first birth was lowest in Bulgaria, at 22, while Romania, where the data for the period are limited, was probably only slightly behind. In the former German Democratic Republic, Poland and parts of the former SFR of Yugoslavia, for which the data are available, the mean age at first birth was somewhat older. The former Slavic Soviet Republics were in an intermediate position.

[499] The increase in the former Soviet Union was brought about by the family policies instituted during 1981-1983, and in Romania by the strengthening of the existing pronatalist polices in 1984.

[500] This is true for all the areas of the former federation except for Bosnia and Herzegovina. If data were available for this country, they would almost certainly reveal a major drop in fertility after the war broke out there. The exception of Yugoslavia to the rule suggests that the openness of a country to outside, particularly western influences, was a factor in childbearing patterns.

[501] The mean TFR for 14 European market economies in 1997, all those referred to earlier except Belgium and Spain, was 1.58.

[502] UN/ECE, *Economic Survey of Europe, 1999 No. 1*, pp. 181-194.

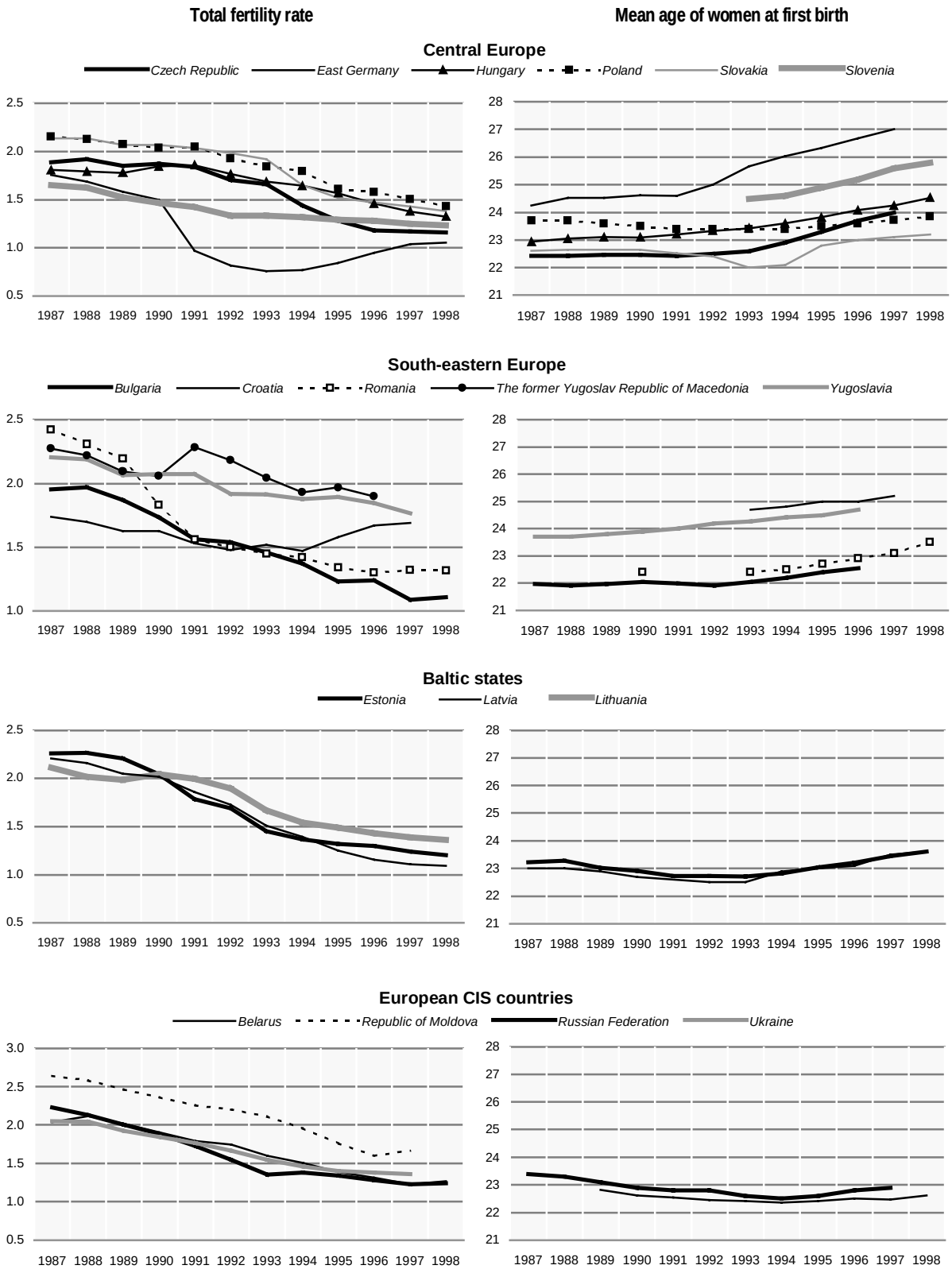
[503] Ibid.

[504] Modern contraceptive methods, such as oral contraceptives and inter-uterine devices were more widely used in some of the former socialist countries, such as the former Czechoslovakia, the former German Democratic Republic and Hungary, than in others. Their use in Romania was minimal, as they were illegal as part of the policy to keep fertility relatively high. However, even in countries where the use of such methods was relatively widespread, these were probably not widely used by young people having pre-marital sex. Unprotected sex within this group frequently led to pregnancy which, in turn, often precipitated marriage and the arrival within a few months of the first child. This contributed to early first marriage and the early onset of motherhood.

[505] The mean age at first birth is calculated as a mean of the schedule of first-birth rates by age rather than as a mean of the distribution of the numbers of first-time mothers by age. Thus, this mean is not influenced by the age distribution of women within the childbearing span. As a result, it allows geographical and temporal comparisons that are unaffected by variations in the age distribution of women across countries and time.

CHART 6.2.1

Trends in the total fertility rate and in the mean age of women at first birth in selected transition economies, 1987-1998
(Number of children, age of women)



Source: UN/ECE Population Database; Council of Europe, *Recent Demographic Developments in Europe* (Strasbourg), 1999.

The rise in the age of entry into motherhood from these low levels was particularly pronounced in central Europe, where it lagged behind the onset of the fall in fertility by a year or two (e.g. Hungary and Slovakia) or practically coincided with it (Czech Republic). The only exception is Poland, where a slow increase, following a stabilization, began around the middle of the decade. The upturn in south-eastern Europe, at least in the countries for which the information is available, occurred relatively early and was comparatively strong. The postponement of the onset of motherhood in parts of the former SFR of Yugoslavia, including Croatia and the present-day Yugoslavia, appears to have been underway at least since the middle of the 1980s. On the other hand, in the former Soviet Republics considered here, the limited evidence shows that the age of entry into motherhood fell during the first five years or so when fertility was falling rapidly. The reversal of this trend has been somewhat more pronounced in the Baltic states than in the European CIS countries (the former Slavic Soviet Republics and the Republic of Moldova).

Reductions in fertility often go hand in glove with the postponement of the onset of motherhood and, in some instances, with the delay in childbearing in general.[506] In particular, where women choose to defer first- and higher-order births, the postponement brings about a decline in the period indicators of fertility levels, such as period TFR used in this analysis. A recent analysis for the European Union countries has shown that part of the decline in the TFR in France since 1970 and in Belgium and Italy after 1980 have been due to the postponement of childbearing, including the delay in the onset of motherhood.[507] The study also showed that in all three countries the postponement occurred across-the-board: the mean ages at first- to higher-order births all increased over time and they did so at rates that were inversely related to birth-order. This finding has a direct bearing for the analysis of the transition economies in this chapter, because it strongly suggests that part of the decline in TFR in central and south-eastern Europe may be due to the postponement of first- and possibly second- and higher-order births. It also suggests that the fertility decline in the European CIS countries has not been influenced by postponement. In the Baltic countries, postponement might have been a factor since the middle of the 1990s, although it was probably a minor one.

6.3 The economic and social context of fertility change

The deepening structural problems and the attendant slowdown of the former centrally-planned economies during the 1980s culminated in an economic standstill at the end of the decade. The response of the new governments to this situation, which was more vigorous in some countries than others, was to embark on unprecedented programmes of economic reform and related institutional change. Everywhere, the transition was initially associated with an economic downturn: declines in output, employment and trade occurred together with increases in unemployment and inflation or hyperinflation.[508] Real wages, social benefits and entitlements, and by implication, standards of living have fallen too. A striking indication of how taxing the transition had become for society was the temporary rise in mortality that swept many parts of the new countries that emerged from the demise of the Soviet Union. Some of these adverse trends were reversed relatively quickly in some countries, persisted in others for several years before improving and continued largely uninterrupted until the end of 1998 in others. The extent to which these trends have contributed to the fertility decline is examined below.

(i) Changing output and employment levels, shifting wage rates and incomes[509]

Judging by the change in aggregate output, the depth and duration of the economic crisis varied enormously across the region (chart 6.3.1). In central Europe, where the break with the communist past was relatively swift and clean, the losses in output were relatively moderate, ranging between 15.4 per cent in the Czech Republic to 25 per cent in Slovakia, and the return to growth also occurred relatively early, during 1991-1993. Poland's recovery, one of the earliest, has been the most successful leading to an output level in 1998 that was by one sixth higher than in 1989. Once it got underway, the return to growth in the Czech Republic and Hungary has been hesitant and, as a result, GDP in these countries had failed to return to its pre-decline levels by 1998. Slovakia and Slovenia occupy an intermediate position, where output levels in 1998 had reached their pre-reform levels.

The European CIS countries have fared worst, with the largest declines in aggregate output. After sharp declines during the early 1990s and more moderate ones thereafter, these countries, with the exception of Belarus

[506] Shifts in the onset of motherhood are typically analysed using period or cross-sectional information on the mean age of women at first birth. Changes in the timing of childbearing are, as a rule, studied employing period information on the mean age of childbearing; see, for example, UN/ECE, *Economic Survey of Europe, 1999 No. 1*, chap. 4. The practice of using period indicators rather than those for yearly birth cohorts is necessitated by data limitations and/or, more importantly, by the fact that cohort indicators become available only years after the shifts that are of interest have taken place. (The indicators for cohorts can be derived only after these have completed childbearing.) The present analysis, therefore, uses the period indicators.

[507] R. Lesthaeghe and P. Willems, "Is low fertility only a temporary phenomenon in the European Union?" *Population and Development Review*, Vol. 25, No. 2 (New York), 1999, pp. 211-228.

[508] For an analysis of trends in inflation for selected transition economies see UN/ECE, *Economic Survey of Europe 1999 No. 1*, chap. 3.4.

[509] This subsection and the next, 3(i) and 3(ii), review the changes in aggregate output and labour markets that have been part of the analysis reported in the *Survey* since the early 1990s. The reader familiar with this analysis will find limited new evidence or interpretation of those changes but they are examined here in order to make the analysis self-contained.

had still not seen a return to growth by 1998. Aggregate output in the Republic of Moldova and Ukraine in 1998 was as low as one third and two fifths, respectively, of the 1989 levels. In south-eastern Europe and the Baltic states, the return to growth occurred relatively early, in most cases during 1993-1995. Growth has not been robust, however, and in countries such as Bulgaria and Romania it was interrupted by a new recession in 1996-1997. As a result, the 1998 aggregate output levels in the south-east European and Baltic countries were approximately between 60 and 80 per cent of the 1989 levels.

At one end of the spectrum, Hungary, during the first half of the 1990s, adopted an approach whereby employment had to bear the full adjustment to falling output with real wages remaining stable, although this later changed. Employment in Hungary fell by 30 per cent by 1996, after which it slightly recovered, and this was in response to a decline in aggregate output of 18 per cent by 1993 and a subsequent recovery. At the other end of the spectrum, for example, in the Ukraine, a massive, 60 per cent loss of output by 1998 was associated with the smallest loss in employment (12 per cent). The Republic of Moldova is perhaps even more striking: a two-thirds loss in output by 1998, with somewhat more than a one-fifth loss in employment. In other words, the largest declines in employment were not necessarily in the countries that suffered the most severe recession in output. Consequently, the losses in employment have been much more uniform across the region than those in output.[510]

This approach to protecting workers and their families from massive unemployment could only have been achieved at a price: real wages had to take the brunt of the adjustment. This was particularly the case in one or two countries in each of the subregions except central Europe – in Bulgaria and The former Yugoslav Republic of Macedonia, in Lithuania, and in Belarus and the Republic of Moldova – where the declines in real wages between 1989 and 1998 amounted to about 60 per cent or more.[511] The real wage losses in these countries by 1997 or 1998 have been very large. They were larger than elsewhere in Belarus and the Republic of Moldova where in 1998 they were 6 and 25 per cent, respectively, of their levels in 1989.[512] In most east European countries, the lowest levels were reached in the first half of the 1990s, after which, hardly any improvements have occurred. In central Europe, the lowest levels were reached in the early 1990s and the increases thereafter have often been substantial.

The declines in employment and real wages have combined to produce reductions in the real wage bill, the sum of all real wages paid to employees (chart 6.3.1). In central Europe, these declines have been large and although there has been a recovery from the lowest levels reached, as a rule, in the early 1990s, by 1998 the wage bill has not regained the levels of 1989. In other parts of the region, the declines have been considerably larger than those in central Europe. The recovery, where it occurred, has been limited and, consequently, the wage bill levels in 1998 were at least 50 per cent below those in 1989.

The bulk of earnings accruing to households headed by persons in their childbearing years during the communist era consisted of wages earned by their members. This was particularly true of countries, such as the former Soviet Union, where economic activities were almost entirely confined to the state sector. There were other sources of household income, including various state transfers as well as proceeds from sales by private-farm households when these were allowed to operate. Other types of income included income in kind, or the value of home production, especially relevant in rural areas, plus money made in the private, as a rule, informal sector and/or the grey economy. These sources of household income have become diversified as the former centrally-planned economies have moved towards free markets. Nevertheless, wages have remained the prime source of income, although their relative contribution to the household incomes has probably declined. For example, in countries making rapid progress towards a market economy, non-labour incomes, such as capital income, may have risen. In the transition economies that have fared worst, there has probably been an increase in the importance of home production, a response to falling wages. In sum, the share of wage income in household income may have fallen, but it is certain that it has remained the dominant component. Consequently, the declines in the real wage bill paint a rough (and possibly bleaker) picture of the decline in household incomes and, by implication, the living standards of households headed by people in their childbearing years.[513]

[510] The declines in employment that have been proportionately much smaller than the losses in output are more typical of the countries that emerged from the break-up of the Soviet Union, particularly the European CIS countries, than of the central and south-east European transition economies. It is obvious that the governments in those countries sought to avoid massive unemployment by allowing the already chronic underemployment to rise even higher. Behind this response to economic decline were a number of factors: firstly, the legacy of socialist-era employment policies, the basic axiom of which was that every able-bodied person should work, probably remained strong. And secondly, keeping the majority working, if only nominally so and, in the process, making it possible for them to earn income and enjoy social protection, no matter how meagre, was probably a way of maintaining social peace.

[511] Data on real wages used in this analysis have limitations and the results based on them ought to be taken with a measure of caution. For the majority of the transition economies, the information comes from the Common Database maintained by the secretariat of the United Nations Economic Commission for Europe. Whenever possible, net wages have been used. Where these were unavailable, gross wages have been employed. For a few remaining countries, the three Baltic states, for which the ECE database lacks information, gross wage data from the UNICEF's TransMONEE 4.0 Database have been used.

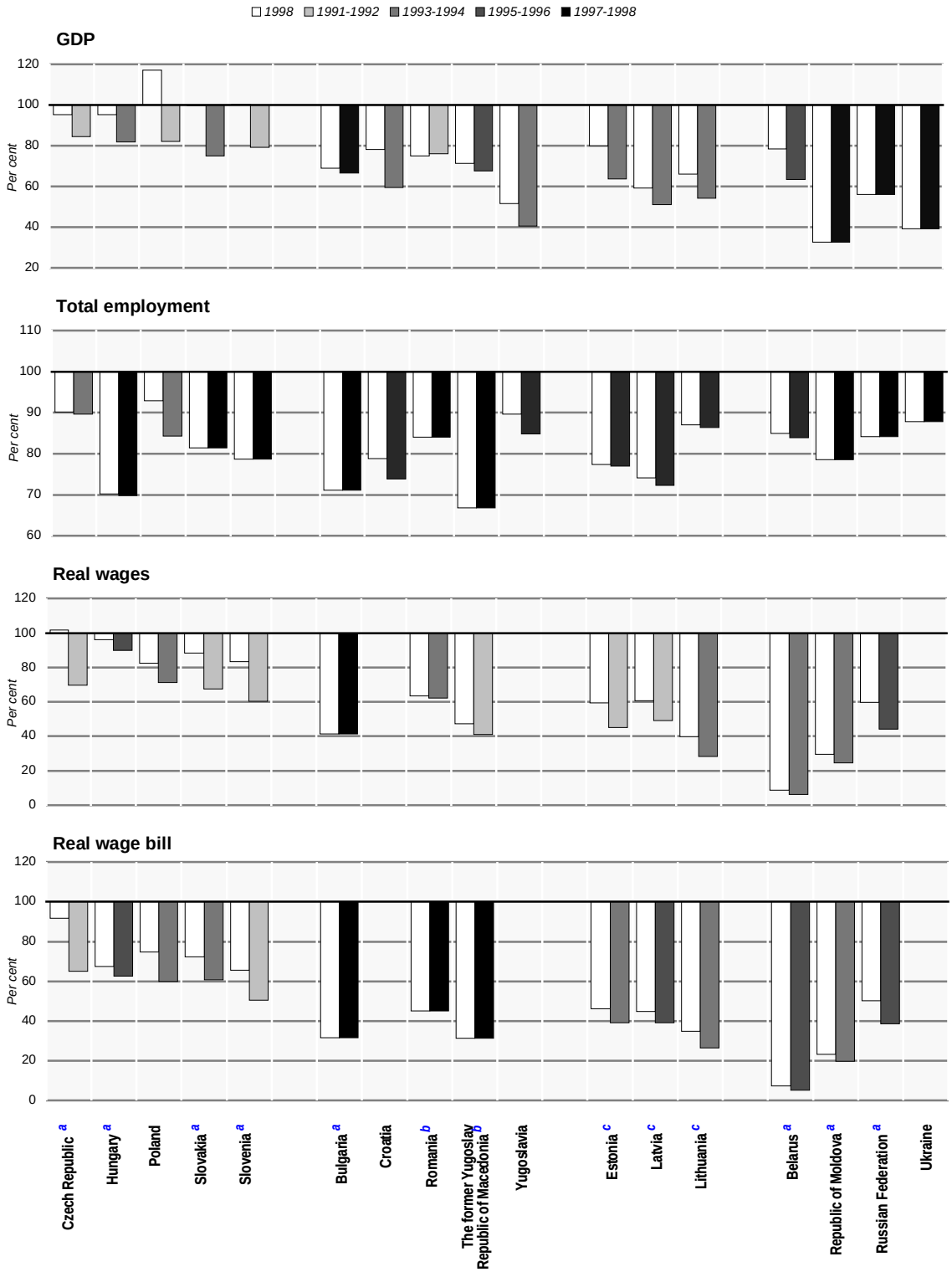
[512] The official wage data for Belarus appear suspect. The reader's attention is called to the fact that another source (TACIS, *Belarus Economic Trends*, January 1999) suggests that the official data for 1994 are erroneous, resulting in implausibly low real wage (and wage bill) indices for the dates beyond this year. *Belarus Economic Trends* has been prepared by TACIS staff assisted by Belarusian government.

[513] In some transition economies, particularly in the European CIS countries, wage arrears have been endemic. As the real wage and wage bill information does not reflect the delays in wage payments, the declines in household incomes suggested by these data are probably understated. In other words, the falls in living standards in countries where wage arrears have been common are probably understated.

CHART 6.3.1

Change in aggregate output, total employment, real wages and the wage bill in selected transition economies, 1989-1998

(Indices for these variables in 1998 and in the period when they reached their lowest levels – 1991-1992, 1993-1994, 1995-1996, 1997-1998 – 1989=100)



Source: UN/ECE Common Database; TransMONEE 4.0 Database.

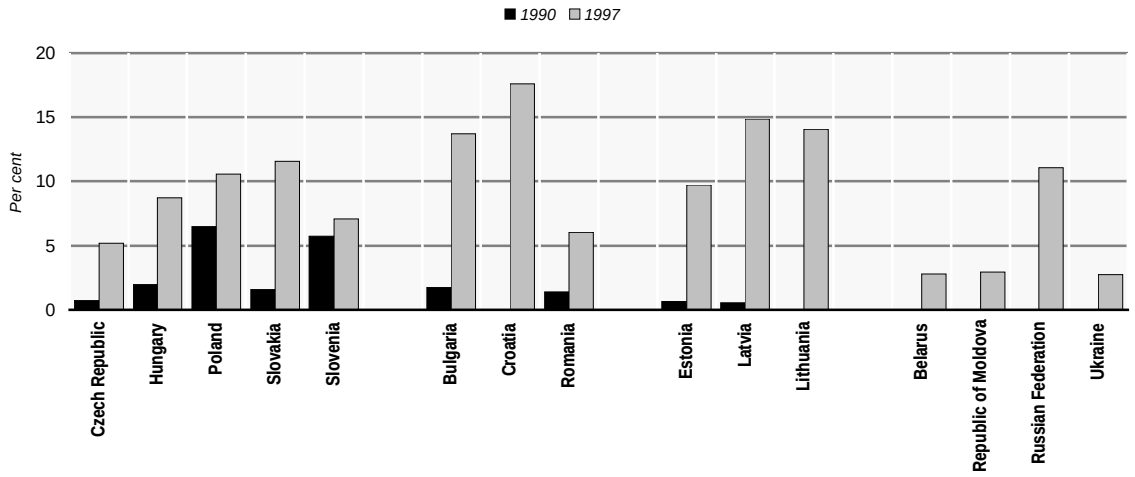
a Change in real gross wages in total economy.

b Change in real net wages in total economy.

c Change in real net or gross wages in total economy (TransMONEE 4.0 Database).

CHART 6.3.2

Unemployment rates in selected transition economies, 1990 and 1997
(Per cent)



Source: UN/ECE secretariat estimates, based on national labour force surveys, statistical yearbooks and direct communications from national statistical offices.

Note: This chart is based on both registration and labour force survey data. The 1990 unemployment rates have all been estimated using registration data. The 1997 rates for Estonia, Hungary, Latvia, Lithuania, Romania, Russian Federation, Slovakia and Slovenia have been obtained from labour force survey data. For the rest of the countries the rates for the same year have been derived from registration data.

(ii) Rising unemployment and falling labour force participation

The reduction in employment has everywhere been accompanied by a rise in unemployment and a fall in labour force participation. The advent and rise of unemployment in a region, where the former regimes had prided themselves on their ability to secure full employment, cannot be portrayed with great certainly.[514] However, the broad picture is clear: whereas unemployment only began to appear at the beginning of the decade in all countries except the former SFR of Yugoslavia, in the majority of those for which the data are available, it approached or surpassed 10 per cent of the labour force by 1997 (chart 6.3.2).[515] Nearly one out of seven persons in the labour force was looking for work in Bulgaria, Latvia and Lithuania at this time. The figures for Estonia, the Russian Federation and Slovakia were one in 10, while the rates in other countries for which the information is available have been below 10 per cent. The unemployment rates in Belarus, the Republic of Moldova and the Ukraine, are based on registration data and therefore grossly understate the extent of joblessness. Furthermore, in the European CIS countries, true unemployment would have been higher had there not also been a substantial number of employees on compulsory unpaid leave.

The result in terms of unemployment for men and women has been similar, according to the labour force survey data (chart 6.3.3)[516]. The unemployment rates by sex in 1997 reveal that women have fared worse than men in parts of central Europe, particularly in the Czech Republic, Poland and Slovakia. The picture was mixed elsewhere, with men in Estonia, Hungary and the Russian Federation suffering from somewhat higher unemployment than women. This suggests that deteriorating labour market conditions have not necessarily been more detrimental to women than men.

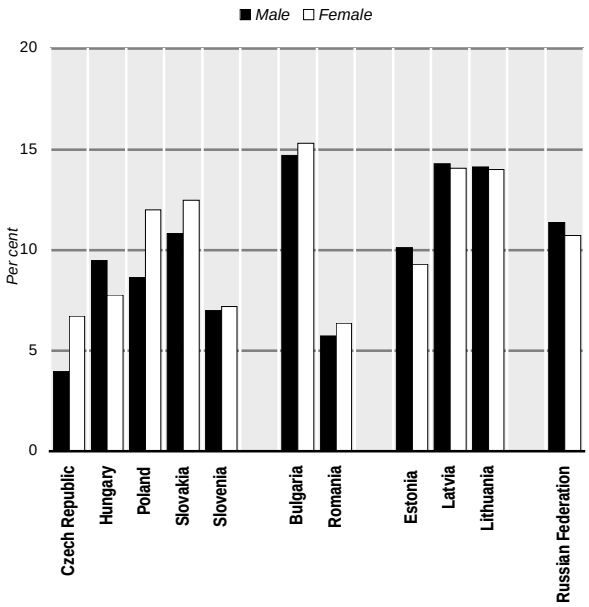
[514] The unemployment data suffer from various limitations. In the Baltic states and the European CIS countries, registration data substantially underestimate unemployment. There, labour force surveys provide superior information on unemployment, but these have been only conducted in the Baltic states and the Russian Federation and not throughout the period of observation. In the case of these countries, survey data has been used. For Belarus, the Republic of Moldova and Ukraine, only registration data, that badly understate unemployment, are available. The data problems in central and south-eastern Europe are less severe but not absent. Comparisons between unemployment figures based on registration and survey data suggest that the two broadly agree in several of these countries – Bulgaria, the Czech Republic and Poland. For these countries registration data have been used. Elsewhere, in Hungary, Romania, Slovakia and Slovenia, the comparisons suggest that, possibly due to attractive unemployment benefits, registration data overstate true unemployment. For these two countries labour survey information has been used. No reliable data are available for The former Yugoslav Republic of Macedonia and Yugoslavia, while labour force survey data are available for only certain years in the case of Croatia.

[515] As indicated in the previous footnote, two sources of information on unemployment, including labour force surveys have been used. The data available from the latter source for 1998 and 1999 were not available at the time of writing. This is the reason why the latest data shown in chart 6.3.2 are for 1997. For some countries, in particular Bulgaria, the Czech Republic and Poland, unemployment registration data for December 1999, which are considered to be of good quality, indicate that the unemployment rate increased in all three; it almost doubled in the Czech Republic since 1997 (see table 3.5.4). In the Russian Federation, for which official estimates are available, the unemployment rate rose by 1 percentage point between 1997 and December 1999.

[516] An in-depth analysis of the transition economy labour markets from a gender perspective has been published in last year's *Survey*. See, UN/ECE, *Economic Survey of Europe 1999 No. 1*, chap. 3.5.

CHART 6.3.3

Unemployment rates by sex in selected transition economies, 1997
(Per cent)



Source: UN/ECE secretariat estimates, based on national labour force surveys, statistical yearbooks and direct communications from national statistical offices.

Whether or not this indeed has been the case depends on whether or not women's attachment to the labour market is as strong as that of men. If women drop out of the labour force in relatively larger numbers than men, their unemployment rates will be lower than otherwise (see below).

The contraction in employment has led not only to unemployment, but also to withdrawals from the labour force. Labour force participation rates, high by international standards in 1990, have declined everywhere (chart 6.3.4).[517] Hungary, where the decline in employment has been steepest, also had the largest reduction in participation; by 1997 its activity rate was more than one fifth lower than in 1990. In the majority of the transition economies for which the relevant data are available, the falls in activity rates were more moderate, between 5 and 10 per cent.

Information available for a minority of the transition economies reveals considerably larger declines in activity rates for women than for men; Slovenia is the only exception. The data, which portray broad changes since the middle of the 1980s, are available for four central European countries – the Czech Republic, Hungary Poland and Slovenia – and for the Baltic states and the Russian Federation (chart 6.3.5). They suggest that the falls in female participation rates have been considerably smaller in central Europe than in the Soviet successor states. Female activity rates in the latter countries, at or close to the rates in 1985, had fallen to 75-80 per cent of these rates by 1997.

The labour force surveys provide information as to how this gender gap has grown in recent years. It has widened in the Russian Federation since 1992, in Hungary since 1994 and in Lithuania since 1996, the years when the first surveys were conducted. The gap has either not grown at all, or not significantly, since the survey data (plus early estimates in the case of Estonia) have been available – since 1990 in Estonia, 1992 in Poland, 1993 in the Czech Republic and since 1995 in Latvia.[518]

In sum, the limited evidence suggests that women have grown more "discouraged" than men as the labour markets deteriorated, and therefore have left the labour force in larger relative numbers than men have. This trend was more pronounced in the Baltic states and the Russian Federation, and possibly in the other European CIS countries, than in central Europe. What has been the fate of working women in the three European CIS countries, is difficult to establish. It is conceivable, however, that they have also fared worse than men. The higher propensity to withdraw from the labour market has moderated the increase in female unemployment rates, since the increases in these rates have not in any significant or systematic manner outstripped the increases in male rates. Irrespective of whether it was voluntary or not, a growing proportion of women that once worked have found themselves at home, available to focus on childbearing, child-raising and homemaking. Also, probably a rising proportion of younger women, who have never held jobs, are facing the same situation.

(iii) Declining state support to families

Family policy was an important component of the elaborate system of social policies during the communist era.[519] Initially, the overriding aim of the family policy was the alleviation of poverty and the promotion of social and economic equality.[520] Later, as fertility has

[517] These rates are defined as the numbers of persons in the labour force per 100 persons aged 20-59.

[518] It can also be deduced from these limited data that substantial sex differentials in activity rates emerged in Estonia, Latvia and the Russian Federation prior to the indicated dates, that is before the collapse of the Soviet Union, in the case of Estonia and the Russian Federation. The increase in male activity rates in Estonia and Latvia contributed to the gap and according to the data, the development in Estonia took place during the second half of the 1980s. Peculiar as these developments appear to be, they require further research in order to establish whether the gap began to open before the Soviet Union collapsed and whether perestroika policies contributed to it.

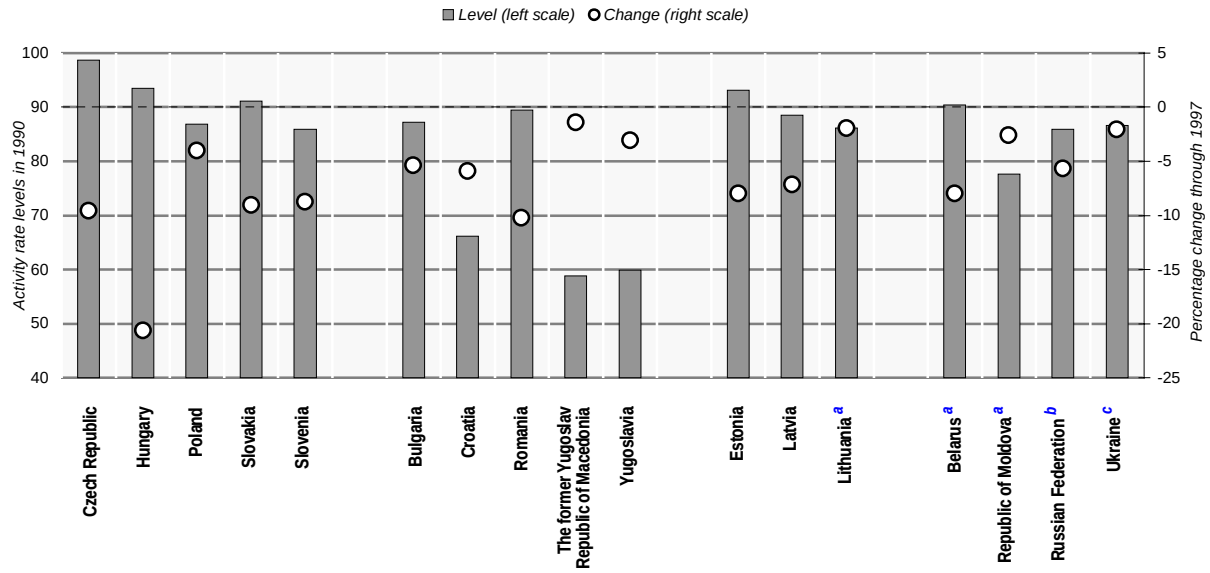
[519] The term "family policy" is used here to denote a variety of measures and programmes that the state implements with the objective of providing families with children with different types of benefits and services. The benefits can be monetary and in kind and may include advantages such as tax exemptions and various types of leave-from-work entitlements. The term also refers to other measures enabling men and women to better balance their parental and work roles.

[520] See, for example, M. Macura, "Population policies in socialist countries of Europe," *Population Studies*, Vol. 28, No. 3 (London), 1974, pp. 369-374.

CHART 6.3.4

Activity rates in selected transition economies, 1990-1997

(Levels in 1990, relative changes between 1990 or the earliest available year and 1997)



Source: National statistics and UN/ECE secretariat estimates.

a 1991.

b 1992.

c 1993.

approached or fell below replacement level, the revival of fertility and of population growth became central objectives. In Romania, the obsession with this aim was complete: highly restrictive and coercive measures were adopted and vigorously pursued. In a few countries, including the former Czechoslovakia and Hungary, other social policies, such as housing and employment policies, were modified in order to support the pronatalist effort. Unlike in Romania, the approach of the party and the state in these countries was to generously assist couples so that the number of children they would choose to have would be in line with the expectations of the state. In Poland and the former SFR of Yugoslavia, demographic developments were such that it was not necessary for governments to influence them. In sum, there were major cross-country variations in the resort to policy instruments, in particular to measures designed to influence fertility behaviour and outcomes. The legacy of these policies is still very much present in the transition economies today. This section looks at how some important aspects of these policies have evolved since the early 1990s, with the focus on the financial benefits and leave entitlements enjoyed by families with children.

Three types of financial benefit and two related leave entitlements have been the centrepiece of state support to families with children in recent years.[521] These have included maternity benefits and leave, to which working women have been entitled during the months straddling the birth of a child. Maternity leave has varied between four months in Latvia and Romania, the shortest leave anywhere, and seven and a half months in Bulgaria, to which only women giving birth to their third-order children have been entitled. In no country did the length of this leave change during the period of observation. The compensation for lost income during maternity leave was complete in the majority of the countries for which the relevant data could be collected – Bulgaria, Poland, the Baltic states and the CIS countries.[522] It was partial in the others: just over two thirds in the Czech Republic, for example, while it has increased with birth order in Romania, reaching 94 per cent in the case of third and higher-order births.

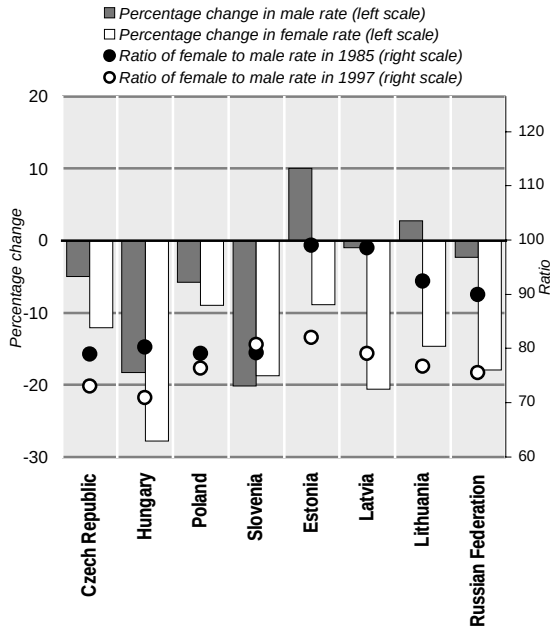
In all countries women have been entitled to childcare leave immediately after the end of maternity

[521] The results reported in this section refer to 1991-1997. The data from which they have been derived have been available only for odd numbered years, that is 1991, 1993, 1995 and 1997. As a result, it is not possible to give the precise timing of changes in the various benefits or entitlements. For example, a change in a particular benefit between any two years for which the information is available could have resulted from a relevant policy change in the latter of the two years or the one just prior to it. The data have been drawn from the UN/ECE Common Database, ILO, *Statistical Yearbook*, International Social Security Association data, and direct communications from relevant national agencies. The data have been verified for all but two countries – Estonia and Romania – by means of correspondence with those agencies.

[522] Apart from Albania and Bosnia and Herzegovina; the data were not available for Croatia, The former Yugoslav Republic of Macedonia and Yugoslavia, as well as for the Republic of Moldova.

CHART 6.3.5

Change in activity rates by gender in selected transition economies, 1985-1997
(Per cent)



Source: UN/ECE secretariat estimates, based on national labour force surveys, statistical yearbooks and direct communications from national statistical offices.

leave, thus making it possible for them to remain at home in order to care for their children. (This entitlement existed in Hungary until 1997, when it was abolished.) The length of childcare leave has varied a great deal between the countries and has changed over time in some countries. In the Czech Republic and Slovakia, where the provisions were very generous, women could remain at home until the child's third birthday. In Slovenia it was limited to nine months, while in the Russian Federation it was 15.5 months. In some countries, after the initial childcare leave had ended, women were also entitled to extended childcare leave. In all countries, the women would receive a compensation for lost income while on leave. In some countries, for example in Poland, this compensation was means-tested. Although there are a myriad of formulae for establishing the level of compensation, whatever women did receive was not influenced by the birth-order of the child they were raising. The only exception to this rule is in Estonia since 1995, where the compensation increases with the birth-order of the child. The level of compensation as a proportion of the average gross wage rate for the total economy has steadily declined in some countries (for example, in Bulgaria), in others the decline has been arrested and/or reversed (for example, Lithuania), and in a number (Czech Republic, Hungary and Slovakia) has remained largely stable. Only in Slovenia have women been fully compensated for their lost income during such leave.

Another universally available benefit since the beginning of the 1990s has been the child allowance payable to parents at the birth of a child. Before the change of regime, the child allowance had existed everywhere and often they were at the heart of pronatalist policies, particularly in parts of central and south-eastern Europe.[523] The post-1989 governments have retained these allowances, but at the same time many of them have been purged of their pronatalist bias, although in Estonia and Latvia, the allowances, which until 1995 did not have a pronatalist slant, have been modified to reward parents having higher-order births. Another aspect of the reforms has been a marked trend towards means-testing. In central and south-eastern Europe, this has become the rule while in the Baltic states and the European CIS countries it had not yet made significant inroads by 1997. The only exception is Belarus since 1993.

Analysing the impact of these various financial benefits and leave entitlements on family well-being is exceedingly difficult. A large part of the problem arises from the fact that the benefits and entitlements have an impact not only on the economic but also on the psychological well-being of the family. Assessing the latter is for all practical purposes intractable. A lesser problem arises from the fact that unless the information on the benefits and entitlements can be compressed into standard indicators, comparisons across countries and over time remain elusive. In order to make such comparisons possible, several synthetic indicators have been constructed using the data on the various benefits and leave entitlements mentioned above. It should be emphasized that such indicators only capture the influence of the relevant policy measures on the income or economic well-being of the family. One of these indicators used in the analysis below, expresses income, consisting of wage income and family benefits, as a proportion of the average gross wage for the whole economy. The indicator has been calculated for one- and two-child families where both spouses are working (chart 6.3.6).[524]

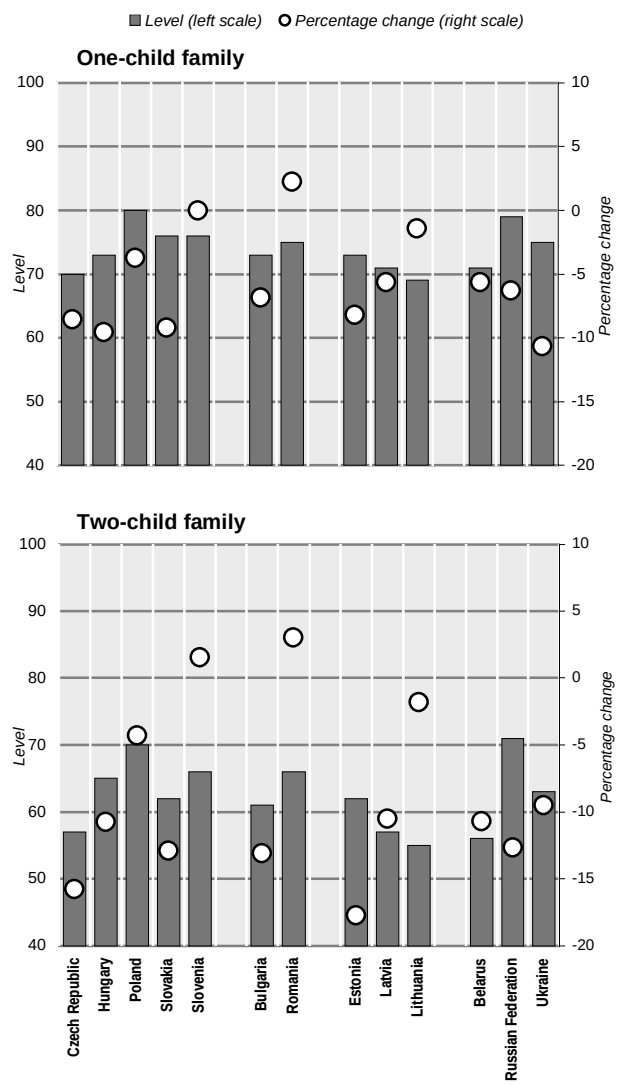
[523] Governments pursuing pronatalist objectives would set them in a manner to stimulate births of a particular order, such as third- or second-order births. This was not the case in Poland, where the allowances were means-tested, and in the former SFR of Yugoslavia. Neither country pursued pronatalist objectives. In Romania, the allowances were also means-tested and probably a minority of families received them. The Romanian regime kept fertility relatively high by prohibiting modern contraceptives and induced abortion rather than by making parenthood more affordable.

[524] The indicator is constructed on the basis of several assumptions. In order to calculate it for a *one-child family* for any given year, it is assumed that the couple enjoys that year's benefits and entitlements over a 10-year period, that the husband works throughout the period and earns the average gross wage, and that when not on maternity or childcare leave, the wife also works and earns the same average wage. Their child is assumed to be born nine months after the 10-year period begins and survives to the end of it. For a specified number of weeks before and after the delivery, the woman is assumed to be on maternity leave, receiving the compensation in force during the year in question. She begins childcare leave immediately after the maternity leave is over and remains at home through the end of the leave (or extended childcare leave) when she returns to work. The stream of income over the

CHART 6.3.6

Ratio of per capita family income to the average gross wage in selected transition economies, 1991-1997

(Level of the ratio in 1991 and percentage change in the ratio during 1991-1997)



Source: UN/ECE Common Database; ILO, *Statistical Yearbook* and International Social Security Association data (various issues); direct communications from national agencies.

The change in the indicator between 1991 and 1997 suggests that the wage-standardized per capita income has declined everywhere except in Romania and Slovenia because of the fall in state support for the family. The fall in the indicator has been mostly within the range of 5-10 per cent for the one-child family and somewhat more for the two-child family. Everywhere in central and south-eastern Europe, except in Slovakia, the decline accelerated over time although this is not shown in the chart. As in Slovakia, the decline in the Baltic states and the European CIS countries was initially quite rapid. In the three CIS countries, the decline was reversed from 1995, but this did not occur elsewhere in this subregion. In sum, the decline of public support to the average one- or two-child family has eroded its standard of living during the period of observation. Although the effect has not been very large, it has helped compound the negative impact of the declines in employment and wages on the family living standard.

hypothetical 10-year period includes the wage income, the maternity and childcare leave compensation as well as the child allowance. In cases where childcare benefits and/or child allowances are means-tested, the couple receives one and/or the other depending on its wage income. Per capita income is calculated by dividing the amount of income for the 10-year period by the number of adult equivalents. It was assumed that the contribution of a child to this number equals 0.7. The indicator itself for each year was obtained as a ratio of the per capita income and the 10-year period average wage prevailing during the year in question. The calculation of the indicator for the *two-child family* is analogous, the only difference being that the couple is assumed to have a second child 50 months after the beginning of the 10-year period.

(iv) Some gains for women amidst the losses

The 1990s were a period of growing hardship for a large majority of people in most, if not all, of the transition economies. As indicated earlier, judging by the trends in the wage bill, the incomes of households headed by persons in their childbearing years were roughly halved almost everywhere but in central Europe before small improvements in a few countries, particularly in the Baltic states, occurred. It is very likely that women were hit harder by the falling standards of living. Traditionally, theirs has been a triple role in the family: as mothers, homemakers and, in spite of withdrawals from the labour force and rising unemployment, workers as well. Fulfilling these roles, especially under the conditions of falling incomes or, for growing numbers outright poverty, has been very difficult. The decade, however, was not solely a period of losses for women. There have also been clear gains, including those pertaining to education and birth control.

(a) Surging tertiary-school enrolment

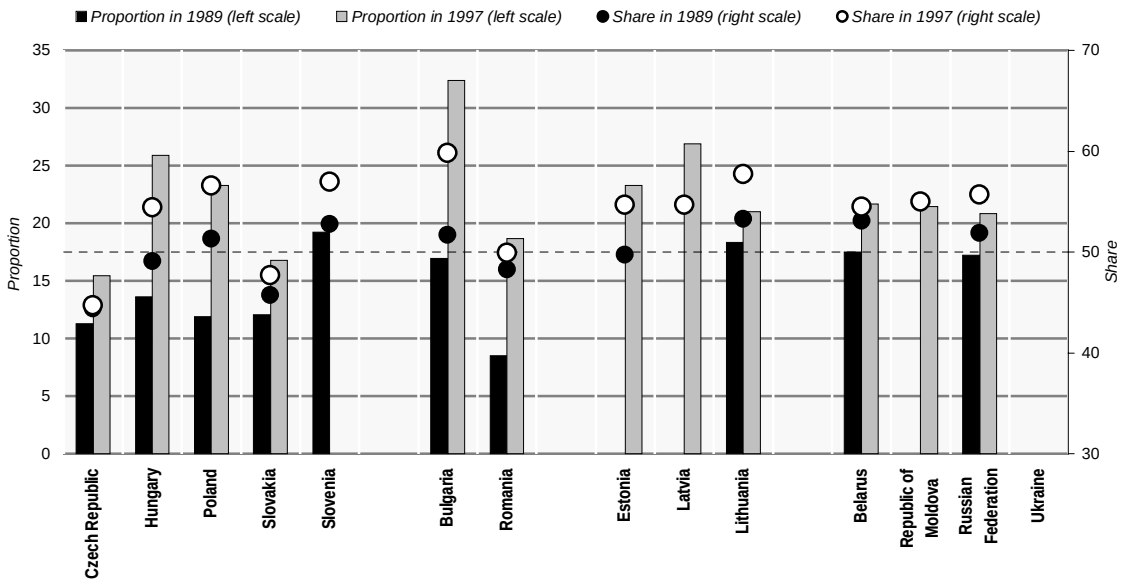
Despite temporary economic setbacks, or uninterrupted economic decline, in some cases, the 1990s have also been a period of further gains in education among girls and women. Enrolment in tertiary or higher education has grown everywhere, for both men and women. The data, which are somewhat limited, show that female tertiary enrolment has risen fast, and more rapidly than those for males (chart 6.3.7).[525] In parts of central Europe (Hungary and Poland) and south-eastern Europe (Bulgaria and Romania), the proportions of 18-22 year old women attending higher education institutions have doubled. Elsewhere in central Europe and in the European CIS and Baltic countries progress has been more modest. The increases have resulted in enrolment

[525] The data come from UNICEF's TransMONEE 4.0 Database. Available in the database are time series on i) the proportions of 18-22 year old persons pursuing tertiary education and ii) the proportion of females among the tertiary-school students. The two series have been used on the assumption that the sex ratio of the 18-22 year old population equals one in order to derive the time series on the proportion enrolled in tertiary schools among women aged 18-22.

CHART 6.3.7

The proportion of women aged 18-22 years enrolled in tertiary education and the share of women among tertiary education students in selected transition economies, 1989-1997

(Per cent)



Source: TransMONEE 4.0 Database; UN/ECE secretariat estimates.

rates in 1997 that were mostly within the 15-25 per cent range. In spite of these increases, these enrolment levels were significantly lower than those in the European Union in the first half of the 1990s, when they were mostly within the 40-50 per cent range or even higher.[526]

As the socialist era drew to a close, access to education and, in particular, to higher education was roughly equal for men and women. If anything, women fared slightly better than men, enjoying a modest numerical advantage in many of the present-day transition economies. In 1989 the share of women among higher education students was around 50 per cent or higher in the majority of these countries; their share increased practically everywhere during the 1990s, bringing it close to 60 per cent in some countries (Bulgaria, Lithuania, Poland and Slovenia). Overall, the advantage of women over men in the transition economies in 1997 was not significantly smaller than that in the EU countries in the first half of the 1990s.

What were the reasons behind these increases in tertiary-school enrolment among men and particularly women? Is it possible that the general decline in access to employment, as reflected by falling activity rates and rising unemployment rates is a major cause? In other words, is it faltering job prospects that have encouraged the young to remain in school, thus postponing the moment when inhospitable labour market conditions have to be faced? Or are young men and women pursuing higher education in ever larger numbers to acquire the knowledge and skills required in increasingly competitive labour markets? The answers to these questions are not really known, particularly for women. But, it appears that the rise in unemployment among women has not been a major factor; in 1997 female unemployment rates were not systematically or significantly higher than male rates. It is however, possible that the withdrawal from the labour force, relatively more prevalent among women than men, has contributed to the larger increases in tertiary school enrolment by women. Moreover, it could be that the young, particularly young women, have become more aware of the impact on life-long earning prospects of higher education.

(b) Spreading modern methods of birth control

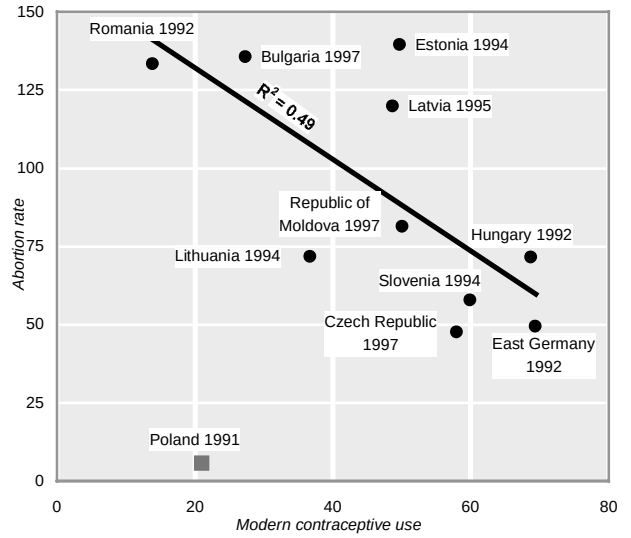
The former socialist countries shared similar patterns of contraceptive practice and induced abortion. Compared to many west European countries, the majority of them have had low rates of modern contraceptive use and high rates of induced abortion. The partial exceptions were the former Czechoslovakia, the former German Democratic Republic and Hungary, where governments promoted the use of modern contraceptives, including oral contraceptives and intra-uterine devices; in these countries, induced abortion on demand, available to women through much of the region since the middle of the 1950s, was a method of last resort. Consequently, their abortion rates were relatively moderate. Elsewhere in the region, the use of traditional, ineffective methods

[526] R. Lesthaeghe and P. Willems, op. cit.

CHART 6.3.8

Abortion rates and the prevalence of modern contraceptive methods in selected transition economies in the 1990s

(Number of legally induced abortions per 100 live births, percentage of women in unions using modern contraceptives)



Source: Modern contraceptive use: *Fertility and Family Surveys* and national *Reproductive Health Surveys,* various issues. Abortion rates: Trans-MONEE 4.0 Database; UN/ECE Population Database.

Note: Poland was excluded from the fitting of the least-squares line.

was the norm and, as a result, unwanted pregnancies were very frequent.[527] In spite of its negative effects on women's health, induced abortion was the primary means of birth control; consequently, abortion rates were very high, the highest in the world.[528] Not surprisingly, the legacy of this anachronistic situation is still present in large parts of central and eastern Europe. The variations in the mix of modern contraceptive use and induced abortion, as observed in the 1970s, have survived through the 1990s (chart 6.3.8). The incidence of induced abortion is universally related to the use of modern contraceptives; the Baltic states appear to be statistical outliers making the relationship weaker.

The patterns of change in the incidence of induced abortion in the transition economies during the last dozen years or so are complex. In a few years prior to the turn of the decade, there was a noticeable rise in abortion rates in many of the former socialist countries.[529] In absolute terms, the increase was considerable in the former Slavic Soviet republics; where there were increases elsewhere (the former Czechoslovakia and Hungary), these were from much lower levels and much more moderate (chart 6.3.9).[530] The increase in Romania, which occurred in response to the liberalization of induced abortion after the regime fell in December 1989, resulted in a sixfold increase in the abortion rate. Elsewhere in the region, notably in Poland, the Republic of Moldova and parts of the former SFR of Yugoslavia, there was a moderate decline in the rates.

Since the early 1990s, there has been a general trend towards lower rates of induced abortion in central and south-eastern Europe. The declines have been particularly strong in the Czech Republic and Romania and substantial in Croatia and Yugoslavia. In Poland legal, induced abortion has been eliminated.[531] In the Baltic states and Belarus, for which the data are somewhat limited from the middle of the 1990s, it appears that the trends have been mostly upward. In the other European CIS countries, where the information is also limited, it seems that moderate declines have occurred since the early 1990s. As a result of these disparate trends, two groups of countries, with substantially different rates of induced abortion, emerged in the second half of the 1990s. In most of the central and south-east European countries there was less than one induced abortion per live birth, while in most of the countries that have once belonged to the Soviet Union there was more than one abortion per child. In Belarus and the Russian Federation the ratio approached two to one in 1995.

The question as to what trends in the use of modern contraceptives have accompanied the change in the incidence of induced abortion during the transition years cannot be answered with confidence, as the necessary information is not available. Data on contraceptive practice are collected only occasionally and where they exist for different points in time for the same county, they may not be comparable. Data and knowledge about contraceptive practice in transition and other European countries in the 1990s have greatly expanded as a result of sample surveys but these do not shed light on changes

[527] The heavy reliance on traditional methods was a consequence of a combination of factors, including poor quality and limited supplies of modern contraceptives and the concerns on the part of family planning personnel and clients about the health risks associated with certain modern methods. See, for example, F. Serbanescu, "Reproductive heath issues in eastern Europe and newly independent states: country cases", draft paper prepared for the Regional Population Meeting (Budapest), 7-9 December 1998, mimeo, and UN/ECE, "Fertility and family planning in the developed countries", *Fertility Behaviour in the Context of Development: Evidence from the World Fertility Survey*, Population Studies, No. 100 (New York), 1987, pp. 357-370.

[528] As suggested earlier, Romanian women wishing to avoid births had no choice but to rely on traditional methods and, when these failed, to resort to illegal abortion, a crime under the law passed in 1966.

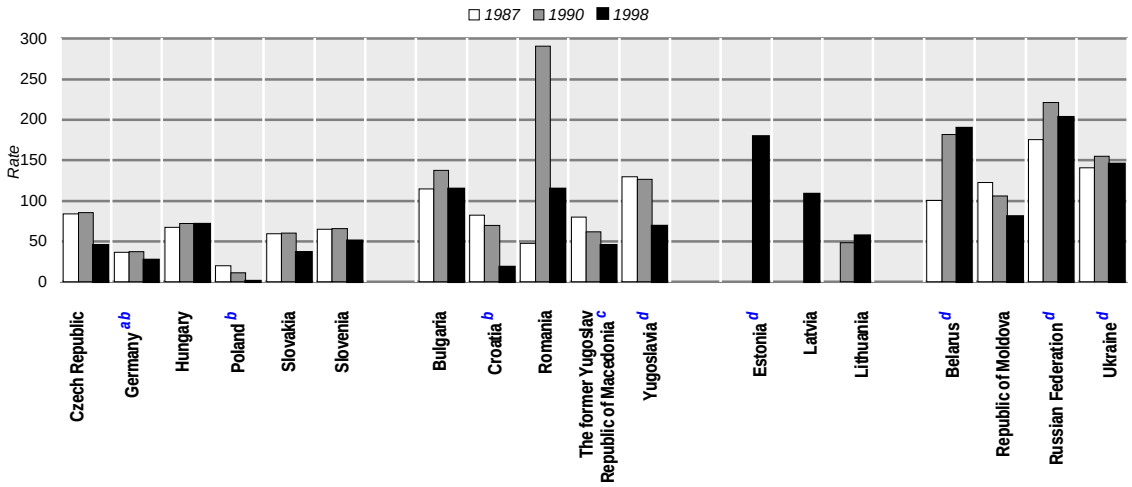
[529] The abortion rate used here is defined as the number of legally induced abortions occurring in any given year, including the so-called mini-abortions performed in the former Soviet Union since the late 1980s, per one hundred live births taking place during the year.

[530] No information is available for the Baltic states prior to the early 1990s. As a result, we cannot ascertain the trends in induced abortion there prior to the dissolution of the Soviet Union at the end of 1991.

[531] Most likely, this does not reflect the real situation with respect to induced abortion, legal and illegal, in Poland during the 1990s. With induced abortion on request legally banned for all practical purposes and with one of the lowest observed rates of modern contraceptive use in Europe in the 1990s, there were probably many illegal abortions performed during this period. These, of course, are not shown in official statistics.

CHART 6.3.9

Abortion rates in selected transition economies, 1987-1998
(Number of legally induced abortions per 100 live births)



Source: UN/ECE Population Database; Council of Europe, *Recent Demographic Developments in Europe* (Strasbourg), 1999.

a East Germany.

b 1997 instead of 1998.

c 1996 instead of 1998.

d 1995 instead of 1998.

over time.[532] These data do show, however, large cross-country differences in the prevalence of modern contraceptive methods among women aged 20-39 in marital and consensual unions. The modern contraceptive prevalence rates range between 75 per cent and 69 per cent in east Germany and Hungary in 1992, to 14 per cent in Romania in 1992 and 21 per cent in Poland in 1991.[533]

The inverse relationship noted above between the incidence of induced abortion and modern contraceptive use can help to shed light on how modern contraceptive practice has changed over time. In particular, in view of the decline in abortion rates in much of central and south-eastern Europe, it can be inferred with some confidence that the practice has made inroads there. Such progress has probably been much greater, say, in Croatia, the Czech Republic, Romania and Yugoslavia, than in countries where there has been smaller reductions in the incidence of induced abortion. In sum, progress towards what has been termed "an almost perfect contraceptive society",[534] has probably been tangible although geographically uneven.

6.4 The impact of social and economic change on fertility

Depressed fertility has been a usual corollary of the major wars, social upheavals and economic crises that befell Europe during the first half of the twentieth century. Fertility plummeted to unprecedented lows in a number of countries during the World Wars, in the former Soviet Union at the time of the forced collectivization and famine, and in many west European countries during the Great Depression.[535] The physical destruction, economic decline and/or the social dislocation associated with these events caused people to abstain from having children during the hard times, postponing births until the return of normalcy or forgoing them altogether. This has now happened again more recently, this time in central and eastern Europe. In particular, as the new post-Communist governments undertook unprecedented political, economic and institutional reforms their economies moved into recession and in some instances societies were thrown into turmoil, particularly after the break-up of the former Soviet Union and the former SFR of Yugoslavia. In brief, the social and economic crisis that accompanied the

[532] These survey data have been collected through the *Fertility and Family Surveys* carried out in 21 European countries as part of the FFS project coordinated by the secretariat of the United Nations Economic Commission for Europe. The data have also been collected through the *Reproductive Health Surveys* carried out in five central and east European countries under the auspices of the United States Centre for Disease Control and Prevention in Atlanta, Georgia.

[533] The rate for Romania refer to the women aged 15-44.

[534] M. Corijn and J. de Beer note that the Netherlands was already "an almost perfect contraceptive society" at the beginning of 1980s. They also suggest that Belgium has achieved a similar status a decade later. M. Corijn and J. de Beer, "Family formation and fertility in Belgium and the Netherlands: a comparison", *Evolution or Revolution in European Population*, Vol. 2., European Population Conference (Milano), Sepember 1995 (Milano, FrancoAngeli, 1996).

[535] See, for example, G. Calot and J.-P. Sardon, "Réflexions sur le baby-boom", on the fertility trends during the 1930s in selected west European countries (Saint-Germain-en Laye), 1997, mimeo.

transition to democracy and the market economy appears to have brought about a reduction in fertility.[536]

The juxtaposition of the fertility and economic declines above lends suggestive support to this "crisis" hypothesis, but it falls short of testing the hypothesis. This is now attempted by postulating and estimating a fertility model and, in the process, testing the validity of an important aspect of the crisis hypothesis, namely, that the economic decline has contributed to the fertility reduction. But first it is necessary to elaborate the hypothesis, as this has not been done in a meaningful way in the literature.[537]

(i) The economic and social crisis hypothesis

In addition to the effects already discussed, the economic decline in the transition economies has also occasioned a reduction in government revenues and spending. A variety of public transfers to families have been scaled down or completely phased out. In particular, the various family policy benefits, for example, childcare benefits and child allowances have declined. This retrenchment of the state support to the population, has further contributed to the reduction of household incomes and living standards and consequently to the spread of poverty. Moreover, the scaling down or elimination of public subsidies to support the delivery of free or nominally priced services, such as childcare or public housing, has imposed extra costs on families, thereby further contributing to the decline in living standards.

In the present-day industrialized societies, including those undergoing transition, children cost money but do not contribute to family income. Adding a child to the family is therefore probably one of the shortest ways to reducing the *economic* well-being of its existing members. And the effect is not just a short-term one; bringing a child into the world amounts to taking a long-term financial commitment. In view of this, it can be hypothesized that the decline in incomes and the increasing costs of maintaining a family, including children, in the transition economies since 1989 have induced many individuals and couples to postpone or altogether forgo births. By refraining from childbearing they have prevented their living standards from falling even lower. Moreover, they have avoided bringing children into a world where, at least, for some time to come, they would have to share in falling or low living standards. If anything, their reproductive behaviour has been highly rational.[538]

The retrenchment of the state has also contributed to strains in the social fabric in the transition economies; in extreme cases, due to conflicts and wars, the fabric of society has been literally torn apart. Among other things, deviant social behaviour, including large-scale corruption and organized crime, has become commonplace in some of these societies. Although not necessarily directly affecting the vast majority of people, the manifestations and knowledge of this behaviour can be surmised to have shaken the confidence of people in society and in its future, thus further eroding the desire to have children during times of economic hardship.

The political and economic transformations have also paved the way for a return of civil society to central and eastern Europe. Rights and freedoms long known to people in western democracies but in many instances denied to the citizens of the former socialist countries have been returned to them. At the same time, norms and values formed during the socialist era began to dissipate, giving way to norms and values consistent with the new political and economic order, many of which, having originated in the west, are often branded as "western". As with the entire political and economic transition, these changes have proceeded at a speed that has differed greatly among the increasingly heterogeneous region. The result of these changes, in many areas of behaviour, including reproductive and family behaviour, has been to enlarge considerably the scope for individual choice and decision-making. Individuals and couples have readily perceived and embraced these new opportunities. In particular, the new forms of fertility and family behaviour, which have been taking root in the west since the middle of the 1960s, have spread rapidly, particularly in central Europe. However, they have not yet reached

[536] The view that the social and economic crises have had a negative effect on fertility is, more or less explicitly, supported by several authors. See, for example, N. Barkalov, "The fertility decline in Russia, 1989-1996: a view with period parity-progression ratios", *Genus*, Vol. V, Nos. 3-4 (Rome), 1999, pp. 11-60; L. Darski, "Fertility in the USSR. Basic trends", in A. Volkov (ed.), *Population Reproduction and Family Dynamics*, The State Committee of Russian Federation on Statistics (Moscow), 1992; V. Stankuniene, "Demographic changes in contemporary Lithuania: crisis, shock, adaptation or evolution", *Revue Baltique*, No. 7 (Vilnius), 1996; D. van de Kaa, *Options and Sequences: Europe's Demographic Patterns*, Nethur-Demography Paper, No. 39 (The Hague), 1997. According to one view, the reasons for the fertility reduction, in particular in the Russian Federation, are to be found in the process of modernization, or westernization, of Russia's reproductive behaviour. See, for example, A. Vishnevky, "Family, fertility and demographic dynamics in Russia: analysis and forecast", in J. DaVanzo (ed.), *Russia's Demographic "Crisis"* (Santa Monica, CA, Rand, 1996) and A. Vishnevky (ed.), *The Population of Russia 1996* (Moscow), 1997.

[537] Although V. Stankuniene, op. cit., has provided the most complete statement available so far.

[538] There are parallels between this explanation of the fertility response to falling living standards in the transition economies and this accounts for the fertility decline in the United States during the economic slowdown after 1973. Common to both is that people have opted for fewer children as macroeconomic trends conspired to erode their living standards. However, the mechanism that brought about fewer children in the two settings have been different. According to the explanation pertaining to the United States, which is known as the economic deprivation hypothesis, American parents have faced falling real wages at a time when their material aspirations continued to rise. See R. Easterlin and E. Crimmins, "Private materialism, personal self-fulfilment, family life and public interest: the nature, effects and causes of recent changes in the values of American youth", *Public Opinion Quarterly*, Vol. 55 (Chicago), 1991, pp. 499-533. Their response to relative economic deprivation has been to modify social and economic behaviour. In particular, according to Easterlin and Crimmins: "[m]others increased their labour force participation dramatically, childbearing was deferred, and family size was reduced ...".

all countries, especially those in the outlying parts of the region. It can be surmised that the spread of these new forms of behaviour has reinforced the impact of the social and economic crisis on fertility, in an independent and negative manner, particularly in central Europe when living standards have begun to improve.

(ii) An empirical test of the hypothesis

The data required to thoroughly test the hypothesis are limited by any standard. A combination of the relevant micro- and macro-level information required is non-existent. Only aggregate-level data are available and then only for a subset of the relevant variables. These data, however, make it possible to assess the impact of some of the key economic changes on aggregate fertility. In particular, the data for many of the variables that have been considered in the previous section are available for much of the transition period and for the majority of the transition economies (the exceptions are Croatia, the Republic of Moldova, The former Yugoslav Republic of Macedonia, Ukraine and Yugoslavia).

The variables used in this analysis are listed in table 6.4.1. The total fertility rate (TFR) is the dependent variable, and two alternative approaches are adopted to assessing the impact of changes in income on fertility; in one activity, unemployment and the real wage rate (ACTIVITY, UNEMP AND LWAGE) are jointly used to capture changes in household incomes. The rationale is that the decline in activity rates and increase in unemployment rates are joint proxies for the decline in the proportion of household members working, while the change in real wage rates is a proxy for the change in the incomes they have been earning. In another approach, the decline in the wage bill (LWAGEBIL) is used as a proxy for the fall in household incomes. The synthetic indicator, capturing the impact of family benefits and entitlements on per capita income of two-child families (FAMILY), has been used to proxy policy support for families with children. The indicator has been used with both of the alternative approaches to capturing changes in households incomes.

Additional variables that may have exerted an influence on fertility during the transition period include divorce and induced abortion rates (DIVORCE and ABORTION). The former has been used in various empirical investigations to capture the effect of family instability on childbearing, and typically it has been found to be negative.[539] The rationale for the use of this variable here is the same. The abortion rate has been introduced to account for the observation in central and eastern Europe as early as the 1960s that unimpeded access to induced abortion tends to have a depressing effect on fertility.[540] In this connection, it should also be mentioned that the use of other birth control methods, in particular modern contraceptives, have been shown to have a negative effect on fertility.[541] In the analysis here, however, no variable has been included to proxy for the use of modern contraceptives; as indicated above, no time series data on contraceptive use are available. This is probably not a serious problem as the incidence of induced abortion and modern contraceptive use are strongly inter-related and, therefore, disentangling their separate effects would have been difficult even if the time series for both variables had been available.

Three other variables have been used. One represents the prevalence of tertiary-level schooling among women (UNIVERS) which, as noted above, has grown during the transition years, and very rapidly in some countries. This variable is likely to capture two important effects: one is almost mechanical, namely, that while in tertiary-education women, as a rule, are not available for family building and childbearing; the second is subtler, and possibly more powerful, namely that schools, particularly universities, are a fertile ground for the transmission of new ideas and values regarding many issues, including family and childbearing. It is likely that in the transition countries of the 1990s they have played this role, leading to new behavioural patterns conducive to low fertility among the young, particularly young women.

The second is the mean age of women at first birth (MEANAGE). The rationale for including this is as follows. The increase in the average age of entry into motherhood in western Europe after the 1960s has been interpreted as one of several signs of the spread of the new forms of fertility and reproductive behaviour, sometimes described as the "second demographic transition".[542] In last year's *Survey*, it was speculated that the new forms of behaviour had probably been spreading into central Europe and possibly the Baltic states. It was noted above, that this mean age had risen during the 1990s, particularly in central Europe, and to a lesser extent, in south-eastern Europe. As in western Europe, this trend in the transition countries may herald the spread of the new patterns of family and reproductive behaviour throughout the region. The mean age of women at first birth is used to test for this possibility, but in doing so it must be kept in mind that it could also be a response to the growing economic hardship during the transition period.

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[539] M. Macura, "Marital fertility and employment in non-agricultural sectors in Yugoslavia", in G. Farooq and G. Simmons (eds.), *Fertility in Developing Countries: An Economic Perspective on Research and Policy Issues* (London, Macmillan, 1985); and P. Di Giulia, R. Lesthaeghe, G. Moors and A. Pinnelli, "Fertility tempo and quantum: an empirical test of major theories with data from four FFS countries" (Rome and Brussels), 1998, mimeo.

[540] T. Frejka, "Induced abortion and fertility: a quarter century of experience in eastern Europe", *Population and Development Review*, Vol. 9, No. 3 (New York), 1983.

[541] M. Murphy, "The contraceptive pill and women's employment as factors in fertility change in Britain 1963-1980: a challenge to the conventional view", *Population Studies*, No. 47 (London), 1993, pp. 221-243; D. van de Kaa "Anchored narratives: the story and findings of half a century of research into the determinants of fertility", *Population Studies*, No. 50 (London), 1996, pp. 389-432.

[542] D. van de Kaa, "Europe's second demographic transition", *Population Bulletin*, Vol. 42, No. 1 (Washingon, D.C.), 1987.

TABLE 6.4.1

Estimates of alternative specifications of the fertility model

Independent variables		*Specification 1 coefficient (t-value)*	*Specification 2 coefficient (t-value)*	*Specification 3 coefficient (t-value)*	*Specification 4 coefficient (t-value)*
Constant		2.5031	3.3939	0.9062	2.1892
		(2.6713)	(3.3747)	(2.2146)	(8.2977)
DBUL	Dummy variable for Bulgaria	-0.2658	-0.4828	-0.1890	-0.4012
		(-3.5099)	(-6.1551)	(-3.3123)	(-7.9553)
DCZE	Dummy variable for Czech Republic	-0.5039	-0.6355	-0.5140	-0.6269
		(-6.7768)	(-7.6322)	(-4.6386)	(-5.3948)
DEST	Dummy variable for Estonia	0.0778	-0.0367	0.0549	-0.0297
		(1.0557)	(-0.4139)	(0.8189)	(-0.3736)
DHUN	Dummy variable for Hungary	-0.1222	-0.3729	-0.1577	-0.3614
		(-0.9543)	(-5.0878)	(-1.3105)	(-6.3058)
DLAT	Dummy variable for Latvia	0.0373	-0.1249	0.0420	-0.0979
		(0.8175)	(-2.3970)	(1.0499)	(-2.3536)
DLIT	Dummy variable for Lithuania	0.0189	-0.0646	0.0368	-0.0400
		(0.2906)	(-0.9218)	(0.5890)	(-0.6084)
DPOL	Dummy variable for Poland	-0.3945	-0.6599	-0.3738	-0.6167
		(-2.9071)	(-4.5514)	(-3.1244)	(-5.1383)
DROM	Dummy variable for Romania	-0.3175	-0.2613	-0.2548	-0.2014
		(-3.4375)	(-2.4185)	(-2.9531)	(-1.9841)
DSLV	Dummy variable for Slovakia	-0.3205	-0.5688	-0.2869	-0.5327
		(-3.3231)	(-4.9101)	(-1.9632)	(-2.8262)
DRUS	Dummy variable for Russian Federation	-0.0010	-0.1132	0.0010	-0.0822
		(-0.0137)	(-1.3210)	(0.01705)	(-1.2014)
ACTIVITY	Activity rate [a]	0.0152	..	0.0134	..
		(3.8572)	..	(3.5871)	..
UNEMPL	Unemployment rate [b]	-0.0105	..	-0.0098	..
		(-5.2131)	..	(-5.1500)	..
LWAGE	Natural logarithm of wage rate [c]	0.0112	..	0.0070	..
		(0.6763)	..	(0.5527)	..
LWAGEBIL	Natural logarithm of wage bill [d]	..	0.0446	..	0.0308
		..	(2.0258)	..	(1.8746)
FAMILY	Ratio of per-capita family income to gross wage rate pertaining to two-child family [e]	0.0127	0.0159	0.0125	0.0145
		(3.6500)	(4.0933)	(3.6985)	(3.7944)
DIVORCE	Divorce rate [f]	-0.0072	-0.0076	-0.0069	-0.0077
		(-6.7221)	(-5.4218)	(-6.9418)	(-5.9436)
ABORTION	Abortion rate [g]	-0.0015	-0.0017	-0.0014	-0.0016
		(-4.0635)	(-4.7670)	(-4.2138)	(-4.9865)
UNIVERS	Tertiary enrolment rate for women [h]	-0.0164	-0.0182	-0.0195	-0.0207
		(-6.0500)	(-4.4964)	(-9.4086)	(-6.3771)
MEANAGE	Mean age of women at first birth [i]	-0.0803	-0.0650	..	..
		(-2.1599)	(-1.3390)	..	..
TUBERCUL	Rate of tuberculosis incidence [j]	-0.0039	-0.0089	-0.0049	-0.0094
		(-3.0039)	(-6.4514)	(-4.0021)	(-7.3026)
R^2		0.9647	0.9018	0.9710	0.9207
Number of observations: 99					

Source: UN/ECE secretariat estimates, based on national labour force surveys, statistical yearbooks and direct communications from national statistical offices; UN/ECE Common Database; Trans-MONEE 4.0 Database.

Note: The dummy variables take the value 1 for the country in question and 0 for the other countries.

a The number of persons in the labour force as a per cent of population aged 20-59.

b The number of unemployed persons, as a per cent of the labour force.

c Real net (or gross) wage rate for the total economy relative to that in 1989.

d The sum of all real net wages relative to that in 1989.

e Ratio of per capita family income to gross wage rate pertaining to a two-child family: the sum of wage income and family benefits per adult equivalent in a two-child family, divided by the gross wage rate.

f General divorce rate.

g The number of legally induced abortions per 100 live births.

h The proportion of women aged 18-22 enrolled in tertiary education institutions.

i The mean of the schedule of first birth rates.

j The number of newly diagnosed cases of tuberculosis per 100,000 population.

The last variable, the incidence of tuberculosis (TUBERCUL), is used to capture not so much the changing health conditions of the population but the effect of deteriorating social conditions and the spread of poverty. There are suggestions in the literature that material deprivation, including poor housing and crowded living conditions, increase the exposure to infection and susceptibility to the disease. In addition, inadequate diet, physical hardship and psychological stress – all consequences of poverty and poor social conditions – are associated with suppressed immunity.[543] In view of this, the incidence of tuberculosis is a proxy indicator for poor social conditions and poverty.

The results of estimating alternative specifications of the fertility model by feasible generalized least squares, FGLS, are presented in table 6.4.1. The results are based on the data for the following 11 countries: Belarus, Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Russian Federation and Slovakia. Although data were available for Slovenia, they were not used, as in this country, as in other parts of the former SFR of Yugoslavia, the patterns of fertility change were atypical for central and eastern Europe. The estimates of the alternative specifications of the model are, therefore, valid only for the successor states of the former CMEA and Warsaw Pact countries.

The results provide ample support for the core hypothesis, namely that the declines in household incomes have put downward pressure on fertility. In the two specifications where the activity, unemployment and real wage rates are jointly used to proxy for household incomes, the coefficients of the three variables have the expected signs, although those for the wage rate variable are not statistically significant. This may be due to multi-collinearity among the three variables. In the specifications where the wage bill is used as a proxy for household incomes, the coefficients have the expected sign and are statistically significant. Moreover, the coefficients of the variable capturing the effect of family policy benefits and entitlements for the two-child family's standard of living (FAMILY) also have the expected sign and are statistically significant. In the equations (not shown here), however, where a variable capturing the impact of the family policy measures for the one-child family was also used, the coefficients on this variable neither had the expected sign nor were they significant. These results suggest that the effects of family policies on fertility have been mainly restricted to second-order births, that is births that are far more likely to be postponed or forgone altogether.

As for the remaining variables, in most of the specifications their coefficients have the expected signs and most of them are statistically significant. In particular, family instability arising from divorce as well as ease of access to induced abortion both appear to have contributed to lower fertility. The same is true of tertiary school enrolment among women, which in addition to having the expected sign is generally highly significant. The mean age of women at first birth also had the expected sign but is not statistically significant in one of the two specifications. The results for these two variables support the view that the new forms of family and reproductive behaviour have indeed been spreading in the transition economies. The results for the proxy for the deteriorating social conditions and the spread of poverty are also in accordance with expectations.

6.5 Conclusions and some policy considerations

The central and east European countries have undergone a multitude of major developments since the transition to democracy and a market economy got underway around 1990. One of them has been the reduction in fertility, which in relative terms has been steeper than in western Europe during any period of comparable length since the postwar baby boom ended there in the middle of the 1960s. In the transition economies as a group, in less than 10 years, total fertility had fallen from a replacement rate to about two thirds of this level. The result has been greatly depressed fertility, making central and eastern Europe the region with the lowest fertility in the world. At the same time, the postponement of the onset of motherhood has also occurred in many parts of the region, particularly in central Europe, and appears most likely to have contributed to the reduction in fertility. The trend towards a later start to motherhood has not materialized to any significant extent in the Baltic states and the European CIS countries. There have also been other major changes in fertility patterns in the transition economies, such as the spread of extra-marital childbearing.

These changes in fertility levels and patterns have occurred in the context of a general deterioration in economic and social conditions. This deterioration has been relatively brief in the central European countries, where conditions have begun to improve early. But in large parts of the region, for example in the European CIS countries, the deterioration continued through 1998. Employment has fallen everywhere, and although it has recovered in some cases, the improvement is very limited. As a result, the spread of joblessness, a phenomenon unknown in much of the region during the socialist era, has produced in many instances double-digit unemployment rates. As job opportunities declined and unemployment benefits often became symbolic, a trend towards withdrawal from the labour force set in. Consequently, activity rates have fallen and, in many instances, more so for women than men. These trends have been associated with declines, sometimes precipitous, in real wages. The net result has been declining household incomes, and this as the analysis suggests, has had a negative impact on fertility. As real incomes fell, individuals and couples found it economically advantageous to refrain from childbearing,

[543] See, for example, F. Elender, G. Bentham and I. Langford, "Tuberculosis mortality in England and Wales during 1982-1992: its association with poverty, ethnicity and aids", *Social Science and Medicine*, Vol. 46, No. 6 (Oxford), 1998, pp. 673-681.

postponing births until better times or, as it may turn out, forgoing them altogether.

Economic decline has not only made families poorer, it has also left governments incapable of maintaining the various public transfer programmes that existed in the past. The casualties, among others, have been the benefits and entitlements for families with children. Some of them, particularly the more generous ones, have been reduced, and means-testing has become more frequent. As a result, transfers to families have not only declined in real terms, but they have also fallen relative to wage rates. It is almost certain that many other advantages that families, particularly those with children, had enjoyed during the socialist era, such as heavily subsidized institutional childcare, were reduced or eliminated. As these trends have unfolded, child-raising has increasingly become unattractive. The results of the analysis made above suggest that the retrenchment of state support to families with children has also made childbearing less attractive. These are perhaps some of the most salient effects of the economic and social crisis on fertility during the last decade or so.

The transition has also been a period of an opening, in some instances a very rapid one, towards civil society, with its many attendant rights and freedoms. The new freedoms have included, among others, the ability to choose among a growing number of alternative life styles that have already been explored by the young in western Europe since the 1960s. These alternative ways, which as a rule amount to a movement away from conjugal life and children and, thus, from the long-term commitments they entail, appear to have been taking root, particularly in central Europe. Without being certain, it nevertheless appears plausible to conclude that the expansion of opportunities for increased education, particularly for women, have also assisted the spread of the new, alternative forms of family and reproductive behaviour. The contribution of increased education to the reduction in fertility, has probably worked though raising the age of the onset of motherhood and childbearing in general. This is most likely to have happened in central Europe where the economy, and especially living standards, have begun to improve.

What policy conclusions can be drawn from the above analysis? The governments in many transition countries view current fertility levels as excessively low and would like to see them recovering. This appears to be particularly the case in the Baltic states and in some of the European CIS countries.[544] The question is whether there is anything that governments can do to assist such a recovery. Before trying to answer the question, it is worth pointing out that a recovery, although possibly not a major one, is almost certain to occur in a number of countries. To appreciate this point attention need only be given to what has happened since 1993 in east Germany, when its TFR reached an unprecedently low level for a large population, namely, 0.76 children per woman (chart 6.2.1). A recovery is likely to occur, particularly in central Europe, as the dampening effect of the postponement of childbearing on the total fertility rate is likely to lose its force over time. The extent of the recovery, however, will depend on the actual fertility rates that younger women, who have recently been postponing births, will achieve in five to 10 years from now.

The governments of the former socialist countries, as well as those in the Nordic countries and France have provided sufficient evidence to show that generous family policies do have an impact on increasing families size. (Completed cohort fertility rates in these countries, only slightly below replacement, have been consistently and considerably higher than those in a number of European countries without such policies.) These policies provide generous financial or tax benefits to individuals and couples with children as well as help to enable them to balance their parental and work roles. As a rule, these policies are expensive. However, as the experience with them in western Europe demonstrates, they are in no way incompatible with a market economy. Moreover, they are not contingent upon widespread affluence: France, Norway and Sweden, for example, had such policies, although certainly less generous than those of today, during the immediate postwar years when levels of affluence were far lower than they are now. But, it has been observed that such policies require lots of political will.[545] What is more, they do not necessarily guarantee success, and this may make governments in transition countries hesitate before adopting or strengthening them.

There exist many family policy measures, which are mixed in a variety of ways in different countries. But the purpose of this chapter has not been to discuss these measures or to consider how they may contribute to higher fertility. They have already been well documented and studied, although more in some countries than in others.[546] Nor is the aim here to advocate family policies: that is a matter for the electorates and governments of the countries concerned. The objective instead, however, has been to draw attention to their merits. Firstly, they add to the well-being of families and children. Secondly, they help individuals and couples to approach, if not attain, their desired family size. And thirdly, they can contribute to bringing aggregate fertility back towards replacement level, a goal that is important for any society concerned with its long-term survival.

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[544] T. Frejka, "Population and development issues in the UN/ECE region: the governments' perspective", *Population in Europe and North America on the Eve of the Millennium: Dynamics and Policy Responses*, Regional Population Meeting, 7-9 December 1998, Budapest, Hungary (United Nations publication, Sales No. E.99.II.E.16).

[545] G. Calot, a French demographer, made this remark at the Regional Population Meeting, an intergovernmental population conference held in the context of the global review and appraisal of the Programme of Action of the 1994 International Conference on Population and Development (Budapest), 7-9 December 1998.

[546] See, for example, J. Ditch, H. Barnes and J. Bradshaw (eds.), *Developments in National Family Policies in 1996*, European Observatory on National Family Policies, European Commission, 1998; W. Dumon (ed.), *Changing Family Policies in the Member States of the European Union*, European Observatory on National Family Policies, European Commission.