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Populations and Demographic Trends of European Countries, 1980-2010

Europe has the most studied and best documented population of all the world's regions. It was on the basis of long-running observations of demographic trends and population reproduction in European countries that the concept of "demographic revolution" or "demographic transition" was first developed (Rabinowicz, 1929; Landry, 1934).(1) The wealth of data about the European population has served as a base for historical demography, particularly for studies of the secular decline in fertility and the transformation of the family (Henry, 1953; Fleury and Henry, 1956; Goubert, 1960). The availability of detailed mortality statistics by cause of death in European countries led to the concept of epidemiological transition (Omran, 1971). More recently, the analysis of demographic trends in the 1980s and 1990s supported the theory of a "second demographic transition", which has yet to yield all of its potential contributions to science (Lesthaeghe and van de Kaa, 1986; van de Kaa 1987 and 2003; Lesthaeghe and Surkyn, 2004).

European countries also established the first modern systems of population statistics (some of which include series of demographic indicators dating back to the mid-eighteenth century), developed the principles of general population censuses, and created the first classifications of the causes of death and disease.

(1) The expression "demographic revolution" was first used by Léon Rabinowicz in 1929 to describe the demographic changes in developed countries. The expression was taken up by Adolphe Landry in 1934.

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However, the study of the European population in recent decades has faced challenges linked to:

- the imprecise geographical boundaries of the region and its sub-regions, and the changing political and administrative borders of European countries;
- the political, economic and demographic heterogeneity of the continent;
- the impact of political upheavals at a time of profound change in demographic behaviours.

We will start by defining the framework of this chronicle, before reviewing the overall trends that have affected the population of Europe. We will then examine fertility, mortality, population ageing and international migration in more detail. A brief overview of the main statistical sources used in this study are given in an appendix, along with a review of the major European censuses and comparative surveys.

I. Geographical area and observation period

1. Choice of a study period

In his recent review of population trends in twentieth-century Europe, Alain Monnier (2006) divided the century into three periods. The period up to the mid-1960s represented the classic demographic transition, with fertility decline taking place within the traditional family, based on universal and lasting marriage. Over the next period, from the mid-1960s to the late 1980s, the traditional model was challenged and a new model emerged as legal constraints on demographic behaviour were eased (legalization and simplification of divorce, legal access to abortion and contraception). Finally, the late 1980s ushered in a period of consolidation and institutionalization of new types of union and families (the growing acceptance of new forms of union and the creation of a corresponding legislative framework, the combined recognition of conjugal relationships and parenthood outside traditional marriage). These fundamental changes have occurred alongside a significant decrease in mortality, a trend which also affects the structure of the family cycle and intergenerational relationships. This periodization ties in with the concept of a "second demographic transition" developed by R. Lesthaeghe and D. J. van de Kaa in 1986. We will focus here on the most recent phase,[(2)] namely the consolidation of Europe's demographic modernism, to borrow Alain Monnier's expression.

(2) Earlier periods have been analysed in numerous studies, many of which are published in *Population*. European demography has been extensively covered by the journal, beginning in 1949 with an article by L. Henry on demographic trends in Europe between 1938 and 1947. Subsequently, a regular chronicle of the demographic situation in Europe and the developed countries was produced by R. Pressat (until 1973), J.-N. Biraben (1975-1978), A. Monnier (1979-1999, assisted by C. de Guibert-Lantoine between 1992 and 1997) and J.-P. Sardon (2000-2007).

European history of the past 30 years has also become more diverse and can likewise be divided into three roughly equal periods. The first decade, from 1980 to 1990, was characterized by the general decline of totalitarian socialism and command economies in the countries of eastern Europe. The last dictatorships in western Europe disappeared in the 1970s; in 1974 in Greece and Portugal and in 1975 in Spain. In the late 1980s and early 1990s, the totalitarian socialist system in eastern Europe collapsed in velvet revolutions, leading to the creation of new, more or less ethnically homogeneous, independent states. Several countries disappeared from the political map of Europe: the German Democratic Republic was united with the Federal Republic of Germany in 1990; the Soviet Union, Czechoslovakia and Yugoslavia gave rise to thirteen new European states, plus several territories of unclear political status because their independence is not recognised, or only partly so, by member states of the United Nations (Transnistria, Abkhazia, Kosovo and South Ossetia).

The result is a territorial redistribution of the population, breaks in demographic trends, and specific migration flows. The change in migration patterns in the 1990s was due not only to conflict, but also to the liberalization of political regimes and the deterioration of the economic situation in the former socialist countries of eastern Europe. New flows of labour migrants headed from Romania, Poland and the new Balkan states towards Western Europe, from Ukraine and Moldova to Russia and Poland, and from the Caucasus and Central Asia to Russia. They have joined and swelled the "traditional" flows from former colonies to European cities, but their potential is limited. By the late 1990s, these flows were easing off, as the new states of eastern Europe enjoyed economic growth, new job creation and higher living standards. While a market economy and democratized forms of political governance developed in eastern and central Europe, economic and political integration intensified in western Europe. The decade from 1990 to 2000 can therefore be seen as a transition period for the whole continent.

The first decade of the twenty-first century was a period of stabilization of the new political and economic structures in eastern and western Europe, occurring simultaneously with a strengthening of the integration process as the European Union expanded eastwards.

2. Geopolitical area and history

A geographical region with changing contours

Europe is currently defined geographically as the western part of the Eurasian continent plus the British Isles and Iceland. The northern, western and southern boundaries of the continent are naturally defined by the Arctic, Atlantic and Mediterranean coasts. On the east, however, the natural boundary

Box: List of countries of Europe by region and their ISO codes

North		South		Centre	
Denmark	DK	Albania	AL	Bulgaria	BG
Finland	FI	Bosnia-Herzegovina	BA	Czech Republic	CZ
Iceland	IS	Croatia	HR	Hungary	HU
Norway	NO	Cyprus	CY	Poland	PL
Sweden	SE	Greece	GR	Romania	RO
		Italy	IT	Slovakia	SK
West		Macedonia	MK	**East**	
Austria	AT	Malta	MT	Belarus	BY
Belgium	BE	Montenegro	ME	Estonia	EE
France	FR	Portugal	PT	Latvia	LV
Germany	DE	Serbia	RS	Lithuania	LT
Ireland	IE	Slovenia	SI	Moldova	MD
Luxembourg	LU	Spain	ES	Russia	RU
Netherlands	NL			Ukraine	UA
Switzerland	CH				
United Kingdom	GB				

Source: International Organization for Standardization, www.iso.org/iso/country_codes/iso_3166_code_lists/english_country_names_and_code_elements.htm

between Europe and Asia, defined as the eastern slope of the Ural Mountains, is contested.

The political borders of Europe – like its cultural and linguistic borders – do not coincide with its geographical borders. According to the official United Nations division of the world into regions, Europe is currently divided into four sub-regions going clockwise: northern, eastern, southern and western.(3) This regional division, based on purely geographical criteria, does not reflect the political and cultural history of Europe. We therefore prefer to divide Europe into five sub-regions, which are unequal in size but more homogeneous in composition (Box and Figure 1):

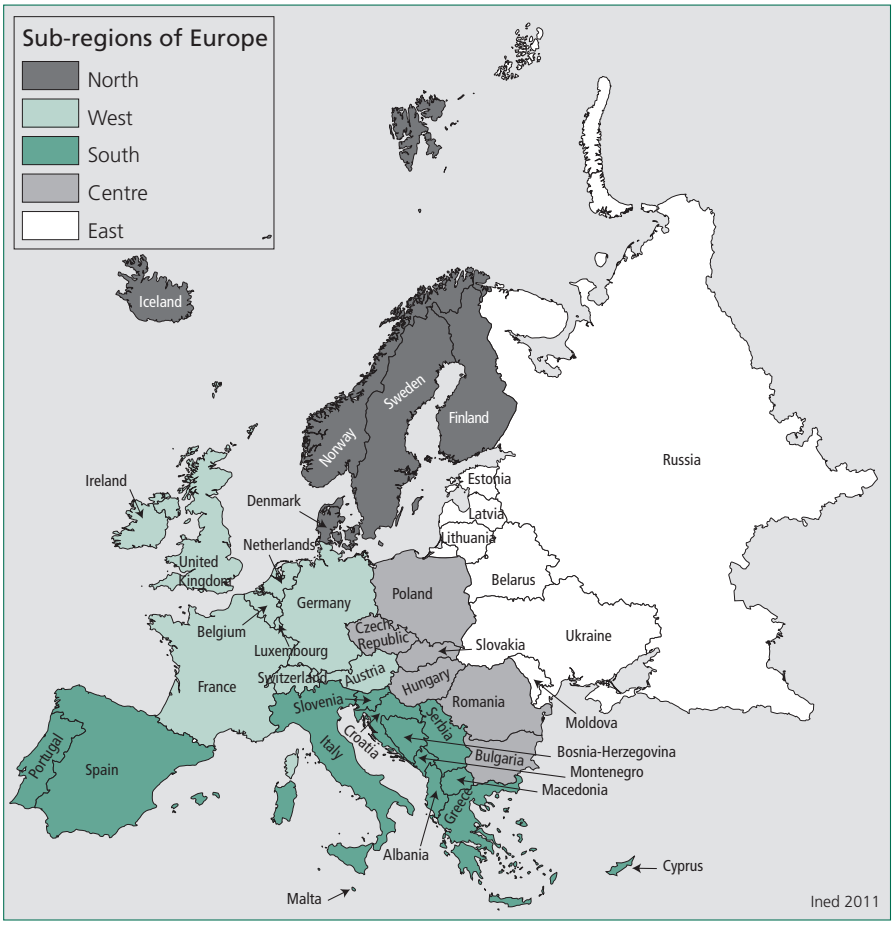
- northern Europe, which comprises the five Nordic countries (Sweden, Norway, Denmark, Finland and Iceland);
- eastern Europe, which covers seven former Soviet republics;
- central Europe, which includes all the other former socialist countries located in central Europe;

(3) Under the UN definition, Europe includes the Russian Federation, which spans an area of 17 million sq.km, only 3.9 million sq.km of which are geographically located in Europe. Conversely, four countries partly located in Europe are not considered to be European by the UN. These are Kazakhstan, Turkey, Georgia and Azerbaijan. Assimilated into Western Asia, the latter three are nevertheless members of the Council of Europe. We have followed the UN on these points. For want of sufficiently reliable and detailed data, we have excluded from our analyses the least populous countries, such as Andorra, Liechtenstein, Monaco, San Marino and the Vatican (see Appendix p. 99). Furthermore, some European countries have overseas dependencies, which are usually small in size with small populations.

- southern Europe, which comprises all the Mediterranean countries plus Cyprus[4] and Portugal;
- western Europe, which comprises all the remaining countries.

Depending on the availability of data, our analyses sometimes include and sometimes exclude three eastern European countries: Russia, Ukraine and Belarus.

Figure 1. Map of the countries of Europe and their division into five sub-regions



The European Union comprises 27 countries with a total population of almost 498 million, of which 16 countries (330 million people) belong to the euro area and thus share a common currency.

(4) The UN puts the Republic of Cyprus in western Asia, even though it joined the European Union in 2004 and the euro area in 2008.

Table 1. Countries and gross national income (GNI) per capita (international dollars) in 2008 for the five sub-regions of Europe

North		South		Centre	
Country	GNI	Country	GNI	Country	GNI
Denmark	39,020	Albania	8,480	Bulgaria	13,070
Finland	37,820	Bosnia-Herzegovina	9,380	Czech Republic	23,990
Iceland	33,000	Croatia	19,150	Hungary	19,090
Norway	60,510	Cyprus	28,050	Poland	17,640
Sweden	40,760	Greece	29,290	Romania	15,040
		Italy	32,190	Slovakia	22,490
		Macedonia	10,380		
		Malta*	22,640		
		Montenegro	14,090		
		Portugal	24,350		
		Serbia	11,240		
		Slovenia	28,540		
		Spain	32,060		
West				East	
Country	GNI			Country	GNI
Austria	39,290			Belarus	12,550
Belgium	37,260			Estonia	20,250
France	34,970			Latvia	8,120
Germany	37,510			Lithuania	19,220
Ireland	37,440			Moldova	3,320
Luxembourg	67,050			Russia	19,770
Netherlands	41,890			Ukraine	7,270
Switzerland	42,220				
United Kingdom	38,050				

* Income in 2007.
Note: Gross national income per capita is expressed in current international dollars (purchasing power parity)
Source: World Bank.

Changes to national borders

Because of its internal political structure, Europe represents a complex, historically unstable conglomerate. Over the past two centuries, the political geography of Europe has changed numerous times. The late twentieth century was characterized by spatial fragmentation, with the collapse of the Soviet Union in December 1991, practically without conflict; the peaceful split of Czechoslovakia into Slovakia and the Czech Republic in 1993; and the long and painful disintegration of Yugoslavia, after Croatia and Macedonia[(5)] broke away in 1991, followed by Slovenia and Bosnia-Herzegovina in 1992. Serbia and Montenegro, which formed a state union in 2003, gave way to two independent countries in 2006. The political map of the Balkans is still being drawn, however, because of the status of Kosovo, which is recognised by only 70 UN members after it unilaterally proclaimed independence from Serbia in 2008.

(5) Since 1993, the country's official name has been Former Yugoslav Republic of Macedonia (FYROM).

As a result of this tumultuous political history, Europe, often thought of as the "old world", in fact represents one of the youngest – if not the youngest – geopolitical region in the contemporary world, whose external boundary is still not clearly defined.

For the sake of consistency, this demographic overview of Europe since 1980 examines the geographical area and population of Europe in the countries that make up the Europe Region as defined by the UN, plus the Republic of Cyprus, and population movements and demographic trends are described within the current borders of European countries. Thus, for the period from 1980 to 1990, the national statistics of countries that no longer exist, such as Czechoslovakia, Yugoslavia and the Soviet Union, have been broken down according the borders of the former autonomous provinces, federal units and union republics that have since become new independent states. For the same period, statistics from the GDR and the FRG were merged to reflect demographic trends within the current borders of the Federal Republic of Germany.

3. Socioeconomic heterogeneity

To understand the demographic situation of Europe and explain its development, we need to take both the economic and geopolitical dimensions into account. The standard of living and economic potential of countries, reflected in gross national income per capita, is a good illustration of this (Table 1). In this regard, Europe as a whole is one of the richest regions in the world. With a population of 734 million, one-tenth of the world population, Europe generates more than one-quarter of annual world income. In purchasing power parity (PPP), per capita income in Europe is above 30,000 international dollars, behind that of the United States (47,500 dollars) but well above the world average (roughly 10,000 dollars).

However, per capita income in Europe varies widely between countries. The income ratio of the richest European country (Luxembourg) to the poorest (Moldova) is 20 to 1. Five countries have per capita income of less than 10,000 international dollars (PPP); the sixteen countries (including Russia) where this indicator is lower than 20,000 dollars account for 42% of the population of Europe. The richest countries are located in the north-western corner of Europe; the demographic giants of western and southern Europe are in an intermediate position; and the poorest countries are located in the Balkans (excluding Greece) and eastern Europe.

II. Growth of the European population and its components from 1980 to 2009

1. General trends, 1950 to 2009

The population of Europe as a whole completed its demographic transition by the end of the Second World War. In the 1950s, the annual rate of population

growth in Europe oscillated between 10 and 11 per thousand (Figure 2A). Growth rates subsequently declined steadily, reaching zero by 1995 and 1996. Until then, the natural surplus of births over deaths accounted for most growth. But migration became increasingly important and, from the mid-1990s onwards, offset a large percentage of the population loss due to the surplus of deaths over births. Between 1997 and 2001, the population of Europe contracted by 2.08 million,[6] but without immigration the decline would have been twice as large (4.86 million). In 2002-2008, the slight population increase (2.5 per thousand in 2007 and 2008) was generated entirely by migration.

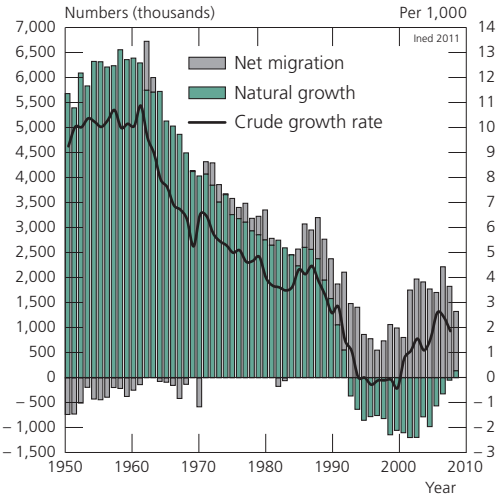
Until the late 1970s, the gaps between countries were stable, or even narrowed slightly, as measured by the lower and upper quartiles of the distribution around the median (Figure 2B). The interquartile range, which was seven points (between 6 per thousand and 13 per thousand) in the first half of the 1950s, narrowed to five points (between 5 per thousand and 10 per thousand) 20 years later, reflecting a slight convergence between European countries. Subsequently, the gaps widened surprisingly as growth declined overall. In the first half of the 2000s, the range between the lower and upper quartiles was eight points (between –2 per thousand and +6 per thousand) around a much lower median. In the early 1990s, a small number of countries exhibited a steep decline in population growth after the fall of the Berlin Wall, which caused a sharp fall in the first decile of the distribution of growth rates, a phenomenon that was partly reabsorbed in subsequent years. A slight reduction in the interquartile range emerged in the late 2000s, but it is too recent to be analysed.

The general decline in population growth can be attributed overwhelmingly to the diminishing surplus of births over deaths. For the continent as a whole, a deficit of births to deaths appeared in the early 1990s (Figure 2C) and has increased rapidly since. However, that trend is dominated by the demographic weight of Russia, and the median of countries has always remained slightly positive, even when the deficit was highest. The dispersion, measured by the interquartile range, narrowed between the early 1950s (9 points from 7 per thousand to 16 per thousand) and the early 1970s (5 points from 4 per thousand to 9 per thousand), influencing the dispersion of population growth rates in general. After the 1990s, there was no systematic pattern, with the result that in the early 2000s the dispersion of natural increase was the same as in the early 1970s (5 points again, from –2 per thousand to +3 per thousand). The stable dispersion is somewhat misleading, however, because rates of natural increase declined sharply over the period.

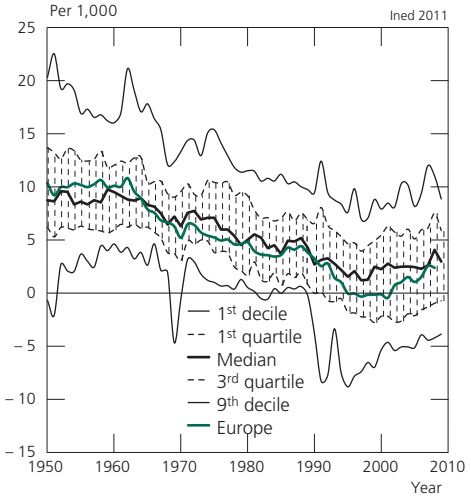
(6) Note that for this period, adding the natural surplus (births minus deaths) to net migration does not necessarily equal the change in the total population because of statistical adjustment. For a definition of this indicator, see *Recent Demographic Developments in Europe*, 2004, Council of Europe, Strasbourg, 2005, p. 118.

Figure 2. Changes in population growth and its components in Europe as a whole and in European countries since 1950

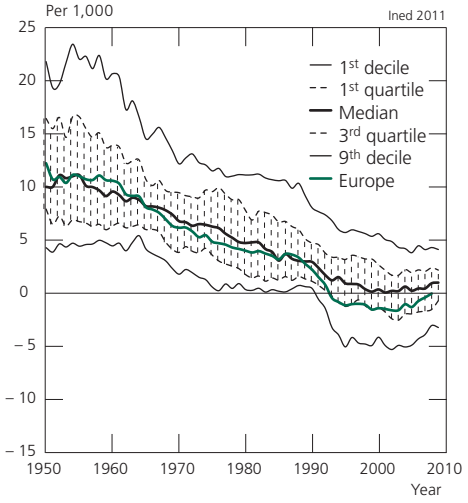
A. Crude rate (right-hand axis) and components of European population growth (left-hand axis)



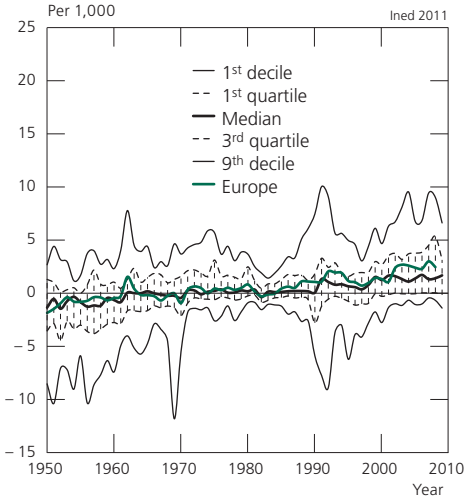
B. Crude population growth rate in European countries



C. Crude natural growth rate in European countries



D. Crude migratory growth rate in European countries



Sources: Database of developed countries (INED);
Devision database of the Centre for Population Studies (Moscow).

The increasing disparity in population growth rates in recent decades is therefore not due to natural increase or decrease but to net migration (Figure 2D). In the 1950s, a narrow majority of European countries and Europe as a whole exhibited negative net migration. Between 1962 and 1985, European countries

were divided into two almost equal groups – one with positive net migration and the other with negative – and migratory growth for the whole of Europe oscillated around zero. It turned positive in the mid-1980s. In the past decade, two-thirds of European countries have posted positive net migration. As median net migration ceased to be negative, the dispersion of countries around the median narrowed (an interquartile range of four points), becoming very small in the 1980s (two points). Since then, the median has risen gradually but the dispersion has increased significantly, reaching four points again in the 2000s. Against this general trend there have been occasional lurches when a small number of countries experienced mass emigration and other countries simultaneously saw a dramatic increase in immigration. That was the case when large numbers of Albanians moved to Italy and Greece in the early 1990s, an event that is perceptible in the troughs and peaks of the first and last deciles.

Altogether, the last three decades of very low or even negative population growth form part of a general trend of slowing growth that began in the late 1950s, with a steady decline in the natural surplus of births over deaths partly offset by net migration. European countries initially followed a converging path, but subsequently the gaps between them either stabilized or widened again. This challenges the assumption of European convergence.

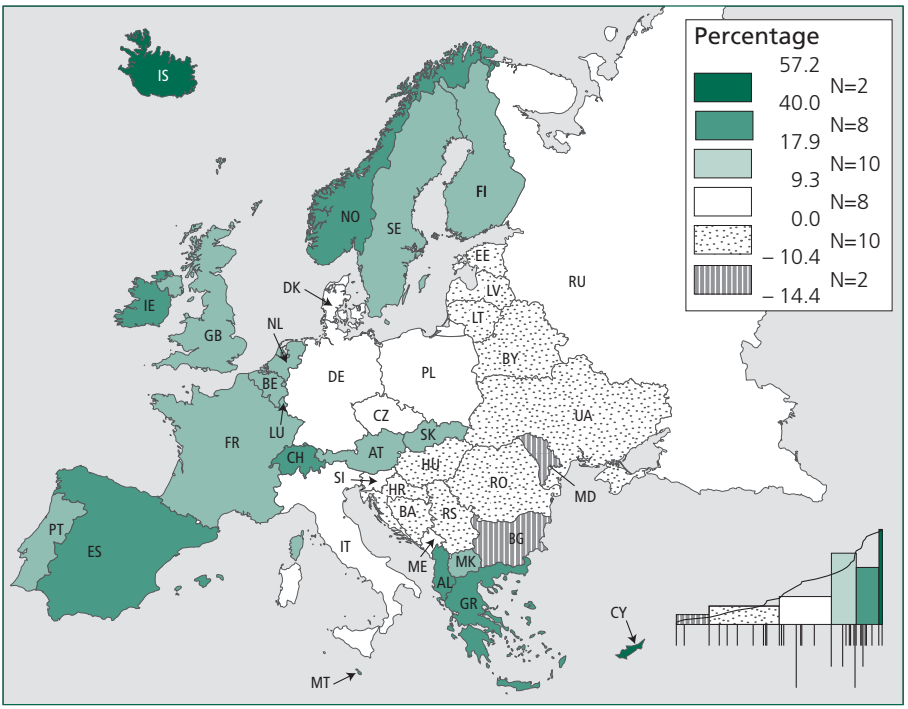
2. Population growth in European countries from 1980 to 2009

On 1 January 1980, Europe had a population of 692.5 million. By 1 January 2009, the population had increased by more than 40 million (or 6%) to 733.4 million.(7) In 22 countries, the increase was above 10%. Among the most populous countries, strong growth was recorded in Spain (23.1%), France (16.3%), and the United Kingdom (9.5%) (Appendix Table A.1). Poland's population grew by more than 7%, Italy's by more than 6%, Germany's by 4.9%, and Russia's by 2.7%. Over the 30-year period, the average population change in the countries of Europe (arithmetic mean of the changes in the various countries, or "political" mean with no weighting to take account of population size) was 15%. However, in the 12 countries located along a belt running from Estonia to the Balkans, the population shrank by 8% on average (Figure 3). The biggest population declines were recorded in Bulgaria (–14%), Moldova and Latvia (–10%).

Of the three decades under review, the highest population growth was recorded in the first (1980-1990), when the population expanded in every country except Hungary (–3%), Bulgaria (–0.9%) and Macedonia (0%). Population growth was highest in southern and eastern Europe and lowest in northern and western Europe.

(7) Since at the time of writing, population data to 1 January 2010 were not available for Albania, Andorra, Bosnia-Herzegovina, Croatia, Macedonia (FYROM), Montenegro, Serbia or Ukraine, we could only examine the population of Europe for the period from 1 January 1980 to 1 January 2009. Demographic trends in the countries are considered either over 30 years (to l January 2010) or over 29 years, depending on the availability of data.

Figure 3. Population growth in the countries of Europe, 1980-2010



Note: The numbers in each class are as similar as possible to the distribution [2, 8, 10, 10, 8, 2] (see Appendix, p. 99). The histograms and aggregate curve to the right of the map present the distribution of values. The areas of the rectangles in the upper histogram are proportional to the numbers of countries in each class. In the lower histogram, each vertical line represents the position of a country.
Sources: Database of developed countries (INED);
Devision database of the Centre for Population Studies (Moscow).

Over the next decade, characterized by profound social change in eastern Europe, the total European population virtually stopped growing. From 1990 to 2000, the population increased by only 4.5 million, or 0.6%, taking the total to 725 million. In 17 countries that were home to almost 300 million people (40% of the population of Europe), the population shrank by 6% on average. The biggest losses occurred in countries where there was armed conflict, particularly Moldova and Bosnia-Herzegovina (–16%), and in two Baltic countries, Estonia and Latvia (–12% and –10% respectively). In fact, depopulation affected the whole of eastern Europe, except Poland, Slovakia and, most noticeably, Macedonia (+8%).

Between 2000 and 2009, the population stopped declining in the Czech Republic, Bosnia-Herzegovina and Slovenia but started falling in Germany and Poland. The total population of Europe increased by 1.2% and only 14 countries had a shrinking population, but these were home to 378 million people, more than half the European total.

3. The components of growth since 1980

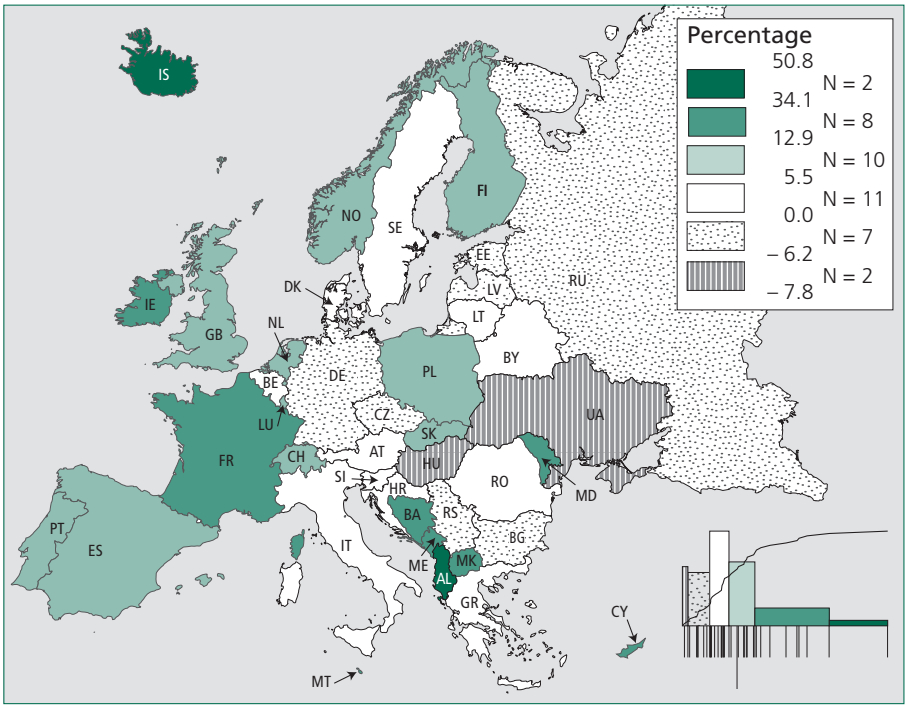
Natural growth: births and deaths

Over the entire period, there was a surplus of births over deaths in 32 European countries.[8] For the population of Europe as a whole, the natural surplus was 2.3%, and the "political" mean was 8.2%. Conversely, deaths exceeded births in eight countries: Germany and seven central and eastern European countries. Five countries in this group experienced a population decline (Hungary, Ukraine, Latvia, Bulgaria and Estonia), but three reported population growth between 1980 and 2010 (Russia, Germany and Czech Republic) (Figure 4).

The three decades in the period under review show contrasting patterns (Appendix Table A.2). In the first decade, "before the crisis", the situation was generally more favourable. Thanks to natural growth, the population of Europe

Figure 4. Natural growth in the countries of Europe, 1980-2010

Relative natural growth from 01/01/1980 to 01/01/2010



Note: For Albania, Bosnia-Herzegovina, Macedonia, Montenegro and Ukraine, the variation is estimated over the period 1980-2009.

Sources: Database of developed countries (INED); Devision database of the Centre for Population Studies (Moscow).

(8) Note that data for Andorra, Liechtenstein, San Marino and Monaco are not included in the analysis of the components of population growth in the countries reviewed.

increased by 3.6%, with an average "political" natural increase of 5.2%. Deaths outnumbered births in only two countries, Hungary and Germany (within today's borders).

In the decade from 1990 to 2000, the map of natural increase changed considerably. Europe was split in two: 27 countries with a total population of 331 million maintained positive natural growth, but 13 countries with a combined population of 404 million reported negative growth. A zone of natural decrease extended across almost all the former socialist countries (except Moldova, Poland and Lithuania), plus Germany and Italy from 1993 onwards. Three of the most populous countries in Europe (Russia, Germany, Italy) recorded more deaths than births.

In the following decade, natural growth became negative in Lithuania, Moldova and Serbia and increasingly so in all the countries where it was already below zero (except Estonia and the Czech Republic). In others, natural increase slowed down (except in France and Luxembourg). The average natural growth of the European population fell again from –0.3% to –1%.

Europe steadily became a region with fairly sustained natural decrease in 15 countries (representing 55% of the European population) and a very low rate of natural increase in 19 others, home to one-third of the population. Over time, natural decrease has intensified and natural increase has slowed.

Migratory component of population change

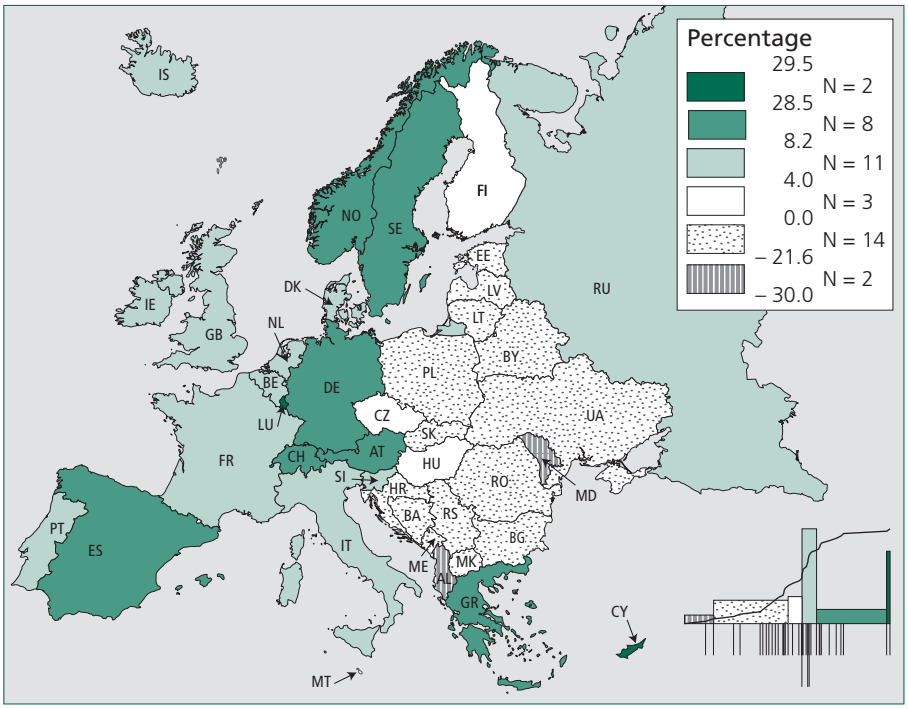
Over the three decades, migration boosted the population of Europe by 26.5 million, or 3.8%, between 1980 and 2009, but this positive overall impact conceals a wide range of situations (Appendix Table A.3). Net migration was positive in 24 countries, with the highest rate of migratory growth in Spain and Switzerland (15%), Greece (13%), Germany, Norway, Switzerland and Austria (8% to 9%)[9] (Figure 5). Conversely, in eastern and central Europe, migration reduced the population by an average 11% in 16 former socialist countries; only Russia, Hungary, the Czech Republic and Slovenia escaped this trend. The largest losses due to migration were reported in the poorest countries: Albania lost 30% of its population, Moldova 24%, Bosnia-Herzegovina 21%, Macedonia 16%, and Montenegro 14%. In these countries with negative net migration, the population also declined, with the exception of Poland and Slovakia, whose populations grew thanks to natural growth.

Between 1980 and 1990, net migration was negative in almost all the socialist countries of south-eastern and central Europe, except Serbia and the Czech Republic. In western Europe, net migration was negative in Ireland, as well as in Portugal, Spain and Italy in southern Europe. By contrast, Sweden, the Netherlands, Germany, Switzerland and Greece reported significant migratory growth.

(9) Migratory growth was highest in two small countries: Cyprus and Luxembourg (almost 30%).

Figure 5. Migratory growth in the countries of Europe, 1980-2010

Relative migratory growth from 01/01/1980 to 01/01/2010



Note: For Albania, Bosnia-Herzegovina, Macedonia, Montenegro and Ukraine, the variation is estimated over the period 1980-2009.

Sources: Database of developed countries (INED); Devision database of the Centre for Population Studies (Moscow).

In the decade from 1990 to 2000, the picture of migration in Europe changed considerably. In some countries, migratory growth accelerated. It increased by a factor of 2 to 2.5 in Greece, Germany, Russia, Sweden, Switzerland and Denmark, and became positive in all western European countries. In others, the huge political upheavals of the 1990s migration resulted in substantial population losses. Albania lost more than 21% of its population, Moldova and Bosnia-Herzegovina 19%. Three populous countries – Romania, Poland and Ukraine – lost 616,000, 535,000 and 298,000 inhabitants, respectively. While the exodus from the Balkans and Moldova was triggered by armed conflict, mass emigration from the Baltic countries and Ukraine resulted from the collapse of the Soviet Union, which encouraged a large section of the Russian and Russian-speaking population to move to Russia. By the end of the decade, when the economic situation had improved, Russia had become a destination for labour migration from neighbouring countries. Despite these mass exoduses, immigration increased the population of Europe by almost 6.7 million over ten years (9.2 per thousand).

Between 2000 and 2010, negative net migration affected fewer countries (9 instead of 17) and to a lesser extent. The countries of emigration were still concentrated in the eastern half of Europe and the Balkans, with the exception of Bosnia-Herzegovina and Serbia, which probably benefited from returning refugees. Albania is still the country with the strongest negative migratory growth, though it has now fallen to –3.5%. In central Europe, net migration turned positive in Slovakia, Slovenia and Estonia, probably because of the improved economic situation in those countries, which had recently joined the European Union.

In countries with positive net migration, migratory growth topped 10% in Spain, which thus caught up with Cyprus and Luxembourg. Traditional emigration countries began to post high levels of migratory growth: alongside Spain, this group included Italy and Ireland (+8.4%). By contrast, migratory growth in Germany fell to 1.1%.

Overall, the population of Europe increased by 16.7 million (or 2.6%) thanks to migration between 2000 and 2010.

III. A wide range of fertility patterns in Europe

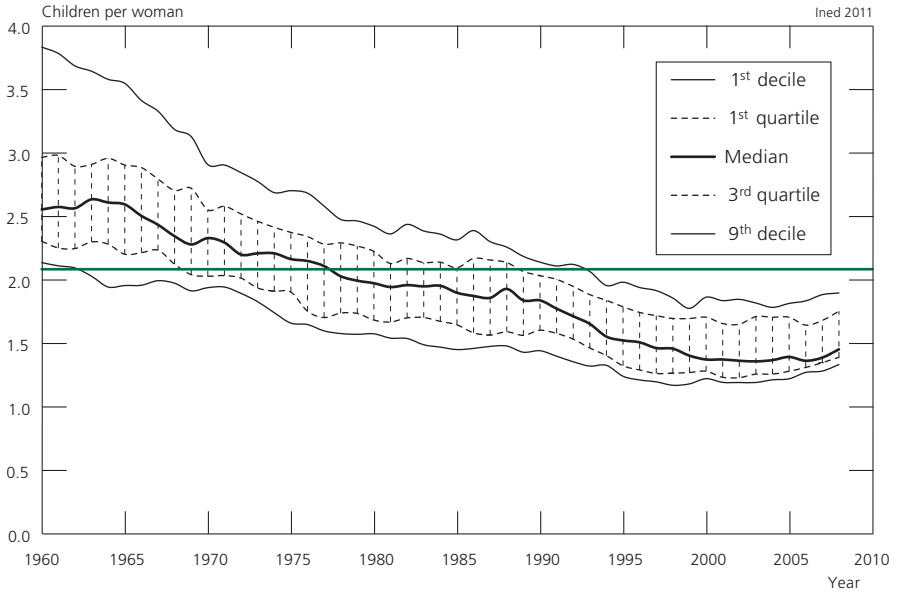
1. General trends from 1960 to 2008

Europe is now relatively homogeneous in terms of fertility: the most recent annual rates rarely exceed the symbolic threshold of two children per woman (Appendix Table A.4). The fertility decline in countries where it was still high is the key factor in this mild convergence. In the countries with the highest fertility (the first decile in the distribution), the rate exceeded 3.9 births per woman in 1960, 2.4 in 1980 and 1.9 in 2008; this represents a decline of 2 points and more than 50%. Over the same period, the last decile (countries with the lowest fertility) declined from 2.1 to 1.6 then 1.3, i.e. a decrease of 0.8 points and almost 40% (Figure 6).

The total fertility rate (TFR) fell below the threshold of two children per woman in Finland and Sweden in 1969. The other northern and western European countries soon followed suit and by 1975 the TFR was below 2 in almost all the countries of the region. In the Mediterranean countries, fertility fell below this threshold slightly later, in the early 1980s (Figure 7A). By the mid-1980s, the TFR was surprisingly low in some very populous countries, falling to below 1.2 children per woman by 1995.

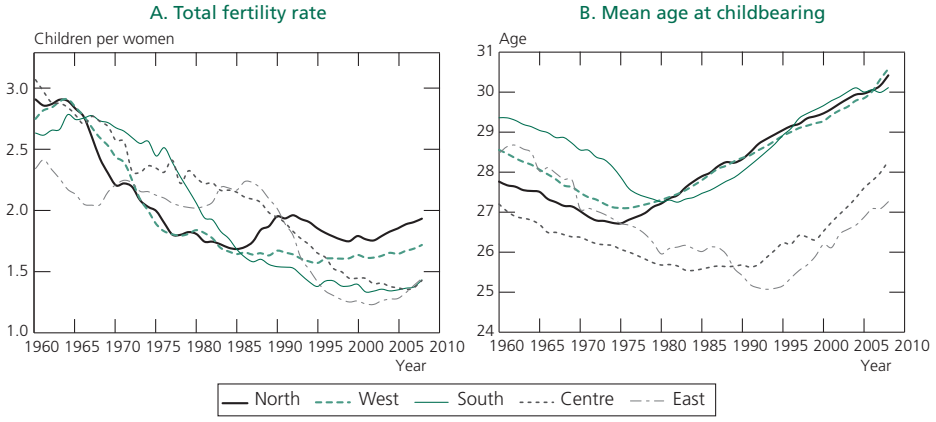
In several central and eastern European countries, fertility fell below two children per woman even earlier (1961 in Hungary), but soon picked up again after family support policies were implemented or expanded in most of the socialist countries. However, after increasing for four or five years, fertility rates began to decline again rapidly. During the crisis of the socialist system in the late 1980s and early 1990s, fertility collapsed in all those countries, and the decline continued throughout the transition period, reaching just 1.2

Figure 6. Distribution of countries by total fertility rate since 1960



Sources: Database of developed countries (INED);
Devision database of the Centre for Population Studies (Moscow).

Figure 7. Total fertility rate and mean age at childbearing in the sub-regions of Europe since 1960



Sources: Database of developed countries (INED);
Devision database of the Centre for Population Studies (Moscow).

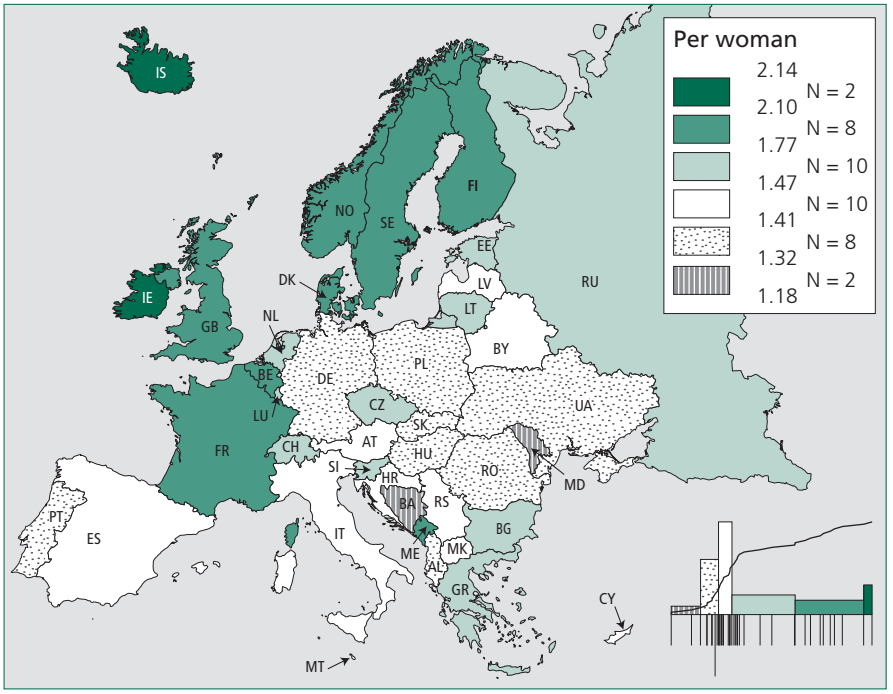
children per woman in some countries. The most spectacular drop occurred in Albania, where the TFR was still above 3 children per woman in 1990 but has remained below 1.4 since 2007 (Appendix Table A.4).

A part of this widespread decline in the TFR might be temporary, however, caused by changes in fertility timing over different cohorts, and accentuated by

the hardships of the transition period in southern and eastern Europe. Since the mid-1970s, the mean age at childbearing has increased considerably in northern and eastern Europe. The same trend emerged ten years later in southern and central Europe and spread to the countries of eastern Europe in the mid-1990s (Figure 7B). All other conditions being equal, the increase in mean age at childbearing causes a temporary decrease in annual fertility rates, since the youngest cohorts have not yet had children and the older cohorts have stopped having children because they have reached their desired family size. It is therefore possible that the fertility of successive cohorts is shifting towards higher ages without actually altering lifetime fertility (Frejka and Calot, 2001; Lesthaeghe, 2001; Avdeev, 2003). This is supported by the slight increase in annual fertility rates in many European countries observed since the beginning of the twenty-first century. In northern Europe and France, the TFR has come close to the threshold of two children per woman; but in southern and eastern Europe, it is still well below that level.

These trends are contributing to a gradual convergence of fertility patterns in European countries. The divide is no longer between west and east but between north-west, south and east (Figure 8). We will examine these developments by distinguishing fertility and fertility levels from other aspects of family transformation.

Figure 8. Total fertility rate in the countries of Europe in 2008
(mean number of children per woman)



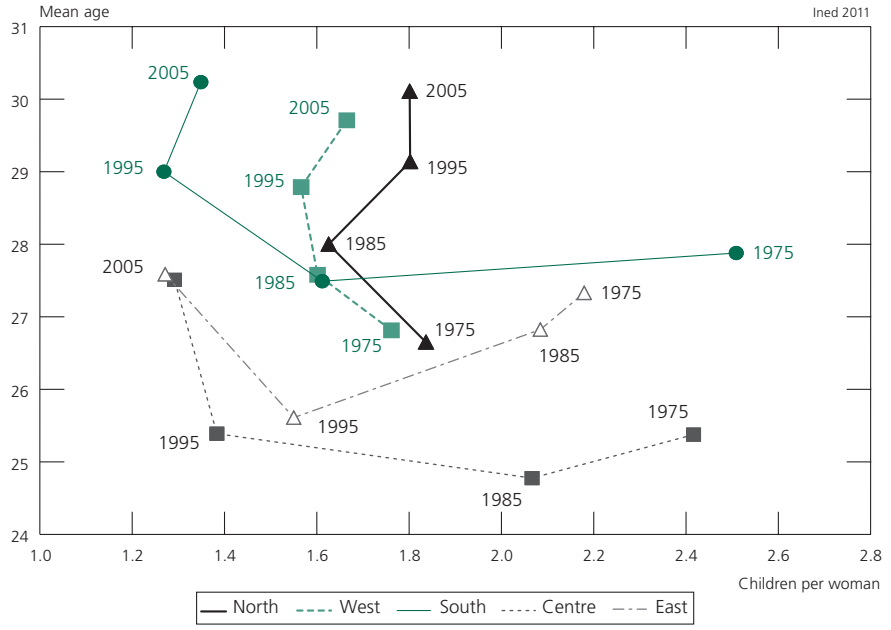
Sources: Database of developed countries (INED);
Devision database of the Centre for Population Studies (Moscow).

2. Fertility and age at childbearing from the 1970s to the 2000s

Figure 9 shows the total fertility rate and the mean age at childbearing in the five sub-regions of Europe by decade since the 1970s. It shows the shift from relatively high fertility to low fertility (from right to left on the graph) that occurred simultaneously with the increase in age at childbearing (from bottom to top on the graph).

European fertility over the past 40 years has followed two paths. In the north and west of the continent, the period was dominated by an increase of at least three years in the mother's age at childbirth between the 1970s and the 2000s, with little change in the annual number of children per woman over the period. In southern, central and eastern Europe, the key trend has been the decline in fertility, although this has slowed or even stopped recently. By contrast with the north and west, the age at childbearing in these sub-regions remained stable for a long time, before rising suddenly in recent years. The ranking of fertility levels has reversed, with lower levels in the north and west than elsewhere in the 1970s, and the opposite pattern today. Delayed childbirth has become a common feature of all sub-regions of Europe in the past five to ten years, maintaining a gap in the mean age of mothers at childbirth between the western and eastern halves of the continent, which has its roots in a deeper past.

Figure 9. Total fertility rates and mean age at childbearing by sub-region, 1975-2005

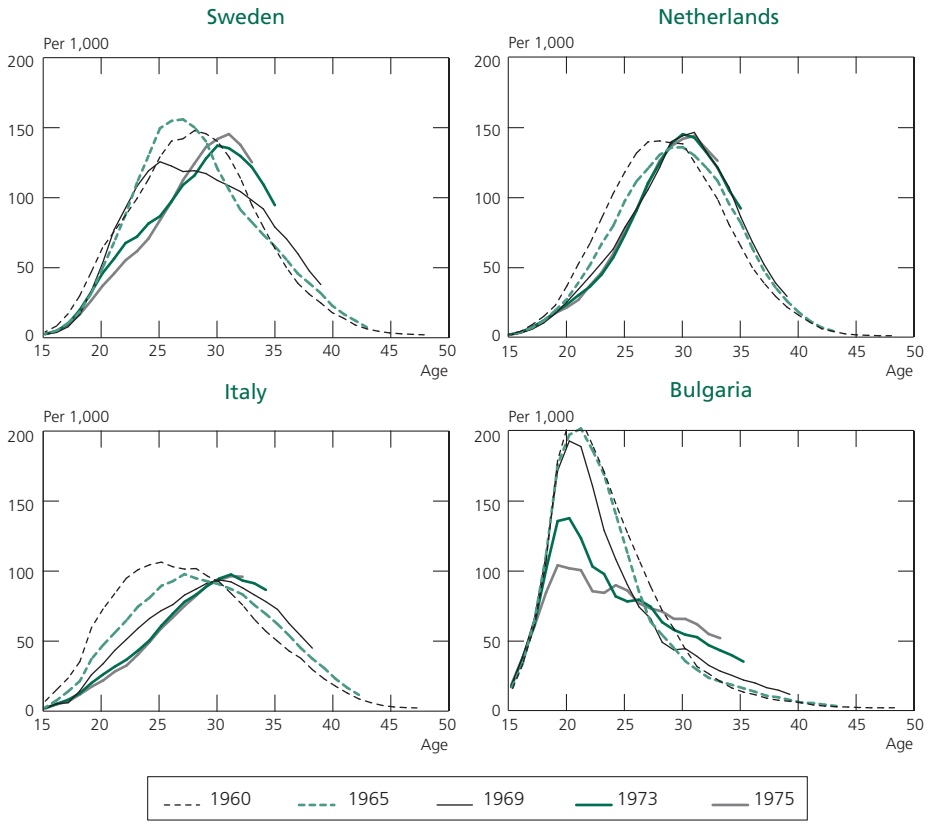


Source: Author's calculations based on Eurostat data.

3. Age-specific fertility by cohort

The scale of the change in fertility timing calls for a closer look at age-specific fertility. The general pattern is a decline in fertility at young ages, partly or fully "offset" by an increase in fertility at older ages. We are thus moving from observation to interpretation of the shift in age at childbearing and the postponement of parenthood. Such concepts are only meaningful from a longitudinal rather than cross-sectional perspective, when the same group of women is observed over time to see whether the children they did not have at an early age are born when they are older. We will focus on a small sample of countries that illustrate the mechanisms at work in each sub-region: Sweden in northern Europe, the Netherlands in western Europe, Italy in southern Europe, and Bulgaria in central Europe[(10)] (Figure 10).

Figure 10. Age-specific fertility rates in the 1960-1975 cohorts in Sweden, the Netherlands, Italy and Bulgaria



Source: Author's calculations based on Eurostat data.

(10) Among eastern countries, Lithuania's profile is very similar to that of Bulgaria.

In the western countries (Sweden, the Netherlands and Italy), the curves of age-specific fertility rates have shifted slowly but surely from younger to older ages. The modal age has increased sharply: the mode has risen from 26-27 to 31 years in Sweden and the Netherlands, and from 24 to 30 years in Italy. These are considerable changes. In Italy, however, the increase in fertility after age 29 has not offset the decrease before that age, resulting in a decline in lifetime fertility from 1.7 to 1.4 children per woman over 15 cohorts. In Sweden and the Netherlands, later fertility has made up more fully for the decline at younger ages, resulting in a smaller decrease in lifetime fertility.

In eastern countries, childbearing is significantly earlier than in the western half of the continent. This is particularly evident in Bulgaria, where women born in 1960 had already had most of their children by age 20 or 21. Changes in fertility timing over the cohorts have resulted not in a shift in the mode of distribution but in a steep decline in the fertility level. As in the west, fertility after age 30 has increased, but this has only partly offset the decline at younger ages. As a result, lifetime fertility has declined from 1.9 to 1.5 children per woman, while average age at childbearing has increased by 2 years.

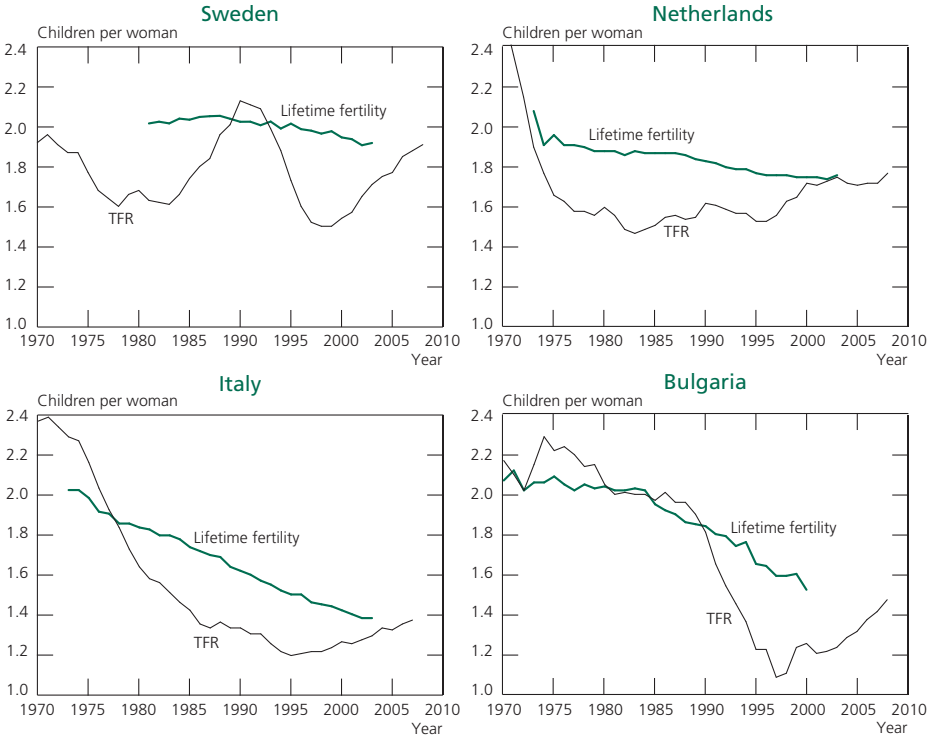
4. Trend in fertility over the years and cohorts

We know that later fertility from one cohort to the next, as women delay childbirth, tends to depress total fertility rates, which consequently understate lifetime fertility, which is the real indicator of reproductive life. We can therefore expect annual fertility rates in western Europe since 1970 to have underestimated the actual fertility of female cohorts over those decades, because the age at childbearing has increased steadily over more than 30 years. In the east of the continent, where the shift in age is more recent, the discrepancy between the cross-sectional and the longitudinal data should become visible more recently (Figure 11).

These expectations are borne out in reality, but there are significant differences between countries. In Sweden, cohort fertility has levelled off at around two children per woman, with a slight downward trend (from 2.05 to 1.91 over the cohorts from 1960 to 1975). The total fertility rate fell to 1.6 children per woman around 1980, then to 1.5 around 2000, with an intervening recovery between 1986 and 1993 driven by policies that encouraged closely spaced births.[11] The current increase is bringing the total fertility rate into line with the cohort fertility rate (1.9 children per woman). The overall pattern has been similar in the Netherlands and Italy – aside from the policy-induced

(11) In Sweden, parents are entitled to paid parental leave after the birth of a child, and receive an allowance that represents 80% of their wage prior to the birth. If a second child is born soon afterwards, the entitlement remains the same, even if they have occupied a less well-paid job in the meantime (such as a part-time position). The Swedes call this the "speed bonus". In 1980, this rule applied when the gap between the two births was less than 24 months. In 1986, the interval was increased to 30 months, extending the advantage to many more parents.

Figure 11. Total fertility rates and lifetime fertility (lagged by 28 years) in Sweden, the Netherlands, Italy and Bulgaria



Source: Author's calculations based on Eurostat data.

recovery – but the downtrend in lifetime fertility has been steeper, especially in Italy; the cross-sectional and longitudinal measurements converge strongly at the end of the period at around 1.75 births per woman in the Netherlands and only 1.4 in Italy. Although recent indicators are up and converging towards the lifetime fertility in all three countries, patterns vary: a strong recovery towards a relatively high level in Sweden, a moderate increase towards moderate levels in the Netherlands, and a very modest increase towards still low fertility in Italy.

The situation in eastern Europe in recent decades has been very different, owing to abrupt policy changes in the early 1990s. Total fertility rates fell sharply soon after and have tended to recover recently (Bulgaria, Figure 11). Cohort fertility followed a downward trend and total fertility rates amplified this movement by hitting very low levels just before or after 2000, with a period of delayed births followed by a partial recovery. Lifetime fertility and total fertility rates seem to be converging at around 1.5 children per woman, a much higher level than the very low values in the years around 2000, but well below the rates in the years before 1990.

The discrepancy between the level and even the trend of annual fertility indicators (total fertility rate) and the indicators of the final number of offspring born to a cohort (lifetime fertility) has been a recurrent issue in the analysis of demographic trends in Europe for at least 40 years. With the steady trend towards later childbearing in all the countries, cross-sectional measures are no more than a default estimate of lifetime fertility. In the case of Sweden, for example, the steep decline in total fertility rates in the 1970s was attributable chiefly to delayed childbirth, not to a decrease in lifetime fertility. The clear recovery in the second half of the 1980s, concomitant with the introduction of a family policy that encouraged closely spaced births, has not affected lifetime fertility. The only impact of the policy was to slow the increase in the mother's age at childbearing (over the 1960-1965 cohorts), with the underlying trend partly offset by closer spacing of births. As is often the case, high annual fertility rates may have been interpreted as an increase in family size when they merely reflected a fluctuation in fertility timing.

In recent years, the significant recovery in fertility in Sweden and some western European countries is probably less indicative of higher lifetime fertility than of a pause in the postponement of childbearing, which may mean that the trend of increasing age at childbearing is peaking.

5. Birth order and family size

A strong and lasting contrast has materialized between slightly declining or stable cohort fertility in north-western Europe, and low, declining cohort fertility elsewhere, especially in the south.

In Sweden, for example, not only has lifetime fertility stabilized in recent female cohorts (1965-1975) but the distribution of family sizes has changed little (Table 2). The percentage of childless women has increased only slightly, from 12% to 14%. The percentages of women with only one child and with two children are roughly stable, with the former being a very small minority (just over 15%) and the latter accounting for almost half (45%). Only the percentage of women with three or more children has declined, but even that only moderately (from 29% to 25% over ten cohorts).

In Spain, by contrast, the distribution of family sizes has changed considerably. The percentage of childless women has increased sharply over the ten cohorts (from 16% to 26%). The percentage of mothers with only one child has also increased but much more moderately, from 28% to 30%, over the same period. The other significant difference with Sweden is a steep decline in the percentage of families with two children (from 44% to 35%), while families with three or more children, which were already less common, have declined by a further three points (from 12% to 9%).

For the most recent cohort, born in 1975, the distribution of families by size reveals the scale of the difference between southern and northern Europe today. In Sweden, only a minority of women from this cohort – most of whom

Table 2. Characteristics of cohort fertility by birth order in Sweden and Spain, 1965-1975

	Cohort										
	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
Sweden											
Percentage of women with											
0 children	12	13	12	12	12	13	12	13	13	14	14
1 child	15	15	15	15	16	15	15	16	16	16	16
2 children	44	43	45	45	45	46	46	46	45	45	45
3+ children	29	28	28	27	27	26	26	26	26	25	25
Mean age at childbirth for											
1st birth	26.8	26.9	27.0	27.2	27.3	27.5	27.8	28.0	28.2	28.4	28.5
2nd birth	29.4	29.5	29.6	29.7	30.0	30.2	30.4	30.6	30.8	31.0	31.1
3rd birth	31.6	31.7	31.9	32.0	32.2	32.4	32.6	32.8	32.9	33.1	33.1
Spain											
Percentage of women with											
0 children	16	18	18	18	21	21	22	23	25	25	26
1 child	28	27	28	29	28	29	29	30	30	30	30
2 children	44	43	43	43	41	40	39	38	37	35	35
3+ children	12	11	11	11	10	10	10	9	9	9	9
Mean age at childbirth for											
1st birth	27.2	27.6	27.8	28.1	28.5	28.9	29.3	29.6	29.9	30.0	30.2
2nd birth	30.8	31.0	31.3	31.5	31.7	32.0	32.2	32.4	32.5	32.7	32.7
3rd birth	32.5	32.8	33.0	33.2	33.4	33.6	33.8	33.9	33.9	34.0	34.1

Source: Author's calculations based on Eurostat data.

had children in the 2000s – are childless (14%) or have only one child (16%); a large majority have two or more children (45% have two children and 25% at least three). In Spain, by contrast, a majority of these women are childless (26%) or have only one child (30%), while women with two or more children are a minority (35% with two children, 9% with three or more). The differences between the two countries, which have widened significantly over the last ten cohorts, are particularly evident with regard to childless women, now much more common in Spain than in Sweden, and women with two children, much rarer in Spain.

While trends in terms of number of children are diverging, the two countries show a similar trend in mother's age at the birth of each child, with a large increase in both Sweden and Spain. Over ten cohorts, the average age has generally increased by 1.5 to 2 years at each birth order. This suggests some stability in the spacing of births, with a delayed first birth but closely spaced subsequent

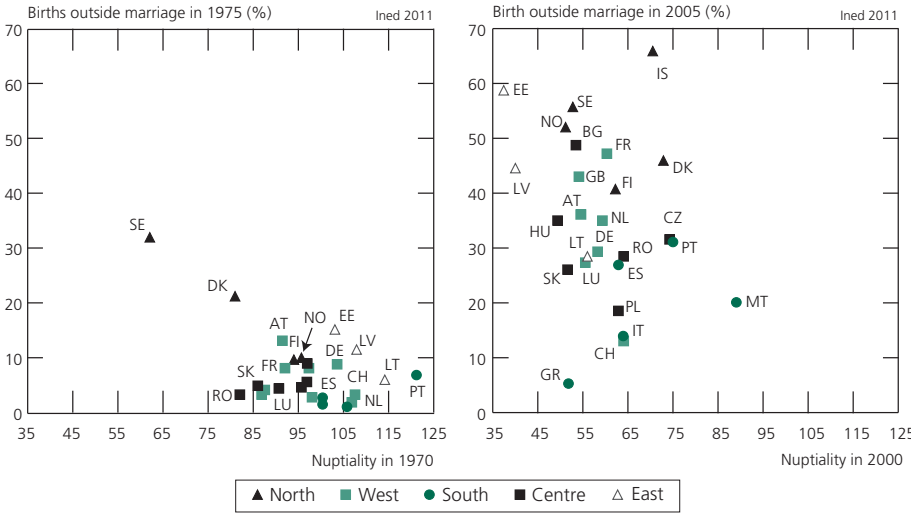
births (when they occur). The slight exception in Spain is that while age at first birth has been delayed by three years, the increase in age at subsequent births is slightly smaller. This suggests a narrower gap between the first and second birth. However, it may also reflect a specific group of women who had their first child at a late age and consequently had only one child in total.

IV. Fertility and family types

1. Nuptiality and births outside marriage from the 1970s to the 2000s

The four decades between 1970 and 2010 were characterized both by a dramatic decline in marriage and a strong rise in births outside marriage (Appendix Table A.5). The two trends are linked, as the decline in nuptiality makes way for less formal unions, which may provide a context for childbearing, although to different extents depending on the period and country. In Europe, this relationship is expressed generally in a negative correlation between total marriage rates[(12)] over a period and the percentage of births outside marriage a few years later. The lower the marriage rate, the higher the percentage of births outside marriage (Figures 12 and 13).

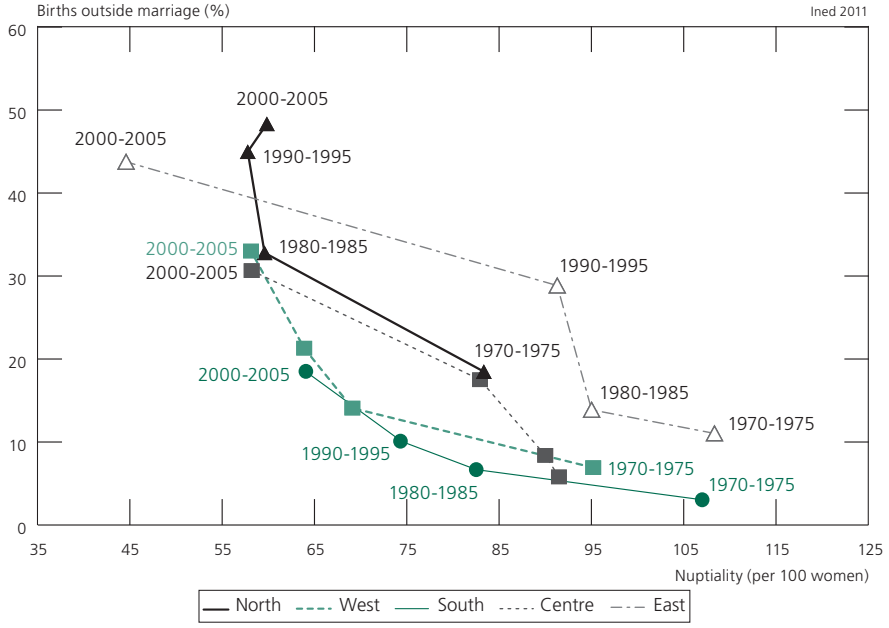
Figure 12. Total marriage rate (per 100 women) and percentage of births outside marriage 5 years later



Source: Author's calculations based on Eurostat data.

(12) The sum of age-specific first marriage rates of women aged 15-49. The age-specific rates are calculated as the percentage of female first marriages in the total female population of a given age. Like the total fertility rate, the total marriage rate can diverge significantly from the frequency of first marriages before age 50 in actual cohorts: when ages at marriage are decreasing, the total marriage rate overestimates nuptiality and can exceed 100%.

Figure 13. Nuptiality and non-marital births five years later by sub-region over time



Source: Author's calculations based on Eurostat data.

In the 1970s, marriage was still dominant in almost all European countries and fertility outside marriage was rare. Only Denmark and Sweden saw a significant decline in marriage and a percentage of births outside marriage that exceeded 20-30%. Those pioneering countries started to exhibit a negative correlation between nuptiality and fertility outside marriage. Elsewhere total marriage rates often exceeded 100%, attesting to increasingly early marriage in southern, western and eastern Europe (but not central Europe). Consequently the dispersion of marriage rates was relatively high, ranging from under 90% to over 120%; much higher than the dispersion of percentages of births outside marriage, almost always below 10%.

Ten years later, in the 1980s, the behaviour observed in Denmark and Sweden had spread to the other Nordic and some western countries. Southern Europe also saw a decline in nuptiality, but the percentage of births outside marriage remained very low. The countries of central and eastern Europe now had the highest marriage rates in Europe.

From the 1990s onwards, the whole continent exhibited a negative relationship between nuptiality and fertility outside marriage. In this decade, however, there was a contrast between low nuptiality and a high percentage of births outside marriage in the north, and still relatively high – although strongly declining – nuptiality and still low births outside marriage in the

south. Western countries were in an intermediate position. Most countries in eastern Europe were still very different; although the correlation was negative, nuptiality levels remained much higher.

In the 2000s, all the countries of Europe shared a regime of low nuptiality, as the last countries of eastern Europe aligned themselves with the rest of the continent. The main difference concerned fertility outside marriage, which has a more discrete inverse relationship with nuptiality. The percentage of births outside marriage was very high everywhere in the north (above 40%), as well as in France and the United Kingdom in the west, in Slovenia and Bulgaria in the centre, and in Estonia and Latvia in the east. Southern countries all exhibited percentages below 30%.

The changes over time in the different sub-regions have all been towards lower nuptiality and a higher percentage of births outside marriage. The trend was steady and gradual in western Europe, followed by southern Europe with a lag of ten or fifteen years. It was much more rapid in northern Europe, and likewise in eastern Europe where it began 20 years later in the 1990s (Figure 13).

2. First marriage in female cohorts

The example of the Netherlands illustrates the trend reversal that occurred in western Europe between 1970 and 1980 for women born in the 1950s (Figure 14). The percentage of never-married women[13] at 20-24 years, which fell over 20 cohorts from 70% to 45%, rapidly rose again to over 80% before gradually edging up towards 90%. Women who marry before 20-24 represent only a tiny minority in recent cohorts, due not only to the increasing rarity of early marriage but also to the growing numbers of women who will probably never marry, as indicated by the rising percentage of never-married women aged 45-49. Marriage has become later and rarer over the successive cohorts, in contrast to the early and high nuptiality of the post-war years, the golden age of marriage.

This trend is even more visible in Sweden, where it began earlier. The percentage of never-married women at age 20-24 now seems to have reached a peak of around 92%. The same applies at older ages, suggesting that the characteristics of rare and late marriage could be stabilizing at around three-quarters of women never-married at 25-29 (compared with fewer than one-quarter 30 years earlier) and one-third of women who will probably be never-married at 50 (Figure 14).

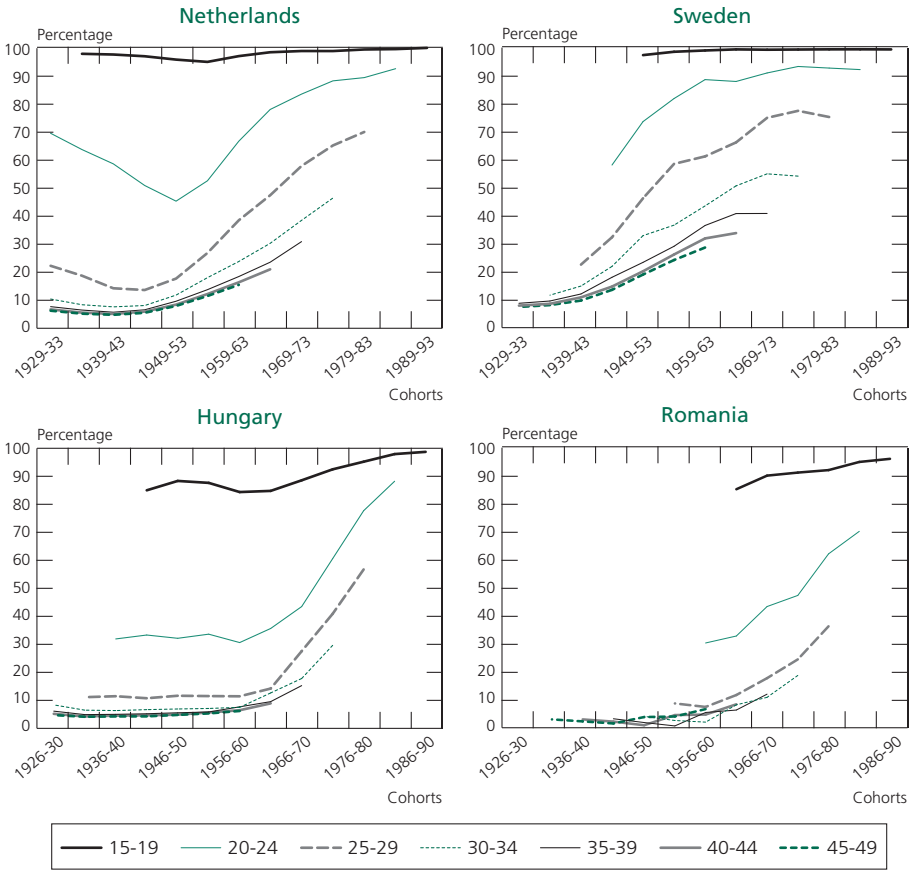
In the eastern half of the continent, Hungary is a country where marriage was early and frequent until recently and then departed dramatically from the

(13) "Never-married" should be understood as never legally married. Anyone not in this category has therefore been married (in law) at least once. The age-specific percentages of never-married people are an indication of the earliness or lateness of marriage.

traditional model in the 1980s. Only 30% of women born around 1960 were never-married at age 20-24, and fewer than 10% by age 50. In the space of only a few cohorts, however, the percentage of never-married young women reached the startling level of 90%, comparable to Sweden and the Netherlands, and the percentage of women who will still be never-married at 50 is set to grow rapidly, with a lag of several decades. This may signal the end of eastern Europe's strongly distinctive pattern. Although less radical, the trend in Romania is similar to that of Hungary.

What are the specific trends for these four countries?(14) The percentage of women who will still be never-married at 50 has risen sharply in all four

Figure 14. Percentages of never-married women at different ages in successive cohorts, in the Netherlands, Sweden, Hungary and Romania



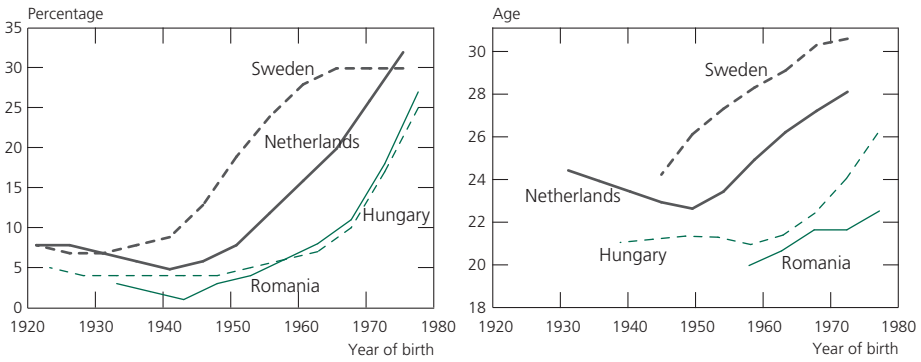
Source: Author's calculations based on Eurostat data.

(14) It is assumed that the probability of marriage at older ages will remain constant at the level immediately prior to 2010.

countries, from fewer than 10% to around 30% over 20 or 30 cohorts (Figure 15). The trend is the same in all four countries, but with differences in timing: it first emerged in Sweden, then occurred in the Netherlands about 15 cohorts later, and finally in Hungary and Romania another 10 years after that.

The mean age of women at first marriage in Sweden rose from 24 to 31 years over 30 cohorts. That is a huge increase, which now seems to be peaking. A similar trend occurred in the Netherlands with a lag of about 15 years and at younger ages (23 to 28). It is hard to say for certain whether the two countries will converge. In the east of the continent, Hungary followed suit some years later. The increase was more moderate in Romania, leaving a distinctive eastern pattern, albeit conforming to the generalized pattern of later marriage (Figure 15).

Figure 15. Proportion of never-married women at age 50 and female mean age at first marriage by cohort in the Netherlands, Sweden, Hungary and Romania



Source: Author's calculations based on Eurostat data (extrapolation assuming constant marriage probabilities).

3. Marriage, divorce, consensual unions

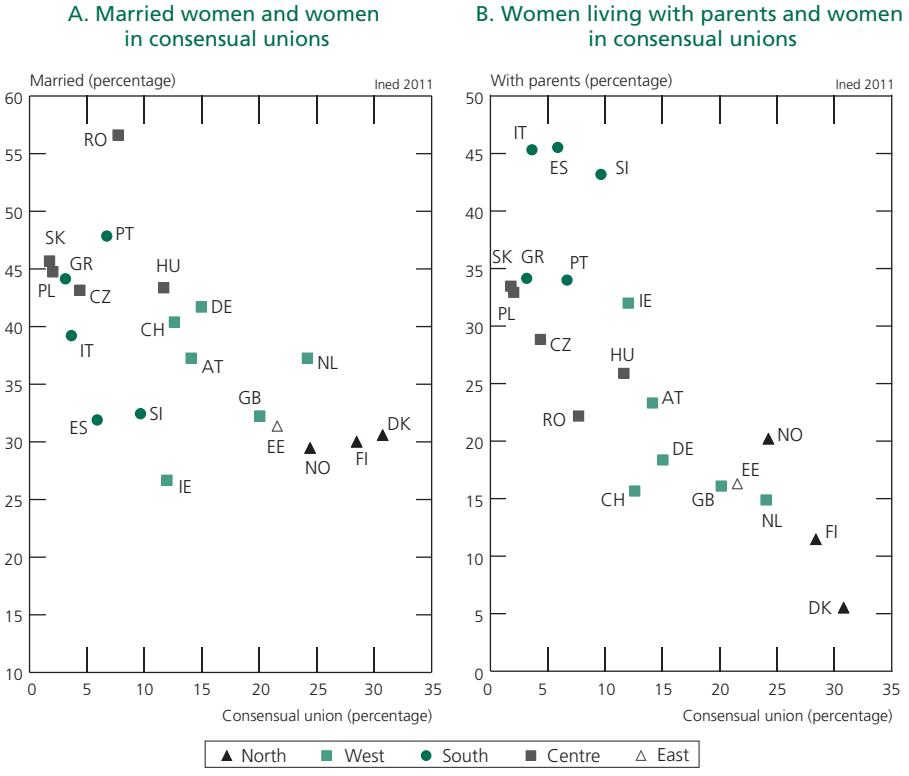
The growing proportion of persons who never marry and the rising mean age at first marriage reflect a broader phenomenon of decline in the institution of marriage. This is also reflected in the increase in divorce almost everywhere in Europe, the lower frequency of remarriage after divorce or widowhood, and the increase in consensual unions.

The increase in divorce over the past 40 years is common to the whole continent. However, the rise has been steeper in the north and west, where legislative changes have supported this trend by facilitating divorce. Some 40% to 50% of marriages now end in divorce, compared with 10% to 20% around 1970. In Mediterranean countries like Italy and Spain, the increase has been much smaller and the frequency of divorce is still only about 10%, creating a big gap with the rest of western Europe. The former socialist countries form a heterogeneous group: divorce rates are relatively high and steadily increasing

in Hungary, the Czech Republic and the Baltic countries, but are lower in Poland, Romania, Bulgaria and Slovakia, although they have recently seen a sharp increase. Between 20% and 50% of marriages in central and eastern Europe now end in divorce (Sardon, 2006; Sobotka and Toulemon, 2008).

Concomitant with the decline of marriage and the rise of divorce, consensual unions have also increased. In the western half of the continent, the current situation is nevertheless extremely diverse (Figure 16). In the censuses of 2000-2001, the percentage of women aged 20-34 living with a partner without being married ranged from around 5% in the southern countries to 25% to 30% in the northern and western Atlantic countries, with countries in the interior of the continent occupying an intermediate position (10% to 15%). Eastern Europe is more homogeneous, since informal unions are quite rare throughout the sub-region (between 2% and 12%), with the exception of Estonia, which is similar in this respect to the Nordic countries (Sobotka and Toulemon, 2008).

Figure 16. Percentage of women in consensual unions at ages 20-34 in relation to percentage of married women (A), and percentage of women living with their parents (B) in 2000-2001 in selected European countries



Source: Sobotka and Toulemon, 2008, based on Eurostat data.

This geography could suggest that consensual unions are more common in countries where marriage has been in severe decline for a long time, and where consensual unions have become a substitute for legal ones. However, there is no systematic negative correlation between the percentages of married women and of women in consensual unions at ages 20-34 (Figure 16A). Ireland, Slovenia and Spain, for example, simultaneously exhibit low percentages of married women and fairly low percentages of women in consensual unions.

There is a much clearer negative relationship between the percentage of young women still living in their parents' homes and the percentage of women in consensual unions (Figure 16B). In southern countries, a high frequency of living in the parental home is concomitant with low rates of cohabitation outside marriage, whereas the reverse is typical of Nordic countries like Denmark and Finland, where women tend to leave the parental home much earlier. Eastern Europe displays similar behaviour to the south, probably because of the importance of family solidarity and the difficulty of obtaining independent housing. In the west, the Atlantic countries are more similar to the Nordic countries, while the continental countries are more similar to central Europe.

The relationship determined by comparing countries at a given point in time confirms the pattern observed over time, i.e. that young people are living in their parents' homes for longer and delaying union formation, as they spend longer in education and find it increasingly difficult to find employment and housing after completing their education (Corijn and Klijzing, 2001).

4. Marital and non-marital fertility

The contrast between countries where the proportion of non-marital births is high and similar to that of births within marriage, and those where fertility outside marriage is still rare, shows up particularly clearly in the outcomes of pregnancy outside marriage. Because conception outside marriage is often followed by the legalization of an informal union, non-marital births are still rare in some countries (Appendix Table A.5). In western Europe, unmarried pregnant women almost always married in the 1950s and even the 1960s. This is still the case now in countries like Poland, used here as an illustration. In the early 1990s, 7 in 10 pregnancies to unmarried parents in Poland resulted in marriage before the birth of the child. Despite a steady decline, the percentage is still above 4 in 10 (Figure 17).

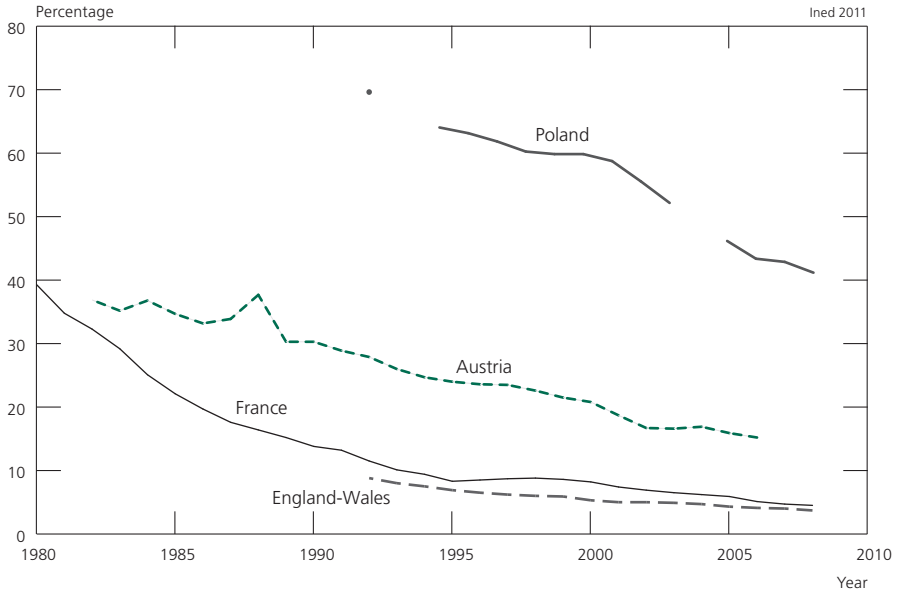
The "nuptiality of pregnant women"[15] in France and England was above 60% in the 1960s. It fell to 40% around 1980 and is still declining, though it

(15) The group of unmarried pregnant women consists of women who are still unmarried at delivery and who give birth to a child outside marriage and women who marry before delivery (marriage with "prenuptial conception"). Nuptiality of pregnant women is the ratio of the latter sub-group (pregnant women who marry before the child is born) to the total (all initially unmarried pregnant women).

is now below 10%. Fertility outside marriage accounts for around half of overall fertility in these two countries. Austria is an example of an intermediate level.

In all cases, the child's legal status is no longer a major concern for parents. However, considerable differences remain in the frequency of marriage during pregnancy, resulting in extremely heterogeneous patterns of fertility outside marriage and reflecting wide variations in the acceptability of non-marital fertility in European societies.

Figure 17. Nuptiality of pregnant women since 1980 in selected countries of Europe

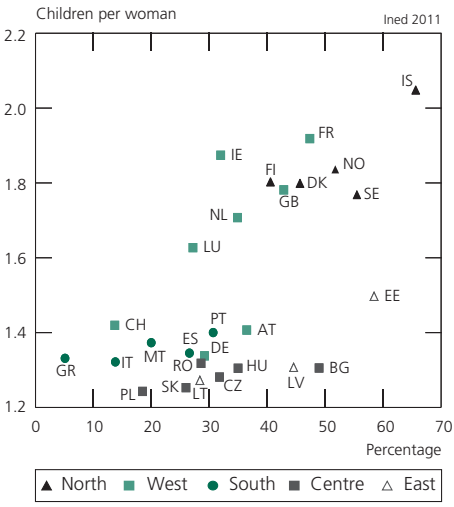


Note: The nuptiality of pregnant women is calculated as follows:
Births before 8 months of marriage / (births outside marriage + births before 8 months of marriage).
Source: Author's calculations based on data from each country.

5. Overall fertility and non-marital fertility

The combined trend in overall fertility and in the frequency of births outside marriage over 40 years in European countries has led to a seemingly paradoxical situation: fertility in recent years has been highest in the sub-regions where the percentage of births outside marriage is also the highest, such as in northern Europe. The picture is reversed in the southern countries, which combine low overall fertility with low fertility outside marriage. Western Europe is in an intermediate position. The pattern is slightly different in the eastern half of the continent, where overall fertility is low in all countries, and

Figure 18. Total fertility rate and proportion of births outside marriage in 2005



Source: Author's calculations based on Eurostat data.

sometimes even very low, and where the percentage of births outside marriage is moderate, except in Estonia, Lithuania, Bulgaria and Slovenia, where non-marital fertility remains high (Figure 18).

If we take the percentage of births outside marriage as an indicator of the European decline in the institution of marriage in recent decades, the most prudent conclusion is that there is no clear, systematic link between the degree of "de-institutionalization" of the various countries and their level of fertility. Declining marriage and low fertility can probably be attributed to different sets of causes.

V. What do these fertility patterns reveal?

1. The second demographic transition

The most widely accepted interpretations of family change in Europe in the past 40 years are grouped under the broad concept of "second demographic transition", a theory advanced by Ron Lesthaeghe and Dirk van de Kaa in 1986 (Lesthaeghe and van de Kaa, 1986).

The "first demographic transition" refers to the decline in mortality and fertility that began to emerge in the late eighteenth century in France and that has been gradually spreading to the rest of the world up to the present day.

The second demographic transition, which began in the 1960s in some countries, is characterized by a long-term stabilization of fertility at below-replacement levels, new forms of domestic organization other than marriage, and fertility that is independent of the legal status of the union. This second demographic transition is bringing new social challenges in its wake, including faster population ageing, greater instability of households, and the prevalence of poverty in some types of households, such as lone-parent families and one-person households (Billari, 2008; Lesthaeghe, 2001; McDonald, 2008).

The first demographic transition was associated in Europe with a phase of development during which economic growth generated new material aspirations, better living conditions (in work, housing and health), the formation of human capital (universal education) and the creation of a welfare system.

Solidarity was a central concept. These trends were underpinned by a gendered division of roles within the family and encouraged a return to a "bourgeois" family model.

As western populations became richer and better educated, their concerns shifted away from the strict needs of survival, security and solidarity. More importance was placed on self-awareness and self-fulfilment, freedom of thought and action (the decline of religion), democracy in everyday life, the benefits of work and educational values. The second demographic transition is therefore closely linked to Ron Inglehart's (1990) concept of "post-materialism". According to the second demographic transition theory, its demographic aspects (long-term below-replacement fertility and the expansion of alternative types of household organization) should appear in all societies that develop as capitalist economies with democratic institutions, as "higher-order concerns" prevail (Inglehart, 1990). On the individual level, the choice of new types of household (cohabitation, living apart together, etc.) is associated with the expansion of individualistic and non-conformist values. That association is not limited to the countries of northern and western Europe; it has expanded to the south, centre and east of the continent.

In this description of fertility and marriage trends in Europe over the past 40 years, the second demographic transition theory seems to offer a good explanation of trends in marriage and informal unions and their corollary: births outside marriage. These trends, which have spread from the north and west of the continent to the south and east, coincide strongly with a change in attitudes and predominant values in those societies. However, the theory does not hold so well with regard to fertility trends, in particular during the recent phase, where stabilization at a relatively high level, or even recovery, is occurring in northern and western Europe, while fertility remains very low and even continues to decline in the south and east. A continuum of change in mentalities does not seem to account for these disparities (Thornton and Philippov, 2009).

2. Towards more equal gender relations

To gain more insights into these disparities in fertility rates and trends, we probably need to consider changes in gender relations. In countries where gender relations have evolved the most, the transition has occurred in two distinct phases.

In the first phase, a better balance between men and women develops in the public sphere (in particular in employment), as the female labour force participation rate rises in response to improvements in education, declining fertility and longer life expectancy. While women play a larger role in the public sphere, previously the preserve of men, men do not step up their contribution in the private sphere, which puts families under pressure to reduce their fertility. In countries that have not moved beyond this phase, particularly in southern

Europe, the current low levels of fertility can probably be attributed to strong disparities between men and women in family responsibilities, combined with relative economic equality between the sexes.

In the second phase, the gender balance improves in the private sphere – at very different speeds from one country to another, with the northern countries taking the lead – in terms of division of household chores, conjugal and family life, and care for dependents. Families become stronger as men contribute directly to domestic tasks (in the broad sense) and fertility moves closer to the replacement level. It seems that men's greater involvement in their families enhances gender equality and thus contributes to higher fertility. This is supported by studies that show higher fertility in couples where fathers participate more in family life, for example by taking a large share of parental leave when children are born (Goldscheider and al., 2010).

3. The role of family policies

These findings raise the question of how policies aimed at fostering equality between parents are liable to influence their fertility decisions and, more generally, of the extent to which family policies are responsible for the differences in fertility levels and trends between European countries in recent decades (Gauthier, 2007).

We can be guided by the following observation. If recent fertility rates and female labour force participation in Europe are plotted on the same graph, a positive correlation is observed: on average, the higher the female labour force participation, the higher the level of fertility. The same graph for the 1970s and 1980s would show a negative correlation: fertility was lowest in countries with the highest female labour force participation. This led to the conclusion that motherhood and employment could not easily be combined (Thévenon, 2008). The positive correlation observed now could be due to the fact that the societies which most strongly encourage women to participate in the labour force are also those which, by fostering equality between partners and parents within the family, facilitate relatively high fertility. This suggests that by encouraging men to participate more in family life, family policies to promote the work-life balance can help maintain fertility close to the replacement level, as is currently the case in the countries of northern Europe and in France (Hoem, 2008; Ronsen and Skrede, 2010).

M.-T. Letablier and al. (2009) recently reviewed studies that sought to measure the impact of family policies on fertility. They found that, in addition to family cash benefits, provision of services (infant and pre-school daycare, etc.) and measures to free up time for families (parental leave, flexible working hours, etc.), a consistent package of complementary measures, including early childhood care provision and better living conditions for families were necessary to encourage parenthood. They also showed that the policies which influence couples' decisions are those which remain in place over the long term, thereby

contributing to a social climate that is favourable to families, and which provide consistent, continuous support throughout childhood.

VI. Life expectancy at birth: uneven progress

Since the end of the Second World War, improvements in healthcare have been considerable everywhere in Europe. However, the European life expectancy map has changed profoundly over the decades, with very different rates of progress across countries. In 1950, the north-western quarter of Europe was way ahead of the other sub-regions. By the mid-1960s, the gaps had narrowed considerably, thanks to remarkable advances in southern and eastern European countries. The situation subsequently continued to improve everywhere in Europe except in the east, confronted with a health crisis. In the 1970s, a new east-west divide cut through the European life expectancy map (Meslé and Vallin, 2002a; Caselli and Vallin, 2002; Monnier, 2006).

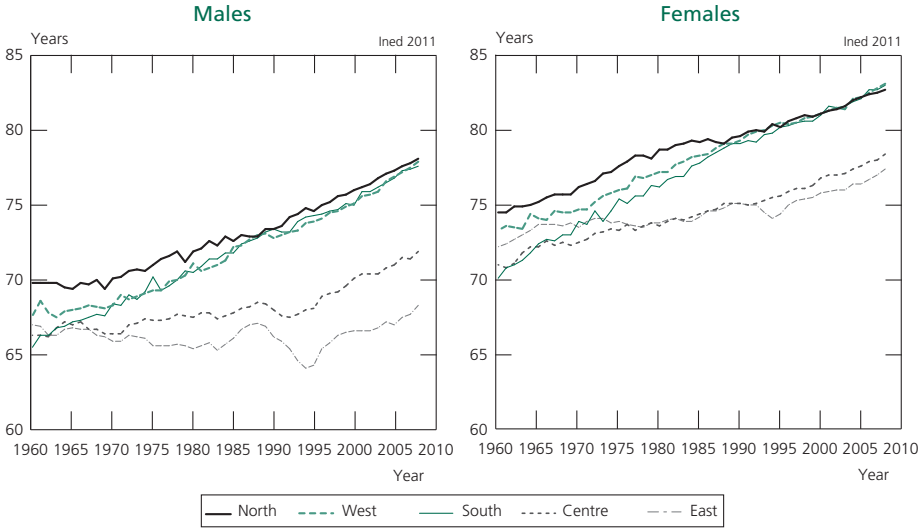
By any measure (life expectancy at birth and at age 65, child and adult mortality), the dividing line was still clear in 2008. In the past few decades, male and female life expectancies began to converge. The Scandinavian countries spearheaded this convergence, which has gradually spread to the rest of Europe, except for eastern Europe and most of the central European countries.

1. Life expectancy at birth in the sub-regions of Europe

The steady overall increase in European life expectancy conceals sharp divergences between the five sub-regions (north, east, centre, west and south), as shown by the changes in their arithmetic means, calculated for groups of between four countries (eastern Europe) and 12 countries (southern Europe).

In the early 1960s, northern Europe was ahead of the other sub-regions, which all exhibited similar life expectancies, especially for men (Figure 19). Over that decade, life expectancy gains then slowed in Scandinavia, and even stabilized for men. The slower pace of improvement in the most advanced countries reflected slow progress against cardiovascular disease and the growth of "lifestyle diseases" (smoking, alcoholism, road accidents, etc.). It was not until the "cardiovascular revolution" of the 1970s that life expectancy increased again (Vallin and Meslé, 2010). Progress through medical innovation and behavioural changes (healthier lifestyles and diets) occurred gradually in northern, western and southern Europe. By 1985, there was little or no distinction between the three sub-regions, which subsequently enjoyed steady improvement, mainly attributable to increasingly effective action against mortality from cancer (prevention campaigns, anti-smoking policies, etc.). In these sub-regions, given the already high life expectancy levels at birth (78 years for men and 83 years for women), the potential for further life expectancy gains is concentrated at the oldest ages.

Figure 19. Male and female life expectancy at birth in the sub-regions of Europe since 1960.



Sources: Database of developed countries (INED);
Devision database of the Centre for Population Studies (Moscow).

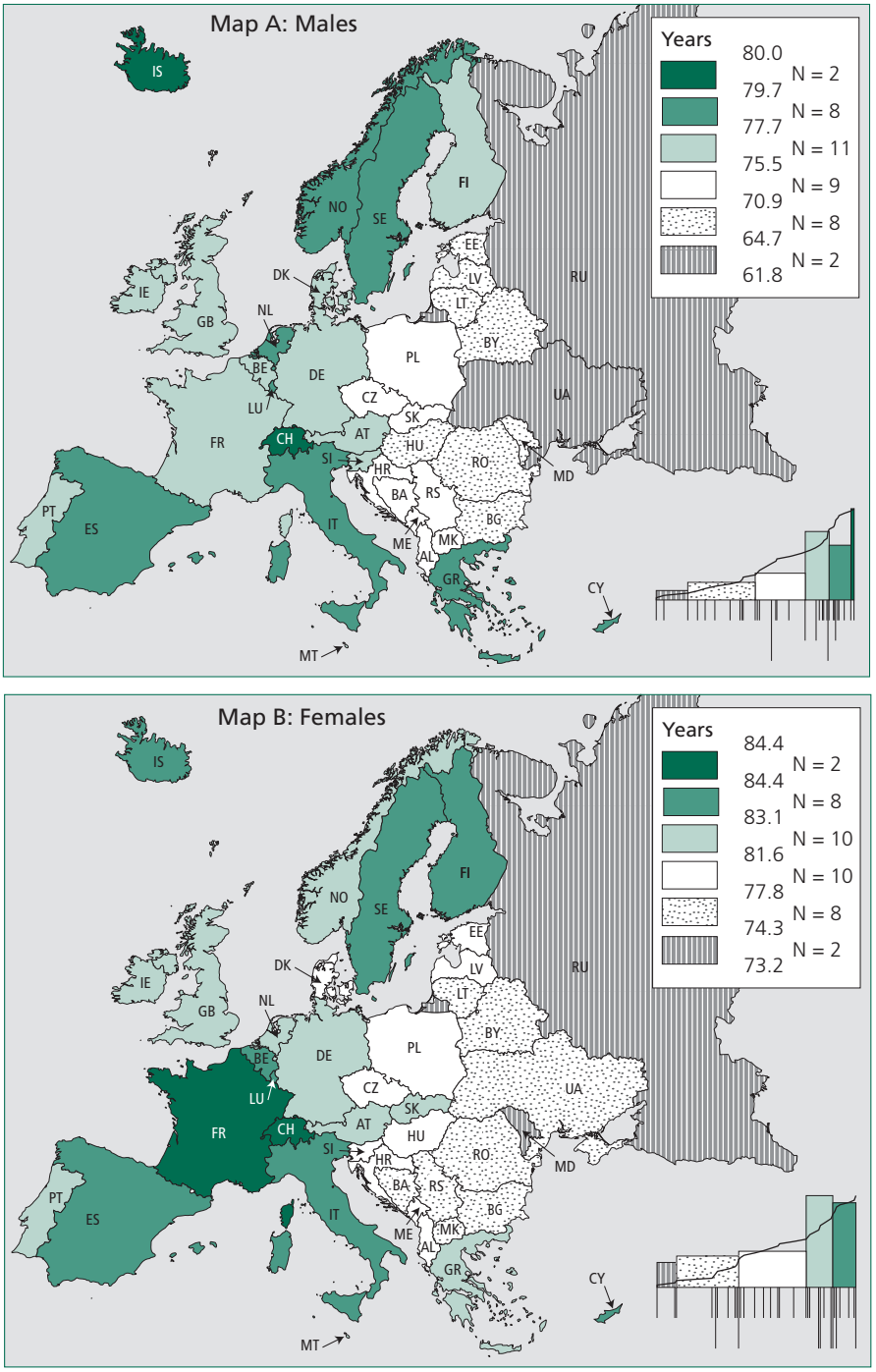
The situation in eastern and central Europe is quite different. In the early 1970s, the socialist countries lagged a long way behind the rest of Europe (Monnier and Rychtarikova, 1992; Monnier, 2006; Meslé and Vallin, 2002a; Caselli and Vallin, 2002). In the decade from 1970 to 1980, they made little progress in reducing cardiovascular mortality, and male life expectancy stabilized while female life expectancy improved by much less than elsewhere. In this sub-region in crisis, confronted with a deteriorating public healthcare system, the next two decades were characterized by worsening male mortality and much smaller gains in female life expectancy than in other countries. Furthermore, in the early 1990s, increased consumption of alcohol, particularly by men, was a major factor in the decline in life expectancy (Shkolnikov et al., 1996; Avdeev et al., 1998). Although mean length of life started rising again in 1995, the gap with the rest of Europe has barely narrowed, because almost equal gains have been recorded in all five sub-regions.

Despite historical developments, the map of life expectancy at birth in Europe (Figure 20) remains as it was around the late 1980s, and the east-west divide can be expected to persist for another decade.

2. Varying progress across countries between 1980 and 2008

In 1980, male life expectancy at birth varied widely across countries (Appendix Table A.6 and Figure 21), with a gap of more than ten years between Iceland (73.8) and Moldova (62.6). A group of countries, mostly located in northern

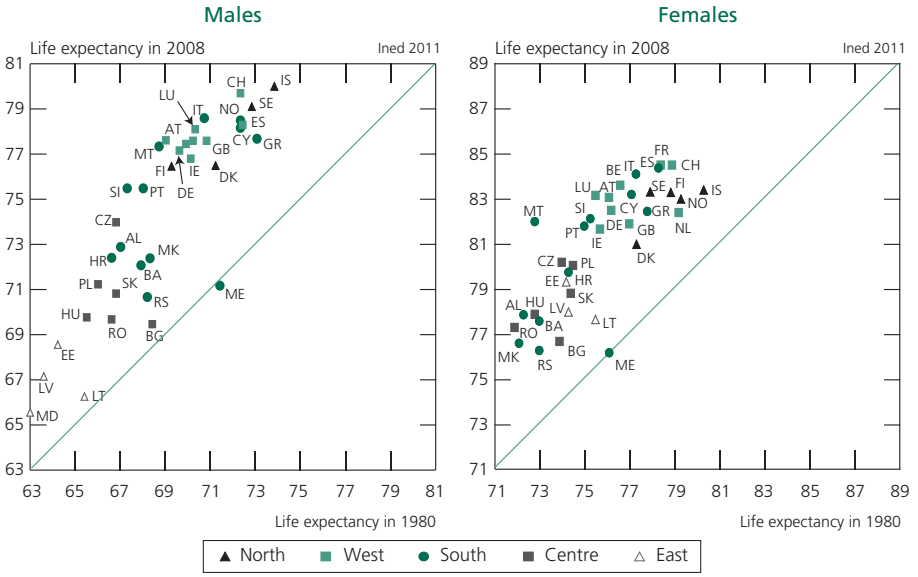
Figure 20. Male and female life expectancy at birth in the countries of Europe, 2008



Note: The United Kingdom data concern the period 2006-2008.
Sources: Database of developed countries (INED);
Devision database of the Centre for Population Studies (Moscow).

Europe (Sweden, Iceland and Norway), western Europe (the Netherlands and Switzerland) and southern Europe (Spain, Greece and Cyprus), had crossed the threshold of 72 years, while in all the countries of eastern Europe, plus Hungary and Poland, male life expectancy was still below 66 years. By 2008, the ranking of countries was virtually unchanged (with a correlation coefficient of 0.83) but geographical inequalities had sharpened, with a gap of 15 years between the two extremes. Italy had joined the leading group where male life expectancy exceeds 78 years, while Bulgaria and Romania, with life expectancy of below 70 years, have replaced Poland in the most disadvantaged group.

Figure 21. Life expectancy reached in 2008 with respect to life expectancy reached in 1980



Sources: European Demographic Observatory, Eurostat.

Between 1980 and 2008, western Europe recorded the fastest progress and caught up with the northern countries: life expectancy is now the same (78 years) in both sub-regions (Table 3). Almost everywhere in the west, men gained more than 7.4 years of life (with a maximum of 8.6 years in Austria). With life expectancy that ranges from 77 years (Germany) to 80 years (Switzerland), this sub-region was the most homogeneous in 2008 (Figure 21). Only the Netherlands posted a smaller increase over the period, more in line with northern Europe, where average gains were only 6.2 years. In the northern sub-region, there was a considerable range of improvement, with a gain of 5.3 years in Denmark but more than 7 years in Finland.

Southern Europe shows even greater internal contrasts. Not only have gains been highly varied, but geographical inequalities are much more pronounced

than elsewhere. Portugal and Italy are among the countries where life expectancy has increased most (by 7.5 and 7.9 years respectively), in contrast to the countries of the former Yugoslavia (4.4 years on average). With an average life expectancy of 72.7 years in 2008, the latter are more similar to central Europe than to the other southern European countries, where men can now expect to live as long as men in western and northern Europe (77.7 years on average).

Table 3. Change between 1980 and 2008 in male and female life expectancy at birth in the European sub-regions (arithmetic means)

		Males			Females			Difference F-M	
		1980	2008	Change	1980	2008	Change	1980	2008
North	Mean	71.9	78.1	6.2	78.7	82.7	4.0	6.8	4.6
	Standard dev.	1.7	1.6		1.2	1.0			
West	Mean	70.5	77.8	7.3	77.0	82.9	5.9	6.5	5.1
	Standard dev.	1.2	0.8		1.4	1.0			
South	Mean	69.4	74.9	5.5	74.9	80.3	5.4	5.5	5.4
	Standard dev.	2.2	3.00		2.2	3.1			
Centre	Mean	66.7	70.9	4.2	73.5	78.4	4.9	6.8	7.5
	Standard dev.	1.0	1.7		1.0	1.5			
East	Mean	63.9	66.9	3.0	73.2	77.0	3.8	9.3	10.1
	Standard dev.	1.2	1.3		2.8	2.6			
Overall	Mean	69.0	74.5	5.5	75.5	80.6	5.1	6.5	6.1
	Standard dev.	2.8	4.1		2.5	2.9			

Sources: European Demographic Observatory; Eurostat. See Appendix Table A.6 for the composition of the sub-regions at each date.

In 1980, all the countries of central Europe lagged behind the European average. Thirty years later, the gap had widened even further. Only the Czech Republic stood out, with male life expectancy (74 years) comparable to the European average. In all the other central European countries, male life expectancy was 70 or 71 years, among the lowest in the region, although still above the levels in eastern Europe. It is in the eastern sub-region that gains in male life expectancy between 1980 and 2008 were smallest (ranging from 0.9 years in Lithuania to 4.5 years in Estonia). Despite their disadvantage, these countries were still ahead of Russia, however, where life expectancy at birth in 2008 was close to the level observed in 1980, namely 61.8 years. Life expectancy in these countries in 2008 is below that attained by most Scandinavian countries in 1980, illustrating the huge lag accumulated over the years.

Given the high correlation between male and female mortality, women also have the longest life expectancy in western, northern and southern Europe and the shortest in central and eastern Europe. There are nevertheless some exceptions in the country ranking: the Baltic countries and, above all, France,

have a higher ranking for female than for male life expectancy, while the reverse is true for some former Yugoslavian countries (Macedonia, Montenegro and Serbia).

Between 1980 and 2008, life expectancy at birth for European women rose from an average of 75.5 years to 80.6 years. With a maximum of 84 years (Spain, Italy, France and Switzerland) and a minimum of 77 years (Bulgaria, Macedonia, Montenegro and Serbia), the dispersion is less than half that of male life expectancy. The contrasts between European sub-regions are less sharp for women (Table 3 and Figure 21) and have not widened since 1980.

It is in western Europe that female life expectancy has increased by the most (5.9 years) and in eastern Europe by the least (3.8 years) over the period. Female trends nevertheless differ from male trends in two respects: the gains recorded in northern Europe are among the smallest (4 years), while the gains in southern Europe are among the largest (5.4 years). This reshuffles the country ranking: all the Scandinavian countries, most of which were in the lead in 1980, have been surpassed by Italy, Spain, France and Switzerland.

3. Gains that vary by decade and by sub-region

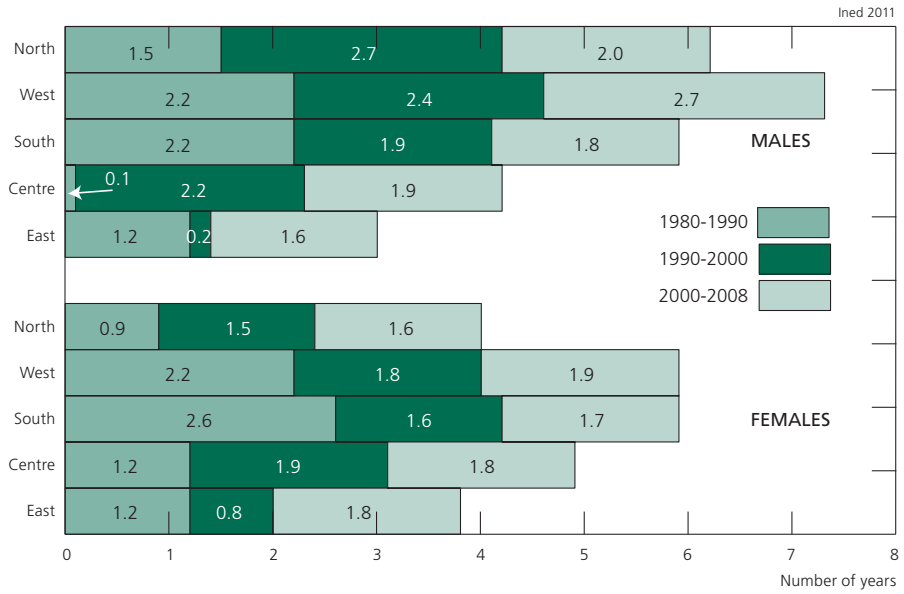
A breakdown by decade shows variations in the speed of progress in life expectancy in the different sub-regions (Figure 22).

In the 1980s, male life expectancy gains were smaller in northern Europe than in the west or south. Gains were 3 years in Belgium, Austria and Italy but barely 1 year in Denmark and Norway. Northern Europe, particularly the Scandinavian countries, posted the biggest average gain (2.5 years) in the 1990s, before once again being strongly surpassed by the west, the only sub-region that recorded a continuous acceleration in life expectancy gains. An average gain of 2.7 years was recorded between 2000 and 2008, ranging from 2.2 years in Germany and the United Kingdom to approximately 3 years in Belgium, Ireland and Luxembourg. The gains reported in southern Europe are more steady over the decades (around 2 years), aside from a slight slowdown in the 1990s, particularly in Macedonia, Greece and Malta.

Central Europe was the only sub-region where life expectancy stagnated in the 1980s; it even declined in Bulgaria, Hungary and Slovakia. After the political and socioeconomic changes of the 1990s, most central European countries saw a return to falling mortality. There has been a clear acceleration in life expectancy gains (as high as 4 years in the Czech Republic and 3.2 years in Poland) and since 2000 they have reached levels comparable with those of the north and south.

By comparison, eastern Europe's lag is again striking. In that sub-region, gains slowed in the 1990s, and life expectancy even decreased in Moldova. Despite a recovery in the 2000s (except in Lithuania), the gains are nevertheless smaller than those observed elsewhere.

Figure 22. Number of years of life expectancy at birth gained over the decades 1980, 1990 and 2000 by sex and sub-region in Europe



Sources: European Demographic Observatory; Eurostat.
See Appendix Table A.6 for the composition of the sub-regions at each date.

In eastern Europe, gains in both male and female life expectancy (Figure 22) slowed between 1990 and 2000, but unlike those of men, women's gains then became comparable to the rest of Europe. Northern Europe stands out very clearly from the other three sub-regions with smaller gains in every decade. It was mainly in the 1980s and 1990s that women from western countries, and from southern countries even more so, saw their life expectancy increase by more than women from the north: they gained 2.6 years in the 1980s and, excluding the former Yugoslavia, more than 2 years in the 1990s (compared with 0.9 and 1.5 years in the north). After 2000, gains in northern Europe were smaller than in the other sub-regions, where improvements were relatively uniform.

4. Changing trends in causes of death

The differences in mortality trends and levels owe a great deal to different rates of success in combating cardiovascular diseases (Meslé and Vallin, 2002b). Since 1980, first in the north then in the west and south, cardiovascular mortality has been in steady decline, with death rates that have practically halved in almost all countries in the space of two decades (Monnier, 2006). By contrast, in eastern and central Europe, cardiovascular mortality stagnated or increased until the 1990s, then began to fall (except in Bulgaria, Romania, Moldova and Russia). Despite the downtrend, cardiovascular mortality is still

much higher in this sub-region (twice as high as in the west), and this gap is one of the main reasons why eastern European life expectancy lags behind that of the rest of Europe.

Mortality from cancer also stopped increasing at very different dates in the various sub-regions. In the north, west and south, the uptrend stopped in the 1980s, and even earlier in some countries, whereas in central and eastern Europe, cancer mortality continued to rise steadily until the 1990s. Ireland, Spain, Greece and Portugal were also in that situation, probably because they introduced anti-smoking measures later. Since the 1990s, cancer mortality has fallen everywhere in Europe, more slowly than cardiovascular mortality but the levels reached are more homogeneous across the sub-regions.

By contrast, there are sharp differences in mortality from external causes (accidents, poisoning, suicide and homicide). The overall percentage of deaths from external causes has decreased steadily across Europe in the past 30 years, except in eastern Europe, which has exhibited higher levels since the 1980s. Moreover, external-cause mortality began to increase sharply in the 1990s, chiefly for men. Even if such deaths do not have a large impact on overall mortality, they reflect the adverse social environment in eastern Europe, where men are four times more likely to die from external causes than in southern Europe, three times more likely than in northern or western Europe, and twice as likely as in central Europe (Monnier, 2006).

Everywhere, women initially benefited more from progress against cardiovascular diseases. Men subsequently benefited too, but to different extents in different countries. Furthermore, because of varying trends in excess male mortality from other causes of death, especially cancer, the life expectancy gaps between the sexes narrowed more quickly in some countries than in others (Meslé, 2004 and 2006). The narrowing of the gap is of course attributable to a decrease in health-damaging attitudes among men but also to the spread of behaviours among women that mirror those of men. For example, one of the key factors in the slowdown in female life expectancy gains in northern countries compared with southern countries could be the increase in smoking among women (Vollset, 2008).

5. A convergence between male and female life expectancies

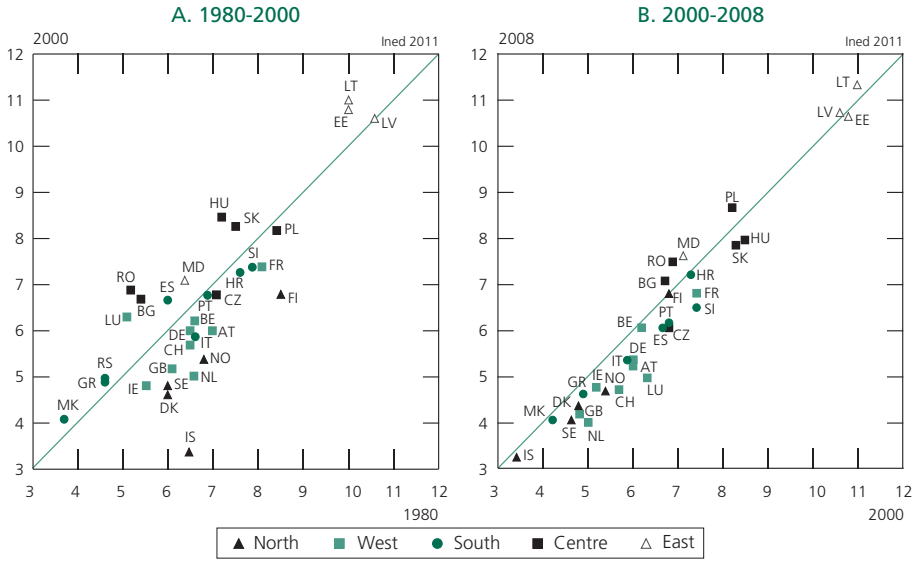
On the scale of all European countries, the gap between average male and female life expectancies narrowed slightly between 1980 and 2008, from 6.5 years to 6.1 years. Everywhere in Europe, women today live longer than men, but the size of the gap between the sexes varies widely, as does its evolution over time (Table 3, Figure 23).

The Nordic countries pioneered this trend, mainly by narrowing the gender gap in cardiovascular mortality risk. The life expectancy gap, which was already below the European average in 1980 (except in Finland), narrowed steadily to around 4 or 5 years by 2008, to become the smallest in Europe (with just

3.3 years in Iceland, Figure 23). The gap in Iceland and Finland seems to have stabilized since 2000, however. Is this a temporary phenomenon or does it signify a trend change in these two countries where convergence was both strong and early?

Western Europe followed the northern countries slightly later, in the 1990s. The average gender gap narrowed from 6.4 years in 1980 and 1990 to 5.1 years by 2008, with a similar sized gap in all countries except for France, where it is particularly large (6.8 years), and the Netherlands, where it is smaller (4 years).

Figure 23. Change in absolute differences (in years) between female and male life expectancies at birth, 1980 versus 2000 (A), and 2000 versus 2008 (B)



Source: INED, developed countries database.

Southern Europe has followed the same trend but with more internal differences: a decline in excess male mortality from 1990 in most countries, but only from 2000 onwards in Portugal; and a stabilization of the gap in Greece, Croatia and Macedonia. In 2008, this sub-region exhibited strong contrasts, with women living between 4.1 years (Macedonia) and 7.6 years (Croatia) longer than men.

By contrast, in all the countries of central Europe, women's advantage increased in the 1980s to an average of almost 8 years in 1990. In the 1990s, the gap continued to widen only in Romania; in the other countries, the gap either stabilized (Hungary and Bulgaria) or narrowed (Poland, Slovakia, Czech Republic). Since 2000, the gender gap has increased again in half of the countries

(Bulgaria, Poland, Romania) and in 2008, the sub-region was one of the most unequal: women can expect to live slightly more than 6 years longer than men in the Czech Republic and almost 9 years longer in Poland.

The three Baltic countries are a clear exception, with excess male mortality steadily increasing over the period. Both in 1980 and in 2008, female life expectancy exceeded male life expectancy by more than 10 years, with a maximum of 11.3 years in Lithuania. Those gaps are nevertheless smaller than those observed in Russia (11.6 years in 1980 and 12.3 years in 2008). This finding is another illustration of the strong male mortality disadvantage in these countries.

VII. Mortality by age

A more detailed breakdown of mortality at different ages shows that deaths before age 65 are now rare almost everywhere in Europe, although in this respect too, the countries of central and eastern Europe still lag far behind the rest of the continent.

1. Infant mortality is now very low

Since 1950, infant mortality has fallen steadily everywhere in Europe. Only the countries of eastern Europe were an exception to this trend in the early 1990s, with a slight temporary increase in infant mortality due to the health crisis and changes in the definition of live births (Kingkade and Sawyer, 2001; Avdeev and Blum, 1996).

Table 4. Infant mortality rates (per thousand) in the European sub-regions, 1980, 1990, 2000 and 2008

		1980	1990	2000	2008
North	Mean	7.7	6.4	3.9	2.9
	Standard dev.	0.6	0.8	0.9	0.6
West	Mean	11.2	7.5	5.0	3.6
	Standard dev.	1.8	0.5	0.6	0.8
South	Mean	26.1	14.5	7.6	5.3
	Standard dev.	14.0	8.4	2.9	2.4
Centre	Mean	22.7	16.5	10.3	6.6
	Standard dev.	4.3	5.9	5.0	2.8
East	Mean	20.5	13.8	11.4	7.2
	Standard dev.	9.7	3.8	4.7	3.4
Overall	Mean	18.6	11.9	7.3	4.9
	Standard dev.	11.2	6.7	3.8	2.5

Sources: INED, developed countries database. See Appendix Table A.7 for the composition of the sub-regions.

By 1980, infant mortality had fallen below 10 per thousand in all the northern European countries as well as in the Netherlands and Switzerland (Appendix Table A.7). Ten years later, the whole of western Europe, plus Spain, Greece, Italy, Malta and Slovenia, were well below that threshold, and most northern countries had fallen below 6 per thousand. Infant mortality also fell in the rest of Europe, but in 1990 rates were above 15 per thousand in almost all the former Yugoslav republics and in all the countries of central Europe, with eastern European countries at 13.8 per thousand on average (Table 4).

Although infant mortality continued to fall over the next two decades, in 2008 it was still synonymous with strong geographical inequalities. There is almost a threefold difference between northern Europe (2.9 per thousand on average) and eastern Europe (7.2 per thousand). Infant mortality rates are close to 10 per thousand in Moldova, Romania and Macedonia, compared with only 2.5 per thousand in Sweden and Iceland, and a low of 1.8 per thousand in Luxembourg.

2. Adult mortality

Deaths before age 65 have become very rare. Under current mortality conditions, in northern, western and southern Europe, 85% to 90% of newborns can expect to celebrate their 65th birthday. In other words, in these sub-regions, mortality before that age has only a minor negative impact on life expectancy at birth. In eastern Europe, the probability of dying before age 65 is much higher (in the Baltic countries, fewer than 60% of newborn boys can expect to live to that age). In Russia, a decrease in under-65 mortality to the level of western countries would boost life expectancy by 6 years (both sexes combined).

Focusing on mortality at ages 15-65, when external causes and cancer are major causes of death, the disadvantage of men in eastern Europe is striking: in 2008, they were on average three times more likely to die[16] than men in the same age group in western or northern Europe (399 per thousand compared with 147 per thousand and 140 per thousand, respectively, Table 5). With twice the likelihood (291 per thousand), men in central Europe were slightly less disadvantaged. Female mortality in eastern and central Europe is also higher, but the differences between sub-regions are smaller, with average probabilities of dying ranging from 84 per thousand (in the north), to 165 per thousand (in the east).

Between 1990 and 2008, mortality in this age range declined in the vast majority of countries, but the size of the decrease divides the countries into two groups (Figure 24, Appendix Table A.8). Overall, the countries where the

(16) Life tables for all European countries are available on the website of the World Health Organization (WHO): http://www.who.int/healthinfo/statistics/mortality_life_tables/. In our calculations, we used the life tables recalculated in May 2010.

Table 5. Mean probability of dying between ages 15 and 65 (per thousand) in the European sub-regions, 1990, 2000 and 2008

		Males			Females		
		1990	2000	2008	1990	2000	2008
North	Mean	207	162	140	114	98	84
	Standard dev.	41	31	35	22	15	12
West	Mean	216	176	147	112	96	83
	Standard dev.	19	16	18	13	9	8
South	Mean	243	226	194	120	113	97
	Standard dev.	43	50	51	25	34	33
Centre	Mean	357	319	291	163	142	127
	Standard dev.	38	37	38	16	20	18
East	Mean	398	414	399	181	179	165
	Standard dev.	15	19	34	32	40	33
Overall	Mean	267	241	213	131	119	104
	Standard dev.	76	87	90	32	36	35

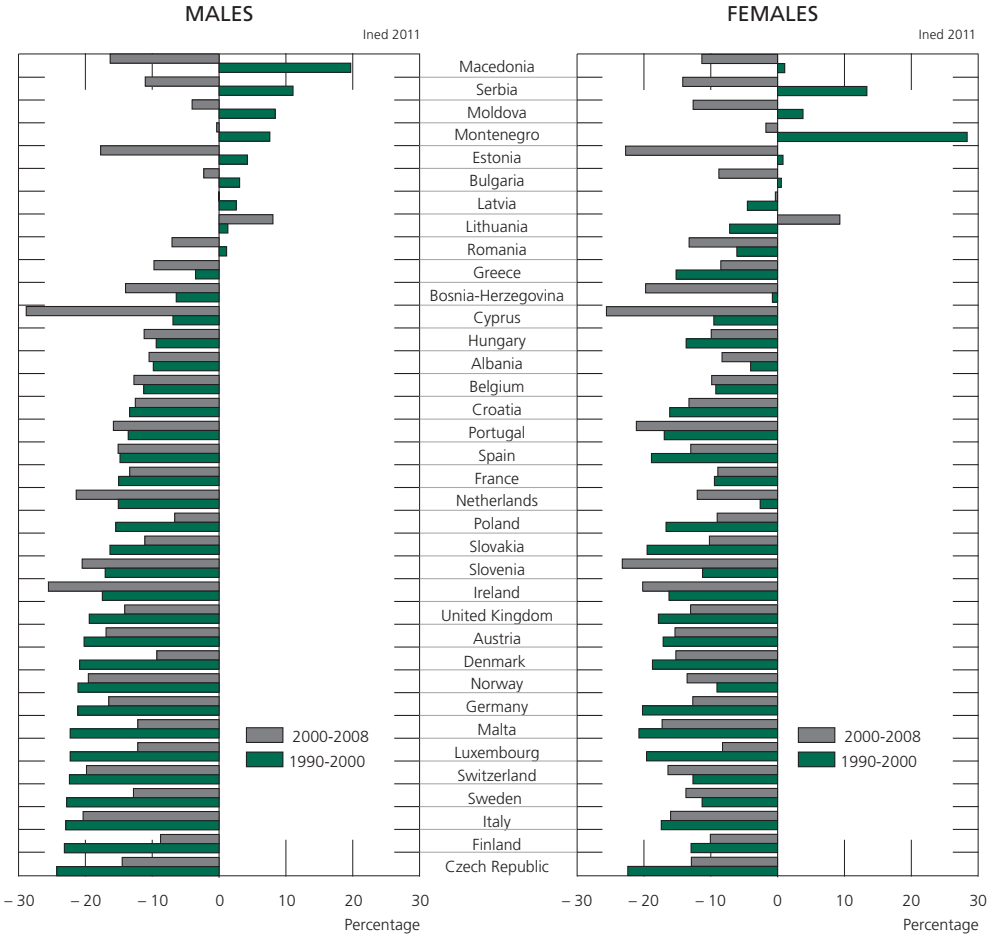
Source: WHO.

probability of dying before 65 fell most in the 1990s subsequently showed slower progress. Italy, Switzerland, Slovenia, Austria, Spain and Norway are the only cases where the improvement was large and uniform over both decades. Conversely, countries where improvements were smaller in the 1990s, mostly located in southern and central Europe, subsequently recorded bigger improvements. Adult mortality has thus become more homogeneous across most of Europe.

Within this general trend of improvement, 9 countries are an exception. In 7 of those countries (4 for women), mortality increased until 2000 then fell. For men, the trends show a decline in mortality in Estonia and Romania over the period as a whole, but stability in Serbia and an increase in Montenegro, Moldova, Bulgaria and Macedonia. Male adult mortality has steadily worsened in Latvia and Lithuania. The trends are more favourable for women, since female mortality declined everywhere, except in Montenegro.

In 2008, in northern, western and southern Europe (excluding the countries of the former Yugoslavia), adult mortality was low and remarkably uniform. In these sub-regions, the male probability of dying at ages 15-65 exceeds 160 per thousand in only five countries (Denmark, Finland, Belgium, France and Portugal), and the minimum is 103 per thousand in Iceland. Elsewhere, by contrast, the risks are much higher: around 200 per thousand in the former Yugoslavian countries, 300-350 per thousand in Estonia and all the central European countries (except the Czech Republic) and above 400 per thousand in Lithuania, Estonia and Moldova. Female mortality is also higher in those sub-regions, but the gap with the rest of Europe is less pronounced, with the probability of dying ranging from under 65 per thousand (Spain, Italy, Cyprus) to 207 per thousand (Moldova).

Figure 24. Change in the probability of dying at ages 15-65 for the periods 1990-2000 and 2000-2008 (%)



Note: Countries are ranked by change in the male probability of dying over the period 1990-2000.
Interpretation: The positive values on the right represent an increase in the probability of dying and the negative values on the left a decrease; the change in the probality of dying in the interval between 1990 and 2008 is the combination of the two values, taking account of the signs.
Source: WHO, Global Health Observatory Database at http://apps.who.int/ghodata (beta version)

3. Mortality after age 65

In the 1970s, progress against cardiovascular diseases was reflected in an acceleration of the mortality decline at advanced ages. Since then in Europe, average life expectancy at age 65 has increased by over 3 years, and at age 80 by more than two years. The increase has been steady, except for a slight dip in 2003 due to a freak heatwave in western and southern Europe. As we have seen, mortality between birth and retirement is now so low in most western countries that gains are now concentrated at advanced ages (Monnier, 2006;

Meslé and Vallin, 2002b). There is even speculation about a possible new phase in the health transition stemming from improved health surveillance for the oldest adults which could extend life expectancy even further (Vallin and Meslé, 2010).

Given the high concentration of mortality at the oldest ages, there is a very high correlation between life expectancy at birth and life expectancy at age 65. The countries have exactly the same ranking for female life expectancy at both ages, and there are few exceptions for male life expectancy: Finland and the Netherlands have a higher ranking for male life expectancy at birth than at age 65, while the reverse is true for France and the United Kingdom.

Between 1980 and 2008, at the level of all European countries for which data are available (Appendix Table A.9), life expectancy at age 65 increased from 13.1 to 16.1 years for men and from 16.3 to 19.5 years for women. In 6 countries (Iceland, Sweden, France, Switzerland, Spain and Italy) life expectancy at age 65 is at least 18 years for men, and in the latter four countries it is at least 22 years for women. At the other extreme, mainly in some eastern European and former Yugoslavian countries, and for men in the Baltics, life expectancy at age 65 is the shortest: around 13-14 years for men and 16-17 years for women, values that northern and western Europe had already exceeded by 1980.

For Europe as a whole, the male mortality disadvantage after age 65 remained the same on average between 1980 and 2008, with a gap of more than 3 years between average male and female life expectancies at both dates. However, that stability conceals a divergence between the north and the west, where the gap has narrowed, and the rest of Europe, where it has widened (Table 6).

Table 6. Change between 1980 and 2008 in life expectancies at age 65 by sex in the European sub-regions (arithmetic means)

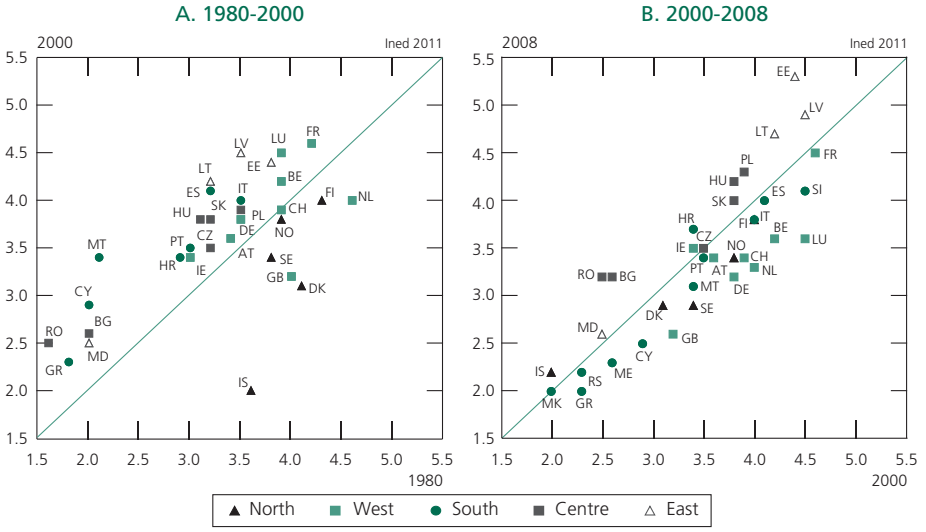
		Males			Females			Difference F-M	
		1980	2008	Change	1980	2008	Change	1980	2008
North	Mean	14.1	17.6	3.5	18.1	20.7	2.6	4.0	3.1
	Standard dev.	1.1	0.7		0.8	0.7			
West	Mean	13.2	17.7	4.5	17.1	21.1	4.0	3.9	3.4
	Standard dev.	0.7	0.6		1.1	0.9			
South	Mean	13.4	16.3	2.9	15.8	19.3	3.5	2.4	3.0
	Standard dev.	1.6	1.8		1.9	2.3			
Centre	Mean	12.0	14.2	2.2	14.8	18.1	3.3	2.8	3.9
	Standard dev.	0.6	0.7		0.5	0.9			
East	Mean	12.4	13.0	0.6	15.5	16.9	1.4	3.1	3.9
	Standard dev.	0.7	0.7		1.1	1.9			
Overall	Mean	13.1	16.1	3.0	16.3	19.5	3.2	3.2	3.4
	Standard dev.	1.2	2.0		1.5	2.0			

Source: Eurostat.

In the 1980s and 1990s, women's lead over men widened everywhere in Europe, except in the northern countries (apart from Norway), the United Kingdom and the Netherlands, where convergence began (Figure 25). Over the next decade, that trend continued in those countries (except in Iceland), and women's lead at age 65 also began to narrow across all of western Europe, but to different extents: only very slightly in France and Austria, but by at least half a year in all the other countries of this sub-region. In southern Europe, Greece, Montenegro, Malta and Cyprus followed the same trend as the western countries. Elsewhere in Europe, the gaps stabilized (Italy, Spain, Portugal) or widened slightly (Slovenia, Croatia). Only in the three Baltic countries and certain eastern European countries (Bulgaria, Hungary, Poland, Romania) did women's life expectancy at age 65 continue to increase much faster than that of men.

As is the case for life expectancy at birth, the convergence of male and female life expectancies at age 65 spread progressively from northern to southern Europe.

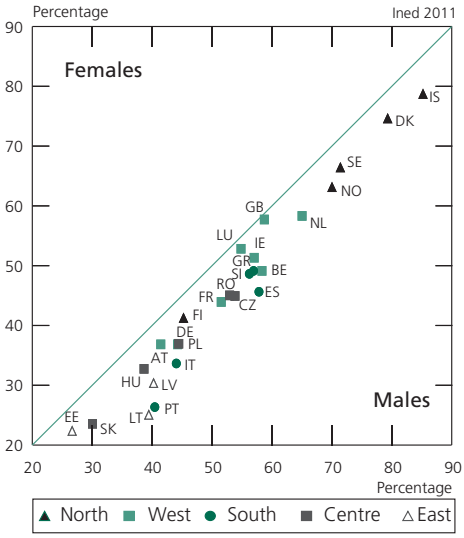
Figure 25. Change in absolute differences (in years) between female and male life expectancies at age 65, 1980 versus 2000 (A), and 2000 versus 2008 (B)



Source: Eurostat.

However, life expectancy remains an imperfect indicator of the health of a population, since long life expectancy does not necessarily mean a better state of health. In all European countries, women live longer than men, but after age 65, women more frequently have disabilities than men of the same age, whatever the degree of severity (Cambois et al., 2003; Jagger et al., 2008; Van Oyen et al., 2010). Consequently, men can expect to live more than half of their lives after 65 without disability (i.e. 8.7 out of 16 years on average in

Figure 26. Proportion of male and female life expectancy at age 65 lived in good health in 2007



Sources: European Demographic Observatory; Eurostat; Appendix Table A.9.

2007), and women less than half (9 out of 19 years).

Male and female life expectancies with and without disability are highly correlated (a coefficient of 0.97), but the geographical dispersion of these indicators[17] is much larger than for life expectancy itself. At age 65, there is a gap of around 5 years between the minimum and maximum female life expectancies in Europe, but the gap is more than twice as wide for life expectancies with disability: Finnish women can expect to live fewer than 5 years with disability on average, whereas women in some southern countries (Italy, Portugal) and Baltic countries will have around 14 or 15 years of life with disability. Another illustration of these stark geographical inequalities is the percentage of years after age 65 spent in good health (Figure 26 and Appendix Table A.9), which ranges from 27% to 85% for men and from 22% to 79% for women, depending on the country. This is another illustration of the divide between the north – the most advantaged – and the east of Europe – the most disadvantaged – with the west and south in an intermediate position.

These data show the extent to which population ageing is having and will continue to have different impacts across countries. In some countries, demand for long-term care will be amplified by the fact that a higher percentage of the elder population is growing old in poor health.

VIII. Population ageing

Population ageing is generally measured by the increase in the percentage of people aged 65 and over. However, the age of entry into old age is a largely arbitrary point, which varies over time and space (Bourdelais, 1996). Onset of senescence is occurring later and later because of improvements in health. But in western societies, this stage in the life cycle is also a social construct. The age of 65 represents the point by which most people have left the labour market

(17) Despite efforts to harmonize the data, this dispersion can partly be attributed to differences in the way the disability is assessed in different socio-cultural contexts.

and are therefore highly dependent on transfer payments. This social age is increasingly disconnected from biological ageing, however.

The age structure of a population reflects its demographic history over more than a century: the base of the pyramid is determined by fertility, and the peak mostly by mortality. Population ageing may be the result of a falling birth rate, which reduces the number of young people and narrows the base of the pyramid (bottom-up ageing). This was the case in France, where the early fertility decline in the nineteenth century meant that for a long time its population structure had the largest share of old people in the world. Ageing can also be a consequence of a decline in mortality at the oldest ages, which increases the number of elders (top-down ageing). In Europe, the two processes are now occurring simultaneously: mortality at advanced ages has declined rapidly since the Second World War, and falling fertility has accelerated ageing. Population ageing is more predictable than any other demographic phenomenon, enabling us to make projections to 2040 with a high level of probability.

With the decline in mortality, the elder population has undergone a twofold change in recent decades: not only are more and more people living to retirement age, but retirement is lasting longer. The elder population can now be divided into two groups with very different lifestyles, with the crossover point usually falling somewhere between ages 75 and 80. The end of working life is now usually followed by many years of independence, most of which are spent with a partner and in good health. Later, as people grow even older, the risks of widowhood and dependency increase, making it harder to continue living at home. The position old people hold on the family solidarity chain is different at each of these two life stages. In the early retirement years, they are more often givers than receivers of help (providing financial assistance to their descendants, caring for grandchildren, etc.). In very old age, they are generally in the reverse position. However, the structure of the elder population is also ageing as the share of very old people increases. This process is set to accelerate in the future as the baby boom cohorts enter very old age. The temporary surge in the birth rate between 1945 and 1975 has had a lasting impact on the population pyramid in most countries in the north-western quarter of Europe (Monnier, 2007). The advancing age of these large cohorts is another factor in the acceleration of ageing in those countries.

The ageing map of Europe has changed and will continue to do so. Between the end of the Second World War (10.3% of people aged 65 and over) and the 1980s (13.8%, Table 7), western Europe had the oldest population in the region. Now the west has been caught up by southern Europe (old people now represent 16% of the populations of both sub-regions) and surpassed by the three Baltic countries (16.7%). In 30 years' time, almost all the European sub-regions will have the same percentage of elders (around 26%); only southern Europe will be slightly older (27%).

Table 7. Percentage of persons aged 65 and over in the European sub-regions, 1980, 2008 and 2040

	1980	2008	2040
North	13.4	15.1	24.8
West	13.8	15.9	25.1
South	11.2	16.3	26.9
Centre	11.7	14.8	25.8
East	12.3	16.7	25.3
Overall	12.5	15.7	25.7

Source: Eurostat, see Appendix Table A.10 for percentages by country.

1. Increased ageing in southern Europe between 1980 and 2008

In 1980 the percentage of people aged 65 and over was 12.5% or more in half of all European countries (Appendix Table A.10). The highest values were observed mainly in northern and western Europe. With more than 14% of old people, Sweden, Germany, Austria, the United Kingdom, Norway, Belgium, Denmark and France topped the list. At the other extreme, southern and central Europe, plus Ireland and Iceland, exhibited less pronounced ageing, as most countries in those sub-regions had fewer than 11% of over-65s (Figure 27A).

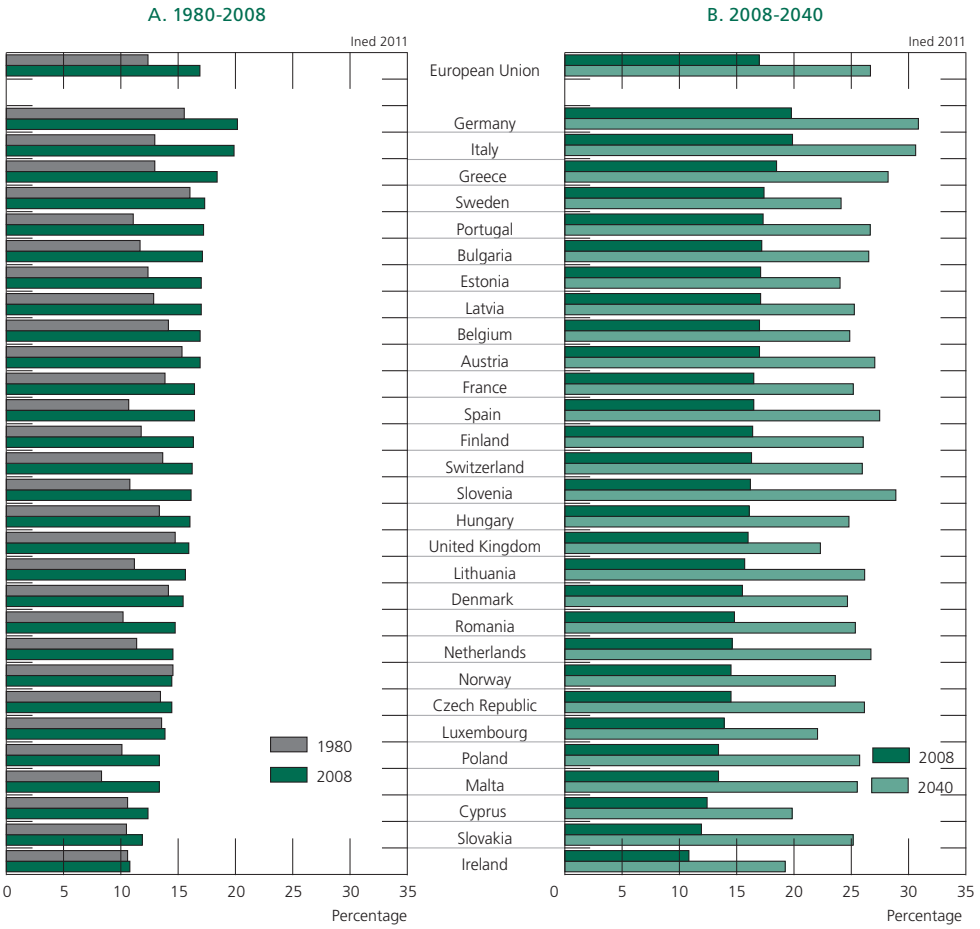
Some 30 years later, in 2008, only 6 countries (Ireland, Iceland, Moldova, Macedonia, Slovakia and Cyprus) had fewer than 12.5% of over-65s. In almost all the others, the proportion exceeds 14%, and half of the countries are now above 16.2%. There is a clear geographical homogenization. But while the population has aged everywhere, the process has been more intense in many of the countries that had a smaller initial percentage of elders. In other words, the map of population ageing in Europe has changed and the ranking of countries in 2008 (Figure 28) bears only a distant relationship to the ranking of 30 years earlier (a correlation coefficient of 0.56).

With 20.1% of the population aged 65 and over, Germany is now in the lead with Italy (20%), followed by Greece (18.6%), Portugal (17.4%), Bulgaria, Latvia, Estonia, Serbia and Croatia (17.2-17.3%). Although Sweden (17.5%), Belgium and Austria (17.1%) still have some of the oldest populations, the percentage of older adults in the other countries of northern and western Europe (United Kingdom, Denmark, Netherlands, Norway) is now around or below the median.

The change in ranking can be attributed to variations in the intensity of fertility and mortality trends analysed above. This leads to different paces of change in the young, adult and elder populations in different countries (Figure 29).

The faster pace of ageing in southern European countries can be attributed to a combination of a sharper contraction in the base of the pyramid – due to

Figure 27. Percentage of persons aged 65 and over in 1980 and 2008 (A) and projections for 2040 (B) in 29 European countries, listed by ranking in 2008



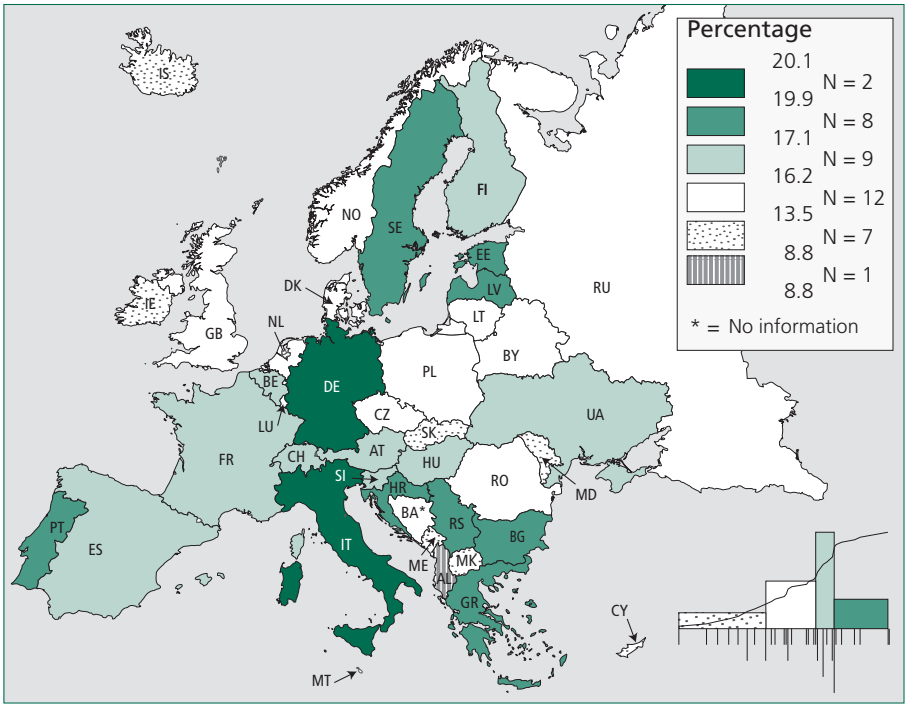
Source: Eurostat.

the recent decline in fertility – and a bigger bulge in the peak – due to larger gains in life expectancy at age 65. The typical example is Italy, where the population aged under 20 has shrunk by almost 35%, while over-65s have increased by almost 62%.

Most countries in central Europe, plus the three Baltic countries, have recorded comparable declines in the population aged under 20 (over 30% in Bulgaria, Latvia, the Czech Republic and Romania), but a slower increase in the oldest category (from 40% in Poland to around 10% in Hungary and the Czech Republic), owing to less favourable mortality rates.

By comparison, in the countries of western and northern Europe, where ageing was initially most pronounced, the trends are much more gradual, both

Figure 28. Percentage of persons aged 65 and over in the countries of Europe in 2008



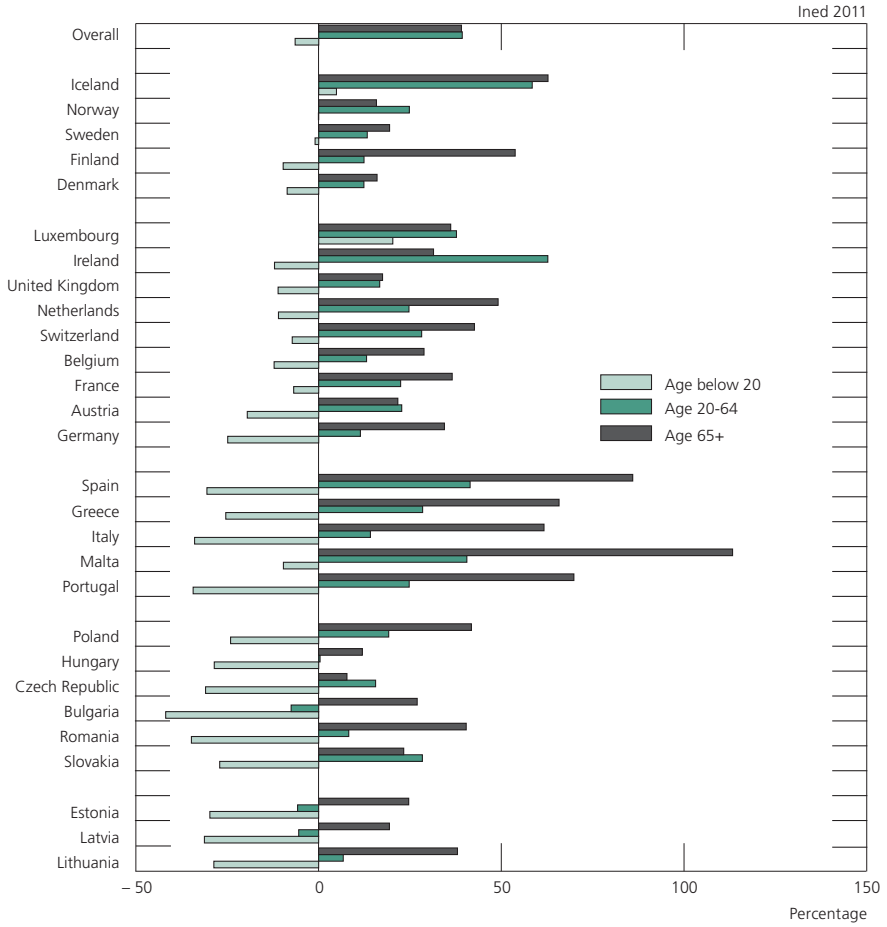
Sources: Eurostat; UN (2010).

at the base and the peak of the pyramids: the number of people aged under 20 has fallen only slightly (by 12% at the most) and only three countries (Netherlands, Finland, Iceland) have seen strong growth (50% or more) in their elder population. Germany stands out: its sustained ageing over the period is attributable to the sharp decline in the young population (–25%), due to low fertility from the 1970s onwards.

2. The ageing process is expected to accelerate between 2008 and 2040

Eurostat's projections (Giannakouris, 2008; Goll, 2010) forecast an acceleration of population ageing. In 2040, the percentage of people aged 65 and over in the population will exceed 20% in all countries except Ireland (19.4%), and in half of them it will be above 25.7%. Table 8 shows that in the space of 28 years (between 1980 and 2008), the percentage of people aged 65 and over increased by a factor of more than 1.5 in only five countries. By contrast, over the period from 2008 to 2040, which is only slightly longer (32 years), increases of this magnitude may occur in 26 countries (out of 29), with Malta, Poland and Slovakia even seeing their percentages double.

Figure 29. Population growth rates by age group between 1980 and 2008 in 28 countries of the 5 European sub-regions (%)



Source: Eurostat.

The ranking of countries will remain roughly the same (a correlation coefficient of 0.71), with the great majority of countries moving at the same pace towards higher levels of ageing. With around 31% of people aged 65 and over, Italy and Germany will remain in the lead, followed by Slovenia (29%), Greece, Spain, Portugal and Austria (with around 28%) (Figure 27B). The other extreme will consist primarily of northern European countries – Ireland (19.4%), Luxembourg (22.2%), the United Kingdom (22.5%) and Norway (23.8%) – plus Cyprus (20%).

This territorial homogenization stems from the uniformity of changes in the different age groups, probably based on the assumption of convergence of behaviour that underpins the European projections. Compared with the previous period, the acceleration in the growth of the elder population is

Table 8. Multiplier coefficient of the percentage of persons aged 65 and over in 29 European countries between 1980-2008 and 2008-2040

Coefficient	1980-2008	2008-2040
1	Ireland, Luxembourg, Norway	
1.1-1.2	Austria, Belgium, Cyprus, Denmark France, Hungary, United Kingdom Czech Rep., Slovakia, Switzerland, Sweden	
1.3-1.4	Germany, Estonia, Finland, Greece, Latvia, Lithuania, Netherlands, Poland, Portugal, Romania	Estonia, United Kingdom, Sweden
1.5-1.6	Bulgaria , Spain, Italy, Slovenia, Malta	Germany, Austria, Belgium, Bulgaria, Cyprus, Denmark, France, Finland, Greece, Hungary, Italy, Latvia, Luxembourg, Norway, Portugal, Switzerland
1.7-1.8		Spain, Ireland, Lithuania, Netherlands, Czech Rep., Romania, Slovenia
1.9-2.1		Malta, Poland, Slovakia

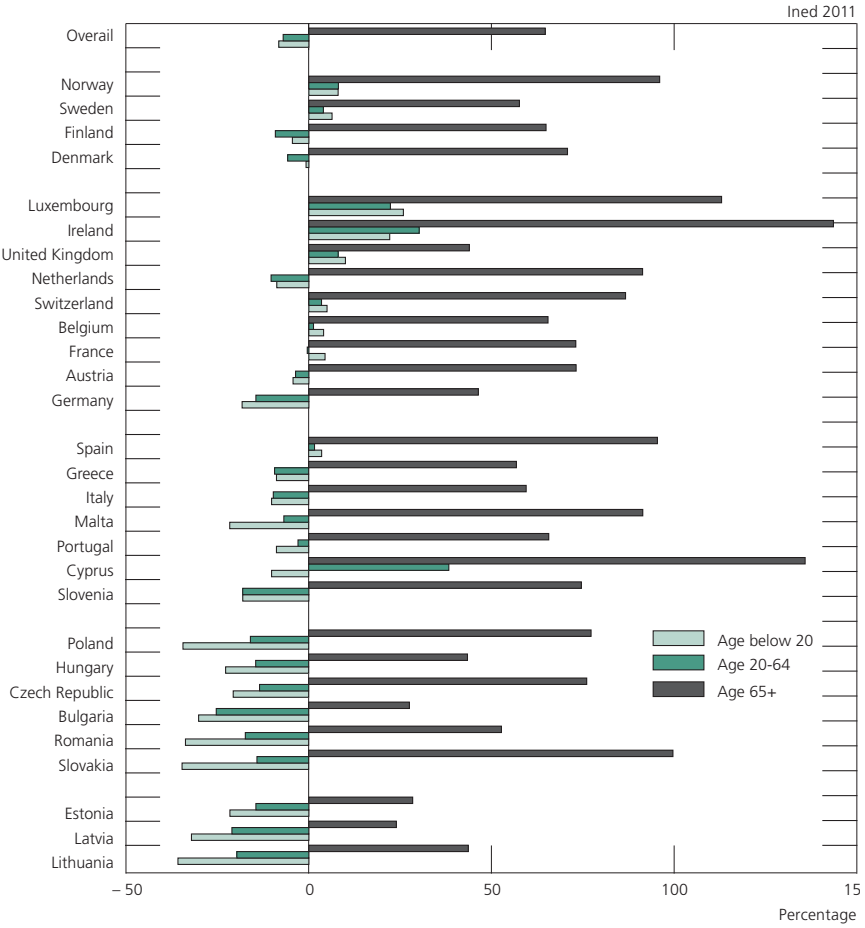
Source: Eurostat.

striking (Figure 30). Whereas previously the increase exceeded 50% only in southern countries, now only the three Baltic countries and some central European countries (Hungary and Bulgaria) and less so Germany (47%) and the United Kingdom (44%) are below that level. In some countries, the increase is around or above 100% (Luxembourg, Norway, Ireland, Slovakia and Spain). This will be due to an ongoing mortality decline in the projection assumptions, combined with the ageing of the baby boom cohorts.

Another contrast with respect to the previous period is projected: the almost universal decline in the young population will be combined with a decrease in the number of adults in southern Europe (except Cyprus), eastern and central Europe. The declines will be much bigger in eastern and central Europe, where the adult population will diminish by between 15% (Hungary) and over 25% (Bulgaria), and the population of under-20s by between 21% (Czech Republic) and almost 35% (Slovakia), versus no more than 10% or so in the southern countries.[18] The decline in the under 20s observed between 1980 and 2008 will feed through to a decrease in numbers of adults 30 years later, causing the base of the pyramid to shrink further: fewer women of reproductive age means fewer births, especially as most of the countries have also seen continued fertility decline.

(18) Except in Malta, where the population aged under 20 is forecast to fall by more than 21%.

Figure 30. Population growth rates by age group between 2008 and 2040 in 30 countries of the 5 European sub-regions (%)



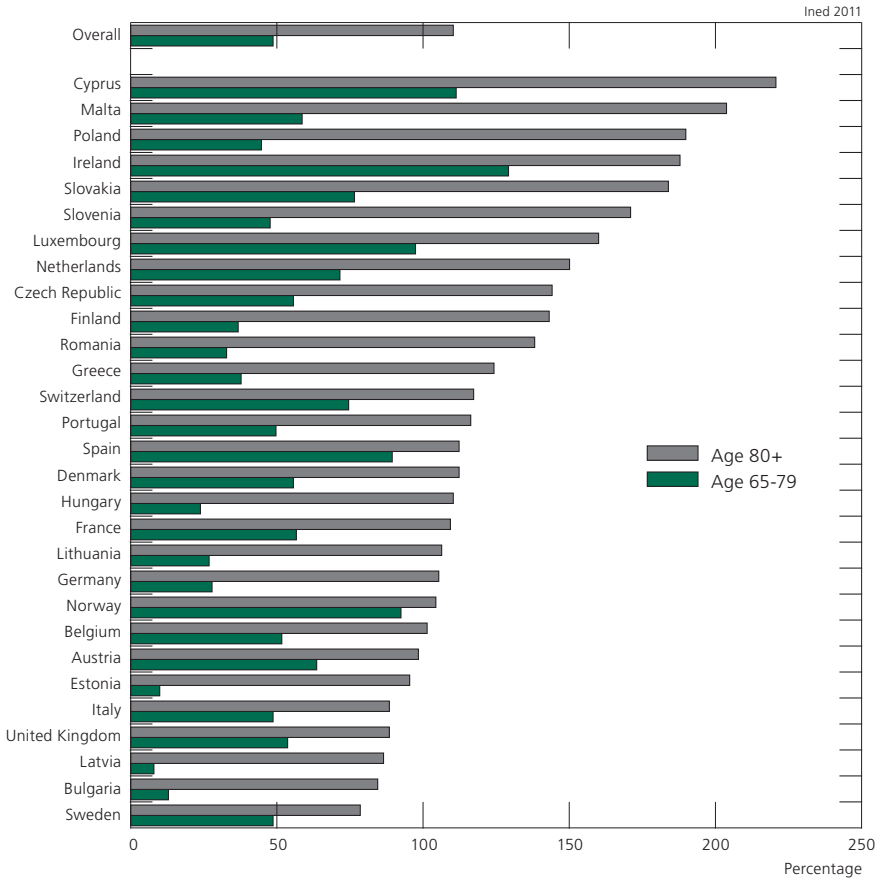
Source: Eurostat.

By comparison, in most western and northern European countries, the young and adult populations will shrink only slightly (Austria, Netherlands, Finland and Denmark), level off (France, Belgium and Switzerland) or even increase (United Kingdom, Ireland, Luxembourg, Norway and Sweden).

3. Strong growth in the oldest-old population in coming decades

In the years to come, everywhere in Europe strong top-down ageing will be coupled with ageing of the elder population. In other words, the number of people aged 80 and over will increase faster than the group aged 65-79 (Figure 31). With few exceptions, the oldest-old population will double by 2040; and might even triple in some countries (Cyprus, Malta, Poland and Ireland).

Figure 31. Growth rate (%) between 2008 and 2040 of the population aged 65-79 and 80+



Source: Eurostat.

In Europe as a whole, the percentage of people aged 80 and over in the total population was almost 4% in 2008. The percentage exceeded 3.7% in half of the countries and 5% in only three (Sweden, Italy and France). In 2040, the percentage of very old people could be higher than 8% in more than half of the countries, and even above 10% in Finland, Germany and Italy (Appendix Table A.10).

Although the majority of elders are growing old without disability, and future cohorts will certainly reach the various stages of old age in better health, the probability of physical and mental dependency increases with age, often making daily assistance essential. The sharp increase in numbers of very old people heralds a huge increase in care needs and we know that everywhere in Europe, spouses play an essential role in this respect. One of the major consequences of the mortality decline is that by postponing widowhood, it

extends the number of years that spouses will live together. Over the coming decades, the downtrend in widowhood will more than offset the increase in divorce, still low in those cohorts, and will enable more elders to grow old in their own homes. Women, in particular, who are more frequently widowed because of excess male mortality, will be able to rely more frequently on a partner to cope with their dependency (40% in 2030 compared with 21% in 2000 among women aged 75-84) in all countries (Gaymu et al., 2007).

However, the growing numbers of men confronted with the dependency of their wives[19] and the longer survival of couples where both members suffer from disability suggest increased needs for professional care. Yet everywhere in Europe, there is uncertainty about the future funding of pensions and the financial capacity of tomorrow's seniors to pay for care to assist them in their daily lives. Furthermore, while in recent decades, there has been genuine political will in many countries to provide assistance, there is a potential risk that collective solidarity will be overwhelmed by the growing costs of social protection. The deteriorating financial situation of elders and/or the withdrawal of state support enabling people to continue living in their own homes will automatically put more pressure on families, women in particular, even though they already shoulder the major burden of care for the most vulnerable members of society (Mestheneos and Triantafillou, 2005).

IX. The transformation of Europe into an immigration continent

Over the past fifty years, Europe has gradually moved from being an emigration continent to being one of immigration (Part II, Figure 2D). The recruitment of foreign workers in the postwar period of economic growth, together with the arrival of European repatriates in the wake of decolonization, marked the first stage in this process, which was brought to a sudden halt by the 1973-74 oil crisis. For nearly a decade, migration flows both towards and between European countries were reduced to a trickle. Then came the wave of political and socioeconomic instability that engulfed the former Socialist countries in southeast and central Europe in the wake of the opening of their borders in the late 1980s, triggering a surge in migration from these countries.

Worldwide, there was a similar acceleration in migration from developing countries in the direction of the developed world, due to the persistent inequalities of the North-South divide (United Nations, 2009a). Over the next two decades, migration reached high levels in an ever-larger number of countries.

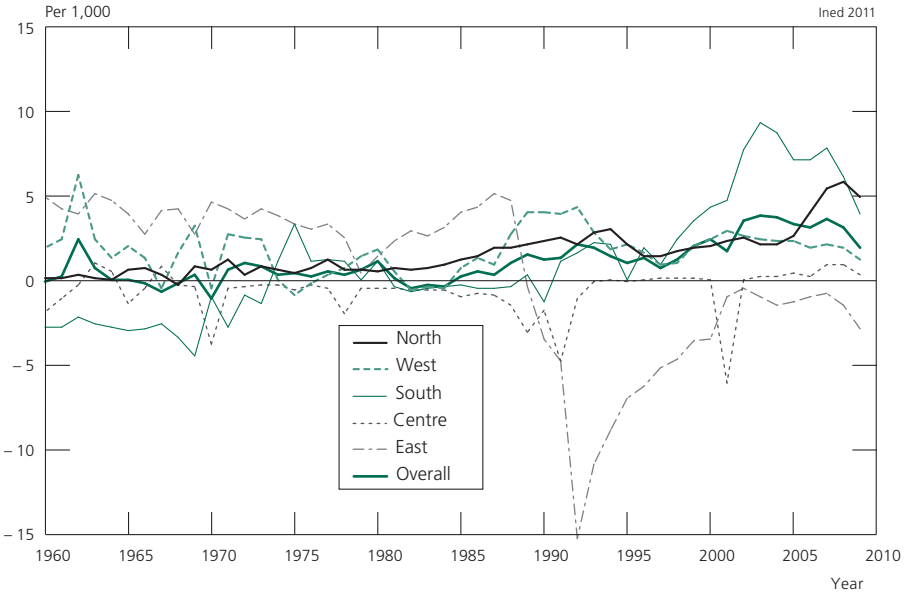
(19) Men currently find it harder than women to cope with the dependency of their spouses. They more frequently opt for professional help or place their wife in residential care (Gaymu and al., 2006).

Throughout this period, migration has made an increasing contribution to the population growth of European countries. In most of them, net migration now surpasses natural increase, and nations with a high rate of natural increase (France, Ireland) or negative net migration (Poland) are exceptions to the rule.

1. Overall trends in net migration

Net migration is an indicator of the volume of migration between a given country and the rest of the world, whichever direction this may take. When migration gains exceed losses (i.e. more people enter the country than leave it), the figure is positive. It may also be negative, if more people leave than enter, or occasionally zero. Figure 32 shows the rates of migratory growth for each of the five European sub-regions,[20] as well as for the whole of Europe, since 1960, while Figure 33 shows the countries that recorded the minimum and maximum five-year net migration figures in Europe. As the latter are correlated with population size, Europe's most highly populated countries are predominantly represented.

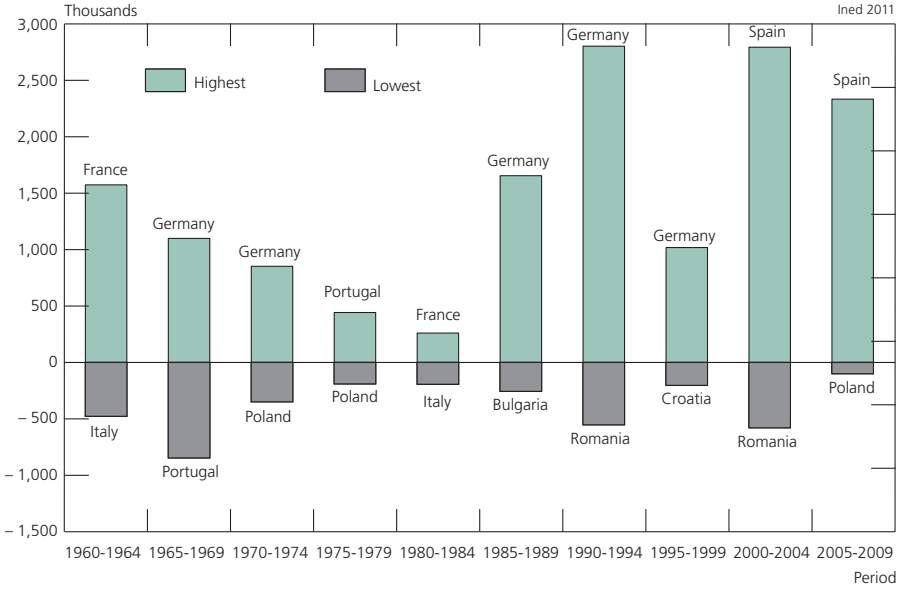
Figure 32. Migratory growth rates by sub-region since 1960



Sources: Database of developed countries (INED);
Devision database of the Centre for Population Studies (Moscow).

(20) We chose to calculate these rates for each region as a whole, rather than rely on an arithmetic average of the individual countries' net migration figures, as population sizes sometimes differ too greatly for such averages to be truly meaningful.

Figure 33. Countries recording highest and lowest five-year net migration in Europe since 1960



Sources: Database of developed countries (INED);
Devision database of the Centre for Population Studies (Moscow).
Interpretation: In 1960-1964, Italy was the European country that recorded the greatest population loss due to migration (–480,000), while over the same five-year period France recorded the greatest population gain (+1,580,000).

During the first half of the period under consideration, the migratory growth rate hovered around zero (Figure 32). It finally moved into positive figures in the mid-1980s, since when it has been gradually rising. That said, each sub-region follows a specific pattern. Prior to 1974, for instance, migratory growth was positive in western and northern Europe, the destination of the majority of migrants from the other sub-regions of Europe, as well as from the rest of the world. Between 1960 and 1964, France recorded net migration of 1.6 million – a figure that included both migrant workers and French repatriates returning from Algeria after it had gained independence in 1962 (Figure 33). Meanwhile, southern Europe remained a region of high emigration and thus experienced negative migratory growth (–2.5 per thousand on average in 1960-1974). During this 15-year period, the migratory deficit reached 1.5 million in Portugal, 1.2 million in Italy, and 0.7 million in Spain. Central European countries made only a very minor contribution to migration flows, recording an average rate of –0.6 per thousand. The mid-1970s marked a turning point. Migration was to remain sluggish throughout the ensuing decade, but subsequently reached historic highs in the 1990s and 2000s.

Migration started to climb again in the late 1980s. At first, the highest migratory growth rates continued to be observed in western Europe. Germany

was the migrants' main destination at that time, with aggregate net migration of 5.5 million over the period 1985-1999, over half this growth occurring between 1990 and 1994 (Figure 33). By the early 1990s, net migration turned positive in the countries of Southern Europe, but it was not until the early 2000s that they began to rival longstanding immigration countries in terms of volume. Between 2000 and 2004, migration accounted for an increase of 2.8 million in Spain's population, followed by an additional 2.3 million in the five years after that. For its part, Italy recorded net migration of 3.8 million over the first decade of the twenty-first century, with Greece and Portugal each reporting approximately 0.4 million.

In central Europe, which includes high-emigration countries such as Poland and Romania, but also countries that attract migrants, such as Hungary and the Czech Republic, net migration fell markedly in the late 1980s. Although the figure has since tended towards zero, this is the sub-region (made up of the former Socialist countries of southeast and central Europe) that now sees the highest number of departures. For instance, Albania, Bulgaria and Poland each lost an estimated half a million people between 1985 and 2010, and Romania 1.3 million.

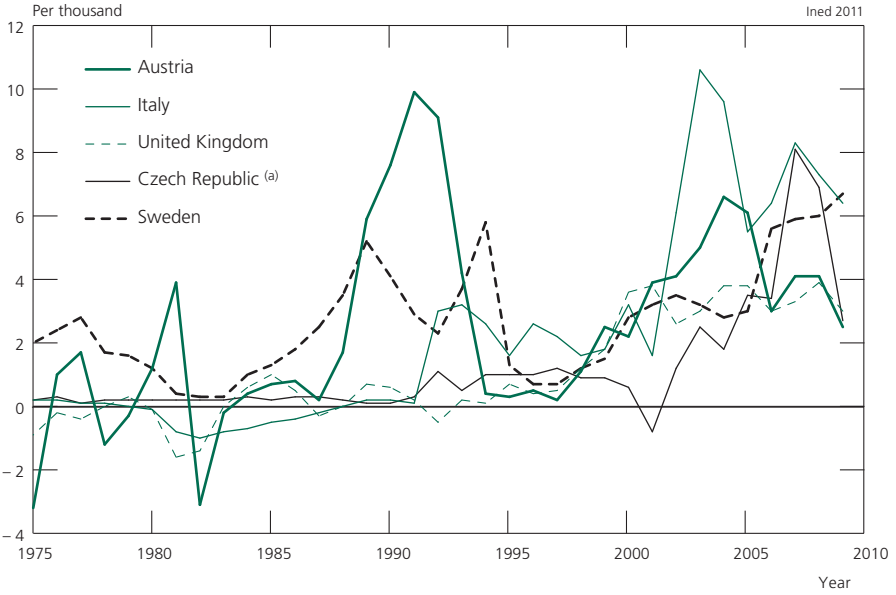
It is important to interpret the situation in eastern Europe (i.e., the Baltic states) in the light of its recent history. Before they gained their independence from the Soviet Union in 1991, these states habitually received large numbers of migrants from other Soviet republics. After the break-up of the USSR, however, many of these people, now counted as international migrants, decided to return to their countries of origin, giving rise to the negative net migration observed from the 1990s onwards.

The volume and nature of migration continue to be strongly determined by the characteristics of each individual country (socioeconomic context, geographical proximity and historical links with other countries) as can be seen from the examples of five European countries shown in Figure 34.

Back in 1975, migratory situations varied considerably from country to country. While Italy was the only country with a recent history of massive emigration (Figure 32), both Austria and the United Kingdom had recorded negative net migration in the past, due mainly to the departure of nationals. An emigration country back in the nineteenth century, Sweden had already become a major destination for migrants, especially from its Nordic neighbours. As for the Czech Republic, which then belonged to the Soviet Bloc, its net migration figures were slightly positive.

When migration picked up again in the late 1980s, it was Austria and Sweden that recorded the highest migratory growth rates (around 5 per thousand). The peaks observed in Austria in the early 1990s (9 per thousand) were caused by incoming refugees fleeing the war in neighbouring ex-Yugoslavia. At the same time, net migration became positive again in Italy, due to large numbers of migrants from eastern Europe, including a great many Albanians. A relatively well developed economy compared with those of adjacent countries

Figure 34. Migratory growth rates (per thousand) since 1975 in five European Union countries (current borders)



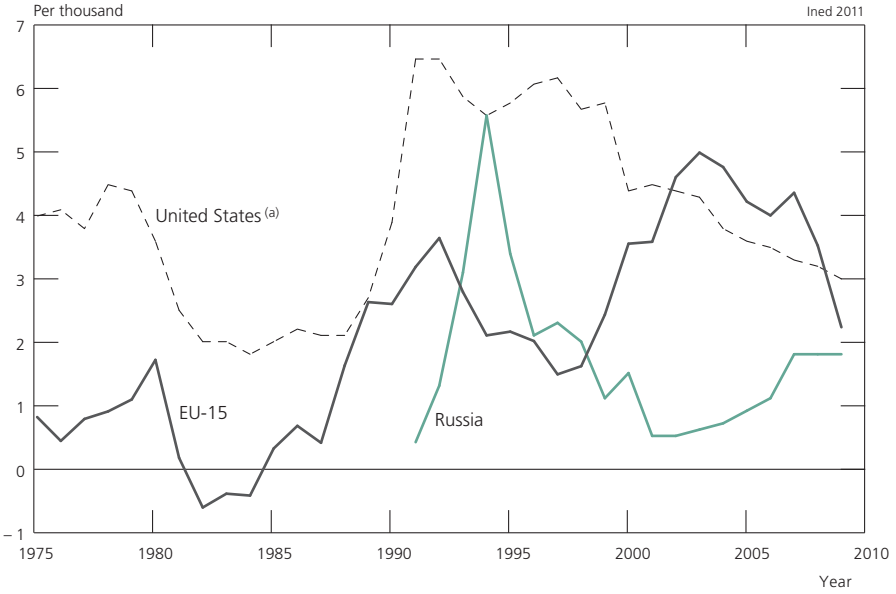
(a) The negative figure for 2001 is due to changes in the procedure for registering migrants, rather than to any genuine change in net migration.
Sources: Database of developed countries (INED);
Devision database of the Centre for Population Studies (Moscow).

spared the Czech Republic from massive emigration and even attracted an influx of migrants, mainly from the newly created Slovakia. A period of stagnation in the late 1990s was followed by a general increase in migration rates, especially in Italy (10 per thousand in 2003-2004) and the Czech Republic (8 per thousand in 2007).

Viewed as a longstanding immigration country, the United Kingdom has a more complex situation. Although it constituted a prime destination for migrants from its closest neighbour, Ireland, and from other Commonwealth countries, it continued to record zero – if not negative – net migration until the 1990s, due to the regular emigration of its nationals and the introduction of a restrictive immigration policy in the late 1960s. When the Labour Party came to power in 1997, it introduced an open-door policy for selected immigrants. This, coupled with strong economic growth in the 1990s and 2000s, (Somerville et al., 2009), pushed up net migration from the mid-1990s onwards, with the rate rising from around 0.5 per thousand to 3.5 per thousand in the 2000s.

Migratory change in Europe has stemmed not just from internal factors, such as the construction of the EU and the fall of the Berlin Wall, but also from global ones. This point is best illustrated by comparing it with other regions of the world, migration destinations especially (Figure 35).

Figure 35. Migratory growth rates (per thousand) in the EU-15 member states, Russia and the United States since 1975



(a) Due to absence of data, the 2005-2008 levels were extrapolated from trends observed since 2000 and from United Nations estimates (2009c).
Sources: Database of developed countries (INED); Devision database of the Centre for Population Studies (Moscow).

The United States is and always has been a major immigration country. In 2010, it was home to one in every five migrants in the world (United Nations, 2009b). The rates for the EU and the US followed similar trends between 1975 and 2000, with a fall in migratory growth in the wake of the 1974 oil crisis, a rise beginning in the late 1980s and relative stagnation in the mid-1990s. Throughout this period, however, the US received more migrants in both absolute and relative terms (migratory growth rate three times higher on average than that of the EU-15). The situation seems to have been reversed in the last decade, however. At the turn of the millennium, the rate in the US stabilized at around 4.5 per thousand and subsequently fell to an average of 3.3 per thousand in 2005-2010. During that time, it rose in the EU, tripling between 1998 and 2003, when it peaked at 5 per thousand. The past few years have witnessed a decline, coinciding with the economic and financial crisis of 2008.

Russia's migratory situation is linked to its recent history. The positive net migration it has enjoyed since the break-up of the USSR in 1991 initially had a strong ethnic component, with the return of Russian nationals from the former Soviet republics. This "population reservoir" has now largely dried up and Russia is attracting increasing numbers of non-Russian migrants, some from former Soviet states, chiefly in central Asia. Russia and the EU have experienced opposing trends over the past two decades. With the exception of the first few years

following Russia's independence, the EU has recorded steadily higher levels of net migration, although the economic crisis has brought the two regions closer together, with both currently standing at around 2 per thousand.

At the start of the period under scrutiny, the migratory situation in Europe varied considerably across sub-regions. Although some differences still exist and some countries continue to be marked by strong emigration, migration is causing an overall rise in Europe's population. Today, therefore, the continent is just as important a destination for international migrants as the more longstanding ones (United States, Canada, Australia).

2. Migration flows and migrant characteristics since 1990

Mainly inflows of people born abroad and outflows of natives

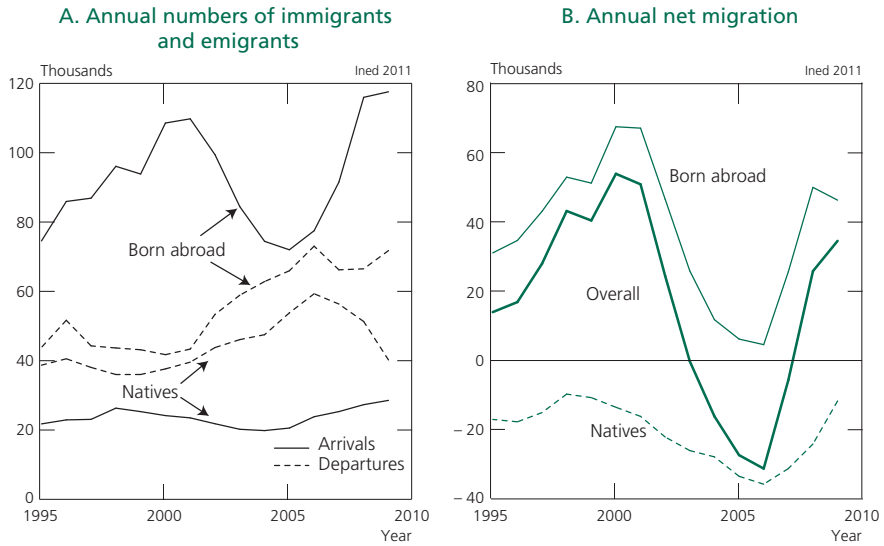
"Net migration" corresponds to the difference between inward and outward flows for a given territory over a given period, but this figure can only be directly calculated by countries that keep population registers tracking migrant movements. The other countries estimate their net migration more indirectly, at the time of a census, by subtracting the natural population change between two censuses from the total change in population (this is referred to as the "net migration balance"). Net migration calculated in this way is less reliable, for it depends not only upon measures of migratory movements, but also upon the quality of the two relevant censuses and the accurate recording of births and deaths. Moreover, this mode of calculation tells us nothing about the composition of this balance. Thus, zero net migration may reflect either an absence of movement or an exact balance between inward and outward flows.

The United Nations recommends that countries break down their migration flows according to the migrants' country of birth and/or citizenship (United Nations, 1998). The first characteristic is permanent, in that an individual's country of birth remains unchanged even if he or she migrates, whereas the second may change once, or even several times, in the space of a person's lifetime (following acquisition of the receiving country's citizenship). Historically, citizenship-based statistics are more widespread, even if some countries have started to produce statistics based on country of birth.[21] Although these two variables are very closely linked, entries of nationals may also refer to entries of persons born abroad and arriving in the country for the first time. This was the case of German ethnic minorities that had lived in Eastern Europe for several generations and, more recently, of the descendants of Spanish and Italian migrants living in Latin America who chose to take advantage of *jus sanguinis* and settle in their parents' country of origin (Padilla and Peixoto, 2007).

(21) Regulation (EC) no.862/2007 of the European Parliament and of the Council of 11 July 2007 on Community statistics on migration and international protection provides for the dual classification of immigration to and emigration from member state territories according to both the migrants' citizenship and their country of birth. Eurostat has been compiling these migration statistics by citizenship since 1998, and by country of birth since 2008.

Figures 36A and 36B show the annual immigration and emigration figures for the Netherlands since 1995, by the migrants' country of birth, and the resulting net migration. Over these past fifteen years, emigration has far outstripped immigration for persons born in the Netherlands, the opposite being true for people born abroad, leading to negative net migration for the former and positive net migration for the latter. Net migration has been positive for the population as a whole, except during 2003-2007, when an increase in emigration by both groups was accompanied by a substantial fall in immigration by foreign-born people. These flows react in different ways to changes in context. In the recent economic crisis, for instance, the number of natives leaving the Netherlands fell by 20% between 2008 and 2009. For people born abroad, the outward flow increased by 8% but the inward flow, which had hitherto been rising, levelled off.

Figure 36. Annual numbers of immigrants and emigrants (A) and annual net migration (B) in the Netherlands since 1995, by migrants' country of birth



Source: Statistics Netherlands.

Net migration is often thought to concern above all the movements of individuals born abroad. However, the example of the Netherlands shows that the movements of natives can also have an impact. Table 9 breaks down the total volume of migration[22] in thirteen European countries in 2008 into inward and outward flows of natives and foreign-born persons.

(22) The total volume of migration is the sum of four flows: inward and outward flows of natives, and inward and outward flows of foreign-borns.

Table 9. Distribution (%) of the total volume of migrations in thirteen European countries in 2008 by type of flow

Region	Country	Immigration		Emigration		Total
		Native	Born abroad	Native	Born abroad	
North	Denmark	16.3	43.7	13.3	26.8	100
	Finland	18.2	49.5	20.1	12.2	100
	Sweden	9.1	59.9	14.1	16.8	100
West	Austria	7.0	52.3	9.7	31.0	100
	Ireland	15.8	37.0	19.9	27.3	100
	Netherlands	11.6	49.9	19.7	18.8	100
	United Kingdom	7.0	51.0	17.0	25.0	100
South[(a)]	Italy	4.4	82.4	6.5	6.6	100
	Slovenia	5.7	66.0	6.6	21.7	100
	Spain	2.4	70.7	3.3	23.5	100
Centre[(a)]	Hungary	0.1	88.5	1.3	10.1	100
East	Estonia	14.9	30.2	44.7	10.3	100
	Lithuania	21.0	14.4	45.8	18.8	100

[(a)] The very low proportions of movements of Spanish, Italian and Hungarian natives may be due to incomplete statistical coverage of these movements.
Source: Eurostat (migr_imm3ctb, migr_emi4ctb).

In every country, with the exception of Estonia and Lithuania, persons born abroad represent the largest flow of entries, accounting for between 37% and 89% of all movements. Even so, emigration by natives also accounts for a far from negligible proportion in the countries of northern and western Europe, ranging from 10% in Austria to as much as 20% in Finland, Ireland and the Netherlands. Thus, although we have come to regard Ireland as an immigration country in recent times, it has never entirely broken with its tradition of emigration, which was revived by the recent economic crisis.

Migrants are young and with diverse origins

Because of their greater availability, we have used data pertaining to citizenship, rather than country of birth, to establish the profile of foreign-origin immigrants. Table 10 lists the ten countries that received the most immigrants with foreign citizenship in 1998 and 2008. While none of them left the top ten in the course of this decade, the number of migrants they each received did change, and with it their ranking. The flow of foreigners to these countries doubled in the space of ten years (up from 1.4 million in 1998 to 2.9 million in 2008), with Spain contributing to 40% of this rise. The number of countries receiving more than 100,000 foreigners rose from four in 1998 to seven in 2008. The only country not to experience an increase was Germany. Coming top in 1998, with more than 600,000 new arrivals, it was overtaken in 2008 by Spain, which totalled nearly 700,000 entries.

Table 10. Number of foreign immigrants arriving in Europe's top ten receiving countries in 1998 and 2008

	1998	2008	Multiplier coefficient
Spain	57,195	692,228	12.1
Germany	605,500	573,815	0.9
Italy	127,114	496,549	3.9
United Kingdom	238,503	455,290	1.9
France[(a)]	155,879	211,055	1.4
Switzerland	72,202	161,629	2.2
Belgium	59,666	109,926	1.8
Austria	59,229	94,376	1.6
Netherlands	81,701	94,335	1.2
Sweden	35,701	82,972	2.3

[(a)] Since 2004, EU nationals have not been required to apply for a residence permit in France and are no longer included in official immigration statistics. The number of migrants originating from these countries in 2008 is therefore based on an estimate.
Sources: Eurostat (migr_imm2ctz); INED, Immigration Flows, http://www.ined.fr/en/pop_figures/france/immigration_flow/

The migrants' countries of origin have also changed in recent decades. Prior to 1974, their provenance was determined largely by historical ties – mainly linked to colonization – and by the signing of bilateral treaties to recruit guest workers. However, as international migration became ever more widespread, origins subsequently diversified. New routes were established, both from new emigration countries and from traditional emigration countries towards new destinations. Table 11 shows the five nationalities that were most heavily represented in eleven European countries – and their weight in the total number of incoming foreigners – in 1998 and 2008.

Only in Switzerland and Hungary did the provenance of the "top five" groups of migrants remain the same over this ten-year period, and the Czech Republic registered just one change. Several different trends emerged in the other countries, with western Europe's most longstanding communities (Moroccan, Turkish) being gradually outnumbered by migrants from new EU member countries (Bulgaria, Hungary, Poland, Romania). Similarly, persons originating from Albania, the former Yugoslavia, Russia and Ukraine accounted for much of the migration to several countries in southern and central Europe.

Among Asian migrants, the only significant flows were those of Chinese and Filipino migrants, directed towards a few specific countries. Agreements on guest workers, signed under the Communist regime, explain the enduring presence of a large Vietnamese community in the Czech Republic. The United Kingdom once again stood out from the rest, this time on account of the large numbers of migrants

Table 11. The five most represented nationalities among foreign immigrants in 1998 and 2008

Sub-region	North		West					South		Centre	
Country	Norway	Sweden	Germany	Austria	Netherlands	United Kingdom[a]	Switzerland	Spain	Italy	Czech Republic[a]	Hungary
1998											
Number of foreign immigrants	26,747	35,701	605,500	59,229	91,701	221,086	72,202	57,195	127,114	6,810	16,052
Five leading countries of origin											
Total number	11,899	15,802	263,020	37,807	23,191	57,830	33,225	27,175	55,877	5,028	11,132
Percentage	44.5	44.3	43.4	63.8	25.3	26.2	46.0	47.5	44.0	73.8 %	69.3
Countries of origin[b]	Sweden Denmark Finland United Kingdom Iraq	Iraq Former Yugoslavia Finland Norway Denmark	Former Yugoslavia Poland Turkey Italy Russia	Former Yugoslavia Germany Turkey Poland Croatia	Morocco Turkey Germany United Kingdom United States	France Greece South Africa Italy Germany	Former Yugoslavia Germany France Portugal Italy	Morocco Germany United Kingdom France Colombia	Albania Morocco Philippines Former Yugoslavia Romania	Slovakia Ukraine Vietnam Russia Former Yugoslavia	Romania Former Yugoslavia Ukraine China Germany
2008											
Number of foreign immigrants	51,671	82,972	573,815	94,376	94,335	451,702	161,629	692,228	496,549	76,151	35,547
Five leading countries of origin											
Total number	25,037	30,671	243,989	51,440	36,483	199,369	95,908	276,141	293,590	49,762	23,483
Percentage	48.5	37.0	42.5	54.5	38.7	44.1	59.3	39.9	59.1	65.3	66.1
Countries of origin[b]	Poland Sweden Germany Lithuania Philippines	Iraq Poland Denmark Somalia Germany	Poland Romania Turkey Hungary Bulgaria	Germany Former Yugoslavia Romania Hungary Turkey	Poland Germany Bulgaria United Kingdom China	Poland India Pakistan Australia China	Germany Portugal France Italy Former Yugoslavia	Morocco Romania Colombia Ecuador Peru	Romania Morocco Albania Ukraine Moldova	Ukraine Vietnam Slovakia Russia Germany	Romania Former Yugoslavia Ukraine Germany China

Source : Eurostat (migr_imm1ctz).

[a] The data refer to 1998 and 2006 for the United Kingdom and 1999 and 2008 for the Czech Republic.

[b] Immigrant nationalities are ranked by absolute size of flows.

of South Asian origin. People from Latin America settled mainly in Spain – doing so in increasing numbers. Like Luxembourg, Switzerland was characterized by a high proportion of EU-15 migrants. In 1998, north European countries were still receiving mainly Nordic nationals, but the situation changed with the arrival of refugees from Iraq and Somalia, as well as migrants from the EU's newest member states. Germany was the only western European country to see a large-scale outflow of its nationals (175,000 in 2008), with Germans heading the list of incoming migrants in no fewer than eight countries.

No such analysis can be conducted for France, due to insufficient data. In 2004, EU nationals ceased to be included in France's official immigration statistics, as these are based on the issue of new residence permits, which they no longer required. The top five nationalities among non-EU sending countries – Algeria, Morocco, China, Tunisia and Turkey – have remained unchanged over the last decade and their combined share among total non-EU immigrant inflows has risen from 30 to 36%. However, back in 1998, France received the same numbers of migrants (5,000-8,000) from Germany, the United Kingdom, Portugal and Italy, as it did from Tunisia, Turkey and China (INED, Immigration Flows).

Most countries receive a majority of male migrants, although there are several exceptions to this rule (Table 12). The smallest proportions of women are to be found in eastern Europe (between 20% and 40%), and the largest in South European countries (around 53%). Most west European countries lie somewhere between these two extremes, with the proportion of women generally ranging between 45% and 49%. Germany and France are the exceptions here, as the former has always received a relatively small proportion of women (around 40%),[23] while the latter is notable for the extent of its female migration (54%).

Table 12. Percentage of women among foreign immigrants in 2008

Below 40%		40- 45%		45-50%		50% and above	
Slovenia	20.5	Germany	40.0	Switzerland	45.7	Portugal	50.9
Slovakia	30.9	Estonia	40.0	Denmark	47.6	Ireland	53.1
Latvia	36.5	Hungary	41.0	Belgium[a]	47.9	Spain	53.5
Czech Republic	36.7	Norway	43.4	Austria	48.0	France	53.6
		United Kingdom[a]	44.9	Sweden	48.1	Italy	54.1
				Netherlands	48.6		

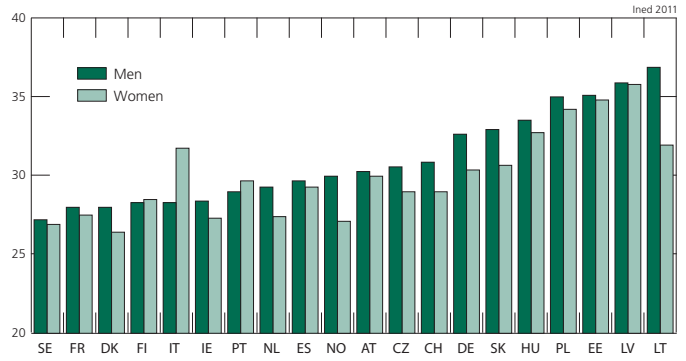
[a] The data for Belgium and the United Kingdom refer to 2007.
Source : Eurostat (migr_imm1ctz)

(23) This stems, among other things, from the immigration policy implemented in postwar Germany. As there were no former colonies to fall back on, the majority of the country's guest workers (*gastarbeiter*) were recruited through bilateral agreements signed between Germany and a number of other countries (Italy, Greece, Turkey, Portugal and Yugoslavia). These contracts were often short-term and mainly concerned traditionally male jobs.

Contrary to the widely held assumption that migration is becoming increasingly feminized further to the restrictions on labour migration in place since the 1970s, there has not been a linear increase in the proportion of women in migration flows. A detailed analysis of immigration and emigration statistics for four countries (Belgium, Germany, the United Kingdom and the United States) reveals that even before 1974, some flows contained a sizeable percentage – if not a majority - of women, notably nationals born abroad and migrants from developed countries (Zlotnik, 1995). Although the proportion of women has increased in certain groups since 1974 (immigrants from Latin America and Southeast Asia, ethnic minorities returning to Germany), most inflows have retained their male majority. In fact, net migration is the only measure to have shown any signs of feminization. This is because countries generally record more departures by men than by women, and the latter therefore weigh more heavily in changes to this composite indicator based on the difference between inward and outward flows.

Immigrants generally have a younger age structure than the population of the receiving country,[24] with between 70% and 90% belonging to the adult age group (15-64 years), depending on the destination. In 2008, the youngest immigrants (27-28 years on average) went to north European countries, their older peers (32-36 years) headed for central and eastern Europe (Figure 37). The women are one or two years younger on average than the men, with the exception of those who migrate to Italy or Portugal. The higher age of female immigrants in Italy can be explained by the large proportion of women who are already married when they arrive (with or without children) and who travel from the Philippines, South America or Eastern Europe to work as domestic workers.

Figure 37. Average age of foreign immigrants in 2008 by sex and receiving country



Source: Eurostat (migr_imm2ctz).

(24) Returning nationals are generally older than incoming foreigners, especially in countries with large numbers of departing nationals (Austria, Netherlands, Finland), who generally return to their country of origin after spending a few years abroad.

A variety of reasons for migration

The reasons for migration are interesting, but complex to study. Researchers generally rely on the legal dimension – that is, the official grounds for issuing residence permits to foreigners – to study them.[25] The problem is that such information is only available for migrants who actually need to obtain a residence permit to stay in the country, and this excludes EU and EEA nationals, as they benefit from freedom of movement. Moreover, the wording of the reasons for admission is determined largely by national legislation on immigration, allowing only limited comparisons between countries.[26]

Family reasons are often the most common reason for admission (Table 13). Figures for this category actually rose between 2000 and 2005, except in Denmark, which introduced stricter criteria for family reunification in 2002. In 2005, education came top in Denmark and second in France and the Netherlands, accounting for 33%, 25% and 16%, respectively, of all first-time permits. The number of permits issued on humanitarian grounds fell during this period, except in Norway and Sweden, where it remained high (20% and 17% of all first-time permits in 2005). With the exception of Austria, only a small proportion of permits were issued for reasons of employment. In France, for example, they represented just 6% of the total in 2005, compared with 10% in 2000.

The other reasons for admission may cover a very wide range of migrant profiles.

Retirement migration is poorly covered by existing statistics and can only be calculated through indirect means. As many retirees spend part of the year in their country of origin and another in their receiving country, they do not qualify as international migrants in either migration flow data or censuses. As a result, both statistical sources underestimate their numbers. Several factors can account for this type of migration, which began in the 1980s. These include longer life expectancy, better health in later life, higher incomes, simplification of the procedures for setting up a home in another EU country, the creation of the Eurozone, making it easier to transfer pensions, the development of the tourist industry and changes in attitudes and lifestyle preferences (e.g. sunseeking) (Gustafson, 2008).

Retirees from northern and western Europe (Germany, Denmark, Norway, Netherlands, United Kingdom, Sweden) head mainly for Mediterranean countries (Spain, France, Italy, Malta, Portugal). In Spain, EU nationals represent 74% of all foreigners aged 65 and over, but just 39% of the under-65s (OPI, 2008, Table I.4). Within this group, if we distinguish further between nationals from

(25) In a few countries (United Kingdom, Cyprus), people are asked about the purpose of their journey at the border control.

(26) The OECD has now started gathering comparable data for permanent permits (OECD, 2008). In line with Regulation (EC) no.862/2007 of the European Parliament and of the Council of 11 July 2007 on Community statistics on migration and international protection, Eurostat has also been collecting this type of data since 2008.

Table 13. Distribution (%) of initial residence permits by reason for admission in 2000 and 2005

Reason for admission[a]	Austria[b]	Denmark	France	Norway	Netherlands[b]	Sweden
2000						
Family	36.1	37.9	42.0	41.5	39.1	53.6
Employment	51.5	12.3	9.9	2.0	9.7	9.8
Education	8.6	19.3	30.1	9.9	7.0	3.8
Humanitarian	2.2	19.5	4.3	46.5	39.2	27.2
Other	1.6	10.9	13.8	0.1	5.0	5.7
Total	100.0	100.0	100.0	100.0	100.0	100.0
Number of foreign immigrants	65,966	26,406	149,982	15,326	69,772	33,789
2005						
Family	55.7	20.2	49.5	45.9	49.9	54.4
Employment	32.5	17.1	5.9	21.0	15.1	12.6
Education	8.9	32.6	24.7	12.6	15.8	9.4
Humanitarian	1.6	4.5	8.1	20.3	6.1	165
Other	1.3	25.7	11.8	0.1	13.0	72
Total	100.0	100.0	100.0	100.0	100.0	100.0
Number of foreign immigrants	53,366	25,553	187,134	19,209	48,349	41,541

[a] The ranking is based on official presentations in France, Norway, the Netherlands and Sweden; it was determined by the author for Austria and Denmark.
[b] The data refer to the years 2002 and 2005 for Austria, 2000 and 2004 for the Netherlands. There are no comparative studies for more recent periods.
Source: Thierry (2008, p. 73, Table 3).

the old and new EU member states, we find that 27% of British residents and 18% of German residents in Spain are aged 65 years or over, compared with just 1% of Bulgarians and Romanians. The latter generally live and work in the major cities, while the Britons and Germans are more likely to be found in the coastal resorts (OPI, 2009).

France is another popular destination for retirees from northern European countries, mainly the United Kingdom and the Netherlands. In 2003, the British formed the third largest contingent of incoming migrants (10,800), as measured by the number of residence permits issued, just after Algerians and Moroccans (INED, 2003). They were older than the other immigrants (43% were aged 50 years or over, compared with 9% for all immigrants) and half of them held an "inactive" residence permit. Although less numerous (2,100 in 2003), Dutch nationals had a similar age profile, one-third of them being aged 50 years or over, and were often issued "inactive" residence permits.

Although this type of migration still occurs on a smaller scale than migration for work or family reasons, it could rapidly increase in years to come. Its impact on

the population structures of the sending countries is still barely perceptible, but could modify the top of the population pyramid in countries with small populations and a high standard of living, such as Denmark and Finland (King et al., 1998).

People born abroad more frequently leave the receiving country than natives

Studies of migratory changes often focus exclusively on immigration. There are several factors than can explain their "neglect" of emigration, not least the difficulty of obtaining the relevant information. Emigration is more complex to measure than immigration, as migrants leave the territory where official statistics are collected.(27)

The absolute number of natives leaving a given country often exceeds that of foreign-born people who arrived there a few years earlier. However, if we take the size of each population into account when calculating emigration rates,(28) we find that immigrants are actually more mobile than natives (Table 14).

Table 14. Emigration rates (per thousand inhabitants) in 2008 by sex and country of birth

Sub-region	Country	Native-born			Born abroad		
		Overall	Male	Female	Overall	Male	Female
North	Denmark	3	3	2	52	56	49
	Finland	2	2	2	24	28	20
	Norway	1	1	1	14	15	13
	Sweden	3	3	2	19	23	16
West	Austria	3	3	2	45	55	36
	Ireland	6	8	5	53	61	44
	Netherlands	3	3	3	25	26	23
	United Kingdom	3	–	–	38	–	–
South	Italy	1	1	1	9	10	9
	Spain	1	1	1	37	29	45
Centre	Hungary	0	0	0	10	14	6
East	Estonia	3	3	3	4	4	3
	Lithuania	4	4	4	22	32	15

Source: Eurostat (migr_pop3ctb, migr_emi4ctb).

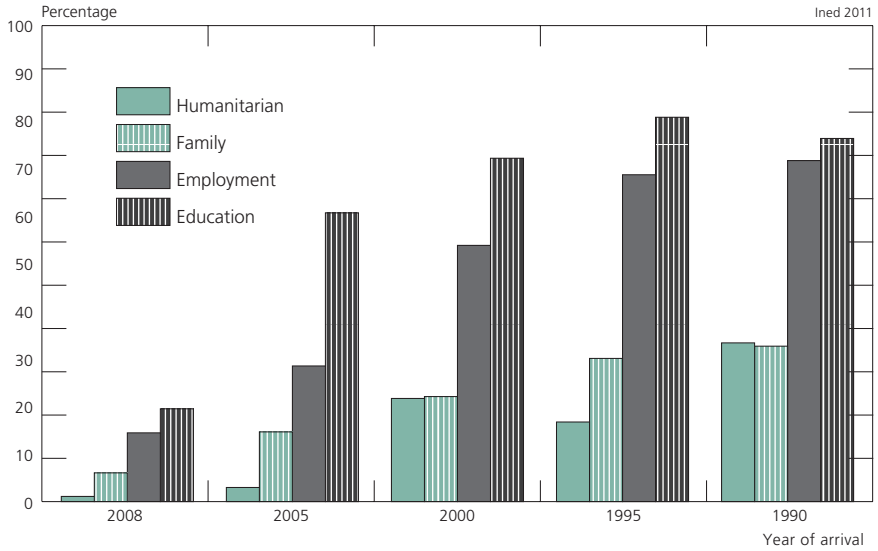
(27) Except in a few countries that keep good-quality population registers, such as Belgium, the Netherlands and the Nordic countries, but even there, departures (removals from the register) are less comprehensively recorded than arrivals.

(28) As figures for the distribution of the total population by sex and country of birth have only been available for all European countries since 2009, we were unable to establish a mean population for 2008. We therefore based our calculation of emigration rates on the ratio of emigrants in 2008 to the total population on 1 January 2009, working on the assumption that the figures for mid-2008 and the beginning of 2009 were similar.

In 2008, emigration rates for natives did not exceed 4 per thousand, with the exception of Ireland (8 per thousand for men, 5 per thousand for women). The frequency with which immigrants left depended on the country in which they had settled. While it was relatively limited in Italy (9-10 per thousand), it topped 40 per thousand in several countries (Ireland, Denmark, Austria). Men left or returned to their country of origin more often than women, the sole exception being female immigrants living in Spain. Unfortunately, the statistics are not sufficiently accurate to draw more detailed conclusions.

The propensity of immigrants to leave is influenced by several factors. Migrants from developed countries are more likely to return home than migrants from developing countries. This is partly linked to the reasons why they came to the receiving country in the first place, the former doing so more on economic grounds and the latter for family or humanitarian reasons, as shown by the Norwegian example (Figure 38).

Figure 38. Proportion of immigrants in Norway who left prior to 1 January 2010 by year of arrival and reason for admission[29]



Interpretation: Of those immigrants who were admitted in 2008 on humanitarian grounds, only 1% had left by 1 January 2010. This proportion rose to 6% for family immigrants, 15% for workers and 20% for students.
Source: Statistics Norway.

The proportion of departures observed within a cohort of immigrants depends on the length of time the cohort has been in the country. Four in ten immigrants who arrived in Norway in or before 1995 were no longer living in the country on 1 January 2010. Only one in ten immigrants who

(29) This solely concerns foreign-born immigrants with non-Nordic citizenship.

arrived in 2008 had left by 2010. The proportions also vary by reasons for admission. Immigrants who come to Norway to study leave sooner than workers (60% of the former within the first five years, compared with 30% of the latter), but after twenty years of residence, these proportions tend to even out (25% still living in Norway). Migrants who come for family or humanitarian reasons are characterized by relatively small percentages of departures: of those who arrived in Norway in 1990, fewer than a third had left the country twenty years later. A similar situation prevails in the Netherlands, where more than 80% of the students and more than 70% of the workers who entered the country in 1997 left within the following six years, compared with just 20% of family migrants and asylum-seekers (Nicolaas and Sprangers, 2004).

Alongside the migrants' individual characteristics, those of the receiving country itself also influence their decision to leave. According to an OECD study (2008), 60% of immigrants in Ireland and 50% in Belgium left within five years of their arrival, as opposed to just 28% of immigrants in the Netherlands (Table 15). In North America, immigrants less frequently leave their host country (19% in the United States and 24% in Canada, according to a slightly earlier study). Immigrants more frequently settle permanently in these two high-immigration countries than in Europe, which is considered less attractive.

Table 15. Percentage of immigrants who left within the first five years of their arrival (immigrant population aged 15 years or over)

Country	Period of entry	Percentage emigrated after 5 years
Ireland	1993-1998	60.4
Belgium	1993-1999	50.4
United Kingdom	1992-1998	39.9
Norway	1996-1999	39.6
Netherlands	1994-1998	28.2
United States	1999	19.1

Source : OECD (2008, p. 171, Table III.1)

X. Immigrants and their descendants

While annual population growth is influenced by the inward and outward flows of migrants over a given year, additional indicators are needed to analyse the longer-term impact of migration. The number of immigrants (stock) and their proportion in the total population are the consequence of cumulative migratory growth over years, if not decades. The proportion of persons of migratory origin (immigrants and their descendants born in the receiving country) in a given population is determined by a combination of these indicators

of stocks and flows, and by the immigrants' specific demographic behaviour, notably with regard to fertility.

1. Immigrants represent between 1% and 32% of the total population of European countries

We generally know more about immigrant numbers (stocks) than about immigration flows. This is because the main tools used to identify and count them (censuses, population registers) have been around for longer, and are simpler and less costly than those used to measure flows (residence permit registers, questions at national border crossings). The United Nations publishes figures on migrant stocks for every country in the world (United Nations, 2009a; Pison, 2010), which the OECD breaks down by age, educational level and length of residence (Dumont and Spielvogel, 2008).

While country of birth serves to determine the size of the "immigrant population", citizenship is the criterion used to calculate the "foreign population".[30] As is the case for migration flows, the variables of country of birth (which remains unchanged throughout a person' lifetime) and citizenship (which can change over time) can lead to different estimates, even if they share a common basis. Although most foreigners are immigrants, in countries where *jus sanguinis* prevails (Germany, Austria, Switzerland), large numbers of children born there may hold foreign nationality. The immigrant population may include not just foreigners but also individuals who have acquired the nationality of their receiving country ("nationals"). Thus, statistics based on the country of birth criterion provide us with a more accurate picture of immigrants and their descendants, but nationality-based statistics are the most readily available.

An immigrant population is made up of cohorts that have arrived over the space of several decades. All the changes described in the previous chapter (e.g., increase in the number of migrants, emergence of new destinations and origins) can be observed within the immigrant population, albeit with a time lag due to demographic inertia, as illustrated by Turkish migration. Arrivals of migrants originating from Turkey have been falling Europe-wide, with a 50% drop in Germany between 1998 and 2008. Previously the prime source of immigrants, Turkey has now been overtaken by other nations. Even so, Turks still form the largest foreign group (7.9%) in the EU (Vasileva, 2009).

The growth of migration flows, especially since the late 1980s, has led to an increase in Europe's migrant stock. Accounting for approximately 6% of

(30) However, citizenship is sometimes used as a criterion to define the immigrant population in national statistics, in which case people born abroad who hold the nationality of the receiving country (e.g. France or the United States) are not classified as immigrants. In France, the High Concil for Integration defines an immigrant as "a person born as a foreigner abroad and residing in France". This means that people born abroad with French nationality and who live in France are not counted as members of the immigrant population.

Europe's population in 1990, this figure had risen to 10% by 2010 (United Nations, 2009b). At the same time, there has been a redistribution of migrants across Europe. In 1990, 70% of migrants lived in western Europe, but this proportion had fallen to 61% by 2010. A far from negligible percentage of migrants are now concentrated in the countries of southern Europe (28%).

The proportion of immigrants (i.e. individuals born abroad) in a country's population is the indicator most often used to measure the migrant stock. In 2009, it ranged between 1% and 32% (Table 16). In the countries of central Europe, where migration was strictly limited in the past, this proportion remains below 5%. All the traditional immigration countries (United Kingdom, France, Germany, Sweden, Austria) have proportions ranging between 10% and 15%. The figure for Spain (14%) is now twice as high as it is in Italy and Portugal, showing just how quickly migration has brought about changes in that country: within the space of a decade, it has drawn level with the longstanding immigration countries. The apparently high figures for Latvia and Estonia are actually a statistical artefact; following the break-up of the Soviet Union, internal migrants within the region who had arrived prior to 1991 were counted as international migrants. Switzerland and Luxembourg are exceptions in Europe, with immigrant proportions of 26% and 32%, made up mostly of EU nationals.

Table 16. Percentage of people born abroad (immigrants) in the total population of each country in 2009

Country	%	Country	%	Country	%
Romania	0.8	Norway	10.2	Austria	15.2
Slovakia	0.9	United Kingdom[(a)]	10.9	Latvia	15.6
Poland	2.7	Netherlands	10.9	Estonia	16.4
Czech Republic	3.7	France	11.0	Switzerland[(b)]	25.8
Hungary [(a)]	3.8	Greece	11.1	Luxembourg	32.2
Finland	4.0	Germany	11.6		
Lithuania	6.6	Iceland	11.8		
Malta	6.7	Slovenia	12.0		
Italy	7.3	Belgium	13.0		
Portugal	7.4	Spain	13.8		
Denmark	8.8	Sweden	13.8		
		Ireland	14.1		

[(a)] 2008 for the United Kingdom, 2007 for Belgium and Hungary.
[(b)] For Switzerland: population aged 15 years or over in 2008.
Sources: Eurostat (migr_pop3ctb); OECD, database on international migration; SLFS 2008.

The diversification of migrants' national origins is gradually modifying the make-up of the immigrant population, as illustrated by five north European countries. Until recently, these countries had a separate migratory system.

The Nordic Council, set up in the wake of World War II, introduced freedom of movement for people living in these countries in the early 1950s, which explains the preponderance of migrants from neighbouring countries, compared with those from farther afield. In Sweden and Norway, other Nordic populations represented more than 60% of these two countries' foreign populations in the early 1970s. Since then, these proportions have dwindled in all five countries, falling from between 15% and 40% in 1990 to between 6% and 26% in 2008. The more diversified geographical origins of the new immigrants (Table 11) account partially for this fall, another factor being the greater mobility of Nordic immigrants with respect to migrants from elsewhere.

Other characteristics of the immigrant population (age distribution, proportion of immigrants holding the nationality of their receiving country, etc.) are directly linked to the immigrants' length of stay in the receiving country. Recent immigrants to France and Spain tend to be young (average age of 28 and 30 years, respectively, in 2008), but in other respects the two countries' immigrant populations differ quite considerably. Most of the immigrants living in France have been there for several decades[31] and their population pyramid has a narrower base (average age 47 years) than that of the native-born population (39 years). The relatively few immigrants now arriving are not sufficient in number to rejuvenate this subpopulation, whereas the native-born population is constantly being renewed by births (France has quite a high birth rate).[32] The opposite situation prevails in Spain, where the continuous influx of large numbers of young immigrants has resulted in a broader-based population pyramid (average age 36 years) than that of the native-born population (42 years).

2. Immigrant fertility is converging with that of natives

The impact of migrants on the demographics of the receiving population does not end with their arrival in the country. Their behaviour in terms of fertility, union formation and mobility also affects, to a varying extent, the trends observed in the total population. We have chosen to focus here on the fertility of migrants and the rise of a second generation, namely, the children of immigrants born in the receiving country.[33]

The migrants who arrive or circulate in Europe are relatively young and therefore of childbearing age. Whether or not they are already parents when they leave their country of origin, many of them go on to have children after

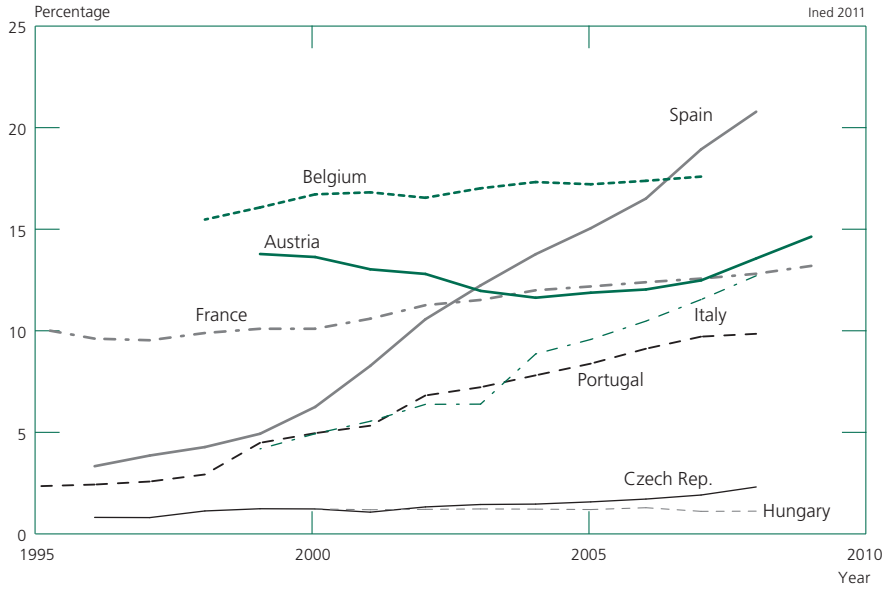
(31) At the time of the 1999 census, 83% of immigrants in France had been living there for ten years or more.

(32) Note that France's relatively high fertility (2.0 children per woman in 2010) is only marginally attributable to the presence of foreign women, who are estimated to contribute approximately 0.1 children to this rate (Héran and Pison, 2007).

(33) They are also referred to as "descendants of immigrants".

settling in their receiving country. Figure 39 tracks changes in the proportion of children born to foreign mothers in eight European countries since 1995.(34)

Figure 39. Percentage of children born to foreign mothers since 1995



Sources: National institutes of statistics.

Traditional immigration countries, such as France, Belgium and Austria, report relatively stable proportions of births to foreign mothers. In France, this indicator had hovered around 10% since the 1980s, but started to rise in the 2000s, reaching 13% in 2008. In Belgium, it was slightly higher (15% in the late 1990s) and also started to rise a few years ago. Switzerland and Luxembourg, both countries with particularly high proportions of immigrants (Table 16), also have exceptionally high proportions of foreign births (36% and 56% in 2008). The new immigration countries in southern Europe have witnessed strong increases in the proportion of births to foreign mothers. Until the late 1990s, fewer than one child in twenty was born to a foreign mother, but by 2008, this figure had risen to one in five in Spain, one in eight in Italy and one in ten in Portugal. Births to foreign mothers remain infrequent in central European countries, averaging around 1-2%, although this proportion tripled in the Czech Republic during the period under scrutiny.

(34) This indicator does not measure the proportion of children born to immigrant mothers (who are more numerous than foreign mothers as some may have acquired the nationality of their receiving country).

Several factors account for the increased contribution of immigrants (or foreigners) to the birth rate, besides differences in fertility levels. Given their younger age structures, immigrant populations have larger proportions of women of childbearing age. As a result, they have higher birth rates[35] than the native-born populations – a difference exacerbated by the ageing of European populations. In Spain, the birth rate is twice as high for foreigners (21 per thousand) as it is for nationals (10 per thousand) (Roig Vila and Castro Martin, 2007).

Total fertility rates allow us to compare the fertility intensity of the two populations, based on the assumption of identical age distributions. The fertility level of foreign women varies according to the receiving country. Thus, in the mid-2000s, it ranged from 1.7 children per woman in Germany and Spain to 3.3 in France (Sobotka, 2010). It is systematically higher than that of women who hold the nationality of the receiving country, the difference between the two varying from 0.4 children per woman (Spain) to 1.5 (France). However, calculations based on the foreign population paint a skewed picture of migrant fertility, as they do not include the fertility of women who have become naturalized, which is closer to that of natives. Fertility figures for female immigrants, available for a more limited number of countries, are lower and correspondingly closer to those of native-born women. In 2008, for example, Sweden's total fertility rate stood at 2.6 children per woman for foreigners, 2.1 for immigrants and 1.9 for natives (Sobotka, 2010).

Four potential factors are identified in the literature to explain these differences.[36] The first of these is the migrants' selective characteristics (level of education, intermarriage rate) favouring higher fertility. The second factor is socialization in the country of origin, where the level of fertility is probably higher than in the receiving country. Third, the link between migration and family formation may explain the particularly high levels of fertility observed in the first years following arrival[37] (Davie and Mazuy, 2010; Tribalat, 2005; Toulemon and Mazuy, 2004; Ostby, 2002). Fourth and last, continuing high fertility could be a defensive reaction on the part of minorities who do not adhere to the mainstream population's family ideals ("minority status").[38]

Studies adopting a longitudinal approach have revealed that the fertility levels of female immigrants and natives gradually converge. Table 17 shows the mean number of children per woman in the Netherlands by migratory origin. The overall fertility rate rose from 1.5 to 1.8 children per woman between

(35) The birth rate is the ratio of the total number of live births in a given year to the average total population for that year.

(36) See Sobotka (2010) for an overview of existing research on migrants' birth rates and fertility.

(37) Cross-sectional fertility indicators tend to overestimate immigrant fertility, thereby exaggerating differences with respect to the native-born population. It is important to take length of stay in the receiving country into account, especially when estimating the fertility of recently arrived cohorts.

(38) For other authors, however, this same "minority status" explains migrants' use of family limitation to achieve greater social and economic mobility.

1996 and 2009. Over the same period, the rate for immigrant women fell from 2.1 children to 1.8, after peaking at 2.3 in 2000. As a result, the two groups' fertility levels moved closer together, virtually closing the gap that initially stood at 0.6.

Table 17. Total fertility rates in the Netherlands by women's migratory origin since 1996

Year	All women	Women with two parents born in the Netherlands (natives with no migratory origin)	Women with at least one parent born abroad (immigrants and second generation)	
			Overall	o/w immigrants
1996	1.5	1.5	1.8	2.1
2000	1.7	1.7	2.0	2.3
2005	1.7	1.7	1.8	2.0
2009	1.8	1.8	1.8	1.8

Source: SCBS Statline-Geboorte; herkomstgroepering en leeftijd moeder (op 31 december).

3. The difficult task of estimating populations of immigrants and their descendants

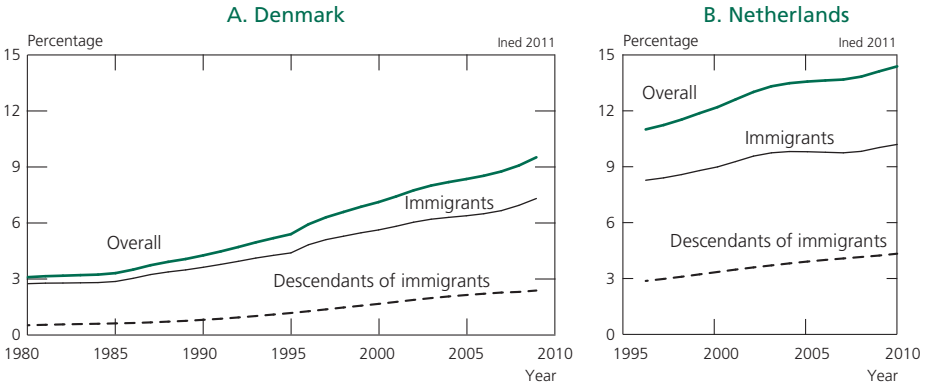
Whether or not fertility levels are higher among migrants than among natives, the number of children born to migrant parents and their proportion among the total population inevitably rise when a country's immigrant population increases. Providing there is no major fertility gap between the two groups, once the proportion of immigrants has stabilized so, too, should the proportion of descendants of immigrants. This can be seen to some extent in Figure 39, which shows that the proportions of births to foreign mothers in the traditional immigration countries of western Europe varied little over the period under scrutiny, in marked contrast to their rapid growth in southern Europe.

At the present time, data on population composition by origin, not just of immigrants but also of their descendants, are only available in a handful of countries (Tribalat, 2008). Because migration flows in many European countries are still recent, and as the second generations are still being born, there are no relevant statistical data. There is also a more general problem linked to data, as calculating this sort of indicator requires systematic information not just about the individual but also about his or her parents. This information can be obtained from population registers, but for countries with no such registers the only solution is to obtain point estimates by conducting dedicated surveys.

Figure 40 shows changes in the proportions of immigrants and their descendants[39] in the total populations of Denmark and the Netherlands.

(39) A descendant is defined as a person whose parents are either immigrants themselves or immigrants' descendants still holding foreign nationality.

Figure 40. Percentage of the total population represented by immigrants and their descendants in Denmark since 1980 (A) and the Netherlands since 1995 (B)



Immigration to Denmark developed more recently than in France, Germany and the Netherlands. The annual number of foreigners entering the country started to rise in the 1980s, stabilizing at 30,000-50,000 in the mid-1990s. The immigrant population underwent a correspondingly large increase over this period, climbing from 135,000 in 1980 to 350,000 in 2006 (i.e. an average yearly rise of 4.4%). At the same time, the second generation rose from 18,000 to 113,000, with an average annual increase of +7.3%. As the number of people "with no migrant parentage" remained unchanged at 4.9 million throughout this period, the proportion of persons of immigrant origin in the total population rose from 3% to 9% in 25 years. Today, the composition of Denmark's population by migratory origin resembles that of the Netherlands 15 years ago.

Immigration to the Netherlands started to take off in the immediate postwar period. We can hypothesize that its composition followed the same course as the Danish one, albeit rather earlier. Since the 1990s, the populations of immigrants and descendants of immigrants have continued to grow, though at a slower pace than in Denmark, while the mainstream population has stagnated.[40] Immigrants now represent 10.3% of the total population and their descendants 4.3%, if we only count those who have two immigrant parents, as is the case in Denmark. If all those who have at least one immigrant parent are included, the proportion of descendants reaches 10%. Table 18 shows the proportions of these different subgroups in the total population of five European countries.

(40) Between 1996 and 2010, the average growth rate was 2.0% for immigrants, 3.6% for descendants of immigrants and 0.1% for the mainstream population.

Table 18. Percentages of immigrants and descendants of immigrants in the total populations of five countries in 2008

Country	Immigrants	Descendants of immigrants with		Overall
		two immigrant parents	one immigrant parent	
Netherlands	10	4	6	20
France	8	5	6	19
Austria	13	4	not available	17
Norway[a]	9	2	4	16
Denmark	7	2	not available	9

Figure for 2010.
Source : National statistical institutes; Borrel and Lhommeau (2010) for France.

Results for Austria and Denmark cannot be fully compared with those of other countries, as there are no figures for descendants with one immigrant parent (i.e., children of mixed parentage). For the other three countries, we can see that the proportion of children of mixed parentage is always slightly higher than that of children with two immigrant parents. It is important to make this distinction, as these two second-generation groups are exposed to different socialization conditions. It would also seem that the ratio of first- to second-generation immigrants is directly contingent upon the date at which the migration flows took place. In France, there are now more descendants of immigrants than immigrants (11% versus 8%), while the reverse is true in Norway (6% versus 9%).

Projections for the longer-term impact of migration on the receiving population and the proportion of the total population represented by persons of immigrant origin[(41)] have been made in a number of countries, including Austria, the United Kingdom, Denmark, Germany, the Netherlands, Norway and Sweden (Coleman, 2006). In the early 2000s, proportions varied between 9% and 17% in these countries and are expected to reach levels of between 15% and 32% by 2050. These trends lead the author to suggest that receiving populations characterized by low fertility and high immigration are now undergoing a third demographic transition, reflected in a growing diversity of national populations in terms of migratory origin.

(41) For a discussion of the various definitions used to construct this population, see Coleman (2006) and Tribalat (2008).

Conclusion: the future of the European population

The demographic future of the European population is forecast by population projections such as those constructed by countries or international organizations such as the United Nations and Eurostat. Rather than predicting the most likely course of change, the primary aim here is to show what factors will be operative in upcoming population trends. In this respect, the 2008 revision of the United Nations' projections is a useful tool, as it provides sets of coherent assumptions for the various countries and assumption combinations that shed light on the components of future demographic growth.

Three fertility variants are considered. Under the medium-fertility variant, all countries in the world gradually converge towards a total fertility rate of 1.85 children per woman. In Europe, this level will be reached almost everywhere before the end of the projection period in 2050. Under the high-fertility variant, the fertility rate increases from 1.85 to 2.35 per woman, and under the low-fertility variant it is set at 1.35.

It is assumed that mortality will continue declining gradually. For example, life expectancy at birth in western Europe (both sexes) should rise from 81 years in 2010-2015 to 85 years in 2045-2050. Life expectancy should rise slightly faster in countries where it is currently lower. So here, too, convergence is predicted. An alternative assumption is also put forward, based on mortality remaining constant at its most recent level, neither increasing or declining.

Lastly, future levels of international migration are "set on the basis of past international migration estimates and consideration of the policy stance of each country with regard to future international migration flows. Projected levels of net migration are generally kept constant over most of the projection period". The alternative here is zero net migration for every year from 2010 to 2050, with emigration counterbalancing immigration.

The reference scenario combines medium fertility, falling mortality and non-zero net migration. Two other scenarios are envisioned that differ from the reference only with regard to fertility: high fertility in one, low in the other. These three scenarios can be compared to analyse the role of fertility in future change.

Two scenarios are added, both assuming medium fertility, and differing from the reference scenario in one way: the first assuming an absence of mortality decline; the second assuming zero net migration. Comparison of these scenarios with the reference sheds light on the respective impacts of declining mortality and of migration.

1. Change in the total population

In Europe (as the term is used by the United Nations; i.e. not including Belarus, Russia and Ukraine), the total population should increase slowly until around 2025, rising from 537 to 546 million inhabitants, then fall gradually

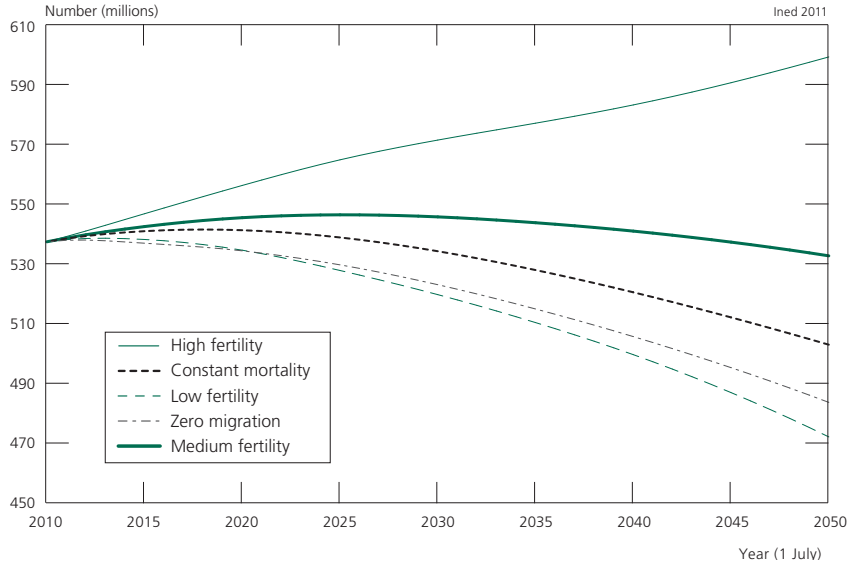
until the end of the projection period in 2050, from 546 to 533 million[42] (Figure 41).

That path would be radically altered by either higher or lower fertility. With high fertility, the population would increase rapidly and continuously, reaching 600 million in 2050. With low fertility, it would decrease almost immediately and continuously, reaching a low of 472 million in 2050. This range is remarkably wide, but clearly reflects the gap between fertility rates of 2.35 and 1.35 children per woman.

If mortality did not decline, the population would continue to increase for a few years, then fall to 503 million by 2050; i.e. at a level 30 million below that of the reference scenario, which assumes medium fertility and falling mortality. Future gains against mortality would thus provide the European population with 30 million additional inhabitants, i.e. half of what it would lose by a fall in fertility to an average of 1.35 children per woman.

In the event of zero international migration, the European population would decrease almost immediately at a speed quite similar to the one envisioned in the low fertility scenario. In 2050 Europe would have 483 million inhabitants, 50 million fewer than in the reference scenario. Net in-migration practically cancels out the loss that would result from a fall in fertility to an average of 1.35 children per woman.

Figure 41. European population growth under the different projection assumptions, 2010-2050



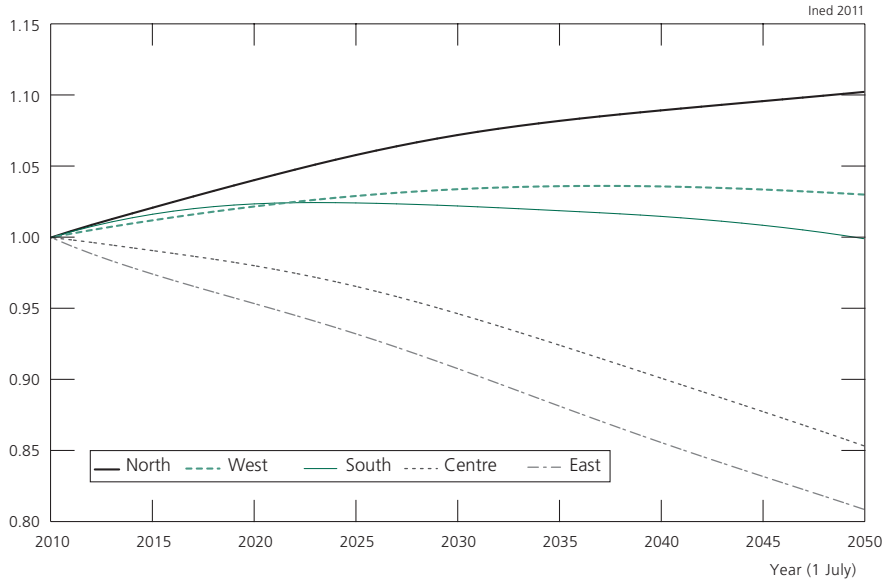
Source: United Nations, 2009c.

(42) If we include Belarus, Russia and Ukraine, the population of Europe is forecast to decline from 733 to 691 million inhabitants from 2010 to 2050. The population of Cyprus will rise from 0.9 to 1.2 million inhabitants.

Despite the convergence of fertility and mortality assumptions towards similar levels, the paths of European countries are bound to differ considerably in the coming decades due to contrasting initial conditions. The northern European population should increase 10% by 2050, whereas the populations of central and eastern Europe should fall (by 15% and 20%, respectively).[43] These two contrasting trends should continue throughout the period. In southern and western Europe, however, populations should increase slightly, then slowly decline, as in the continent overall (Figure 42).

The contrast between northern Europe on the one hand, central and eastern Europe on the other, also holds for an analysis of growth components in each sub-region. In the north, and even with low fertility, the population in 2050 should be greater than in 2010: the mortality decline will not play a major role (since life expectancy there is already high) while migration should contribute significantly. In central and eastern Europe, even with high fertility, the population should fall: improvements in life expectancy will have a more visible impact there than in northern Europe but the increase due to migration should be negligible. Southern and western Europe show similar development profiles, differentiated above all by a greater contribution of migration to demographic dynamics in southern European countries.

Figure 42. Population projections for European sub-regions based on the medium fertility variant, 2010-2050 (baseline: 1 in 2010)



Source: United Nations, 2009c.

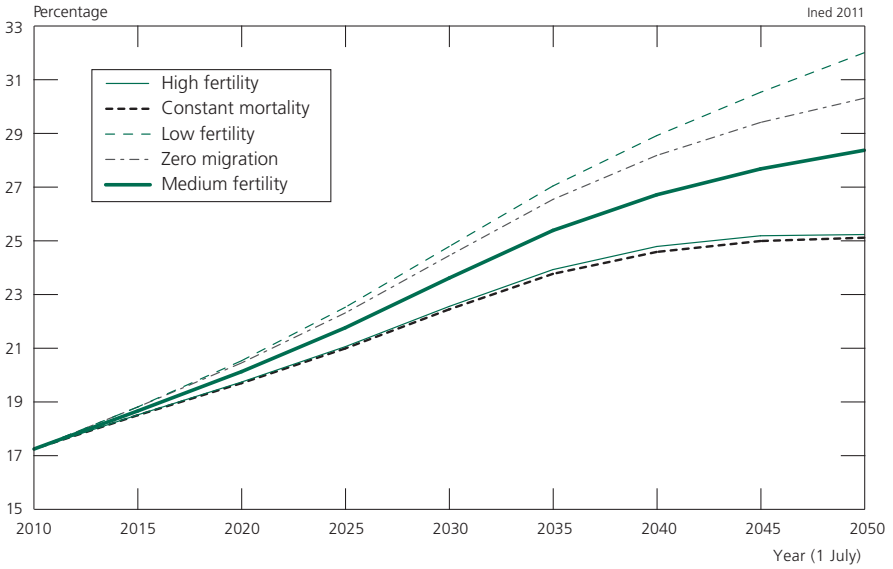
(43) Change in Belarus, Russia and Ukraine will not differ from change in the other eastern European countries.

2. Change in the older population

Europe will almost inevitably be affected by an increase in the proportion of older persons in the coming decades. In 2010, 17% of the European population was aged 65 or over, and in all scenarios the proportion exceeds 25% in 2050, while under certain combinations of assumptions it could even exceed 32%. In the reference scenario, it is above 28% (Figure 43).(44)

It is well known that fertility plays an important role in the degree of population ageing. This is confirmed here: with high fertility, the proportion of older persons should reach 25% in 2050, whereas with low fertility it would rise to 32%. Even assuming fertility everywhere in Europe to be higher in the future than it is today (high assumption), the degree of ageing will still become considerably more acute. Specifically, with fertility higher than it is today, ageing would be three points lower than in the reference scenario, i.e. an increase of eight percentage points instead of eleven. This is only a marginal adjustment.

Figure 43. Percentage of Europeans aged 65 or over under the different projection assumptions, 2010-2050



Source: United Nations, 2009c.

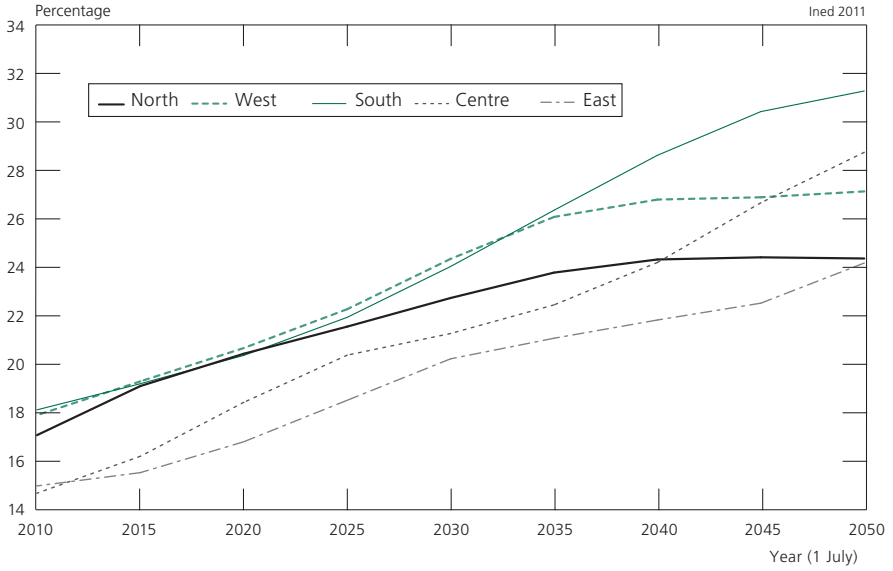
The scale of that adjustment is the same for the effect of mortality: if mortality did not decline, the proportion of older persons would reach 25%. A decline in mortality raises the figure to 28%, since it brings about additional

(44) If Europe is defined to include Belarus, Russia and Ukraine, the different percentages all decrease by one point.

ageing. Migration has the opposite effect: if the European population did not grow through immigration, the proportion of older persons would exceed 30%, two points above its level in the reference scenario. Net immigration to Europe would slow population ageing. Once again, the shift would be slight. Population ageing seems inevitable, for even a combination of the three above-mentioned factors cannot prevent it from occurring.

The ageing dynamic varies by European sub-region, however. In the north and west of the continent, the reference scenario shows population ageing slowing from 2040 on, while in the south, it begins to slow only about ten years later. In central and eastern Europe,[45] ageing should actually accelerate at the end of the projection period (Figure 44).

Figure 44. Percentage of Europeans aged 65 or over in the different sub-regions under the medium fertility variant, 2010-2050



Source: United Nations, 2009c.

These trends mirror the fertility schedule of 65 years earlier, when the cohorts that were to become the future older population were born. Beginning in 1975 in northern and western Europe, this was the "baby-bust" period, when the number of births was at an all-time low. These small cohorts will therefore make small contributions to the size of the elderly population after 2040. In southern Europe, the same process will occur but approximately ten years later, as the fall in fertility occurred later there. In central and eastern Europe, on the other hand, the 1970s and 1980s were characterized by relatively high

(45) Trends in Belarus, Russian and Ukraine will not differ from those in the other Eastern European countries.

fertility in response to pro-birth policies – in some cases generous, in others repressive – in those countries. This explains why a rapid increase in number of older persons is to be expected in these sub-regions in the 2040s.

Yet demographic developments produce their effects quite slowly. Even if we posit – though we cannot confirm – a convergence of behaviours, it will be some time before the populations of the various sub-regions of Europe evolve at the same pace.

Appendix: Data sources for European demography

This section gives an overview of the main statistical sources available for analysing European demography, along with a summary of census methods, which have evolved substantially in recent decades, and a rundown of survey data sources for those seeking a more detailed picture of European populations for comparative purposes.

Almost all the countries in Europe have reliable statistics on population change and long series of demographic data. Most of the indicators used in this section are taken from the data collection project initiated by Alain Monnier and continued by Alexandre Avdeev. This has recently been turned into a publicly accessible database on the websites of INED[46] and the Centre for Population Studies of Moscow State University.[47] Part of this database contains series ranging from the early twentieth century to the present day. These data have mostly been drawn from the official publications of national statistical agencies and from the European Demographic Observatory data series supplied by Gérard Calot and Jean-Paul Sardon, supplemented in some cases by data from Eurostat.[48]

The national statistics and indicators of population change of European countries are comparable, at least for the period since the Second World War. However, total population numbers, except when they are taken from general censuses, are always estimates and contain a degree of uncertainty. This holds particularly for the Balkan countries and countries with large international migration flows.[49]

The very smallest countries (Monaco, San Marino, Vatican City) have been excluded from the analysis, and components of population change have not been analysed for Liechtenstein and Andorra, because fluctuations in numbers due to demographic events there are often too large relative to the size of their population.

(46) http://www.ined.fr/en/pop_figures/developed_countries/developed_countries_database/

(47) http://devision-dmo.econ.msu.ru/

(48) http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search_database

(49) For example, censuses in Albania (2001) and Belarus (2009) revealed a population figure much lower than the pre-census estimates, although these were not subsequently revised. Situations of this sort are excluded from our analysis. In addition, since the data from the autonomous province of Kosovo and Metohija were excluded from Serbian statistics in 1998, they have also been omitted from our analysis of population growth and its components for the last two decades. Official population estimates for Kosovo, however, are included in the analysis of population dynamics for the whole of Europe.

The cartographic presentation is based on an analysis of the distribution of countries by various indicators:

- 10% (5% + 5%) of countries at either end of the distribution;
- 50% of countries in the middle of the distribution, forming the second and third quartiles;
- 40% (20% + 20%) of countries on either side of the central group. We also distinguish the countries to the right and left of a central indicator (median or arithmetic mean).

The means calculated here are of two types. The first is obtained by dividing the sum of national indicators by the number of countries; this is the "political" mean, describing the demographic position of European countries independently of their population size. For the second type of arithmetic mean, national indicators are weighted by the population of each country; this is the "demographic" mean, describing the position of the European population as a whole, independently of national borders.

The databases mentioned above are supplemented by specific ones dealing with particular aspects of population dynamics. The most extensive concerns mortality. The Human Mortality Database[50] contains results in the form of death rates and life tables for national populations, and the raw data behind them. Data are available for 26 countries in Europe. The same methodology has been used in each country. More information comes from the Human Life Table Data Base,[51] in which life tables have been constructed by various techniques. This provides results also for Albania, Cyprus, Greenland and Malta. A Human Fertility Database[52] is currently under construction for fertility, but at present only covers eight countries in Europe.

For international migration, establishing a comparative basis is a much trickier task, since the sources are highly heterogeneous in their measurement of a country's entry and exit flows, whether of foreigners or nationals. In addition, there are divergences in the very concept of a migrant. A recent report has been published as part of the Prominstat project (Promoting Comparative Quantitative Research in the Field of Migration and Integration in Europe, Kupiszewska et al., 2010). The difficulty of comparing migration statistics in Europe means that our overview is based on the measurement or estimation of net migration figures; details on actual flows (immigration and emigration) are given for only a limited number of examples where data quality is sufficient for correct analysis.

(50) http://www.mortality.org/

(51) http://www.lifetable.de/

(52) http://www.humanfertility.org/

1. Censuses in Europe

Europe pioneered some of the first modern population censuses, the earliest of which date back to the eighteenth century.[53] During the twentieth century the most common form of census was the so-called "traditional" census.[54] But the uniformity of the 1950s-1960s, when all countries took censuses of their populations by questioning all individuals in a single survey on a set date, has now disappeared. Europe is entering a new age in which new forms of population census are being developed. As a consequence of increasing costs and the reactions of civil society,[55] the direct exhaustive collection of data is being replaced by other collection methods (surveys, registers, administrative sources) and data capture and control techniques have been modernized. Within the last thirty years, a wide range of different European census practices have been introduced.

New census techniques

Traditional population censuses, the method adopted by almost all European countries until the 1970s , have been replaced either by hybrid forms combining surveys and/or administrative registers, or by alternative forms using registers only or based on new census methods (France: 5-year rolling census in small municipalities and sample surveys in the others) (Table 19).[56]

Use of registers

The extent to which registers are used by national statistical offices, and the ways they are used, vary greatly. In some countries they form the basis of the census and in others they only supplement it.

In 1970, Norway adopted a hybrid method of collection, based on the population register established in 1964, on education and salary registers and a traditional census. In 1990, the census was taken from three sources: registers, a sample survey on employment and housing in towns of more than 6,000 population and a "census" of persons aged over 16 in the smaller towns (Eggerickx and Bégeot, 1993). In 2011, the census is now held solely on the basis of data from three main registers: the central population register (now

(53) A population count was held in Iceland, then under Danish administration, as early as 1703. Sweden (then including Finland) held a general population census in 1749, followed by Denmark in 1769 and France and Great Britain in 1801.

(54) Traditional censuses involve a comprehensive count of population and dwellings in the field using a long form. Each individual was recorded by their characteristics and the data were collected without the use of sampling techniques.

(55) The example of Germany is striking. Following protests in the name of individual liberty, the German authorities postponed the census due in the early 1980s; and because the reunification of the two Germanys considerably increased the population size and the cost of the census, no exhaustive operation took place from 1987 (FRG) to 2011.

(56) For a presentation of various census methods, see Valente, 2010.

Table 19. Changing types of census in Europe

Country	Census wave		
	1985-1994	1995-2004	2005-2014
Albania	12/04/1989	01/04/2001	01/10/2011
Austria	15/05/1991	15/05/2001	31/10/2011
Belgium	01/03/1991	01/10/2001	01/01/2011
Bosnia-Herzegovina	31/03/1991		01-15/04/2011
Bulgaria	04/12/1985	01/03/2001	01-28/02/2011
	04/12/1992		
Croatia	31/03/1991	31/03/2001	01-15/04/2011
Cyprus	01/10/1992	01/10/2001	2011
Czech Republic	03/03/1991	01/03/2001	25-26/03/2011
Denmark	01/01/1991	01/01/2001	01/01/ 2011
Estonia	12/01/1989	31/03/2000	31/12/2011-31/03/2012
Finland	17/11/1985	31/12/1995	31/12/2010
	31/12/1990	31/12/2000	
France	05/03/1990	08/03/1999	20/01/2006 and subsequent years
Germany	25/05/1987 (FRG)	30/09/1995 (households)	09/05/2011
		05/12/2001 [a]	
Greece	17/03/1991	18/03/2001	16-18/03/2011
Hungary	01/01/1990	01/02/2001	01/10-30/11/2011
Iceland	[b]	[b]	2011
Ireland	13/04/1986	28/04/1996	23/04/2006
	21/04/1991	28/04/2002	10/04/2011
Italy	20/10/1991	21/10/2001	09/10/2011
Latvia	12/01/1989	06/04/2001	01/03/2011
Lithuania	12/01/1989	06/04/2001	01/03/2011
Luxembourg	01/03/1991	15/02/2001	01/02/2011
Macedonia	31/03/1991	01/11/2002	10-11/2011 [c]
Malta	16/11/1985	26/11/1995	27/11/2005
			21/11-18/12/2011
Moldova	12/01/1989	05/10/2004	01/04/2012
Montenegro	31/03/1991	31/10/2003	01-15/04/2011
Netherlands	01/01/1991	01/01/2001	01/01/2011
Norway	03/11/1990	03/11/2001	19/11/2011
Poland	06/12/1988	20/05/2002	01/04-30/06/2011
Portugal	15/04/1991	12/03/2001	21/03/2011
Romania	07/01/1992	18/03/2002	10/2011
Serbia	31/03/1991	31/03/2002	01/04/2011
Slovakia	03/03/1991	25/05/2001	21/05/2011
Slovenia	31/03/1991	31/03/2002	01/01/2011
Spain	01/03/1991	01/11/2001	01/11/2011
Sweden	01/11/1985	[b]	31/12/2011
	01/11/1990		
Switzerland	04/12/1990	05/12/2000	31/12/2010
United Kingdom	21/04/1991	29/04/2001	27/03/2011

Note: The dates of censuses not yet held (planned for 2011 or 2012) may be modified; consequently those recorded here are the ones officially announced by 15 March 2011. Most of them are census reference dates or, failing that, survey dates.

[a] Register-based test census held on 5 December 2001 on 1.2% of the population.

[b] Iceland held no censuses from 1981 to 2011. Sweden held no censuses during the 1995-2004 wave.

[c] On 9 March the census planned for 31 March 2011 was postponed until autumn 2011.

Traditional census	Hybrid	Registers	5 annual surveys

including the employment and unemployment register, education register and tax register), the company register, and the address and dwelling register.

Over the last forty years, the Nordic countries have widely developed and generalized the use of administrative data: Denmark opted for a hybrid census type in 1976,[57] Sweden and Finland in 1985. In time they became a reference for many countries that had registers, such as the Slovenian statistical office.[58] The Netherlands in 1971 and Belgium in 1981 also adopted a hybrid form of census.

Attracted by the lower costs of this method, other countries are working to improve the quality of their registers with a view to introducing this sort of census in the near or mid-term future. Poland is preparing for 2011 a census combining register data and a self-administered census. The register data will be taken from 28 sources, both central registers and those of municipalities and public administrations. According to an estimate made by the Polish central office of statistics, this new method, together with the use of the Internet, will reduce the number of census agents (from 200,000 to 20,000 in 2011) and the costs of the census operation.

Use of sample surveys

Sample surveys are applied either to the whole population (united Germany held a 1% population census in 1991), or to a part (the French census in all towns over 10,000 population), or solely for particular socioeconomic data (use of two questionnaires, short and long, given to a fraction of the population, as in Hungary in 1990).

In 2011, Italy is using two types of census form in towns of 20,000 or more inhabitants: a short one for demographic characteristics and a long one for socioeconomic variables collected by sampling. This solution appears to be only a stage in the total reform of the system for collecting demographic and socioeconomic data, since Italy intends to set up an entirely register-based census by 2021.

New data collection methods

The Internet has probably been the main technical revolution in the census cycle 2005-2014. A number of countries, such as Switzerland and Spain, had already encouraged their residents to use this method during the previous census wave. In the 16th federal census in Switzerland, 4.2% of the target population chose this option.[59] The Swiss federal office repeated the experiment

(57) In 1981, Denmark held a census based solely on registers.

(58) Conference of European Statisticians, "The Slovene example how to improve the census count in a register-based census", Geneva, 28-30 October 2009, p. 2.

(59) Not all households could complete the census form online, depending on the census technique adopted by their municipality of residence. The figure of 4.2% was calculated for the population for whom this option was available.

in its December 2010 census. Poland, Latvia, Austria and Portugal also encourage online self-declaration. In all, 13 countries have used it.

Wide-ranging techniques and methods but greater harmonization of data

The UN and Eurostat[60] publish recommendations for each census cycle concerning the form and structure of the censuses, desirable information and data to be collected, and a list of tables to be supplied. These recommendations form a framework within which each country then makes its own rules.

Although national policy has a decisive impact on the conduct of censuses and the interpretation of their results,[61] the international recommendations are intended to provide incentives and many countries follow them to the letter, starting with the choice of census year. Following the UN suggestions adopted by Eurostat, some thirty countries are holding a census in 2011.

Similarly, in order to harmonize census-taking and ensure comparability between the national data collected, these international organizations encourage countries to ask certain key questions (basic characteristics defined in the specifications) or guide the choice of questions so that the data collected refer to similar realities. These recommendations are perhaps those that encounter most resistance or problems, because national censuses are designed in priority to meet national concerns. However, harmonization and comparability of results continue to advance.

Access to census results

Tables of census results may be consulted in the Eurostat database. They refer both to the most recent census campaign (2000-2001) and the previous one (1990-1991). They are structured around five topics: population structure, working population, education standards, households and housing. Some thirty countries were covered in 2000-2001, and about twenty ten years earlier.

Access is now also possible not merely to quantitative tables based on the analyses of census data but even to individual data, which gives users maximum flexibility to conduct their own analyses without the constraint of pre-programmed tabulation. A comparative database for European countries is provided by the IECM project (Integrated European Census Microdata).[62] This makes it possible to process samples of individual data (clustered in

(60) The Official Journal of the European Union published *Regulation (EC) N) 763/2008 of the European Parliament and of the Council of 9 July 2008 on Population and Housing Censuses*. The nine articles of this document contain recommendations for statistical cooperation between Eurostat and Member States for the 2005-2014 census wave.

(61) This interference is particularly sensitive in the counting of ethnic groups: typical examples here are Nigeria and Lebanon, but the US 1980 census also revealed tensions between the authorities and scientific objectives (Choldin, 1986). A European example is Ireland (Courbage, 2003).

(62) http://www.iecm-project.org/

households) taken from national censuses held since the 1960s in a dozen European countries.

2. European surveys

Development of comparative data in Europe

Surveys are a major source of data for studying demographic trends and the underlying changes in behaviour. In recent decades, increasing interest in comparisons between countries has led to the development of networks facilitating access to data for comparative studies on the basis of national surveys. But these studies remain a complicated matter because of differences in concepts, definitions and questionnaires. In addition, from one country or survey to another, there may be variations in methods of sampling, data collection and choice of base population. All these are obstacles to cross-border comparisons.

To remedy these problems, Europe-wide surveys have been designed in recent years with the prime objective of producing comparative data on various topics. These surveys are increasingly well documented and accessible. Some take the form of a panel, so that longitudinal data can be obtained and causality examined. Surveys providing cross-sectional data are often repeated at regular intervals, making it possible to study trends. Furthermore, these surveys are often used to test new approaches to the methodological problems of collection and analysis specific to comparative studies.(63)

This section presents the infrastructure created to facilitate access to and use of European data, a brief description of the various surveys and some ideas for improvement. Most of this information was found on websites during the summer of 2010 and is naturally not exhaustive.

Infrastructure for data archiving and accessibility

In France, access to international data and documentation is facilitated by the members of the Quételet network(64) formed by the data archives based on public statistics from the Centre Maurice Halbwachs(65)(CMH-ADISP), the Centre for Socio-Political Data(66) (CDSP) and the Surveys Department of the National Institute for Demographic Studies(67) (INED). These institutions in turn take part in European and international surveys: the CDSP in the European

(63) See, for example, the COMPARE project associated with the European SHARE survey.

(64) http://www.reseau-quetelet.cnrs.fr/

(65) http://www.cmh.greco.ens.fr/adisp

(66) http://cdsp.sciences-po.fr/

(67) http://www.ined.fr/en/

Social Survey[68] (ESS), the CMH-ADISP in the International Social Survey Program[69] (ISSP) and INED in the Generation and Gender Survey[70] (GGS).

The Quételet network, via the CDSP, takes part in a European data archiving portal, the Council of European Social Science Data Archives[71] (CESSDA). The network is involved in constructing major European research infrastructure in order to consolidate researchers' access to all these data in Europe. Moreover, the Centre for Comparative European Survey Data[72] (CCESD) does not merely seek to facilitate access to the data but is also interested in technical solutions for pooling resources and new methods of analysis at an "inter-national" or "inter-cultural" level.

Facilitating researchers' access to data from the various surveys is also the prime objective of two major international networks, the International Federation of Data Organizations[73] (IFDO), in partnership with CESSDA, and the Inter-University Consortium for Political and Social Research[74] (ICPSR), represented in France by the CDSP. The ICPSR is the oldest and largest archive providing researchers with cost-free access to the archived surveys. It also offers assistance to researchers in identifying relevant data and conducting their research projects.

There are other initiatives at European level for the accessibility and comparability of survey data. One is EQUALSOC,[75] a research excellence network concerned with economic change, quality of life and social cohesion, which includes among its objectives facilitating data access for its members, addressing matters of harmonization and comparability, and initiating young researchers into comparative research. These aspects are the responsibility of the CMH, which hosts the project's Data Support Committee. Another example of work in data harmonization is given by two projects of the International Network of Studies in Technology, Environment, Alternatives, Development (CEPS/INSTEAD) in Luxembourg: the Panel Comparability Project Database (PACO), designed to harmonize 1983-1993 panel data for a number of countries, and the Community Household Panels for European Research[76] (CHER).

Another major advance has been the development of databases for identifying national and international surveys that have used a particular question. An initiative of this sort has been taken by the CDSP, together with the political

(68) http://ess.sciencespo.com/

(69) http://www.issp-france.info/

(70) http://www-erfi.ined.fr/

(71) http://www.cessda.org/

(72) http://www.ccesd.ac.uk/

(73) http://www.ifdo.org/

(74) http://www.icpsr.umich.edu/icpsrweb/ICPSR/

(75) http://www.equalsoc.org/2

(76) http://www.ceps.lu/documents/historique/ceps-instead.pdf

research centre at Sciences Po[77] (CEVIPOF) and the centre for European studies[78] (CEE). The Economic and Social Data Service[79] (ESDS) does similar work in the United Kingdom.

Methods and concepts in international surveys

In addition to difficulties in accessing the data, differences in concepts and methods reduce the validity of comparisons. European or international surveys that pay greater attention to comparability in sampling methods, concepts, definitions and the socio-cultural influences specific to each country are therefore of particular value. Beyond the harmonization of data collection and instruments, methods specifically designed for the context of comparative analysis are needed. A number of initiatives are working to advance research in this field, with an increasing number of publications on these topics (Harkness et al., 2002; Hantrais, 2009; Vigour, 2005; Hoffmeyer-Zlotnik and Wolf, 2003).

The Leibniz Institute for the Social Sciences in Germany[80] (GESIS) is closely involved in this type of methodological research. For example, the first volume of their Survey Methodology series addresses the concept of a private household and its use in national and international surveys (Hoffmeyer-Zlotnik et al., 2008). Another group of researchers working on comparative surveys has formed a Workshop on Comparative Survey Design and Implementation,[81] (CSDI) to advance research into sampling and analysis methods. A further example is the COMPARE project,[82] attached to the SHARE survey, which tests the value of "anchoring vignettes" in comparative studies, for example concerning satisfaction with life or the subjective assessment of health. These are descriptions of hypothetical situations, where the respondents' assessment of them is used to estimate the bias introduced by, say, different cultural norms.[83] Elsewhere, research into comparative methods is an integral part of the survey project, as with the European Social Survey.[84] Linked to this project, an internet portal, the Macro Data Guide,[85] provides access to macro data, made as comparable as possible, which are potentially useful for comparative analyses. A contextual database is also being created for the GGS[86] survey as part of the GGP project.

(77) http://www.cevipof.com/

(78) http://www.cee.sciences-po.fr/

(79) http://www.esds.ac.uk/international/

(80) http://www.gesis.org/

(81) http://www.csdiworkshop.org/

(82) http://www.compare-project.org/

(83) http://gking.harvard.edu/vign/

(84) http://www.europeansocialsurvey.org/index.php?option=com_content&view=article&id=67&Itemid=235

(85) http://www.nsd.uib.no/macrodataguide/about.html

(86) http://www.ggp-i.org/contextual-database.html

European comparative surveys

Table 20 briefly presents the major European surveys by main topic, type of survey (cross-sectional, longitudinal, multi-round), countries included and harmonization method used.

In recent decades a large number of European and international surveys have been conducted, some in the form of a panel. This is the case for the Generations and Gender survey, which provides for three waves at three-year intervals, and also Eurostat's two consecutive surveys: the European Community Household Panel (ECHP) and EU-SILC. A final survey of this type, the Survey of Health, Ageing and Retirement in Europe (SHARE), focuses on the population aged 50 and over in order to study living conditions before and after retirement.

Other surveys are repeated at regular intervals, making it possible to follow the development over time of certain behaviours and opinions. The oldest European survey of this kind is the Labour Force Survey (LFS), which began in France in the 1950s. Its frequency varies from one country to another: in some cases the data are produced quarterly, in others yearly. The European Social Survey (ESS) and European Values Survey (EVS) belong to this type of survey. They are designed mainly to examine opinions and attitudes towards a wide variety of topics, like the Population Policy Acceptance Study (PPAS), but with fewer topics and a more restricted geographical coverage. Eurobarometer, whose frequency and content depend on requests from the European Commission, covers different topics each time, although repeat surveys on some particular questions do make it possible to follow trends. The International Social Survey Programme,[87] which aims at comparisons in space and time, was built from the earliest international collaborative endeavour of this type.

Growing interest among policy-makers in measuring the effectiveness of education systems has led to a number of assessments of students' and adults' knowledge and skills. Eurostat's Adult Education Survey (AES)[88] is a pilot project, and the OECD is currently preparing a Programme for the International Assessment of Adult Competencies (PIAAC). This includes a survey to assess the standard and pattern of adult skills systematically and consistently across countries. After the International Adult Literacy Survey (IALS) in the 1990s and the Adult Literacy and Life Skills Survey (ALL), PIAAC is the OECD's third survey on this topic. There are a number of surveys to assess children's success in each participating country's education system. They include another OECD survey, the Programme for International Student Assessment (PISA),[89] now in its fourth cycle, testing the acquisition by 15-year-olds of fundamental knowledge and skills. In parallel, information is collected on family and school

(87) http://www.issp.org

(88) http://epp.eurostat.ec.europa.eu/portal/page/portal/microdata/adult_education_survey

(89) http://www.pisa.oecd.org

background. This is also done in two other surveys[90] – TIMSS and PIRLS – that separately test reading, comprehension and science skills in specific age groups.

Health, migration and the family are less well covered by European surveys

European surveys on a wide variety of topics, such as working conditions (EWCS) and quality of life (EQLS), are organized by Eurofound[91] with data available online. Health, migration and the family, however, are rarely the subjects of particular surveys, although questions on these topics are often included in general studies or studies addressing other topics.

To improve the comparability of health data between countries and over time, an initiative by Eurostat and the European Commission (DG Health and Consumers) is attempting not only to set up a system to collect harmonized data but also to develop question modules that can be used in European surveys. Details of the European Module on Health Status (EMHS), the European Survey Module on Determinants of Health (ESMD) and the European Survey Module on Care (ESMC), intended to ensure comparability of collected data, are presented on the European Commission's website.[92] This initiative has, for example, influenced the choice of questions asked in EU-SILC. One question found in almost all surveys concerns general health, and its comparability depends, among other things, on the choice of response categories. Other initiatives to make data on health and disabilities comparable have been undertaken by the World Health Organization[93] and the Washington Group on Disability Statistics,[94] an initiative of the United Nations Statistics Division.

With respect to the vast subject of migration, in addition to comparability problems, surveys encounter limitations due to the small size of the sub-populations under study. The European Prominstat project[95] has produced an analysis of the various sources of quantitative data available in the 27 EU countries and a database of the results. One of the most important surveys for analysing migration is the Labour Force Survey (LFS). But the two European panels, PISA and other surveys can also be used for an analysis, albeit limited, of migration and migrants' characteristics. A specific survey, EU-MIDIS,[96] focuses on discrimination perceived by migrants and national minorities in the 27 EU countries. It was held by the European Union Agency for Fundamental Rights (FRA) with particular attention paid to comparability across countries.

(90) http://timss.bc.edu/

(91) http://www.eurofound.europa.eu/surveys/index.htm

(92) http://ec.europa.eu/health/data_collection/tools/mechanisms/index_en.htm#fragment0

(93) http://www.who.int/healthinfo/survey/en/index.html

(94) http://www.cdc.gov/nchs/citygroup.htm

(95) http://www.prominstat.eu/

(96) http://fra.europa.eu/fraWebsite/research/projects/proj_eumidis_en.htm

Table 20. International and European surveys by main theme

Acronym	Name	Year	Survey type	Countries	Main type of harmonization	Theme	Population	Sample	Notes	Access
GGS (Fr: ERFI)	Generations and Gender	2005/2006	Cross-sectional/ Panel/ Biographical	AT/BG/FR/GE/DE/ HU/NL/RO/RU/ ES/NO	Recommendations/ Ex-post	Family/Gender/ Couple	Age 18-79	9,500 – 13,000 individuals per country	Contextual database	NIDI
ECHP (Fr: PCM)	Community Household Panel	1994-2001 Yearly	Cross-sectional/ Panel	BE/DK/FR/DE/IT/ES/ GR/PT/NL/LU/GB/IE Later: AT/SE/FI	Model questionnaire/ Ex-ante and ex-post	Income/ Living conditions	Age16 and over	3,400 - 7,300 households per country (1994)	Attrition	Eurostat
EU-SILC	EU statistics on income and living conditions	Since 2003- Yearly	Cross-sectional/ Panel	7 to 29 countries	Common framework/ Ex-ante and ex-post	Social cohesion/ income/ living conditions	Age16 and over	2,250 – 8,250 households per country	Contextual database	Eurostat
SHARE	Survey of Health, Ageing and Retirement in Europe	2004/2006-2007/ 2008-2009/	Cross-sectional/ Panel/	AT/BE/DK/FR/DE/IT/ ES/GR/SE/CH/NL (CZ, PL)	Model questionnaire/ Ex-ante	Ageing/ Living conditions	Age 50 and over	31,000 - 33,000 individuals per country	Various topics/ latest wave biographical	GESIS
ESS	European Social Survey	2002- 2008 Two-yearly	Cross-sectional/ Multi-round	22 to 31 countries	Model questionnaire/ Ex-ante	Values/Norms/ Behaviours	Age 15 and over	1,200 - 3,100 individuals per country	Variable modules	Website
EVS	European Values Survey	1981/1990/ 1999/2008	Cross-sectional/ Multi-round	14 to 36 countries	Model questionnaire/ Ex-ante	Values	Age 18 and over	300 - 2,800 individuals per country		GESIS
ISSP	International Social Survey Program	1985 - Yearly	Cross-sectional/ Multi-round	43 countries	Model questionnaire / Ex-ante and ex-post	Various topics	No general information	1,000 - 1,400 individuals per country	These modules may be integrated into national surveys	GESIS
PPAS	Population Policy Acceptance Study	1991/2000	Cross-sectional/ Multi-round	Approximately 16 countries	Model questionnaire/ Ex-ante	Opinion/ demographic change	Age 20-65	1,100 - 4,500 individuals per country		CD-ROM
	Eurobarometer	Since 1973 six-monthly	Cross-sectional/ Time series	All EU member countries	Model questionnaire/ Ex-ante	Opinion/ Quality of life/ Satisfaction	Age 15 and over	1,000 individuals except small countries	At European Commission's request	GESIS

Table 20 (cont'd). International and European surveys by main theme

Acronym	Name	Year	Survey type	Countries	Main type of harmonization	Theme	Population	Sample	Notes	Access
LFS (Fr: EFT)	Labour force survey	1968-1981 1983 2009 (frequency varies by country)	Cross-sectional/ Time series	33 countries of which 28 available	Model characteristics/ Ex-ante and ex-post	Living and working condition of economically active population	Age 15 and over (with exceptions)	Sampling rate per country: 0.2% - 3.3%		Eurostat
AES	Adult Education Survey	2005-2008	Pilot project	29 countries	Model questionnaire/ Ex-ante	Life-long training	Age 25-64	150,000 individuals in all		Eurostat
PISA	Programme for International Student Assessment	2000-2009 Three-yearly	Cross-sectional/ Multi-round	43 to 65 countries	Model questionnaire/ Ex-ante	Assessment of education system Reading/Maths/ sciences/	Age 15 – 6 years formal education	4,500 – 10,000 per country	School and household context	Website
PIRLS	Progress in International Reading Literacy Study	2001/2006	Cross-sectional/ Multi-round	35 countries	Model questionnaire/ Ex-ante	Assessment of education system– Reading	Age 9-10	150,000 in all	School and household context	Website
TIMSS	Trends in International Mathematics and Science Study	1995/1999/2003/ 2007(2008)	Cross-sectional/ Multi-round	59 countries	Model questionnaire/ Ex-ante	Assessment of education system – Maths/Sciences	4th and 8th years of school	150 schools and 1 or 2 classes/ grades	School and household context	Website
EQLS	European Quality of Life Survey	2003/2007	Cross-sectional/ Multi-round	28 countries (2003) 31 countries (2007)	Model questionnaire/ Ex-ante	Living conditions and quality of life/ Family-social relations	Age 18 and over	600 – 1,000 individuals per country		ESDS
EWCS	European Working Conditions Surveys	1991/1996/2000-2001/2005/2010	Cross-sectional/ Multi-round	12 to 34 countries	Model questionnaire/ Ex-ante	Working conditions	Active population aged 15 and over	1,000 - 1,500 individuals per country	Change in questionnaire content	ESDS

Considerable work was done by UNECE in the 1990s to launch a comparative survey in Europe on the family and fertility (Family and Fertility Survey, FFS)[97] and extensive documentation is available on their website. As a follow-up to this survey, again at the initiative of UNECE, the Generations and Gender Programme was established around a panel-based Generations and Gender Survey (GGS).[98] These two surveys can be used to analyse family structure (traditional, or including new forms of cohabitation in the GGS), and its development in space and over time from a comparative perspective in the GGS. While the FFS covered a huge number of countries, geographical coverage is unfortunately not yet very balanced. In many other surveys, on the other hand, family relations are ignored or only briefly addressed, making it impossible to analyse them satisfactorily. It is necessary to know not only the number of children living, but also the number who have died, a question that is rarely asked. Similarly, it would be more useful to consider together both the children living in the same household and those who have already moved out. SHARE may be cited as an attempt not to limit the scope to the household, since its analysis of the frequency and type of contact even goes beyond the family to include friends and neighbours.

Concluding thoughts

Enormous efforts have been made in recent decades to render survey data more comparable and accessible throughout Europe and elsewhere. However, the various initiatives concerned are often still hard to identify. A systematic, regularly updated inventory of these endeavours will assist cooperation between projects and avoid unnecessary repetition.

Many attempts have been made to homogenize methods of collection and, especially, sampling. The diversity of sampling frames for a given comparative survey introduces an unpredictable bias. There can sometimes be wide variations in sample sizes between countries for the same survey, which throws doubt on the comparability of results, since their degree of significance is directly influenced by the number of respondents. Similarly, the sometimes small sample size in European surveys does not always make it possible to carry out in-depth analyses of demographic or social behaviour. In the present context, apart from age and sex, it is often necessary to control for marital status, educational qualifications and health. Where the sample size is small, practical limits are soon reached.

(97) http://www.unece.org/pau/ffs/ffs.htm

(98) http://www.unece.org/pau/ggp/Welcome.html

Statistical Appendix

Table A.1. Population on 1 January (thousands)

	1980	1990	2000	2007	2008	2009	2010
Northern Europe							
Denmark	5,120	5,135	5,330	5,447	5,476	5,511	5,535
Finland	4,771	4,974	5,171	5,277	5,300	5,326	5,351
Iceland	227	254	279	308	315	319	318
Norway	4,079	4,233	4,478	4,681	4,737	4,799	4,855
Sweden	8,303	8,527	8,861	9,113	9,183	9,256	9,341
Western Europe							
Austria	7,546	7,645	8,002	8,283	8,319	8,355	8,375
Belgium	9,855	9,948	10,239	10,585	10,667	10,750	10,828
France	53,731	56,577	58,858	61,795	62,130	62,469	62,808
Germany	78,180	79,113	82,163	82,315	82,218	82,002	81,758
Ireland	3,393	3,507	3,778	4,313	4,401	4,450	4,451
Luxembourg	363	379	436	476	484	493	502
Netherlands	14,091	14,893	15,864	16,358	16,404	16,486	16,578
Switzerland	6,304	6,674	7,164	7,509	7,593	7,702	7,760
United Kingdom	56,285	57,157	58,785	60,781	61,179	61,635	62,042
Southern Europe							
Albania	2,645	3,143	3,058	3,153	3,170	3,194	3,195
Bosnia-Herzegovina	4,137	4,499	3,781	3,844	3,844	3,844	3,844
Croatia	4,598	4,688	4,568	4,441	4,436	4,435	4,426
Cyprus	510	573	690	779	789	797	802
Greece	9,588	10,121	10,904	11,172	11,214	11,260	11,306
Italy	56,388	56,694	57,680	59,131	59,619	60,045	60,397
Macedonia	1,878	1,873	2,022	2,042	2,045	2,049	2,053
Malta	323	352	380	408	410	414	416
Montenegro	584	642	612	625	628	630	633
Portugal	9,714	9,920	10,195	10,599	10,618	10,627	10,637
Serbia	9,185	9,859	7,528	7,398	7,366	7,335	7,307
Slovenia	1,893	1,996	1,988	2,010	2,010	2,032	2,054
Spain	37,242	38,826	39,961	44,475	45,283	45,828	46,087
Central Europe							
Bulgaria	8,846	8,767	8,191	7,679	7,640	7,607	7,577
Czech Republic	10,273	10,362	10,278	10,287	10,381	10,468	10,507
Hungary	10,709	10,375	10,222	10,066	10,045	10,031	10,013
Poland	35,413	38,038	38,263	38,125	38,116	38,136	38,164
Romania	22,133	23,211	22,455	21,565	21,529	21,499	21,466
Slovakia	4,963	5,288	5,399	5,394	5,401	5,412	5,425
Eastern Europe							
Belarus	9,592	10,189	10,019	9,714	9,690	9,672	9,480
Estonia	1,472	1,571	1,372	1,342	1,341	1,340	1,340
Latvia	2,509	2,668	2,382	2,281	2,271	2,261	2,249
Lithuania	3,404	3,694	3,512	3,385	3,366	3,350	3,329
Moldova	3,987	4,362	3,643	3,581	3,573	3,568	3,564
Russia	138,127	147,665	146,890	142,221	142,009	141,904	141,915
Ukraine	49,952	51,838	49,430	46,466	46,192	45,964	45,783

Source: Database of developed countries (INED).

Table A.2. Natural growth rate (per thousand)

	1980	1990	2000	2007	2008	2009
Northern Europe						
Denmark	0.3	0.5	1.7	1.6	1.9	1.4
Finland	3.9	3.1	1.4	1.8	2.0	2.1
Iceland	13.1	12.0	8.9	8.4	8.9	9.3
Norway	2.4	3.5	3.4	3.5	3.9	4.1
Sweden	0.6	3.4	– 0.3	1.7	1.9	2.3
Western Europe						
Austria	– 0.2	1.0	0.2	0.2	0.3	– 0.1
Belgium	1.1	2.0	1.0	1.9	2.2	2.1
France	4.7	4.2	4.1	4.3	4.2	4.3
Germany	– 1.1	– 0.2	– 0.9	– 1.7	– 2.0	– 2.3
Ireland	11.9	6.2	6.2	9.8	10.6	10.0
Luxembourg	0.2	3.1	4.5	3.4	4.1	4.0
Netherlands	4.7	4.6	4.2	3.0	3.0	3.1
Switzerland	2.3	3.0	2.2	1.8	2.0	2.1
United Kingdom	1.7	2.7	1.2	3.2	3.5	3.6
Southern Europe						
Albania	20.1	19.5	11.0	5.9	6.3	–
Bosnia-Herzegovina	10.9	8.4	2.4	– 0.2	0.0	0.9
Croatia	3.9	0.7	– 1.4	– 2.4	– 1.9	– 1.8
Cyprus	11.1	9.7	4.5	4.1	5.1	5.1
Greece	6.3	0.8	– 0.2	0.2	0.9	0.9
Italy	1.7	0.6	– 0.3	– 0.1	– 0.1	– 0.5
Macedonia	13.9	11.0	6.0	1.5	1.9	– 2.3
Malta	7.4	7.4	3.4	1.9	2.1	1.6
Montenegro	11.7	–	6.1	3.0	4.1	4.4
Portugal	6.5	1.3	1.4	– 0.1	0.0	– 0.5
Serbia	8.4	5.3	– 4.0	– 4.7	– 4.6	– 4.6
Slovenia	5.8	1.9	– 0.2	0.6	1.7	1.9
Spain	7.6	1.8	0.9	2.5	2.9	3.9
Central Europe						
Bulgaria	3.4	– 0.4	– 5.1	– 4.9	– 4.3	– 3.8
Czech Republic	1.8	0.1	– 1.8	1.0	1.4	1.0
Hungary	0.3	– 1.9	– 3.7	– 3.5	– 3.1	– 3.4
Poland	9.0	3.8	– 0.2	– 0.3	0.5	0.7
Romania	7.5	2.9	– 1.0	– 1.7	– 1.5	– 1.4
Slovakia	8.9	4.8	0.4	0.1	0.8	1.5
Eastern Europe						
Belarus	6.1	3.2	–– .1	– 3.0	– 2.7	–
Estonia	2.7	1.8	– 3.9	– 1.2	– 0.5	– 0.2
Latvia	1.4	1.2	– 5.0	– 4.3	– 3.1	– 3.4
Lithuania	4.7	4.6	– 1.4	– 3.9	– 2.6	– 1.6
Moldova	9.8	7.9	– 1.2	– 1.4	– 0.8	– 0.4
Russia	4.9	2.3	– 6.5	– 3.3	– 2.6	– 1.8
Ukraine	3.5	0.5	– 7.6	– 6.3	– 5.3	– 4.2

Source: Database of developed countries (INED).

Table A.3. Migratory growth rate (per thousand)

	1980	1990	2000	2007	2008	2009
Northern Europe						
Denmark	0.2	1.7	1.9	4.2	5.3	2.8
Finland	– 0.5	1.7	0.5	2.6	2.9	2.7
Iceland	– 2.4	– .7	6.1	16.5	3.6	– 15.2
Norway	0.9	0.4	2.2	8.4	9.1	7.5
Sweden	1.2	4.1	2.8	5.9	6.0	6.7
Western Europe						
Austria	1.2	7.6	2.2	4.1	4.1	2.5
Belgium	– 0.3	2.0	1.4	5.5	5.6	5.1
France	0.8	1.4	1.2	1.1	1.2	1.1
Germany	3.9	8.3	2.0	0.6	– 0.7	– 0.7
Ireland	– 0.2	– 2.2	8.3	10.6	0.4	– 9.9
Luxembourg	3.7	10.3	– 1.0	12.5	15.8	13.2
Netherlands	3.6	3.2	3.4	– 0.1	2.0	2.2
Switzerland	2.7	7.5	2.8	9.8	12.1	5.5
United Kingdom	– 0.1	0.6	3.6	3.3	3.9	3.0
Southern Europe						
Albania	0.0	– 27.7	– 5.5	– 0.4	– 1.2	–
Bosnia-Herzegovina	– 16.4	– 4.3	2.1	0.0	0.0	1.1
Croatia	– 3.4	– 1.1	– 27.5	1.3	1.6	– 1.3
Cyprus	1.3	15.0	5.7	9.4	4.5	1.2
Greece	5.2	6.3	2.7	3.6	3.2	3.2
Italy	– 0.1	0.2	3.2	8.3	7.3	6.4
Macedonia	0.1	– 1.6	– 1.2	0.1	– 0.3	– 0.3
Malta	2.5	2.4	25.7	4.2	5.9	5.0
Montenegro	– 14.5	–	– 2.4	1.2	0.1	0.0
Portugal	4.3	– 5.6	4.6	1.8	0.9	1.4
Serbia	3.7	– 7.3	0.9	0.3	0.4	0.7
Slovenia	2.9	– 0.1	1.4	– 0.7	9.2	8.8
Spain	3.0	– 0.5	11.9	15.5	9.1	1.7
Central Europe						
Bulgaria	0.0	– 10.9	0.0	– 0.2	– 0.1	– 0.1
Czech Republic	0.2	0.1	0.6	8.1	6.9	2.7
Hungary	– 0.7	1.8	1.6	1.4	1.6	1.6
Poland	– 0.6	– 0.3	– 0.5	– 0.5	– 0.4	– 0.4
Romania	– 0.8	– 3.7	– 0.2	0.0	0.1	– 0.1
Slovakia	– 0.6	– 0.4	0.3	1.3	1.3	0.8
Eastern Europe						
Belarus	1.3	– 3.1	1.2	0.5	0.8	–
Estonia	4.1	– 3.6	0.2	0.1	0.1	0.1
Latvia	1.0	– 4.9	– 2.3	– 0.3	– 1.1	– 2.1
Lithuania	0.6	– 2.4	– 5.8	– 1.6	– 2.3	– 4.6
Moldova	1.4	– 6.9	– 1.5	– 0.9	– 0.6	– 0.7
Russia	0.3	1.1	1.5	1.8	1.8	1.8
Ukraine	0.2	1.5	– 8.0	0.4	0.3	0.3

Source: Database of developed countries (INED).

Table A.4. Total fertility rate (children per woman)

	1980	1990	2000	2007	2008	2009
Northern Europe						
Denmark	1.55	1.67	1.77	1.85	1.89	1.84
Finland	1.63	1.78	1.73	1.83	1.85	1.86
Iceland	2.48	2.31	2.08	2.09	2.14	2.23
Norway	1.72	1.89	1.85	1.90	1.90	1.96
Sweden	1.68	2.14	1.55	1.88	1.91	1.94
Western Europe						
Austria	1.65	1.46	1.36	1.38	1.41	1.39
Belgium	1.68	1.62	1.62	1.81	1.86	1.84
France	1.95	1.78	1.88	1.96	1.99	1.99
Germany	1.56	1.45	1.38	1.37	1.38	1.36
Ireland	3.24	2.12	1.90	2.03	2.10	2.07
Luxembourg	1.49	1.62	1.78	1.61	1.61	1.59
Netherlands	1.60	1.62	1.72	1.72	1.77	1.79
Switzerland	1.55	1.59	1.50	1.45	1.48	1.50
United Kingdom	1.89	1.83	1.64	1.90	1.94	–
Southern Europe						
Albania	3.62	3.03	2.00	1.33	1.40	–
Bosnia-Herzegovina	1.93	1.71	1.30	1.18	1.19	–
Croatia	1.92	1.67	1.39	1.40	1.47	1.49
Cyprus	2.48*	2.41	1.64	1.39	1.46	1.51
Greece	2.23	1.39	1.27	1.42	1.51	1.52
Italy	1.64	1.36	1.26	1.37	1.42	1.41
Macedonia	2.47	2.06	1.88	1.46	1.47	–
Malta	1.99	2.05	1.69	1.37	1.43	1.44
Montenegro	2.15	1.84	1.85	1.69	1.77	1.85
Portugal	2.25	1.57	1.56	1.34	1.37	1.32
Serbia	2.26	2.11	1.46	1.38	1.41	1.44
Slovenia	2.11	1.46	1.26	1.38	1.53	1.53
Spain	2.20	1.36	1.23	1.40	1.46	1.40
Central Europe						
Bulgaria	2.05	1.82	1.30	1.42	1.48	1.57
Czech Republic	2.10	1.89	1.14	1.44	1.50	1.49
Hungary	1.91	1.87	1.32	1.32	1.35	1.33
Poland	2.26	1.99	1.37	1.31	1.39	1.40
Romania	2.43	1.84	1.31	1.29	1.35	1.38
Slovakia	2.31	2.08	1.29	1.25	1.32	1.41
Eastern Europe						
Belarus	2.04	1.90	1.31	1.37	1.42	–
Estonia	2.02	2.05	1.34	1.64	1.66	1.62
Latvia	1.90	2.01	1.24	1.42	1.44	1.31
Lithuania	1.99	2.03	1.39	1.35	1.47	1.55
Moldova	2.41	2.39	1.29	1.26	1.28	1.33
Russia	1.86	1.89	1.20	1.41	1.49	1.54
Ukraine	1.95	1.89	1.09	1.30	1.39	–

* 1982.
Source: Database of developed countries (INED).

Table A.5. Proportion of non-marital births (per 100 live births)

	1980	1990	2000	2007	2008	2009
Northern Europe						
Denmark	33.2	46.4	44.6	46.1	46.2	46.6
Finland	13.1	25.2	39.2	40.6	40.7	–
Iceland	39.7	55.2	65.2	63.8	64.1	–
Norway	14.5	38.6	49.6	54.5	55.8	–
Sweden	39.7	47.0	55.3	54.8	54.7	–
Western Europe						
Austria	17.8	23.6	31.3	38.2	38.8	39.3
Belgium	4.1	11.6	25.6*	39.0	–	–
France	11.4	30.1	42.6	50.7	51.6	–
Germany	11.9	15.3	23.4	30.8	32.1	–
Ireland	5.9	14.6	31.5	32.8	33.1	32.8
Luxembourg	6.0	12.9	21.9	30.7	30.2	–
Netherlands	4.1	11.4	24.9	39.5	41.2	41.2
Switzerland	4.7	6.1	10.7	16.2	17.1	–
United Kingdom	11.5	27.9	39.5	43.7**	–	–
Southern Europe						
Albania	–	–	–	–	–	–
Bosnia-Herzegovina	5.4	7.4	10.3	11.5	10.8	10.5
Croatia	5.1	7.0	9.0	11.5	12.0	12.9
Cyprus	0.6	0.7	2.3	8.7	8.9	–
Greece	1.5	2.2	4.0	5.8	5.9	–
Italy	4.2	6.3	9.7	20.7	20.8	–
Macedonia	6.1	7.1	9.8	12.6	12.2	12.2
Malta	1.1	1.8	10.9	24.9	25.4	–
Montenegro	3.7	6.6	–	15.6	17.4	15.7
Portugal	9.2	14.7	22.2	33.6	36.2	–
Serbia	10.1***	12.7***	20.7	22.3	22.8	–
Slovenia	13.1	24.5	37.1	50.8	52.8	–
Spain	3.9	9.6	17.7	30.2	33.2	–
Central Europe						
Bulgaria	10.9	12.4	38.4	50.2	51.1	–
Czech Republic	5.7	8.6	21.9	34.6	36.3	38.8
Hungary	7.1	13.1	29.0	37.5	39.5	40.8
Poland	4.7	6.2	12.1	19.5	19.9	–
Romania	2.8	4.0	25.5	26.7	27.4	–
Slovakia	5.8	7.7	18.3	28.8	29.9	29.9
Eastern Europe						
Belarus	6.4	8.5	18.6	21.2	20.1	–
Estonia	18.3	27.2	54.5	58.1	59.1	–
Latvia	12.5	16.9	40.3	43.0	43.1	–
Lithuania	6.3	7.0	22.6	29.2	28.6	–
Moldova	7.4	11.1	20.5	22.7	22.3	22.9
Russia	10.8	14.6	28.0	28.0	26.9	–
Ukraine	8.8	13.0	17.3	21.4	20.9	–

* 1999; ** 2006; *** Serbia and Montenegro.
Source: Database of developed countries (INED).

Table A.6. Life expectancy at birth (years)

	1980		1990		2000		2007		2008	
	M	F	M	F	M	F	M	F	M	F
Northern Europe										
Denmark	71.2	77.2	72.0	77.8	74.5	79.3	76.1	80.5	76.5	80.9
Finland	69.3	78.0	71.0	79.0	74.2	81.2	76.0	83.1	76.5	83.3
Iceland	73.8	80.3	75.7	81.1	78.0	81.4	79.6	83.4	80.0	83.3
Norway	72.3	79.1	73.4	79.8	76.0	81.4	78.2	82.7	78.3	83.0
Sweden	72.8	78.9	74.8	80.4	77.4	82.0	78.9	83.0	79.1	83.2
Western Europe										
Austria	69.0	76.0	72.2	78.8	75.1	81.1	77.3	82.8	77.6	83.0
Belgium	69.9	76.7	72.7	79.5	74.6	81.0	77.3	83.3	77.5	83.5
France	70.2	78.4	72.7	81.0	75.3	82.8	77.6	84.5	77.6	84.4
Germany	69.6	76.1	72.0	78.4	75.0	81.0	76.9	82.3	77.2	82.4
Ireland*	69.8	75.1	71.9	77.6	73.8	79.1	77.2	81.9	77.9	82.5
Luxembourg	70.0	75.6	72.4	78.7	74.6	81.3	76.7	82.2	78.1	83.1
Netherlands	72.4	79.1	73.8	80.1	75.5	80.6	78.1	82.3	78.3	82.3
Switzerland	72.3	78.8	74.0	80.8	76.9	82.6	79.4	84.2	79.7	84.4
United Kingdom	70.8	76.9	72.9	78.6	75.5	80.3	77.6	81.8		
Southern Europe										
Albania	67.0	72.3	69.6	75.5	72.1	78.6	73.9**	78.0**	72.9	77.8
Bosnia-Herzegovina	67.9	72.9	69.7	75.2	71.3	76.7	72.1	77.5	72.4	77.7
Croatia	66.6	74.2	68.4	76.0	70.5	77.8	72.3	79.2	72.4	79.6
Cyprus			74.1	78.6	75.4	80.1	77.9	82.2	78.5	83.1
Greece	73.0	77.5	74.7	79.5	75.5	80.6	77.1	81.8	77.7	82.4
Italy	70.7	77.4	73.6	80.1	76.5	82.5	78.7	84.0	78.6	84.0
Macedonia	68.3	72.1	70.3	74.5	70.9	75.3	71.8	75.9	72.4	76.5
Malta	68.7	72.8	73.7	78.1	74.3	80.2	77.5	82.2	77.1	82.3
Montenegro	71.4	76.0	73.1***	78.2***	71.1	76.3	71.2	76.1	71.2	76.1
Portugal	68.0	74.9	70.6	77.5	72.9	79.9	75.2	81.6	75.5	81.7
Serbia	68.2	72.7	68.5***	73.6***	69.7	74.8	70.7	76.2	71.1	76.3
Slovenia	67.3	75.2	69.8	77.8	72.2	79.9	74.7	82.0	75.5	82.6
Spain	72.3	78.5	73.4	80.5	75.6	82.5	77.8	84.1	78.2	84.3
Central Europe										
Bulgaria	68.4	73.8	68.0	74.7	68.4	75.1	69.2	76.3	69.5	76.6
Czech Republic	66.8	73.9	67.6	75.4	71.7	78.4	73.7	79.9	74.0	80.1
Hungary	65.5	72.7	65.2	73.7	67.1	75.6	69.2	77.3	69.8	77.8
Poland	66.0	74.4	66.2	75.2	69.7	78.0	71.0	79.7	71.3	80.0
Romania	66.8	72.8	66.6	73.1	67.7	74.8	69.7	76.9	69.7	77.2
Slovakia	66.8	74.3	66.6	75.4	69.1	77.2	70.5	78.1	70.9	78.7
Eastern Europe										
Belarus	65.9	75.5	66.3	75.6	63.4	74.6	64.5	76.2	64.7	76.5
Estonia	64.2	74.2	64.7	74.9	65.6	76.4	67.1	78.7	68.6	79.2
Latvia	63.6	74.2	64.3	74.6	64.9	76.0	65.8	76.5	67.2	77.9
Lithuania	65.4	75.4	66.4	76.2	66.8	77.4	64.9	77.2	66.3	77.6
Moldova	62.6	69.3	65.0	71.8	63.9	71.2	65.0	72.6	65.6	73.2
Russia	61.5	73.0	63.7	74.3	59.0	72.3	61.4	73.9	61.8	74.2
Ukraine	64.6	74.0	65.6	74.9	62.9	74.1	62.5	74.2	62.5	74.3

* For Ireland 1950-2008, life expectancy at birth is estimated using data from the international database on mortality by cause of death (http://imdb-dmo.econ.msu.ru/); ** 2006; *** 1989.
Source: Database of developed countries (INED).

Table A.7. Infant mortality rate (per thousand)

	1980	1990	2000	2008
Northern Europe				
Denmark	8.4	7.5	5.3	4.0
Finland	7.6	5.6	3.8	2.6
Iceland	7.7	5.9	3.0	2.5
Norway	8.1	6.9	3.8	2.7
Sweden	6.9	6.0	3.4	2.5
Western Europe				
Austria	14.3	7.8	4.8	3.7
Belgium	12.1	.08	4.8	3.4
France	10.0	7.3	4.4	3.6
Germany	12.4	7.0	4.4	3.5
Ireland	11.1	8.2	6.2	3.9
Luxembourg	11.5	7.3	5.1	1.8
Netherlands	8.6	7.1	5.1	3.8
Switzerland	9.1	6.8	4.9	3.8
United Kingdom	12.1	7.9	5.6	4.7
Southern Europe				
Albania	50.3	28.3	11.9	6.0
Bosnia-Herzegovina	31.5	15.3	9.7	6.9
Croatia	20.6	10.7	7.4	4.5
Cyprus	–	11.0	5.6	3.5
Greece	17.9	9.7	5.9	2.7
Italy	14.2	8.0	4.5	3.6
Macedonia	54.2	31.6	11.8	9.7
Malta	15.2	9.1	5.9	8.2
Montenegro	23.4	–	11.1	6.0
Portugal	24.3	11.0	5.5	3.3
Serbia	34.1	23.2	10.7	6.7
Slovenia	15.3	8.4	4.9	2.4
Spain	12.3	7.6	4.4	3.4
Central Europe				
Bulgaria	20.2	14.8	13.3	8.6
Czech Republic	16.9	10.8	4.1	2.8
Hungary	23.2	14.8	9.2	5.6
Poland	25.4	19.4	8.1	5.6
Romania	29.3	26.9	18.6	11.0
Slovakia	20.9	12.0	8.6	5.9
Eastern Europe				
Estonia	17.1	12.3	8.4	5.0
Latvia	15.3	13.7	10.4	6.7
Lithuania	14.5	10.2	8.6	4.9
Moldova	35.0	19.0	18.3	12.1
Russia	22.0	17.6	15.2	8.5
United States	12.6	9.2	6.9	–
Canada	10.4	6.8	–	–

Source: Database of developed countries (INED).

Table A.8. – Probability of dying between ages 15 and 65 (per thousand)

	1990		2000		2008	
	M	F	M	F	M	F
Northern Europe						
Denmark	231.7	152.2	183.2	123.4	166.1	104.4
Finland	265.3	106.6	203.7	92.7	185.8	83.3
Iceland	165.3	108.6	133.6	90.8	103.5	73.6
Norway	198.2	103.4	156.2	93.9	125.6	81.0
Sweden	175.7	99.2	135.5	87.8	118.1	75.7
Western Europe						
Austria	230.9	110.7	184.2	91.5	152.9	77.3
Belgium	211.0	110.5	187.2	100.2	163.2	90.2
France	231.0	95.8	196.2	86.7	169.9	78.9
Germany	235.6	118.3	185.6	94.1	154.9	82.1
Ireland	220.0	129.6	181.5	108.3	135.0	86.2
Luxembourg	233.2	119.4	181.1	95.7	159.0	87.8
Netherlands	185.0	103.8	157.1	101.0	123.4	88.8
Switzerland	190.4	93.6	147.7	81.6	118.3	68.1
United Kingdom	207.8	127.9	167.3	104.8	143.6	91.1
Southern Europe						
Albania	264.8	163.3	238.7	156.7	213.6	143.5
Bosnia-Herzegovina	278.0	141.9	260.1	140.8	223.6	112.7
Croatia	319.9	139.5	277.0	116.7	242.2	101.1
Cyprus	180.6	91.8	168.1	82.9	119.5	61.5
Greece	177.9	86.6	171.6	73.3	154.8	67.1
Italy	199.8	93.6	153.9	77.2	122.5	64.7
Macedonia	232.7	144.1	278.7	145.7	233.1	129.0
Malta	233.2	110.3	181.1	87.2	159.0	72.0
Montenegro	243.4	113.7	261.9	146.4	261.0	143.8
Portugal	249.3	116.5	215.3	96.5	181.2	75.9
Serbia	273.8	146.4	304.2	166.2	270.5	142.4
Slovenia	294.4	123.2	244.1	109.2	193.9	83.6
Spain	209.4	89.4	178.3	72.3	151.3	62.8
Central Europe						
Bulgaria	308.9	149.7	318.5	150.5	311.1	137.2
Czech Republic	342.0	151.6	258.7	117.3	221.1	102.0
Hungary	413.8	193.6	374.7	166.9	332.6	150.1
Poland	366.6	156.4	309.8	130.0	289.2	118.1
Romania	328.4	169.6	332.1	159.2	308.6	137.9
Slovakia	379.9	158.0	317.7	126.9	282.3	113.8
Eastern Europe						
Estonia	406.9	164.6	424.2	166.0	348.8	127.8
Latvia	413.9	174.1	424.6	166.2	424.4	165.6
Lithuania	380.7	158.1	385.7	146.7	416.8	160.5
Moldova	390.4	228.7	423.2	237.5	406.0	207.2
Russia	424.9	174.6	557.4	225.0	395.9	202.2
United States	247.6	138.3	207.3	126.9	190.4	117.7
Canada	201.2	109.2	154.2	93.6	131.3	82.2

Source: WHO.

Table A.9. Life expectancy at age 65 and health expectancy (HE) at age 65, in years

	Life expectancy at age 65								HE	
	1980		1990		2000		2008		2007	
	M	F	M	F	M	F	M	F	M	F
Northern Europe										
Denmark	13.6	17.7	14.0	17.9	15.2	18.3	16.6	19.5	13.1	14.3
Finland	12.7	17.0	13.8	17.9	15.6	19.6	17.5	21.3	7.8	8.8
Iceland	15.7	19.3	16.4	19.8	17.8	19.8	18.4	20.6	15.7	16.5
Norway	14.3	18.2	14.6	18.7	16.1	19.9	17.6	21.0	12.2	13.1
Sweden	14.3	18.1	15.4	19.2	16.8	20.2	18.0	20.9	12.8	13.8
Western Europe										
Austria	12.9	16.3	14.4	18.1	16.0	19.6	17.7	21.1	7.3	7.7
Belgium	12.9	16.8	14.3	18.8	15.6	19.8	17.3	20.9	10.1	10.3
France	14.0	18.2	15.7	20.2	16.8	21.4	18.5	23.0	9.4	9.9
Germany	12.8	16.3	14.0	17.7	15.8	19.6	17.5	20.7	7.7	7.6
Ireland	12.6	15.6	13.2	17.1	14.6	18.0	16.8	20.3	9.6	10.4
Luxembourg	12.6	16.5	14.3	18.5	15.5	20.0	17.4	21.0	9.0	10.7
Netherlands	14.1	18.7	14.5	19.2	15.4	19.4	17.4	20.7	11.2	12.1
Switzerland	14.3	18.2	15.3	19.7	17.0	20.9	18.9	22.3	–	–
United Kingdom	13.0	17.0	14.2	18.1	15.9	19.1	17.7	20.3	10.4	11.7
Southern Europe										
Albania	–	–	13.5	17.3	13.5	17.2	–	–	–	–
Bosnia-Herzegovina	–	–	13.5	15.8	–	–	–	–	8.9	7.3
Croatia	12.3	15.2	12.7	15.8	13.3	16.7	14.3	18.0	–	–
Cyprus	14.5	16.5	15.8	17.5	16.0	18.9	17.9	20.4	–	–
Greece	15.2	17.0	15.7	18.0	16.1	18.4	17.8	19.8	9.8	9.4
Italy	13.9	17.4	15.2	19.0	16.7	20.7	18.2	22.0	7.9	7.3
Macedonia	–	–	–	–	13.1	15.1	13.6	15.6		
Malta	10.7	12.8	15.4	18.0	15.1	18.5	17.0	20.1	10.4	11.3
Montenegro	–	–	17.9	21.2	15.4	18.0	14.8	17.1	–	–
Portugal	13.1	16.1	14.0	17.1	15.4	18.9	16.9	20.3	6.8	5.3
Serbia	13.2	14.6	13.2	15.3	12.8	15.1	13.8	16.0	–	–
Slovenia	–	–	13.4	17.1	14.2	18.7	16.4	20.5	9.0	9.9
Spain	14.6	17.8	15.5	19.3	16.7	20.8	18.1	22.1	10.3	10.0
Central Europe										
Bulgaria	12.6	14.6	12.7	15.2	12.7	15.3	13.5	16.7	–	–
Czech Republic	11.2	14.4	11.7	15.3	13.8	17.3	15.3	18.8	7.6	7.7
Hungary	11.6	14.7	12.0	15.4	13.0	16.8	13.9	18.1	5.3	5.8
Poland	12.0	15.5	12.4	16.2	13.6	17.5	14.8	19.1	6.5	7.0
Romania	12.6	14.2	13.3	15.3	13.5	16.0	14.0	17.2	4.1	4.1
Slovakia	12.0	15.2	12.3	16.0	12.9	16.7	13.8	17.8	8.0	8.3
Eastern Europe										
Estonia	11.8	15.6	12.0	15.8	12.6	17.0	13.6	18.9	3.5	4.1
Latvia	12.3	15.8	12.2	15.8	12.5	17.0	13.0	17.9	5.1	4.3
Lithuania	13.4	16.6	13.3	17.0	13.7	17.9	13.4	18.1	5.2	5.4
Moldova	12.0	14.0	12.6	14.8	11.4	13.9	12.1	14.7	–	–
Russia	11.6	15.6	12.1	15.9	11.1	15.2	11.8	16.1		
United States	14.1	18.3	15.1	18.9	16.2	19.3	17.0*	19.7*		
Canada	14.5	18.9	15.7	19.9	16.8	20.4	18.2*	21.4*		

*2006.
Sources: European Demographic Observatory, Eurostat.

Table A.10. Percentage of population aged 65+ and aged 80+

	65+			80+		
	1980	2008	2040	1980	2008	2040
Northern Europe						
Denmark	14.3	15.6	24.8	2.8	4.11	8.1
Finland	11.9	16.5	26.2	1.7	4.3	10.1
Iceland	9.8	11.5	–	2.2	3.2	–
Norway	14.7	14.6	23.8	2.9	4.6	7.8
Sweden	16.2	17.5	24.3	3.1	5.3	8.4
Western Europe						
Austria	15.5	17.2	27.2	2.6	4.6	8.4
Belgium	14.3	17.0	25.0	2.6	4.7	8.4
France	14.0	16.6	25.3	2.8	5.0	9.3
Germany	15.7	20.1	31.1	2.6	4.6	10.3
Ireland	10.7	11.2	19.4	1.8	2.7	5.7
Luxembourg	13.7	14.0	22.2	2.2	3.4	6.7
Netherlands	11.5	14.7	26.9	2.2	3.8	9.0
Switzerland	13.8	16.4	26.1	2.6	4.7	8.7
United Kingdom	14.9	16.1	22.4	2.7	4.5	7.3
Southern Europe						
Croatia	11.0	17.2	–	–	3.2	–
Cyprus	10.7	12.5	20.0	–	2.8	6.1
Greece	13.1	18.6	28.4	2.3	4.1	8.9
Italy	13.1	20.0	30.8	2.1	5.5	10.0
Macedonia	–	11.4	–	–	1.7	–
Malta	8.4	13.5	25.7	0.9	2.8	9.3
Montenegro	–	12.9	–	–	2.0	–
Portugal	11.2	17.4	26.8	1.6	2.5	8.4
Slovenia	10.9	16.3	29.1	1.8	3.6	9.9
Spain	10.8	16.6	27.7	1.7	4.6	8.3
Central Europe						
Bulgaria	11.8	17.3	26.7	1.5	3.6	8.0
Czech Republic	13.6	14.6	26.3	1.9	3.4	8.4
Hungary	13.5	16.2	25.0	2.0	3.7	8.4
Poland	10.2	13.5	25.9	1.4	3.0	9.4
Romania	10.3	14.9	25.5	1.2	2.8	7.4
Slovakia	10.6	12.0	25.3	1.5	2.6	7.8
Spain	10.8	16.6	27.7	1.7	4.6	8.3
Eastern Europe						
Estonia	12.5	17.2	24.2	2.1	3.7	7.8
Latvia	13.0	17.3	25.4	2.3	3.5	7.9
Lithuania	11.3	15.8	26.3	2.0	3.3	7.8
Russia	10.2	12.9*	20.5	1.4	3.0	5.8
United States	11.2	13.0*	21.0	2.4	3.8	7.0
Canada	9.4	14.1*	24.5	1.8	3.9	8.4

* United Nations (2010).
Source: Eurostat.

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Alexandre Avdeev, Tatiana Eremenko, Patrick Festy, Joëlle Gaymu, Nathalie Le Bouteillec, Sabine Springer • **Populations and Demographic Trends of European Countries, 1980-2010**

European population growth has slowed over the last thirty years, with a steadily decreasing excess of births over deaths. Net migration is now a major contributor and in some countries plays a decisive role in maintaining positive population growth. This general trend is common to most European countries, reflecting the combined effects of fertility decline, higher life expectancy, and positive and increasing net migration. At a more detailed level of analysis, the countries of Europe exhibit similar trends in family transformation, with fewer marriages and more informal unions, and in the major causes of death, with decreases in cardiovascular and cancer mortality. However, rather than a convergence of these trends across Europe, we are witnessing a repetition of similar changes at intervals of several years, with the gaps between countries or sub-regions remaining largely unchanged. The future of the European population will depend largely on fertility in coming years, with growth if fertility is high, decline if it is low, and relative stability if it remains at moderate levels. Whatever the level of fertility in the next forty years, European population ageing will be inevitable, even if immigration remains at current levels, and substantial differences across Europe will persist.

Alexandre Avdeev, Tatiana Eremenko, Patrick Festy, Joëlle Gaymu, Nathalie Le Bouteillec, Sabine Springer • **Populations et tendances démographiques des pays européens (1980-2010)**

Au cours des trente dernières années, la croissance de la population européenne s'est effectuée à un rythme de plus en plus ralenti. L'excédent naturel des naissances sur les décès n'a cessé de reculer, et l'excédent migratoire représente désormais un apport substantiel, parfois décisif pour le maintien d'une croissance positive. Cette tendance générale est largement partagée par la plupart des pays, à travers un mouvement qui combine recul de la fécondité, progression des espérances de vie et solde migratoire positif en augmentation. À un niveau plus fin d'analyse, on observe une évolution semblable des formes familiales vers moins de mariages et davantage de situations de fait, et un même recul des causes majeures de mortalité, cancéreuses ou cardiovasculaires. Pourtant, il y a moins convergence de ces tendances à travers l'espace européen que répétition à quelques années d'intervalle de ces transformations, les écarts se maintenant entre les pays ou les régions du continent. L'avenir de la population européenne dépendra largement du niveau de la fécondité future : croissance ou décroissance selon qu'elle sera élevée ou faible, quasi-stabilité si elle reste moyenne. Quelle que soit la fécondité des quarante ans à venir, le vieillissement de la population européenne est inéluctable, y compris en cas de poursuite de l'immigration, et des différences notables vont perdurer à travers l'Europe.

Alexandre Avdeev, Tatiana Eremenko, Patrick Festy, Joëlle Gaymu, Nathalie Le Bouteillec, Sabine Springer • **Poblaciones y tendencias demográficas de los países europeos (1980-2010)**

La lentificación del crecimiento de la población europea se ha proseguido durante los últimos treinta años. El excedente natural de los nacimientos sobre las defunciones no ha cesado de disminuir, y el excedente migratorio representa ahora un aporte substancial, a veces decisivo para el mantenimiento de un crecimiento positivo. Esta tendencia general es común a la mayor parte de los países, a través de un movimiento que combina el retroceso de la fecundidad, la progresión de la esperanza de vida y un saldo migratorio positivo en aumento. Afinando el análisis, se observa una evolución similar de las formas familiares con una menor frecuencia de los matrimonios y una mayor de las parejas de hecho, así como un retroceso común de las principales causas de mortalidad, por cáncer o por enfermedad cardiovascular. Sin embargo, más que una convergencia de tendencias a través del espacio europeo, se observa de hecho una repetición de dichas transformaciones a varios años de intervalo, lo que mantiene las distancias entre los países o las regiones del continente. El porvenir de la población europea dependerá ampliamente del nivel de la fecundidad: crecimiento o decrecimiento según que este nivel sea elevado o débil, cuasi-estabilidad si es mediano. Cualquiera que sea la fecundidad en los cuarenta próximos años, el envejecimiento de la población europea es inevitable, incluso si la inmigración continúa, y diferencias notables van a perdurar a través de Europa.

Keywords: Europe, population growth, fertility, mortality, migration, ageing, projection.

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