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Low fertility in Europe

Is there still reason to worry?

Stijn Hoorens, Jack Clift, Laura Staetsky, Barbara Janta
Stephanie Diepeveen, Molly Morgan Jones, Jonathan Grant

RAND EUROPE

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Published 2011 by the RAND Corporation
1776 Main Street, P.O. Box 2138, Santa Monica, CA 90407-2138
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MG-1080

Preface

Many European governments have been concerned about falling fertility rates, due to the welfare implications of an ageing population supported by a shrinking workforce. However, 'Doomsday' scenarios of fertility spiralling downwards and European populations imploding have not yet materialised; indeed, recent snapshots of indicators for childbearing suggest some recovery in fertility. Therefore, RAND Europe decided to update its 2004 study into the causes and consequences of low fertility in Europe.

This monograph, which has been funded by RAND Europe's Board of Trustees, presents the findings of this update. We have analysed the latest data, reviewed the recent literature, and examined the situation in Germany, Poland, Spain, Sweden and the UK in depth. The study aimed to address the following questions.

1. Is fertility really recovering, to what extent and where?
2. If so, what are the underlying reasons for this trend?
3. What are the key differences between different regions and, within countries, between different groups in the population?
4. What are the consequences for policy? Do we need to adjust the conclusions in the 2004 report?

This monograph should be of interest to policymakers in the European Commission, Member States and beyond, and to researchers who are interested in the relationship between demography and policy.

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Summary

In 2004, RAND Europe published a report entitled "Low Fertility and Population Ageing: Causes, Consequences and Policy Options" (Grant et al. 2004), which explored the issue of low birth rates in Europe, its consequences for population ageing and what governments can do about it. At that time, the total fertility rate (TFR) was below the replacement level of 2.1 children per woman in every Member State of the European Union (EU). Even small differences in fertility levels below replacement can have significant consequences for population size: a TFR of 1.5 means, *ceteris paribus*, that the population will halve in fewer than seven decades. As fertility goes down, the mean age of the population increases – there are more older people relative to the younger cohorts. Over the next four decades, the ratio of the population over the age of 65 to the population of working age (15–65) is expected to double in the EU. This has serious consequences for policymakers, not only because of the increased pressure on pension and health provisions as there are more older people and fewer tax payers, but also because the larger group of older people will hold greater political influence.

Jonathan Grant and colleagues at RAND Europe and RAND Labor and Population explored this issue in 2004. The study identified various different strategies used to mitigate population ageing and its consequences in different European countries, including allowing more working age immigrants to enter the country to top up the workforce, promoting increased labour participation by the elderly and women, reducing the financial and social barriers to parenthood, and reforming welfare systems, including pensions and health care. The study's conclusions were that immigration cannot reverse population ageing or its consequences; national policies can slow fertility decline under the right circumstances but no single policy intervention necessarily works; and what works in one country may not work in another. The study also found that policies not specifically targeted at fertility may affect it indirectly.

While there is considerable debate about how severe the consequences of population ageing are likely to be, the European Commission made a clear commitment in 2005 to 'demographic renewal' in Member States with low fertility rates, and national governments began to implement policies, implicit or explicit, to address these challenges. However, since then, the scientific evidence and policy practice has changed. Some recently published statistics and empirical research suggest that there are some signs that "babies are making a comeback" (Tuljapurka 2009), with many EU countries demonstrating an increase in TFR. The question arises as to whether this trend-break is due to policy efforts or some other reason, and whether governments should continue to address low fertility and the consequences of population ageing.

Against this background, it is relevant, interesting and timely to investigate whether the evidence has changed since 2004, and whether the recent trends are still reason to worry. In updating the earlier study, we chose to focus on fertility and policy efforts that may affect fertility decisions, while acknowledging that mortality and migration also play a role in population dynamics. We investigated the recent trends in childbearing behaviour in Europe, the possible underlying reasons for any changes and the key differences across regions and socio-economic and ethnic groups. We also explored the consequences for policy and how policies have affected fertility rates. Along with data analysis and a review of the recent literature, we examined five countries in depth: Germany, Poland, Spain, Sweden and the UK. These case studies, representing a range between relatively high and low fertility, as well as recovering

and non-recovering TFR, help us to gain a better understanding of the rich and complicated context in which these trends occur.

Are babies making a comeback?

Period TFR in most EU 15 countries fell below the replacement threshold of 2.1 children per woman in the mid-1970s. In the mid-1980s, Ireland and Sweden were the only members of the EU 15 with TFR still at or slightly above 2.1 and by the mid-1990s, TFR in these too had fallen below replacement. Newer members of the EU followed a similar trend almost a decade later, with TFR falling below replacement. In 2000, Ireland and France had the highest TFRs among the EU 15, both at 1.89.

However, since the early 2000s, there have been some signs of recovering fertility. After two decades of year-on-year declines, the average period fertility for the EU as a whole has stabilised in the 21st century, and increased in most Member States. In all but four countries of the EU (Cyprus, Luxembourg, Malta and Portugal), fertility rates have increased between 2000 and 2008. In Austria, Germany and the Netherlands, the recovery was only marginal; in 10 Member States, fertility increased by more than 0.2 children per woman in that period, equally divided between new (Bulgaria, Czech Republic, Estonia, Latvia and Slovenia) and EU 15 Member States (Greece, Ireland, Spain, Sweden and the UK).

Despite these recent trends, TFR still remains below 2.1 in all EU countries, and more than half (14) of the 27 EU countries still have a fertility rate below 1.5 children per woman. However, considerable variations continue to exist. Eastern, Southern and German-speaking European countries tend to have the lowest TFRs. In Germany, for example, TFR has hardly increased in the last 10 years, and with 1.4 children per woman, Germany still has one of the lowest period fertility rates in Europe. Higher TFRs are found in Western and Northern European countries. Therefore, it may be fair to speak of a 'two-speed' Europe, with Northwestern Europe in one lane and Southern, Central and Eastern Europe in the other. Observing TFRs alone can be somewhat misleading. The rising birth numbers and fertility rates in recent years might suggest that couples are having more children, but this is not necessarily the case. If we look at age-specific trends, we can see that the fertility decline at younger maternal ages has stabilised, while at later ages, fertility is increasing. Couples are having about the same number of children as couples 30 years ago, but at a later age.

However, the rise in older childbearing is not a new phenomenon, since the age-specific fertility of women in their thirties began to increase in the 1970s and 1980s. Originally, the effect of this trend on aggregate period fertility was offset by continuously falling fertility in younger age groups. It was not until the fertility of younger women began to stabilise in recent years that aggregate fertility went up. It is unlikely that this trend will reverse, and societies and economies will have to accommodate older motherhood from both an individual and a societal perspective.

What might underlie these trends: possible drivers and inhibitors of fertility

Population size and structure depend on a range of intersecting societal and individual factors, from economic and labour market conditions to gender equality, marital status, family employment and income and the cost of having and rearing children. The interrelationships between these factors, and the contexts in which they operate, make it extremely challenging to analyse causality in any great detail.

Neoclassical economic arguments suggest that fertility should be strongly affected by the costs associated with children: not only those of rearing the child itself, but also the loss of income if one of the parents is unable to work due to childrearing duties. These costs are affected in turn by wider aspects of society, such as economic conditions, legal provisions and government programmes.

This neoclassical economic theory predicts a countercyclical association between economic growth and fertility: this means that fertility tends to drop in times of economic progress. This has been empirically confirmed by the observation that traditionally, most countries have been characterised by a negative association between economic development and fertility. However, several recent studies have shown that in a number of highly developed countries this association has reversed: in those countries, economic development tends to be positively associated with fertility. Therefore, the relationship between economic progress and fertility tends to follow an inverse J-shaped curve. It seems that those countries with pro-cyclical fertility are characterised by relatively high female labour force participation rates.

The recent recession can give us some interesting data regarding the correlation between economic development and fertility. There are some signs of stagnation or slight decline already: statistics published for 2009 show that TFR was lower than the year before in 13 EU countries, compared to none in 2008.

The relationship between employment and fertility is not straightforward. Male unemployment has a clear negative effect on fatherhood, but the evidence on female unemployment is more ambiguous, with contradictory evidence for women of different countries and ages. The ambiguous effect of female unemployment is related to other changes in the role of women in the economy over time. For example, while micro-theory may suggest that women within each country face a negative trade-off between labour market participation and motherhood, cross-national comparisons indicate that some of the countries with highest average fertility (such as the Nordic countries) have high levels of female labour force participation. Some suggest that the positive association between fertility and female employment trends could be explained by labour market characteristics and institutional contexts. Similarly, recent evidence from Nordic countries suggests that although higher education still leads to postponement of fertility, the negative correlation between female educational attainment and completed fertility has weakened or even disappeared.

Social changes also affect fertility. In a number of countries, primarily those in North-West Europe, the importance of marriage is eroding as a prerequisite for childbearing. These countries have seen a rise in cohabitation rates and an increasing proportion of children born out of wedlock. In other countries where this is less acceptable, the EU-wide trend of decreasing marriage rates and increasing age at first marriage may explain partly the postponement of parenthood. Another broad change is towards later childbearing, which increases the risk of reduced fecundity and infertility. The mean age at childbearing is over 30 in the majority of Northern and Western European countries, and may still be rising.

The effect of migration and fertility of migrants

We can conclude that migration is not the main reason behind the recent recovery of period fertility in Europe, despite the influx of migrants. While it is true that there are now more children born to foreign-born women than a decade ago – in many EU countries more than 20% – the reproductive behaviour of migrants played only a relatively modest role in the recent recovery of aggregate period fertility. The data reveal that the fertility trends of many groups of foreign-born women tend to converge with the average of native women. In Sweden, this happened typically within two years of arriving, although with some different responses among specific countries of origin.

Although immigration appears to have little effect on longer term trends in fertility, it does bring in a rapid infusion of women of childbearing age, which has a mitigating effect on population ageing.

Is there a policy effect?

Social and economic policies influence the environment within which individuals make decisions regarding starting a family. The factors that influence fertility are multifaceted, interrelated and context-dependent, which makes targeted policy development challenging. However, evidence from the literature review and the in-depth case studies reveals that policies can have an effect on reproductive behaviour. Given the complex interplay of factors affecting reproductive behaviour, the impact of individual policy measures tends to be fairly small. The wider context of social, cultural and economic factors in these countries matters more. If governments are able to bring about a paradigm shift in the societal system, they may create the conditions that encourage longer term trends in fertility behaviour at the societal level.

Recent years have been characterised by heavy investment in the family in a number of European countries, including Germany, Poland and the UK. Policies that reduce the opportunity cost of having children seem to have a greater influence on fertility than direct financial incentives. Institutional factors that affect mothers' earning potential seem to impact particularly on the decision to have children in Southern European countries. Further support to families comes through parental leave and other policies to support different career patterns, along with subsidised childcare.

On the basis of evidence from Nordic countries, it seems reasonable to conclude that comprehensive long-term government efforts to stimulate

female labour participation, and gender equality in the workplace and the family, have had unintended consequences for fertility behaviour.

However, the impacts of these family policy packages are, at most, mixed. Since national contexts are so important, it is also impossible to extrapolate the findings at Member State level to EU level. For each example of policy impact, there seems to be a counter-example where this impact remained absent. This statement is no different from the overall conclusion in Grant et al. (2004). However, the key question in this study was whether policy has been a driving force behind the recent recovery of fertility rates in the EU. Unfortunately, it is too early to answer this question – and even if a longer time series had been available, the relatively poor explanations for the driving forces behind fertility decline show that it is nearly impossible to find convincing evidence for causal mechanisms. However, it seems unlikely that the recent recovery, which can be observed in most EU countries, is primarily driven by policy, as by no means have interventions been uniform across Europe.

A closer look at five countries

Germany

The fertility rate in Germany is low. It has been below 1.4 children per woman since 1990, despite large state support in the form of family policies. The continuous decline in fertility among younger women (aged 20–29) is the main factor for the overall low fertility level in Germany, as it cancels out the increase in births of older women (aged 30–39). Low fertility seems to be due to a combination of interlinked factors, with the prevalence of a male 'breadwinner' model and inflexible childcare provision, making it difficult for women to combine work and family duties. Childlessness is also becoming more socially acceptable, which could be a contributing factor to the relatively low fertility rate.

Poland

TFR in Poland is low at just under 1.4 children per woman, although it has been rising very slowly since 2003, when it was 1.2. Women in Poland are still quite young mothers relative to other European countries, having their first child by the age of 26 on average. Marriage rates are decreasing and couples tend to marry at a later age. More couples are cohabiting and more children are born out of wedlock. Unstable employment, lack of job security and extended years spent in education are important inhibitors of fertility, and so are inconsistent family policies and lower levels of state support. Large emigration from Poland since 2004 means that a lot of children are born to Polish mothers in other countries, particularly in Germany, Ireland, Sweden and the UK.

Spain

The fertility rate in Spain is low at 1.5, although it had one of the highest TFRs in the EU in the 1960s–1970s. Profound social, cultural, economic and political changes have contributed to the drop in TFR since then, with the post-Franco regime paying little attention to family policy. Efforts to increase and expand family policies in the past decade may have helped the slight recent rise in TFR, but social developments such as protracted transition to adulthood, and deep-seated problems including high unemployment and expensive housing, continue to influence fertility decisions.

Sweden

Fertility in Sweden saw a rise in the 1980s, a decline in the 1990s and a rise again since the late 1990s. Various studies have shown that the 'speed premium' of the 1980s and the economic recession of the 1990s had marked effects. TFR in Sweden is now around 1.9. There may be less reason for Sweden to worry about fertility than other countries, as although fertility rates among younger women were declining, they appear to have stabilised, while fertility rates among older women are still increasing. Nevertheless, there is little to suggest that fertility will reach replacement levels in Sweden, and fertility trends continue to drive population ageing. However, changing fertility decisions and behaviour may be less important than previously thought, as the trends may not necessarily indicate a change in the cumulative number of children born per women. Since fertility rates in Sweden have been positively correlated to economic growth in the last decades, there is reason to expect that recovery will stagnate or reverse following the recent recession.

United Kingdom

The UK has had one of the most dramatic turnarounds in fertility over the last five years, with recent gains more than reversing the slow decline

of the previous two decades. While TFR was at 1.97 in 2008, there is reason to expect that it may soon reach replacement level. In general, broad social and economic factors do not give a convincing explanation for the reversal in fertility trends, and there is no evidence that these factors began to move in such a way that explains the increase in fertility. Although foreign-born women do contribute a significant number of births to the UK each year and on average have higher fertility than UK-born women, recent immigration is unlikely to explain much, if any, of the rising fertility. Although the policies introduced by the New Labour government, which came into power in 1997, were not explicitly pro-natalist, they did influence fertility rates – however, it is difficult to estimate their exact effect. It appears that policies intended to improve the quality of children's lives had the unintended effect of increasing the quantity of children born.

What does this mean for policymakers going forward?

'Doomsday' scenarios of imploding European populations, with fertility spiralling downwards, have not materialised. Recent snapshots of fertility indicators look less depressing than they did a decade ago: average fertility for the EU as a whole has stabilised, and increased in a number of Member States. However, there is no clear explanation for the recent recovery – the drivers and policies described above indicate the range of factors that influence the timing and quantity of births. In addition, it is not unlikely that fertility will drop again as a consequence of the recent economic recession.

While this study focuses on fertility, it is worth noting that the relationship between fertility, mortality and migration determines the overall structure of a population. Therefore, it should be recognised that while the recent recovery of fertility in many European countries will no doubt have an effect on population structures, it is unlikely to reverse the trend of population ageing, unless fertility remains above replacement levels for several decades.

So, while policymakers may feel that they have less cause for concern, they must not ignore the fact that European populations are continuing to age. A number of countries may be less concerned about very low fertility rates, but governments will still have to consider and address the (socio-)economic consequences of ageing populations, such as issues of pensions, health care and all the other side-effects.

The outlook for fertility in the EU as a whole is better than it was a decade ago, but fertility rates in several countries are still alarmingly low. Countries with very low TFRs will need to continue to explore ways to make it easier for both women and men to choose to have children. Implementing measures that help both women and men to combine their career with their family life has direct effects for gender equality and female labour participation, but potential positive externalities for childbearing behaviour.

Acknowledgements

This study was commissioned by the RAND Europe Board of Trustees. The authors are grateful for their support for this subject, which is of vital importance to governments in Europe and elsewhere.

The study team involved six members. Stijn Hoorens led the study. Laura Staetsky was responsible for the data analysis and provided data input to the case studies. She also wrote Chapter 2 on demographic trends. Barbara Janta, Stephanie Diepeveen and Molly Morgan undertook the literature review included in Chapter 3 and were responsible for four of the case studies: Germany and Poland (Barbara), Spain (Molly) and Sweden (Stephanie). Jack Clift carried out the analysis for the case study on the UK. He also contributed substantially to other chapters, providing the completed cohort fertility projections, suggesting improvements and ensuring consistency across case studies.

The authors wish to acknowledge the contribution of Kate Kirk for her support during the reporting stage of this study. She is responsible for compiling a first draft of the summary. Jonathan Grant, lead author of the 2004 report, provided useful input at various stages of the study. Samuel Drabble and India Bethell provided excellent research assistance. We are grateful to Michael Rendall and Julie DaVanzo for providing very helpful comments and suggestions during the peer review process of this publication. Many thanks to Paul Barrett for graphic production of the publication and cover design.

The views expressed in this monograph are those of the authors alone and do not necessarily represent any official position. The authors are fully responsible for any errors which may have occurred.

Chapter 1 Introduction

A need to update the 2004 RAND report

In 2004, RAND Europe published a report entitled "Low Fertility and Population Ageing: Causes, Consequences and Policy Options" (Grant et al. 2004), which explored the issue of low birth rates in Europe, its consequences for population ageing and what governments can do about it. Since then, governments have implemented various policy measures to address these issues and recently fertility rates have shown signs of recovery. Against this background, it is relevant, interesting and timely to investigate whether the evidence has changed since 2004 and whether the recent trends should still be reason to worry.

From baby boom to baby bust

Until the 1970s, debates about demographic developments were dominated by concerns of exponential population growth (e.g. Ehrlich 1968; Malthus 1982[1798]; Meadows et al. 1972). However, since the 1980s, demographers and economists alike began to become worried about low fertility rates and consequential population stagnation and ageing in many parts of the world. In 2004, the total fertility rate (TFR) in every Member State in the European Union (EU) was less than the replacement level of 2.1 children per woman, childlessness was more common than ever, and the average age at which women had their first child was nearing 30 years. As a result, European populations were either growing very slowly or even starting to shrink. Along with the fact that people are living longer and healthier lives than ever before, low fertility rates accelerate the ageing of populations.

Policymakers concerned about ageing

The old-age dependency ratio expresses the number of old-age people (aged 65 and over) in the population for every working age person (aged 15 to 64). This ratio increases as the population ages. As the relative and absolute size of the older age groups in the population increases, the primary concern is the likely effect on public budgets and expenditure. A considerable proportion of government expenditure, such as health care and pensions, are sensitive to the age structure (Dang et al. 2001). Consequently, the sustainability of pension systems is at stake as expenditure increases while contributions are levelling off.

To counter this trend, welfare contributions will have to increase or considerable cuts in public expenditure will have to be made. For pension systems, this is likely to include higher retirement ages, cuts in pension benefits and increasing contributions, particularly for those taxed on a 'pay-as-you-go' model.

There is considerable debate about how severe these consequences may be. The economic burden of dependency of an ageing workforce may be counterbalanced by a declining young-age dependency ratio – that is, the ratio of young people in the population to the working age population – and increased female labour participation. For example, the proportion of gross domestic product (GDP) spent on education and health care for young people is likely to decrease. Some argue that the size of the labour force will actually increase in most countries, because declining fertility has been, and may continue to be, correlated with greater female labour force participation (Bloom and Canning 2000; Bloom et al. 2009). Also, the extent of ageing and the consequence for old-age

Box 1
Potential consequences of population ageing[1]

Welfare spending: a rise in old-age dependency ratios and the growing electoral importance of elderly people could contribute to increased pressure on policymakers to provide for elderly people out of limited resources.

Labour force and skills: population ageing will contribute to a smaller workforce and lower workforce activity levels. In addition, it could make new approaches to education and training necessary, in order to maintain a skilled workforce within a rapidly changing knowledge-based economy.

Social cohesion: population ageing will alter the distribution of influence between different age cohorts. Policymakers may have to consider the burden of work and care on different age groups more explicitly, in order to avoid exclusion or neglect.

Consumption and innovation: An ageing population changes the consumer market, possibly affecting the direction and nature of innovation.

Environment: Population ageing could have a limited effect on reducing carbon emissions. However, population ageing could limit the population's capacity to adapt to the effects of climate change.

dependency are determined by the threshold value for old age, which is commonly held at 65 years. Sanderson and Scherbov (2010) recently argued that *healthy* life expectancy has increased in parallel with life expectancy. Hence, population projections and measures of old-age dependency should incorporate increases in longevity and health. Based on their results, they conclude that the costs of population ageing have been exaggerated by projections based on chronological age.

RAND Europe addressed this challenge in a 2004 study

Despite the lack of consensus over the exact nature of the consequences, concerns over these demographic and economic trends have sparked an intense debate about the policies deemed most effective at reversing or lessening the impact of population ageing. National governments have begun to implement policies, implicitly or explicitly, that are aimed at addressing low fertility and offsetting the consequences of further population ageing. As reported by Jonathan Grant and colleagues (2004) at RAND Europe and RAND Labor and Population, a number of different strategies can be distinguished:

- investing in the family, in order to reduce the financial and social barriers to parenthood;
- allowing more working age immigrants to enter the country and top up the workforce;
- promoting increased labour participation by groups that have been underrepresented, such as women and the elderly; and
- reforming welfare systems, including pensions and health care, in order to manage the negative consequences of these trends.

To help inform this debate, researchers at RAND Europe examined the relationships between policy and demographic change in 2004. We analysed the interrelationships between government policies and demographic trends and behaviour, and assessed which policies prevent or mitigate the adverse consequences of low fertility and population ageing. The study, which focused on EU countries, concluded that:

- immigration is not a feasible way of reversing population ageing or its consequences;
- national policies can slow fertility declines under the right circumstances;
- no single policy intervention necessarily works;
- what works in one country may not work in another – social, economic and political contexts influence the effect of policies;
- policies designed to improve broader social and economic conditions may affect fertility indirectly;
- population policies take a long time to pay dividends – increases in fertility take a generation to translate into an increased number of workers, making such policies politically unattractive (Grant et al. 2004).

Informed by this and the many other publications on this topic, the European Commission published a Green Paper, "Confronting Demographic Change: A New Solidarity between the Generations" (2005). This was followed by a Communication entitled "The Demographic Future of

[1] For a more elaborate discussion of these consequences, see Appendix A.

Europe: From Challenge to Opportunity" (European Commission 2006). In these documents, the European Commission makes a clear commitment to the aspiration of 'demographic renewal' in Member States with low fertility rates, with five core policy directions:

1. promoting demographic renewal;
2. promoting employment;
3. promoting a more productive and dynamic Europe;
4. receiving and integrating immigrants; and
5. promoting sustainable public finances.

Recent data suggest a trend-break

Since the publication of the study in 2004 and the subsequent Communication by the European Commission, academic evidence and policy practice has changed, partly in response to the report, but also due to renewed government interest in tackling these issues. Several years on, there may now be new evidence on the effectiveness of policy efforts and the underlying reasons for fertility decline.

Moreover, some recently published statistics and empirical research suggest that there are some signs that "babies are making a comeback" (Tuljapurka 2009: 693). For example, the media in the UK have reported extensively on recent increases in birth rates, with the TFR reported to have reached the highest level for 35 years in 2008 (Office for National Statistics 2009a). Furthermore, a recent paper in *Nature* (Myrskylä et al. 2009) argued that this can be interpreted as a trend-break. If this is true, the following questions become relevant.

> Is this trend-break the result of policy efforts?
>
> If not, what are the underlying reasons?
>
> Is there still a need for governments to address low fertility and the consequences of population ageing?

Against this background, it would be timely, useful and interesting to investigate whether the evidence has changed since 2004, and whether the recent trends are still reason to worry. Therefore, this document revisits the Grant et al. (2004) study and analyses the most recent data, explores insights from the latest literature, updates the case studies and revises the conclusions and policy insights accordingly.

Research scope and questions

In contrast with Grant et al. (2004), which addressed the issue of population ageing from a holistic perspective, looking at causes, consequences, policy options and their impact, the focus of this report is trends in fertility. We acknowledge that population dynamics are driven by mortality and migration as well as fertility. However, low fertility and the recent signs of a recovery of TFR in Europe are the focus of this study. We aim to address the following research questions.

1. What are the recent trends in childbearing behaviour in Europe? Are babies making a comeback in Europe? In other words: is fertility really recovering, to what extent and where?
2. If so, what are the underlying reasons for this trend? Do they include policy?
3. What are the key differences between different regions and, within countries, between different socio-economic or age groups?
4. What are the consequences for policy? Do the conclusions in the 2004 report need to be modified?

Research approach

We have followed the same approach as the 2004 study, comprising three tasks: an analysis of recent demographic statistics; a review of recent literature explaining fertility changes; and in-depth analyses of five case study countries.

Data analysis

We analysed recent trends in fertility and associated indicators. The TFR is the most commonly used measure of fertility. For a given year, TFR is "a measure of the number of children that a woman would have over her childbearing years if, at each age, she experienced the age-specific fertility rate of that year" (Grant et al. 2004: 55). TFR is a useful indicator to monitor the extent of childbearing in a particular geographic area over time as it is readily available, easy-to-understand information that provides an up-to-date overview of fertility at a certain point in time. In contrast with the annual birth rate, which is expressed in the number of children born per 1,000 capita, TFR takes into account the relative size of the population of women of reproductive ages.

TFR is affected by both tempo and quantum effects (Bongaarts, 1998). The notion of tempo effects refers to the timing of births, which can distort TFR when women decide either to postpone or advance childbearing. If, for the purpose of illustration, over the course of 2010 all women decide to postpone childbearing for one year, then the TFR for this year would be 0. However, this would not mean that all women remain childless, it merely implies they have their children one year later. In 2011, TFR will be nearly double the rate of 2009. Quantum effects imply actual variations in the average number of children that women have over their reproductive lifespan, despite changes in the mean age of childbearing. Since at first glance it is impossible to determine whether a change in TFR is due to a quantum or tempo effect, TFR is often referred to as 'period fertility'.

Therefore, it is useful to disaggregate the TFR by maternal age to assess how fertility is distributed across different age groups of women. After all, if the fertility of younger women is increasing while older childbearing is decreasing at the same time, the aggregate effect on the TFR could be cancelled out. Thus we have reviewed age-specific fertility rates for groups of women between the ages of 15 and 49 at five-year age bands. We show these data in two formats: age-specific fertility rates by five-year age-bands over time; and age-specific fertility profile between ages 15 and 49 at specific years with 10-year intervals.

When only interested in the quantum effect of fertility, an indicator based on the total childbearing of cohorts of women can be used by measuring the average number of births that 50-year-old women had during their reproductive years (Bongaarts, 1998). This is often referred to as the completed cohort fertility (CCF) or the completed fertility rate (CFR). The downside of CCF is that it records the completed fertility of cohorts that were in the prime of their reproductive years about two or three decades ago. Moreover, the most recent cohorts which can be analysed are those that have turned 49 in 2009 (i.e. those born in 1960 or before) In other words, it does not help us much in explaining what is happening today. In order to partly compensate for this limitation, we have assumed that fertility for the age groups 40–44 and 45–49 of the two youngest cohorts (those born between 1961 and 1965 and 1966 and 1970) will remain will remain constant at the level observed in 2008.

In order to sidestep the limitations of both CCF and TFR, various measures have been proposed which aim to adjust the TFR for tempo effects, and thus to present a more up-to-date figure of actual fertility (e.g. Bongaarts, 1998; Kohler and Philipov, 2001; Kohler and Ortega, 2002; Sobotka 2004). However, tempo-adjusted TFR is a measure which has generated considerable controversy in scientific circles. Both critics and users point out its conceptual problems, such as unclear meaning and hence doubtful informative use, as well as its methodological pitfalls, such as volatility and absence of a close relationship with CCF.[2]

In order to show the extent to which fertility changes over time have been caused by a tempo effect (timing of births) or a quantum effect (the total number of births over the reproductive lifespan), we have included cohort cumulative fertility rates. This indicator represents the cumulative difference in completed cohort fertility between an index cohort (born between 1941 and 1945) and subsequent cohorts at specific intervals in their reproductive life.

The definitions used for these indicators are summarised in Table 1.1. We have obtained cross-country data for these indicators from international sources such as the Eurostat Statistics Database, United Nations *Demographic Yearbook* and the Human Fertility Database. Country-specific data was obtained primarily from the respective national statistics offices. In addition to fertility indicators, we also reviewed what the trends mean in the context of wider demographic trends, such as mortality and migration, as well as the socio-economic impact of these trends. (However, since the focus of this report is on fertility, these are included in Appendices A and B.)

Literature review

Given the renewed focus of this study, we have limited the review to two aspects: the factors driving changes in fertility; and the intended and unintended impacts of direct and indirect policies on fertility. We used the same search terms as those used to identify the literature for the previous report in the following bibliographic databases: Google Scholar, JSTOR and a selected number of

[2] For more details, see Sobotka (2004: 210) and references therein.

Table 1.1
Definitions used for fertility indicators

Indicator	Definition
TFR	The number of children that would be born to a woman during her lifetime if she experienced the age-specific fertility rates observed in a calendar year
Age-specific fertility rate	The number of births in a year per 1,000 women in a five-year age group
CCF	The average number of children per woman for a cohort of women that has completed its reproductive lifespan
Cohort cumulative fertility rates	The cumulative difference in CCF (born between 1941 and 1945) and subsequent cohorts at specific intervals in their reproductive life
Mean age at childbearing	The mean age of women at childbearing across all birth orders
Mean age at first birth	The mean age of women at the birth of their first child

academic journals in the field of demography,[3] and the working paper series of selected institutions.[4] Queries were limited to documents published since 2003.[5] We reviewed abstracts and selected those publications addressing (aspects of) the research questions listed above. Where relevant, and in addition to the sources identified through this process, we selected the sources cited by these publications. The literature review may include some references older than 2003, if they were not included in Grant et al. (2004), or if it is useful to remind the reader of the findings. The synthesis of this literature review is provided in Chapter 3. This section does not necessarily contain references to all sources analysed as part of this review, but summarises the most important findings of the literature which have appeared since 2003. In order to avoid repetition of the 2004 study, we have omitted the findings that confirmed those in Grant et al. (2004). (Please contact the authors for a full bibliography of the literature sources considered.)

Case study analysis

We selected five countries to be the subjects of case studies: Germany, Poland, Spain, Sweden and the UK. These countries were selected on the basis of three criteria (see Table 1.2):

1. consistency with the case studies used in Grant et al. (2004);
2. a fair balance of countries that were considered to have 'low fertility' (TFR <1.5), and those with 'sub-replacement fertility' (TFR below 2.1) in 2002;[6] and
3. a fair balance of countries where recovery of TFR has been observed since 2000, and countries where this has not been the case.[7]

Consequently, we selected the same case study countries as in 2004, with the exception of France. The UK was selected instead due to its significant recovery in TFR from 1.64 to 1.97 children per woman (criterion 3). In contrast with France, the UK is not considered to have a strong tradition of family policy, but it has seen considerable investments in the family in recent years. This makes it an interesting case for examining the potential impact of family policies on fertility.

Each of the case studies review fertility trends in the country under analysis in further detail. They summarise the policy efforts implemented since 2003 which may have potentially affected reproductive behaviour, and review recent evidence for the fertility impact of policy measures.

[3] Including: *European Journal of Population*, *Demographic Research*, *Population and Development Review*, *Journal of Population Economics* and *Population Studies*.

[4] For example, Max Planck Institute for Demographic Research, and Vienna Institute of Demography.

[5] The literature review in Grant et al. (2004) was conducted in 2003.

[6] The reference year for the data used in Grant et al. (2004) was 2002.

[7] At the outset of this study, the most recent fertility data available were those from 2008. An arbitrary cut-off point of one decade was chosen.

Table 1.2
Case study selection

		Low fertility in 2002	Sub-replacement fertility in 2002
Recovery between 2000 and 2008	No recovery or decline (ΔTFR ≤ 0)	Malta Cyprus Portugal *Germany*	Luxembourg
	Slight recovery (0<ΔTFR ≤ 0.2)	Slovakia Hungary *Poland* Romania Austria Lithuania Italy	Denmark Finland Netherlands France Belgium
	Considerable recovery (ΔTFR > 0)	Latvia Bulgaria *Spain* Greece Slovenia Estonia Czech Republic	Ireland *United Kingdom* *Sweden*

Source: Eurostat (2010)
Note: For Belgium and Italy we used the 2007 figure as those were the most recent available data points for these countries.

The five case study chapters follow the following generic structure:

- a brief paragraph introducing the country, its demographic history and context;
- fertility trends – an overview of trends for a selection of fertility indicators:
  - total fertility rate (1960–2008)
  - age-specific fertility rates for five-year age bands between the ages of 15 and 49 (1960–2008)
  - age-specific fertility profile from age 15 until 49 for specific calendar years: 1965, 1975, 1985, 1995 and 2005
  - completed fertility for five-year cohorts of women born between 1941 and 1970[8]
  - cohort cumulative fertility rate for five-year cohorts born between 1946 and 1960, in comparison with the index cohort born between 1941 and 1945
- factors influencing fertility in case study country – reviewing recent literature (since 2002) on the drivers of fertility in case study country;
- policy efforts and their impacts on fertility – an overview of policies with an explicit or implicit aim to raise fertility, or policies with a potential indirect or unintended on fertility; and a summary of evidence for the fertility impact of those measures; and
- conclusion – a summary of recent fertility trends and an assessment of the explanation for those trends.

Structure of the report

Chapter 2 reports on the results of the data analysis, reviewing demographic trends over the past decades with particular attention to recent fertility trends. Chapter 3 discusses the results of reviewing the recent literature on the drivers of fertility: the factors that may affect fertility decisions and outcomes in a positive or negative way. Chapters 4 to 8 discuss the findings of the five case studies in alphabetical order: Germany, Poland, Spain, Sweden and the UK. The findings are synthesised and summarised in Chapter 9.

[8] CCF for the two youngest cohorts are estimations, assuming that fertility at age 40–44 and 45–49 will remain constant for these age groups at the level observed in 2008.

Chapter 2 Demographic trends: what the data tell us

Over the past decade, policymakers, researchers and media alike in Europe have been concerned with birth shortages and consequential population ageing. Birth rates have been falling worldwide and family sizes have been shrinking. However, the tables seem to have turned in recent years, and total fertility rates (TFRs) in many countries of the European Union (EU) have followed an upward trend during the 2000s.

Levels and trends in fertility in the EU constitute the main focus of this chapter. In sections 2.1 and 2.2, we review the trends of fertility decline and its recent recovery in the EU. Section 2.3 explains why these developments are relevant for policymakers.

It is important to remember that changes in fertility, whether incurred through social and economic processes or policy measures, do not occur in a vacuum. Population size, age structure, sex ratio and composition are determined by three factors: fertility, mortality and migration. Trends in mortality and migration will have an effect on the extent and nature of population ageing, and in turn may influence the drivers of low fertility. As the focus in this study is on fertility and its recent recovery, developments in the other driving forces of population structure are discussed in Appendix B.

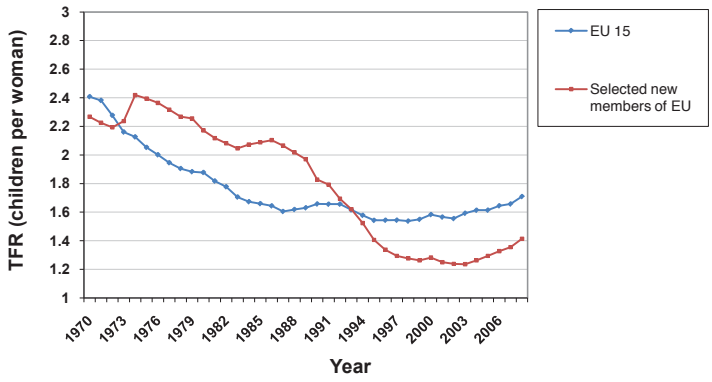
Fertility trends since the 1960s

Since the post-war years and the baby boom of the 1960s, birth rates have fallen worldwide. Trends in fertility can be measured through various indicators. In this section we will discuss both period fertility, a measure of current childbearing trends, and cohort fertility, a measure that tracks differences between cohorts of women.

Period fertility dropped below replacement level across the EU

TFR in the EU has declined drastically over recent decades. The aggregate TFR trends for the EU 15 countries (EU Member States prior to the 2004 accession wave) and in a selection of Member States that joined the EU since 2004 are illustrated in Figure 2.1. Since the mid-1970s, period TFR in the EU 15 countries decreased below the replacement threshold of 2.1 children per woman – a level which may bring population growth to a halt in the long run. New members of the EU followed the transition to TFR below 2.1 almost a

Figure 2.1
Trends in total fertility rate in the EU, 1970–2008

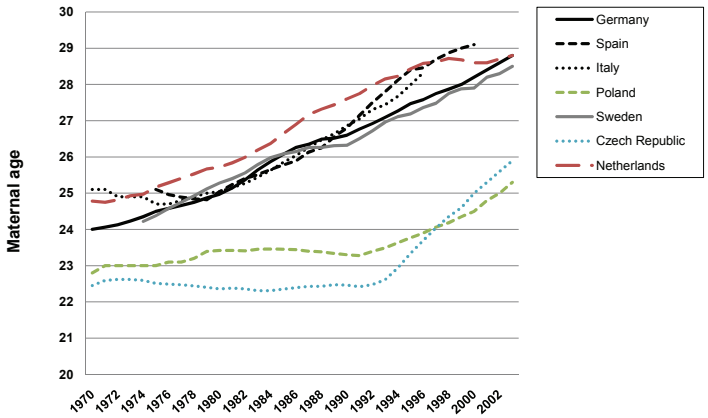


NOTE: (1) Selected new members of the EU are Bulgaria, Czech Republic, Hungary, Poland and Romania. (2) Period TFR for both groups of countries is an unweighted average of country-specific TFRs. Unweighted averages are used in an attempt to summarise the diversity of fertility schedules of EU Member States. (3) Detailed developments in country-specific TFRs are documented in Figure 2.5.

SOURCES: United Nations *Demographic Yearbook* (1987–95, 1997, Historical Supplement, 2001–03 and 2007). Data missing in the *Demographic Yearbook* for certain years was obtained from the Eurostat Statistics Database

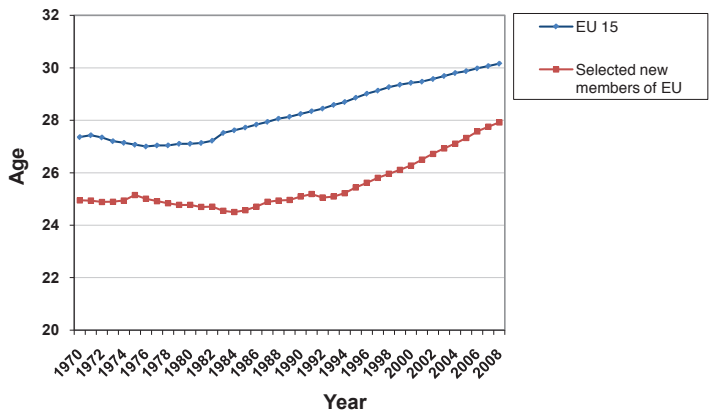
decade later. The lag between the EU 15 countries and the new members persisted into the 1990s and 2000s: while EU 15 countries showed signs of stabilisation and some recovery in period TFR, in new EU members it remained at unprecedentedly low levels.

Figure 2.2
Female age at first childbirth in selected EU countries, 1970–2003



SOURCE: Eurostat (2005)

Figure 2.3
Trends in the mean age of women at childbirth in the EU, 1970–2008



NOTES: (1) Selected new members of the EU are Bulgaria, Czech Republic, Hungary, Poland and Romania. (2) The average for the EU 15 excludes France before 1998 and Germany before 2000; the data for selected new members of EU for 1970s–1980s exclude Poland before 1990 and Romania before 1974.

SOURCE: Eurostat (2010)

Country-specific variations in the level and pace of decline in TFR have been extensively documented in an earlier RAND monograph and will not be reproduced here (Grant et al. 2004). By the mid-1980s, Ireland and Sweden were the only EU 15 members with TFR still at the level of 2.1 children per woman or slightly above, and by the mid-1990s there were no EU 15 countries with TFR at or above replacement. In the mid-1990s, fertility in EU 15 countries was at its lowest. In 1998, Ireland and France had the highest fertility in the EU 15, with period TFRs of 1.93 and 1.76 children per woman, respectively. Spain and Italy had the lowest fertility, with period TFRs of 1.2.

A shift towards childbearing at older ages

When considering age-specific fertility trends, it was clear early on that the plunging period TFR was at least partly due to a shift towards later childbearing. The mean age of women at childbirth has increased throughout the EU 15, from 27 years in the 1970s to 30 years in 2008 (see Figure 2.4). In the former communist countries, it increased from 25 to 28 years. The gap between the two groups of countries persisted through the entire period under examination, but in both groups an increase of 3.0 to 3.5 years has been observed since the 1970s. Such an increase in the mean age of childbearing can reduce period TFR, even if the final number of children that women may have over their lifetime (referred to below as completed cohort fertility, CCF) remains constant between generations.

Postponement of motherhood is best expressed in the mean age at first birth, which indicates the average female age at the time of the birth of their first child. However, due to inconsistencies in definitions and measurement across countries, Eurostat no longer publishes mean age at first birth for EU countries. The most recent available data are for 2002, obtained in 2005. Figure 2.2 includes trends in mean age at first birth for a selection of EU countries to indicate the overall trends and differences between countries. Eurostat does release annual statistics for the mean age at childbirth for EU countries, which measure the average female age at the time of birth across all birth orders (see Figure 2.3). In 2008, the mean age of women at childbirth reached 31 years in Ireland, the Netherlands, Spain and Sweden. The lowest mean age at childbirth among the EU 15 countries – 29 years – was observed in Austria and the UK.

The influence of further postponement of childbirth on TFR is likely to be limited in the short term. Estimates by Leridon and Slama (2008) show that a decrease in fecundity by 15%, and an increase in age at first pregnancy attempt of 2.5 years, lead to a decrease in fertility of 4% and 5%, respectively. However, the persisting trend of rising female age at first childbirth indicates that decreasing fecundity may become an increasingly important factor driving fertility rates.

Over the last decade, the mean age of motherhood in Europe has increased by nearly 50 days per year on average. This would imply that by 2050, mothers will be on average around six years older: for example, in Spain, this would imply that the mean age of motherhood would be around 37 years. However, as fecundity decreases with age, the prevalence of couples who have difficulties conceiving can be expected to increase if these postponement trends continue. Such postponement then may actually start to have a quantum effect, which will lead to further deviation between desired and completed fertility and increases in involuntary childlessness at later ages.

Cohort fertility has remained relatively constant

So far we have resorted to period measures of fertility (TFR and age-specific fertility rates presented from a period perspective). Since it is difficult to distinguish tempo effects from quantum effects when only analysing period fertility, we have reviewed CCF also. Table 2.1 provides an overview of CCFs for cohorts of women born in 1955, 1960 and 1965 in EU 15 countries and selected new Member States, as well as the difference between the 1955 and 1965 cohorts.

Cohort measures of fertility exhibit greater stability than period measures. There was little or no change in the completed fertility of women born between 1955 and 1965 in Belgium, Denmark, Luxembourg, the Netherlands, Sweden and the UK. Cohort fertility in Finland, Germany and Southern Europe decreased. In Greece, cohort fertility reached the 'lowest-low' fertility levels, i.e. 1.3 and below. Clearly, cohort fertility measures do not give us an up-to-date picture of fertility, as women born in the 1970s and 1980s have not completed their reproductive lives yet. The comparison of cohort and period fertility measures suggests that any descriptions of declining or increasing fertility based only on one measure can be potentially misleading. A drop or increase in period TFR may be accompanied by any of three variations in cohort fertility: that is, decrease, increase or stability.

Table 2.1
Completed cohort fertility in the EU (children per woman)

Country	Birth cohort 1955	1960	1965	Change between cohorts 1955 and 1965
EU 15				
Austria	1.77	1.67	1.57	0.2
Belgium	1.82	1.81	1.76	0.1
Denmark	1.84	1.89	1.88	-0.0
Finland	1.86	1.76	1.35	0.5
France	2.13	2.07	NA	NA
Germany	1.62	1.57	1.47	0.2
Greece	1.83	1.46	1.24	0.6
Ireland	3.34	NA	NA	NA
Italy	1.83	1.69	1.59	0.2
Luxembourg	1.69	1.73	1.77	-0.1
Netherlands	1.87	1.87	1.80	0.1
Portugal	NA	NA	NA	NA
Spain	1.92	1.75	1.46	0.5
Sweden	1.90	1.90	1.90	0.0
UK	2.02	1.97	1.86	0.2
Selected new members of EU				
Bulgaria	2.10	1.90	NA	NA
Czech Republic	2.10	2.00	NA	NA
Hungary	1.90	2.00	NA	NA
Poland	NA	NA	NA	NA
Romania	2.30	2.20	NA	NA

NOTE: The figures for selected new members of EU were read from the diagrams.

SOURCES: EU 15: Lesthaege and Willems (1999: 220); selected new members of EU: Frejka and Calot (2001: 106)

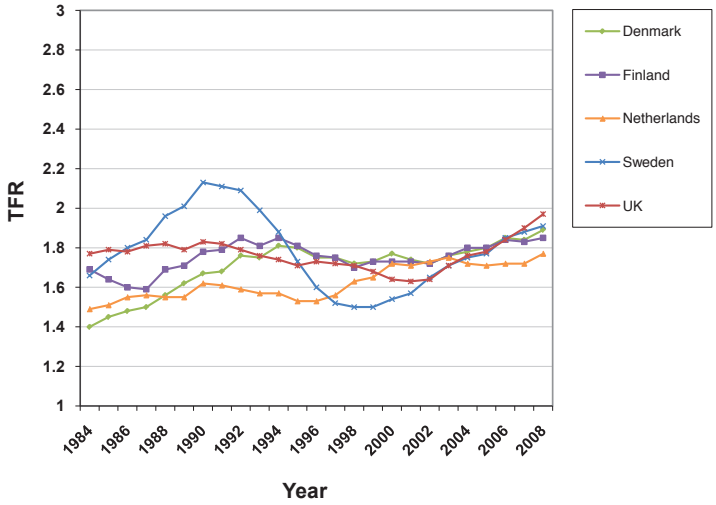
Since both period and cohort measures of fertility have limitations, the way forward seems to be to present and examine *both*, with appropriate attention to the actual research questions asked and to the contexts in which fertility is being measured. While theories of fertility can be tested with both measures, cohort measures may be useful for estimating long-term future growth prospects (Ni Bhrolchain 1992).

Some signs of recovery since 2000

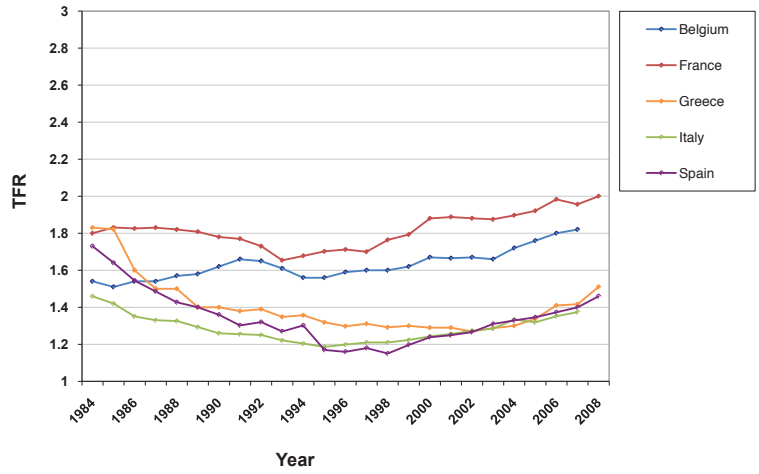
The recovery in period fertility in the EU began around the end of the 1990s. The most striking feature of this new development is that the upward

Figure 2.4
Country-specific trends in total fertility rate in the EU since the mid-1980s

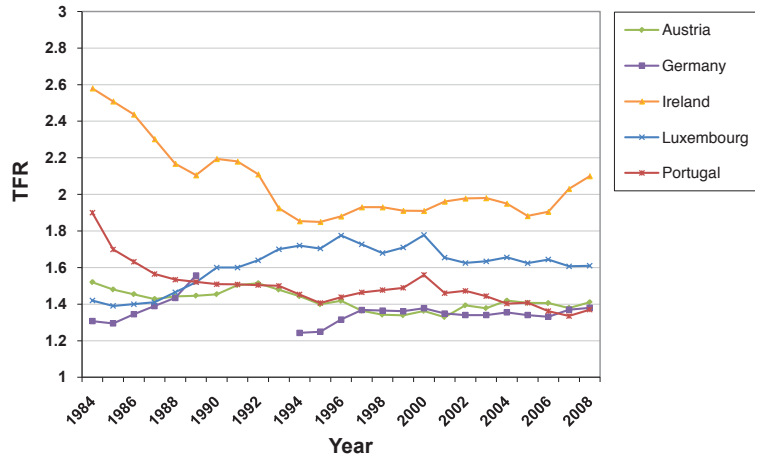
PANEL A. Countries of EU 15 that show slight or strong recovery of period fertility in 2000s: North-west Europe



PANEL B. Countries of EU 15 that show slight or strong recovery of period fertility in 2000s: Western and Southern Europe



PANEL C. Countries of EU 15 that show slight or no recovery of period TFR in 2000s



NOTE: Selected new members of the EU are Bulgaria, Czech Republic, Hungary, Poland and Romania.

SOURCES: United Nations *Demographic Yearbook* (1987–1995, 1997, Historical Supplement, 2001–2003 and 2007). Data missing in the *Demographic Yearbook* for certain years was obtained from the Eurostat Statistics Database

trend is shared among almost all Member States. Indeed, as Figure 2.4 demonstrates clearly, recovery is seen almost in every EU country, and occurs irrespective of the level of fertility observed prior to the trend-break.

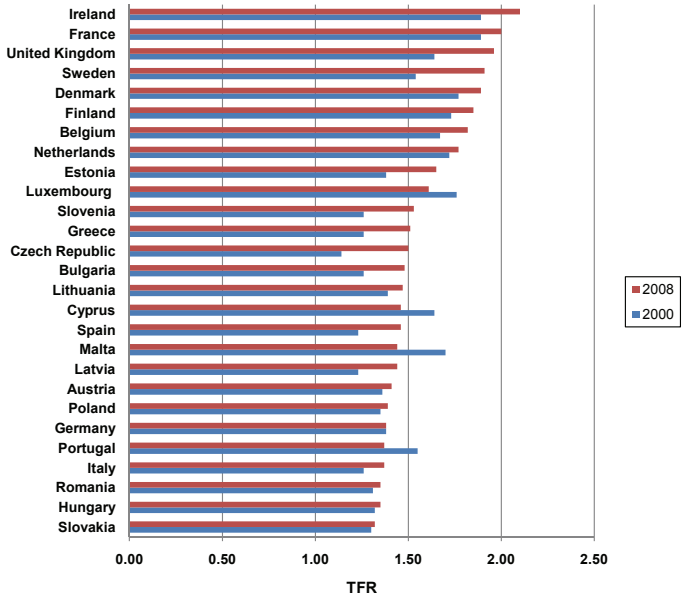
We define recovery as an increase in period TFR observed for five consecutive years, with 2008 being the last year with available data on TFR. This definition is adopted in order to avoid interpreting short-term fluctuations in fertility as the beginning of a new trend. As Figure 2.4 shows, in 10 out of the EU 15 countries, recovery can be clearly observed, beginning from the end of the 1990s at the latest. Period TFR across the EU 15 countries recovered from 1.5 in the late 1990s to 1.7 in 2008. Among the new members of the EU, the lowest point of 1.2 was reached in 2003, and recovery since then resulted in period TFR reaching 1.4 in 2008.

Prominent exceptions to this trend of recovery in the EU 15 are the German-speaking countries (Austria and Germany), Ireland, Luxembourg and Portugal. After years of decreasing fertility, TFR in Ireland stagnated between 1.8 and 2.0 in the 1990s and early 2000s; levels that can be considered high, given the current profile of European fertility. Ireland has shown some signs of possible recovery, however, the increase in fertility in this country is a very recent phenomenon and has not yet lasted five consecutive years, hence its classification with the non-recovery countries. Fertility in German-speaking countries and Portugal has stalled at very low levels, below 1.6 children per woman, since the mid-1980s.

Among the new members of the EU, recovery was most conspicuous in Bulgaria and the Czech Republic, where a TFR of 1.5 was registered in 2008, up from 1.1 in 1997. In Poland, fertility was 1.4 in 2008, up from 1.2 in 2003. TFR in Hungary and Romania seems to have stalled below 1.4 children per woman.

Figure 2.5 lists the aggregate difference between the TFR in 2000 and in 2008 for all EU countries. In all but four Member States – Cyprus, Luxembourg, Malta and Portugal – fertility rates have increased since 2000. In Austria, Germany and Ireland, the recovery was only marginal. In 10 Member States, fertility increased by more than 0.2 children per woman in that period, equally divided between new (Bulgaria, Czech Republic, Estonia, Latvia and Slovenia) and EU 15 Member States (Greece, Ireland, Spain, Sweden and the UK). However, despite the recovery in period fertility among the majority of EU Member States, more than half of them still have a TFR below 1.5.

Figure 2.5
Total fertility rate in the EU countries, 2000 and 2008



NOTE: Due to missing data for 2008, Belgium and Italy have 2007 data. Latvia has missing data for the years until 2002. The earliest available data point, 2002, has been used.

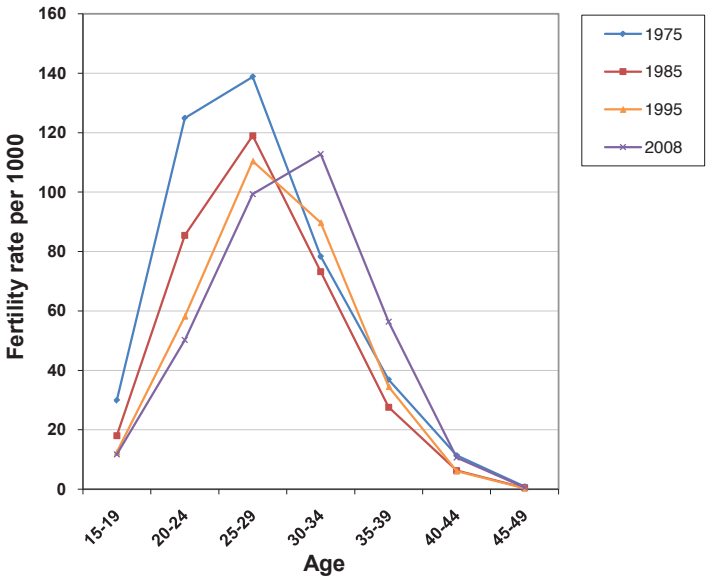
SOURCE: Eurostat (2010)

Of course, the future is uncertain and there is no reliable method for forecasting long-term developments in fertility. Even after five years of increasing period TFR, fertility in all EU countries remains below 2.1.[9] If the observed trend in period TFR continues, fertility in France and Sweden will reach replacement level by 2015. Fertility at age 35 years and above has been recovering continuously since the 1970s or the 1980s in EU 15 countries. In view of this development, the continuation of recovery in TFR is not an implausible scenario. (We will return to the issue of forecasting fertility in the case study chapters.)

The recent increase in period TFR has not been comprehensively explained in the literature, partly because it is a relatively new phenomenon. Part of the explanation for the increase is an artefact of

9 With the exception of Ireland, which recorded a TFR of 2.1 in 2008.

Figure 2.6
Age-specific fertility rates in EU 15 countries, 1970s–2000s



NOTE: The average for the EU 15 excludes France and Germany before 2008.

SOURCE: Eurostat Statistics Database

the way that fertility is measured: period fertility is less robust as a measurement of fertility when age at childbearing is changing across cohorts (see section 1.3). In other words, postponement of childbearing to later in life is a partial explanation (Lesthaeghe and Willems 1999; Sobotka 2004). Fertility at young ages (15–19, 20–24 and 25–29 years) dropped significantly over the second half of the 20th century. At the same time, fertility at age 30 years and above changed very little between the mid-1970s and mid-1980s, but increased continuously from the mid-1980s onwards, as Figure 2.6 shows. Indeed, fertility at age 30 years and above is now higher than it has been since the 1970s.

Are we in fact witnessing postponement in fertility to older ages in women's lives, when education is complete and careers are established? The demographic indices support this hypothesis. However, to establish whether the observed shift in childbearing to older ages is actually a postponement, it is necessary to delineate the intentions of women regarding the distribution of births across their lifecourse. Ni Bhrolchain and Toulemon (2005) forcefully argued against attribution of such a meaning to the observed shift in childbearing. Although exposing causal mechanisms of processes is important in principle, the value of the distinction drawn by Ni Bhrolchain and Toulemon (2005) is unclear from a policy perspective. Whether women have an ideal number of children early in their lives and make a conscious decision to have them later rather than now, or do not begin to plan births until later in life, the same factors (e.g. education, labour participation, protracted transition to adulthood) are likely to impact on their decisions under both scenarios, and the effect of their decisions on fertility seems to be the same under both scenarios as well.

So, how can this trend-break in declining period fertility in Europe be explained? If a particular phenomenon is observed across different social and economic contexts, it is reasonable to ask whether it has a common cause. It is possible, of course, that a number of isolated country-specific factors ultimately generate similar demographic phenomena, but this is rather unlikely. Thus investigating the recovery in period fertility should strike a balance between country-specific situations and processes, and the underlying social, economic and demographic trends that are shared by a large number of countries in Europe. In this context, it may be useful to comment that international trends in mortality – such as slowdown, stalling or increase in adult mortality among males and females during the 1960s and 1980s respectively – have been successfully explained by common factors across these countries.[10]

In this respect, developments in the fertility of migrant populations across Europe are another interesting dimension of variation in level and trends in fertility. Many European populations have been exposed to in-migration from less economically developed part of the world, especially North Africa, South Asia and the Middle East. Typically, those migrants came from the societies with higher levels of fertility relative to those observed in the receiving countries. The total fertility of migrant women in the 1990s and 2000s was in the range of 2.5–3.3 in France, 2.6 in Italy, 2.43 in Denmark (Sobotka 2008b) and 2.48 in the UK (Office for National Statistics, 2010). Indeed, it has been shown that although migrant fertility tends to converge with the fertility levels

[10] See Mesle and Vallin (2006), Staetsky (2009) and Preston et al. (2010).

of destination countries in the long term (Nahmias 2004; Sobotka 2008b; Coleman and Dubuc 2010), overall migration is responsible for an elevation of up to 0.1 in total fertility in Western Europe (Sobotka 2008b; Coleman 2008). That is, the relatively high fertility observed in migrant communities, operating along with their increasing share in the total population of destination countries, boosts total fertility in the EU. It should be noted that the contribution of migrants to childbearing is greater than just their fertility contribution: migration brings in a large volume of women in their childbearing years, which may not significantly increase the overall fertility rate, but will have an absolute effect on the birth rate, total number of births and the 'capacity for childbearing'. However, when exclusively considering the TFR effect, the overall increase in the 2000s seems to be the result of an increase in fertility among native rather than foreign-born women; this has been documented at least in France and the UK (Heran and Pison 2007; Tromans et al. 2009). The impact of migrants' fertility on total fertility in European societies should be investigated in greater depth.

Consequences for policymakers

As below-replacement level fertility contributes to population ageing, the decrease in fertility between the 1960s and 1990s has been recognised as an issue for governments in many industrialised countries. Low fertility could lead to an increasing relative size of the dependent population, decreasing size of the workforce and even population loss. In turn, these developments are potentially associated with reduced productivity per capita and an increasing pressure on the sustainability of welfare and pension systems (see Appendix A).[11] Billari (2005) has shown that even small differences in fertility levels below replacement can have significant consequences for population dynamics:

- a TFR of 1.5 means, *ceteris paribus,* that the population will halve in 64.7 years;
- a TFR of 1.3 translates into the population halving in 44.3 years;
- with a TFR of 1.1, it takes only 32.4 years for a population to halve.

Hence, even small decreases in period fertility will have long-term consequences. However, as indicated above, trends in mortality and migration can enforce or mitigate these consequences respectively. For example, European countries have depended on immigration as a way of labour supply for some time. Migration has been a significant contributor to population growth in the EU 27.

No doubt the recent recovery of period fertility in many European countries will have an effect on population structures, but it is inconceivable that this trend will reverse the ageing of European populations, since it would require decades of above-replacement level fertility. Furthermore, since these additional newborns will not enter the workforce until they are at least 15 years old, the effect will slow the pace of the ageing of Europe's population in the long term. In fact, the dependency ratio will increase in the short term because of the increasing dependent population of young children. Finally, the baby boom generation will enter retirement age in the coming decade, no matter what. Short-term fluctuations in fertility rates will not change this.

In sum, the recent recovery of period fertility will have a mitigating effect on Europe's ageing population in the long term. However, this is only one piece of the puzzle. Policymakers should take into account the behaviour of the entire demographic system – migration, mortality and fertility – as well as the realities of modern welfare systems. There is no easy 'rule of thumb' to guide the policy measures addressing these issues, and in-depth analysis is required for specific policy measures aimed at influencing demographic processes.

[11] Kravdal (2010) provides a useful overview of the possible macro-effects of low fertility.

Chapter 3 Drivers of fertility: what the literature tells us

As one of three main factors influencing population structure, understanding the drivers and inhibitors of fertility can provide insight into the factors contributing to the trends explored in Chapter 2 and their possible consequences.

Population size and structure depend on a range of intersecting societal and individual factors, ranging from economic and labour market conditions and gender equality, to marital status, family employment and income, and the cost of having and rearing children (Grant et al. 2004). This chapter explores the literature on how socio-economic and socio-cultural factors affect the fertility decisions of individuals within countries, and how immigration has affected fertility trends in Europe.

Socio-economic factors

Classic economic theories of fertility recognise that children are costly, and distinguish between the direct costs and indirect costs (or 'opportunity costs') of children (see e.g. Easterlin 1968). Direct costs include not only expenditure on food, clothing and education, but also the effort that must be invested in raising children and the associated emotional and psychological costs (Nauck 2006). The opportunity costs of having children pertain to the loss of income that may be related to parenthood because of the incompatibility between employment and childrearing.[12] Various socio-economic factors can affect parents' ability to meet the direct costs of parenthood, or can affect the indirect costs associated with having children, or may affect both simultaneously. When a socio-economic factor unambiguously reduces costs, or increases parental resources without affecting costs, economic theory predicts that fertility should increase; when socio-economic developments affect resources, direct and indirect costs simultaneously, the predictions are more ambiguous. We discuss a number of these factors below.

Economic growth, recession and employment

For more than 50 years, economists have cited the differences in fertility across wealthy and poor countries, and between wealthy and poor families within developed countries, as evidence that economic growth and increased per-capita income leads to decreased fertility, perhaps because parents prefer to invest more in the 'quality' of their children as their income increases, rather than their quantity – the cost-per-child increases, and the number of children decreases (see e.g. Becker 1960). The theory underpinning this prediction is that disposable income tends to increase with economic growth, which means that the opportunity costs (i.e. lost income due to the incompatibility of work and childrearing) of having children increases. There is ample empirical evidence for such a negative (countercyclical) correlation between economic growth and fertility (see Grant et al. 2004).

However, recent research presented by Myrskylä et al. (2009) shows that further economic development among developed countries may be positively associated with fertility. They argue that the previously negative development–fertility relationship has become an inverse J-shape, with the Human Development Index being positively associated with fertility among highly developed countries: these findings are confirmed by Karaman Örsal and Goldstein (2010). Using panel methods to study short-term changes in aggregate

[12] Grant et al. (2004) includes an elaborate discussion on the direct and indirect costs of children and their potential effect on fertility decision making.

fertility and economic measures in the Organisation for Economic Co-operation and Development (OECD) over the past three decades, they conclude that fertility has become positively (procyclically) associated with good economic conditions. Finally, Luci and Thevenon (2010) singled out gross domestic product (GDP) per capita to empirically test the impact of economic development on fertility in OECD countries from 1960 onwards. Their findings support other recent conclusions of a convex impact of economic advancement on fertility rates.

The global recession will provide an interesting test case for competing economic theories of fertility. The most recent data released by the Population Reference Bureau suggest a negative impact of the recession on fertility (Haub 2010). Data published by Eurostat (2010) for 2009 indicate that TFR was lower than the year before in 13 EU countries, compared to none in 2008.[13] Sobotka et al. (2010) report that total births in the EU have declined for the first time since 2000, with an overall decline in total births in the EU for that year of 0.07%, compared with a rise of 2.7% in 2008.

Closely linked to macroeconomic development, employment rates (and types of employment) may impact fertility directly. At the international level, there has been a change in the cross-sectional correlation between unemployment rates and fertility across OECD countries: fertility and unemployment were positively related in the 1980s, but by the mid-1990s they were negatively related (D'Addio and Ercole 2005). Looking at unemployment and fertility within low-fertility countries over time, Goldstein et al. (2009) find a generally negative relationship between unemployment and fertility since the 1990s: among European countries in their sample, Greece, Italy, Poland and Spain all demonstrate a significantly negative relationship between unemployment and fertility, but in Hungary the opposite relationship holds.

Although the general relationship between unemployment and fertility is negative, the effect may differ for men and women. Summarising a number of studies, Sobotka et al. (2010) show that unemployment has a clear negative effect on fatherhood for men, but that evidence on female unemployment is more ambiguous, with contradictory evidence for women of different countries and ages. The ambiguous effect of female unemployment is related to other changes in the role of women in the economy over time. These are discussed in the next section.

Female education, female labour force participation and gender equality

Neoclassical economic theories of fertility derived from the seminal work of the Nobel Prizewinner Gary Becker predict a negative (countercyclical) relationship between female labour force participation[14] and fertility rates (Becker 1960; Becker and Lewis 1973; see also Grant et al. 2004 for discussion). According to these theories, increased opportunities for women in the labour force may increase the economic resources available to families (which could increase fertility), but also have a substantial effect on the opportunity cost of having children (which tends to depress fertility). Time spent out of the labour force raising children has a direct effect on present income and reduces future income by impeding career progression: the better the labour force opportunities for women, the more must be given up in order to raise children – or so the theories suggest. The rise in female labour force participation and decline in fertility over the last 50 years provide *prima facie* support for this view.

Figure 3.1 illustrates the increase in rates of economically active women for a limited selection of EU countries.

Female labour force participation has increased in most EU countries for decades, with the exception of countries where activity rates were initially very high, for example the Nordic countries. In the mid-1980s, the proportion of women in employment or seeking employment was up to 40% in countries such as Greece, Ireland, Italy and Spain. In 2008, it was above 55% for all the countries presented except Italy, and above 60% in the majority of countries.

[13] Data for 2009 were unavailable for Belgium, Italy and the UK.

[14] Labour force participation measures the proportion of a specific population (such as women and older workers) considered to be either working or actively searching for a job. Female labour force participation measures those women aged between 15 and 64 who are economically active, i.e. employed or actively looking for a job.

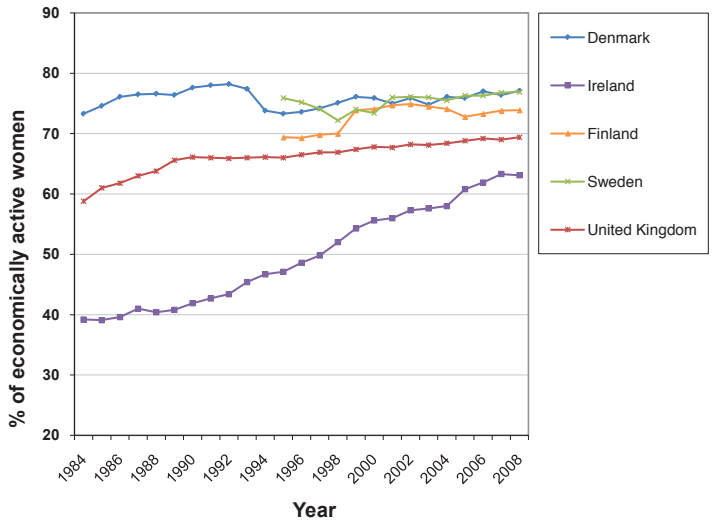
However, a closer look at the relationship across countries between female labour force participation and fertility seems to provide contrary evidence: although low female labour force participation used to be associated with high fertility in the 1980s, in the 21st century, countries with low female labour force participation (e.g. Southern European countries) tend to have very low fertility, and countries with high female labour force participation (e.g. Scandinavian countries, the UK) tend to have relatively high fertility (D'Addio and Ercole 2005). This shows that high fertility and high female labour force participation can be compatible at a national level, and was confirmed recently by Luci and Thevenon (2010), who tested the impact of GDP per capita on fertility using data from OECD countries between 1960 and 2007 (see section 3.1.1). The authors suggest that female labour market participation is the main driver of GDP growth's impact on fertility. However, it is worth noting that the authors also find a significant negative effect of average hours of work-per-woman on fertility, which suggests that women should only work a few hours per week to have an optimal fertility effect.

Nevertheless, within countries over time, there may still be a negative relationship between female labour force participation and fertility: Matysiak and Vignoli (2008) show that an increase in female labour force participation within a country is typically associated with a decrease in fertility, implying a trade-off between working and raising children. However, they also show that the negative relationship between working and raising children has diminished over time, and that the effect differs, depending on country-specific welfare regimes and sociocultural and institutional factors. The difference in these factors across countries helps to explain the apparent conflict between the neoclassical economic theories of fertility and the empirical fact that many countries with relatively high female labour force participation have relatively high fertility.

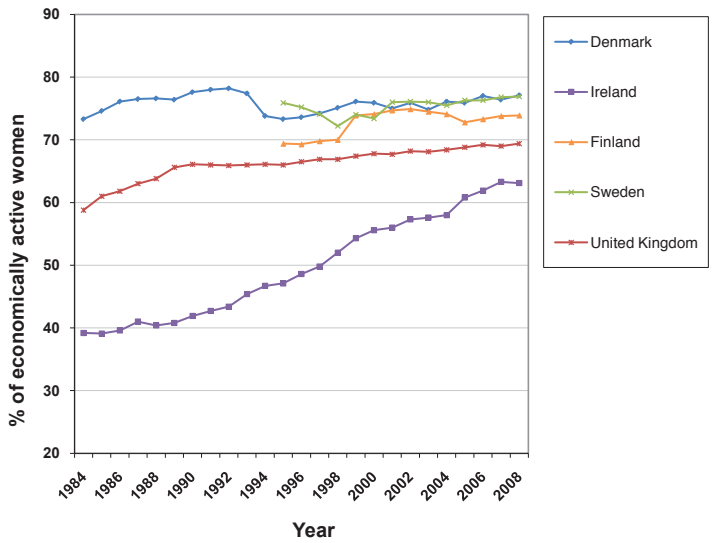
The countries with high female labour force participation and high fertility are often thought to exhibit greater gender equality than other countries, with women having relatively high status in the workforce, the government subsidising childcare and men taking relatively greater responsibility for household production and childrearing. A cross-country study by Feyrer et al. (2008) demonstrates that fertility is lowest in countries when women have high opportunity costs for childbearing (in terms of forgone labour market opportunities) and take on the majority of responsibility for looking after the house and children; but childrearing support from government or male part-

Figure 3.1
Proportion of economically active women aged 15–64 years (female labour force participation) in selected countries of the EU, 1984–2008

PANEL A. Selected EU 15 countries: North-west Europe



PANEL B. Selected EU 15 countries of Southern Europe and Germany



NOTE: The selection is restricted to those countries with the longest and the most complete time series in the Eurostat database.

SOURCE: Eurostat (2010)

ners gives women greater equality and increases the compatibility between female labour force participation and fertility.[15] In countries with low compatibility, women may have to choose between a career and motherhood; countries with more gender equality allow mothers to work and career-oriented women to have children.

Greater opportunities in the labour force tend to lead to greater returns to education for women. Furthermore, female educational participation and attainment has increased dramatically in OECD countries: women now form the majority of university students in most OECD countries, despite being a minority in most countries in 1985 (Vincent-Lancrin 2008). However, higher education tends to be associated with delayed or lower fertility, which is likely to be due to a combination of factors (which may differ in importance across countries). In conducting a meta-analysis of the relation between social status and fertility, Skirbekk (2008) finds that the association between education and average fertility in all identified datasets is negative. Separate analysis of men and women shows that the depressing effect of schooling on fertility is considerably stronger for women than for men for all periods.

First, there are the increased opportunity costs of childrearing for women with higher human capital (see the discussion in Grant et al. 2004). Second, there is a general incompatibility between continuing education and motherhood, which leads to a mechanical delay in childbearing in most countries (Billari and Philipov 2004). Finally, Nicoletti and Tanturri (2008) see evidence of decreased propensity to childbirth, mechanical delay in childbirth, and a related effect of biological age constraints (discussed further in section 3.2.2). The studies above demonstrate significant heterogeneity across countries and time, and a complex interplay of these factors and the policy environment within each country.

However, recent analyses in Nordic countries suggest that the strong negative association between education and fertility may have weakened. Drawing on the Norwegian population registers for cohorts born from 1940 to 1964, Kravdal and Rindfuss (2008) find that better-educated women still have a higher age at first birth and remain childless more often. Nonetheless, the negative effect of education on higher-order birth rates net of the impact of later motherhood has disappeared. Among men, a positive relationship has even emerged, and Andersson et al. (2009) echo these findings. They conclude that in line with other developed countries, there is an ongoing postponement of first parenthood in Nordic countries. However, Nordic countries are unique in the weak role of educational attainment in completed fertility. They actually found a positive relationship between educational level and completed fertility when mothers who already had their first birth at similar ages are compared. Other recent studies have shown that the asssociation between educational attainment and fertility is not always a simple inverse one (e.g. Lappegård and Rønsen 2005; Hoem et al. 2006; Kravdal 2007). (The case study chapters discuss some of these complex issues in more detail.)

Housing

Housing is a major cost in most household budgets, and thus potentially plays a significant role in the decision to start a family. As Billari (2005) notes, countries or regions with inflexible housing markets, for example due to the limited availability of properties for rent, high transaction costs or limited availability of financing for home ownership, may make it difficult to increase family size.

However, it is difficult to analyse the effects of housing on fertility. Cross-sectional differences across countries in housing factors and fertility are suggestive – countries with high home ownership rates but significant barriers to home finance tend to have the lowest fertility (Mulder and Billari 2010) – but potentially confounded by myriad other differences between countries. Longitudinal data on housing type and fertility in Finland suggest that people living in single-family homes tend to have higher fertility than those in apartments after controlling for various factors, but the issue is complicated by the fact that people may change housing types in anticipation of starting a family (Kulu and Vikat 2007).

[15] Evidence on gender equality from within-country studies is more mixed, probably due in part to the differences in institutional and cultural factors – see e.g. Mills et al. (2008) for negative relationships between workloads and fertility intentions in Italy and the Netherlands, but see the case studies on Germany, Poland and Spain for contrary evidence on the effects of patriarchal attitudes and divisions of labour at the family level.

Despite the significant role that housing may play in the direct economic cost of increasing family size, currently there is little research that identifies convincingly the effect of housing factors on fertility decisions.

Sociocultural factors

In addition to the factors affecting the direct or indirect costs of raising children, various non-economic factors within society play a role in individual fertility decisions and outcomes. Changing social norms concerning family formation and the timing of childbirth may influence individual choices. However, it will be difficult to prove the causality of these factors. Below, we briefly discuss the potential fertility impacts of some sociocultural trends.

The cultural developments that have unfolded over the second half of the 20th century, which allowed women access to education and participation in the labour market, have been discussed above. However, these developments should be seen in the context of broader cultural change in value orientations among European societies, with the new centrality of self-fulfilment, individual autonomy, tolerance towards diverse lifestyles, egalitarianism in relation to gender roles and beyond, and the decline of strong religious sentiments (Frejka and Calot 2001; Surkyn and Lesthaeghe 2004; Esping-Andersen 2009). The relations between childbearing and marriage or cohabitation as precursors seem to have loosened.

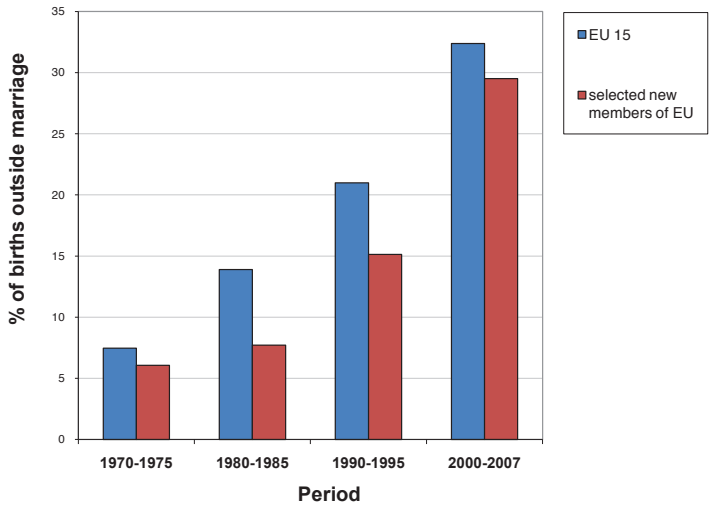
In addition, the decrease in fertility levels observed across Europe after the post-war baby boom could be related to the wider demographic trend of late transition to adulthood. Young people spend much of their early adult life in education, leave their parental home later than in the past, and prolong the time before they form a new union, get married and become a parent. This trend of postponing the key transition into early adulthood is converging across Europe, but in some countries, most notably in Southern Europe, extreme levels of postponement have been experienced (Billari 2005). However, it is fair to say that although the broad picture of reasons behind decline in fertility is well understood, the isolated effects of different factors have not been disentangled. The recent decade of scholarship has not seen much advancement in this area. Demographic developments such as rising age at marriage, declining proportion of 'never married' (Table 3.1), rising proportion of births outside marriage (Figure 3.2) and increasing mean age of childbearing (Figure 2.3) are reflective of these social and economic changes.

The proportion of 'never married' among adults aged 30–49 years rose in the EU 15 from an average of 11% in the 1970s to nearly one-quarter in the 2000s, while it rose from 5% to 12% in the former communist countries (see Table 2.1).

In the EU 15, France and the Nordic countries exhibited the highest proportions of 'never marrieds' in the 30–49 age group, and Greece and Portugal had the lowest. Also, the proportion of births out of wedlock has increased since the 1970s.

Figure 3.2 shows that the proportion of births outside of wedlock increased considerably across Europe, from about 7% in the 1970s to nearly one-third of total births in selected EU 15 countries, and from 5% to one-quarter of total births

Figure 3.2
Proportion of births outside marriage out of total births in the EU, 1970s–2000s



NOTES: (1) selected new members of the EU are Bulgaria, Czech Republic, Hungary, Poland and Romania. (2) The average for EU 15 for 1970s–1990s excludes France; the data for selected new members of the EU for 1970s–1980s excludes Romania. (3) Unweighted averages are presented for both groups of countries.

SOURCE: Eurostat Statistics Database

Table 3.1
Proportion of 'never married' in age group 30–49 years in the EU, 1970s–2000s

Panel A. EU 15

	Period 1970–78		Period 1970–78		Period 1999–2002	
	Year of observation		*Year of observation*		*Year of observation*	
Austria	11%	1971	18%	1991	19%	2001
Belgium	9%	1970	*N/A*	*N/A*	*N/A*	*N/A*
Denmark	9%	1970	13%	1991	*N/A*	*N/A*
Finland	14%	1970	17%	1985	31%	2000
France	11%	1975	17%	1990	27%	1999
Germany	9%	1970	*N/A*	*N/A*	22%	2001
Greece	*N/A*	*N/A*	11%	1991	17%	2001
Ireland	*N/A*	*N/A*	17%	1986	26%	2002
Italy	14%	1971	*N/A*	*N/A*	22%	2001
Luxembourg	10%	1970	14%	1991	19%	2001
Netherlands	*N/A*	*N/A*	*N/A*	*N/A*	26%	2002
Portugal	*N/A*	*N/A*	9%	1991	12%	2001
Spain	13%	1970	14%	1991	*N/A*	*N/A*
Sweden	13%	1970	14%	1985	42%	2003
UK	9%	1971	13%	1991	24%	2001

Panel B. Selected new Member States

	Period 1970–78		Period: 1970–78		Period: 1999–2002	
	Year of observation		*Year of observation*		*Year of observation*	
Bulgaria	4%	1975	6%	1985	10%	2001
Czech Republic	*N/A*	*N/A*	7%	1991	11%	2001
Hungary	6%	1970	8%	1990	*N/A*	*N/A*
Poland	7%	1978	10%	1988	12%	2001
Romania	4%	1977	7%	1992	14%	2002
Slovakia	*N/A*	*N/A*	10%	1991	13%	2001

NOTES: for Germany, data relate to the Federal Republic of Germany for the 1970s and 1980s, and a united Germany since 1991.

SOURCES: United Nations Demographic Yearbook (1997 Historical Supplement, 2001–2003, and Special Census Topics round, 2007): http://unstats.un.org/unsd/demographic/products/dyb/dyb2.htm

in selected new Member States. Marriage is still an important step on the way towards family formation, but much less so than 40 years ago.

Broadly speaking, marriage rates have declined in Europe due to a combination of delays in first marriage, the rising acceptance of cohabitation and other informal relationships as an alternative to marriage, and rising divorce rates (Sobotka 2008a).[16] Although historically there has been a positive relationship between fertility levels and marriage rates, this relationship has weakened or even reversed in recent years (see the literature summarised in Grant et al. 2004 and Hoorens 2009).

In recent times, some countries with a very low marriage rate and high divorce rates (such as France, Norway, Sweden and the UK) have among the highest TFR in Europe. This may be possible due to different attitudes towards out-of-wedlock births in those countries – in North-West Europe, cohabiting couples choosing to have

[16] The importance of these factors varies across countries.

children are responsible for the majority of out-of-wedlock births, with a much lower proportion of out-of-wedlock births to single mothers than in Central and Eastern Europe (Sobotka 2008a). As the prevalence of marriage in society and the norms concerning marriage and childbearing may change at the same time, it is difficult to predict how any future changes in marriage rates might affect overall fertility.

Biological factors

Biological constraints on fertility may become more relevant as childbearing is increasingly postponed. As described in Chapter 2, postponement in fertility is observed in nearly all European countries, with a decline in fertility at younger ages and an increase in fertility at older ages (these trends are examined in detail in the case studies). Norms concerning childbearing at older ages may be changing, and the factors mentioned previously (such as female education and labour force participation) are likely to play a significant role in this delay.

If women choose to postpone trying to become pregnant to later in life, it is possible that they may not be able to attain their desired family size due to reduced fecundity. UK clinical guidelines suggest that around 84% of women in the general population usually conceive within one year of trying for a baby, but older women have more difficulty: at age 35 a woman has roughly a 94% chance of conceiving within three years, but at age 38 the probability drops to 77% (National Institute for Clinical Excellence, 2004). The influence of postponement of childbirth on TFR is likely to be limited in the short term. Estimates by Leridon and Slama (2008) show that a decrease in fecundity by 15%, and an increase by 2.5 years in age at first pregnancy attempt, lead to a decrease in fertility by 4% and 5% respectively. However, the persistent trend of rising female age at first childbirth indicates that decreasing fecundity may become an increasingly important factor driving fertility rates (see further the discussion of fecundity issues in Hoorens 2009).

Immigration

The previous sections describe how factors influencing the fertility decisions of individuals within a country affect overall fertility rates; however, it is also possible for the composition of individuals in a country to change through migration, and this has implications for fertility. More nuance is given in the case studies, but in general the fertility of non-EU migrants appears to contribute positively to TFR in Europe, due to higher fertility than native-born individuals (Sobotka 2008b).

Nonetheless, there is significant heterogeneity in migrant fertility, and fertility differences between native and foreign-born women change over time. Summarising information from a number of articles, Sobotka (2008b) shows that the fertility of immigrant women from South Asia and Sub-Saharan Africa demonstrate particularly high fertility in comparison not only with native women, but also with other immigrant groups, and shows that migrant fertility rates and fertility expectations tend to converge fairly rapidly with those of native women (with some exceptions). For example, using the 1996 wave of the German Socioeconomic Panel (GSOEP), Mayer and Riphahn (2000) show that this was the case in Germany.

Overall, migrant women are responsible for a significant portion of total *live births* in many European countries, but this is largely a reflection of the proportion of migrant women of childbearing age in the population; the positive impact on total *fertility rates* is relatively small (Sobotka 2008b). The difference between native and migrant fertility, and the size of the migrant woman population, are not large enough in most countries for a significant impact on period fertility in the total population.

Public policy

Government policies can impact fertility through a number of the factors described in the previous sections, but the relationship between policy and fertility can be complex and difficult to ascertain (Gauthier 2007), and policies may have different effects depending on the country context and timing (Andersson 2008). In some countries, fertility is seen as largely a private issue, limiting the extent to which public policy can be explicitly pronatalist (Barach et al. 2005, in Gauthier and Philipov 2008); however, broader policy mixes may be able to increase fertility without arousing cultural or ideological concerns (Grant et al. 2004).

Of the factors influencing fertility described in the previous sections, some receive only limited policy intervention in most countries,[17] and other factors are addressed by policy largely without consideration of fertility outcomes.[18] However, governments do play an active role in several areas, treating family and fertility as outcomes of interest or relevant considerations for policy. We describe various types of relevant policy in the following section, and explore their effects in more detail in the case studies.

Direct financial incentives

As noted in previous sections, the costs of having children are a significant factor in individual fertility decisions. Economic circumstances may be a barrier to fertility (Gauthier and Philipov 2008): financial incentives such as tax advantages or cash transfers could address such circumstances by providing immediate and transparent incentives to parents (McDonald 2006) and reducing the direct costs associated with a child. For example, in Australia, there was a 10% increase in the number of births in the first full quarter compared to the previous year immediately after the introduction of a maternity payment in July 2004; a similar effect occurred in Austria in 2003 (McDonald 2007).

Earlier work nuances the link between fertility and financial incentives, suggesting that financial incentives have at best a temporary effect on the timing of births (Grant et al. 2004). Gauthier (2007) affirms this conclusion when reviewing studies based on macro-level data, finding that studies using micro-level data tend to show a positive effect on fertility – but this effect varies depending on country and birth order. Other studies find that financial incentives have only a limited or weak impact on fertility levels (Thévenon 2008; Philipov et al. 2009). In general, while financial concerns are part of childbearing and childrearing decisions, financial incentives appear to have an ambiguous and often limited role in shaping fertility trends.

[17] For example, sociocultural norms regarding marriage or attitudes towards postponed motherhood.

[18] For example, economic growth and reduced unemployment are pursued as ends in themselves, not as a means to fertility outcomes; general education policy typically does not consider fertility an outcome (although sex education in some countries presumably considers teenage pregnancy rates as an outcome of interest).

Reconciliation of work and family life

Reconciliation of work and family life has been a salient EU policy discourse since the beginning of the 1990s (Hantrais 2000; Threfall 2000). Compared with the previously dominant 'equal opportunities at work' approach, the reconciliation of work and family life debate recognised for the first time that access to employment for women was not central to gender equality, and that employment was just one outcome of a more complex problem of gender inequality (Duncan 2002). Some general and more specific aspects of work–family reconciliation policies, and their impact on fertility, are explored below.

Gender equality and female employment

Grant et al. (2004) concluded that incorporating gender provisions into family policies can help to reconcile careers and family life for both men and women. However, how such policies then affect fertility is less clear. Although studies explore how gender equality can drive fertility, few provide robust empirical evidence on how different gender *policies* shape fertility decisions (Gauthier 2007).

Based on studies that find evidence to link gender equality and fertility, gender policies appear to influence fertility decisions (Gordo 2010). Andersson's (2008) review of policies and fertility in Sweden suggests that policies to promote gender equality and strengthen women's participation in the labour market are more important than monetary transfers in influencing childrearing. Similarly, affirming the literature review in Grant et al. (2004), Thévenon reviews the data on France and concludes that policies that "secure the conciliation between labour market participation and first motherhood do appear to be very important" (2008: 21). Strong support for the work–family combination is typical for Northern European countries, but strong family orientation appears to drive fertility downwards in Southern Europe, where welfare policies neglect young adults and their children, and pay little attention to the compatibility of parenthood with other choices such as work or education (Billari 2008; Fiori 2009).

Rainer et al. (2008) show that social policies that affect the cost of childbearing to mothers could affect not only the decision to have children, but also the decision to postpone childbearing to later ages. Institutional factors that affect the earning potential of mothers seem to impact particu-

larly on the decision to have children in Southern European countries. Social policies that affect the costs of raising children can explain the positive correlation between older mothers and fertility rates in continental and Northern European countries.

Kalwij (2010) finds that labour market policy programmes aimed reconciling work and family life have both a tempo and a quantum effect on fertility. Kalwij examined individual-level data across 16 Western European countries.

However, there are some further nuances to these general findings. A review by Philipov et al. (2009) concludes for example that, while labour market policies tend to affect fertility behaviour, the extent to which such micro-based evidence can serve to account for the differences in macro-level fertility rates is far from obvious.

In addition, gender equality policies do not necessarily have a positive effect on fertility decisions in households. Drezgić (2010) finds that in the former Yugoslavia, policies under the socialist government that were intended to change the status of women did not seem to affect patriarchal power relations in families. The patriarchal preference for small families persisted and, correspondingly, fertility in many parts of Yugoslavia fell after the 1950s. These different experiences suggest that if gender equality policies resonate to some degree with household structures and preferences, they can have a positive effect on fertility. However, this effect is context-specific and may vary between countries and groups.

In sum, we may conclude that the relation between gender equality and related trends (such as female education participation and female labour force participation) on the one hand, and fertility, on the other, is complex. A recent debate published in the journal *Demographic Research* (Neyer 2011; Oláh 2011; Philipov 2011; Toulemon 2011) showed that there is all but consensus on the question of whether governments should push aggressively for gender equality to raise fertility. There seems to be agreement that:

- very low fertility rates seem to characterise countries where gender equality is lowest, in both the family sphere and the public sphere of education and employment;
- institutional arrangements and policy measures facilitate the dual-earner family to reconcile paid work and family life; and
- reducing gender inequality and offering equal opportunities for men and women should be encouraged in modern societies.

However, there is disagreement about the need for pro-natalist policies, and the need for such policies in the 'guise of gender equality' (Neyer 2011).

Leave provisions

Parental leave provisions vary from country to country in the duration and size of benefits, and have a theoretically ambiguous effect on fertility: they could reduce the indirect costs of having and rearing children (which would increase fertility), but also they could undermine mothers' career prospects and financial security (which may decrease fertility).

Grant et al. (2004) concluded that the significance of any correlation between fertility and parental leave varied across countries. More recently, looking across a panel of OECD countries, D'Addio and d'Ercole (2005) find that longer parental leave lowers fertility rates, but that the higher wage replacement rate during maternity leave contributes to higher fertility rates. However, they find no statistically significant coefficient when looking at the combined effect of duration and generosity of leave.

Some studies have examined whether or not specific parental leave provisions for fathers influence fertility decisions. Looking at Sweden and Norway using event-history analysis, Duvander et al. (2010) show that where the father takes parental leave, couples have considerably higher second and third-birth intensities than when the father takes no leave (Duvander and Andersson 2006; Duvander et al. 2010).

Childcare provisions

Childcare policies could affect fertility decisions from several perspectives: public provision of childcare may be seen as a subsidy to families who otherwise would have paid for childcare out of pocket, or as reduction in the opportunity cost of childbearing by making it easier for mothers to reconcile work and family life. Rindfuss et al. (2007) present a fixed-effects model using Norwegian register data to show that daycare availability has a strong positive effect on the transition to motherhood.

However, studies conclude more often that the impact of childcare policies on fertility depend on

wider cultural and labour market considerations and welfare provisions. Using multivariate statistical analyses, Gauthier (2007) suggests that the impact of childcare on fertility is influenced by the structure of childcare systems, the heterogeneity of parents in terms of childcare needs, and the relationship between daycare systems and other social or welfare state institutions. Similarly, Boling (2008) finds that childcare in Japan did not have as great an effect on TFR as in France. Boling suggests that fewer incentives for reconciling work and family commitments in Japan, demonstrated by long waiting lists for places in childcare and a culture of long working hours, could have limited the positive impact of childcare on fertility. Finally, Kravdal and Rindfuss (2008) suggest that family-friendly policies, including better access to high-quality daycare, are likely to be the engine behind the weakened negative association between education and fertility in Norway.

Infertility treatment

Biological constraints on fertility have always existed, but may be becoming more relevant to fertility in Europe as women increasingly choose to postpone childbearing to later in life. The effect of these biological constraints on fertility rates may be somewhat mitigated by government support for infertility treatment, including assisted reproductive technologies (ARTs). ARTs are being increasingly used across Europe, and estimates for 2007 indicate that more than 90,000 babies were born in Europe through *in vitro* fertilisation (IVF) or other ARTs, but with large variation across countries (de Mouzon et al. 2010).

Some theoretical studies suggest that increases in ART could have a small but non-negligible effect on fertility (Grant et al. 2006; Hoorens et al. 2007; Habbema et al. 2009), a result complemented by an analysis of Danish data suggesting an impact of ART on completed fertility of 0.05 to 0.08 children per woman for the cohort of women born in 1975 (Sobotka et al. 2008).

However, there is also reason for caution concerning ART. Many authors emphasise the potential maternal and neonatal health implications of ARTs (e.g. Pinborg 2005; Sutcliffe and Ludwig 2007), particularly those associated with multiple births as a consequence of transferring multiple embryos per treatment cycle. Potential problems include pregnancy complications, caesarean delivery, miscarriage, premature birth and low birthweight (Elster 2000; Helmerhorst et al. 2004; Allen et al. 2006; Weisglas-Kuperus et al. 2009). The negative consequences may be exacerbated and fertility gains minimised if, as Rainer et al. (2008) suggest, the widespread availability of ART itself may contribute to women postponing childbirth until later in life.

Conclusion

In this chapter, we have given a succinct summary of recent findings from the literature on the factors affecting fertility. In line with the conclusions in Grant et al. (2004), based on the literature until 2003, we may conclude that these factors are multifaceted, interrelated and context-dependent, which makes a detailed analysis of causality challenging.

Classical economic arguments suggest that fertility decisions should be strongly affected by the costs associated with children, factoring in day-to-day expenses, larger issues such as housing and the opportunity costs for parents (particularly mothers) who have to forgo labour income in order to raise their children. These costs for would-be parents are affected in turn by wider aspects of society, such as economic conditions, legal provisions and government programmes, which vary from country to country. Societal factors, such as the importance of marriage as a precursor of family formation, may exert a direct or indirect influence on fertility. However, it is difficult to show evidence of any causality. So far, biological constraints have had a limited effect on fertility, but they may become more relevant as childbearing is increasingly postponed.

The confluence of these factors leads to some counterintuitive results at the individual and national level: for example, while micro-theory may suggest that women within each country face a negative trade-off between labour market participation and motherhood, cross-national comparisons indicate that some of the countries with highest average fertility (such as the Nordic countries) have high levels of female labour force participation. This illustrates the difficulty in isolating specific factors at the national level and assessing their effect on fertility – it is very difficult to hold all else equal in cross-national comparisons. Nevertheless, several recent studies have shown that the

relationship between economic progress and fertility tends to follow an inverse J-shaped curve, with a positive association between these two factors in several highly developed countries. It seems that those countries with pro-cyclical fertility are characterised by relatively high female labour force participation rates. Some suggest that the positive association between fertility and female employment trends could be explained by labour market characteristics and institutional contexts. Similarly, recent evidence from the Nordic countries suggests that although higher education still leads to postponement of fertility, the negative correlation between female educational attainment and completed fertility has weakened considerably.

This suggests that policy interventions or institutional factors play an important role. It seems reasonable to conclude that to some extent, the role of female labour force participation and weakened negative effect of female educational attainment can be attributed to the impact of labour market and social policies in Nordic countries. However, it is difficult to generalise and draw definitive conclusions about the impact of policy changes on fertility across Europe. Furthermore, policies may take time to have an impact, or may not actually effect the intended change in behaviour, and incremental changes to policy may produce an effect that is too small to be detected in analysis.

In general terms, it appears that policies that reduce the direct and indirect costs associated with parenthood do have an effect on fertility decisions, but the size of the effect is small by most accounts. The nature of the effect – tempo or quantum – is often a subject open to academic debate. Some authors argue that the reason for the relatively small estimated effects of policies may be due to the notion that most studies consider only one component of family policy (e.g. child benefit payments). Grant et al. (2004) conclude that policies have most impact on fertility when they are implemented as part of a comprehensive family policy package. Therefore, radical changes in the family policy regime may have a more substantial effect on reproductive behaviour: this argument seems to hold for the fertility trends following the transition to market economy in the former communist countries in Europe (although it was not just the family policy regime that changed in these countries).

It is also important to note that a policy may affect fertility even if changing fertility is not among its goals. For example, labour market policies may be focused on reducing unemployment or increasing gender equality in the labour force, but also they may have an effect on fertility. Finally, policy changes must be seen in their national context. Policy changes that appear to have an effect in one country may not have an effect when implemented in another country if there are crucial differences in the broader policy context, or if the constraints that are binding in one country are not binding in another. In the case studies that follow, we attempt to take a holistic view of the factors affecting fertility in a number of countries, and the role that policy plays within those contexts.

Chapter 4 Case study: Germany

The fertility patterns in the former East and West Germany have changed considerably since reunification. Before 1990, the total fertility rate (TFR) in West Germany had been decreasing continuously since the late 1960s, whereas in East Germany, a similar decrease in TFR began to reverse in the mid- to late 1970s, apparently in response to the introduction of pro-natalist family policies. However, as summarised by Grant et al. (2004) these policies were part of a comprehensive package of measures, therefore it is difficult to assess the impact of specific family policies. As the authors conclude, the purely economic incentives had an undeniable and immediate impact on the number of births, but the long-term effects of these policies are less visible (Grant et al. 2004).

Since unification, Germany has had one of the lowest TFRs in Europe, but until recently no direct policy measures had been introduced to increase the TFR.

Fertility trends in Germany

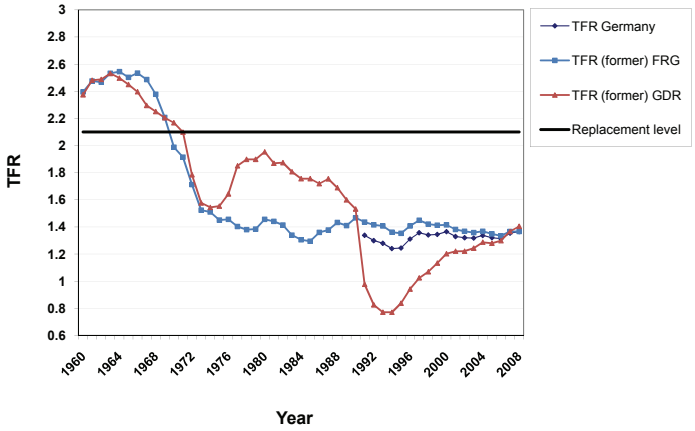
TFR in the reunified Germany was just under 1.4 children per women in 2008 and one of the lowest in Europe. As Figure 4.1 shows, the TFR has oscillated around 1.3 to 1.4 children per women in the first decade of the 21st century. There is no clear trend in TFR: it increased to 1.36 in 2000, decreased to 1.32 in 2002, 2003 and 2005, reached 1.31 in 2006 and increased again, reaching 1.37 in 2008.

Analysis of the German TFR data disaggregated for the former East and West Germany shows important differences in fertility behaviour since reunification. The overall TFR trend closely follows that of West Germany, mostly due to the large differences in population size between the former German states.[19] However, the massive drop in TFR in the former East Germany in the early 1990s has had some effect on the overall decrease in TFR. This massive decrease in fertility in the former East Germany, referred to in the literature as a 'demographic shock' (see Dorbritz 2008), coincided with the transition from socialism to a free market economy, and is similar to the experiences of other former socialist countries such as Poland (see Chapter 5). However, the speed of the decrease in the former East Germany is unprecedented – within five years, TFR halved from 1.53 in 1990 to a record low 0.77 in 1994. It began to rise again in 1995 and in 2006, the TFR in East and West Germany converged. In 2008, the TFR of women in the former East Germany was higher than their counterparts in the former West Germany.

Although the aggregated TFR in the former West Germany has seen little movement since the early 1970s, analysis of the age-specific data shows some variation in fertility patterns. In the first decade of the 21st century, the fertility of the youngest age groups (women aged 15–19 and 20–24) has decreased continuously. A similar decrease, although not linear, has been reported for women in the 25–29 age group. In contrast, fertility among older women (women aged 30+) has increased throughout the same period. The age-specific recovery dates back to the mid-1970s, but it is masked at the TFR aggregated level by large drops in fertility in the younger age groups (Figure 4.2).

[19] The population of West Germany prior to reunification was around four times greater than the population of East Germany. In 1990, the population of West Germany was around 63 million, and the population of East Germany was around 16 million.

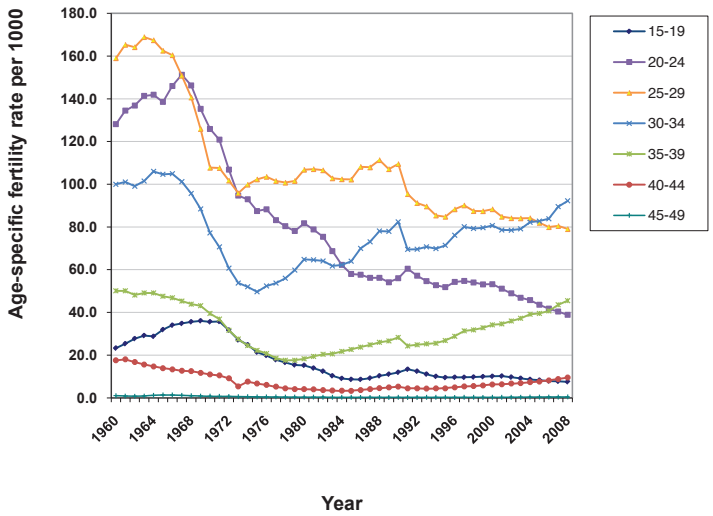
Figure 4.1
Trend over time in total fertility rate in Germany, 1960–2008



NOTES: (1) For East Germany (GDR), figures for 1990–2000 include Eastern Berlin; from 2001 onwards, Eastern Berlin is excluded. (2) For West Germany (FRG), figures for 1990–2000 include Western Berlin; from 2001 onwards Western Berlin is excluded.

SOURCE: Federal Statistical Office of Germany (Statistisches Bundesamt)

Figure 4.2
Trends over time in age-specific fertility rates (per 1,000 women) in Germany, 1960–2008



NOTE: United Germany since 1991; Federal Republic of Germany until 1990 (inclusive).

SOURCES: Federal Statistical Office of Germany; Human Mortality Database (http://www.mortality.org/)

As Figure 4.3 shows, the overall pattern of childbearing changed considerably from 1965–2005. The shift towards older childbearing is clearly noticeable. At each interval between 1975 and 2005, the average number of children born to women aged 30–34 and 35–39 increased, while the average number of children born to women aged 20–24 and 25–29 decreased, leading to a much greater dispersion of births across different age groups of mothers. The distribution of births peaks in the 25–29 age range, but in 2005 the 30–34 age range was equally important.

Historically, completed cohort fertility (CCF) in Germany has been fairly low, well below the replacement rate of 2.1 and falling: CCF fell from 1.77 to 1.61 between the 1946–50 cohort and the 1956–60 cohort, and we project that it will fall to around 1.4 children per woman for the 1966–70 cohort, based on their fertility thus far in their lives. This low level of CCF is understandable, given that TFR in West Germany fluctuated around 1.4 children in the 1970s and 1980s, and that TFR in Germany has been below 1.4 since reunification. Women in the 1966–70 cohort have gone through their whole childbearing career in a country with low period fertility rates, and were the women most likely affected by the disruptive transition period after reunification, as they were going through some of their peak years of fertility in the early 1990s. Given less difficult circumstances, future cohorts (beyond those projected in Figure 4.4) may be expected to have slightly higher CCF than the 1966–70 cohort, *ceteris paribus*.

Overall, analysis of the fertility trends in Germany shows that women in Germany are among the frontrunners in postponing childbearing to older ages, compared to women in other European countries, as the beginning of this postponement trend in the former West Germany (Dorbritz 2008) can be identified in the early 1970s.

Figure 4.5 illustrates the process of postponement and recuperation that reconciles significant changes in the age distribution of motherhood with a declining CCF for the cohorts born between 1941 and 1960. By the age of 25, the women in each successive cohort had had fewer children on average than women in the 1941–45 cohort, and fell slightly further behind by the time that they reached 30 (the 1956–60 cohort had, on average, 0.3 children fewer by the age of 30 than the 1941–45 cohort had had at the same age).

However, German women in more recent cohorts made up for their lower fertility at young ages with increased fertility at older ages and, by the time they had completed their fertility at the age of 50, the women in all cohorts were within 0.1 children per woman of the 1941–45 cohort.

As discussed earlier, the period fertility level of women in Germany has not recovered much in the first decade of the 21st century, with TFR oscillating around 1.3 to 1.4. However, based on the patterns generally seen in Europe, we have reason to expect that period TFR in Germany may pick up in the near future, if we believe that childbearing postponement is the driving factor for the drop in period fertility experienced in that country. If German women follow the trends observed in other countries, such as Sweden or the UK, we can expect that the age-specific fertility rates of women aged 30–39 will continue to rise for some years after those of the women aged 20–24 and 25–29 stabilise. However, this may not represent an increase in quantum fertility: period fertility may rise in the future without an appreciable change in completed fertility as a statistical consequence of postponement stabilising.

Factors influencing fertility in Germany

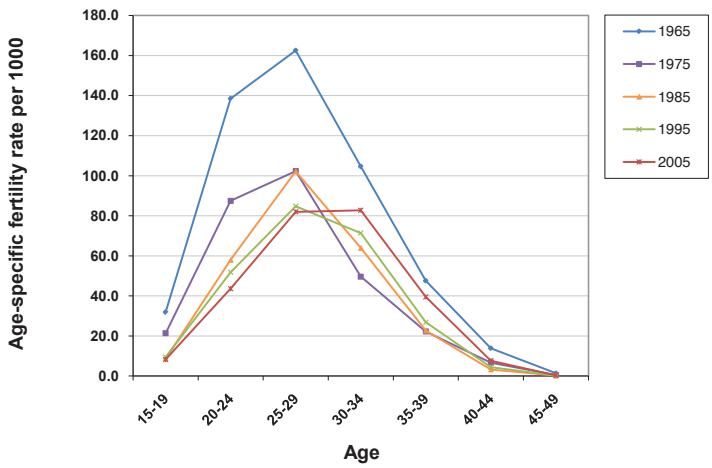
Changes in fertility patterns are partly a result of changing societal norms and values

Analysis of fertility trends and intentions in Germany emphasise changes in social norms and values as important factors influencing fertility patterns.

The literature shows that Germany has one of the highest rates of childlessness in the world, and that childlessness has become widely accepted. The results of the Population Policy Acceptance Survey show that people in Germany have very low desired fertility, and this is mostly due to the high share of those who would like to remain childless (Dorbritz 2008; Kotowska et al. 2008). In addition, it is argued that a lower fertility rate in one generation transmits notions of the desirability of the same or even a lower fertility rate to the next generation, creating a self-perpetuating cycle of low fertility (Lutz and Skirbekk 2005).

The high level of childlessness is the result of a polarised situation where there are two distinct groups:

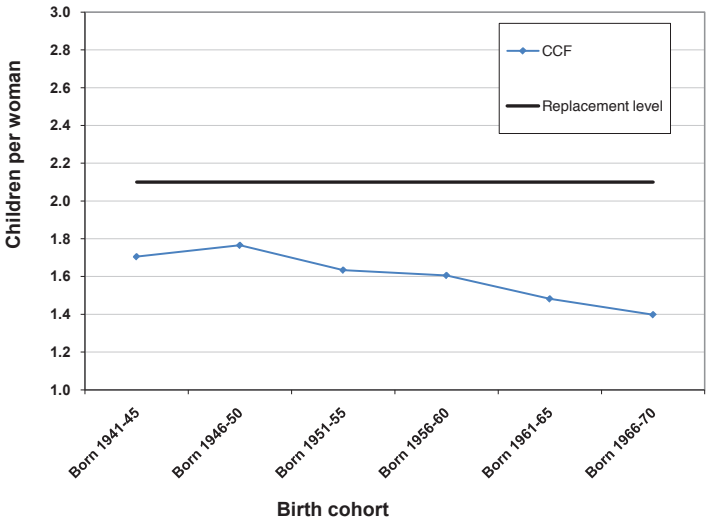
Figure 4.3
Age-specific fertility rates (per 1,000 women) in Germany, 1965–2005



NOTE: United Germany since 1991; Federal Republic of Germany until 1990 (inclusive).

SOURCES: Federal Statistical Office of Germany; Human Mortality Database

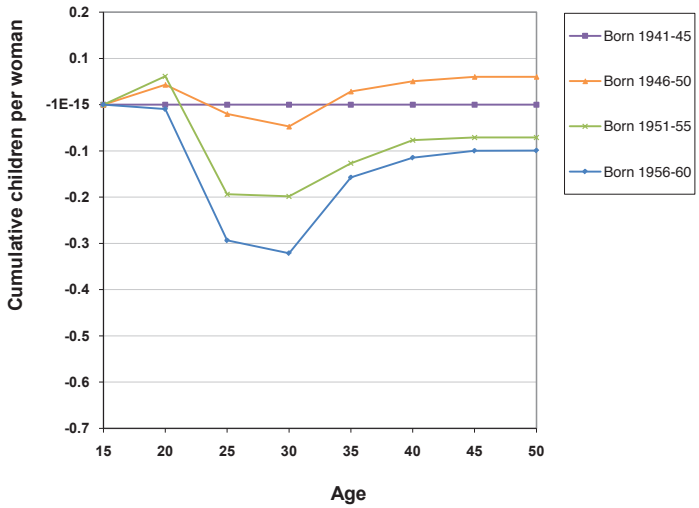
Figure 4.4
Completed cohort fertility in Germany for women born from 1941–70 at five-year intervals



NOTES: (1) United Germany since 1991; Federal Republic of Germany until 1990 (inclusive). (2) Two last data points are authors' projections of CCF, assuming that fertility at age 40–44 years and 45-49 years for these cohorts will remain at the level observed in 2008.

SOURCES: cohorts born 1941–1960, Federal Statistical Office Germany; later cohorts (born 1961–1970), Federal Statistical Office of Germany and authors' estimations; Human Mortality Database

Figure 4.5
Cohort cumulative fertility rates by age in Germany



SOURCES: Federal Statistical Office of Germany; Human Mortality Database

1. those who live with children and are usually married;
2. those who do not have children and are usually not married.

The trend towards individualism in society has spread in Germany, so decisions against family formation are common and the desire to have children is low (Dorbritz 2008).

While there is a consensus about the rising proportion of childless women among researchers examining childlessness in Germany, the exact scale of this phenomenon is unknown (Dorbritz 2008). Although high levels of childlessness have been experienced by earlier cohorts, such as those from 1901–05 and 1925, when around 25–30% of women remained childless, it was mostly as a result of external factors, such as world wars and high loss of the male population. A continuing rise in childlessness is found for women born after 1935 and is most pronounced in the former West Germany. It is estimated that around 21% of the 1960 birth cohort and 29% of the 1966 cohort remain childless in West Germany (Dorbritz 2008). Whereas the childlessness of pre-war cohorts is usually linked to external factors, women in post-war cohorts are seen mostly as making a voluntary decision not to have children. The highest level of childlessness is found among female university graduates, and fluctuates at around 35 to 38% for women in the 1960 and 1966 cohorts. Dorbritz (2008) explains this trend as a consequence of the high opportunity cost of children and the incompatibility of work and family life. He argues that highly educated women who are oriented towards gainful employment have to choose between family and work, and often decide to remain childless. In addition, the rise in childlessness is linked to the decreasing share of families with one child, thus contributing to the polarisation argument (see Schulze and Tyrell 2002; Rendall et al. 2009).

Changing societal attitudes towards marriage

Attitudes towards marriage are changing in Germany. Although marriage is still seen as a precondition for starting a family, the number of marriages contracted in Germany is low, with the figure in 2006 being the lowest since 1950 (Dorbritz 2008). At the same time, the number of children born to unmarried parents has doubled since the beginning of the 1990s. On average, three out of 10 children were born out of wedlock in Germany in 2006. There are still large differences in the proportion of children born out of wedlock in the former German states, with 60% of all children born to unmarried parents in the former East Germany compared with 24% in West Germany. It seems that the differences between these two former German countries is widening rather than converging, and as Dorbritz (2008) argues, if the convergence is to happen, it would be of the West to East German behavioural patterns. Analysis by Mayer and Schulze (2009) of East and West-German women born in 1971 shows that there are widely differing parenthood motives and behaviour between these two populations. West German women perceive West German men as avoiding and delaying parenthood commitments, thus complicating their maternal aspirations while also facing the incompatibility of career and family. In contrast, both East German men and women take parenthood for granted, even under difficult economic circumstances (Mayer and Schulze 2009).

As marriage rates have declined, a broad range of other living arrangements have become more common. An increasing proportion of people in Germany now live on their own, in non-marital cohabitation, in a patchwork family or as a lone parent.

Individual values, norms and goals matter

Within the wider changes in social norms, individual fertility is also influenced by cultural differences and different personal attitudes. The analysis by Heiland et al. (2008), based on West German panel data constructed from the 1988 and 1994–95 waves of the *Familiensurvey* conducted by Familienforschung des Deutschen Jugendinstituts (Family Research of the German Youth Institute), provides insight into the factors that influence childbearing decisions at the individual level. The authors examine fertility intentions and preferences and their stability across an individual's lifetime. They find that up to 50% of respondents report a totally different desired family size across the two survey waves (six to seven years apart). The stability in views between waves is only slightly higher among older individuals. Analysis of the background factors influencing fertility desires and decisions provides some explanation for this considerable variation across respondents and between years. The authors find that women who have had children earlier in their life are more likely to be Catholic, live in rural areas and agree with the statement that women should participate less in the labour market than men. The results of this study also confirm the importance of early influences and social norms: respondents who grew up in a two-parent household and have siblings have a greater desire for a larger family size (Heiland et al. 2008).

Analysis of the survey "Change and Development of Family Life Forms" conducted by Familienforschung des Deutschen Jugendinstituts (Family Research of the German Youth Institute) by Henz (2008) shows that ideational factors play a major role in fertility decisions. Henz examined how different factors contribute to the value placed on children by childless couples in East and West Germany, finding that differences in the division of household work are associated with differences in attitudes towards children and subsequent differences in fertility. In general, women in households with a more patriarchal division of labour had a relatively high first birth rate, whereas couples where gender roles were less traditional had more variation in the rate of first birth, and it largely depended on whether they saw children as important for a fulfilling life.

In addition, low fertility and childbearing at older ages can be explained by the extension of years in education and increasing difficulty in entering the labour market. As a result of these factors, children depend on their parents for longer and this influences fertility behaviour. Honekamp's (2008) analysis of a representative survey of the German population aged 18–44 by the Allensbach Institute shows that people in Germany prefer to complete their education and get some work experience before starting a family. In fact, 83% of parents and 61% of childless people questioned expressed a view that starting a family should not occur until after some years of independence and job security. The survey also shows that for 84% of the respondents, the most important precondition for starting a family is a stable partnership. Moreover, only 25% of German respondents consider Germany to be a child-friendly country (compared with 80% of respondents in France), and German couples often justify their childbearing decisions based on the incompatibility of work and family, and the fear of facing financial problems (Honekamp 2008; Salles et al. 2010).

Reconciling work and family life is difficult for women of all education levels

In the literature, Germany is described as focusing on monetary support for families that represent the traditional male 'breadwinner' model, with clearly defined gender roles and expectations. In this model, men are strongly attached to the labour market, whereas women more often depend on the income of their husband or partner and bear the main responsibility for childrearing. It is argued that the incompatibility of fertility and participation in the labour market leads to a demographic dilemma, and that women under pressure to choose between work and family life often decide not to have children (Dorbritz 2008; Dudel 2009).

The incompatibility between career and parenthood for women is described in the literature as an opportunity cost of children. Typically, the higher the education level of women, the higher the opportunity cost expressed as a loss of potential income and human capital accumulation, although for some countries an opposite pattern has been found (see Chapter 3 for more discussion on opportunity cost). Contrary to the opportunity cost theory, research by Klein and Eckhard (2007) based on the *Familiensurvey* shows that there are no significant differences in the opportunity cost for women with different education levels. The

authors find that the level of incompatibility between career and motherhood in Germany is similar for highly educated women and those with a lower level of formal education.

A similar conclusion is reached by Köppen (2006), using data from the *Familiensurvey*. Köppen compared the transition to second births in France and the current geographical area of the former West Germany, finding that second-birth risks are higher for highly educated women than for women with lower education levels in both countries. Examining this issue in more detail, Köppen shows that after controlling for the partner's education level, this positive effect weakens in West Germany and remains unchanged in France. She concludes that work and family life are more compatible in France, and that highly educated women have more opportunities to turn their education into employment and income. This is not the case for West German women, who often have to choose between work and motherhood as two exclusive life options. Köppen (2006) concludes that the partner's earning potential has a positive effect, and is the key factor influencing the fertility behaviour of highly educated women in West Germany.

Policy efforts and their impacts on fertility

Some changes in family policies have been introduced recently (as discussed later in this chapter); nevertheless, family policy in Germany remains oriented towards the male 'breadwinner' model. Analysis of German data shows that the desired and actual number of children has become very low, and that German family policy is considered to be a failure in terms of its influence on fertility (Dorbritz 2008; Honekamp 2008). The literature also shows that the German government spent about €185 billion on measures to support families in 2000, which accounts for 2.96% of gross domestic product (GDP). In comparison, expenditure on families in France is lower than in Germany and accounted for 2.74% of GDP in 2000. Yet the fertility levels in these two countries are completely different, with TFR in Germany being one of the lowest in Europe, and in France being one of the highest.

Honekamp (2008) shows that the German joint taxation system, which allows the total income for married couples to be split between them and thus entails large marginal tax rates for women who usually earn less than their partners, may encourage women not to participate in the labour market. At the same time, the inflexibility of childcare provision makes it difficult for women with young children to take up employment.

Analysis of the net cost of childcare in 24 countries around the world shows that German parents have the lowest costs, which makes it surprising that fertility and female labour force participation rates in Germany are lower than, for example, in France, where parents pay more than twice as much for childcare (Immervoll and Barber 2005). However, when examining the actual availability of childcare provision, Honekamp (2008) shows that in Germany it is very inflexible and ranks among the poorest in the EU countries. Many childcare institutions have very limited opening hours, and the parents of pre-school age children are only subsidised for three hours' care per day. Childcare provision for children up to the age of three is also limited. The situation does not improve much when children reach the compulsory education age, as they attend *Halbtagsschulen* (half-day schools), which usually finish between 1pm and 2pm. The short hours that children spend in childcare and educational institutions mean that it is extremely difficult for a woman with children to find employment, as often even a part-time job is not feasible (Köppen 2006). Moreover, the incompatibility between family and work is influenced by attitudes to childcare. While only 7% of German women would find it appropriate to leave a child under the age of one in an external childcare centre, 62% of French women consider it acceptable (Köppen 2006; Honekamp 2008). Salles et al. (2010) view attitudes to the use of childcare as equally important to access to childcare, interlinking the effect of policies with social attitudes. The authors conclude that while policy changes do not affect fertility decisions in the short term, as long as external childcare is not seen as an acceptable option, policy does have an impact on childcare attitudes in the long term (Salles et al. 2010).

In recent years, discussions regarding population-oriented policy have become more common, and the goal of 'implementable desirable fertility' has been articulated more clearly. In 2004, the Department for Families, Elderly, Women and Youth (Bundesministerium für Familie, Senioren, Frauen and Jugend) expressed a reorientation in policy, saying that:

> sustainable, population-orientated family policy does not mean that people are to be persuaded to want children. Rather, it is to help people to achieve their desired fertility with the aid of better infrastructures, accompanied by a newly-centred financial promotion and by a family-friendly corporate culture. (cited in Dorbritz 2008: 587)

The aims of the sustainable family policy include an increase in the birth rate, together with promotion of female employment and greater involvement of mothers in working life in order to alleviate the poverty of families and children. This has been called a paradigm shift in German policymaking, as the new policy model aspires to improve women's ability to reconcile childbearing and work, and at the same time, to break up traditional gender-specific role attributions (Dorbritz 2008; Henninger et al. 2008).

The new family policy was converted into concrete reform measures in 2005. First, the federal government agreed to provide additional funding to local government (*Länder*), which are the main childcare providers, if they expanded their facilities to provide places for every child under three years old. As Henninger et al. conclude, "while this is a considerable improvement, the details of the implementation are not clear yet" (2008: 294). Second, a new income replacement parenting benefit was introduced in 2007, with two additional months for the partner. Again, while the new parental benefit is a way to increase equality in childcare between men and women, it is unlikely that it will lead to more egalitarian participation of women and men in caring duties. Nevertheless, the new income-dependent parenting benefit provides incentives for a dual-earner model, as the level of payment is higher for families of two working adults and lower for parents who did not work before having a child. In addition, the benefit aims at greater labour market participation by mothers, as it is paid for a limited time and thus provides an incentive to return to work sooner (Henninger et al. 2008; Honekamp 2008). Analysis of Henninger et al. (2008) shows that, while these new policy objectives offer better opportunities for highly qualified parents, they might lead to greater social inequalities between families and, more specifically, mothers.

Some authors suggest that family policies aimed at increasing fertility are only effective when they aim to influence demographic and socio-economic factors. In Germany, key demographic factors behind the low birth rates are the postponement of childbearing and the polarisation of attitudes and intentions to have children. Similarly important is labour force participation opportunities for women and hence employment related policies. Therefore, as Prskawetz et al. (2006) conclude, it is important that family policy in Germany responds to these key challenges and policymaking evolves in this direction.

Conclusion

As mentioned previously, the fertility rate in Germany is low. Despite large state support in the form of family policies, TFR in Germany has oscillated around 1.3–1.4 during the first decade of the 21st century. Although some differences still exist in fertility behaviour between the former East and West German populations, in 2008 TFR in both countries was at a similar low level. The lack of recovery in fertility among women in Germany is mostly influenced by a continuing decline in fertility among younger women (age groups below 30). The fertility of older women (aged 30–34 and 35–39 in particular) has been increasing for some time now, and we can expect it to continue to rise for some years to come. At present, the decrease in the number of births to younger mothers cancels out the increase in births to older mothers, hence no real change in the TFR level has been observed.

The low fertility in Germany is explained by a combination of interlinked factors. The literature suggests that the prevalence of the male 'breadwinner' model and inflexible childcare provision make it difficult for women to combine work and family duties. Changes in societal values and a wide acceptance of childlessness also contribute to the low number of children. While differences in women's educational level do not appear to be an important factor in childbearing behaviour, men's level of education as a proxy for potential earnings plays a crucial role in fertility decisions.

Recent policy developments and their impact on fertility are yet to be analysed, but the literature suggests an important paradigm shift in family policies in Germany, with new policies having the direct objective of raising the birth rate and helping to reconcile work and family life.

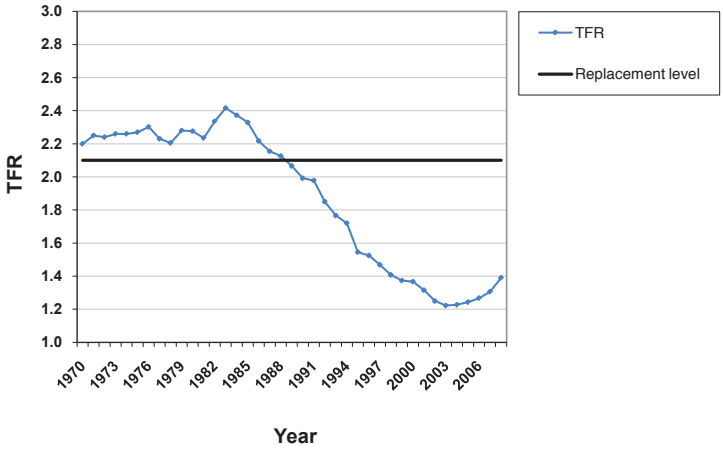
Chapter 5 Case study: Poland

The changing fertility trends in Poland provide researchers with the opportunity to explore policy and demography. Some government initiatives resulted in a drop in fertility rate in the 1950s and early 1960s, whereas pro-natalist family policies in the 1970s and 1980s helped the total fertility rate (TFR) to stabilise above replacement level. The fertility level declined slowly from the 1960s, but remained above the replacement level of 2.1 children per woman until the late 1980s. In the 1990s, during the economic transition from a planned to a free market economy, a rapid decrease in fertility levels was experienced. As summarised by Grant et al. (2004), this decrease is explained by three main interlinked factors. First, economic transition brought many socio-economic consequences, such as an increase in unemployment, job insecurity, poverty, privatisation of family services and cuts in social spending. Second, Western European ideas, including the fertility pattern of fewer children, spread widely in Poland and other former communist countries. Finally, major policy changes and reduction in family benefits occurred, possibly also disincentivising childbearing (Grant et al. 2004).

Fertility trends in Poland

Although period fertility in Poland had been decreasing since the early 1980s, it was not until 1989 that it fell below the 2.1 replacement level, and TFR has never reached replacement since then. The lowest recorded TFR in Poland was just over 1.2 (1.22 in 2003); it has since increased slightly to just below 1.4 (1.39 in 2008). Thus Poland has changed from a high-fertility country to having one of the lowest TFR levels in Europe in just 15 years. Recently, a small recovery in fertility rates has been recorded in Poland, with TRF increasing every year from 2003 onwards (see Figure 5.1).

Figure 5.1
Trend over time in total fertility rate in Poland, 1970–2008

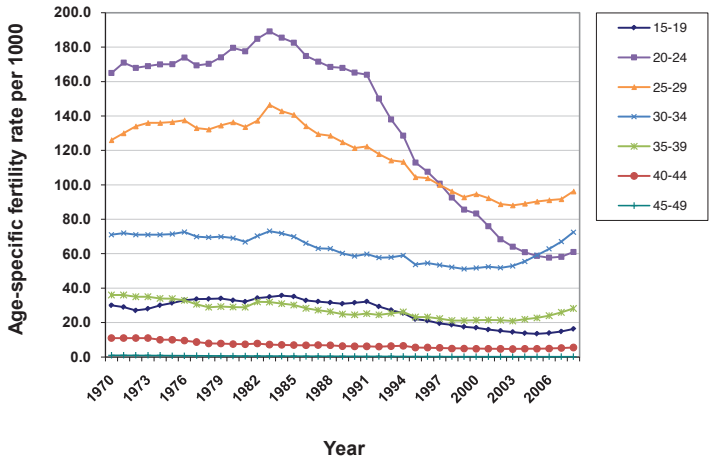


SOURCE: Central Statistical Office of Poland (Główny Urząd Statystyczny)

The decrease in fertility levels can be expressed as the proportion of first births to the total number of births in a particular year. In 2005, first births constituted 51% of all live births (55% in urban and 46% in rural areas), a significant increase of 13% compared with 1989 data (Kotowska et al. 2008). The likelihood of having a second child and a child of a higher order has decreased significantly over the analysed period.

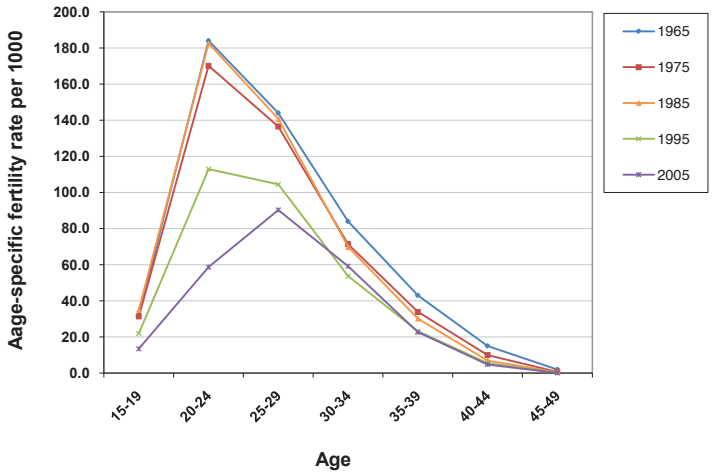
After decades of continuing decline, period fertility in Poland has recovered slightly since 2003. As Figure 5.2 shows, fertility at ages 15–19, 20–24 and 25–29 stabilised (and even increased slightly) in the 2000s, and fertility at ages 30–34 and 35–39 has increased since 2003, after being flat in the prior decade. The recent increases in fertility at older ages may reflect recuperation of previously postponed fertility: in particular, it is notable that women aged 20–24 had a precipitous drop in fertility in the early 1990s (during the economic transition years), and the same cohorts of

Figure 5.2
Trends over time in age-specific fertility rates (per 1,000 women) in Poland, 1970–2008



SOURCE: Central Statistical Office of Poland

Figure 5.3
Age-specific fertility rates (per 1,000 women) in Poland, 1965–2005



SOURCE: Central Statistical Office of Poland

women had increased fertility in the early 2000s when they were in the 30–34 age range. Recent recoveries in fertility rates at younger ages may indicate that the trend in postponement appears not to be abating (at least not in the mean age of motherhood), so it may reflect a quantum effect. There has been little change in fertility in the 40+ age groups, and they currently play a very small role in aggregate fertility.

The different trends in age-specific rates have led to a change in the age distribution of motherhood within Poland, combining an overall decline in fertility with an increase in the importance of older mothers. As shown in Figure 5.3, from 1965–2005 the number of children born to women in each age group tended to drop every decade. In fact, until the recent increase, the only exception was women from the 1985 cohort. In 2005, the fertility rate for women aged 20–24 years was much lower than it was for the same age group in the preceding decade. For women aged 25–29, the fertility rate is also lower, however the gap in the fertility rate between 1995 and 2005 is smaller than for the younger age groups. For women aged over 35, the fertility rate has remained at a fairly constant level over the last few years. In 2005, only women aged 30–34 had a higher fertility rate than women in the same age group in 1995. Therefore, we can say that the recovery in fertility rates in Poland over the last few years can be partly attributed at least to a rise in the fertility of women in their thirties.

Traditionally, the distribution of births peaked in the 20–24 age group, with the 25–29 age group significantly higher than the other groups, but clearly below those aged 20–24. The sharp decline in 20–24 age group fertility and more moderate decline in 25–29 age group fertility made the two groups almost equally important in 1995, and by 2005 the peak distribution of births had clearly moved to the 25–29 range, with the 20–24 and 30–34-year-olds roughly level in second place. This corresponds to a shift to later childbearing.

The trend of increasing older motherhood is reflected by the rising female mean age at first childbirth. The mean age of birth for the first child did not change much before the mid-1990s and was around 23.5 years. Then this mean began to increase, and in 2008 women were on average aged 26 when they gave birth to their first child. The average female age at childbirth (across all birth orders) also rose over the analysed period, and in 2008 the average age of childbearing in Poland was 28.2 years. Despite these increases, the age of birth (first birth and subsequent births) in Poland is still lower than in other European countries.

Completed fertility rates (CFR) in Poland (Figure 5.4) have been fairly constant – and above replacement rate – for the cohorts who most recently completed their childbearing years (i.e. those women born prior to 1961). However, those women went through their peak fertility years prior to the disruption of the post-communist

transition. The cohorts that were affected by this disruption during their peak fertility years are projected to see a significant drop in completed fertility, with the 1961–65 birth cohort dropping below replacement rate, and the 1966–70 cohort falling well below two children per woman.

Cumulative fertility rates (Figure 5.5) do not show dramatic differences between cohorts: the later cohorts fall somewhat behind the 1941–45 cohort in their teens and early twenties, catch up a certain amount by the age of 30, but then fall slightly further back in the later childbearing years. Nevertheless, the differences between cohorts in Poland are relatively small, corresponding to the relatively stable CFRs for women born prior to 1961.

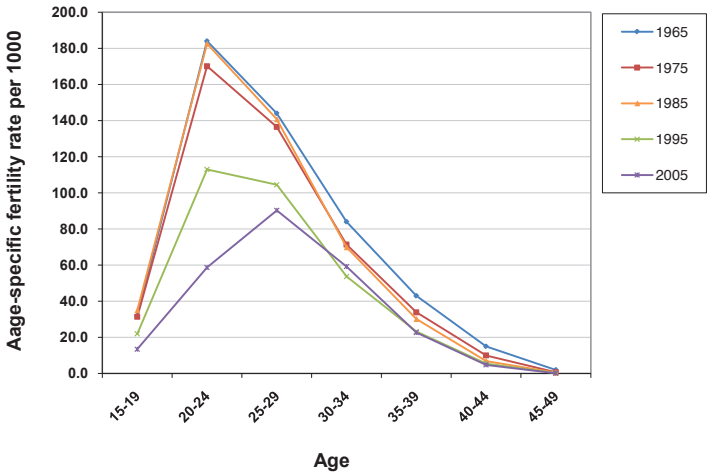
Aggregate national fertility trends mask significant historic differences between urban and rural fertility

Women living in urban and rural areas in Poland have different fertility patterns, which can be explained by the different socio-economic characteristics of the two groups. The rural population has lower levels of education, more traditional cultural and religious norms and tend to live close to other family members, such as grandparents, who can provide childcare support (Ścibek 2004). The rural population still constitutes a large share of the total Polish population (around 38% in 2008; the EU average is around 25%) and fertility trends in rural areas tend to follow patterns previously seen in urban areas. Therefore, in order to understand population trends, it is important to uncover the differences between these two populations (Kotowska et al. 2008).

Traditionally, rural families tended to be larger than those in urban areas, although this difference in family size has narrowed over time, from more than one child per woman in the 1960s, down to just over 0.2 children per woman in 2008. The TFR of urban women began to decrease rapidly in the 1960s, and from 1963 onwards it was below replacement level. As Central Statistical Office fertility data show, the relatively high fertility of women in rural areas was mainly responsible for keeping overall TFR above 2.1 until the late 1980s. The lowest TFR for urban women was recorded in 2003, at just 1.1 children per woman, whereas the lowest TFR for rural women was observed in 2005, at 1.39.

In addition, there are differences in the timing of childbearing between urban and rural women. Until the beginning of the 21st century, the highest fertility age for urban women was 25–29 years; since 2000, fertility in the age group 30–34 has been increasing. The fertility behaviour of rural women follows the trends observed for urban women a few years later, and is now demonstrating the shift to older childbearing ages and maxi-

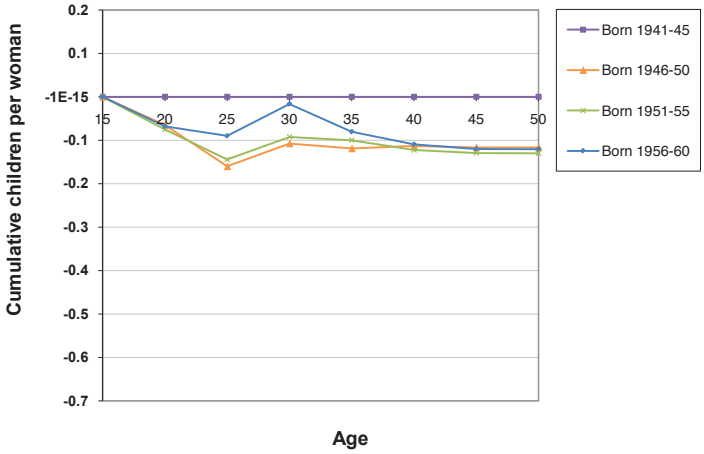
Figure 5.4
Completed cohort fertility in Poland for women born from 1941–70 at five-year intervals



NOTE: Two last data points are the authors' projections of CCF, assuming that fertility at ages 40–44 years and 45–49 years for these cohorts will remain at the level observed in 2008.

SOURCE: Central Statistical Office of Poland

Figure 5.5
Cohort cumulative fertility rates by age in Poland



SOURCE: Central Statistical Office of Poland

mum fertility in the 25–29 age group. Although the behaviour of women in rural areas is converging with the behaviour of women from urban areas – as expressed by age at first birth and number of children – significant differences still remain.

Factors influencing fertility in Poland

Marriage is on the decline, more children born out of wedlock

Traditionally, most children are born to married couples in Poland, therefore a drop in the number of marriages and late progression to marriage are important factors for the decline in fertility rates in Poland. From the post-war period until the beginning of the 1990s, marriage patterns by age remained stable, with marriages contracted early (persons aged 20–24). The highest annual numbers of marriages (around 320,000 per year) were recorded in the late 1970s and early 1980s, when the post-war baby boomers were entering their early adulthood years. Since then, the number of marriages has been decreasing: from 1993–2005, the total number of marriages oscillated around 200,000 per year (the lowest number of marriages was recorded in 2004, at 191,800). In the last five years, the number of marriages has increased again, as the population born during the second baby boom period of the early 1980s enters their adulthood years. However, as Central Statistical Office population figures show, with 257,700 marriages in 2008, the total number of marriages per year is still much lower that it was in the late 1970s.

The declining propensity to marry, along with marriage postponement, has an impact on age at time of marriage. A significant decline in contracted marriages is reported for the 20–24 age groups for both women and men, and in the 25–29 age group for men. This is in parallel with the growing number of marriages among women and men aged 30–34. Along with postponement of marriage, an increase in the mean age at first marriage has been reported. Between 1989 and 2004, the mean age at first marriage increased from 22.8 to 24.7 for women, and from 25.1 to 26.9 for men (Kotowska et al. 2008; Central Statistical Office of Poland, 2010).

The decline in the number of marriages was partly compensated by an increase in the number of cohabiting couples in Poland. Although studies based on official data point to a low incidence of non-marital unions in Poland, at around 2% (Fihel 2005; Kotowska et al. 2008), more recent studies based on data on partnership histories show that cohabitation is becoming a popular relationship option, particularly for the younger generations (Matysiak 2009). Analysis of the 2004–06 data by Matysiak (2009) shows that over this period, cohabitation constituted about one-third of all new first union entries. Cohabitation is more popular among groups with lower socio-economic status, but in recent years there has been a clear increase in cohabitation among the highly educated. Although the popularity of cohabitation is still much lower in Poland than in other European counties, there is a growing trend in the number of cohabiting couples. However, Poland's family policy has not adapted to this social change: current legal arrangements exclude non-married couples (Szukalski 2007).

Poland is often characterised by low levels of divorce. As official Central Statistical Office data show, although the number of divorces in Poland has nearly doubled in the last 20 years, from around 40,000 per year in the early 1990s to more than 65,000 in 2008, marriage dissolution is still not very widespread in Poland.

The decrease in number of marriages and increase in cohabitation and divorce rate could affect fertility trends in Poland. Out-of-wedlock births were relatively uncommon until recently, but from the early 1990s, a systematic rise in non-marital births is reported. The percentage of out-of-wedlock births remained at around 5% from 1960–90 and increased rapidly in the subsequent two decades. In 2008, 19.9% of all children were born to unmarried parents. Statistical data show that there are differences in the pattern of non-marital births between urban and rural areas: in 2008, 22.7% and 15.8% of all live births in urban and rural areas, respectively, were to parents in a non-formal relationship.

Intended fertility remains at replacement level, social norms reinforce relatively early motherhood

Despite falling fertility rates, intended fertility remains above replacement level and voluntary childlessness remains relatively low. On average, Polish people have high intentions to have at least one child, and voluntary childlessness is relatively

low when compared with other European countries. Depending on the survey, between 1.6% (Eurobarometer survey 2006) and 13.5% (Population Policy Acceptance Survey) of Polish respondents intend to remain childless (both surveys are reported in Kotowska et al. 2008).[20]

Results from the Population Policy Acceptance Survey show a high level of uncertainty about fertility intentions, with 33% of childless women and 40% of childless men in Poland undecided about their childbearing plans (Kotowska et al. 2008). While some surveys show that the average number of expected children for childless Polish females and males is below replacement level,[21] the Eurobarometer data of childless families and families with children show that ideal family size in Poland is still above replacement level. In 2006, both mean general and mean personal ideal numbers of children were reported to be around 2.3 for both males and females (Testa 2006).

As mentioned previously, age at first birth remains lower in Poland than in many other European Union (EU) countries. Mynarska (2009) argues that cultural norms regarding the age at which women have their first child play an important role in sustaining the pattern of relatively early motherhood. In her study, she investigated young adults' perception of age in relation to their fertility and found that age is indeed a salient and universal dimension that structures and regulates individual childbearing plans. For most respondents, age 30 is the most frequently quoted deadline for having a first child, with biological and health aspects used to explain this deadline. Mynarska concludes that "it is not the biological clock itself but rather the culturally defined and socially sanctioned prescriptions and proscriptions which define at what age one should enter motherhood" (2009: 18). Therefore, cultural and societal norms could explain why women's mean age at first birth has not increased as steeply as we might have expected. Analysis of the statistical data shows that the shift in women's mean age at first birth is mostly due to a concentration of first births in the 25–29 age group and for women aged 30–33, with a marginal share of births to mothers older than 34 (Mynarska 2009; Central Statistical Office of Poland, 2010).

Unstable employment during transition hampered fertility behaviour

The literature on fertility trends in Poland highlights the unstable labour market situation as an important factor. The Polish economy under socialism was based on labour-intensive sectors with inflexible employment structures. Unemployment was marginal and workers enjoyed a high level of job security. Women were actively encouraged to enter the labour market and to re-enter it after a period of childbearing with minimal or no loss of wages. State provision of institutional childcare was comprehensive and relatively inexpensive. Access to women's education and reproductive rights was also extended. However, gender equality in the workplace did not extend to greater gender equality in families, and women were still responsible for the majority of childcare and domestic duties. Thus Poland pre-1989 is characterised as having a "dual earner model-double burden of females" (Kotowska 2007: 15; Kotowska et al. 2008; Mishtal 2009).

Economic changes during the transition period, with soaring unemployment and job insecurity, had profound consequences for female employment. Employment was no longer guaranteed, and policies encouraging women's entry into paid employment were no longer a priority. At the same time, maternity leave and subsidies for childcare were substantially reduced and responsibility for providing care was shifted onto families. As summarised by Kotowska et al., the fertility decline in Poland was "a response to profound societal and labour market changes" (2008: 795). Hence the main driving forces behind family-related behaviour are linked to institutional changes. First, the state no longer plays a main role as employer and provider of services and

[20] There are some important differences in the fertility intentions of Polish men and women. According to the Population Policy Acceptance Survey, 8.5% of childless women aged 18–39 and 13.5% of childless men at that age declared that they intended to remain childless. Results of the Eurobarometer 2006 survey show that only 1.6% of childless women aged 15–39 and 3.4% of men at that age declared a preference to remain childless.

[21] According to Population Policy Acceptance Survey, the average number of children expected by childless respondents aged 20–40 was very low at 1.05 in Poland. The results from the survey "Changes in Reproductive Behaviours in Poland and Their Consequences for Family and Household Formation and Dissolution", carried out in the urban population in 2006, also show below-replacement intended number of children (around 1.5) expected by the young cohort (below 30 years of age). Both studies are cited in Kotowska et al. (2008).

social benefits. Second, conditions of employment in a competitive labour market, and a large increase in the number of potential workers as the children of baby boomers reached working age in the 1990s, made unemployment a persistent risk for large groups of people. These changes led to unstable circumstances for many households, and reconciling work and family has become more difficult (Kotowska et al. 2008). While there have been major upheavals in the balance of the state and economy, labour market and family policies in Poland have failed to adjust to ongoing socio-economic developments, and "work arrangements have remained very rigid" (Matysiak and Vignoli 2009: 8). Researchers have argued that these factors, together with the spread of Western European values, have played a significant role in declining fertility in Poland (Grant et al. 2004; Bradatan and Firebaugh 2007; Kotowska et al. 2008).

Female adjustments to new labour market conditions reduce and/or postpone fertility

Labour force participation, employment and fertility are interrelated in Poland: high unemployment is seen as one of the factors that reduce the propensity to start a family and have a child, but falling fertility is also seen as an adjustment strategy for dealing with difficult economic circumstances (Kotowska et al. 2008; Matysiak and Vignoli 2009; Mishtal 2009). During the first decade of the 21st century, female labour force participation has been consistently lower in Poland than the EU 27 average. According to Eurostat data, the female labour force participation rate was 52.8% in 2009 compared with an EU 27 average of 58.6% (Eurostat 2010). In neoclassical Becker economic analysis, female labour force participation and fertility tend to be negatively correlated, but in post-transition Poland, the place of women in the labour force has declined and fertility has declined at the same time. This can be explained with reference to other socio-economic changes in Poland. In the newly-competitive labour market, women face various forms of discrimination and, as work–family reconciliation has become more difficult, the opportunity cost of having children has become higher. In order to avoid even greater declines in labour force participation, women may be reducing fertility to compensate (Kotowska et al. 2008).

Discrimination in the labour force has been investigated by Mishtal (2009), who found that the majority of women participating in the study experienced gender discrimination in employment, or knew women who had. Respondents reported women who returned to work following maternity or childrearing leave being fired, and provided examples of illegal practices such as asking female job applicants about their fertility plans and whether they have small children. In addition, this research found that employers often require women to sign a contract pledging not to get pregnant for a few years, as a contingency for their employment. As Mishtal (2009) found, although these practices are illegal, employers use a number of legal loopholes. This discrimination may affect fertility directly or indirectly, causing women to postpone fertility as a condition of work, or making women reluctant to leave the labour force for childrearing, for fear of not being able to get a job in the future.

The increasing difficulty of work and family reconciliation in Poland has been demonstrated by numerous authors, and in this respect Poland is becoming similar to Southern European countries. According to Kotowska et al. (2008), the presence of children – especially small children – has a negative impact on mothers' employment in Poland. According to the Labour Force Survey conducted in 2006 (*Badanie Aktywności Ekonomicznej Ludności*, cited in Głogosz 2007), care and domestic duties were the main cause of economic inactivity for 1.47 million people (including 1.37 million women) in Poland. Opinion polls in Poland also confirm that difficulties in reconciling family and work duties are the major factor influencing participation in employment. A survey conducted in 2006, which was dedicated to the issue of family policy and labour market situation of women with young children, found that inadequate work–life balance policies were the main factor for not being in employment for more than half of the surveyed population. A lack of affordable and good-quality institutional childcare provision was seen by respondents as a major factor contributing to economic inactivity (Boguszewski 2006). With increasing incompatibility between work and family life, some women face a trade-off between forgoing employment and postponing or forgoing childbearing.

In addition, postponement in fertility has occurred as a result of rising participation in

higher education, another adjustment that women (and young people in general) are making to meet the new labour market conditions. Educational attainment has increased considerably in Poland over recent decades, with a particularly rapid increase in participation in tertiary education. The number of university students reached nearly 2 million in the 2007–08 academic year – four times higher than in 1989. According to Central Statistical Office data, the highest growth in the student population occurred during the 1990s, from 404,000 students in 1990–91 to 1,432,000 in 1999–2000. Continuous growth was reported up until 2005–06, when the student population reached 1,954,000. Since then, the number of students has declined slowly, reaching 1,937,000 in 2007–08. Overall, women constituted around 56% of all students in the first decade of the 21st century. Spending more time in education "contributes remarkably to postponement of marriage and parenthood" (Kotowska et al. 2008: 830).

Number of Polish children born abroad impacted on total births in Poland, but its effect on TFR is unknown

Following EU accession in 2004, Poland experienced a large out-migration to other EU Member States. The statistical data gathered by national statistical authorities in Germany, Ireland, Sweden and the UK – the most popular migration destination countries for Polish migrants – show that births to Polish-born mothers constitute a significant and growing proportion of all births in these countries. In 2008, Polish-born mothers gave birth to 30,477 children in these Member States alone, and 18,034 of these children also had a Polish-born father. This compares with 416,437 children born in Poland in 2008.

It is impossible to say how this migration has affected Poland's TFR, as accurate data is not available on the age distribution of the women that emigrated to those countries. As TFR is calculated on a per-woman basis, it is possible that TFR in Poland has been negatively affected (if the women who emigrated are more fertile than their peers of the same age), positively affected (if the women who emigrated were less fertile than their peers) or not affected at all (if the women who emigrated were of average fertility). However, regardless of TFR, it is almost certain that emigration has led, in absolute terms, to fewer children being born in Poland in recent years than would have been in the absence of migration, through the removal from the resident population of substantial numbers of women of childbearing age. This may be important for the population structure of Poland, if the children born to Polish parents abroad remain abroad, or it may be a meaningless distinction if those children return to Poland in the future. Similarly, the total effect of emigration on population structure and population ageing depends on whether the parents return to Poland in the future after a temporary period working abroad, or whether they choose to emigrate permanently. These details will not be known for many years, but the relatively large number of births to Polish mothers abroad is noteworthy, as it means that there is potential for a significant effect on the demography of Poland. Also, the fact that more than one-third of the fathers are not born in Poland suggests that it is likely that many of these children will not return to Poland.

Policy efforts and their impact on fertility

Rising cost of having children and combining employment with childbearing are main factors behind fertility decline

In Poland it is useful to distinguish between policies pre- and post-1989. Whereas the pre-1989 period can be characterised by strong state support for families, support for working mothers and universal cash benefits for families, the post-1989 period is characterised by cuts in social spending and the shift from a universal social model to one supporting low-income families with children. Benefits began to be allocated to more restrictive eligibility criteria, and the majority of family benefits (apart from maternity and childcare benefits) were reduced and became means-tested. The financial value of benefits decreased in real terms (Grant et al. 2004; Kotowska et al. 2008).

Studies on the economic transition and its impact on demographic changes in Central and Eastern European countries found that fertility barriers result from the rising cost of having children, and the difficulty of reconciling work and family life for women in the new labour market. In addition, the traditional family model is weakening, with growing individualism and some cul-

tural changes in the perception of gender roles (Bühler and Frątczak 2004; Kotowska et al. 2008; Mishtal 2009).

Reduction in child benefits and public childcare discouraged women from having children

Mishtal (2009) argues that the dismantling of socialist era family-friendly policies – particularly cash benefits to parents and state-subsidised childcare – is one of the main reasons for the decline in fertility in Poland. She found that lack of state-subsidised childcare in the form of infant and preschool care centres acts as an obstacle for many families, and in particular for women to be able to combine work and motherhood. Similar findings are reported in Lange and Frątczak's (2009) study on daycare services in Poland: the authors conclude that the decline in the availability of childcare provision could have had an impact on women's participation in paid employment. In addition, issues such the lack of flexibility in childcare facility opening hours (i.e. not adjusted to the varied needs of the parents), and the high level of fees charged for these services, are seen as factors hindering the accessibility and affordability of institutional childcare in Poland.

The negative effects on fertility of these policy changes may be mitigated by the presence of informal social networks. A study by Bühler and Frątczak (2004) finds that there is a positive relationship between the number of supportive exchange relationships (such as help from other family members and friends) and intentions to have a second child in Poland. Nevertheless, while many other countries have increased their investment in public childcare in order to make motherhood and employment more compatible, family policy in Poland has moved in the opposite direction in the two decades since 1989, and this is likely to have contributed to the steep decline in fertility.

Fertility has declined despite restriction in access to family planning

Paradoxically, the decline in fertility in Poland occurred at the time when access to family planning and contraceptives became restricted. Abortion policy, which was quite liberal under socialism, changed significantly in the 1990s and is now one of the most stringent in the EU. Nevertheless, despite policy restrictions on family planning, the use of contraceptives is widespread and abortion is performed illegally (Henshaw et al. 1999; Frątczak and Ptak-Chmielewska 2009; Mishtal 2009).

Low fertility is seen as a policy challenge: recent changes aim to increase fertility levels

Until recently, low fertility has not been formally recognised as one of the challenges and priorities for social policy in Poland. Recent years have brought some changes in this respect, and family policies aimed at increasing fertility have been introduced. These have included extending maternity leave, introducing paternal leave and some efforts to help with work–family reconciliation (Kotowska et al. 2008). However, as some academics and social policy analysts suggest, there is an even stronger demand for a more systematic and multifaceted government intervention if fertility in Poland is to increase in the near future (Balcerzak-Paradowska 2007; Golinowska 2007; Kotowska 2007; Szukalski 2007).

Conclusion

As mentioned previously, compared with other European countries, TFR remains very low in Poland, at just under 1.4 children per women. A continuous increase in TFR is observed from around 2003; however, the level of this increase is small, at only around 0.2 children per woman (TFR increased from 1.2 to 1.4). Women in Poland are still young mothers relative to women in other EU countries and usually have their first child before reaching 30 years of age. This young age at first birth is explained by a strong attachment to cultural values and social norms. TFR among younger mothers (women aged 20–24 and 25–29) has stabilised since the late 1990s and early 21st century, and from around 2004–05 the women in this age group have experienced a small increase in fertility levels. Older mothers (women aged 30–34 and 35–39) experienced a continuous increase in fertility since the turn of the 21st century.

Although the proportion of married couples is decreasing, more people are cohabiting and more children are born out of wedlock. There is also postponement of marriage, as marriages are contracted on average at older ages. This postponement of marriage has some impact on childbearing in older mothers, as being married is still

highly valued for potential parents. Analysis of the socio-economic factors shows that unstable employment, lack of job security and extended years spent in education are important factors for childbearing intentions and fertility behaviour in Poland. In addition, inconsistency in family policies and the decreasing monetary value of state support are seen as having an impact on fertility trends. Finally, large emigration from Poland post-2004 is one of the causes for a growing number of children being born to Polish mothers in Germany, Ireland, Sweden and the UK. However, as we do not know the relative fertility levels of migrant and non-migrant women, it is difficult to assess the importance of this factor on the fertility rate in Poland.

Chapter 6 Case study: Spain

Spain had one of the highest fertility rates in Europe in the 1960s to 1970s, reaching nearly three children per mother at various points in time. However, in the mid-1970s fertility rates experienced one of the steepest drops in all of Europe, reaching a low of 1.15 children in 1998 (Grant et al. 2004; Delgado et al. 2008). Although the fertility rate has not risen above the replacement level of 2.1 children per woman since 1981, it has seen steady increases since 1998 and now stands at just under 1.5 children per woman.

Spain has gone through a period of rapid social, cultural, political and economic change since the end of the Franco regime in the 1970s. These rapid changes have had far-reaching effects on wider demographic changes (Grant et al. 2004). Under Franco, traditional family values were impressed upon Spanish society, with women in traditional roles as spouses, large families encouraged and contraception prohibited. After Franco, family policies became much more 'hands-off', in part due to a reaction against the more explicit policies introduced during his rule (Flaquer 2000). Grant et al. (2004) considered whether the low fertility rate in Spain post-1975 could be attributed to this lack of family policy or to other contributory factors. They and others found that interrelated social, political, economic and cultural factors contribute to the overall decline in fertility rates in Spain. These include high and persistent unemployment, difficult and fractured labour markets, growing secularisation, shifting marriage patterns and widespread postponement of motherhood. In the face of these pressures, the relative lack of explicit family policy in Spain up until the early 2000s seems only to have compounded the problems. Thus, Grant et al. (2004) conclude that the 'family-focused' welfare society emphasising individual family freedoms (Vidal and Valls 2002), as promoted by Spanish policy, does indeed explain, at least in part, the low fertility rates in Spain compared to other Eureopean Union (EU) countries.

The data presented below and analysed for this case study show that there has been a consistent increase in fertility rates since 1998, especially in women aged 30 and over. This increase seems to coincide with a greater focus on family policy by the Spanish government, alongside a clear shift in the average age of first entry into motherhood. Thus, in this case study we focus on the question of whether the recent increases in fertility rates in Spain, although still low compared to other EU countries, can be attributed to changes in family policy – and if not, what other factors may be contributing.

The following sections will look first at recent trends in fertility in Spain, taking into account data up until 2008. They then discuss recent social, cultural, economic and political trends in Spain with the aim of explaining the observed fertility trends post-1975, particularly over the past decade.

Fertility trends in Spain

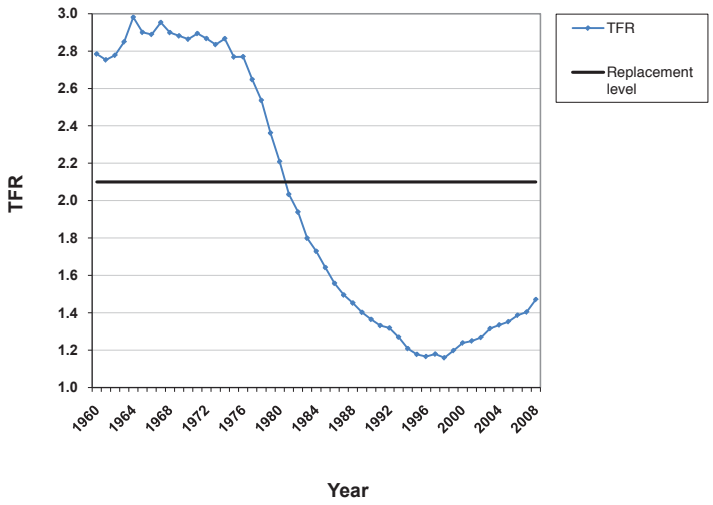
The total fertility rate (TFR) in Spain began to fall in the latter half of the 1970s and reached a low of 1.15 in 1998. Although a similar drop in fertility has been observed across many Western European countries (Grant et al. 2004; Fernández Cordón 2007), it is particularly noticeable in Spain, given the fact that it had one of the highest fertility rates in Europe in the late 1960s and early 1970s. However, TFR has been increasing in recent years and there have been shifts in the pattern of childbearing towards delayed motherhood.

As can be seen in Figure 6.1, the fertility rate fell below the replacement level of 2.1 children per woman in 1981, and continued to decline until the late 1990s. Since 1998, there has been a consis-

tent yearly increase in TFR, with data from 2008 showing a fertility rate of just below 1.5 (1.47).

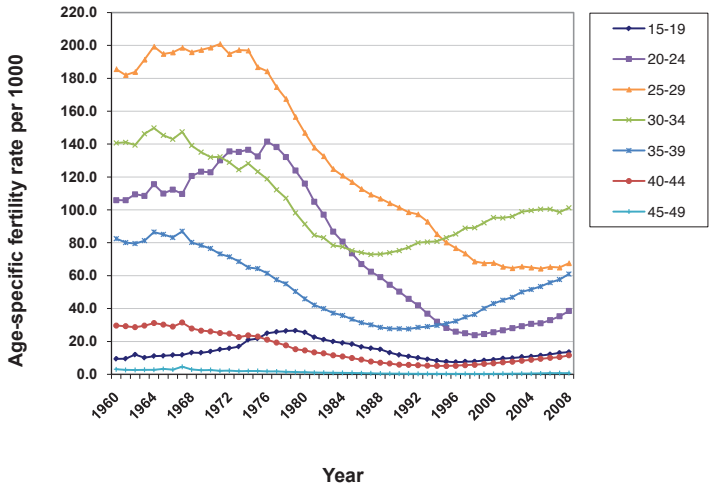
Further analysis of period TFR by age allows us to see what is going on beneath the broader trends. Figure 6.2 shows the period age-specific fertility rates since 1960 for seven different age groups of women. Five out of the seven groups show similar declines in fertility throughout the 1980s and early 1990s. Women in the 20–24 and 25–29 age groups show the steepest decline in fertility rates since the mid-1970s, suggesting that the decline in childbearing of this age group is a major contributor to the overall drop in TFR seen above. Looking at the increase in fertility rates since 1998, it seems that the greatest and most consistent increases are found in women in the 30–34 and 35–39 age groups. Moreover, it is interesting to point out that there has been no increase in the fertility rate of women aged 25–29 over the same time period. Thus, it seems that women in the older age groups are beginning to play a greater role in the Spanish fertility narrative, and that there is a marked shift towards older motherhood.

Figure 6.1
Trend over time in total fertility rate in Spain, 1975–2008



SOURCE: National Statistics Institute of Spain (Instituto Nacional de Estadística)

Figure 6.2
Trends over time in age-specific fertility rates (per 1,000 women) in Spain, 1960–2008



SOURCE: National Statistics Institute of Spain

Further evidence of the changing distribution of births is seen in Figure 6.3. Looking at the period age-specific fertility rates in this way allows us to see more clearly how the different underlying trends in Figure 6.2 are contributing to overall changes in the pattern of childbearing. In 1975, fertility rates peaked within the 25–29 age group, but by 1995 peak fertility rates were shifting to the 30–34 age group. By 2005 the shift was complete, and peak fertility rates were squarely within the latter age group. These data are supported by national statistics from the National Statistics Institute of Spain, which show that in 2002 the mean age of first birth was 29.2, up from 24.9 in 1977 (Matorras et al. 2007). In 2005, the mean age of a mother for any birth was almost 31, which is higher than the EU 15 average (Fernández Cordón 2007).

While period fertility rates can tell us about broad trends, they are only one measure of fertility and should be considered alongside other indicators. Completed cohort fertility (CCF) indicators tend to be more stable measures of fertility, as they measure the completed fertility of a specific cohort of women. The CCFs shown in Figure 6.4 provide a complete picture of changes in childbearing patterns over time for women in successive birth cohorts from 1940–60. These data also show a steady decline in the number of children that women are having, with women in the first birth cohort having an average of 2.5 children, while women born in the last cohort (1956–60) had an average of 1.8 children over their lifetime. This decline in CCF is one of the greatest among the case studies in this report, and suggests that there

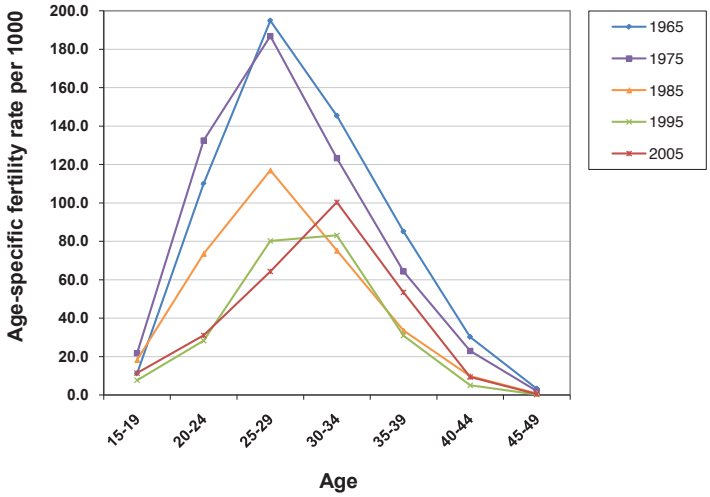
was a real decline in fertility in Spain between the generation born during the Second World War and the generation that reached childbearing age in the 1970s.

Considering the indicators reviewed in the figures above, we might hypothesise that some of the more dramatic decline seen in the period TFR may be attributed to the shift in age at first birth, as well as an overall decline in the average number of children per mother. Alongside the rapid period of decline in TFR, there was a corresponding decrease in first and second-order birth rates. From 1975–95, these rates fell by 40% and 47%, respectively, and the third-order birth rate fell by almost 80% (Delgado et al. 2008). However, since the mid-1990s, there has been a slight rebound in first and second-order birth rates, with the former increasing at a much faster rate than the latter (going from 0.6 in 1995 to 0.736 in 2005, compared to a smaller rise from 0.436 to 0.459 for second-order births over the same timespan). Third and fourth-order birth rates seem to have stabilised somewhat over the past 10 years, hovering around 0.1 and 0.03, respectively. Although this is a drop from levels reached in the 1970s,[22] the levelling off of these figures may be contributing to the upward trend in fertility rates.

The drop-off in later-order births is apparent in Figure 6.5, which shows cumulative fertility (total children per woman) at different ages broken down by cohort and compared to the earliest cohort of women, those born in 1941–45.

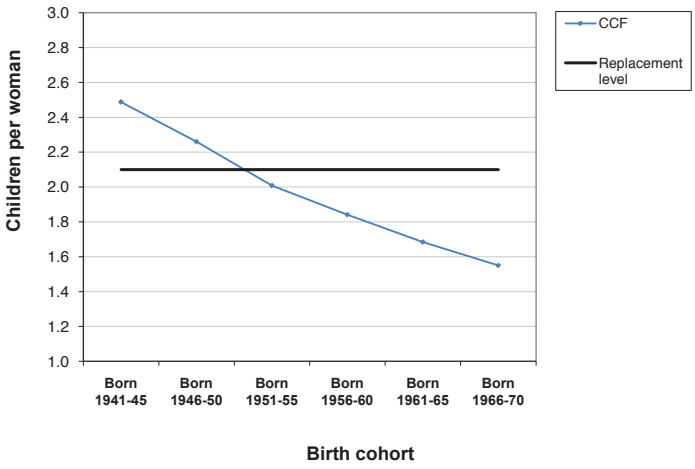
We can see from Figure 6.5 that the more recent cohorts actually had had more children by the time that they were 25 years old than the 1941–45 birth cohort, but by the age of 30 the recent cohorts had fallen behind the fertility of the earlier cohorts and continued to fall further behind at older ages: the 1956–60 cohort had nearly 0.1 more children per woman before the age of 25 than the 1941–45 cohort. However, by the time that the later cohort had completed their fertility at age 50, the average woman had had just over 0.6 fewer children than the women in the earliest cohort. These results largely reflect the rising fertility of 20–24-year-olds in the 1960s and the precipitous drop in fertility of 25–29-year-olds in the 1970s (seen in Figure 6.2). These data dovetail with Delgado et al.'s (2008) analysis of the declining rates of higher order births over the past four decades. Projecting forwards, Fernández Cordón (2007) comments that since previous cohorts did not show recovery of birth rates later in life, there

Figure 6.3
Age-specific fertility rates in Spain (per 1,000 women), 1965–2005



SOURCE: National Statistics Institute of Spain

Figure 6.4
Completed cohort fertility in Spain for women born from 1941–1970 at five-year intervals

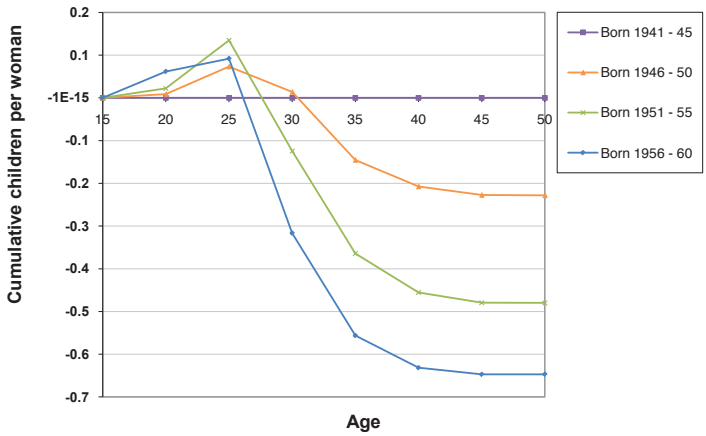


NOTE: Two last data points are the authors' projections of CCF, assuming that fertility at ages 40–44 years and 45–49 years for these cohorts will remain at the level observed in 2008.

SOURCE: National Statistics Institute of Spain

[22] To give a sense of comparison, in 2005, third-order births accounted for 10% of the TFR, compared to 33% in 1975 (Delgado et al. 2008).

Figure 6.5
Cohort cumulative fertility rates by age in Spain



SOURCE: National Statistics Institute of Spain

is little hope that younger cohorts today will show substantial increases in birth rates later in life.

Factors influencing fertility in Spain

Despite the decrease in fertility rates observed over the past 40 years, the data presented above indicate that there has been an upward trend in fertility rates since the late 1990s. Some initial suggestions for the increase include a rise in first-order birth rates among Spanish women, a small contribution of births by foreign-born women (Delgado et al. 2008), and a slowdown in the rate of postponement of childbirth during the 1990s (Fernández Cordón 2000). First, this section will review recent insights into the rapid decline in fertility rates seen from 1975–98. Then, it will look at possible explanations for the recent increase in fertility rates, before moving to a discussion in the next section about policy efforts and their impact on fertility.

Many related factors are thought to have influenced the decline in fertility in Spain, a number of which are reviewed in the 2004 report by Grant et al. and are linked to the period of rapid social, political and cultural transition since the mid-1970s and the end of the Franco regime (Grant et al. 2004). Most commentators and analysts agree that the following factors all played a role the decline, (Gutierrez-Domenech 2002; Columbia University 2004; Adsera 2006a, 2006b; Nimwegen et al. 2006; Brodmann et al. 2007; Cooke 2008; Delgado et al. 2008):

- changing cultural patterns, including increasing secularisation of society, changing marriage patterns and 'protracted adulthood';
- difficult socio-economic conditions, including high unemployment and shifting educational and labour market conditions for women;
- low rates of non-marital childbearing and low teen fertility; and
- a lack of explicit family policy at the state level until the late 1990s.

The subsequent upswing in fertility trends is attributed largely to increased immigration and slowing rates of childbearing postponement (these will be discussed further in the sections below).

Growing secularisation of society and changing patterns in marriage behaviour affect fertility trends

Using data from the 1985 and 1999 Spanish Fertility Surveys, Adsera (2006b) explores the effects of increasing secularisation in Spain on the decline in fertility since the 1970s. Although she points to many demographic factors as contributing to declining fertility, she argues that women's religious characteristics have grown in importance as a determinant of fertility, and uses different regression models to test this hypothesis. She argues that the family size of non-practising Catholic women declined in comparison to practising Catholics between 1985 and 1999 and, moreover, that the family size of non-practising Catholic women has become similar to those with no religious affiliation. Further analysis showed that the main contribution of secularisation to declining fertility is in the lower order births of non-practising Catholic families. All of this seems to suggest that the influence of the church on culture and family life in Spanish society is declining (Adsera 2006b).

While some have questioned the robustness of the findings (Neuman 2007), there seems to be agreement that there are correlations between changing religious attitudes and fertility including, but possibly not limited to, rapid secularisation after the Franco regime (Gutierrez-Domenech 2002; Adsera 2006b; Nimwegen et al. 2006; Delgado et al. 2008). For example, the relationship between parental religion and fertility rates of the second generation has been explored, and it has been shown that a secular mother has a positive impact on the fertility of her daughter, while the

opposite is true for a secular father (Branas-Garza and Neuman 2008).

In addition to growing secularisation, there have been shifts in the pattern of marriage within Spanish society. Since 1975, the mean age at first marriage for both men and women has increased, and there has been a downward trend in the total female first marriage rate[23] from 1.05 to 0.56 in 2004 (the latter figure including 'native' and 'non-native' marriages, where at least one partner is foreign-born). The mean age at marriage (either first or subsequent) is now over 30 for women and over 33 for men, both having increased by at least four years over the period 1990–2004 (Delgado et al. 2008). Delayed marriage is closely linked with fertility trends as traditionally, women did not consider childbearing until after marriage. It is interesting to note that in 2004, the mean age of first marriage and first childbirth were almost identical at 29.2 and 29.3, respectively (Delgado et al. 2008).

It is also worth mentioning that there is some indication of a rise in the use of assisted reproductive technologies (ART) among Spanish women, which may be linked to the rising age at which women are starting families. ART policy is fairly liberal in Spain and it has been available free of charge to women under the national health care system since 1988 (Melo-Martín 2009).

However, any conclusions made about the relationship between delayed age at marriage and declining fertility need to be considered alongside the fact that Spain has seen an increase in births out of wedlock, with the proportion of children born outside of marriage more than doubling from 11.7% in 1995 to 25% in 2004 (Fernández Cordón 2007). This might suggest that acceptance of out-of-wedlock births is growing in Spanish society, however Delgado points out that the percentage of unmarried couples during this time period is not consistent with the higher out-of-wedlock birth rates. This could mean that couples are marrying soon after the birth of their children, and that the status of marriage as an institution in Spanish society is not changing dramatically; rather, that the factors influencing its timing are.

Difficult socio-economic conditions make it harder for young people and impact families' ability to have multiple children

Difficult socio-economic conditions, including high unemployment and shifting educational and labour-market conditions for women and young people, contributed to the rapid decline in fertility seen between the 1970s and 1990s. While some studies show that temporary unemployment can actually increase fertility, persistent unemployment can have a negative impact on fertility. Women become more likely to postpone childbirth until their employment situation becomes more stable or they get sufficient work experience, so as to be certain that they can re-enter the workforce after childbirth. The structure of the labour market in Spain has evolved to one where mature workers hold stable jobs, while younger workers have a harder time finding work (Adsera 2006a). This is increasingly referred to in the literature as a 'dualisation' of the labour market, and many argue that it is a crucial – if not central – component of the overall story of explaining the impact of unemployment and the labour market on fertility in Spain (Gutierrez-Domenech 2002). For couples affected by persistent and severe unemployment, or who are only able to find temporary employment opportunities, childbearing is occurring increasingly later in life (Adsera 2006a).

Socio-economic conditions have led to a phenomenon of 'protracted adulthood', where children live with their parents for longer, further delaying entry into marriage (Nimwegen et al. 2006). This is due, in part, to the increasing costs of leaving home, as well as the difficulties that young people face in finding permanent employment. In addition, it could be that young people today are less inclined to start a family early because they have 'learned' from their parents that deferral of first birth could be economically beneficial (Kohler 2001) – a finding that could serve to negatively impact future fertility rates. Fernández Cordón points out that the "increasing delay in entering active and reproductive life by the young generations is freezing their social integration" (2007: 64).

[23] This measure is analogous to TFR: it reflects the expected proportion of women who would experience a first marriage, if they were to experience the present age-specific rates of first marriage for their lifetime. A value of 1.05 suggests that more than 100% of women would get married in their lifetime, which is clearly impossible: this means that in 1975, far more women were getting married at young ages than had got married at young ages in previous cohorts.

The impact of rising levels of female education and participation in the labour market

However, it would seem that it is demographic factors and not employment that explain the decline in third births and, to a certain extent, second births. Gutierrez-Domenech (2002) argues that the higher the education level of the woman, the less likely she is to have a third child. Rendall et al. (2010) confirm these findings by showing that the female age of first birth among higher educated women is very high in Spain. This suggests that we might look at the rapid and dramatic expansion of the number of women in education as exacerbating the earlier decline in fertility (Ignacio Martínez Pastor 2008) and slowing the recent increase of fertility rates.

The changing role of women in society has led some researchers to explore the relationship between gender and equality within family relationships, and the impact that this has on both second births (Brodmann et al. 2007) and fertility overall (Cooke 2008). Cooke finds that instability in the labour market, and high or unstable male employment, leads to dual-working households which are not economically supported by the state. For each hour increase in a women's employment, there is a significant decrease in the likelihood of a second birth: with the woman working full-time, the odds of a second birth are decreased by 80%. Earnings are insignificant in these calculations, leading one to conclude that it is time constraints that are preventing second birth, not financial costs. In addition, dual-earner couples in Spain who pay for childcare are more likely to have a second child, perhaps because they have the capacity to pay for childcare. However, research by Brodmann and colleagues (2007), which looked at male education and labour market potential in relation to the probability of second births, showed that the use of daycare had no effect on the estimated fertility of a couple, and that there was no positive effect on fertility associated with the father playing an active role in childcare, although there were positive correlations between the male's 'breadwinner' capacity (i.e. being paid better than low wages) and fertility.

All of this suggests that the socio-economic conditions affecting fertility decisions within families are increasingly complex and dependent upon numerous factors. Female labour force participation seems to figure prominently in the fertility narrative (Delgado et al. 2008; Engelhardt and Prskawetz 2009), while dual labour markets and economic uncertainty lead to protracted adulthood and potential delays in marriage and childbearing. Some argue that all of these delays in motherhood only increase the chance of childlessness over time, and that it will remain high in contexts where family life and employment are not easily reconciled (González and Jurado-Guerrero 2006).

Recent increases in period fertility may reflect stabilisation of post-Franco society and changing immigration patterns

Despite rapid cultural changes and difficult socio-economic conditions, there has been an increase in fertility over the past decade in Spain. This increase can be attributed to a rise in the number of foreign-born women having children in Spain, a general increase in first-order births since 1998, and a slowing of the pace of postponing childbirth (Nimwegen et al. 2006; Fernández Cordón 2007; Delgado et al. 2008).

Although part of the explanation for the increase in birth rates is the rise in immigrant populations in Spain, this effect is not great in relative terms and is inflated in absolute terms due to larger inflows of immigrant populations. Moreover, although there are initial high fertility rates among immigrants to Spain, these rates fall the longer the immigrant is in the country, eventually reaching native population levels (Nimwegen et al. 2006; Delgado et al. 2008).

The increase in first-order births since 1998 and slowing of the postponement of childbirth could be due to stabilisation of the social, cultural and political environment in Spain following a rapid and immediate upheaval after the Franco regime. The profound changes to Spanish society experienced in the aftermath of the change had immediate impacts on period TFR, but as we have seen from the data presented earlier, CCF fell less dramatically over time. This means that the recovery being seen today may be due to the effects of younger generations of women who have been brought up in a different social context. Moreover, the fact that fertility rates are beginning to increase is consistent with research into the 'fertility gap' – that is, the gap between a women's desired fertility and her actual fertility. Analysing data from the 1999

Spanish Fertility Survey, Adsera finds that there is a link between the difficult economic and labour market and the gap between how many children women state as their desire, versus the number they actually have. However, there does seem to be an overall decline in the stated number of desired children among younger generations. One reason for this may be the economic outlook and a perceived increase in the cost of raising children. All of this points to the institutional environment in Spain as key to explaining and addressing the decline in fertility rates and the presence of a so-called fertility gap (Adsera 2006a).

Policy efforts and their impact on fertility

The political history of Spain is important to understanding the effects of current policies on fertility. The impact of the Franco regime on how individuals planned their families is not insignificant, and has contributed to the Spanish government taking a 'hands-off' and timid approach to family policy. There is generally a perception that it is unacceptable, both politically and socially, to introduce pro-natalist policies, because this may be seen as interfering too much in the personal lives and decisions of Spanish citizens. As a result, there was little activity in the way of family policies in Spain until recently, and public spending on family policies is at one of the lowest levels across many Organisation for Economic Co-operation and Development (OECD) countries (OECD 2008). Although the expenditure as a percentage of gross domestic product (GDP) has doubled since the mid-1980s from 0.3% to 0.6% of GDP, this is well below the European average of 2.1%. In addition, regional politics in Spain affect the coherence and impact of any wide-ranging attempt at establishing a coherent national policy (Grant et al. 2004). For example, some researchers have found that there are significant differences in childcare provision based on the region, which can have an impact on fertility patterns (Adsera 2006a; Baizan 2009).

Although there is agreement in the literature that it can be difficult to assess the impact of family policies on social trends such as fertility (Bernardi 2005; Thévenon 2008), it is not difficult to see that there is a lack of family policy in Spain in comparison to other countries. In the past decade, there has been a growing awareness of the shortcomings of policy in this area and, as a result, measures have been introduced and strengthened. Thus, we will look at changes in family policy in four categories – financial support for fertility, childcare services, parental leave programmes and work and family time policy (all categories suggested as useful for comparison by Bernardi) – to see if we can deduce whether they have contributed to the increase in fertility rates seen in the past decade. We will argue that a singular focus on family policy alone is insufficient to address the low fertility problem in Spain. Therefore, it is likely that the introduction and expansion of fertility policies in Spain are not solely responsible for recent increases in fertility, although they are certainly not doing any harm and should be encouraged.

Effects of increased financial support and childcare likely to be positive but small

Financial support for fertility includes policies related to tax deductions, maternity allowances and cash payments that depend on the age of the child. In 2003, Spain introduced tax deductions for higher parity families in order to provide incentives for families to have three or more children. Since 2003, mothers who work and pay into social security have been entitled to an annual payment of €1,200 per child (Delgado et al. 2008). However, there is some evidence that the direct cash benefits of such explicitly pro-natalist policies are limited (Kalwij 2010), with some countries exhibiting strange anomalies in the response to direct family benefits. Evidence from Austria, for example, shows that despite having one of the highest mean values of child benefit packages, it has one of the lowest fertility rates in Europe (Bradshaw and Finch 2002). Research based on data from Eastern European countries shows that child benefit packages have affected only the timing of births, not the overall number (Hugo 2000). Thus, it is questionable whether these policy efforts have had a positive effect on fertility.

Childcare services are arguably an important component of fertility-related policies. In theory, state-sponsored or supported childcare programmes should help to alleviate the opportunity costs of parenthood. At the macro level, some studies have found a positive association between childcare policies and increased fertility, but at the micro level, the results have been more mixed and

can depend on several factors, such as the number of children in the family, regional childcare policies (Baizan 2009), and so forth. In Spain, childcare services for infants (up to the age of three) are minimal. In 2001, only 10% of children had access to childcare services. Baizan claims that in some regions of Spain, childcare coverage is as high as 45%, while in others it is less than 5% (Baizan 2009).

Unstable labour market limits potential impact of parental leave and work/family-time policies

Parental leave programmes have been expanded in recent years in Spain and maternity leave is now 16 weeks (18 weeks in the case of a child with a disability). Maternity allowances for self-employed workers were introduced in 2006, and expansion of benefits for young mothers in 2007 (Delgado et al. 2008). Bernardi (2005) argues that the critical issue related to parental leave as an incentive for childbirth is not necessarily related to the amount of leave time, but the guarantee of work at the end of leave. This is especially relevant for those on temporary contracts or who are self-employed, and resonates with the earlier discussion about the instability of the labour market in Spain and the resulting effect on postponed fertility. Thus simply expanding maternal or paternal leave may be insufficient to promote fertility due to the labour market structure in Spain. More aggressive approaches to tackling wider problems in the labour market, alongside generous parental leave policies, may be needed (Bernardi 2005).

Finally, work and family-time policies have been gradually expanded in Spain. Since 1980, employees have been permitted to reduce their number of hours to care for children under the age of six, or family members with severe illnesses. However, this type of policy benefit may be less effective in Spain than it is in other countries such as France and Sweden, where similar policies exist. This may be due to the fact that women have more secure employment in the latter two countries than in Spain.

Although it is probably the case that attention to and expansion of family policies has not had a negative effect on fertility in Spain in the past decade, it is also not solely responsible for the increases in fertility. We have seen how national institutional contexts are shaped by social, political and economic factors that affect the costs, uncertainties and conditions associated with motherhood in different ways. For example, we discussed earlier the marked effects of the economy and unemployment on declining fertility, and the pressures on young people which lead to a protracted adulthood. Thus, one useful area of policy attention might be housing policies that encourage young people to leave the home, making it easier for them to make the transition to adulthood in this way (Bernardi 2005). The research discussed above has shown that fixed-term employment contracts and unemployment are barriers to first births in Spain, and that owning a home and being in a stable relationship facilitate movement towards first birth (González and Jurado-Guerrero 2006). Thus, while family policies may be helping to improve the incentives around childbearing for some, there are a range of other social, economic and cultural factors which must be addressed.

Conclusion

As mentioned previously, Spain has experienced a profound change in social, cultural, economic and political circumstances since the 1970s. During this time it has seen a sharp decline in the fertility rate and, although this rate has increased slightly in the past 10 years, it is still one of the lowest in the EU. This decline has been examined by many and was discussed in detail in Grant et al. (2004). The research since then still leads us to conclude that interrelated cultural, socio-economic and political factors have all contributed to the decline in fertility rates, a situation that was not helped by the relative inattention to family policy by the Spanish government since the end of the Franco regime. Although efforts to increase and expand family policies have been introduced over the past decade, they are unlikely to be solely responsible for the increase in fertility rate, as family policies alone cannot address more deep-seated problems with the economy, labour market and cultural changes affecting Spanish society. These include high unemployment, a difficult and inflexible labour market, an expensive housing market, better-educated women, protracted adulthood and changing cultural values (such as increasing secularisation and delayed age of marriage). Spain must urgently address structural issues such as employment, housing and the economic situation alongside family policies, if declining fertility trends are to be reversed.

Chapter 7 Case study: Sweden

Unique among its neighbours, period total fertility rates (TFR) in Sweden varied widely in the 1980s and 1990s. There was a definite rise in TFR in the 1980s, a decline during the 1990s and a rise from the late 1990s. These shifts in TFR have been termed 'rollercoaster fertility' (Hoem and Hoem 1996, cited in Hoem 2000) and are the focus for much work on the drivers of fertility in Sweden.

In 2004, Grant et al. asked: "Is it possible to explain the rollercoaster nature of fertility in Sweden since the 1970s by specific policy measures and/or contextual factors?" (2004: 6). As explained by Grant et al. (2004), these fluctuations did not necessarily represent changes in completed cohort fertility (CCF). Rather, there has been remarkable consistency in CCF; instead, fluctuations appeared in the timing of births (see Figure 7.2 and Figure 7.4). In examining the literature on the socio-economic, cultural and policy context in Sweden, the 2004 report found that policies to promote gender equality and the compatibility of work and family life had positive effects on fertility rates (Hoem 1993b), particularly within a relatively stable economic environment in the 1980s. Fertility rates declined in the 1990s alongside an economic recession: the hypothesis was put forward at the end of the 1990s that TFR would rise when economic conditions improved (Bernhardt 2000, in Grant et al. 2004).

Indeed, since the late 1990s TFR in Sweden has risen, although it has not yet reached replacement levels. Does this recovery in period TFR affirm earlier hypotheses about the impact of Swedish family policies and gender equality policies on fertility patterns in Sweden? Can this recent rise be explained by the combination of policy and economic conditions? Recent data and empirical studies on fertility trends in Sweden suggest that Sweden's policies to promote gender neutrality[24] in work and childcare responsibilities, and to reduce the opportunity cost of having a child, have supported a higher number of births to women at older ages. Sweden's policy environment seems to support childbearing, particularly during periods of economic growth. Studying how fertility trends unfold over the next few years – following the recent economic recession – could shed light on the extent to which Sweden's fertility rates are indeed shaped by economic circumstances.

Fertility trends in Sweden

Although fluctuations in TFR in Sweden were much greater than in other Nordic countries in the 1980s and 1990s, the direction of change in TFR in Sweden was similar to other countries in the Nordic region throughout this period (Neyer and Andersson 2008). After a rise in TFR in the 1980s, reaching a peak of 2.13 in 1990, TFR then declined to a low of 1.51 in 1999 as Sweden experienced an economic recession. This decline reversed in the early 2000s, and since then TFR has risen to levels similar to the mid-1970s (Figure 7.1). However, the recovery in fertility rates has not yet reached the 1990 peak or even reached replacement levels.

Period TFR masks differences in fertility patterns among women at different ages. Since the late 1990s, trends in age-specific fertility rates have diverged for women below and above the age of 30

[24] Gender equality and gender neutrality are similar but distinct concepts. Gender neutrality suggests that the government does not try to impose equal outcomes; rather, it allows people to choose for themselves within a framework that is neutral.

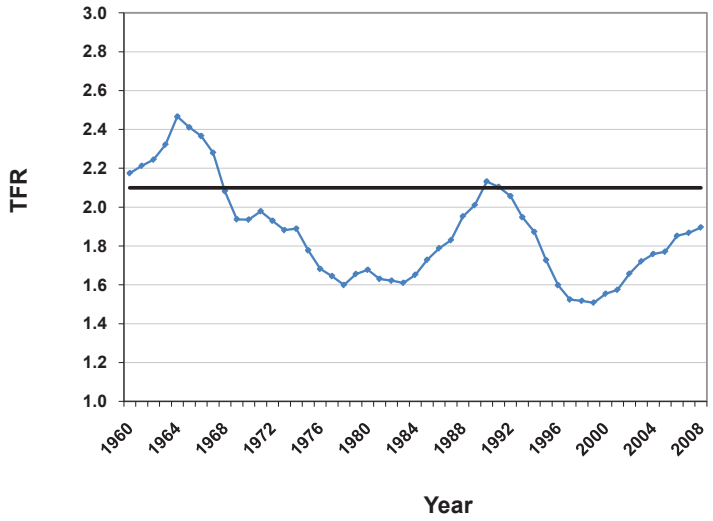
years. There is a distinct change in the distribution of births between women, with a greater proportion of births to women at older ages. Fertility rates seem to be stabilising among the 15–19, 20–24 and 25–29 age groups. In contrast, the number of births has continued to rise among women aged 30–34, 35–39 and 40–44 years (Figure 7.2). The mean age for first-time mothers rose from 24 years in 1976 to 29 years in 2004 (Nilsson 2010). As illustrated in Figure 7.2, by 2005 women aged 30–34 years had the highest number of children out of the different age groups for the first time since 1965.

This divergence in age-specific fertility rates has changed the age structure of Swedish motherhood. As illustrated in Figure 7.3, in 1965, 1975, 1985 and 1995, the greatest proportion of births were to women aged 25–29 years. However, over time generally there have been fewer births in the 25–29 and younger age groups. In contrast, there has been an increase in the number of births to women at older ages, particularly in the 30–34 age group.

The trends underpinning these changes in fertility rates can be complex. Looking at previous decades, changes in period TFR and age-related TFR appear to be linked to postponement of birth. The consistency in CCF across cohorts suggests that the total number of children per woman was unchanged on average, but the period when a woman chooses to have children over her lifetime seems to have changed, with an increasing number of children born to older women. For example, CCF was largely constant for those born between 1941 and 1960 (Figure 7.4), rising only slightly from 2.00 in the 1941–45 cohort to 2.07 for the 1956–60 cohort (see also Oláh and Bernhardt 2008). CCF is projected to fall very slightly in the two cohorts next to complete fertility, but nonetheless to remain around two children per woman.

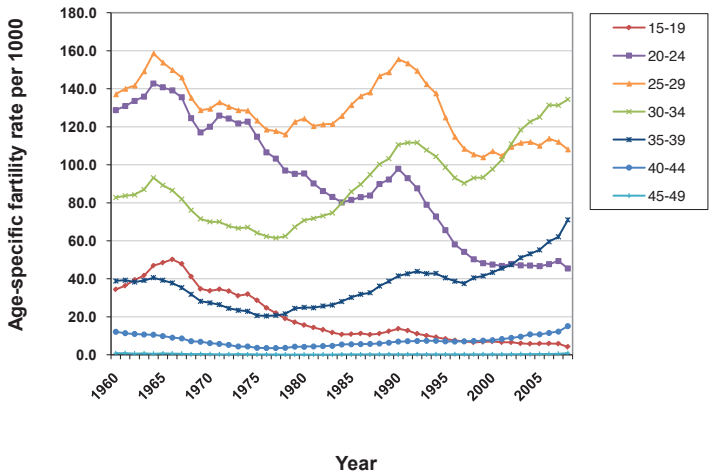
Looking more closely at the trends across cohorts, it becomes apparent that women in the 1946–60 cohorts were postponing childbearing to later ages. Based on age-specific fertility rates, Figure 7.5 shows the expected number of children at different ages for the 1941–60 cohorts of women. From this figure, it is evident that although CCF was relatively constant across birth cohorts, the total number of children that a woman had at different points in her life was changing through these cohorts. For example, there is a drop in the number of children per woman at 25 years and 30 years across the cohorts. In contrast, by the age of 40 years, the 1951–55 and 1955–60 cohorts have more children per woman relative to the earlier cohorts. While the women in the later cohorts have more children on average overall, this does not occur until they reach their late thirties and early forties. Thus, in these cohorts, there is an apparent postponement and recuperation of fertil-

Figure 7.1
Trend over time in total fertility rate in Sweden, 1960–2008



SOURCES: Human Fertility Database (years 1960–2007); Statistics Sweden (year 2008)

Figure 7.2
Trends over time in age-specific fertility rates (per 1,000 women) in Sweden, 1960–2008



SOURCES: Human Fertility database (years 1960–2007); Statistics Sweden (year 2008)

ity, with later cohorts having fewer children at earlier ages, mostly catching up by the age of 35, and then finishing their fertile years with slightly more children than earlier cohorts.

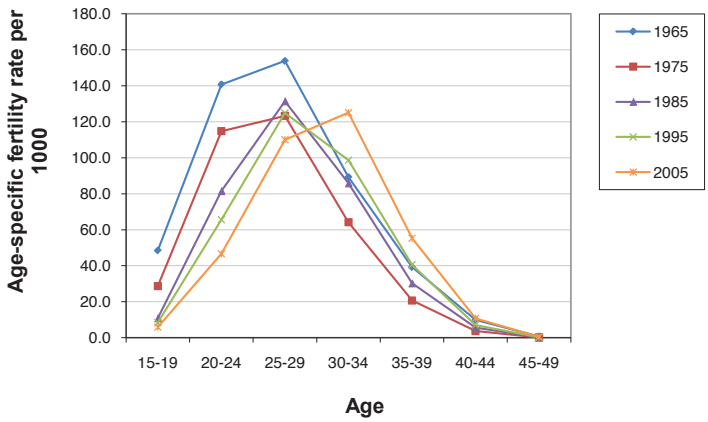
Without cohort data, it is more difficult to determine the trends underpinning the recent rise in TFR in Sweden. It could be due to a recuperation of births later in a woman's lifetime, or it could suggest a change in the quantum level of births per woman. However, age-specific fertility rates do suggest some consistency in TFR since the mid-1970s. Although fertility rates have fluctuated widely, through these fluctuations there has been a relative decline in the number of births to women in younger age groups, compared to older age groups. TFR has risen steadily among women aged over 30 since approximately 1977, disrupted by 'critical junctures' such as in the mid-1980s and early 1990s (Neyer and Andersson 2008). Thus, underneath the 'rollercoaster' fertility, there has been a general trend towards an increasing number of births to women at older ages compared to younger age groups since the mid-1970s.

Although CCF was consistent previously, it is possible that this could change if there continue to be relatively more children born to women at older ages. In the 1980s and 1990s, there was already a significant reduction in the level of childbearing intensities for third and fourth children, partially due to fertility ageing effects (Kohler and Ortega 2002). Statistics Sweden (2002, cited in Nilsson 2010) also finds that the number of women reporting unwanted childlessness has risen. This has been accompanied by an increase in childlessness among women over 35 years from 15% to 21% between 1985 and 2005. In addition, during this time there has been an increase in single households (Nilsson 2010). These trends could suggest that in the future, increased fertility rates among older women relative to younger women could affect their ability to achieve desired fertility levels.

Factors influencing fertility in Sweden

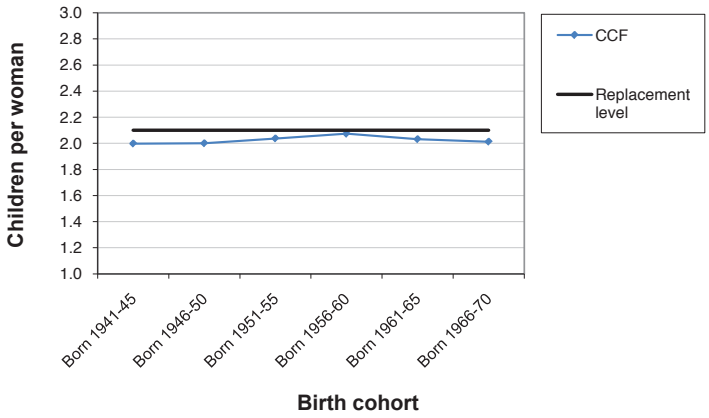
Grant et al. (2004) concluded that the example of Sweden presents a strong case that economic cycles and varying social policies can result in rollercoaster fertility. However, although TFR did decline in the context of economic recession and, in general, rose following the introduction of the so-called 'speed premium' (Jönsson, 2003),[25] the question arises: were these trends common across Sweden, or were they specific to certain groups? Also, is the recent rise in fertility the result of behaviours among specific groups?

Figure 7.3
Age-specific fertility rates (per 1,000 women) in Sweden, 1960–2005



SOURCE: Human Fertility Database

Figure 7.4
Completed cohort fertility in Sweden for women born from 1941–60 at five-year intervals

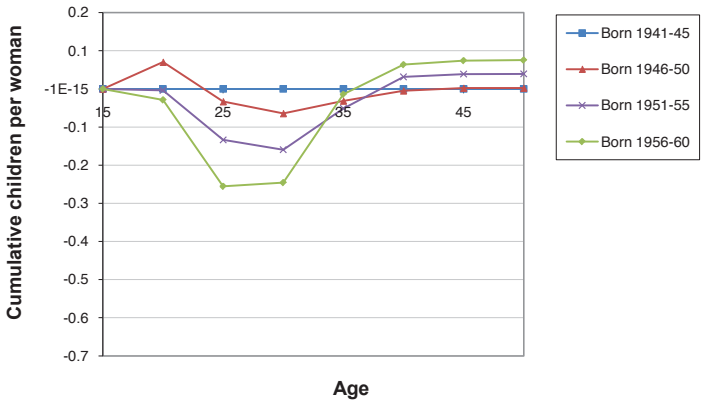


NOTE: Two last data points are the authors' projections of CCF, assuming that fertility at ages 40–44 years and 45–49 years for these cohorts will remain at the level observed in 2008.

SOURCES: Human Fertility database (years 1960–2007); Statistics Sweden (year 2008)

[25] The 'speed premium' was a change to the parental leave law which, in the event of a second child being born within 30 months of a first child, permitted the income replacement to be calculated based on the income earned prior to the first birth, rather than on the income obtained between first and second birth. This policy provides an incentive for parents to have children at short intervals, but the effect on total family size is less clear.

Figure 7.5
Cumulative cohort fertility by age in Sweden



SOURCES: Human Fertility database (years 1960–2007); Statistics Sweden (year 2008)

Due to the availability of data and the current and ongoing rise in TFR, the recent literature has been able to disaggregate fertility decisions in the 1980s and 1990s by different groups. These studies provide some insight into the drivers and inhibitors of fertility in previous decades, illustrating the factors important to the more recent rise in period TFR.

Immigrant groups have an ambiguous and overall small effect on fertility trends

Sweden has experienced several waves of immigration since the 1960s: first, an influx of labour migrants, predominantly from other Nordic countries but with some from Southern Europe; then migrants coming through family reunification and asylum-seekers from the mid-1970s onwards; and then in the 1990s, an influx of refugees mainly from the Balkans.

Looking at data up to the early 2000s, immigrant groups tended to have higher than average childbearing levels in Sweden immediately after migrating (Andersson 2004). Particularly, first and third birth risks were elevated among migrants within the first two years after migration (Andersson 2004; Eggert and Sundquist 2006). However, over time, the majority of migrant groups in Sweden have adapted to demonstrate fertility trends similar to the Swedish-born population (Eggert and Sundquist 2006). During the 1990s, period TFR declined among both migrant and Swedish-born women. This could suggest that institutional factors in Sweden affecting both migrant and Swedish-born women influenced childbearing behaviour (Andersson 2004). In one study, looking at the entire childless Swedish-born population and populations of 19 subgroups of foreign-born women aged 20–41 years in Sweden with first births in 1991–92 and in 1997–98, Eggert and Sundquist (2006) find that the majority of migrant women follow the adaptation hypothesis. However, they also show that there are exceptions to this trend, and thus it is not possible to invalidate other hypotheses.

Although overall trends in fertility among migrant women seem to follow the Swedish majority over time, the level of childbearing has diverged among women with different countries of origin. The availability of longitudinal population register data among foreign-born and Swedish-born women allows for an analysis of how fertility trends converge or diverge between migrant groups. Specific studies looking at groups of immigrants from Nordic countries confirm the adaptation hypothesis for migration and fertility trends. In looking specifically at migrants from other Nordic countries, although levels of childbearing are initially higher among immigrants from these countries, differences in the levels of childbearing between female migrants from other Nordic countries and Swedish-born women narrow over time (Andersson 2004). By looking at Finns in Finland, Finns in Sweden and Swedes in Sweden using 1987–98 birth register data, Gissler et al. (2003) find that trends in TFR among Finns in Sweden and the average in Sweden were similar. Also, differences in the level of TFR narrowed until the mid-1990s, after which the rates equalised. However, there were specific groups of Finnish migrant women that diverged from the Swedish average. For example, Finns in Sweden had a higher rate of teenage pregnancy, compared to both Finland and Sweden, and Finnish migrants who were single mothers showed similar trends to Finns in Finland (Gissler et al. 2003).

Migrant groups from other countries show different behaviours. Eastern European migrant women tend to have lower fertility rates than the Swedish average, with similar levels of first birth intensities but lower higher birth intensities. Somali migrant women and those from Muslim countries have higher fertility rates, although Iran remains an exception where fertility patterns are

similar to women from Eastern Europe (Andersson 2004).

Migrants have been shown to have different fertility patterns according to socio-economic status. In Eggert and Sundquist's (2006) study, differences emerged in fertility levels among non-employed women, low-income migrant women and Swedish-born women. Several groups of foreign-born women increased first birth fertility from 1991–92 to 1997–98, even if they were unemployed or had a low income, while the corresponding Swedish-born women showed decreased first birth fertility.

Finally, recent work has found that migrant women can respond differently to family policies. Using hazard regression analysis to consider second birth behaviour, migrant groups revealed different responses to speed premium policies introduced in the 1980s (Andersson et al. 2005). Nordic immigrants and Swedish-born women responded similarly to the speed premium; however, immigrants from non-Nordic countries had only a small reaction to the speed premium incentive. One hypothesis could be that non-Nordic immigrants were less tied to the labour market at the time of first birth, and so would have expected a relatively smaller premium (Andersson et al. 2005).

Despite the divergences evident between immigrant groups, it is unlikely that different fertility patterns among migrant women can account for rollercoaster fertility. For example, the majority of migrants seemed to have converged with the average after two years in Sweden. However, the differences do suggest that migrant women can react differently to policies that directly or indirectly influence fertility decisions. This raises questions about how different external factors can influence individuals' receptivity and incentives to respond in different ways to policies. Women's situation and circumstances, and how they are integrated into the Swedish labour market and society, could affect fertility decisions and the ways that policies influence them.

Field of education can influence fertility behaviours among women

In addition to migrant status, education has been suggested to affect fertility decisions. In Sweden, recent studies consider the role of education in changes in fertility rates through the 1980s and 1990s. Do fertility trends in Sweden differ based on women's level and/or field of education, and can education offer insight into rollercoaster fertility in Sweden?

Using Swedish Level of Living Survey data, Ström (2005) finds that childlessness is higher among female respondents with higher levels of education, when comparing those with and without a university degree or at least one year of education above upper secondary or high school diploma or three to four-year high school course (Ström 2005). Similarly, through two studies looking at completed fertility rates and childlessness among the 1955–59 cohort, Hoem et al. (2006) find that ultimate fertility decreases with educational level. However, looking at the period from 1925–60, level of education has been found to be of less importance for CCF in Sweden than in France and the former West Germany. Highly educated Swedish women have a higher mean ultimate number of children than their West German counterparts (Hoem 2005).

In addition, women with different levels of education have responded similarly towards different family policies. In the 1980s, parents from all educational levels adjusted their behaviour to produce shorter birth intervals following the speed premium (Andersson et al. 2005). Looking more generally at childlessness, the link between level of education and childlessness is not necessarily significant. Comparing Austria and Sweden, Neyer and Hoem (2008) do not find a significant difference in childlessness among women with a comprehensive education, a two or three-year secondary school education or a vocational college education; only those with a master's level education or doctorate show a higher level of childlessness (Neyer and Hoem 2008). These studies suggest that policies to influence fertility do not necessarily impact on women in different ways based on their level of education.

Recent studies find the link between *field* of education and fertility is more significant than the link between *level* of education and fertility (Hoem et al. 2006). For example, women educated in the teaching and/or health care professions in Sweden have both lower levels of childlessness and higher ultimate fertility than other groups of women (see also Neyer and Hoem 2008). They indicate that higher education in Sweden does not necessarily correspond with higher levels of childlessness (for example, women with research degrees – licenti-

ates or doctorates – do not appear systematically different in childlessness from other women), and that structural factors in the educational system and one's field of education could be more important for fertility decisions (Hoem et al. 2006).

Income level, sector and type of employment seem to correspond with variations in fertility trends

The Swedish policy environment promotes the compatibility of work and family life. As a result, employment status could affect how individuals experience and benefit from policies. Generally, there is gender segregation in education and occupation in Sweden: women have favoured the public sector, health care, teaching and services, with men dominating higher positions across sectors (Stanfors 2009). The public sector in Sweden is considered to have more flexible work conditions and a relatively higher compatibility with family life than the private sector.

Differences in fertility trends emerge across different types of employment. Possibly linked to flexibility within the public sector, employment in that sector is found to have a more significant positive correlation with childbirth among women than men. Women employed as lawyers, medical doctors and PhDs in the public sector have a higher likelihood of second or third births than those outside the public sector; the opposite is true for men. However, for men there is a greater likelihood of making the transition to fatherhood if employed in the public sector versus manufacturing (Ström 2005). The transition to motherhood is also found to be affected by job strain.[26] Women in trades characterised by high levels of job strain appear to be less likely to have a first child, while no significant association is found in the timing of second and third children (Ström 2005).

Stanfors (2009) considers the influence of income on fertility trends. He finds a positive income effect on second births for men and women; the general relationship is linear for men and curvilinear for women. Overall, lower income couples tend to have lower probabilities for second births than middle income couples, with the probability for second birth increasing further among the highest income group. However, the results are more complex and less certain for third births (Stanfors 2009).

Thus, recent studies on Sweden suggest that conditions of employment are important with regard to fertility behaviours: with the different likelihood of first births and high order births depending on the type of employment, level of job strain and level of income, and that men and women respond differently to such conditions.

Policy efforts and their impacts on fertility

The role of policy in shaping fertility trends in Sweden in the 1980s and 1990s has been analysed extensively (see Grant et al. 2004). The general policy environment in Sweden promotes gender equity and gender neutral policies. Correspondingly, women comprise more than 50% of all students in higher education in Sweden, have labour force participation rates similar to men, and the gender wage gap has narrowed over time (Stanfors 2009).

Family policies provide substantial support for both parents to combine work and family life

Family policies in Sweden are generous, flexible and universal (Hoem 2005). Sweden does not have an explicit policy to encourage or maintain a certain fertility level; rather, the thrust behind family policies has been gender equality so that men and women can reconcile work and parenthood (Oláh and Bernhardt 2008). Swedish family policies are seen as typical of a gender egalitarian approach, with long leave duration, affordable, full-day, publicly subsidised childcare, individual income taxation and custodial rights and responsibilities for fathers (Ferrarini and Duvander 2010).

Throughout the 1990s, the Swedish government extended policies to support a dual-earner, care-sharing household model: first, by introducing a four-week quota for fathers for parental leave, and then extending this to two months in 2002. The promotion of compatibility between work and family life for both partners has not necessarily stopped since the creation of a Centre–Right coalition government led by the Moderate Party and Fredrik Reinfeldt in 2006. The Moderate Party

[26] Ström (2005) measures job strain according to the conditions used in Robert Karasek's model, which views psychological stress as due to combinations of work demands and decision making freedom.

was elected on a platform including the promotion of a gender equality bonus that rewards the better paid working partner for taking a larger share of parental leave. The coalition government gradually implemented changes to family policies in 2008 and 2009 (Aylott and Bolin 2007), with conflicting implications for the earner-carer model (Ferrarini and Duvander 2010). In 2007, tax deductions of up to 50% of the cost of services in the household were introduced, with the main beneficiaries being those in the highest income deciles (Ferrarini and Duvander 2010). On 1 July 2008, the gender equality bonus and a municipal child-raising allowance were introduced; then on 1 July 2009, provisions for educational content in pre-schools, which combine pedagogy and childcare for children aged 12 months to five years, and a childcare voucher system, were introduced (Ministry of Health and Social Affairs, Sweden 2010). The coalition government's policies provide greater room for market solutions and family reliance for care, while also some support for combining work and family life (e.g. the gender equality bonus). These potentially diverging impacts could provide increased space for intra-household bargaining in terms of childbearing and childcare decisions, and could have an impact on the importance of employment and economic conditions on fertility decisions.

Family policies have adopted a supportive approach to work and family life

Sweden's family policies implemented through the 1990s, with the gender equality bonus, tend to promote increased paternal involvement in childcare and increasing female labour supply and demand (Ferrarini and Duvander 2010). Correspondingly, almost 60% of women are involved in full-time or longer part-time work (30+ hours per week), while the average share is a little over 30% among longstanding Organisation for Economic Co-operation and Development (OECD) countries (Ferrarini and Duvander 2010).[27] Over time, men's share of parental leave days has risen from less than 1% in the mid-1970s to 22% in 2008. Sweden's policy framework seems to be facilitating increased female labour force participation, relatively high fertility (Ferrarini and Duvander 2010) and child well-being.

Sweden is unique from other countries in its pro-cyclical fertility, which corresponds with the economic cycle. Thirteen out of the 16 months of total parental leave in Sweden are earnings-related (80% of previous earnings), which is likely to contribute to pro-cyclical fertility (Ferrarini and Duvander 2010). At a more individual level, women also seem to be influenced by economic circumstances in fertility decisions. For example, as discussed above using data from the 1980s and 1990s, women with greater job flexibility and in the public sector had a higher likelihood of childbearing. In addition to economic circumstances, the correlation between field of education and fertility suggests that structural factors influence fertility decisions.

Effect of gender-neutral policies on individual fertility decisions is ambiguous

The impact of gender-neutral policies on gender equality in households can be difficult to determine. The pervasiveness of Sweden's gender equality can be questioned. For example, women seem to continue to take primary responsibility in childcare: they are more likely to be employed in sectors that are more compatible with family care, take the most parental leave, are overrepresented in part-time work, and tend to be more negatively affected by parenthood and the increased responsibility for unpaid work (Nilsson 2010). The relatively small wage gap in Sweden is largely due to collective bargaining and a compressed wage structure rather than gender-equal family policies, and Sweden has a relatively low share of female legislators and managers (Aisenbrey et al. 2009).

In addition, the influence of Sweden's gender egalitarian policy framework on fertility trends can be questioned. Recent studies question the scope for policy to drastically affect individual fertility decisions, suggesting that the policy space open to policymakers to implement new or changed family policies may be small. Ellingsæter (2009) explains that changes in family policies are gradual and develop over a long time period, shaped by labour market developments and cultural institutions, and questions the extent to which fertility trends follow economic situations. For example,

[27] The 18 OECD countries included are Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Ireland, Italy, Japan, the Netherlands, New Zealand, Norway, Sweden, Switzerland, the UK and USA.

although labour market conditions were important to fertility decisions in the 1990s, a similar effect was not seen in Finland, even although unemployment rates were higher than in Sweden; Finland did not experience a similar decline in fertility (Ellingsæter 2009).

Finally, households with greater gender equality do not necessarily have higher fertility rates. Using hazard regression and data from surveys completed in 1992–93, Oláh (2003) finds that gender structures in Sweden contribute to increased second-birth fertility by reconciling parenting and labour force participation for both parents. In contrast, looking at 22–30-year-olds in Sweden and using survey data, Bernhardt and Goldscheider (2006) find that men with more traditional attitudes towards gender roles were more likely to become fathers within four years, compared to other men. In contrast, attitudes towards gender roles were not found to affect women's transition to motherhood in the following four years.

Recent economic crisis could pose interesting challenges for maintaining a rise in period TFR

Recent changes in policies, as well as changing economic conditions, could provide an interesting context for future fertility trends. If it continues according to past patterns, the recent economic downturn suggests that fertility rates will decline in Sweden. However, new and potentially conflicting policies introduced by the coalition government could provide new incentives for childbearing and childcare. This in turn could affect the compatibility of work and family life for different groups in Sweden (e.g. by class, income, ethnicity, immigrant group). Further studies into the contribution of economic cycles, institutional factors, demographic considerations and policy on the recent rise in fertility – in particular, rising fertility rates for older women – are needed in order to understand the ways that earner-carer policies impact fertility decisions.

Conclusion

Instead of presenting a break with the previous decades, the recent rise in TFR shows some consistency in changes in fertility among women in Sweden. Since the mid-1970s, fertility rates have increased among older women, and declined and stabilised among younger women. Even through the rollercoaster fertility rates in the 1980s and 1990s there has been consistency in changes to the relative number of births born to women at different ages since the mid-1970s. Although policy and economic circumstances have influenced changes in TFR, particularly with the speed premium in the 1980s and the economic recession in the 1990s, data on fertility in Sweden show that future concerns with fertility may not be as urgent as previously thought. Rather, the decline in TFR for younger women appears to be levelling off, while the number of births continues to increase among older women.

Nevertheless, there is little to suggest that fertility will reach replacement levels in Sweden, and fertility trends continue to drive population ageing. However, changing fertility decisions and behaviour may be less important than previously thought, as the trends may not necessarily indicate a change in the cumulative number of children born per women.

Chapter 8 Case study: United Kingdom

Of all the countries of the European Union (EU), the UK has had one of most dramatic turnarounds in period total fertility over the last five years, with recent gains more than reversing the slow decline of the previous two decades. The possibility of reaching the replacement level of 2.1 children per woman looked remote in the early years of the millennium, but now appears much more likely.

This case study explores UK fertility in more detail, looking at the trends underlying the headline period total fertility rate (TFR), asking what could explain the recent rebound and examining whether any changes in government policies have had an effect. We find that the Europe-wide shift of childbearing towards older ages is likely to have had an impact on period fertility indicators, but also that immigration to the UK since EU expansion in 2004 – a prominent topic in British political discourse – is unlikely to have had an impact on fertility rates. While it is difficult to gauge the magnitude of the effects, it seems likely that the significant changes in policy instituted by the Labour government between 1997 and 2010 had some impact on fertility rates, even if this impact was mostly (or entirely) unintended by policymakers.

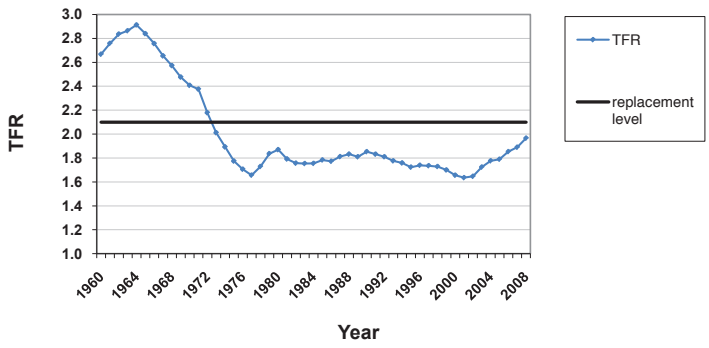
Fertility trends in the United Kingdom

Traditionally, the UK[28] has had relatively high fertility compared with the European average, but with some fluctuations over time. There were large peaks in the TFR immediately following the Second World War (not seen in Figure 8.1) and again in the early 1960s, but fertility fell below replacement levels in the 1970s and remained relatively stable at this lower level throughout the 1980s and 1990s. When Tony Blair's New Labour government was elected in 1997 the TFR was 1.74, down slightly from 1.85 in 1990, but still higher than the modern low of 1.66 in 1977. Period TFR continued a slow decline from 1997 to a nadir of 1.64 in 2001, but has since rebounded strongly, rising to 1.97 in 2008, the highest level since 1973.

As in much of Europe, different age groups in the UK have had different fertility trends over the past 50 years (see Figure 8.2). Age-specific fertility rates for the 20–24 and 25–29 age groups dropped consistently through the 1980s and 1990s, while rates for the 30–34 and 35–39 age groups rose from the late 1970s onwards. Rates of teenage pregnancy remained fairly stable from the late 1970s, at a high level relative to other European countries.

Looking more closely at the trends after 1997, the overall fall in TFR in the late 1990s comprised significant drops in the fertility of the 20–24 and (particularly) 25–29 age groups, a moderate rise in fertility for 35–39-year-olds, with other age-

Figure 8.1
Trend over time in total fertility rate in England and Wales

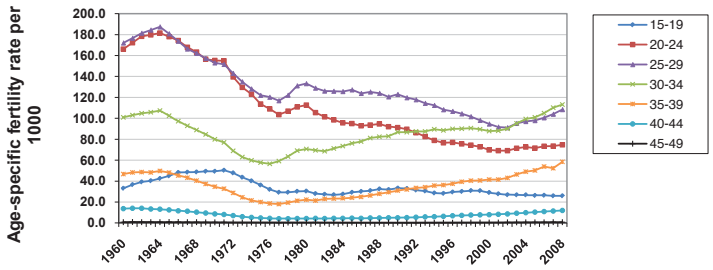


SOURCE: Office for National Statistics

[28] Strictly speaking, the fertility data we use in this case study is only for England and Wales; in the 2001 census, the population of England and Wales made up approximately 89% of the total population of the UK.

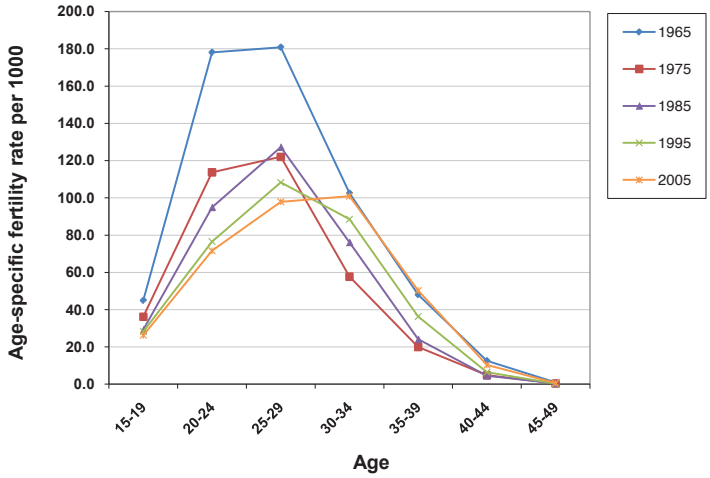
specific fertility rates holding steady. From 2001, the fertility of 35–39-year-olds continued to rise and fertility of 30–34-year-olds began to rise significantly after being roughly flat for a decade. The fertility of women aged 20–24 rose more slowly, but the 25–29 age group showed a dramatic turnaround, rising from 92 live births per 1,000 women in 2001 to 108 per 1,000 in 2008, after dropping from 120 per 1,000 over the previous decade. A small decline in the fertility of under-20s was offset by a small increase in the fertility of over-40s. The combined effect of these rising age-specific fertility rates was the strong rise in TFR since 2001, previously shown in Figure 8.1.

Figure 8.2
Trends over time in age-specific fertility rates (per 1,000 women) in England and Wales, 1960–2008



SOURCE: Office for National Statistics

Figure 8.3
Age-specific fertility rates (per 1,000 women) in England and Wales, 1965–2005



SOURCE: Office for National Statistics

The countervailing trends in age-specific fertility rates for people in their twenties and thirties in Figure 8.2 has led to significant changes in the age distribution of motherhood. A snapshot of age-specific fertility rates in Figure 8.3 shows the way in which the distribution has moved rightwards and flattened, with 25–34 being the key childbearing ages for recent cohorts, compared with a strong concentration of fertility among 20–29-year-olds in earlier cohorts. In general, births to older mothers make up an increasingly large share of total births.

Although trends in completed fertility necessarily lag behind trends in period TFR, the completed fertility trends in Figure 8.4 show a gradual but significant decline in the number of children born per woman in successive cohorts, from above replacement level for the 1941–45 cohort to below replacement level for more recent cohorts. Despite an apparent levelling off in the trend with the 1951–55 and 1956–60 cohorts, completed total fertility is highly likely to fall below two children per woman in the cohort born in 1961–65, given the low fertility of that cohort in their prime childbearing years.

The relatively small differences between completed fertility at age 50 for the different birth cohorts in Figure 8.4 conceal some significant differences in the patterns of childbearing for those cohorts. Figure 8.5 shows a comparison of cumulative fertility: how many children the women in each cohort had by a certain age, compared with the 1941–45 cohort. Here we can see a pattern consistent with increasing postponement and partial recuperation of fertility: each successive cohort had had fewer children by age 25 than the previous cohort and had fallen further behind by age 30; but between 30 and 35 they caught up somewhat with the previous cohort, and also caught up a little between 35 and 40 before mostly levelling off. This pattern is not surprising after seeing the trends in age-specific fertility rates for the different age groups in Figure 8.2, but does illustrate the way in which women in later cohorts appear to be postponing birth at younger ages and then recovering that fertility somewhat at older ages. The remaining shortfall in cumulative fertility at age 50 for each successive cohort in Figure 8.5 maps to the declining completed fertility seen previously in Figure 8.4.

Factors influencing fertility in the United Kingdom

Social factors may have contributed to historical decline in fertility

Over the last 50 years there have been some significant changes in social mores relating to fertility, family, relationships and birth control. These changes may have contributed to the overall decline in fertility over that period, but do not appear to explain the increases since 2001.

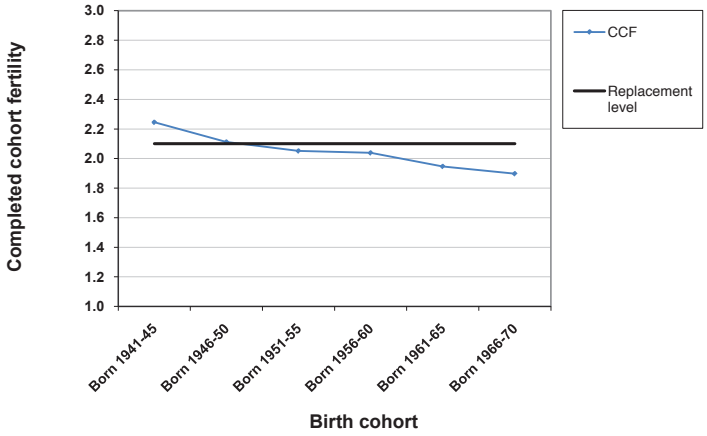
Some decline in average fertility intentions, but a strong two-child norm

Over time there has been a decline in 'average' fertility intentions in the UK. Between 1979–81 and 1998–2001, the average intended family size fell among all age groups: for example, 18–20-year-olds dropped from an average intended family size of 2.35 children to 2.05; 27–29-year-olds dropped from 2.12 to 2.04; and by at least 0.08 children in all age groups (Smallwood and Jefferies 2003). The most common intended family size in the UK, as elsewhere in Europe, remained two children in 1998–2001: more than 50% of women in most age groups in every year intended to have two children, and an intended family size of two children is more than twice as popular as the next highest category in all age groups. However, there has been an apparent increase in the number of people intending to have fewer than two children, and a decrease in the number intending to have more than two children (Smallwood and Jefferies 2003). While this may provide some insight into the declining fertility in the last two decades of the 20th century, we are not aware of studies that have evaluated whether fertility intentions have increased more recently, and so cannot relate fertility intentions to the recent increase in fertility.

Decline in marriage and increase in contraception reduce fertility

A number of social trends relating to family formation and birth control have influenced fertility in the UK over time. The postponement of marriage (and larger decline of marriage) may have a negative effect on fertility: married couples tend to have higher fertility than unmarried couples, but the average age at which people get married has increased over time, and the percentage of marriages that lead to childbirth within a year of marriage has decreased over time. Divorce rates have increased dramatically, but the effect of this is theoretically ambiguous, as divorcees may remarry and wish to have (additional) children. The availability and use of contraception increased significantly in the 1960s and 1970s, with the contraceptive pill available to all women on the NHS in 1974. Abortion became legal in 1968, has increased in use over time and is now above the

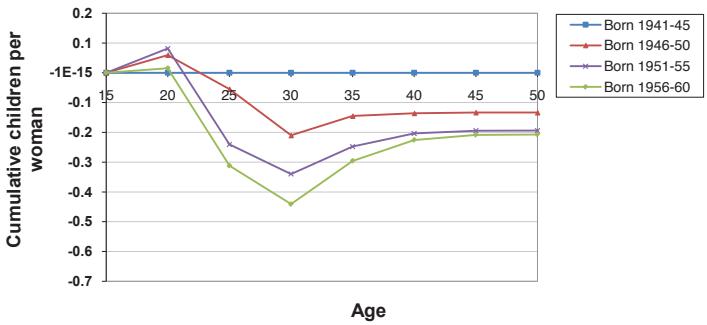
Figure 8.4
Completed cohort fertility in England and Wales for women born from 1941–70 at five-year intervals



NOTE: Two last data points are the authors' projections of CCF, assuming that fertility at ages 40–44 years and 45–49 years for these cohorts will remain at the level observed in 2008.

SOURCE: Office for National Statistics

Figure 8.5
Cohort cumulative fertility rates by age in England and Wales



SOURCE: Office for National Statistics

European average at the high levels associated with the Scandinavian countries (Sigle-Rushton 2008). Again, while these factors may have influenced the long decline in fertility from the 1970s to the early 2000s, there is little evidence to suggest that there has been a turnaround in the social factors driving the increase in period fertility since 2001.

Economic factors have no clear effect on fertility trends

Over the period of the study, there have been several micro-economic and macro-economic factors that might be considered theoretically as potential drivers of fertility. However, neither the ongoing rise in female labour force participation, nor the fluctuations in macro-economic performance, appear to bear any relation to the trends we see in fertility rates. The rise in female education levels may have had an effect on the age structure of fertility, and these tempo effects may explain some amount of the trends seen in total fertility.

High and rising female labour force participation has an ambiguous fertility effect

There has been a steady upward trend in female labour force participation for a number of years, with increasing economic activity rates over time and recent declines in female unemployment. Male unemployment has also declined, but the percentage of men aged 16–64 who are active in the labour force has gone down as well (Lewis and Purcell 2006). As discussed in section 3.1.2, the relationship between labour force participation and fertility is not clear-cut; however, the consistent trend in participation makes it unlikely to be able to explain the recent reversal in the period fertility trend.

Increasing higher female education may contribute to postponing fertility

Female education levels have risen steadily over time, with average educational attainment increasing and women significantly outnumbering men in higher education in 2007–08 (Department for Innovation, Universities and Skills 2009). As noted in section 3.1.2, greater educational attainment is often associated with delayed and reduced fertility. In the UK, a recent study of the cohort born in 1954–58 found both effects: the median age of first birth was five years greater for women with higher educational qualifications than those without them, and a significantly larger proportion of women with higher educational qualifications remained childless (22.5% versus 15.2% of women without higher qualifications; Rendall and Smallwood 2003). However, the same study found evidence for partial recuperation of fertility, with greater proportions of higher-educated women progressing onto higher order births at any given age of first birth (e.g. a 30-year-old first-time mother is more likely to go on to a second birth if she is higher educated), giving some evidence that higher-educated women catch up somewhat on their postponed fertility. Nevertheless, as progression to higher order births is more likely at younger than at older ages, the combined effect of the educational difference in age at first birth and age-specific progression to higher order births is that higher-educated women tend to have fewer children overall. The rising trend in female education in the UK is consistent with the rising fertility rates for women aged 30–34 and 35–39, and with the falling rates for 20–24 and 25–29-year-olds up until the early 2000s, as seen in Figure 8.2. However, there is nothing to suggest that any trends in female education could account for the rise in fertility for the 20–29-year-olds since the early 2000s.

Gross domestic product and fertility trends seem unrelated

As noted in section 3.1, macro-economic conditions may affect fertility through a number of paths. Economic growth may raise family incomes and make it easier to afford the costs of raising additional children, but also it may raise the opportunity cost to potential workers (typically women) taking time out of the labour force to care for young children, making the overall effect ambiguous. In the UK, there is some evidence of pro-cylical fertility in the early 1980s and early 1990s: the small dips in TFR in those years were coincident with drops in real per capita GDP.[29] However, the consistently rising real per capita GDP in the 1990s and early 2000s was met with consistently declining fertility. It does not appear that any change in macro-economic conditions precipitated the rebound in fertility from 2002.

[29] Source: World Bank data and author calculations.

Recent immigration boosts total births, but not necessarily fertility rates

Immigration into the UK has doubled since the mid-1990s to nearly 600,000 in 2008. The population of women of childbearing age (15–44) in the UK that are born abroad has grown accordingly. Nonetheless, between 2008 and 2009 the population of foreign-born women rose by 4%, while the population of UK born women of childbearing age fell by 1% (Office for National Statistics 2009b). As a consequence, births to mothers born outside the UK accounted for nearly one-quarter (24.7%) of all live births in 2009 (Office for National Statistics (2010).

Researchers from the Office for National Statistics have examined the extent to which recent changes in fertility are due to the fertility of foreign-born women rather than UK-born women (Tromans et al. 2009). Theoretically, an increase in TFR could come about by one or both groups increasing their specific TFR, or by an increase in the proportion of the higher TFR group in the total population of childbearing age women due to recent patterns of immigration, or due to the demography of earlier immigration. Although data difficulties do not allow us to analyse all these factors any further back than 2004, it appears that the overall increase in fertility since 2004 has been driven by two main factors: the TFR for UK-born women increased from 1.68 in 2004 to 1.84 in 2009; and the increase in the proportion of foreign-born women in the total population of women of childbearing age (Office for National Statistics 2010). The estimated TFR for women born outside the UK was 2.48 children per woman. The increased proportion of foreign-born women is partly the result of the small cohorts of UK-born women born in the late 1970s and partly the result of immigration of women of childbearing age.

Immigration has brought a rapid infusion of women in their childbearing ages, which has had a considerable positive impact on the birth rate in the UK: one in four children is now born to a mother born abroad. This has an important mitigating effect on population ageing. However, the overall effect of migration on the TFR will be limited, as Tromans and colleagues (2009) point out.

Increased immigration from Eastern Europe after EU expansion in 2004 led to Polish-born mothers being responsible for 13,333 births in 2007, up from 924 in 2001. However, Pakistan remains the most common foreign country of birth for mothers, and several other non-EU countries (including India and Nigeria) saw significant increases in total births and percentage of all live births. Despite the large increase in *births* to Polish-born mothers, it is unlikely that there was much impact on *fertility rates*: as seen elsewhere in this report, women in Poland did not tend to have a higher fertility than their UK counterparts over this period; therefore, Polish women emigrating to the UK are unlikely to be the foreign-born women who are raising per-woman fertility rates. Tromans et al. were unable to calculate TFR specifically for Polish-born mothers due to not having sufficiently precise estimates for all age categories for the Polish-born subset of mothers; however, if the Polish women immigrating to the UK from 2004 displayed typical behaviour for immigrant women,[30] they would not increase the fertility rates.

Overall, the total effect of immigration over the past 50 years has probably been to slow the decline in TFRs, due to the higher fertility (on average) of foreign-born women, particularly those from the Indian subcontinent (India, Pakistan and Bangladesh). However, the immigration of people from Eastern Europe since 2004 is unlikely to have had any impact on the increase in TFRs since 2001. If immigration has played a role in the increase in fertility, it is that women born in traditionally high-fertility cultures currently make up a larger proportion of the population of women at the key childbearing ages than in earlier years, as a result of immigration over the last 20 years and the small cohorts of women born in the UK in the late 1970s.

[30] Competing hypotheses for the expected fertility behaviour of immigrant women are that immigrant women may retain the fertility of their country of origin, adapt to the fertility behaviour of their new country, or have lower fertility than normal due to the disruption of moving from one country to another. All three hypotheses would run contrary to the notion that Polish-born mothers are responsible for any increase in TFRs in the UK since 2004.

Policy efforts and their impacts on fertility

Policy history pre-1997: laissez-faire for families and the labour force

Although fertility was high in the UK relative to other European countries between 1946 and 1997, this cannot be attributed to any pro-natalist policy direction from government. Successive UK governments have pursued an essentially neo-liberal policy, leaving decisions about childbearing to families and maintaining a laissez-faire attitude towards the economy (Sigle-Rushton 2008). Low levels of child benefit were provided from 1946 onwards; maternity leave was introduced in 1978, but initially it was available only to women who had been employed full-time for two years, or part-time for five years. Maternity leave was made universal in 1993 only in response to EU legislation (Waldfogel et al. 1999). The Conservative governments of the 1980s and 1990s actively opposed EU legislation on more general parental leave, blocking adoption of a directive first proposed in 1983, and later securing an opt-out from the 1992 Maastricht Treaty's social policy agreement (Hall 1998). The opposition to introducing parental leave is consistent with the general characterisation of the UK as having a strong male 'breadwinner' paradigm, in which women take main responsibility for the household and childrearing while men are the primary wage earners. Increases in the labour force participation of women with dependent children took place over this period without much assistance from government (Kiernan 1998): traditionally, childcare had been available only for 'at-risk' children, state provision of education for young children was minimal, and it was generally considered that children were best left under the care of their family rather than the 'nanny state' (Lewis 2003; Lewis et al. 2008; Rüling 2008).

Policy efforts since 1997: New Labour's more active approach to family policy

After winning a sizeable majority in 1997, Tony Blair's New Labour government began to take a much more active role in work and family policy than previous British governments. However, while some policies may have resulted in higher fertility, the most explicit goal of the policies was to *reduce child poverty*: the government had the stated aspiration to halve child poverty by 2010 and end it by 2020. In addition to reducing poverty, government policies on early education had the goal of giving all children opportunities for success in life and promoting social inclusion (Rüling 2008): in short, the policies were aimed at improving the 'quality' of children rather than the quantity.

Welfare to Work, family tax credits and minimum wage probably caused net increase in fertility

The approach to raising children out of poverty changed over the course of the New Labour project, with different policy emphases and rhetoric in each term of office (Rüling 2008). Rather than attempting to raise children out of poverty through additional spending, New Labour focused initially on getting unemployed parents back into employment (Deven 2009). The policy levers included a variety of 'carrots and sticks': the New Deal 'Welfare to Work' programme offered training and subsidised employment to many unemployed people, while at the same time making it more difficult for people to claim benefits if they turned down employment offers (Zaidi 2009). The introduction of Working Family Tax Credits (WFTC) for low-income parents helped to make getting back into work more attractive, even at low pay (Rüling 2008). At the same time, a premium on child benefits that was previously given to single mothers, irrespective of jobseeking status, was (controversially) abolished, making it less attractive to be a stay-at-home single parent (David 1999). New Labour also introduced the national minimum wage in 1999, which was not targeted at the unemployed or at families but may have helped to reduce "in-work poverty" for some working parents (Deven 2009).

The theoretical impact of these measures on total fertility is ambiguous, as there are countervailing effects: families with greater income may be able to afford to provide for more children, but better job prospects and earning power increase the amount of income forgone when parents take time out of the labour market to raise children.[31]

A potentially useful paper using data from 1991–98 may provide insight into the interaction

[31] See Grant et al. (2004) for discussion of the seminal work by Becker (1960) describing the effect of rising incomes on the opportunity cost of having children.

of employment and fertility decisions in the British context (Aassve, Burgess et al. 2006). The authors find that employment increases a man's propensity to father children, but that there is a small negative relationship between a woman's employment status and likelihood of having a child; they further find that childbearing has a more significant effect on employment for women than employment has on childbearing.

Two studies of the WFTC consider fertility outcomes that may arise from welfare reform. A study of lone mothers found no significant change in the likelihood of subsequent births following the introduction of the WFTC (Francesconi and van der Klaauw 2007). In contrast, a study of women in couples found that the WTFC increased fertility by around 10% (Brewer et al. 2008). This difference may be explained by the fact that eligibility for the WTFC depended on one of the couple working: many women in couples found that the WTFC increased family income without providing any incentive to enter the labour force, and may even have enabled them to drop out of the labour force in response to their partner's increased earnings.

Taking these studies together, it is reasonable to believe that the pro-employment policies had an unintended positive effect on total fertility, even although the negative trend in TFRs continued for a couple of years after the introduction of these policies. However, none of the studies explicitly modelled other policy changes taking place at the same time, so it is difficult to estimate the precise size of the effect.

Slowly increasing investment in early childhood too small to have a big impact on fertility

Before 1997, there was little government support for childcare other than for the most deprived 'at-risk' children (Kiernan 1998). In contrast with previous governments, New Labour viewed publically provided childcare as an additional lever for getting mothers of young children back into work and as a method to level the playing field for children from disadvantaged backgrounds (Lewis and Campbell 2007).

In April 1998, the Department for Education and Employment took over responsibility for childcare provision from the Department of Health, signalling a paradigm shift from remedial childcare to 'educare' (Lewis 2003). Over the course of the New Labour government, free education places were introduced for all three and four-year-olds (in 1998 and 2004 respectively), but the places were only 12.5 hours per week during the school year, making utilisation challenging for dual-earner families (Sigle-Rushton 2008).

The government also launched the more targeted Sure Start programme in 1998, integrating health, social services and education at a local level in the most deprived communities, with the goals of improving social and emotional development, health and the ability to learn, and strengthening families and communities (Roberts 2000). Operationally, Sure Start programmes were given outcome targets that included not only child health and education, but also increases in parental employment and reductions in maternal pre-natal smoking (Clarke 2006). Sure Start expanded in size from 60 local schemes in 1999 to more than 500 by the end of 2004 (Rüling 2008).

In other countries, publically provided education and childcare is used as a means to allow women to reconcile work and motherhood; the low level of public provision in the UK cannot play this role, and primarily appears to be focused on improving outcomes for children rather than allowing women to have children without interrupting their career. Therefore, the increased investment in public education and childcare is unlikely to have had much impact on fertility in the UK.

Maternity leave, parental leave and flexible work unlikely to have a net negative effect

The New Labour government policies and rhetoric towards work and motherhood evolved over time, moving from 'Welfare to Work' in the first half of their first term to more focus on work–life balance as time went on (Rüling 2008). However, policy changes regarding leave for parents may have reinforced the traditional male 'breadwinner' model of the family by focusing on increasing the length and generosity of maternity leave (Lewis and Purcell 2006; Lewis and Campbell 2007; Sigle-Rushton 2008). This latter point has been shown to be relevant to fertility by recent research, which links gender equality in childrearing to increases in fertility (Feyrer et al. 2008).

In 1999, the government enacted legislation at the minimum level allowed under the EU Direc-

tive on Parental Leave, giving each parent the right to 13 weeks of unpaid leave to be taken in blocks of at least one week at a time up to a maximum of four weeks per year (Lewis and Campbell 2007). At the same time, *paid* leave was extended for mothers from 14 weeks to 18 weeks. Paid paternity leave was not introduced at all until 2003, and then it only allocated two weeks; this was accompanied by a larger increase in paid maternity leave from 18 to 26 weeks (Lewis and Campbell 2007). Paternity leave did not increase between 2003 and the end of the Labour government in 2010, but maternity leave increased to a total of nine months' paid leave and three months' unpaid leave by 2010.

From 2003, the parents of young (or disabled) children have had the legal right to request flexible work from their employers, but there is no obligation on the employer to comply with the request. While flexible working arrangements might make it easier to reconcile work and parenthood, evidence on the availability and take-up of flexibility options has been mixed (Sigle-Rushton 2008).

Increased generosity of childcare leave, in terms of compensation and length, is likely to have a positive effect on fertility. Parents can bear the costs of childbearing more easily if they receive more generous payment when on leave. Some authors have pointed out that longer (low-paid) maternity leave may reinforce the traditional male 'breadwinner' family model and discourage female labour force participation (Lewis and Campbell 2007); however, to the degree that female employment is negatively correlated with childbearing in the UK (as in Aassve, Burgess et al. 2006), policies that discourage female labour force participation may have the effect of increasing fertility.

A seemingly opposing viewpoint emerges from recent work on gender equality in childrearing, which argues that when fathers take on more responsibility for parenting, this has a positive effect on fertility (Feyrer et al. 2008). If true, this might suggest that the minimalist approach to paternity leave and transferable parental leave may not be having a positive effect on fertility: if the low level of support for fathers means that they do not play an equal role in childrearing, this may keep fertility lower than it might be otherwise. However, despite the strong male 'breadwinner' economic paradigm for the household, British men apparently contribute to housework and childcare at levels approaching those of the paradigmatically gender egalitarian Scandinavian countries (Feyrer et al. 2008).

Overall, it appears unlikely that the changes in parental leave policy would have a negative net effect on fertility. The increased generosity of leave is likely to have had a positive effect, and the strong male 'breadwinner' model in the UK, perhaps reinforced by the increases in length of maternity leave, does not appear to be incompatible with a relatively high degree of gender equality in responsibility for the household.

Immigration policy has had little effect to date, but future response to EU expansion may reduce fertility

Unlike some other EU 15 countries (including France and Germany), the UK did not impose transitional restrictions on the free movement of people from Accession Countries after EU enlargement in 2004. As noted above, significant migration from Eastern Europe to the UK has taken place since 2004, but this is unlikely to have had much effect on fertility rates, given the similarity of fertility of Polish women to UK-born women. Although this is speculative, it is worth noting that if greater restrictions are placed on immigration from non-EU countries in response to the increased immigration from EU Accession Countries,[32] this may have a negative effect on fertility. That is, if potential immigrants from higher fertility cultures (e.g. India, Pakistan) are displaced by immigrants from moderate or low-fertility cultures in Eastern Europe, the net effect will be negative. Nevertheless, unless this displacement is very large, the effect on fertility will be small.

Conclusion

Among all the countries in the EU, the UK has had one of the largest turnarounds in total fertility rates since 2001, going from a slow decline over the last decade of the 20th century to a strong rise in fertility rates in the first decade of the 21st century. In general, broad social and economic factors do not provide a convincing explanation for

[32] On 29 June 2010, the Home Secretary announced a temporary restriction on immigration from non-EU countries, to be reviewed later.

the reversal in fertility trends: while the trends in these factors fit into standard explanations for fertility decline, there is no evidence that these factors have begun to move in a way that explains an increase in fertility.

Changing patterns of childbearing, including the postponement and later recuperation of fertility by more recent cohorts of women, may play some part in the recent upswing in fertility rates, but they cannot simultaneously explain increases in fertility across most age groups. Although foreign-born women do contribute a significant number of births to the UK each year and on average have higher fertility than UK-born women, recent immigration is unlikely to explain much, if any, of the rising fertility.

The policies pursued by the New Labour government probably did influence fertility rates, but estimating their precise effects is challenging. The emphasis on increasing employment in the first few years of New Labour was coincident with continued falling fertility rates; the subsequent increases in public spending on free education and childcare, increases in income for low-earning families through the WFTC, and increases in the length and generosity of maternity leave, are associated with the period of rising fertility rates.

It is important to note that none of the policies pursued by New Labour were explicitly pronatalist: the goal was to raise children out of poverty, give children better opportunities in life, and promote a social inclusion agenda. Nevertheless, in attempting to improve the quality of children's lives, the policies are likely to have had the unintended effect of increasing the quantity of children born.

Chapter 9 Conclusions and implications for policy

Declining fertility is a global phenomenon induced by a complex interplay of factors

The steady decline of period fertility in Europe that started in the 1960s seems to be part of a global demographic transition. The global decline in fertility was initiated by the introduction of mass contraception and sustained as a consequence of a complex interplay of a large number of socio-economic factors, including economic transition, changes in value systems (regarding marriage, out-of-wedlock births, working women, etc.) and improved access to education.

However, the total fertility rate (TFR) among European countries varies considerably. Eastern and Southern European countries tend to have the lowest TFRs; higher TFRs are found in Western and Northern European countries. Therefore, it may be fair to speak of a 'two-speed' Europe, with northwestern Europe on one side and Southern, Central and Eastern Europe on the other.

Spain and Poland provide typical examples. Spain has experienced a rapid decline in fertility rates over the last three to four decades. This transition is attributed to rather drastic shifts in social and economic conditions, particularly since the end of the Franco regime in the mid-1970s. High unemployment, a difficult and inflexible labour market, expensive housing, the increasing proportion of well-educated women and protracted adulthood have all contributed to some degree. In Poland, in line with trends in the rest of the industrialised world, marriage rates have dropped, couples are older on average at marriage, and the proportion of cohabiting couples has increased. However, since marriage is still highly valued as a prerequisite for starting a family, these trends are thought to have an important impact on childbearing. Analysis of the socio-economic factors shows that unstable employment, lack of job security and extended years spent in education are important factors for childbearing intentions and fertility behaviour in Poland.

We still do not really understand the drivers of fertility

The literature review and the case studies have shown that the literature is abundant on the drivers of fertility. While there seems to be consensus that an interplay of drastic social and economic shifts is responsible for the downward trends, on aggregate the evidence for causal mechanisms is weak, in parts contradictory, highly context-dependent and often poorly understood.

The increasing proportion of women in higher education has been considered as an important driver of low fertility. Empirically, age at first birth is significantly higher among women with higher levels of education. Consequently, the increased proportion of women in higher education has contributed to a further delay of parenthood, and thus a decline of period fertility at national levels. Research in Spain, for example, suggests that the expansion of the number of women in education is exacerbating the earlier decline in fertility and slowing the recent increase of fertility rates. However, recent research in Germany and Sweden shows that the quantum effect of the level of female education on fertility is limited. Looking at Sweden in the 1980s and 1990s, the field of education appeared to have a greater significance for completed fertility and childlessness than level of education among those with higher education. Similarly, in Germany, there do not seem to be significant differences in the opportunity cost of having children for women with different education levels.

Research findings on the correlation between labour participation and fertility are equally ambig-

uous. In Spain, research shows that for each hour increase in a woman's employment, the likelihood of a second birth decreases significantly. Furthermore, there are positive correlations between the male's 'breadwinner' capacity and fertility. This is in contrast with Sweden, where there is a positive correlation between female employment and fertility.

Europe has seen a trend of recovery of aggregate period fertility

'Doomsday' scenarios of imploding European populations, with fertility spiralling downwards, have not materialised. Recent snapshots of fertility indicators look less depressing than they did a decade ago. After two decades of year-on-year drops, the average period fertility for the European Union (EU) as a whole has stabilised in the 21st century, and increased in most Member States. There are a number of countries which are now out of the 'danger zone'. However, based on 2008 statistics, more than half of the EU countries still have fertility rates below 1.5. Low fertility is still a reason for concern in a number of EU countries.

For example, Spain experienced one of the most drastic drops in fertility among European countries in the 1980s and 1990s. However, recently TFR has recovered from a low of 1.15 in 1998, rising to almost 1.5 in 2008. Although Poland remains a country with relatively low fertility, the average number of children per woman increased every year between 2003 and 2008, from 1.22 to 1.39. Similarly, aggregate TFR in the UK rose significantly from 1.64 in 2001 to a 23-year high of 1.97 in 2008. Sweden's rollercoaster fertility bounced back from a low of 1.5 in 1999 to 1.9 in 2008.

Nonetheless, considerable variations continue to exist, and the recovery of period fertility has not been experienced uniformly across countries. Germany, for example, has hardly seen an increase of overall fertility in the past decade, and with 1.4 children per woman, it still ranks among those with the lowest period fertility in Europe.

Policymakers should not over-interpret indicators of period fertility

The TFR for a given year expresses the number of children that a woman would have over her childbearing years if, at each age, she experienced the age-specific fertility rate of that year. It is a heuristic for the extent of childbearing in a given year that, in contrast with the birth rate, compensates for the number of potential mothers in the population. The birth rate could increase simply because there are relatively more women in reproductive ages. Hence, TFR is often used as it is easy to understand – because it is expressed in the number of children per woman – and provides an up-to-date overview of childbearing patterns over time. Hence the term 'period fertility'.

However, observing TFR only can be somewhat misleading, because it can disguise the more complex population developments involved. Period fertility, for example, does not distinguish between tempo and quantum effects. The timing of births affects TFR when women decide either to postpone or advance childbearing, but does not necessarily have to affect their completed fertility. Tempo effects also have an impact on the future population structure, but merely introduce a lag (or the opposite). The rising birth numbers and fertility rates in recent years might suggest that couples are having more children. However, this is not the case: they are having the same number of children as couples 30 years ago, but at a later age.

Therefore, we recommend observing a range of aggregate and disaggregate indicators including, for example, completed cohort fertility (CCF) and fertility trends by age, education level, region, socio-economic status, etc. For example, in Germany the TFR has remained more or less constant over the past 10 years. However, while period fertility in the former West German states has slightly decreased, in the former East Germany it has gradually recovered from the fertility nadir (below 0.8) right after reunification. Furthermore, the age-specific fertility of German women between the ages of 20 and 29 has declined further in the past decade, but older childbearing by women between 30 and 39 has increased in that same period.

More older childbearing, but fewer younger mothers

Given the limitations of aggregate period fertility, it is useful to consider age-specific trends. When disaggregating by age, we conclude that recent trends can be characterised by a stabilisation of the

fertility decline at younger maternal ages, and an increase in age-specific fertility rates at later ages.

Since 2000, the fertility of women in their thirties – in particular, their late thirties – has increased considerably. So, while the aggregate period fertility is still much lower than it was 60 years ago, fertility among women in their late thirties has increased towards levels matching those during the post-war baby boom period. The evidence for the shift to later childbearing is undeniable, but it is difficult to say whether this trend is the result of a conscious choice by women and their partners to postpone childbearing, as the available data do not allow us to track reproductive considerations over time. In fact, it is likely that this shift to later childbearing is at least partly attributable to postponement caused by a change in lifecourse dynamics: expectations, opportunities and values regarding education, labour force participation, self-realisation and family formation.

This trend of increasing older childbearing can be observed across all the case study countries. Typically, the largest increases are seen among the 30–34 and 35–39 age groups. However, there are differences in the trends among the younger age groups. In Poland, the average number of children born to women in the age groups between 15 and 29 years have stabilised since 2000. In the UK, fertility has increased in all age groups except for teenagers (15–19 years). Spain also witnessed an increase among all age groups with one exception: those aged 25–29 years. Age-specific fertility in both Germany and Sweden shows a divergence between younger and older age groups, with an overall increase in the number of childbirths to women above 30 years, and an overall decline in the number of childbirths to women aged 15–24 years. In all the case study countries except Poland, there are now more children born to women aged 30–34 than to those aged 24–29.

The trend of increasing childbearing at later ages is not a new phenomenon

The combination of increasing age-specific fertility rates of women in their thirties and a levelling off in the downward trend of younger childbearing recently has caused the TFRs in most European countries to increase. However, the trend in increasing older childbearing is not a new phenomenon, since the age-specific fertility of women in their late thirties began to increase in the 1970s and 1980s; instead, it is a rather long and gradual trend. Originally, the effect of this trend on aggregate period fertility was offset by quickly falling fertility at younger ages. It was not until young fertility began to stabilise that aggregate fertility went up.

The relatively high fertility rates at older ages do not seem to be a temporary phenomenon. The gradual increase in motherhood among thirty-somethings over recent decades reflect changing opportunities for women and perceptions regarding their role in society. It is unlikely that this trend will reverse, and societies and economies will have to accommodate older motherhood from both an individual and a societal perspective.

While period fertility in many EU countries has declined continuously since the 1960s and recovered only recently, CCF has remained relatively stable, with a gradual decline among the cohorts born after 1940. On average, women born between 1940 and 1944 had slightly fewer children than those born between 1955 and 1959. Unfortunately, since the women born later were in their thirties between the 1970s and 1990s, CCF tells us little about childbearing trends in the past 10 years. Projections of completed fertility hint at a continuation of this gradual decline for cohorts that are currently younger than 50 years of age.

No clear or uniform explanation for the recent recovery

As the recovery of aggregate period fertility is a relatively recent phenomenon, not much literature is available that attempts to explain this trend-break. Most of the sources we examined still review drivers of fertility in the light of declining and low fertility in Europe.

Some authors provide tentative explanations for the recovery in fertility levels, including:

- the end of the transition period from socialism (Central and Eastern European countries);
- the fertility rates of migrants (Spain and the UK);
- improvement in the economic situation, especially decreases in unemployment (Poland, Spain) and increases in female labour participation (Nordic and English-speaking countries); and

- public policies, especially family policies and policies helping parents to combine family and work responsibilities (the UK).

However, none of these explanations tell the complete story, and it is too early to be definitive about the reasons behind the recent mini-baby boom. We discuss the latter three explanations in more detail below.

It is not migration

In contrast with some reports in the popular media, we do know that migration is not the main explanation for the recent recovery of period fertility. Some have attributed the increase to an increased influx of migrants with higher fertility than the host population. However, in our case studies, the reproductive behaviour of migrants only played a relatively modest role.

Although intra-EU migration has a zero-sum effect on fertility at the EU level,[33] it may have an impact on national fertility rates. For example, there is a growing number of children born to Polish mothers in Germany, Ireland, Sweden and the UK. Not only does this mean that those children contribute to the birth rates of the host population, it also implies that Poland is missing these births. However, this will only affect aggregate fertility rates if the migrant population has distinctly different fertility characteristics from the host population. In the UK, the recent immigration of women of childbearing age from EU countries, including Poland, is unlikely to have played much of a role in increasing period fertility. The children born to these migrant mothers may have contributed to total births, but are unlikely to have had much effect on population standardised fertility rates. If any migration has had such an effect in the UK, it would have been due to mothers born particularly in Pakistan and Bangladesh, who tend to have higher fertility than average. Similarly, Spain has seen a considerable increase of immigration flows over the past years, so the potential effect of migration on the absolute numbers of births to foreign mothers is potentially large. However, the positive impact on the TFR turns out to be limited.

In all the case study countries, the data reveal that the fertility trends of many groups of foreign-born women tend to converge with the average of native women. In Sweden, for example, looking back to the 1980s and 1990s, this happens within two years of arriving in Sweden, although with some different responses among specific groups. Consequently, immigration appears to have little effect on longer term trends in fertility.

The association between economic growth and fertility has reversed in some countries

There is some empirical research suggesting that the reversal of fertility decline is a result of continued economic and social development. Neoclassical economics predicts a countercyclical association between economic growth and fertility: this means that fertility tends to drop in times of economic progress. However, in recent years there is some evidence in a number of European countries that this correlation has reversed: in highly developed countries, good economic times now tend to be associated with higher fertility rates.

Some argue that it is not economic development as a whole, but the extent to which there is equality between men and women in society that plays a role in explaining this demographic transition. Empirical evidence suggests that female labour force participation is the main factor in economic development that impacts fertility. A possible explanation would be that economic advancement in some highly developed countries not only increases female labour market opportunities, but also increases the opportunities to combine work and family life for both parents.

As yet, the evidence for the role of gender equality in the workforce in the recent recovery of fertility is not overwhelming, and further in-depth analysis should lead to more definitive answers. However, some of our case studies do suggest that there is a potential association between the compatibility of work and family life and reproductive behaviour that gives direction for future observation. In Sweden, the model of promoting a dual-earner, care-sharing household through a gender egalitarian approach has been associated with the

[33] That is, assuming that moving countries does not affect couples' individual reproductive behaviour. For example, the act of migration could have a disruptive effect on fertility, in which case it would have a negative-sum effect on the TFR at EU level.

highest fertility rates in Europe. Sweden's pro-cyclical fertility (where the trend in period fertility is positively correlated to the economic cycle) is thought to be associated with its dual-earner model. In particular, recent studies have suggested that women employed in professions which have more flexible working conditions (e.g. in the public sector) are more likely to have second and third births, while women in high-stress jobs are more likely to be childless.

In contrast, Germany is often stereotyped as a country that is focused on monetary support to families that match the male breadwinner model and have clearly defined gender roles and expectations. In this model, men are strongly attached to the labour market, whereas women tend to be dependent on the income of their husband or partner and are mainly responsible for childrearing. In situations where childrearing and employment are less compatible, neoclassical economic theory predicts that the opportunity costs of having children will increase with economic growth. Although aggregate period fertility has not fallen further in Germany over the past decade, the continuous decline in age-specific fertility rates among younger women may be explained by countercyclical fertility.

These two contrasting examples could attest that modernisation of gender relations in the workforce is the explanatory factor behind the shift from countercyclical to pro-cyclical fertility. However, the link between gender equality and reproductive behaviour, and subsequently its effect on the fertility response to economic cycles, is less clear from other case studies. Further research on the association between economic development and fertility – particularly on the role of female labour force participation – should clarify the reason for contrasting correlations. An interesting question is: what will happen as a consequence of the financial downturn that began in 2008? This crisis is an excellent opportunity to study the relation between fertility and economic growth.

Policy matters, but probably only a little

Evidence from the literature review and the in-depth case studies reveals that policies can have an effect on reproductive behaviour. However, given the complex interplay of factors affecting reproductive behaviour, the impact of individual policy measures tends to be fairly small. The wider context of social, cultural and economic factors in these countries matters more. If governments are able to bring about a paradigm shift in the societal system, they may create the conditions that encourage longer term trends in fertility behaviour at the societal level. Sweden and other Nordic countries are textbook examples of societies where a comprehensive long-term government effort to stimulate female labour participation, and gender equality in the workplace and the family, has had unintended consequences for fertility behaviour.

The above statement is no different from the overall conclusion in Grant et al. (2004). However, the key question in this study was whether policy has been a driving force behind the recent recovery of fertility rates in the EU. Unfortunately, it is too early to answer this question – and even if a longer time series had been available, the relatively poor explanations for the driving forces behind fertility decline show that it is nearly impossible to find convincing evidence for causal mechanisms. It seems unlikely though that the recent recovery, which can be observed in most EU countries, is primarily driven by policy, as by no means have interventions been uniform across Europe.

Recent years have been characterised by heavy investment in the family in a number of European countries, including Germany, Poland and the UK. However, the impacts of these family policy packages are, at most, mixed. Some argue, for example, that Poland's low fertility is partly due to reluctance to introduce family policy measures that recognise social changes regarding non-traditional family forms and household structures. Current legal arrangements exclude non-married couples, and so fail to acknowledge the existence of a persistent social trend in this country. As mentioned previously, Germany's efforts to invest in the family in recent years have been focused primarily on the traditional male 'breadwinner' model. Fertility rates have remained relatively stable between 1.3 and 1.4, despite these heavy investments.

Conversely, the UK had high fertility relative to EU averages for most of the post-war period, despite very little family policy and active resistance to EU family policy initiatives. A continued reluctance to provide paternity leave and the increasing length and generosity of mater-

nity leave, tends to reinforce the traditional male 'breadwinner' model in the UK. The fragmented nature of public childcare services and education for children at young ages make it tough for dual-earner households to take advantage of them, undermining any gender equality effect from these public services. The New Labour government (1997–2010) took a more active role in family and labour policy, but aimed to reduce child poverty and increase female labour participation through measures including tax credits and extending paid parental leave. Although it is difficult to quantify the actual impact of these investments on period fertility, it is very unlikely that they had no effect.

Since national contexts are so important, it is also impossible to extrapolate findings at Member State level to EU level. For each example of policy impact, there seems to be a counter-example where this impact remained absent.

Enabling parents to combine labour participation and family duties has positive side-effects

Reconciliation of the competing tensions between having a career and family life has been a prominent feature of the EU's social policy over the past years. EU Member States have implemented a broad range of measures encouraging couples to share responsibilities in the labour force as well as duties in the family. In a number of countries, the prime objective of these measures has been to improve gender equality, while others have focused on encouraging the active labour market participation of vulnerable groups, and women in particular. Examples of these measures include extending (paid) maternity leave, subsidising childcare or offering provisions for part-time work. Aside from their positive direct effect on gender equality and labour force participation, which contributes to the tax base and gross domestic product (GDP), these policy measures have an often unintended effect on fertility behaviour. Countries with a positive association between economic development and fertility tend to be characterised by relatively high female labour force participation. The negative association of male and female educational attainment, on the one hand, and fertility, on the other, seems to have weakened or even disappeared in these countries. This seems to suggest that, in times of economic progress, employment policies aimed at improving the balance of work and family life could have indirect impacts on fertility intentions. These policies particularly limit the opportunity cost of having children, which primarily impacts on the choice to have a first child. Recent empirical studies find that these policies have a tempo rather than a quantum effect on fertility, which means that they help women to have their children earlier.

Irrespective of the question as to whether or not the recovery of fertility rates in various EU member states is due to investments in social policy measures aimed at reconciling work and family life, they tend to contribute to increasing the labour force participation of women, and an environment in which men and women are more equal in the workforce and the family.

Regardless of recent period fertility recovery, Europe's population will continue to age

This report has analysed the recent recovery of period fertility in European countries and the underlying factors. We conclude that the outlook is not as bleak as it was a decade ago, and that a number of governments do not have to worry about adopting explicitly pro-natalist policies. However, in several countries fertility rates are still alarmingly low, and this will lead to a significantly reduced influx of young people in the labour force in a generation from now. Furthermore, fertility has a long-term multiplier effect, since it also affects the future size of the population of potential mothers. The increasing rate of older childbearing, changes in period fertility and their consequences for population structure, have a wide range of social consequences and long-term macro-economic impacts.

That said, the recent tempo and quantum fluctuations in fertility will have little effect on the ageing of Europe's population. The main driver behind the looming increase of dependency ratios is the baby boom generation reaching retirement age over the coming decade. Recent changes in fertility will only affect the working age population in two decades from now. It will take decades to reverse the ageing of Europe's population, even if TFR were to recover to replacement level immediately and stay there. This fertility will be applied to the relatively small cohorts of women born in

the 1970s, 1980s and 1990s. Sweden, ironically, will be one of the earliest countries to experience rapid population ageing, because its decline to below-replacement fertility was one of the earliest in Europe.

Hence, governments with generous welfare systems will still have to address the increasing pressure on the affordability of pensions, particularly those based on a pay-as-you-go principle, and health care, even if fertility rates continue to increase to levels beyond the replacement rate. The realities and inevitability of an ageing population will force current governments to reconsider the sustainability of their public welfare expenditure, and the private sector to anticipate the features of older consumer and labour markets.

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Appendix A: The potential consequences of population ageing

Population ageing is often discussed in a one-to-one connection with a looming pension crisis. However, in reality the picture is more nuanced. There is a wide range of potential consequences of an increasing mean age of the population, and an increasing proportion of the elderly in particular, but the evidence of these consequences is not always convincing or uniform. There are continuing debates about the extent and nature of population ageing impacts and the need for action. This appendix provides a brief summary of some of these impacts, with the caveat that this overview is by no means comprehensive.

Public sector spending and revenue patterns may change as populations age

Changing population structures can affect fertility patterns and have far-reaching implications for the public sector, including impacts on public sector spending, focus and distribution, the balance and nature of public sector revenue streams and political trends. In regards to the latter of these impacts, changes to population structures can affect the relative balance of different age groups in the electorate. As populations age, the relative influence on electoral outcomes and political representation of older demographics could rise (United Nations 2007). However, the impacts of an ageing population go far beyond changes to the electorate: it affects the balance between the contributions made to public sector revenues and demand for benefits or public sector spending outputs. The Organisation for Economic Co-operation and Development (OECD) estimates that 40% to 60% of total public spending is sensitive to the age structure of a population (Dang et al. 2001).

Across the European Union (EU), old age dependency ratios are projected to fall with increasingly ageing populations. The greatest effects are likely to be felt in Greece, Italy and Spain as older age populations rise and fertility rates decline (Beetsma and Oksanen 2008). Looked at another way, the 'dependency ratio' – that is, the ratio of nominal old age dependents (65 years and over) to the people who could potentially support older, nominally less active individuals (aged 15–64 years) – is currently 4:1 or 5:1. However, this is expected to fall to 2:1 or 3:1 in 50 years (Coleman 2007). The global economic recession could further increase pressure on government spending.

Therefore, the effect of changing population structure and size and its effect on public expenditure and revenues are likely to be of particular concern to policymakers. Population ageing is likely to increase demand for public spending on pensions, health care and long-term care and old-age health insurance, and is one of many factors which can influence the proportion of gross domestic product (GDP) spent on public services such as pensions, benefits and health care (Dang et al. 2000). There is already evidence that public spending on pensions and health care has increased as populations age (D'Addio and d'Ercole 2005). Pension costs could increase as a result of extended eligibility requirements or a rise in the real value of pensions (Uhlenberg 2009). In extremis, debt and taxes could be pushed to unsustainable levels, as demand on public spending on pensions and health care rise (Burtless 2009). However, it is important to keep in mind that the extent of public spending pressures will vary according to country-specific patterns of ageing, and the design of a country's pension and health systems (Beetsma and Oksanen 2008). (The case studies presented earlier in this report provide further evidence of this observation.)

In addition to the effects on public benefits such as pensions, the health care costs of an ageing population could seriously impact public sector spending. Health care costs are projected

to increase in the coming decades across OECD countries due to advances in technology, population ageing and declines in fertility (OECD 2010). In an ageing population, the costs associated with disabilities and limitations, as well as chronic disease and conditions, will differ between those younger and older than 85 years of age. However, changes to health costs could vary; the extent to which any increase in health costs is due to changing population structures is uncertain. Current evidence suggests that people are living longer, with fewer disabilities and functional limitations (Christensen et al. 2009). Recent data on the age-standardised disability decline in the 1980s and 1990s in the USA suggests that disability rates of the elderly declined (Manton and Gu 2001, in Lutz and Scherbov 2005). Moreover, Lubitz et al. (2003) find that cumulative health care expenditure for those in better health at 70 years and longer life expectancy are similar to those with poorer health and lower life expectancy. Thus, depending on their health status, a greater number of elderly people could have varying impacts on health care costs.

However, some argue that the future picture may not be as bleak as it may seem. The burden of rising dependency ratios on public spending may be counterbalanced by reduced young-age dependency and increased female labour participation. Some argue that the ratio of labour force to population will actually increase in most countries, because declining fertility has been, and may continue to be, correlated with greater female labour force participation. Bloom and colleagues (2009) show that for every unit reduction in fertility, women tend to work two years more over their lives. Furthermore, a decline in fertility across countries will mean fewer children. One could argue that this will allow for more resources per child for education and health care, which could support healthier and better-educated children. Over time, this could have a positive effect on economic growth (Bloom and Canning 2000), perhaps counteracting some of the negative pressures on spending and revenue that are brought on by an ageing population.

Economic productivity may decline as populations age

Alongside the effects on public spending and revenues, changing population size and structure may be likely to have far-reaching economic implications that may affect economic growth, domestic savings, investment, consumption, labour markets and intergenerational transfers, among other areas (D'Addio and d'Ercole 2005; United Nations 2007). These economic impacts can happen in a variety of ways, a few of which are highlighted here.

First, population ageing can contribute to the average age of consumption becoming higher than the average age of production (Coleman 2007). As a result, this can increase demands on the working population and limit a country's ability to maintain the labour force size, age distribution and human capital resources (Uhlenberg 2009).

Second, population ageing can affect the size and composition of the workforce, leading to a decline in its size and activity level (Coleman 2007). Overall participation rates are predicted to decline a further 1.1 percentage points as a result of population ageing between 2005 and 2020 (Burtless 2009). Moreover, Burtless (2009) found that, between 1980 and 2005, the economic activity rate of people over 15 years of age in nine South Eastern European countries would have declined 2.8 percentage points from 65% to 62.2% even without changes in participation rates in each age group. Furthermore, population ageing can lead to a shortage of young skilled workers (McDonald 2007). An older workforce may be less able to learn and adapt to changes in innovation and technology (D'Addio and d'Ercole 2005).

Social cohesion may be affected as proportions of older and younger age groups change

From a societal perspective, changing population structures can present challenges for social cohesion and family relations. Grant et al. (2004) review the importance of social cohesion to political agendas, citing how it is often measured using similar indicators to those that measure the strength of a society. Population change can challenge social cohesion by affecting people's access to services, freedom from crime or perceptions of threat (Schneider 2008).

More specifically, changes to cohort relations as a result of population ageing could threaten social cohesion. Changing population size and structure can alter the composition of, and individuals' attitudes towards, patterns of care between younger and older generations (Blome et al. 2009; Grundy

2008). Some academics theorise that social cohesion could be affected by a threat from gerontocracy, with an increasing electoral power of retirees (Dychwald 1999 and Sinn and Uelbelmesser 2002, in Blome et al. 2009). Perceived and real hostility towards future generations could be greater in continental European welfare states, where demands on family care networks are relatively higher (Esping-Andersen and Sarasa 2002). However, Esping-Andersen and Sarasa (2002) argue that a zero-sum distributional trade-off is premised on an overly static analysis. By looking at cohort dynamics it could be possible to identify win–win policy approaches: for example, policies that invest in children could be a possible means of providing for both child and adult welfare.

Technological advances will be driven by changing socio-economic conditions

Changing demographics, coupled with shifting socio-economic conditions, are affecting the demand for new technologies and altering the nature of the innovation system within and between nations. Innovation is not just about the 'invention' of new technologies, but is widely recognised as part of a much greater and highly dynamic system in which different actors, networks, ideas, capabilities, knowledge, practices and processes are interacting. Therefore, innovation is influenced by interactions and learning within a wider system, where everyday routines may contribute to knowledge creation and diffusion, technology uptake and economic growth (Lundvall 2010). Such 'innovation systems' approaches understand the rate and direction of technological change as related to complex interactions between a range of organisational, cultural and institutional factors which vary according to national context and technology area (Freeman 2009; Lundvall 2010). An ageing population could alter the balance and composition of routines and demand within populations, possibly affecting the direction and nature of innovation.

Perceptions by firms about consumer demands, given changing demographic balances, could affect innovation, resulting in greater effort being directed at creating goods and services tailored to a changing demographic. One example where advances in technology may be able to directly affect population size by influencing the drivers of fertility trends is in the area of assisted reproductive technologies (ARTs). When population ageing results in the loss of reproductive potential in a population (D'Addio and d'Ercole 2005), the use of ARTs could be one mechanism to affect fertility patterns and perhaps mitigate the potential declines in fertility caused by difficulties in natural birth due to older mothers, health problems and so on. Another example where technology and innovation are influenced by changing populations is in the area of health care for the elderly. Here, the need to respond to ageing populations has offered opportunities for new ways to respond to the pressures associated with the social and economic aspects of chronic health conditions. Information and communication technologies (ICTs) and e-health offer efficient mechanisms and systems for health and social care, one that meets the needs of an ageing population (European Commission 2007), as well as illustrating how innovation and technology is responding to the changing demographic situation in Europe. Different age groups are likely to have different impacts on the environment.

Different age groups are likely to have different impacts on the environment

Changes in population size and structure can have implications for the environment, particularly regarding what it is about an environment that makes a place habitable (Grant et al. 2004). Few studies so far have analysed the nature and scope of the relationship between population and environment. However, declining population size and increasing proportions of elderly people could affect both the progression of climate change and people's ability to respond to changes. Different age cohorts have been found to have different carbon footprints. Zagheni (2009) finds that carbon dioxide emissions increase per capita until the age of 60 years, and then begin to decline in the USA. In contrast, comparing across age cohorts above 50 years of age in the UK, the 65–74-year-old cohort had a higher than average carbon footprint (compared to the average carbon footprint for a UK citizen of approximately 12 tonnes of carbon dioxide annually), using more tonnes of carbon dioxide per year than any other age group (Haq et al. 2007). Based on assumptions that carbon emissions increase among elderly people, future population ageing could have an impact in terms of increasing carbon emissions.

Another dimension of population ageing and the environment concerns people's ability to cope with the effects of climate change. Elderly people could be disproportionately affected by the effects of climate change, especially where they have a reduced capacity to act independently in response to environmental changes (Haq et al. 2008).

Conclusion

The consequences of population ageing are not necessarily straightforward. In public spending, the effects of population ageing will be affected by the structure and composition of welfare provisions, such as those regarding pensions. Health status, activity levels, and the use of technologies and consumption will affect the economic, health, technological and environmental impacts of ageing. Finally, even the implications of social cohesion are not straightforward; rather, they are linked to political involvement and care networks in place in different countries.

Nevertheless, despite the variability and uncertainties surrounding how population ageing will play out along these different dimensions, evidence on the interactions between population ageing and policy along political, economic, social, technological and environmental dimensions confirms that population ageing is likely to have wide-reaching implications for the composition and direction of a wide range of policy areas.

Appendix B: The other drivers of population dynamics

Population dynamics – that is, population growth and structure – are shaped by mortality, fertility and migration. The changes in mortality and fertility regimes that human populations have undergone over the past 150 years are described in terms of demographic transitions. Figure B.1 below illustrates the development of two transitions that have been documented so far.

The first transition is marked by a large increase in population, which occurs when mortality decreases while fertility remains stable at a high level. Mortality rates fall as living conditions (including nutrition, hygiene and health care) improve. The second transition occurs when birth rates begin to fall and population growth begins to level off. Falling birth rates are likely to be due to a number of factors, including the availability of contraception, greater educational attainment, rising wages, urbanisation and other social changes. All other things being equal, the population ages (or the mean age of the population will increase), when fertility levels drop. When fertility drops below replacement level – that is, the level needed to replace current generations with future ones – *ceteris paribus*, the population will shrink in size. This can have a number of important implications.

First, different demographic components affect each other, both directly and indirectly. Historically, a decrease in infant mortality, for example, may have affected couples' reproductive behaviour by reducing the need to replace children that die. Migration may affect the fertility of populations through changing their composition, especially when it brings migrants whose fertility is significantly different from that of the host society. Second, fertility, mortality and migration are all shaped by social and economic realities. Economic development may cause fertility to decline by increasing the opportunity cost of children, but the effect of decline in fertility on population size may be offset by a fall in mortality at the same time, as a response to improving socio-economic conditions and quality of medical care. Finally, and most importantly, fertility, mortality and migration interact purely numerically in determining the size, structure and composition of populations.

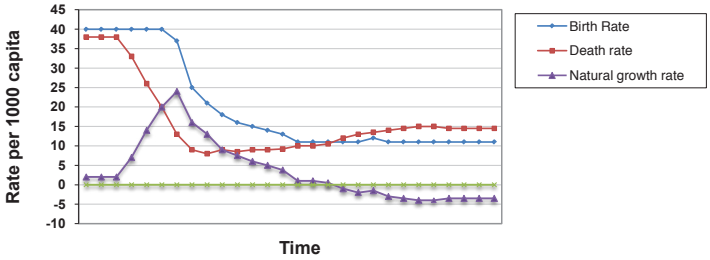
Equation 1 organises the formal relationship between population size and the three components of demographic change. Population size at any point in time (P) is a function of population size at a previous point in time (P_{t-1}) and a balance of births (B), deaths (D) and migration movements in (I) and out (E) of the population between time t and time $t+1$.

$$P = P_{t-1} + (B - D) + (I - E)$$

(Equation 1)

It is easy to see that an increase in number of births in a population should result in an increase in population size. However, in reality, the fate of population change under conditions of rising fertility is uncertain, and depends on the number of deaths and numbers of arriving and departing migrants. A large number of deaths and a high number of emigrants, whether independently or together, may prevent population growth.

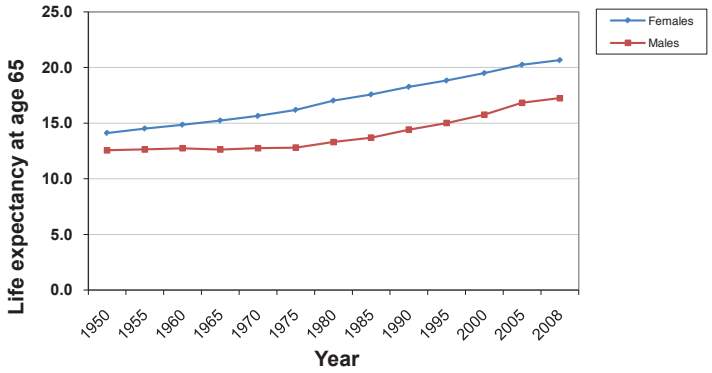
Figure B.1
Schematic representation of the first and the second demographic transitions



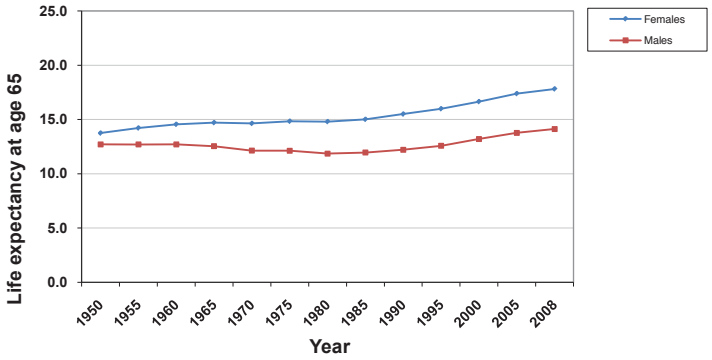
SOURCE: Adapted from Van de Kaa (1999)

Figure B.2
Trends in life expectancy at age 65 in the EU

PANEL A. EU 15



PANEL B. Selected new members of EU



NOTES: (1) Selected new members of the EU are Bulgaria, Czech Republic, Hungary and Poland. (2) The last point in time is 2008, or a point with the latest available data.

SOURCE: for all countries apart from Greece: Human Mortality Database; for Greece: *Demographic Yearbook* 1978, Historical Supplement, 1996, 2005, 2007

Thus, understanding the relationship between fertility and other demographic processes is crucial for policymakers. Both social and macroeconomic processes affecting fertility and policy measures directed at modifying current levels of fertility may affect other demographic processes. However, even if their impact is limited to fertility, other demographic processes interact with fertility in determining population size and characteristics, such as age and sex structure and its social and ethnic composition.

Mortality

Over the past 150 years, European populations have experienced a continuous decline in mortality. Initially, this was due to declining mortality from infectious diseases. Infants, children and young adults were the principal population groups to benefit from this decline, which has been linked to improvements in nutrition, sanitation, and to some extent, progress in medical science (McKeown and Record 1962). More recently, and especially since the 1960s, mortality from chronic diseases associated with old age has begun to decline.

At the beginning of the 21st century, life expectancy at birth in EU 15 countries was about 10 years higher than in the 1950s. As Figure B.2 demonstrates, gains in longevity were especially prominent at advanced ages and in EU 15 countries (Panel A) around 2008, the life expectancy of females and males at age 65 was 20 years and 17 years, respectively – that is, about five to seven years longer than during the 1950s. The populations of new EU members have a lower life expectancy than those of the EU 15 (Panel B). In the Czech Republic, Poland and other former communist countries, mortality stalled during the 1970s and 1980s. Increases in life expectancy in these countries were also smaller than in 'old' EU members: Polish life expectancy at age 65 increased by two years (males) and four years (females) between 1950 and the end of the first decade of the 21st century. In the Czech Republic the corresponding figures were three and five years (Panel B).

The decline in old age mortality can be seen as largely a result of advances made in medical science in the treatment of cardiovascular diseases, and concomitantly from growing awareness of the importance of lifestyle choices (smoking, moderate drinking, healthy diet and exercise) for health and longevity (Vallin and Mesle 2001, 2004; Kesteloot et al. 2006). Indeed, recent research has shown that the gains in longevity could have been even greater than observed, had there not been the offsetting influence of smoking-related mortality and mortality related to bad dietary habits and lack of exercise (see for example, Law and Wald 1999; Mokdad et al. 2004, 2005; Staetsky 2009; Preston et al. 2010). The stall in mortality in new members of the EU has been linked primarily to delays in dissemination of the latest medical technologies for treating cardiovascular diseases.

Therefore, declining mortality is also a cause of population ageing and changes in the dependency ratio – that is, the ratio of elderly population to working age population (Preston et al. 2001; Gavrilov and Heuveline 2003). In the early

stages of demographic transition (typically during its first stage, see Figure B.1) declining fertility drives the process of population ageing through reducing the number of births. Subsequently, newly-born cohorts become smaller in size relative to older cohorts, and older ages assume a proportionately larger share in the population than they did before. At that point, a simultaneous decline in mortality, largely among infants and children, contributes to the creation of a younger population structure, offsetting the impacts of declining fertility to a certain extent. As demographic transition advances (during the second stage, see Figure B.2), the interplay of fertility and mortality and their effect on population structure changes dramatically. When life expectancy at birth in a population reaches 60 years,[34] mortality becomes a force that induces ageing in the population (Preston et al. 2001: 156–161). Reductions in mortality at this point occur among older age groups, and the growing number of lives saved at progressively more advanced ages results in an ageing population structure.

Thus, the populations of developed countries around the world have been subject to the 'double whammy' of population ageing stemming from low and declining fertility, and low and declining mortality throughout the second half of the 20th century. The decrease in mortality, especially at old ages, is a trend that is unlikely to come to a halt in the near future. Whether or not there is a natural limit to human longevity (see Olshansky et al. 2001 and Oeppen and Vaupel 2002 for a debate on this issue), mortality will remain a force contributing to aging in the foreseeable future.

Migration

Migration has played an especially important role in shaping the social and cultural landscape of Europe since the 1950s. During the post-war years, the economies of many European countries went through a phase of regeneration. Migrant workers from North Africa, South Asia and Turkey were invited in their thousands to alleviate the labour shortages in large European economies. In contrast with policymakers' expectations, a large proportion of these workers chose to settle in Europe rather than to return to their countries of origin. Moreover, new migrant communities attracted additional migrants through the process of family reunification.

By the 2000s, the foreign-born population constituted a significant proportion of many European populations. Table B.1 shows the proportion of non-nationals in European populations.

In six out of the EU 15 countries, the proportion of non-nationals was around 10% in 2008. In 12 out of the 15 countries, citizens of non-EU countries constituted more than one-half of all non-nationals. India, Morocco and Turkey were the three largest countries of origin of non-nationals in the EU in 2008. In the former communist countries, the proportion of non-nationals remained very small. It is worth pointing out that the definition of a foreigner as a 'non-national' is rather limiting. In many countries, foreign-born

Table B.1
Proportion of non-nationals in European populations in 2008

Country	% non-nationals (total)	Citizens of non-EU countries	Citizens of EU countries
EU 15			
Austria	10.0%	6.6%	3.5%
Belgium	9.1%	2.9%	6.2%
Denmark	5.5%	3.7%	1.7%
Finland	2.5%	1.6%	0.9%
France	5.8%	3.8%	2.0%
Germany	8.8%	5.8%	3.1%
Greece	8.1%	6.7%	1.4%
Ireland	12.6%	3.7%	8.9%
Italy	5.8%	4.2%	1.6%
Luxembourg	42.6%	6.0%	36.6%
Netherlands	4.2%	2.6%	1.6%
Portugal	4.2%	3.1%	1.1%
Spain	11.6%	7.0%	4.7%
Sweden	5.7%	3.1%	2.6%
UK	6.6%	3.9%	2.6%
Selected new members of EU			
Bulgaria	0.3%	0.3%	0.0%
Czech Republic	3.3%	2.1%	1.3%
Hungary	1.8%	0.8%	1.0%
Poland	0.2%	0.1%	0.1%
Romania	0.1%	0.1%	0.0%

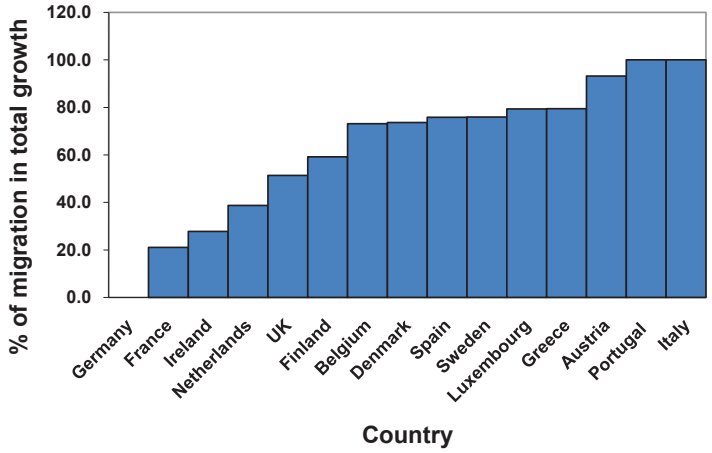
NOTE: All figures are rounded and therefore do not necessarily add up exactly to the total.

SOURCE: Eurostat, Statistics in Focus 94/2009

[34] This threshold has been identified in application to a stable closed population – that is, a population with constant fertility and zero net migration.

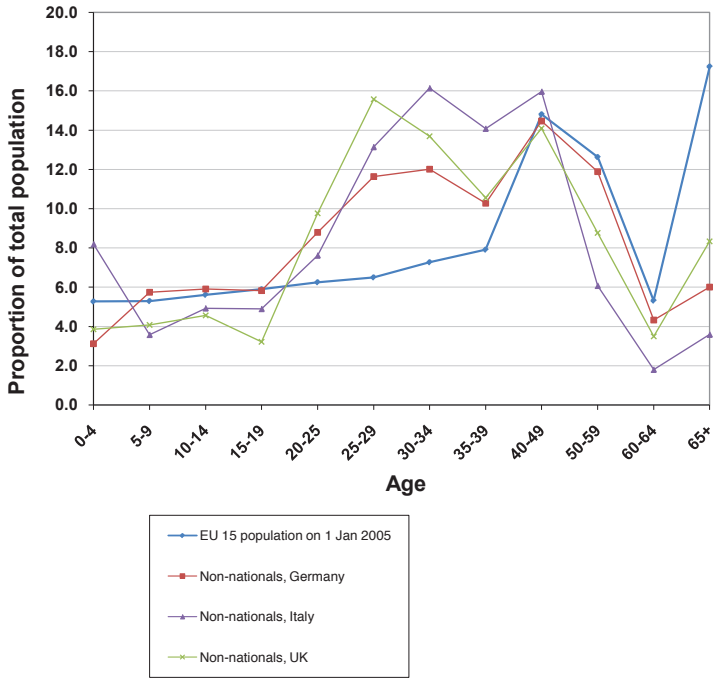
populations have acquired citizenship and are no longer counted among non-nationals. The proportion of foreign-born is greater than the proportion of non-nationals in many countries. At the beginning of the 21st century foreign-born populations, for example, constituted 12% of the total population in Austria and Sweden and 10% in the Netherlands (United Nations *Demographic Yearbook*, Special Census Topics, 2007), figures that differ greatly from the proportions of non-nationals (see Table B.1).

Figure B.3
Contribution of migration to total population growth in the EU 15 in 2008



SOURCE: Eurostat, Data in Focus 31/2009

Figure B.4
Age distributions of EU 15 population and selected non-national populations



NOTE: Age distributions for all non-nationals are for 1 January 2004.

SOURCE: Eurostat (2006)

With decreases in fertility and mortality, migration assumed a significant role in sustaining positive growth in some European populations. Between 2003 and 2007, five EU 15 countries – Austria, Germany, Greece, Italy and Portugal – exhibited zero or negative rates of natural increase (i.e. zero or negative balance of crude birth and death rates, see Equation 1) at least once. In Germany and Italy, zero or negative natural growth was registered in most or all years. In Austria, Greece, Italy and Portugal, net migration (i.e. the balance of in-migration and out-migration) was strongly positive and effectively generated a positive rate of total population growth in these years (United Nations *Demographic Yearbook* 2007; Eurostat, Data in Focus, 31/2009). Migration was a significant contributor to growth even in countries with positive natural balance: in 2008, more than 70% of total growth in the EU 27 stemmed from migration rather than natural balance (Eurostat, Data in Focus, 31/2009). The contribution of net migration to total growth in the EU 15 is shown in Figure B.3.

The role of migration among new members of the EU was quite different to that observed in EU 15 countries. Many post-communist economies experienced a negative migration balance, reflecting the weaker state of their economies and migration of people of working age toward better employment opportunities in EU 15 countries. In Bulgaria, a negative migration balance contributed to negative total growth in 2008 and in Poland, it offset somewhat the impact of a positive natural balance. In the Czech Republic and Hungary, migration balance was positive in 2008.

However, the impact of migration on EU 15 countries is not limited to creating or maintaining positive growth. Migrants are typically younger than the population of the destination countries, and this influx helps to reduce the old-age dependency ratio (Figure B.4).

As Figure B.4 demonstrates, the proportion of the population that is of core working ages (20–39 years) is substantially higher in major non-national communities in Europe than in the total popula-

tion of the EU 15, while the proportion of those aged 65 years and over is significantly lower.

While the short-term benefits of migration for population growth and an increase in working age population is indisputable, the long-term sustainability of such a solution is unclear. This is for two reasons. First, if new migrants remain in the country into old age, this would result in a further numerical addition to the elderly cohorts at some point in the future. The extent to which the eventual ageing of migrants will contribute to ageing of the total population would depend on migrants' fertility and mortality. If migrants' fertility and mortality resembled those of destination countries, then more migrants, perhaps exponentially, would have to be brought in to alleviate the consequences of ageing. Second, in the current political climate, the feasibility of increasing the share of foreign-born people in European populations is questionable (e.g. Goujon et al. 2007).

Apart from influencing changes in population size and structure, migration exercises an indirect effect on population through fertility. Immigration tends to contribute to an increase in birth rates in destination countries, as many immigrant communities (especially those originating in North Africa, Turkey and the Muslim countries of South Asia) have a higher fertility than the populations of destination countries. It is worth noting that migrants' fertility has not been the sole driver behind the increase in fertility observed during the 2000s: its role has remained contributory rather than decisive (Heran and Pison 2007; Tromans et al. 2009).