Doing Better for Families

OECD

Doing Better for Families

Please cite this publication as:
OECD (2011), *Doing Better for Families*, OECD Publishing.
http://dx.doi.org/10.1787/9789264098732-en

ISBN 978-92-64-09872-5 (print)
ISBN 978-92-64-09873-2 (PDF)

The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

Photo credits: © Shutterstock/Boguslaw Mazur.

Corrigenda to OECD publications may be found on line at: *www.oecd.org/publishing/corrigenda*.

Foreword

Families are the cornerstone of society. They play a central economic role, creating economies of scale for people living together and as the source of home production. They are a crucial engine of solidarity, redistributing resources (cash, in-kind or time) among individuals, households and generations. They provide protection and insurance against hardship. Families offer identity, love, care and development to their members and form the core of many social networks.

Families are changing. Life expectancy is higher, birth rates lower. In many families today, there are more grandparents and fewer children. Many families now live in non-traditional arrangements: there is more cohabitation, people marry at older ages, marriages end in divorce more often and remarriages are increasing. Parents' aspirations have changed and across the OECD many fathers and mothers both want to combine a career and an active family life. Children have fewer siblings and live more often with cohabiting or sole parents. More children are growing up in blended families of re-partnered adults.

More effective public policies which do better for families can have large private and public pay-offs. For example, by supporting vulnerable families and children more effectively now, policy is likely to avoid costly negative outcomes in future. Better co-ordination and co-location of services for families generate economies of scale and also ensure that more families get the variety of services they need. But family policy is not just about services or cash allowances, income support during leave or tax breaks for families. It is also about promoting various health and education aspects of child well-being, about reducing barriers to parental employment and helping parents to provide for their children and easing family poverty risks. Increased parental employment will also further economic growth and improve the financial sustainability of social protection systems in the face of population ageing.

This book looks at how family policy is developing in the changing family context, and considers the different ways in which governments support families. It first presents a range of work, family and child outcomes and then seeks to provide answers to the following questions: Is spending on family benefits going up, and how does it vary by the age of the child? What is the best way of helping adults to have the number of children they desire? What are the effects of parental leave schemes on female labour supply, and on child well-being? Are childcare costs a barrier to parental employment and how can flexible workplace options help? What is the best time for mothers to go back to work after childbirth? And what are the best policies to reduce poverty among sole parents? The book concludes with an initial cross-country analysis of the relatively neglected topic of child maltreatment.

The report was prepared by a team of analysts: Nabil Ali, Simon Chapple, Maria Huerta, Dominic Richardson and Olivier Thévenon, with contributions from Marta Bilotta, Alexandra Bytchkova, Pauline Fron, Tatiana Gordine, Linda Richardson, Angelica Salvi del Pero and Juliana Zapata. We are grateful to the many people who pointed to relevant data and took the time to comment on earlier drafts, but in particular to John P. Martin, Director of Employment, Labour and Social Affairs at the OECD and Monika Queisser, Head of the OECD Social Policy Division, who commented on all chapters. Willem Adema led the team and supervised the preparation of this book. Marlène Mohier prepared the manuscript for publication.

Table of Contents

Tables

Figures

Executive summary

Family policy pursues different objectives

All OECD governments aim to support families and to give parents more choice in their work and family decisions. Countries differ considerably, however, in the types and intensity of support provided. These differences are rooted in countries' histories, their attitudes towards families, the role of government and the relative weight given to the various underlying family policy objectives, such as: reconciling work and family responsibilities, helping parents to have the number of children they desire, mobilising female labour supply, promoting gender equality, combating child and family poverty, promoting child development and generally enhancing child well-being from an early age.

Family policy currently faces many challenges including those posed by low fertility and population ageing, the prevalence of family poverty and sometimes worrying child outcomes. Work, family and child outcomes differ markedly across countries. Nordic countries generally have significantly better family outcomes than the OECD average, while Australia, Belgium, France, the Netherlands and New Zealand also do well on many accounts. Other countries face challenges in a range of areas (Chapter 1).

Ensuring fairness in the face of budget cuts

On average across the OECD, public spending on family benefits amounts to just over 2.4% of GDP. In most OECD countries, most of this goes to financial support, *i.e.* payments during parental leave, child allowances and/or tax advantages for families. However, in the current context of fiscal consolidation, budget strategies sometimes involve freezing or reducing child allowances, temporary suspension of income supports during leave, and cutbacks in formal childcare support.

The best and fairest ways of reforming family policy in an era of fiscal consolidation will vary across countries. As most countries pursue a range of objectives in their family policies, consolidation measures in this area must be evaluated carefully against the different objectives and outcomes. Countries that do well on family outcomes devote about half of public spending on family benefits to in-kind services, including quality early childhood care and education services, so it makes sense to sustain this investment. Also, countries which deem it necessary to reduce family support should ensure the most vulnerable are protected.

Making public family support more effective

The efficiency of family service delivery can be increased in many ways. Universal support systems ensure that all children are covered, without stigma, but they are expensive. A "cascaded" approach that provides universal services with more intensive delivery to targeted populations will often be more efficient. For example, a universal system of health visits for families with infants could be supplemented with more intensive service delivery for needy families, as identified through the universal visits.

Families in need often face multiple risks and require multiple interventions. These are most effectively delivered through integrated local-level services, co-located services and/or personal advisers that help families find the service they need. The efficiency argument for integrated services is strong. There are economies of scale, particularly for co-location on sites such as schools, clinics or formal childcare centres. Co-location can promote innovation in working practices amongst professionals and it reduces the risk that support is withdrawn or approved unjustly, because different case assessments are directly available on site. For clients, integrated access can tackle both the disadvantage and the causes of the disadvantage (*e.g.* poor health leading to homelessness or vice versa). Repeat visits are avoided, reducing the burden of time, money, and emotional costs. Giving families vouchers for certain services (*e.g.* housing) and making these conditional on the provision and use of other services (*e.g.* improving child health) can empower vulnerable families to break the cycle of disadvantage and dependency.

Family benefits can also be made conditional to achieving other objectives. Such conditions can include: job-search requirements for parents on income support provided childcare supports are available, pre-school participation of toddlers, vaccinations of children, or medical visits and participation in formal education.

The rate of return on public investment in human capital is higher when it takes place in early childhood and is maintained into young adulthood. A coherent policy approach for the early years would ensure that childcare services are available when leave benefits run out and that there is little difference in investments for children attending pre-schools or compulsory education. However, in most countries, public spending on such benefits is concentrated on the school years rather than on early childhood. Countries should do more to re-orient education spending towards the early years and to ensure that any early benefits are sustained through compulsory education. For example, whilst still maintaining overall investment in tertiary education, countries could envisage a greater role for private investment and a well-developed system of student loans. Freed-up public resources could then be spent on young children.

Enabling people to realise their plans to have children

There has been a long downward trend in birth rates in many countries, but since the early 2000s there has been a small rebound in about half of the OECD countries. Nevertheless, many people still have fewer children than they would like, especially in many southern and central European and Asian OECD countries. More so than elsewhere in the OECD, the mix of societal attitudes, and public and workplace measures to reconcile work and family life, push adults to choose between work and family life in these

countries. The consequences are a postponement of parenthood, fewer large families, and, in European low-fertility countries, high levels of childlessness. Relatively high housing and private education costs in Japan and Korea further constrain parental options.

Policy that helps parents to have their desired number of children has to be sustained over time and help combine family and working life. Introducing or increasing cash support can have a temporary positive effect on birth rates, but investment in formal childcare services as part of a range of supports seems to be more effective. Nordic countries provide a universally accessible continuum of public supports of paid and job-protected parental leave, subsidised early care and education supports, and out-of-school hours care (OSH care) until children enter secondary school. Parenthood and careers are perceived as simultaneously achievable, not mutually exclusive. They tend to have above-average birth rates. Similar supports exist in France, but with greater focus on larger families where mothers are less likely to be in paid work. In France, female employment rates are at the OECD average and lower than in the Nordic countries, but it has a higher birth rate and a greater proportion of larger families.

In Anglophone countries, female employment rates and birth rates are also above average. Policy gives a greater role to income-testing of benefits and supports and relies more on individuals finding flexible workplace solutions, with many mothers working part-time before children enter primary school in Australia, New Zealand and the United Kingdom. Working parents in the United States are also helped by the low cost of domestic services, but this raises concerns about the quality of informal and/or cheap childcare.

Mobilising female labour supply and promoting gender equality in paid and unpaid work

For countries with stabilising or declining working-age populations, it is crucial to mobilise female and maternal labour supply more effectively. This is one key element to ensuring future economic prosperity and the financial sustainability of social protection systems. Changing female aspirations have led to increased female labour market participation. In Asian, Nordic, and southern European countries, men and women work predominantly full-time. By contrast, in the Netherlands and Switzerland, but also in Australia, Germany, Ireland, New Zealand and the United Kingdom, much of the increase in female employment has been on a part-time basis, adding to the job satisfaction of most of these workers, but often with negative consequences on career progression.

There is potentially a "business case" for family-friendly workplace support. Having a family-friendly workplace can motivate current staff, reduce staff turnover and sickness absenteeism, help attract new staff, reduce workplace stress and generally enhance worker satisfaction and productivity. The "business case" is strongest for workers who are difficult to replace, and for flexible workplace arrangements that least affect the production process. Employers frequently offer part-time employment opportunities, but the business case for working time flexibility with employees choosing their own start and finishing times, or teleworking is less evident. Unions and worker representatives can also play an important role in improving the provision of family-friendly work practices, but either they lack bargaining power, and/or do not prioritise demands in this area.

To successfully promote female and maternal labour force participation, policy should provide strong financial incentives to work, for both women and men. Policy should also provide financial supports for formal childcare, OSH care and, as appropriate, flexible

workplace supports, and promote their use among both mothers and fathers. If fathers were to take on a greater role in unpaid care, this would help mothers to enter work or increase their working hours.

Gender gaps in paid and unpaid work are narrowing, but remain wide. On average across the OECD, female employment rates are over 13 percentage points below male rates. The gap is wider when taking account of the fewer working hours of women compared with men. The gender pay gap at median earnings is 16% on average in OECD countries. Women also do most unpaid work at home in all OECD countries. On average, women devote two hours more per day to unpaid work than men do. Even non-working fathers devote less time to caring than working mothers. There are also clear divisions in the type of care provided by men and women: mothers typically provide physical personal childcare and housework, while fathers spend more time on educational and recreational childcare activities.

It has proven difficult to redress the gender balance in earning and caring, partly because countries may not want to impose solutions on parents. Hence, parents generally choose who is going to take parental leave or otherwise divide care responsibilities. However, in a number of countries (the Nordic countries, Germany and Portugal) paternal leave is promoted by granting fathers the exclusive right to part of the parental leave and/or ample income support during the leave. This has resulted in more fathers taking more parental leave, but it is unclear whether this has led to a more equal sharing of responsibilities and whether the changes are durable.

Combating child poverty

Since the 1980s, average family incomes have increased across the OECD. But in many countries, child poverty rates have risen too. This suggests that in these countries family incomes have risen less than those of households without children. In other countries, child poverty fell over the past decade; the biggest gains were seen in those OECD countries with historically high levels of child poverty including Chile, Italy and the United Kingdom.

Paid work, in every OECD country, is more likely to lift families out of poverty. Jobless families are at the highest risk of poverty, while sole-parent and younger families with no more than one adult in work are at the highest risk of poverty. Most countries with female employment rates around or above the OECD average have low child poverty rates, except for Israel, Portugal and the United States. This could be addressed by developing and/or extending existing in-work benefits drawing on the extensive cross-country experience to design them in a cost-effective manner (the earned income tax credit in the United States) and childcare supports for working families. Recent experience in the United Kingdom shows that a combination of measures setting a relatively low wage floor, targeted working family cash benefits (with subsidies for sole-parent families) and an increase in childcare places and subsidies can help.

Keeping parents out of long-term benefit dependency is crucial to reducing child poverty. Policy can help parents to find work and develop their careers. Most OECD countries, except Ireland and, until recently, New Zealand, have made parental income support conditional on job-search and other participation commitments once the youngest child has reached compulsory school age. However, sole parents on income support can only be expected to work if suitable, reasonably priced childcare supports are available. Investment in training and other intensive employment supports may be required when the parent(s) have been out of work for a considerable period.

Not all parents who are obliged to make child-support payments do so. Therefore, public child-support programmes can also be important for reducing child poverty, but their effectiveness varies significantly across countries. For example, in Denmark and Sweden child-maintenance programmes reduce child poverty by 2.5 percentage points, but only by 1 percentage point in the United States. The Danish and Swedish systems ensure regular supports to the parent with care responsibilities through advance payments that are later recouped from the parent obligated to provide financial help. In the United States, payments are only made once the funds have been received from the parent who is obliged to pay child maintenance. Thus, governments may need to guarantee a minimum payment, regardless of the economic circumstances of the parent making maintenance payments.

What is best from a child development perspective?

Across the OECD, the share of children in early childhood care and education has increased. Between 1998 and 2007, preschool enrolment rates for children up to 5 years old grew from about 30% to over 50%. Socio-economic characteristics affect the intensity and type of childcare services that families are using. Children in the lowest income groups are less likely to be enrolled in formal childcare services than those from richer families.

Low-quality care, too many hours in care and participation in care before age one are associated with more behavioural problems. High-quality formal childcare is linked with moderate cognitive gains. But economic circumstances are more important predictors of child's outcomes (especially cognitive) than maternal employment or participation in childcare. For children from more disadvantaged homes, high-quality childcare provides the largest cognitive and social developmental gains.

From a career perspective, women are probably best advised to go back to work around six months after childbirth; from a child development perspective, things are not so clear-cut. Behavioural and cognitive development effects and the reduction of poverty risk may cancel each other out, especially for children in low-income families. In general, a return to work of the mother before the child is 6 months old may have more negative than positive effects. However, the effects are small and not universally observed. The quality of childcare is critical for child development and the gains from participation in high-quality formal care are largest.

No matter when parents return to paid work, good parenting is crucial. Some OECD countries provide parenting support through home visits or family/child service centres. Promoting breastfeeding and parenting activities that contribute to the child's development, as well as providing guidance on what to do in stressful situations, can help improve child outcomes.

Across the OECD, countries have developed different policies to enhance the well-being of parents and children. Family benefits and services are an important tool to assist families in achieving their preferred work and family outcomes. The right balance of family policy tools is of particular relevance in times of difficult economic circumstances. This volume reviews what is known about family and child policies and outcomes, what works and what does not, and hopes to make a contribution to improving family policy in the future.

Chapter 1

Families are changing

Families have changed over the past thirty years. This chapter provides an overview of the changes in family formation, household structure, work-life balance, and child well-being. Fertility rates have been persistently low in many OECD countries leading to smaller families. With marriage rates down and divorce rates up, there are an increasing number of children growing up in sole-parent or reconstituted families. Sole-parent families are of particular concern due to the high incidence of poverty among such households.

Poverty risks are highest in jobless families and lowest amongst dual-earner families. Important gains in female educational attainment and investment in more family-friendly policies have contributed to a rise in female and maternal employment, but long-standing differences in gender outcomes in the labour market still persist. The increased labour market participation of mothers has had only a limited effect on the relative child poverty rate as households without children have made even larger income gains.

Child well-being indicators have moved in different directions: average family incomes have risen but child poverty rates are also up. More youngsters are now in employment or education than before, while evidence on health outcomes is mixed.

Overall, are families doing better? Some undoubtedly are, but many others face serious constraints when trying to reconcile work and family aspirations.

Introduction

Families are changing in many ways across the OECD and its enhanced-engagement partners. Most countries have seen a decline in the fertility rate over the past three decades. Today almost no OECD country has a total fertility rate above the population replacement rate of two children per women. As a result the average household size has also declined over this period. At the same time, there has been a sharp increase in the proportion of women entering the labour force. The evidence on trends in child well-being is mixed, and important challenges remain. There are still large gender gaps in employment and earnings and one in eight children, on average across the OECD, still lives in relative poverty.

Family formation patterns are also changing. Increasingly, both men *and* women want to first establish themselves in the labour market before founding a family. Hence, the age of mothers at first childbirth has risen and with it the probability of having fewer children than previous generations. Many women remain childless. Birth rates have fallen and life expectancy has increased, so there are fewer children and more grandparents than before. Figure 1.1, Panel A and Panel B illustrates how birth rates and average household sizes have fallen in most OECD countries since the 1980s.[1]

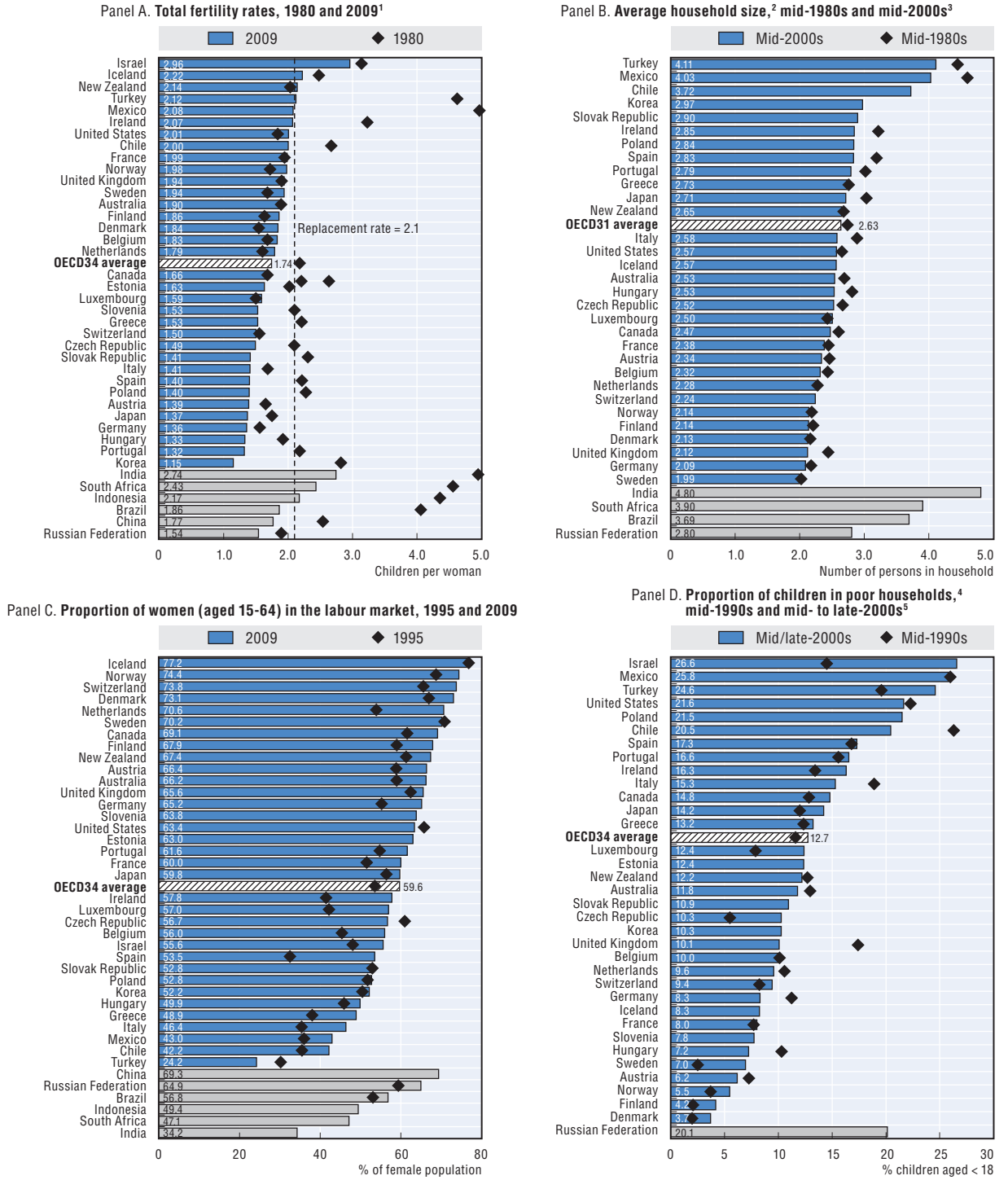
Female educational attainment and female employment participation (Figure 1.1, Panel C) have both risen over the last 30 years. Women have a better chance of fulfilling their labour market aspirations and much needed additional labour supply has been mobilised. And while increased maternal employment has contributed to material wealth among families with children, comparable societal groups without children have also seen similar gains. Poverty rates among households with children, based on a relative poverty concept related to half of equivalised median household income, have increased slightly across the OECD over the past 10 years (Figure 1.1, Panel D).

Issues in family policy, underlying policy objectives and evidence on good practices will be discussed in subsequent chapters. This chapter outlines some of the key indicators that illustrate modern family life and how these affect the well-being of children and parents across the OECD countries and its enhanced engagement partners.[2] The second section provides an overview of the change in family formation over the past thirty years, while the following section illustrates changes in household structure and changes in parent-parent and parent-child relationships. The next section focuses on employment outcomes for parents and what effect this may have on family poverty risks. Before summarising the overall family outcomes, the final section considers child well-being against three key dimensions of material, education and health outcomes.

Trends in fertility and family formation

In many OECD countries, policy makers are increasingly concerned about adults being able to have as many children as they desire. Fertility behaviour can be constrained for different reasons: the perceived inability to match work and care commitments because of

Figure 1.1. **Families are changing**



Note: Panel B: Data missing for Estonia, Israel and Slovenia.
1. Data refers to 2007 for Canada; 2008 for Brazil, Chile, China, India and Indonesia. 2. The size of households is determined by members who live in the same dwelling and include dependent children of all ages. 3. Data refers to 2003 for Brazil; 2007 for India and South Africa. 4. Poverty thresholds are set at 50% of the equivalised median household income of the entire population. 5. Data refers to 2008 for Germany, Israel, Italy, Korea, Mexico, Netherlands, New Zealand, Norway, Sweden and the United States; 2007 for Canada, Denmark and Hungary; 2006 for Chile, Estonia, Japan and Slovenia; 2005 for France, Ireland, Switzerland and the United Kingdom; 2004 for Australia, Austria, Belgium, Czech Republic, Finland, Greece, Iceland, Luxembourg, Poland, Portugal, the Slovak Republic, Spain and Turkey.
Source: OECD (2010b), *OECD Employment Outlook*; Provisional data from OECD (2010e), *Income Distribution Questionnaires*; United Nations Statistical Division, 2010; UNECE, 2010; and national statistical offices, 2010.

StatLink http://dx.doi.org/10.1787/888932392457

inflexible labour markets and/or the lack of public supports, the financial costs of raising children, and the difficulty for prospective parents in finding affordable housing to establish a family of their own. This section illustrates the main drivers of trends in family formation and how they vary between OECD countries. The restrictions to family formation and related public policy issues are discussed in Chapter 3.

Fertility patterns

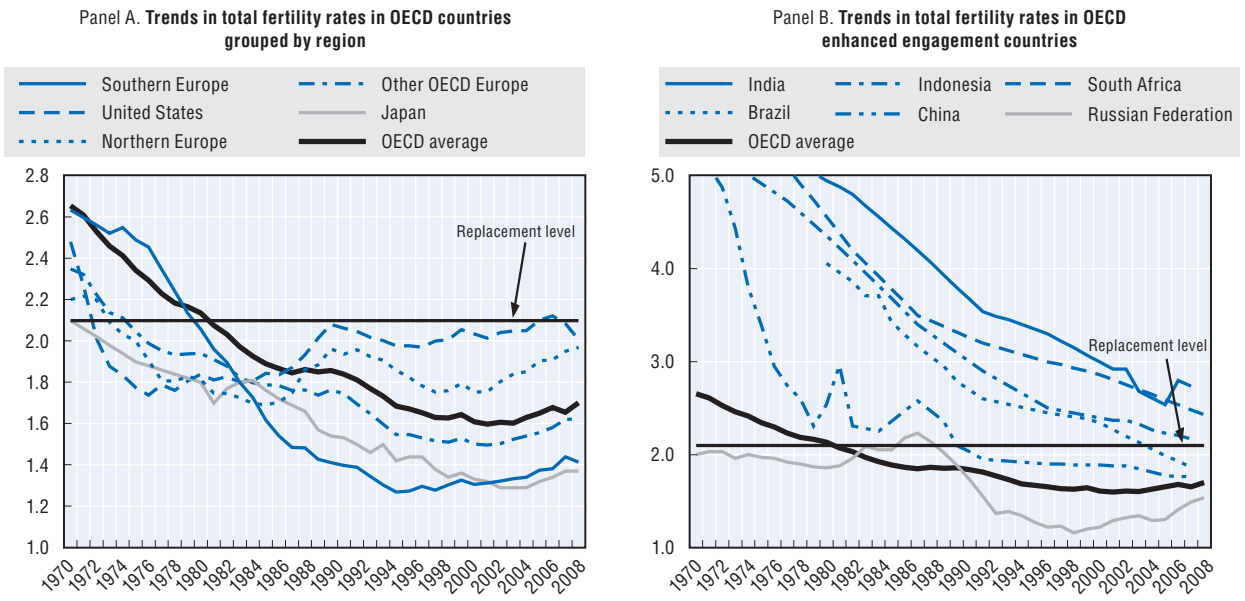
Demographic trends involve low and/or declining fertility rates and increasing life expectancy in most OECD countries (OECD, 2010a, CO1.2). The resultant ageing populations have led to a decline in the number of women of childbearing ages, and curtailed growth of the potential labour force. In some countries this has already resulted in a sharp decline of the working-age population, as seen in the Russian Federation (OECD, 2011a). The growing number of retirees will lead to higher public (and private) spending on pensions and long-term care supports for the retired population (OECD, 2010b and 2011b). Informal support networks will come under increasing pressure as the declining number of children will lead to a reduction of future informal carers for the elderly population.

Total fertility rates (TFR) among the OECD countries have declined dramatically over the past few decades, falling from an average of 2.7 children per woman in 1970 to just over 1.7 in 2009 (Figure 1.2, Panel A). The average TFR across the OECD bottomed out at 1.6 children per woman in 2002 and has since edged up. Overall, the average TFR across the OECD has been below replacement level since 1982.[3] In 2009, the TFR was around the replacement rate in Ireland, Mexico, Turkey and New Zealand, and it was above replacement level in Iceland (2.2) and Israel (3.0). Historically, the fertility rates were extremely high in all enhanced engagement countries, except for the Russian Federation, with TFRs greater than 5.0 children per woman in the early 1970s. Since then there has been a steady decrease in Brazil, India, Indonesia and South Africa, with the TFR dropping below 3 children per women in all four countries in recent years. In China, where fertility rates were also high, around 4.8 in the early 1970s, there was a large decrease in the late 1970s, and, following the introduction of the one-child policy, the TFR fell to 2.3 in 1979. Since then there has been a continuous drop for the past few decades and the TFR in China currently stands below the replacement level at around at 1.8 children per woman (Figure 1.2, Panel B).

The pace of decline in TFR varied widely between countries. In northern European countries, the decline started early but has oscillated around 1.85 children per women since the mid-1970s. By contrast, among southern European countries the decline has been slower, starting in the mid-1970s, but reached an extremely low level of 1.3 in 1994 before slowly starting to edge up. Fertility rates in Japan and Korea (OECD, 2007a) were in decline until 2005. In contrast fertility rates in the United States bottomed in the mid-1970s, and have oscillated around two children per women for the past 20 years. In the Russian Federation, the fertility rates were more stable than in OECD countries in the 1970s, followed by a rise in the 1980s peaking at 2.2 children per woman in 1986. This growth was followed by a sharp decline throughout the 1990s, reaching a low of 1.2 in 1999.

Following the long period of decline, fertility rates began to rise from 2002. Since 2002 the TFR has increased by 0.2 children per woman in Australia, Belgium, Denmark, Greece, Iceland, Italy, Norway, Poland and Spain; and by 0.3 children per women in the Czech Republic, New Zealand, Sweden and the United Kingdom up to 2008 (OECD, 2010a,

Figure 1.2. **Fertility rates have dropped but are beginning to rebound, 1970 to 2009**



Note: Northern Europe includes Denmark, Finland, Iceland, Norway and Sweden. Southern Europe includes Greece, Italy, Portugal and Spain. Other OECD Europe includes all other OECD European countries.

Source: Eurostat (2010), *Eurostat New Cronos Database*, and national statistics offices; UN Population Division, 2010, for China.

StatLink http://dx.doi.org/10.1787/888932392476

SF2.1). Thus, there appears to have been a rebound in fertility in Nordic countries with fertility rates relatively close to the replacement level, and also in some of the so-called "lowest-low" fertility rate countries in southern Europe and the Czech Republic where fertility rates had bottomed around 1.2 children per women. However, TFRs have fallen since the beginning of the economic crisis in 2008 in Portugal, Spain and the United States.

The overall decrease in fertility rates over the past three decades has contributed to the decline in the average household size over the same period (Figure 1.1, Panel B). However, despite persistently low fertility rates the average household size in Korea and the Slovak Republic remains well above the OECD average. This is because of the relatively high proportion of multigenerational households in these two low-fertility countries (OECD, 2010a, SF1.1).

Postponement of family formation

Postponement of childbearing is a major reason for the decline in fertility rates. Greater access to contraceptives has given more adults control over the timing and occurrence of births. And as more men and women first want to establish themselves in the labour and housing markets, many adults have chosen to postpone having children. Across the OECD the average age at which women have their first child increased from 24 in 1970 to 28 in 2008 (OECD, 2010a, SF2.3). The average age of first childbirth of women is high, at just below 30 years of age in Germany, Italy, Spain and Switzerland and is highest in the United Kingdom (despite teenage motherhood being more prevalent in the United Kingdom than in most OECD countries, OECD, 2010a, SF2.4).

Postponement of first childbirth generally leads to a narrower age-interval in which women have their children (Chapter 3) and fewer children overall. Comparing 2008

with 1980, the proportion of births of a first child has increased in most European countries, while the share of births of a third or higher order has fallen over the same period, except in Denmark, Estonia, Finland, Hungary, Luxembourg, Norway and Slovenia (OECD, 2010a, SF2.1). As a result, the proportion of large families has fallen, while the number of children growing up without siblings has risen.

Childlessness

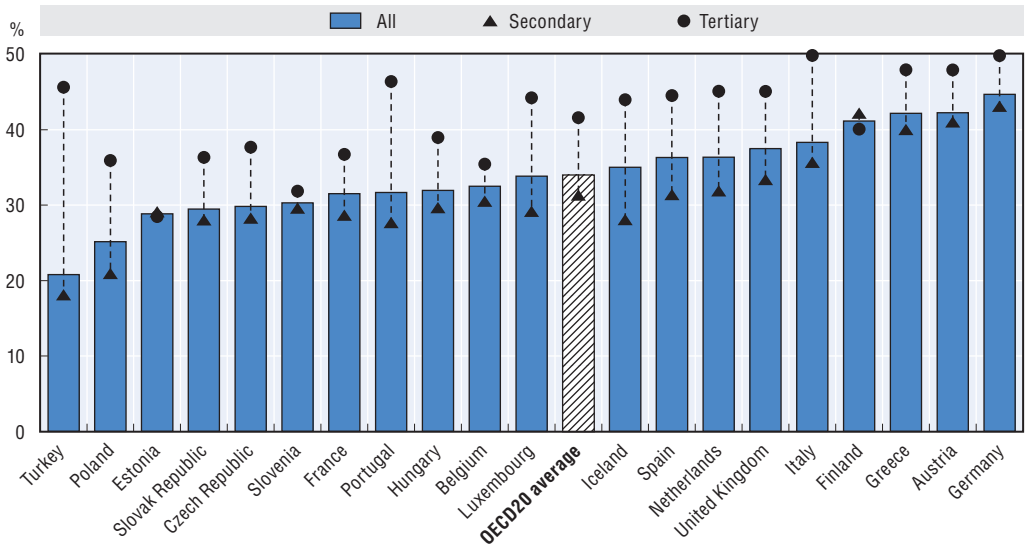
In addition to those women who cannot conceive or those women who have decided not to have any children, the upper limit to the childbearing years, set by the so-called biological clock, makes it difficult for women who postpone having children to give birth at later ages.

The proportion of women who remain childless has increased across the OECD (OECD, 2010a, SF2.5). A greater proportion of women born in the mid-1960s are childless compared with women born in the mid-1950s in most OECD countries, with the exceptions of Mexico, Norway, Portugal and the United States, where there was a decrease in childlessness of less than 2 percentage points. Definitive childlessness is highest in Spain and the United Kingdom, with over 20% of women born in 1965 without any children; it is lowest in the Czech Republic, Hungary, Mexico, Portugal, and Slovenia where less than 10% of women had no children.

Inevitably, the increase in the childlessness rate, along with the drop in the fertility rate, has led to an increase in the proportion of women living in households without children. At least 20% of women aged 25-49 live in households with no children in European OECD countries (Figure 1.3). This is partly due to deferment of childbearing and partly due to the increase in complete childlessness. The proportion of women living in

Figure 1.3. **Women with higher levels of education are more likely to live in households without children, selected OECD countries, 2008**

Proportion of 25-49 year old women living in childless households by level of education[1]



Note: Figures for OECD EU countries and Turkey. Data missing for Denmark, Ireland and Sweden.

1. Women with lower secondary and upper secondary education have been grouped together as category "Secondary".

Source: EU LFS, 2008.

StatLink http://dx.doi.org/10.1787/888932392495

childless households is particularly high in Austria, Finland, Germany and Greece, where more than 40% of women aged 25-49 live in childless households. Conversely, it is low in Estonia, Poland, the Slovak Republic and Turkey where less than 30% of women live in childless households.

The household childlessness rate is strongly linked to the education level of women, as women with tertiary education are more likely to be in a childless household than women with secondary education in most OECD countries (Figure 1.3). This suggests that the increase in childlessness is more due to the consequences of women deferring childbirth or choosing not to have children, rather than being unable to conceive, as highly educated women choose employment over childbirth. The difference also suggests there is ongoing tension between employment and childbearing. The gap between women of differing educational level is largest in countries with low proportion of women living in childless households, such as Poland and Turkey. Another possible cause behind the increased childlessness among highly educated women is their reluctance to take on a partner who is less educated than themselves, especially in Japan and Korea (Chapter 3). This leads to lower marriage and partnership rates among highly educated women and can subsequently lead to lower fertility rates and childlessness.

Changes in household structure

Children in households

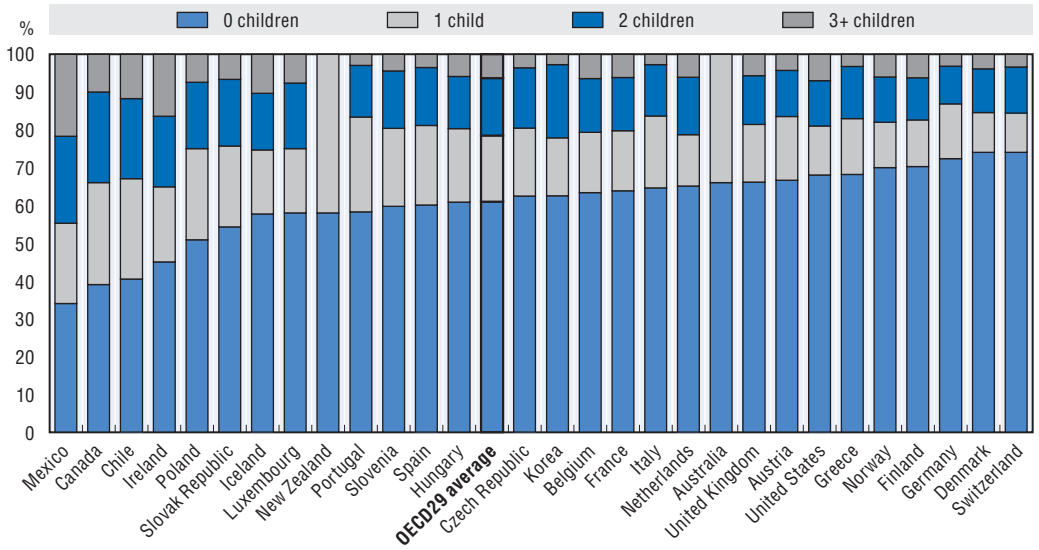
Changing family structures, lower fertility rates and ageing populations have led to a growing share of households without children. Figure 1.4 shows that in all OECD countries, except Canada, Chile, Mexico and Ireland, over half of households do not include children. Even households with children predominantly contain only one or two children. The proportion of households with one child is about the same (around 40%) as the proportion of households with two children, except for Austria, Germany, Hungary, Italy, Poland, Portugal, Slovenia and Spain, where the proportion of households with one child is around 50% of all households with children. The proportion of households with three or more children is below 20% of all households with children, on average, across the OECD, with the exceptions of Chile (20%), Norway (20%), Finland (21%), the United States (22%), Iceland (25%), Ireland (30%) and Mexico (33%).

Partnership patterns

Both falling marriage rates and increasing divorce rates (OECD, 2010a, SF3.1) have contributed to the increase in sole-parent families as well as "reconstituted families". On average across the OECD, marriage rates have fallen from 8.1 marriages per 1 000 people in 1970 to 5.0 in 2009. There is considerable variation across countries: marriage rates have remained high in Korea, Turkey and the United States but are low in Chile, Luxembourg and Italy. Over the same period the average divorce rate across OECD countries doubled to 2.4 divorces per 1 000 people. Again, the rates vary between countries, with high divorce rates in the United States, Czech Republic and Belgium and low divorce rates in Chile, Italy and Mexico. Thus, overall there are less people getting married, and those getting married are more likely to end up divorcing. The correlation between marriage and divorce rates is moderately strong ($r = 0.59$, see Figure 1.A1.1 in the annex), which suggests that high divorce rates reflect the high frequency of marriage in many countries.

Figure 1.4. **Most households have no children, 2008**[1]

Proportion of households by number of children



Notes: For Australia and New Zealand, households with 1, 2 and 3+ children are grouped as households with 1+ children.

Data missing for Estonia, Israel, Japan, Turkey and Sweden.

1. 2001 for Denmark and Norway; 2002 for Ireland; 2003 for Australia; 2005 for the US; 2006 for Canada, Chile and New Zealand; 2007 for Switzerland.

Source: Australia: Family Characteristics, June 2003; Canada: 2006 Census; Chile: CASEN 2006; EU countries: EU LFS, 2008, NOSOSCO; Ireland: 2002 Census; Korea: KLIPS 2007; Mexico: ENIGH 2007; New Zealand: 2006 Census; Norway: Population and Housing Census 2001; Switzerland: SHP 2008; and US Census Bureau, 2005.

StatLink http://dx.doi.org/10.1787/888932392514

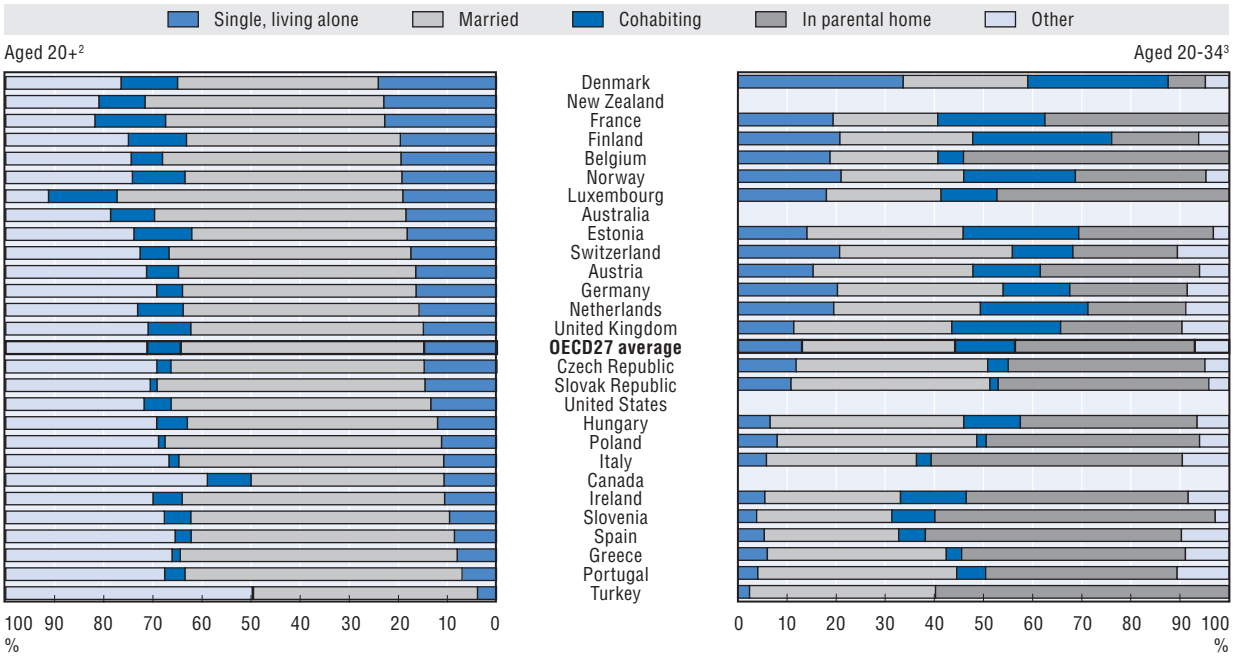
The decline in the marriage rate has been accompanied by an increase in the average age at which first marriages occur (OECD, 2010a, SF3.1). This tendency to defer the age of first marriage is most pronounced in Switzerland where the mean age at first marriage increased by more than seven years from 1980 to 2008. In Denmark, Iceland, Norway and Sweden, where cohabitation is becoming increasingly common, women are, on average, over 30 years of age when they marry for the first time.

The decline in marriage rates is related to the emergence of more non-traditional family forms, including relationships that involve partners keeping their own place of residency, "weekend-relationships", "living apart together" and civil partnerships. Cohabitation is increasing, and because there are more people cohabiting before marriage, people are older when they marry. However, the data show that marriage is still the preferred option of partnership for most couples (Figure 1.5). Regardless of marital or "cohabitational" status, the majority of people opt to partner with someone with similar educational attainment (Box 1.1).

Overall, the partnership patterns are changing between generations. In almost all countries across the OECD the younger generation (aged 20-34) is more likely to be cohabiting than the previous generation at the same age. The younger generation is also less likely to live alone in most of the countries. While cohabitation rates are high in France, and the Nordic and Anglophone countries, they are very low in Greece, Italy, Poland and the Slovak Republic, and negligible in Turkey.

Figure 1.5. **Marriage remains the most common form of partnership among couples, 2000-07**[1]

Proportion of population for both males and females



Note: "Single/living alone" includes sole-parents without partners; "Married" and "Cohabiting" include couples without a third adult present; "Other" includes adults living in households with three or more adults including multi-generational households.

Data missing for Chile, Iceland, Israel, Japan, Korea, Mexico and Sweden, and for Australia, Canada, New Zealand and the United States for those aged 20-34.

1. 2000 for Estonia, Finland, Switzerland and the United States; 2001 for Austria, Denmark, Greece, Hungary, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain and the United Kingdom; 2002 for Ireland, Poland, Romania, Slovenia; 2006 for Australia, New Zealand and Canada; 2007 for Belgium, Bulgaria, France, Luxembourg and Turkey.
2. For New Zealand aged from 15 onwards.
3. For Belgium, France, Luxembourg and Turkey aged 25 to 39.

Source: Australia: 2006 Census of Population; Canada: 2006 Census of Population; New Zealand: 2006 Census of Population; for European countries: 2000 Round of Censuses of Population and Housing, except for Belgium, France, Luxembourg and Turkey: EU LFS, 2007; and United States: 2000 Census of Population.

StatLink http://dx.doi.org/10.1787/888932392533

Children and parental partnership patterns

In 1970, the mean age of women in the OECD countries at first childbirth was 24.3, 0.3 years after the average age at first marriage. By the mid-2000s, however, the mean age at first marriage (29.7) had risen above the mean age at first childbirth (27.7). Many people now get married after having children or have children without getting married This has resulted in a sharp increase in the number of children being born outside marriage: the OECD average tripled from 11% in 1980 to almost 33% in 2007 (Figure 1.6). The rate is particularly high among Nordic countries, with Norway, Sweden and Iceland having more births outside of marriage than within. By contrast, births outside marriage are rare in countries where the cohabitation rate is also low such as Greece, Japan and Korea. Unsurprisingly, there is a strong correlation between countries with high cohabitation rates and large proportion of births outside marriage (r = 0.69, see Figure 1.A1.2 in the annex).

Box 1.1. **Assortative mating**

Men and women typically partner with people with similar educational attainment levels as themselves. Among European countries it is most common for both partners to be educated to upper secondary level (table below). In general, men are more likely to have a higher level of education than their partner in most European countries, with the exceptions of Finland, France, Ireland, Italy, Poland, Portugal and Spain.

Belgium, Finland and Ireland have the highest proportion of couples where both partners have completed tertiary education, at around 20% of all couples, while Portugal and Spain have a high proportion of couples, over 60%, where both partners have only completed lower secondary education. This reflects the overall difference in education levels among these countries, especially in Portugal where the proportion of 25-54 year-olds with at least an upper secondary education is among the lowest in the OECD (OECD, 2010a, CO3.1) The proportion of couples where one of the partners is still a student is relatively high in Finland and Hungary (over 5%).

Parental socio-economic background influences the child's educational, earnings and wage outcomes in all OECD countries (OECD, 2010c). Earnings mobility across parents and children (the extent to which children's earning differ from their parents) is particularly low in France, Italy, the United Kingdom and the United States, while it is high in the Nordic countries, Australia and Canada. In education, the effect of intergenerational transfer is particularly strong in Belgium, France and the United States where a parent's socio-economic status strongly influences the secondary school outcomes of their children. In contrast, the influence is again weak in Nordic countries, Canada and Korea.

Distribution of individuals by educational attainment of partners, selected OECD countries, 2008

	Men and women with high level of education	Men with higher education than women	Women with higher education than men	Men and women with medium education	Men and women with low education	One partner is a student
Austria	8.5	29.3	10.7	42.4	8.9	0.1
Belgium	18.7	20.8	19.2	16.4	24.1	0.8
Czech Republic	7.6	18.9	7.8	61.9	3.5	0.3
Finland	19.3	18.2	25.0	19.2	12.8	5.6
France	15.0	20.6	21.8	20.0	21.0	1.5
Germany	13.1	30.3	8.8	39.7	7.4	0.8
Greece	12.3	14.7	14.6	19.7	38.6	0.0
Hungary	12.0	14.7	13.4	37.7	13.6	8.7
Ireland	21.3	14.5	24.6	17.0	19.2	3.4
Italy	6.6	14.4	18.9	19.5	40.6	0.0
Luxembourg	15.4	26.8	15.1	20.9	20.8	0.9
Netherlands	17.7	29.2	17.9	18.1	15.4	1.7
Poland	13.3	12.9	14.5	50.5	8.3	0.5
Portugal	7.3	7.7	14.0	3.9	66.9	0.2
Slovak Republic	9.6	15.3	8.0	58.9	7.8	0.4
Spain	17.8	17.2	18.8	7.4	38.4	0.3
Turkey	5.6	19.6	6.6	6.1	62.0	0.1
United Kingdom[1]	16.5	20.8	18.0	26.8	17.8	–
OECD18 average	**13.2**	**19.2**	**15.4**	**27.0**	**23.7**	**1.5**

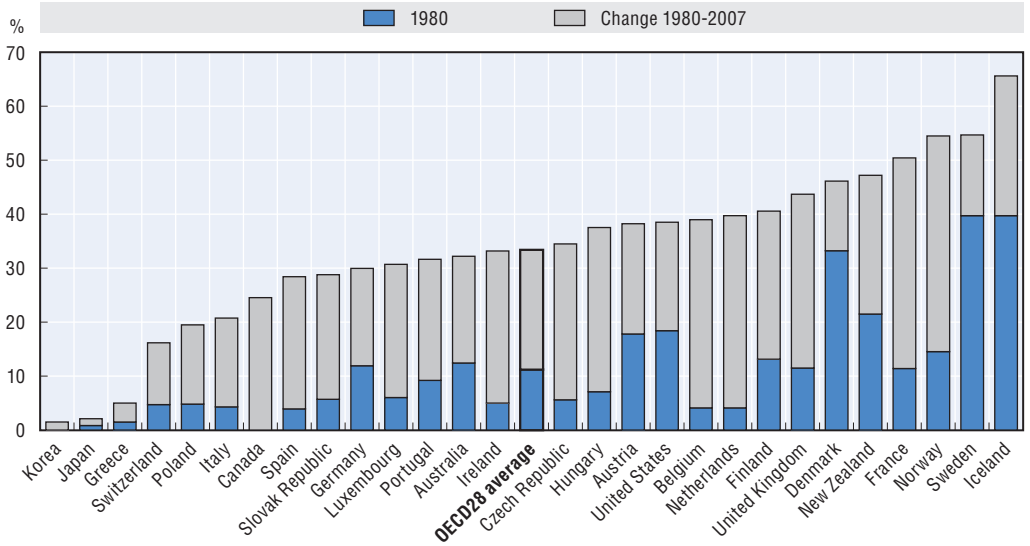
Note: Population includes all adults aged 15 or over, Low education = Lower secondary education; Medium education = Upper secondary education; High education = Tertiary education.

1. For the United Kingdom data for the group "One partner is a student" is not available. The proportions in the table are relative to the five groups for which data is available.

Source: EU LFS, 2008.

StatLink http://dx.doi.org/10.1787/888932394015

Figure 1.6. **A sharp increase in the proportion of births outside marriage, 1980 and 2007**[1]



Note: Data missing for Chile, Estonia, Israel, Mexico, Turkey and Slovenia.

1. 2006 for Iceland, Korea, Japan, New Zealand, Portugal, the United Kingdom and the United States; 2005 for Australia and Canada; 1999 for Mexico.

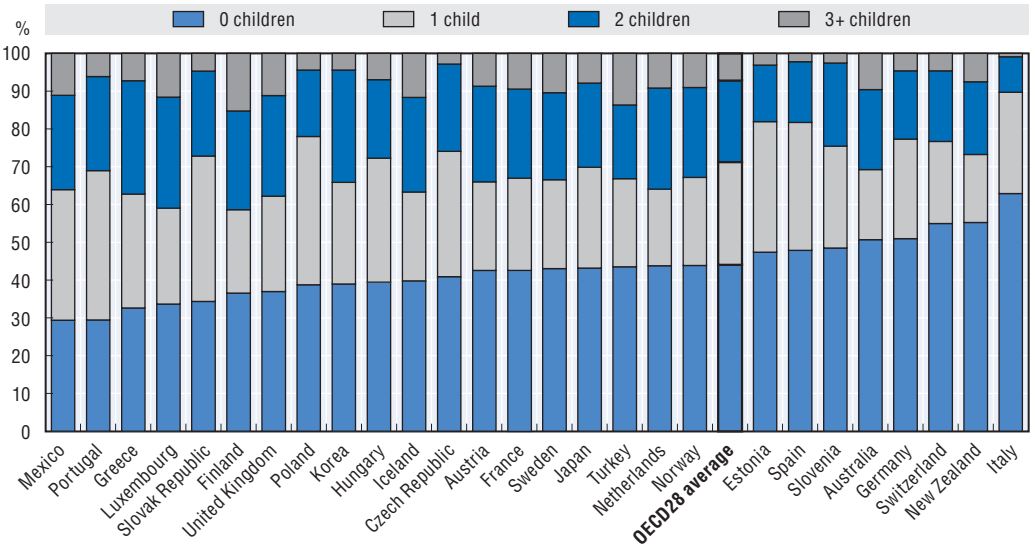
Source: Eurostat (2010), *Eurostat New Cronos Database*, and national statistical offices.

StatLink http://dx.doi.org/10.1787/888932392552

Children today are also more likely to end up with divorced parents. Across the OECD, with the exceptions of Australia, Germany, Italy, New Zealand and Switzerland, most divorces involve children. Countries where a high proportion of divorces involve children include Greece, Luxembourg, Mexico, Portugal and the Slovak Republic, where this reaches 65% or more (Figure 1.7).

Figure 1.7. **Proportion of divorces involving children, 2007**[1]

Number of children involved in divorces, as a proportion of all divorces



Note: Data missing for Belgium, Chile, Denmark, Israel, Ireland and the United States.

1. 2006: France, Korea, Italy; 2005: Greece, Spain; 2003: Portugal; United Kingdom, Turkey.

Source: UN Statistical Division, 2010.

StatLink http://dx.doi.org/10.1787/888932392571

In all OECD countries the divorce rate decreases as more children are involved. In the Nordic countries, where there is strong financial support available for children following divorce or separation, and thus less financial constraint following divorce (OECD, 2010a, PF1.5), there is a high proportion of divorces involving two or more children. For example, more than a third of divorces in Finland and Iceland involve two or more children. The proportion of divorces involving two or more children is also high in the Netherlands, Luxembourg, Austria and Korea.

The increase in the proportion of divorces involving children has been accompanied by an increase in sole parenthood over the past few decades (Chapple, 2009). However, only 15% of all children live with one parent only, while nearly 84% of children live with two married or cohabiting parents, on average, across the OECD countries (Table 1.1).

Table 1.1. **Distribution of children[1] by household type, selected OECD countries, 2007**

	Percentage of children living with:				Total	% of children in multigenerational households
	0 parents	1 parent	2 cohabiting parents	2 married parents		
Australia	2.6	16.8	81.0		100	. .
Austria	2.2	14.3	7.4	76.1	100	7.5
Belgium	2.5	16.2	13.7	67.7	100	2.2
Canada	0.0	22.1	11.0	66.9	100	. .
Czech Republic	0.6	14.9	8.2	76.3	100	7.7
Denmark	1.5	17.9	15.1	65.6	100	0.4
Estonia	1.9	21.8	23.9	52.5	100	12.0
Finland	0.9	14.4	15.8	68.9	100	0.6
France	0.9	13.5	21.0	64.5	100	1.8
Germany	1.3	15.0	5.5	78.2	100	0.9
Greece	1.2	5.3	1.2	92.3	100	6.5
Hungary	0.8	15.4	9.9	73.9	100	11.6
Ireland	1.9	24.3	5.9	67.9	100	4.5
Italy	0.8	10.2	5.2	83.9	100	5.0
Japan	0.0	12.3	87.7		100	. .
Luxembourg	0.3	10.2	6.9	82.6	100	2.8
Netherlands	0.3	11.1	13.1	75.5	100	0.3
New Zealand	0.0	23.7	76.3		100	. .
Poland	0.8	11.0	9.2	79.0	100	22.0
Portugal	2.9	11.9	9.7	75.5	100	11.6
Slovak Republic	1.1	10.6	3.7	84.7	100	17.6
Slovenia	0.6	10.4	19.5	69.4	100	13.7
Spain	1.2	7.2	7.9	83.7	100	5.8
Sweden	1.3	17.6	30.5	50.6	100	0.3
Switzerland	0.1	15.2	84.7		100	. .
United Kingdom	1.4	21.5	12.6	64.5	100	3.4
United States	3.5	25.8	2.9	67.8	100	. .
OECD27 average	**1.3**	**14.9**	**11.3**	**72.5**	**100**	**6.6**

Notes: The category "2 cohabiting parents" includes unmarried parents and parents in reconstituted households. Data missing for Chile, Iceland, Israel, Korea, Mexico, Norway and Turkey.

1. Children are defined as household members aged under 18; < 15 for Canada and New Zealand.

Source: Iacovou and Skew (2010), *Household Structure in the EU*.

StatLink http://dx.doi.org/10.1787/888932393958

Box 1.2. **Projecting changes in household structure to 2025-30**

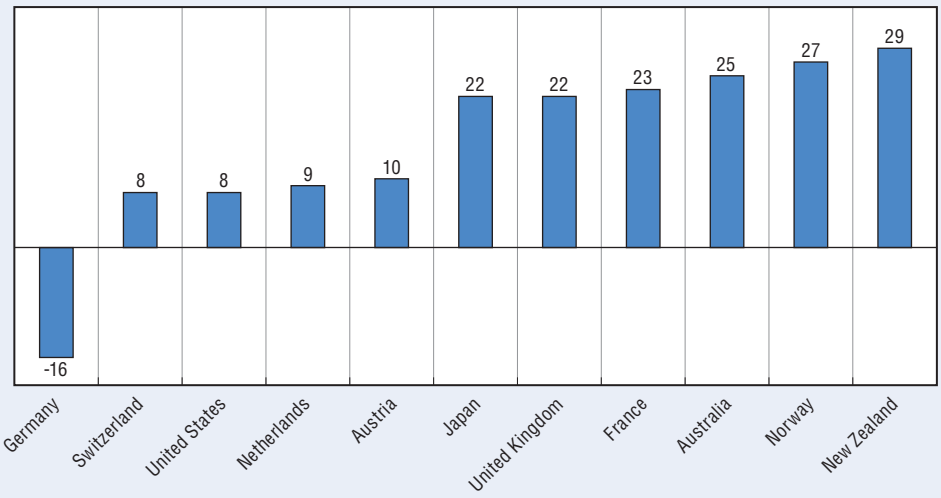
The way family and household structures are likely to evolve in the future is important for forward planning in policy areas including childcare, education, housing, and elderly care. About one-third of OECD countries have produced or commissioned relatively detailed projections to 2025-30 on various aspects of household and family structure, notably one-person households, sole-parent households, and households with or without children. The start dates, time horizons as well as the methods used vary from study to study, making precise comparisons between countries difficult. Nonetheless, the projections reveal strong similarities among many OECD countries with respect to underlying trends.

Much as a consequence of ageing populations, the number of *one-person households* is expected to grow in all the OECD countries for which projections are available. The largest increases are expected in Australia (between 43% and 73% depending on scenario), Korea (43%), New Zealand (71%), and UK (60%).

Data on *sole-parent households* are also available for most countries that have published projections. The consistency of the upward trend across these OECD countries is remarkable, with the bulk of projections to 2025-30 suggesting that numbers are likely to increase by between 22% and 29%. Austria, Netherlands, Switzerland and United States are the countries expecting the lowest increases in sole-parent families (8 to 10%). Germany stands out as the one exception with a projected decrease in sole-parent numbers of 16% by 2025 – the effect of a rise in divorce and separations being unlikely to substantially mitigate that of declining numbers of children.

Recent increases in the number of sole-parent households is expected to continue over the next couple of decades, except in Germany

Projected percentage increase in the number of sole-parent families in selected OECD countries, from early/mid-2000s to 2025-30[1]



1. The period over which changed are projected are as follows: Australia (2000 to 2026), Austria (2007 to 2030), France (2005 to 2030), Germany (2000 to 2025), Japan (2000 to 2030), the Netherlands (2009 to 2030), New Zealand (2006 to 2031), Norway (2002 to 2031), Switzerland (2005 to 2030), United Kingdom (2006 to 2031) and United States (2005 to 2030).

Source: OECD (2010d). OECD work is underway exploring likely future changes in household and family structures to 2030, and the challenges these and other long-term changes in economy and society may pose across a range of policy areas. Results will become available in the course of 2011 through *www.oecd.org/futures*.

StatLink http://dx.doi.org/10.1787/888932392837

Box 1.2. **Projecting changes in household structure to 2025-30** *(cont.)*

Sole-parent families are set to increase not only in absolute terms, but also as a proportion of all family households with children. Indeed, by 2025-30 their share is expected to rise in all the OECD countries for which projections are available (OECD, 2010b). However, the effect is likely to be felt more in some countries than in others. For example in Australia, Japan and New Zealand sole-parent families' share of all family households with children could reach well over 30% (up from 28%, 22% and 31% respectively in the mid-2000s). By contrast, in Austria, Germany and Switzerland shares are expected to range between 17% and 19%, showing little change since the mid-2000s.

In the light of past and current fertility rates and increases in life expectancy, it comes as no surprise that almost all the OECD countries for which projections exist are expected to show significant increases to 2025-2030 in the numbers of couples without children. These increases range between 37% and 72% for Australia, Korea, New Zealand, Switzerland, and the United States. Germany is projected to see the slowest increase (14%) while Japan could in fact experience a decrease in the number of childless couples.

By contrast, most of these countries expect to see declines in the number of couples with children to 2025-30. The largest decreases are projected for Germany, Japan and Austria (between 15% and 27%), the lowest for Korea and the Netherlands. In contrast, the United States and Australia could see increases in the numbers of couples with children.

Children of divorced parents are more likely to live with just one parent than in reconstituted families. On average across the OECD, almost 10% of children live in reconstituted households, while nearly 15% live in sole-parent households (OECD, 2010a, SF1.3). The proportion of reconstituted families is above-average in Belgium, Canada, the Czech Republic, Estonia, France, the Nordic countries, the United Kingdom and the United States. Reconstituted families are rare in Greece, Italy, Poland, Slovenia, Spain and Turkey where less than 5% of children live in such households.

Around 1 in 15 children on average across the OECD live in a household with their grandparent (Table 1.1), a consequence of an ageing population. In many countries, sole parents live with their parents to pool resources and gain better access to childcare (see Chapter 5). Multigenerational households are most common in Poland and the Slovak Republic, where more than 15% of children live in multi-generational households, while they are extremely rare in the Nordic countries.

Work life and family life

Changing patterns of female labour market participation

Increasing female participation in higher education (Box 1.3) has contributed to changing female aspirations regarding labour market participation in many OECD countries, with the biggest change in behaviour amongst married mothers (see below). The timing of the resultant increase in female employment has varied across countries. For example, the rise in female employment began in the early 1960s in Australia, New Zealand, the Nordic countries, and the United States (OECD, 1999), whereas the main gains in Ireland, the Netherlands and Spain were recorded over the past two decades (Figure 1.8).

In the early 1980s, Belgium, Greece, Ireland, Italy, the Netherlands, Mexico, Spain and Turkey had the lowest female labour market participation among the OECD with less than 40% of the female working population in employment (Figure 1.8). Amongst these countries there has been a large increase in female employment in Belgium, Ireland, the Netherlands and Spain with employment rates exceeding 50% in 2009. There were also modest increases in Greece, Italy and Mexico with employment rates reaching above 40%. However, in Turkey female employment dropped below 25% in 2009.

The Nordic countries historically had the highest female employment rates among the OECD countries and are still among the highest despite drops in the 1990s in Finland, Norway and Sweden. Iceland is the only OECD country with nearly 80% of the female working-age population in employment in 2009.

In the past decade the female employment rate has remained fairly stable across most of the OECD countries, with the exceptions of a noticeable decrease in the United States and a large decrease in Turkey. But the rate dropped in almost every OECD country from 2008 to 2009, reflecting the poor economic situation worldwide (OECD, 2010b). In contrast to most of the OECD countries, there was a slight increase in the female employment rate in the Russian Federation over the last decade, increasing from 56% in 1999 to 65% in 2009.

Box 1.3. **Participation in education by gender: women are now more likely to have a university degree, but they study humanities rather than sciences**

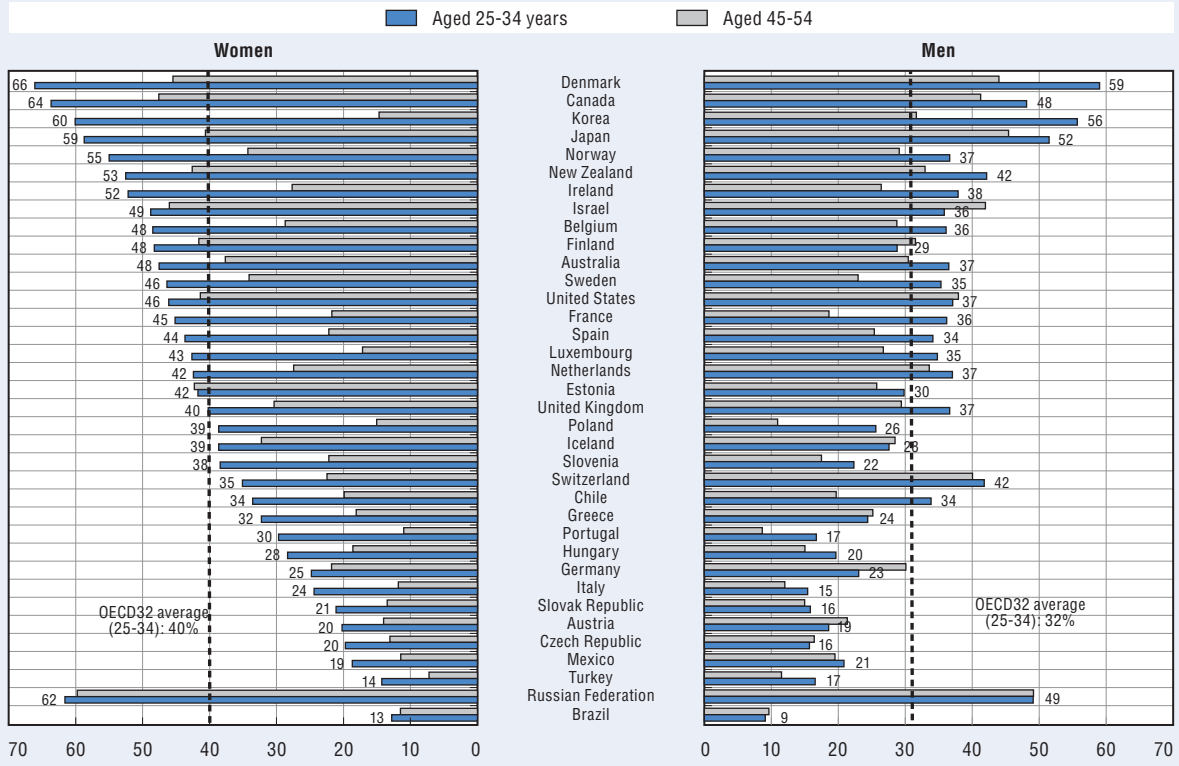
The increase in female educational attainment levels has preceded changes in women's labour market behaviour. The figure below shows that the proportion of younger women with completed tertiary education is higher than for older women in all countries, and the gains have been particularly large in Belgium, Denmark, France, Ireland, Luxembourg, Norway, Poland and Spain (more than 20 percentage points) and most pronounced in Korea (over 40 percentage points). In fact, in the majority of OECD countries, and in the Brazil and the Russian Federation, young women have higher levels of educational attainment than their male counterparts: on average across the OECD 40% of women in the age group 25-34 have completed tertiary education compared with 32% of the young men. As with women, young adult men aged 25-34 are more likely to have completed tertiary education compared with their peers in the age cohort 45-54. In some countries gains have been limited (*e.g.* Austria, Czech Republic, Finland, Germany, Israel, Mexico, the Russian Federation, the Slovak Republic and the United States), or the proportion of men with tertiary educational attainment decreased, as in Brazil and Estonia.

Women may have overtaken young men in terms of average educational attainment levels, but men and women still engage in different fields of study. While a large proportion of females graduate with degrees in humanities (OECD, 2010a, CO3.2), there is relatively low female participation in science and engineering (Panel B). This gender gap in engineering, manufacturing and construction degrees is particularly large in Ireland, Japan, Switzerland and the Netherlands where less than 20% of graduates are female. In Greece, which has the highest proportion of female participation in engineering degrees, less than 50% of engineering graduates are female. Because older female workers have relatively low average education levels, and younger women in general study arts rather than sciences, differences in labour market outcomes (employment and earnings) for men and women persist (see below).

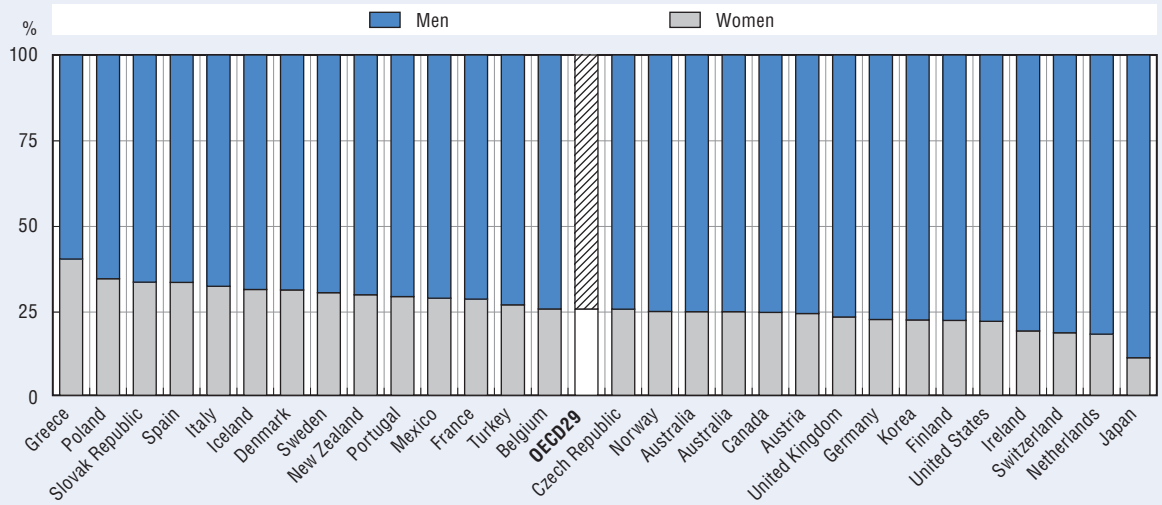
Box 1.3. **Participation in education by gender: women are now more likely to have a university degree, but they study humanities rather than sciences** *(cont.)*

Women are more likely than men to have completed tertiary education, 2008

Panel A. Proportion of population with at least tertiary education, by gender and age group, 2008[1]



Panel B. Proportion of university graduates receiving engineering, manufacturing and construction by gender, 2008



Note: Panel B: data missing for Chile, Estonia, Israel, Luxembourg and Slovenia.

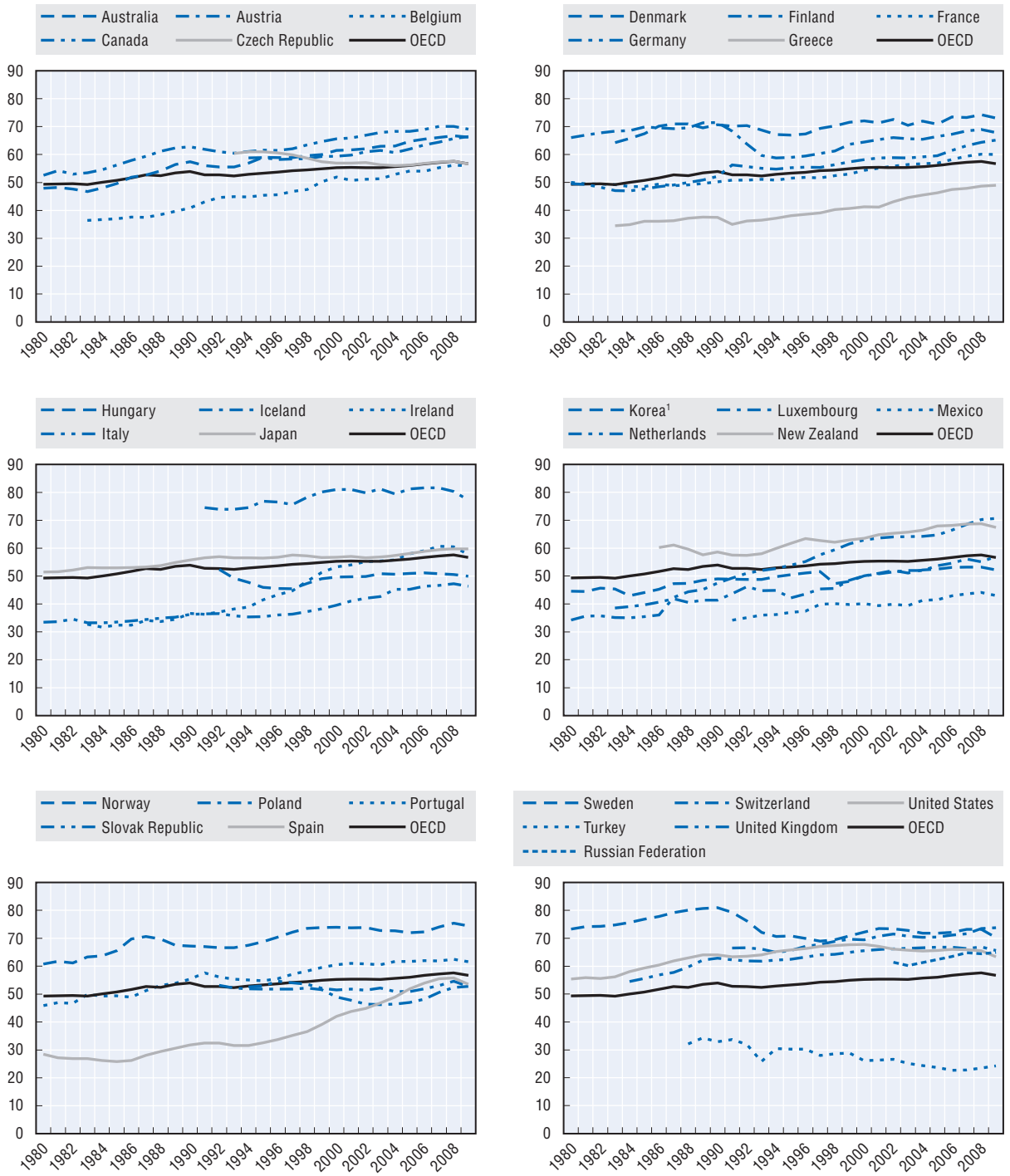
1. 2002 for the Russian Federation.

Source: OECD (2010i), *Education at a Glance*, for Panel A; OECD (2010a), *OECD Family Database*, CO3.2 for Panel B.

StatLink http://dx.doi.org/10.1787/888932392856

Figure 1.8. **Women are increasingly participating in paid work, 1980 to 2009**

As a percentage of the working population (15-64)



Note: Data missing for Chile, Estonia, Israel and Slovenia.

1. For Korea data refers to ages 15-59 prior to 1989.

Source: OECD Database on Labour Force Statistics, 2010.

StatLink http://dx.doi.org/10.1787/888932392590

Gender differences in paid and unpaid work remain

Despite the improvement in female participation in the labour market, gender inequalities persist. While over 70% of prime-aged women (25-54 year-olds) are employed on average across the OECD, the figure is over 85% for men, resulting in a gender employment gap of around 15 percentage points (Table 1.2). There are large cross-country differences in the employment rate gender gap. The gap is below 5 percentage points in Estonia, the Nordic countries and Slovenia. By contrast, the gender employment gap for prime-age workers is over 30 percentage points in Chile and Mexico, and very high in Turkey at over 50 percentage points.

There are also gender gaps in the intensity of employment participation. In all OECD countries, a much larger share of female employment is part-time when compared with male employment, with the OECD average for women at 21.7% compared with only 4.4% for men. The largest gaps in the share of part-time/full-time employment among men and women are in Germany, the Netherlands, Switzerland and the United Kingdom where over 35% of female employees work part-time. The gap is smallest in the Czech Republic, Estonia, Finland, Hungary, Portugal, the Slovak Republic and Slovenia where less than 10% of female employment is part-time. In contrast to the OECD countries the gender gap is low in the Russian Federation where the average for women is almost on par with the average for men (2.4%) at 4.0%, and is lower than the average for men in most OECD countries.

Women are also more likely than men to have a temporary rather than a permanent employment contract (Table 1.2), particularly in Finland, Japan and Korea. In contrast, women in Estonia, Hungary, Mexico and the Russian Federation, where a large proportion work in the public sector, are more likely to have a permanent contract than their male counterparts. In particular the proportion of employed men with temporary contracts is very high in Mexico, Poland and Spain with over 20% of male employment being temporary.

The gender gap is also very large for managerial and supervisory jobs. Although the number of reported jobs with management and supervisory responsibility varies from country to country, women in Japan and Korea have the most difficulty getting through to the top with less than 10% of management jobs occupied by women. Women have the best career prospects in Canada, France, Hungary, Poland, Slovak Republic and the United States, with over 35% of management jobs occupied by women.

Overall, despite the improvement of the labour market situation for women, significant differences in gender employment outcomes remain across the OECD. To some extent this reflects past education and labour market outcomes (older women have lower average levels of education and are unlikely to have strong labour force attachment), but is also related to women's self-selection to employment in sectors with family-friendly workplace practices (often in the public sector) or working under less favourable employment conditions (*e.g.* temporary contracts). Together these factors contribute to persistent gender wage gaps. The wage gap has reduced over time but in most OECD countries the median female wage was still less than 90% of the median male wage in 2008 (see Figure 1.A1.3, Panel A in the annex). Two notable exceptions are Hungary and Italy where the median female wage is almost the same as the median male wage, which for Hungary is related to the recent increase in wages in the public sector where a large proportion of women are employed. To some extent, the low wage gap in Hungary and Italy is also due to selection of highly qualified women in the labour market (both Hungary and Italy have low female employment rates, see above). In Belgium, Greece, New Zealand and Norway, the wage gap is also small with the female median wage

Table 1.2. **Selected labour market statistics for 25-54 year-olds, by gender, 2007-09**

	Employment rates, 2009[1]		Share of part-time employment in total employment, 2009[2]		Share of temporary employment in dependent employment,[3] 2009[4]		Proportion of managers who are female, 2007[5]
	Women	Men	Women	Men	Women	Men	
Australia	72.1	86.3	33.9	6.4	6.6	4.3	. .
Austria	79.5	88.5	33.0	4.2	5.1	4.0	26.8
Belgium	73.8	85.7	30.4	5.0	7.9	4.6	34.0
Canada	77.2	83.5	19.7	5.6	9.7	8.6	37.8
Chile	52.8	86.3	13.9	4.0	. .	. .	
Czech Republic	74.1	90.5	4.2	0.8	6.4	4.3	28.9
Denmark	82.9	87.2	15.0	5.7	8.0	5.0	27.7
Estonia	75.5	77.4	8.6	3.7	1.3	2.8	. .
Finland	80.4	84.4	9.6	4.6	16.6	8.1	27.4
France	76.6	87.6	21.1	4.0	11.6	7.9	37.9
Germany	75.4	86.1	38.9	5.6	9.9	8.8	27.9
Greece	62.2	88.4	14.0	3.9	13.2	9.9	27.9
Hungary	66.9	78.9	3.9	1.7	7.0	8.5	35.1
Iceland	80.6	86.9	18.2	5.0	8.2	6.0	31.1
Ireland	67.1	78.0	34.8	7.7	7.1	5.2	30.7
Israel	68.3	79.6	20.4	5.1	. .	. .	. .
Italy	59.1	84.7	30.2	4.5	13.3	8.7	33.5
Japan	67.6	91.3	30.5	5.0	19.7	4.3	9.6
Korea	59.8	86.3	11.0	4.0	22.9	13.6	7.8
Luxembourg	71.4	90.8	31.0	3.4	5.9	4.0	21.3
Mexico	51.1	90.2	26.7	5.0	10.3	22.2	
Netherlands	79.6	90.7	55.5	6.0	15.0	11.1	27.6
New Zealand	74.2	87.5	30.4	5.3	. .	. .	23.0
Norway	83.5	88.3	22.2	5.4	10.6	4.2	31.7
Poland	71.6	83.7	11.1	3.1	22.3	22.6	36.1
Portugal	74.9	84.5	8.9	2.2	21.2	18.6	31.8
Slovak Republic	71.2	84.2	3.4	1.6	3.2	3.6	38.2
Slovenia	83.2	86.4	5.4	3.1	12.6	10.1	. .
Spain	63.8	77.3	20.0	3.3	25.9	22.8	32.9
Sweden	81.9	86.9	14.1	5.1	13.2	8.9	31.6
Switzerland	80.6	92.9	47.4	5.4	7.0	6.2	21.2
Turkey	27.6	77.9	22.4	4.5	10.0	9.3	. .
United Kingdom	74.4	85.4	35.1	5.5	4.9	3.8	34.4
United States	70.2	81.5	13.6	4.1	3.4	3.5	36.7
OECD34 average	**70.9**	**85.5**	**21.7**	**4.4**	**11.0**	**8.6**	**29.3**
Russian Federation	81.2	86.4	4.0	2.4	11.5	16.6	. .

1. Data refers to 2008 for Israel.
2. Data refers to 2004 for Mexico; 2007 for Chile and Israel.
3. Dependent employment = Total employment – Self-employment.
4. Data refers to 2004 for Mexico; 2005 for the United States.
5. Data refers to 2000 for Canada, Iceland, Japan, Korea, New Zealand, Slovak Republic and Switzerland.

Source: OECD Database on Labour Force Statistics, 2010.

StatLink http://dx.doi.org/10.1787/888932393977

more than 90% of the male median wage. At the other end of the spectrum, the wage gap is large in Japan and Korea with the median female wage less than 70% of the median male wage.

The gender wage gap is greater for top earners in most OECD countries reflecting the low proportion of women in managerial positions. The top quintile female wage is less than 90% of the top quintile male wage for all OECD countries studied, except Belgium, Greece, Italy, Poland and Spain. As with the median wage, the largest gap is in Japan and Korea where the top quintile female wage is around 60% of the top quintile male wage.

These gender employment and wage gaps can also be related to the period of family formation. Employment rates for men and women tend to be similar during their twenties, but patterns diverge when adults become parents. Paternal employment behaviour is not that different from men in general (although in some countries, *e.g.* Australia and the United Kingdom, men often increase working hours after becoming fathers (OECD, 2010a, LMF2.1 and LMF2.2)), but in many countries female employment participation drops when young children are present in households.

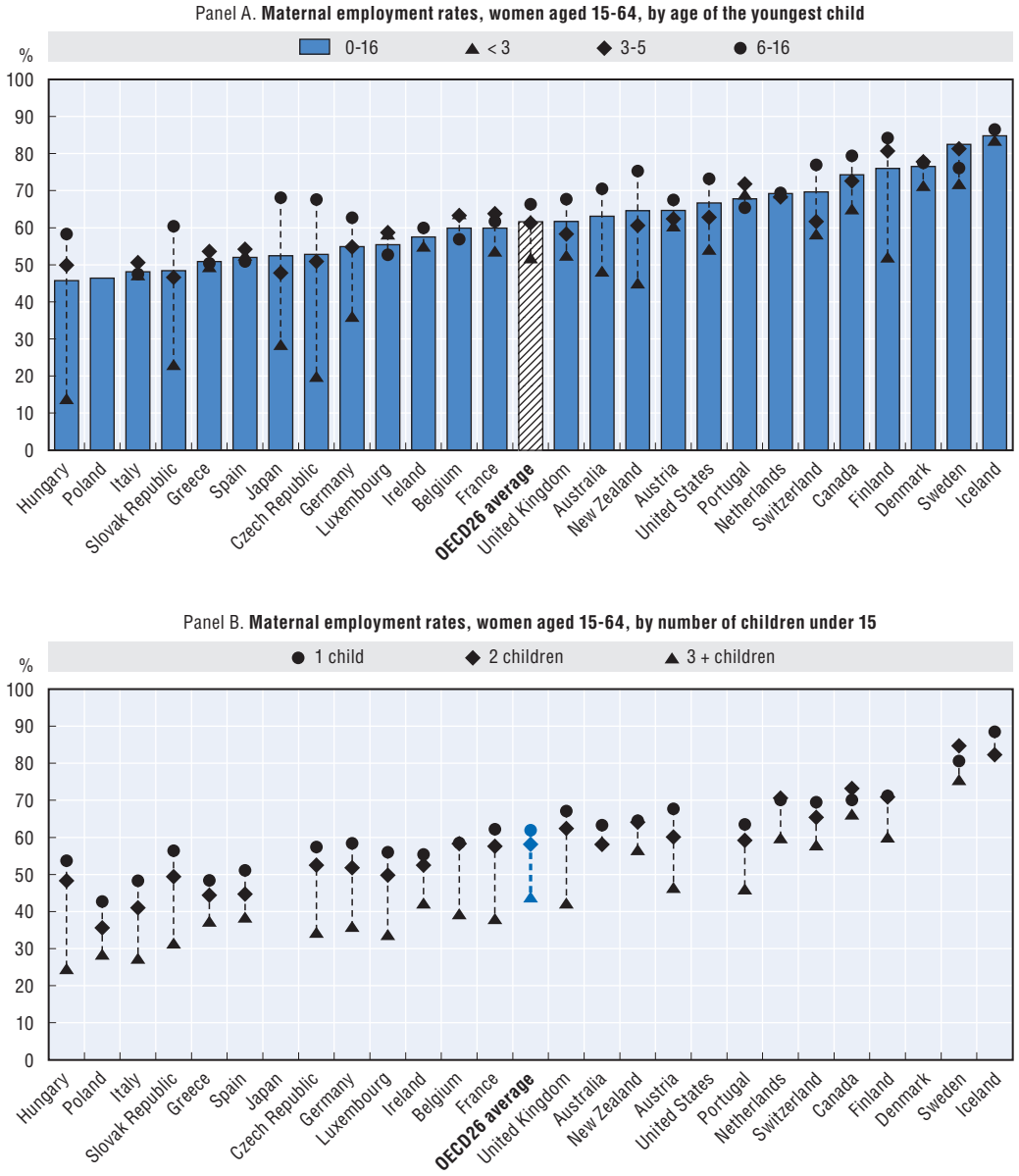
Employers are aware that mothers have to make work and family choices. In fact, many employers expect women, regardless of their level of educational attainment to withdraw (at least temporarily) from the labour force upon marriage and/or childbirth, and are therefore, more likely to consider women less committed to their career than men. As a result, employers are less likely to invest in female workers and their career prospects. To some extent this is a vicious circle: as female workers have limited incentives to pursue a career if they perceive the likelihood of moving upwards to be more limited than for men, they are more likely to leave the labour force, thus reinforcing the stereotype. These features apply to most OECD labour markets to some degree, but are particularly pronounced in Asian OECD countries, where the choice between a career and motherhood is a stark one. In Asian OECD countries, many women either have children or remain in work: the constraints to labour force participation of women who do have children lends to a considerable waste of human resources and can negatively affect child poverty (see below), whereas the fact that many women choose not to have children will have significant implications for the face of future societies.

Parents in work

The growth in the proportion of women in the labour force is strongly related to the growing numbers of mothers re-entering the labour force or remaining in employment. On average across OECD countries in 2007, more than six out of ten mothers with dependent children (aged 0-16) were in paid employment (Figure 1.9, Panel A). There is, however, considerable cross-national variation. At below 50%, employment rates for mothers with dependent children (0-16) were lowest in Hungary, Italy, Poland and the Slovak Republic. In contrast, more than two out of three mothers were in paid employment in Canada, the Netherlands, Switzerland and the United States, with maternal employment rates highest in Nordic countries at around 75% or more.

Virtually all employed mothers take a short break from paid work just before birth and during the first few months after a child's birth. After this period, differences in national parental leave and childcare support arrangements contribute to different labour force behaviour of mothers (Chapter 4). Figure 1.9, Panel A shows that in many countries maternal employment rates rebound when children are three to five years of age, and maternal employment rates often increase further when children enter primary school around the age of six. But the data also mask considerable cross-national differences in the dynamics of employment relationships. For example, in Australia and New Zealand mothers often reduce hours of work per week to care for young children and increase hours when children go to primary school at age five, in contrast to the Netherlands and Switzerland where part-time employment is a more permanent feature for mothers with children throughout childhood (OECD, 2007b). The change in the prevalence and nature of employment among mothers as their children grow older is discussed further in Chapters 3 and 4.

Figure 1.9. **Most mothers are in paid work, especially when children go to school, 2007**[1]



Note: In both panels countries ordered in ascending order of maternal employment rate with youngest child aged 0-16.
Panel A: For Australia, Iceland and Ireland children aged < 2 and 3-5 are grouped together as children aged under 6.
Panel B: For Australia and Iceland the "two children"group represents "2 + children".
Data missing for Chile, Estonia, Israel, Korea, Mexico, Norway, Slovenia and Turkey.

1. 1999 for Denmark; 2001 for Belgium, Canada and Japan; 2002 for Finland, Iceland and Italy; 2003 for Sweden; 2005 for Australia; 2006 for Switzerland.

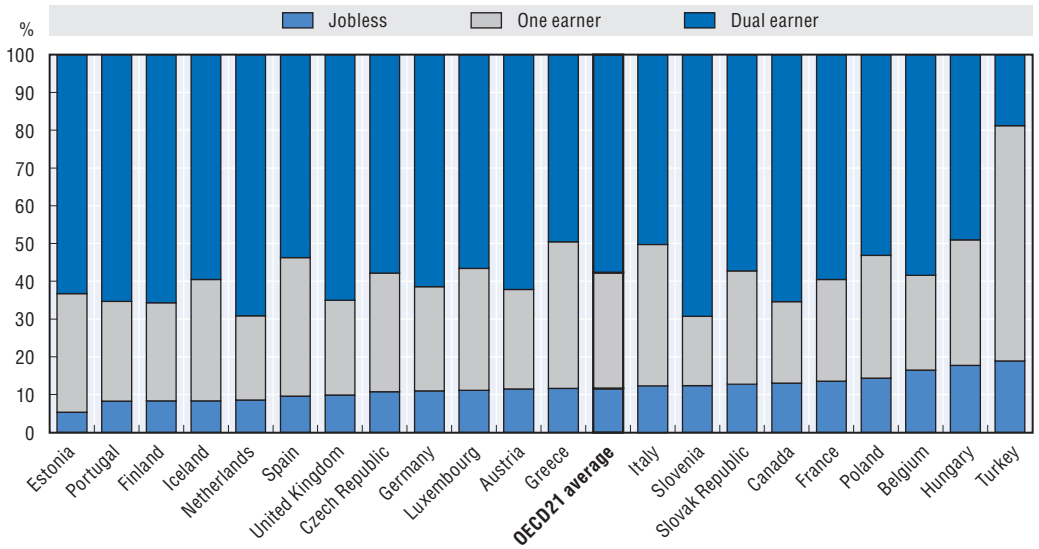
Source: Australia, Australian Bureau of Statistics (2005); Statistics Canada (2001 data); Statistics Denmark (1999 data); Statistics Finland (2002 data); Statistics Iceland (2002 data for women age 25-54); Japanese authorities (2001 data); Swiss LFS (2006 2nd quarter data); UK Office of National Statistics (2005 data); and the US Current Population Survey (2005 data). All other EU countries, European Labour Force Survey (2005 data, except for Italy which concerns 2003).

StatLink http://dx.doi.org/10.1787/888932392609

Employment rates tend to be lower for mothers with a greater number of dependent children (Figure 1.9 Panel B). In 2007, on average almost 60% of mothers with one child were in paid employment, while this was about 55% for mothers with two children. In Greece, Hungary, Italy, Luxembourg, Poland, the Slovak Republic and Spain, less than half of mothers with two or more children were in paid employment in 2007. Maternal employment rates tail off even further in the presence of a third child, to below 30% in Hungary, Italy and Poland.

Looking across the OECD, the increase in female and maternal employment has led to an increase in the share of couple families where both adults are in paid employment. In most countries the male breadwinner household has now been replaced by dual-earner couples: on average nearly 60% of couples are now dual-earner families (Figure 1.10).

Figure 1.10. **Most couples are dual-earner families, selected OECD countries, 2008**



Note: Figures for OECD EU countries, Canada and Turkey. Data missing for Denmark, Ireland and Sweden.
Source: EU LFS, 2008.

StatLink http://dx.doi.org/10.1787/888932392628

Joblessness and poverty among households

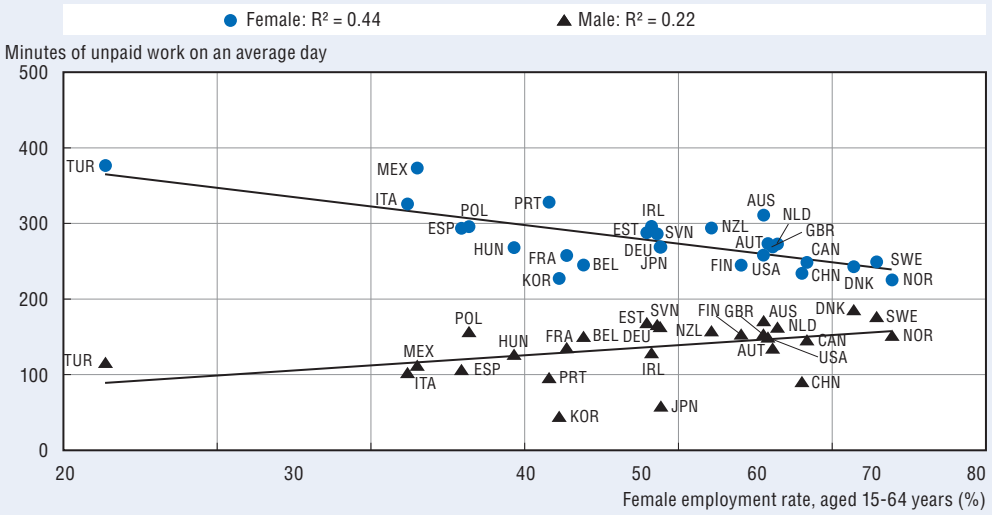
The economic vulnerability of families is linked to parents' incapacity to reconcile employment and parenthood. The most disadvantaged families with children are those where no adults are in paid employment. Joblessness is generally much higher for sole-parent families than for couples with children, and the growth in the incidence of sole-parent families has been a significant contributor to trends in family joblessness (the various policies geared towards improving the labour force participation of sole-parent families are discussed in Chapter 6). Thus, children in couple households are less likely to be living with jobless parents than children in sole-parent households (OECD, 2010a, LMF1.1). In all countries studied, more than 80% of children living in couple households have at least one parent in full-time employment with the proportion particularly high in Japan and the United States. The share of children living in couple households where both parents are employed is also high, particularly in Slovenia, Portugal and the United States, where more than 60% of children live in couple households with both parents

Box 1.4. **Unpaid work and time spent on parenting by fathers and mothers**

The burden of unpaid work can often contribute to gender inequality. Care activities constitute one of the main forms of unpaid work and there are large differences in the time contributed to care work by women and men. Even in families without children, women contribute a substantial part of their time to care work. At the extreme end, women aged 25-44 devote nearly 8% of their time to care work in Mexico, while men of the same age spend only 3% of their time (OECD, 2010a, LMF2.5). This gender gap increases with the number of children in the family. In families with two or more children, women in Germany, Finland, Mexico and the United Kingdom spend over 20% of their time on care, compared with less than 10% of men's time spent on care. In contrast, women in Canada, France and the United States spend less than 13% of their time on care activities. Although the proportion of time spent on care varies between countries the proportion of women whose primary activity is care work is fairly constant across the OECD at 2-4% of the female working population.

In countries with high rates of female employment more men spend time on unpaid work (see Figure below). However, in all OECD countries women spend more time on unpaid work in an average day than men regardless of the level of female employment in the country, due in part to women working shorter hours and taking up more parental leave. In Norway, where the female employment rate is more than 75% men spend more than two hours on unpaid work on an average day, while women spend less than 4 hours per day on unpaid work. In Mexico, where the female employment rate is one of the lowest among the OECD countries at just 43%, women spend a disproportionately large amount of time in unpaid work: more than six hours on average per day. This suggests that many women in Mexico carry out unpaid work on top of some paid work. The amount of time spent on unpaid work is lowest in Korea for both men and women, with women spending around 3.5 hours and men spending less than one hour each day on unpaid work.

Men's unpaid work increases with national levels of women's employment, while women's unpaid work decreases, selected OECD countries, 2007



Note: Data missing for Austria, Chile, Czech Republic, Denmark, Greece, Hungary, Iceland, Ireland, Israel, Luxembourg, the Netherlands, the Slovak Republic and Turkey.

Source: Miranda (2011), "Cooking, Cleaning and Volunteering: Unpaid Work around the World".

StatLink http://dx.doi.org/10.1787/888932392875

Box 1.4. **Unpaid work and time spent on parenting by fathers and mothers** *(cont.)*

In general, women spend at least twice as much time on care work (for children and adults) as a primary activity than men. The largest differences are recorded for Japan and Turkey where women spent on average 4 and 6 times more time on care work than men, respectively (OECD, 2010a, LMF2.5).

Gender inequality also persists in child-related leave policies (OECD, 2007b). Mothers are entitled to paid leave with employment protection in all OECD countries except the United States. Legal entitlements to paternity leave exist in around half of OECD countries with payment rates at 100% of salary, but duration is considerably shorter. For example, in Austria, Greece, Ireland, Luxembourg, the Netherlands and Spain, paternity leave amounts to three days or less (Chapter 4 and OECD, 2010a, PF2.1 and PF 2.2).

working full-time. Given that joblessness greatly increases the chances of a household being poor, couple households can act as a protection for children against poverty as such households are less likely to be jobless.

A significant minority of families in work are poor (as measured with respect to half the median disposable household income). Sole-parent families with a working adult generally have higher poverty rates than two-parent households where only one parent is employed, with the exceptions of Denmark, Norway, Sweden and Portugal (Whiteford and Adema, 2007). But joblessness is still the major poverty risk especially among sole-parent families. In almost all countries, poverty rates among non-employed lone parents are at least twice as high as among those with paid work (Table 1.3), while poverty rates among couples with children where neither parent is employed are, on average, three times higher than where one parent is employed, and more than ten times higher than where both parents are employed.

It is a particular worry that in most OECD countries, poverty risks have shifted over the past 20 years towards families with children (Förster and Mira d'Ercole, 2005). In many countries, families with children are disproportionately likely to be poor; only in Belgium, Denmark, Finland, Greece, Norway and Sweden do children face lower risks of poverty than the national average. Israel and Mexico have the highest rate of child poverty in the OECD with more than a quarter of children living in poor households. The poverty rate is also high in Chile, Poland, Turkey and the United States at over 20% (Table 1.3).

Public benefits for families

With the current economic crisis, and the shift in poverty risks towards households with children, it is important for countries to provide support for families, especially for those with elevated poverty risks such as sole-parent and jobless households. Most governments provide support to families in the form of cash benefits (Figure 1.11): cash benefits make up more than 40% of public spending on families in all OECD countries except France, Germany, Iceland, Japan, Korea, Mexico, the Netherlands, Spain, Sweden and the United States. In Korea, where public social benefits are low overall, cash benefits are extremely low making up less than 5% of all public spending on families. On the contrary, tax breaks for families are low in most OECD countries. Tax breaks only constitute a significant proportion of public family spending in Canada, Germany, Japan, Poland and the United States where they account for over 30% of spending on families.

Table 1.3. **Children in sole-parent families face an elevated poverty risk, mid- to late-2000s**[1]

Poverty rates for children and for families by employment status, percentages

	Children (0-17)	Sole parent		Two parents		
		Not working	Working	No worker	One worker	Two workers
Australia	11.8	67.8	6.1	50.8	7.9	1.0
Austria	6.2	51.3	10.5	36.3	4.5	2.9
Belgium	10.0	43.2	10.1	36.1	10.6	2.5
Canada	14.8	90.5	29.6	79.4	28.7	4.1
Chile	20.5	87.2	37.6	32.8	27.2	5.8
Czech Republic	10.3	71.4	10.3	43.2	9.5	0.7
Denmark	3.7	33.9	5.1	29.2	7.8	0.6
Estonia	12.4	94.5	29.2	75.4	16.3	3.1
Finland	4.2	46.3	5.6	23.4	8.9	1.1
France	8.0	35.8	14.6	18.1	8.7	3.0
Germany	8.3	46.2	11.6	23.2	3.7	0.6
Greece	13.2	83.6	17.6	39.2	22.1	4.0
Hungary	7.2	30.8	21.3	9.6	6.5	3.1
Iceland	8.3	22.9	17.1	51.0	28.8	4.1
Ireland	16.3	74.9	24.0	55.4	15.7	1.9
Israel	26.6	81.1	29.6	86.4	37.5	3.6
Italy	15.3	87.6	22.8	79.3	22.5	2.7
Japan	14.2	52.5	54.6	37.8	11.0	9.5
Korea	10.3	23.1	19.7	37.5	9.5	5.3
Luxembourg	12.4	69.0	38.3	27.4	15.8	5.3
Mexico	25.8	48.2	31.6	68.7	34.7	11.2
Netherlands	9.6	56.8	23.2	63.1	14.6	1.8
Norway	5.5	42.5	5.9	45.4	7.3	0.2
New Zealand	12.2	75.7	14.0	68.6	9.3	1.0
Poland	21.5	74.9	25.6	51.2	28.4	5.7
Portugal	16.6	90.2	26.2	53.2	34.3	4.8
Spain	17.3	78.0	32.2	70.6	23.2	5.1
Slovak Republic	10.9	65.9	23.9	66.0	18.2	1.8
Slovenia	7.8	72.8	19.6	76.6	22.0	2.1
Sweden	7.0	54.5	11.0	46.0	18.5	1.4
Switzerland	9.4	21.6			7.6	
Turkey	24.6	43.6	31.9	28.1	18.9	20.2
United Kingdom	10.1	39.1	6.7	35.8	9.0	1.0
United States	21.6	91.5	35.8	84.1	30.6	6.6
OECD34 average	**12.7**	**61.4**	**21.3**	**49.4**	**17.3**	**3.9**
Russian Federation	20.1	56.0	24.5	57.2	29.8	15.0

Note: The child poverty rate is defined as the share of children living in households with equivalised incomes less than 50% of the median for the entire population.

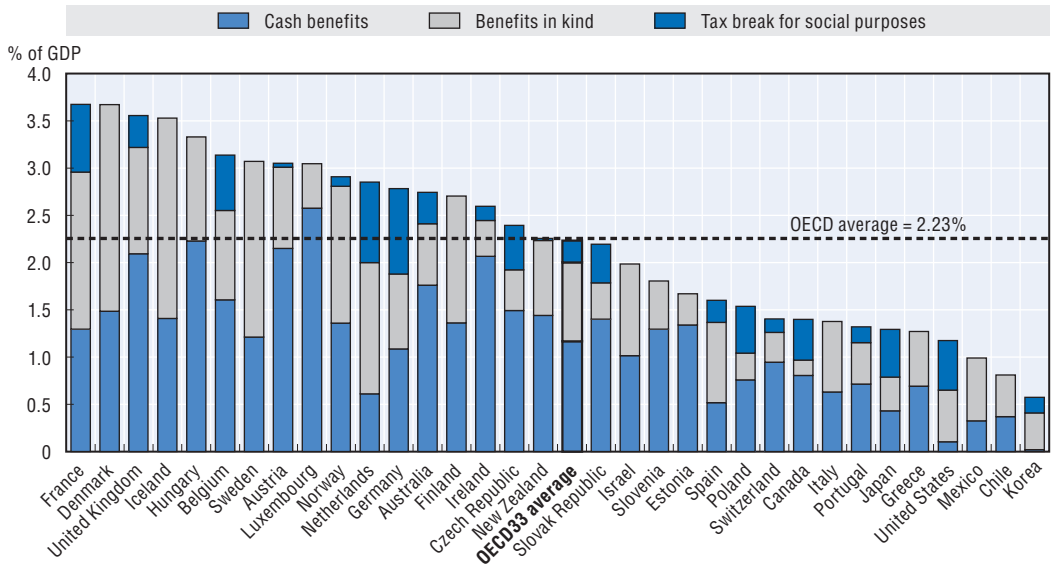
1. Data refers to 2008 for Germany, Israel, Italy, Korea, Mexico, Netherlands, New Zealand, Norway, Sweden and the United States; 2007 for Canada, Denmark and Hungary; 2006 for Chile, Estonia, Japan and Slovenia; 2005 for France, Ireland, Switzerland and the United Kingdom; 2004 for Australia, Austria, Belgium, Czech Republic, Finland, Greece, Iceland, Luxembourg, Poland, Portugal, the Slovak Republic, Spain and Turkey.

Source: Provisional data from OECD (2010e), *Income Distribution Questionnaires*.

StatLink http://dx.doi.org/10.1787/888932393996

Overall, the average OECD public spending on families is around 2¼% of GDP. The highest spending, more than 3% of GDP, is in Austria, Belgium, Iceland, Luxembourg, Denmark, France, Hungary, Sweden and the United Kingdom while it is lowest in Chile, Korea and Mexico where the government spends less than 1% of GDP on families.

Figure 1.11. **Public spending on family benefits in cash,[1] services[2] and tax measures, in percentage of GDP, 2007**



Note: Public support accounted here only concerns public support that is exclusively for families (*e.g.* child payments and allowances, parental leave benefits and childcare support). Spending in other social policy areas such as health and housing support also assists families, but not exclusively, and is not included here. Data on tax breaks towards families is not available for Chile, Estonia, Greece, Hungary, Israel and Slovenia. Coverage of spending on family services (including childcare) may be limited as such services are often provided, and/or co-financed, by local governments. This can make it difficult to get an accurate view of public support for families across, especially but not exclusively, in federal countries.

Data missing for Turkey. Data on tax breaks towards families are not available for Chile, Estonia, Greece, Hungary, Israel and Slovenia.

1. Cash benefits include family allowance, maternity and paternity leave and other cash benefits.
2. Services include day-care/home-care help service and other benefits in kind.

Source: OECD (2010f), *Social Expenditure Database;* and Adema, Fron and Ladaique (2011).

StatLink http://dx.doi.org/10.1787/888932392647

Child well-being

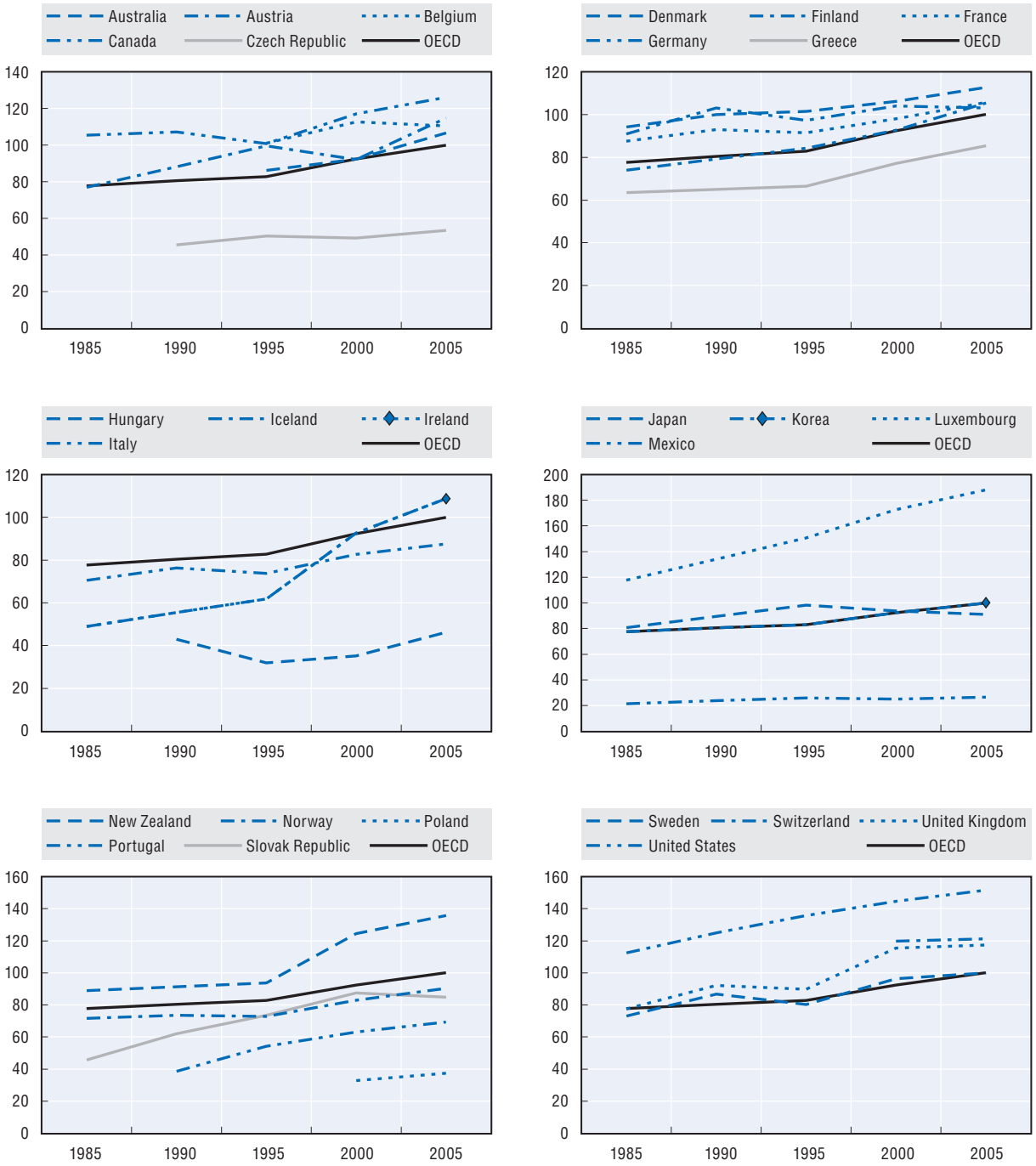
Child well-being is a multidimensional concept. However, for the purposes of this report we focus on three commonly-agreed dimensions only: material well-being, education and health (OECD, 2009a),[4] and also discuss subjective well-being among children. This selection of indicators also aims to cover outcomes for children at different stages of childhood: with material well-being representing the whole of childhood, health indicators covering the early years, and educational outcomes reflecting experiences in the later years.

Material well-being: household income

A number of OECD countries, and the European Union more recently, have set income poverty targets in past years (European Union, 2010). However, even though the equivalised household income for families with children has increased in absolute terms over the past 20 years (Figure 1.12), these increases have not translated to lower relative child poverty (Figure 1.1, Panel D). Indeed, rates of income poverty among children have increased slightly during this period (see Chapter 5 for more detail).

Figure 1.12. **Average incomes in households with children are rising steadily in absolute terms across the OECD, 1985 to 2005**

Income levels relative to OECD average income in 2005
(OECD average income in 2005 = 100)



Notes: Equivalised median household income for households with children aged 0-17 has been anchored to the unweighted OECD average for 2005 data (given a score of 100).
Data missing for Chile, Estonia, Slovenia, Israel, the Netherlands, Spain and Turkey.

Source: Provisional data from OECD (2010e), *Income Distribution Questionnaires*.

StatLink http://dx.doi.org/10.1787/888932392666

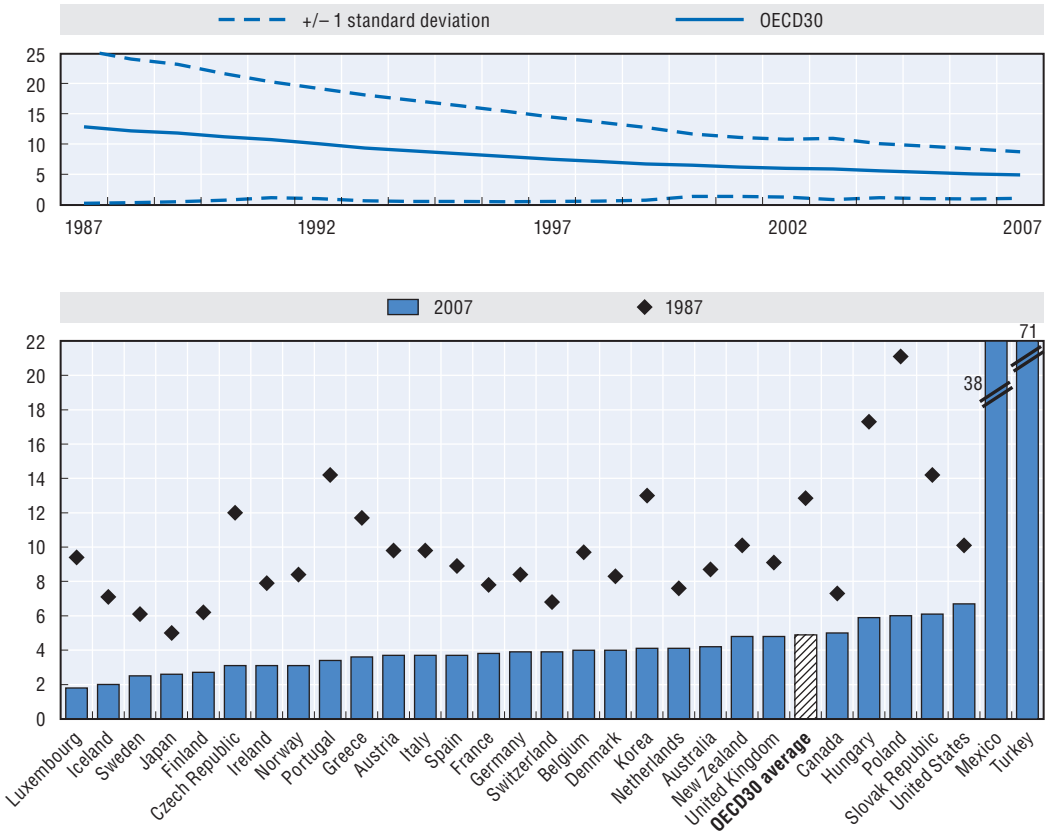
Across the OECD, the income for families with children has increased by an average of 25% between 1985 and 2005, with the increase particularly strong since 1995. Around one-third of countries have seen unabated increases; the remaining countries have witnessed some income fluctuation (with most of the drops being around the mid-90s), but there is an overall increase for all countries.

Health outcomes: infant mortality and low birth weight

Two important measures of child health outcomes are infant mortality rates and low birth weights. In 2007, infant mortality was low or extremely low in most OECD countries (Figure 1.13), and there have been improvements in all OECD countries on this front in the past 20 years. Japan, along with most northern European countries, had the lowest rate of infant deaths in 2005 (two to three per 1 000). Mexico and Turkey are outliers and had substantially higher infant mortality rates than other OECD countries at rates of 16 and 21 per 1 000 births, respectively.

Figure 1.13. **In the past 20 years the numbers of infant deaths have fallen: there has been clear convergence on this front, 1987 to 2007**

Number of deaths of children under one year of age that occurred in a given year per 1 000 live births



Notes: OECD average and standard deviation are unweighted. Some variation in infant mortality rates is related to differences in registration practices of premature babies. For example, in Canada, Nordic countries and the United States, very premature babies (with relatively low odds of survival) are registered as live births, which can increase mortality rates compared with other countries that do not. For more detail, see *OECD Health Data 2009*.
Data missing for Chile, Estonia, Israel and Slovenia. The values above the columns for Mexico and Turkey refer to the figure for 1987. See the Statlink.

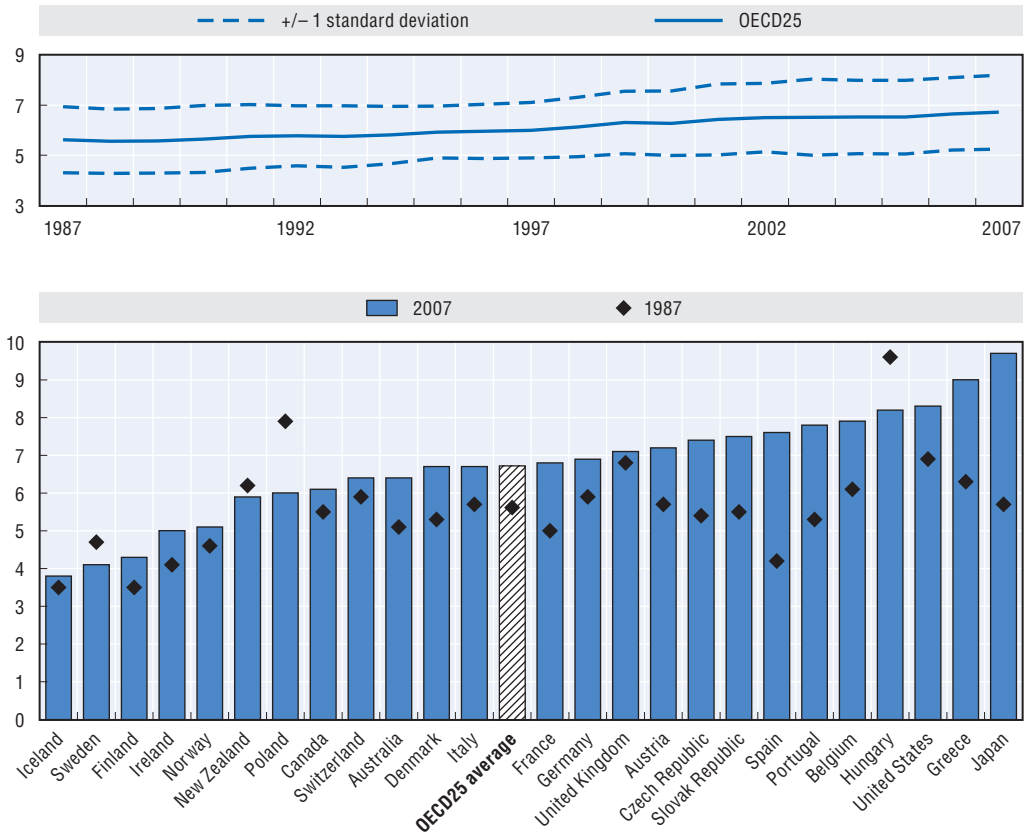
Source: OECD (2009d), *Health at a Glance.*

StatLink http://dx.doi.org/10.1787/888932392685

Contrary to the trends observed in the infant mortality rates, low birth weights have increased across the OECD countries in the past 20 years. Low birth weight is linked to children's future development trajectories and has also been linked to earning and learning capacity in later life (for example see Black, 2007). Part of the increase is due to improvements in medical care leading to higher number of births for children who would otherwise not survive to birth, as well as changes to birth recording practises. Nordic countries have particularly low proportions of children born underweight and the rates in these countries have only increased slightly since 1987 (Figure 1.14). At the other end of the scale, Japan and Greece have high rates of low-birth weight children, rates which have increased more substantially than elsewhere since 1987.

Figure 1.14. **Low birth weights are increasing steadily across the OECD, only Hungary and Poland have seen notable falls, 1987 to 2007**

Number of live births weighing less than 2500 grams as a percentage of total number of live births



Notes: OECD average and standard deviation are unweighted based on 25 OECD countries. Data is missing for Korea, Luxembourg, Mexico, Netherlands and Turkey. Breaks in series: Australia (1991, no significant change), Denmark (1997, 0.9 percentage points decrease) and France (1998, 0.5 percentage points increase). For Germany, until 1989 data refers to the Federal Republic of Germany, from 1990 onwards data refers to Germany after reunification. For further information, see *OECD Health Data 2009*.

Data missing for Chile, Estonia, Israel, Korea, Luxembourg, Mexico, the Netherlands, Slovenia and Turkey.

Source: OECD (2009d), *Health at a Glance.*

StatLink http://dx.doi.org/10.1787/888932392704

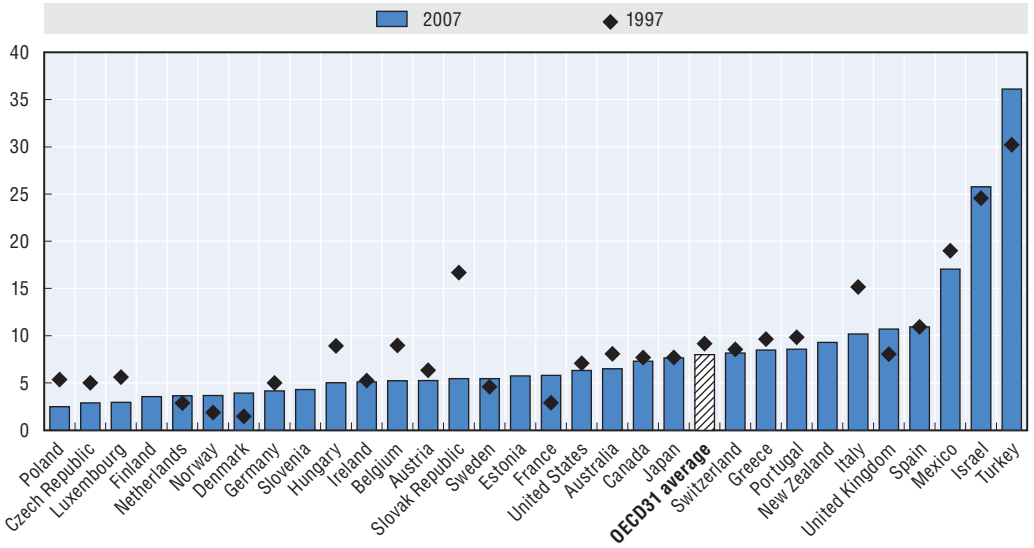
Educational outcomes: literacy scores, children not in education and employment

A good education is critical to a child's personal and social development. Compulsory education of children in the majority of OECD countries takes place between the ages 5 to 15, the most important stages of which – at least for later labour market participation – is around the period of examination and exit from compulsory school. All OECD countries provide comprehensive education systems. But how successful are these systems at getting children into work or further education and providing children with the necessary life skills?

The NEET (Not in Education, Employment and Training) indicator records the proportion of older children who fail to find employment, training or further educational opportunities after compulsory schooling, and compares NEET rates reported in 1997 and 2007. In the last decade, the rates of children aged 15-19 not finding work, training or further education have been below 10%, on average, across the OECD. The data shows that the rate had fallen slightly in the period leading up to the financial crisis. In 2007, only five OECD countries had more than 10% of children not in education, training or employment between the ages of 15 and 19 (the United Kingdom, Spain, Israel, Mexico and Turkey).

Figure 1.15. **In the past decade the likelihood of children being out of education and employment in the years following compulsory school has fallen, 1997[1] and 2007[2]**

Proportion of youth not in education, employment or training



Note: Data missing for Chile, Iceland, Korea.

1. Austria and Israel data is for 2002, United Kingdom for 2000, Ireland for 1999 and Norway and Italy for 1998. Japanese data is for ages 15-24.
2. Mexico data is for 2004. Data for Iceland is missing. OECD average is an unweighted average based on data for 1997 and 2007 only

Source: OECD (2010i), *Education at a Glance*.

StatLink http://dx.doi.org/10.1787/888932392723

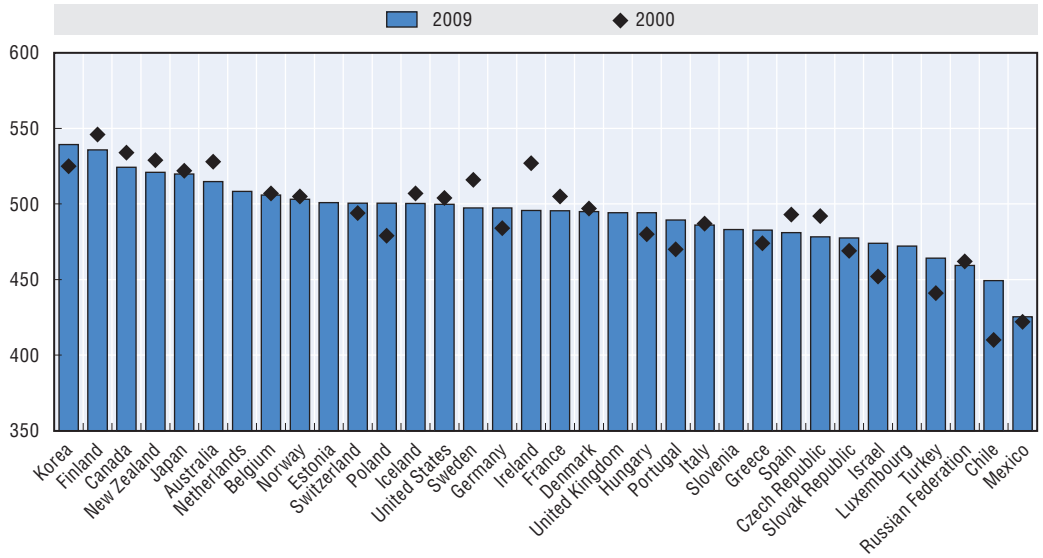
Countries that had above-average NEET rates in 1997 have seen the largest drops from 1997 to 2007. Countries where rates are increasing include the Nordic countries and France, from very low levels in 1997, and in Turkey and Israel from rates already well above

the OECD average. In 2007, there remained considerable variation in NEET rates across the OECD, with the Turkish rate 12 times higher than the Polish rate, although the difference between higher income countries has decreased to between 3% and 10%.

The trends in educational achievement across OECD countries can be compared using information on reading literacy from the first three waves of PISA (Figure 1.16). The data show the change in the countries performance on the reading literacy scale relative to the OECD average for each survey in terms of average performance scores. Chile, Hungary, Israel, Korea, Poland, Portugal and Turkey have seen the largest improvements between 2000 and 2009; it is interesting to note that these countries are spread out across the range of country scores. Ireland and Sweden observed the biggest falls in reading literacy.

Figure 1.16. **A minority of countries have reported real gains relative to OECD average reading literacy levels since 2000**

Differences in student performance on the reading literacy scale 2000 to 2009



Note: For Turkey, Slovak Republic and the Netherlands scores differences are between 2003 and 2009 only. Data for Austria is missing as the 2009 scores were not comparable.

Source: OECD (2010h), *PISA 2009 Assessment Framework*.

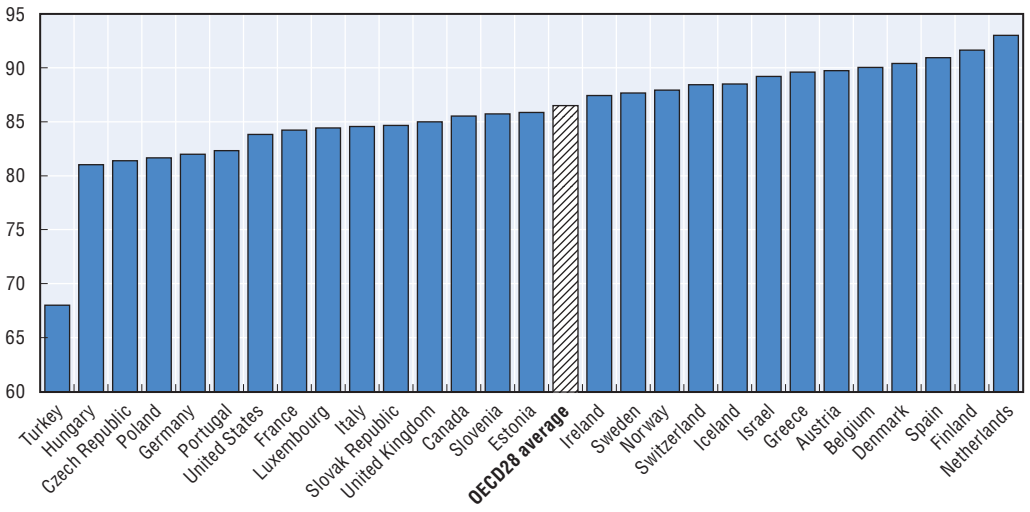
StatLink http://dx.doi.org/10.1787/888932392742

Subjective well-being: children's self-reported life satisfaction

Subjective well-being among children in OECD countries can be measured based on the proportion of children who report scores of 6 and over on a scale used to represent their personal satisfaction with their life. The scale – presented in a written questionnaire in classrooms – asks children aged 11 to 15 years to place themselves on a rung of a ladder based on present subjective perception of life, where the top rung (10) represents the best possible life, and the bottom rung (0) represents the worst possible life. In 2005-06, with the exception of Turkey, at least four out of five children stated that their life is in the top half of the scale (Figure 1.17). Life satisfaction (a score of 6 or more) was particularly high in Belgium, Denmark, Finland, the Netherlands and Spain, where over 90% of children were satisfied with their life. However, around 15% of OECD children said that there life is at most half as good as it could be (Currie *et al.*, 2008).

Figure 1.17. **The majority of OECD children report higher than median levels of life satisfaction, 2005-06**

Proportion of children, aged 11 to 15 years, ranking their life as 6 or above on a scale of 0 to 10



Note: Data missing for Australia, Chile, Japan, Korea, Mexico and New Zealand.

Source: Currie *et al.* (2008), *HBSC International Report from the 2005/2006 Survey*.

StatLink http://dx.doi.org/10.1787/888932392761

Summary

Family life has changed over the past few decades in most OECD countries. Total fertility rates have fallen and, despite a recent rebound in many countries, fertility rates remain below the replacement level in most OECD countries. There has been increased deferment of childbearing among women which in extreme cases has led to increased childlessness. The childlessness rate seems strongly linked to the education level of women: women with higher education levels are most likely to remain childless.

Lower fertility rates and increased childlessness has led to a decline in the average household size and a large proportion of households without children. Falling marriage and increasing divorce rates also mean that less people are getting married, and those that do are more likely to get divorced. Consequently more children are born out of marriage and experience family dissolution. The increase in births outside marriage is also partly due to the increase in non-traditional forms of partnership, namely cohabitation. Cohabitation is becoming increasingly popular among the younger generation as they cohabit before potential marriage and as an alternative to marriage. Overall, changing partnership patterns mean that more children now live in sole-parent and reconstituted families.

Increasing educational attainment levels among women have gone hand-in-hand with improved labour market outcomes for women. However, despite sharp increases in female employment over the past few decades, gender gaps persist. Many women still find it more difficult to gain employment than men, and once they are in the labour market, face further difficulties in gaining equity with their male counterparts. On average, there is a 15 percentage point gap in the employment rates of men and women among prime-aged (25-54) adults. And among the working population, women are more likely to have part-time work and temporary contracts and less likely to reach managerial positions.

Over a generation of children, indicators of three important dimensions of child well-being have evolved in different directions. Average incomes have risen, but at the same time child poverty rates have also increased as households without children have made more financial gains than households with children. More youngsters are now in employment or education than before. Health outcomes for children show evidence of improvement, decline and stability/stagnation in equal measures. Thus, whilst improvements are being made in some areas, it is clear that more could be done to improve child well-being.

Notes

1. In this chapter, the statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.
2. Families have changed more than available data can show, as certain features of family life were not widespread enough to be reflected in data systems until recently. For example, statistics on non-marital forms of partnerships, such as cohabitation, which are now being developed in many countries, were simply not available in the 1980s. The development of formal childcare systems started in the 1960s in Nordic countries, and comparable data for other OECD countries are only available from the mid-1990s onwards. Similarly, data on women in employment by the age of their youngest child are still not available for some OECD countries. In the absence of historical information, some indicators presented in this chapter are based on cross-national comparisons for a recent year only.
3. The fertility "replacement level" is defined as the cohort fertility rate of 2.1 children per woman, which would ensure the replacement of the previous generation, and therefore population stability, assuming no net migration and no change in mortality rates.
4. OECD (2009a) included three other dimensions: risk behaviours, quality of school life and housing and environment. These three dimensions have not been included here as indicators of the first two dimensions have recently been reviewed for changes over time and by gender (OECD, 2009d, 2009e), and housing and environment data are not available in long-term trends for sufficient countries.

References

Adema, W., P. Fron and M. Ladaique (2011), "The Real Cost of Welfare States and the Crisis", *OECD Social, Employment and Migration Working Paper*, OECD Publishing, Paris, forthcoming.

Black, S., P. Devereux and K. Salvanes (2007), "From the Cradle to the Labor Market? The Effect of Birth Weight on Adult Outcomes", *Quarterly Journal of Economics*, MIT Press, Vol. 122, No. 1, pp. 409-439.

CASEN (2010), "The National Socio-economic Characterization Survey (CASEN) for Chile 2003 and 2006", *www.mideplan.cl/casen/en/index.htmlMay 2010*.

Chapple, S. (2009), "Child Well-being and Sole-parent Family Structure in the OECD: An Analysis", *OECD Social, Employment and Migration Working Papers*, No. 82, OECD Publishing, Paris, *www.oecd.org/els/workingpapers*.

Currie, C., S. Gabhainn, E. Godeau, C. Roberts, R. Smith, D. Currie, W. Picket, M. Richter, A. Morgan and V. Bernakow (2008), *Inequalities in Young People's Health: HBSC International Report from the 2005/2006 Survey*, WHO Regional Office for Europe, Copenhagen.

ENIGH (2010), "National Survey of Household Incomes and Expenditures (ENIGH) for Mexico 2006 and 2008", *www.inegi.org.mx/inegi/default.aspx?s=est&c=10656*, May.

EQLS (2010), "European Quality of Life Survey (EQLS) for Turkey in 2007" (provided by EUROFOUND on request), June 2010.

European Union (2010), *Europe 2020: A European Strategy for Smart, Sustainable and Inclusive Growth*, European Union, Brussels, *ec.europa.eu/eu2020/pdf/115346.pdf*.

Eurostat (2006), "Demographic Statistics: Fertility, Eurostat Metadata in SDDS Format", *epp.eurostat.ec.europa.eu/cache/ITY_SDDS/EN/demo_fer_sm1.htm*.

Eurostat (2010), *Eurostat New Cronos Database*, ESDS International, University of Manchester, Manchester.

EU-LFS (2010), "European Union Labour Force Survey (EU LFS) for 2007 and 2008", *http://epp.eurostat.ec.europa.eu/portal/page/portal/microdata/lfs*, September 2010.

EU-SILC (2010), "The European Survey on Income and Living Conditions (EU SILC) for 2007 and 2008", *epp.eurostat.ec.europa.eu/portal/page/portal/microdata/eu_silc*, September 2010.

Förster, M. and M. Mira d'Ercole (2005), "Income Distribution and Poverty in OECD Countries in the Second Half of the 1990s", *OECD Social, Employment and Migration Working Papers*, No. 22, OECD Publishing, Paris.

HILDA (2010), "The Household Income and Living Dynamics (HILDA) for Australia 2007 and 2008", June, *www.melbourneinstitute.com/hilda*.

Iacovou, M. and A. Skew (2010), "Household Structure in the EU", *ISER Working Paper*, No. 2010-10, Institute of Social and Economic Research, Colchester.

KLIPS (2010), "Korean Labour and Income Panel Study (KLIPS) for Korea 2006 and 2007", May, *www.kli.re.kr/klips/en/about/introduce*.

Miranda, V. (2011), "Cooking, Cleaning and Volunteering? Unpaid Work around the World", *OECD Social, Employment and Migration Working Papers*, No. 116, OECD Publishing, Paris.

OECD (1999), *OECD Historical Statistics 1960-1997*, OECD Publishing, Paris.

OECD (2000), *Knowledge and Skills for Life: First Results from PISA 2000*, OECD Publishing, Paris.

OECD (2003), *Learning for Tomorrow's World: First Results from PISA 2003*, OECD Publishing, Paris.

OECD (2007a), *Facing the Future: Korea's Family, Pension and Health Policy Challenges*, OECD Publishing, Paris.

OECD (2007b), *Babies and Bosses: Reconciling Work and Family Life: A Synthesis of Findings for OECD countries*, OECD Publishing, Paris, *www.oecd.org/els/social/family*.

OECD (2009a), *Doing Better for Children*, OECD Publishing, Paris, *www.oecd.org/els/social/childwellbeing*.

OECD (2009b), *OECD Factbook 2009: Economic, Environmental and Social Statistics*, OECD Publishing, Paris.

OECD (2009c), *Society at a Glance*, 2009, OECD Publishing, Paris, *www.oecd.org/els/social/indicators/SAG*.

OECD (2009d), *Health at a Glance*, 2009, OECD Publishing, Paris, *www.oecd.org/health/healthataglance*.

OECD (2010a), *OECD Family Database*, OECD Publishing, Paris, *http://www.oecd.org/els/social/family/database*.

OECD (2010b), *OECD Employment Outlook* 2010, OECD Publishing, Paris, *www.oecd.org/els/employment/outlook*.

OECD (2010c), *Going for Growth*, OECD Publishing, Paris, *www.oecd.org/economics/goingforgrowth*.

OECD (2010d), *Families 2030*, OECD Publishing, Paris, *www.oecd.org/futures*.

OECD (2010e), *Income Distribution Questionnaires*, Data downloaded from OECD.stat, OECD Publishing, Paris.

OECD (2010f), *OECD Social Expenditure Database*, OECD Publishing, Paris, *www.oecd.org/els/social/expenditure*.

OECD (2010g), *OECD Employment Database*, OECD Publishing, Paris, *www.oecd.org/employment/database*.

OECD (2010h), *PISA 2009 Assessment Framework – Key Competencies in Reading, Mathematics and Science*, OECD Publishing, Paris.

OECD (2010i), *Education at a Glance 2009*, OECD Publishing, Paris, *www.oecd.org/edu/eag2009*.

OECD (2011a), *Labour Market and Social Policy Reviews: the Russian Federation*, OECD Publishing, Paris, forthcoming.

OECD (2011b), *Pensions at a Glance 2011: Retirement-Income Systems in OECD and G20 countries*, OECD Publishing, Paris.

PSID (2010), "Panel Study on Income Dynamics (PSID) for the United States 2004 and 2006", June, *psidonline.isr.umich.edu*.

SHP (2010), "Swiss Household Panel (SHP) for Switzerland 2007", June, *www.swisspanel.ch/?lang=en*.

SHS (2010), "Survey of Household Spending (SHS) for Canada 2004 and 2005", June, *www.statcan.gc.ca*.

SLID (2010), "Survey of Labour and Income Dynamics (SLID) for Canada 2004 and 2005", June, *www.statcan.gc.ca*.

United Nations (1989/1990), *United Nations Convention on the Rights of the Child, www.unhcrc.ch*.

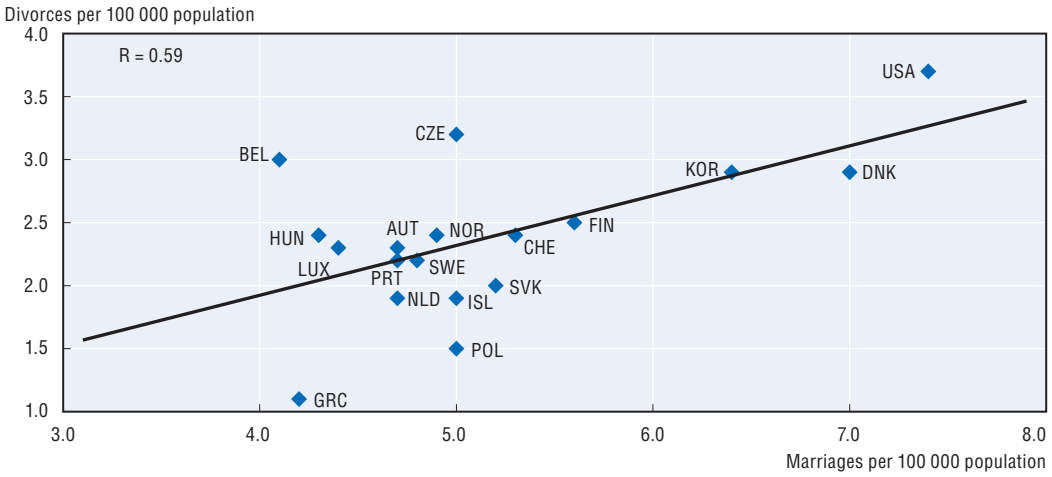
Whiteford, P. and W. Adema (2007), "What Works Best in Reducing Child Poverty: A Benefit or Work Strategy?", *OECD Social, Employment and Migration Working Papers*, No. 51, OECD Publishing, Paris.

ANNEX 1.A1

Background Information to Chapter 1

Figure 1.A1.1. **Countries with high marriage rates also have high divorce rates, 2007**

Relationship between crude marriage and divorce rates



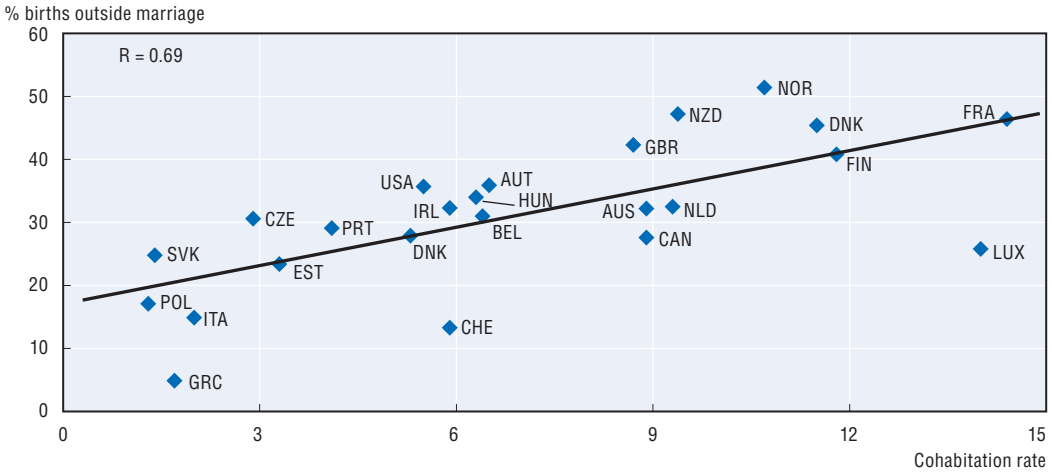
Note: Data refer to 2004 for Mexico; 2005 for Turkey and the EU (except for Denmark and Ireland); 2006 for Denmark, Iceland, Ireland and the United States.

Source: OECD (2010a), *OECD Family Database*.

StatLink http://dx.doi.org/10.1787/888932392780

Figure 1.A1.2. **Countries with high cohabitation rates have a high proportion of births outside marriage, 2000-07**

Relationship between cohabitation and births outside marriage

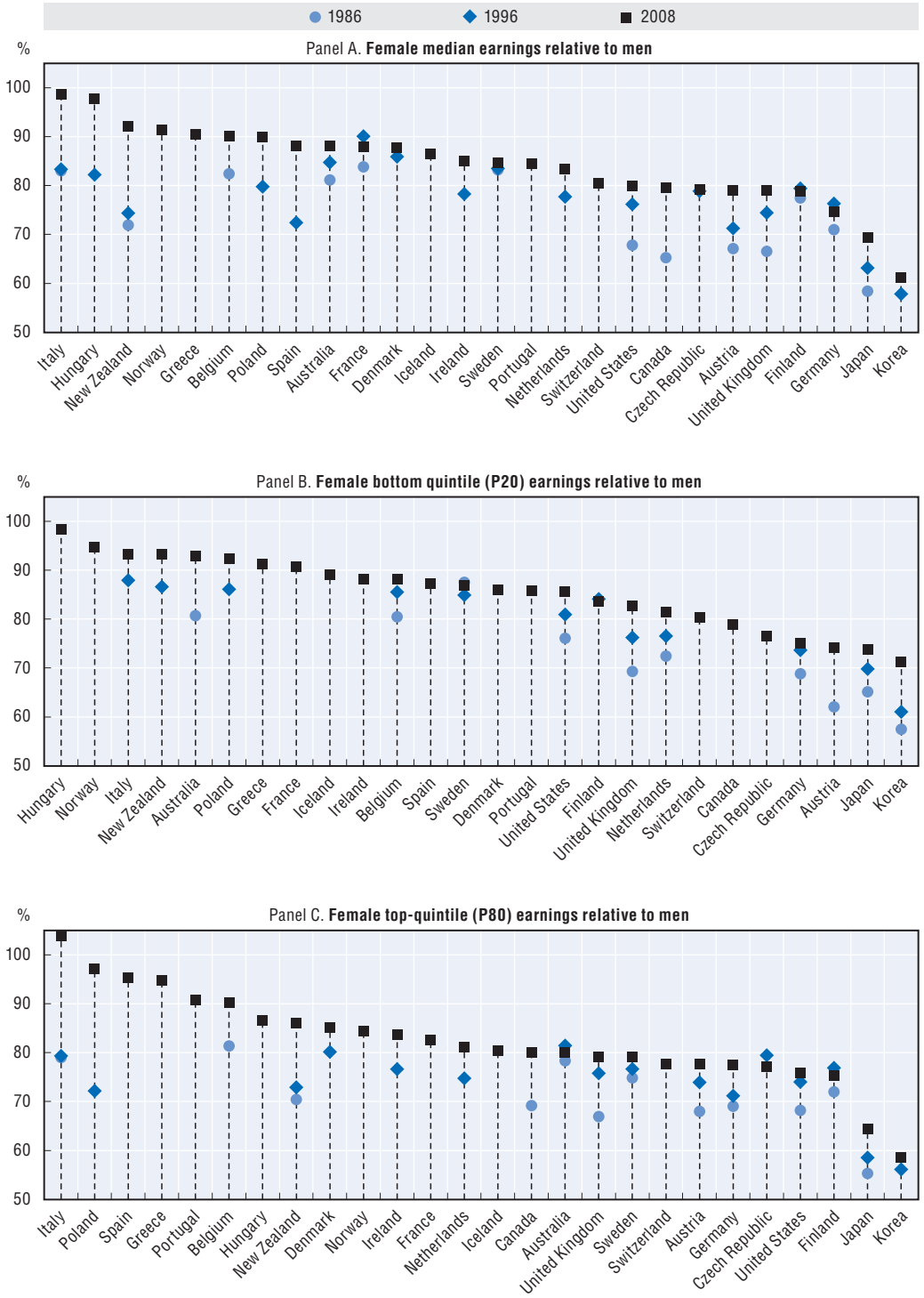


Note: Data refers to 2000: Estonia, Finland, Latvia, Switzerland and the United States; 2001: Austria, Cyprus, Denmark, Greece, Hungary, Italy, Lithuania, Luxembourg , the Netherlands, Norway, Portugal, Spain, and the United Kingdom; 2002: Ireland, Poland, Romania, Slovenia; 2006 for Australia, New Zealand and Canada; 2007 for Belgium, Bulgaria, France, Luxembourg, Malta, and Turkey.

Source: OECD (2010a), *OECD Family Database*.

StatLink http://dx.doi.org/10.1787/888932392799

Figure 1.A1.3. **Trends in the gender gap in earnings, 1980, 1996 and 2008**



Note: Estimates of earnings used in the calculation refer to gross earnings of full time wage and salary workers. However, this definition may slightly vary from one country to another.

Source: OECD (2010g), *OECD Employment Database*.

StatLink http://dx.doi.org/10.1787/888932392818

Chapter 2

The balance of family policy tools – benefit packages, spending by age and families with young children

Across OECD countries, public spending on family benefits makes up, on average, one-tenth of total net public social spending. Since the mid-1990s, there has been a trend increase in spending on in-kind benefits (in particular childcare services), while spending on cash transfers has been relatively stable, even though it remains the most important of the family benefits.

Before the age of three, and more often immediately following birth, poverty risks for families with young children are at their highest. In around two-thirds of OECD countries, some families can expect to experience either deep or persistent (two or more consecutive years) poverty if one parent stops working. A review of age-related spending on children also reveals that in many countries spending on education is prioritised, and often families with older children benefit most.

Family policies were scaled up during the early crisis period as part of the stimulus packages but, with countries now moving into fiscal consolidation, resources for family policies are also being affected.

Introduction

Family benefits and services are important social policy tools in all OECD countries, and influence many of the outcomes reviewed in Chapter 1. Since the mid-1990s, public spending on cash transfers and compulsory education has remained relatively stable while investment in early childhood education and care services increased significantly. Moreover, in the past decade the use of tax allowances and credits in OECD family policy packages has been increasing.

The evolving needs of families and children over the life-cycle means that the timing of a transfer can determine its effect. Spending on early childhood has recorded the highest average rise in recent years, although from a low base. Late childhood still receives the highest share, at around 39% of total spending up to age 18 compared to just under 36% in middle childhood, and 25% in early childhood. The period immediately preceding compulsory school often sees the least investment; country spending tends to peak around birth or in the early teenage years.[1]

Investment in families is most efficient if it starts when children are young. Analysis of early years' tax and benefit policies reveals the different ways in which countries support families with the youngest children. It shows that the greatest variation in household income occurs for families with children in the period from birth to around the age of four (a period critical for child development and parental career development). During the early years, sole-parent families generally face the highest risk of falling into poverty, compared with other family types.

Following the onset of the global financial crisis, spending on families has been evolving rapidly. The year leading up to the economic crisis saw benefits for working families strengthened and, for families more generally, both leave benefits and formal childcare services were extended. The initial response during the crisis was to scale up funds for family policy, with countries extending childcare provisions and often providing additional one-off supplements to family benefits. In the early phases of the recovery, some countries have already implemented cuts to universal birth-related benefits, childcare coverage, and temporary freezes have been imposed on family benefits. But today, less than half of the OECD countries are considering cutting benefits for families as part of an austerity package.

The first section of this chapter briefly outlines the various policy tools used to support families across OECD countries, including a review of the spending levels and the prioritisation of cash and in-kind transfers and tax allowances in the family expenditure budgets of OECD countries. The second section analyses family and child spending by updating the work undertaken on age-spending profiles in *Doing Better for Children* (OECD, 2009). The third section explores of the treatment of different family types in the tax and benefit systems across the OECD. The analysis focuses on different family types: large families (4+ children), sole-parent families, and families earning half of the gross average wage. Results are presented in terms of the relative poverty risk of these families during the early childhood years of their youngest children, taking into account the role of taxes and benefits.

Main findings

Increased spending on childcare does not constitute a fundamental change in the nature of public investment in families. In the years leading up to the financial crisis of 2008-09, there was a sizeable increase of spending on families, in particular public spending on childcare. Nevertheless, this increase does not reflect a fundamental change in the structure and direction of spending on families – despite increasing evidence to suggest that early interventions, when maintained throughout compulsory schooling, are the most effective form of investment in children.

The evidence suggests that countries undergoing changes in family policy often do so by increasing overall spending, not by reallocating funds from one part to the other. Path dependency is a constraint to recommending new policies for family and child development; for instance long-standing education spending programmes can drive future spending, or leave and childcare policies may be linked for reasons of complementarity and not adjusted independently. Countries that plan to maintain present levels of spending should consider options for reallocating funds from one point in the lifecycle to another, or from one family type to another.

The recent economic crisis has been exerting serious budgetary pressures on family benefits. Initially, income supports to families with children were extended but some countries are now introducing austerity cuts, which frequently follow a "last-in-first-out" strategy. As a result, long-term commitments to improving child development and/or the balance of work and family commitments are at risk.

On the basis of the evidence in this chapter, a number of policy recommendations on how policies can spend wisely can be highlighted:

- *Maintain, and, where possible, increase, spending on the youngest and most vulnerable children:* At present, spending across the life cycle of a child favours the later years, when children's behaviours and achievement are less malleable and parents tend to have a more stable situation in the labour market. Starting to spend early on children is efficient, but many countries wait at least 6 years before the main public intervention towards child development begins. Investing in pre-school education can yield a higher return than later investment for outcomes such as cognitive development (see also Chapter 5). Spending early on children also contributes to equity. The family environment plays a key role for a range of children outcomes, and it is important for public services to account for market failures (parents under-investing in their children), and restrict the development of gaps between the rich and the poor. Such gaps are not only inequitable in the short term but they are also the starting point for later forms of social exclusion. The results are costly to both the child *and* society (Chapters 5 and 7).
- *Protect families from poverty in the child's first years:* Ensure that child-related leave policies and associated child benefits provide adequate income support for different family types and complement publicly-provided childcare and consider parental career prospects. During parental leave periods, the depth and length of the poverty risk varies across countries. Before the age of three, and more often immediately following birth, poverty risks for families with young children are at their highest. Earnings levels and family structures play an important role in setting poverty risks, with low-earners (earning half of the average wage) and sole parent families commonly being at the highest risk of poverty (Chapter 6). In countries with low-paid or no-pay leave policies, the birth of a child imposes relatively larger costs on average-earning families, and generally

increases poverty risks. In around two-thirds of OECD countries, some families can expect to experience either deep or persistent (two or more consecutive years) of poverty if choosing to care for their children at home.

- *Older children at-risk should not lose out:* There will be an inevitable investment lag if countries shift focus from their present spending profiles to the early years. Older children who have not benefitted from the expansion to early years support are at risk of missing out. In particular public spending on older at-risk children should be maintained.

In times of constraint on public budgets governments looking to cut back on family policies should ensure that those most at risk do not lose support; countries must also cut smart:

- *Benefit payments to those most in need should be preserved as much as possible:* Countries that deem it necessary to reduce family support should ensure that the most vulnerable are protected. Policy options to means-test cash benefits or cascade or co-locate services could be explored.
- *Make better use of in-kind services:* Many of the OECD countries that perform well in comparisons of poverty and child well-being (*e.g.* health and education) are high investors in service delivery (Chapter 5). However, on average across the OECD spending on in-kind services constitutes the minority of spending on family benefits. Efficiencies in service delivery can also be made. Universal services can be "cascaded" to better identify and target families who are most in need of multiple services, and there are economies of scale particularly for co-location on physical sites like schools, clinics or formal childcare centres. Integrated service delivery can also improve service delivery by professionals, avoid inadvertently withdrawing necessary supports, and give clients better access to the different services families and children may need.

Spending and policy tools for families across OECD countries

The main ways in which families are supported in OECD social protection systems are through cash benefits, in-kind service provisions including childcare and tax breaks. Different spending choices by type may reflect different priorities in terms of family and children's outcomes, administration and coverage, and broader policy goals.

Cash benefits are popular tools in social protection systems due to their relative flexibility; they can be adapted relatively easily and so respond faster to goals or targets such as reducing poverty rates, or the need to cut spending in times of budgetary constraint. Options to means-test cash benefits can add precision to interventions designed to raise minimum standards of living. Cash transfers are also more transparent; their costs can be quickly assessed and outcomes can be evaluated over a shorter period than service interventions. Broadly, cash benefits can be categorised into two types: a "horizontal" transfer, which moves income from one group in society to another (such as universal family benefits) and "vertical" transfers which moves income from one point in a person's lifecycle to another (such as social insurance based leave policies). More recently efforts to influence how families spend their cash payments, by naming benefits as "child" benefits or paying them to the mother rather than to the father (Woolley, 2004), add to the flexibility of this type of intervention. Moreover, there are examples of cash benefits being used in OECD countries as incentives to take-up services, such as

immunisations or other health services (*e.g.* the Australian immunisation allowance, the Finnish and Hungarian birth grants).

Tax breaks are seen as more efficient for encouraging work in comparison to cash benefits. However, tax breaks may not be as easily applied to directly improving family outcomes, such as child poverty targets, if work is not readily available or paid at a low wage, unless the tax breaks are "non-wastable" (*i.e.* paid in cash when recipients' tax liabilities are already fully off-set). As with cash benefits, the costs and effects of tax break policies can be quickly assessed. Over the past few years this type of redistribution has been growing in the OECD, reflecting the evolution of tax and benefit systems designed to encourage welfare through work (Immervoll and Pearson, 2009).

In the case of services such as childcare, education or child protection, issues of flexibility and short-term outcomes may not be the priorities. Certain services provide for public goods or necessities, or are complementary to other family policies such as work-related benefits. Services are earmarked for specific purposes, whereas cash transfers can be used for anything once paid to the family. The coverage of in-kind benefits is commonly universal (although targeting is possible), and free at the point of consumption, although in some cases requires referrals which can be administered through different systems (see Box 2.1 for a discussion of integrated services). Countries with relatively high commitments to in-kind spending are often countries with good outcomes as measured in terms of child well-being. The challenge for all countries is to deliver services efficiently.

Policy measures in support of families can be roughly divided into five main purposes:

- Support for mothers-to-be during pregnancy until delivery: most countries provide medical care, information or counselling services (on positive and negative health behaviours) and hospitalisation for delivery.
- Support for childbirth: for example a "baby pack" (which can include a bottle and clothes for a newborn), vouchers, or a lump sum paid prior to, or on, the birth of a child.
- Longer-term financial assistance for families to cover the direct cost of children: this can include family allowances, welfare benefits indexed by the number of children, tax breaks for families with children, and education or care services or support to cover some education or care expenses.
- Support designed to help working parents raise their children: this category encompasses leave entitlements for the birth of a child or to take care of very young children or sick children, childcare and education facilities, and financial benefits and tax breaks linked to employment.
- Benefits paid to parents who are not in paid employment or who stop working to care for young children: including social assistance or housing benefits related to family size, leave payments, family allowances, child raising allowances and care and education services.

These different types of support are extended at different times and at different paid levels. They can therefore be expected to have different influences on the decisions of whether to have children, how to bring up these children, and whether to enter or leave the labour market.

Box 2.1. **The three Cs of efficient service delivery: cascading, co-operation and co-location**

Delivering services directly to families is a central part of social protection systems. In-kind service spending, including childcare, amounts to around 0.75% of national GDP across the OECD on average and is growing faster than any other form of family intervention (OECD, 2010a). Recent literature has highlighted the varied ways in which OECD countries deliver their services; in particular three ways are highlighted as being most efficient.

The "cascading" services model

Cascaded services are services that are delivered in the first instance as universal, and then focused on families in need at later stages. In the case of pre-natal checks during pregnancy for example, all mothers can benefit from health checks with mid-wives or obstetricians, with evidence suggesting that the most effective number of checks for pregnancies without complications is around four (Di Mario *et al.*, 2005). However, some mothers may require additional treatment because of complications during pregnancy or risks related to do with under-nutrition and/or health behaviours. The first universal stage is efficient insofar as it provides the standard intervention whilst screening for risks that benefit from early intervention. Intensified intervention at the second stage reduces long-term costs associated with the early withdrawal of the service.

Co-operation and co-location of services

Families in receipt of one public service intervention often face multiple risks. For instance, families in temporary social accommodation may also suffer from low incomes, unemployment, or mental and physical health problems. It is equally possible for low incomes or health problems to lead to families entering temporary social accommodation. Allowing multiple risks to establish can affect the lives of the family today and the future of their children tomorrow, through the transmission of risk and disadvantage.

Effective delivery of services in one area may rely on multiple interventions for the family with multiple disadvantages. Delivering integrated services through co-operation, or services from the same physical location through co-location, can reduce cost burden on both the provider (fixed and running costs when located on pre-existing sites such as schools or clinics) and the client (travel, time and emotional costs). Together these methods can be used to identify the best approach to tackle disadvantages and their causes simultaneously. Moreover, co-location reduces the risk that support is withdrawn or approved unjustly, because different professional assessments are directly available on-site. When service users receive the most comprehensive assessment and response first time, the likelihood of longer term dependency on the services is reduced.

OECD experience suggests that integrated services can be delivered by good co-ordination of local services delivered by municipal health, education and family departments as in Nordic countries, personal advisers for services users (established in employment policies), joint funding of initiatives designed to focus on a range of interventions (Stronger Families and Communities Strategy in Australia) or by physically co-locating complementary services for children or families on the same site (United Kingdom – co-location fund for schools and Sure Start; New Zealand's Community Link, Head Start and Early Head Start in the United States, Fair Start in Canada, Best Start in Australia and Dream Start in Korea).

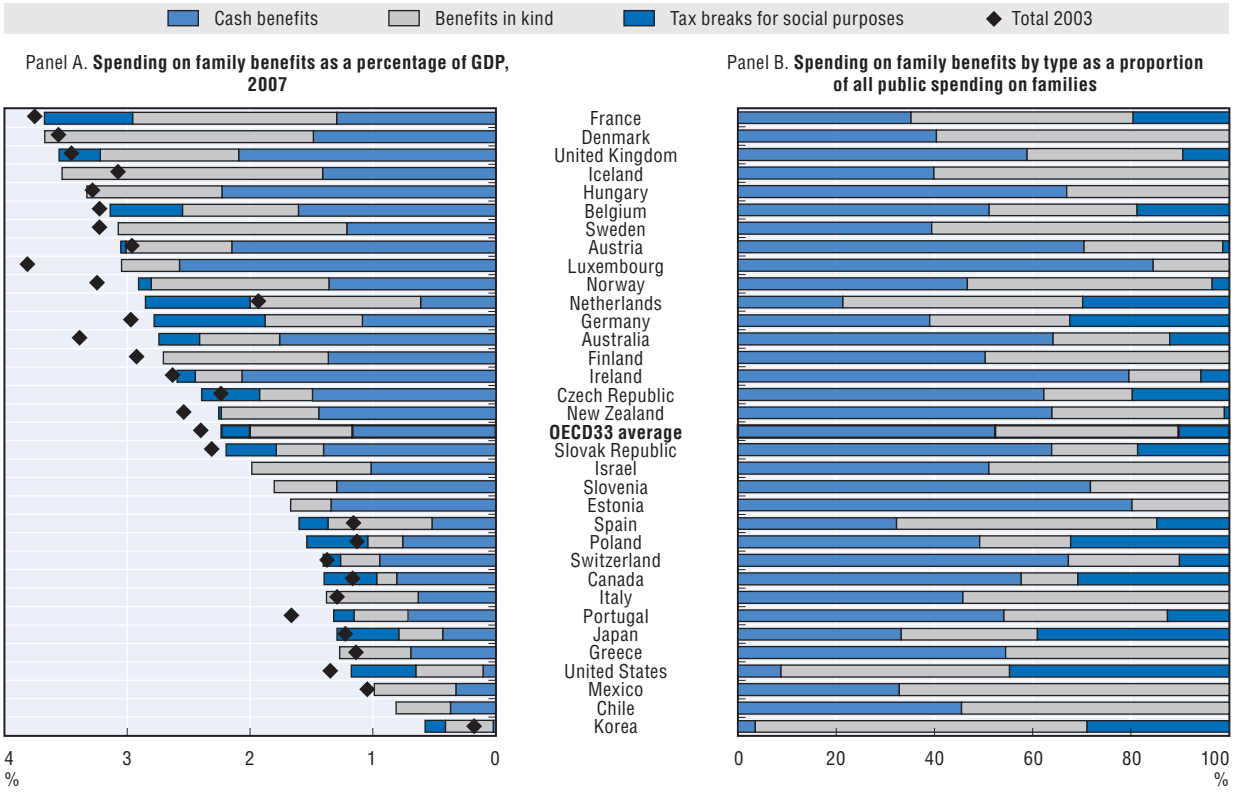
The limited empirical literature on integrated services has yet to extend into comparative analysis; indeed, comparisons of present co-location policies are almost non-existent. Available national evidence for health and social care suggests that the co-location services may require new and sometimes more complex administration and management (Maslin-Prothero and Bennion, 2010). Nonetheless the benefits from appropriately delivered co-located services would be an important next step for improving family and child outcomes.

A snapshot of variations in spending on family benefits in 2007

A good deal of variation exists in the share of GDP different OECD countries invest through the social protection system on child and family benefits. Figure 2.1, Panel A shows the breakdown of spending on family benefits in 2007, not including health and housing (see notes to the Figure). OECD countries on average spend 2.2% of GDP on family benefits, ranging from just over 0.5% in Korea to over 3.5% in Denmark, France, Iceland and the United Kingdom.

The majority of OECD countries transfer at least 1% of GDP to families with children in the form of cash benefits, on average this amounts to about 1.2%. Mostly this is paid through a family allowance, child benefit or working family payments, but also via maternity, paternity and parental leave payments and birth grants. A number of OECD countries also include one-off benefits such as back to school supplements or social grants in these amounts (such as payments to support one-off purchases for the home).

Figure 2.1. **Most public spending on family benefits in 2007 was delivered in the form of cash benefits**



Note: Countries are ranked in decreasing order of total family benefit spending in 2007. The OECD average is calculated as the unweighted average of all available OECD countries. Expenditure includes child payments and allowances, parental leave benefits and childcare support. Spending on health and housing support also assists families, but is not included here. No data on tax breaks for Chile, Estonia, Greece, Hungary, Israel, and Slovenia. Tax breaks are not used in Denmark, Finland, Iceland, Italy, Luxembourg, Mexico or Sweden. Coverage of spending on family may be limited as such services are often provided, and/or co-financed, by local governments. This leads to large gaps in measurement of spending in Canada and Switzerland. Local governments also play a key role in financing childcare. This can make it difficult to get an accurate view of public support for childcare across a country, especially but not exclusively, in federal countries. Data is missing for Turkey.

Source: OECD (2010a), *OECD Social Expenditure Database* (*www.oecd.org/els/social/expenditure*).

StatLink http://dx.doi.org/10.1787/888932392894

Austria, Hungary, Ireland, Luxembourg and the United Kingdom transfer over 2% of GDP to families in cash payments. Korea and the United States both transfer less than 0.1% of their respective GDP in family cash benefits.

In-kind payments or public services for families, including childcare services, are a substantial part of the spending budget, amounting to over 0.8% of GDP across the OECD on average. In-kind services can include childcare and day care services, home help for families, and a suite of family social services. The largest "service providers" are Denmark and Iceland – which spend almost twice as much on services as on cash transfers, over 2% of GDP in total – as well as France and Sweden. These countries are also amongst the biggest spenders on formal childcare services. In-kind services are used to a lesser extent in Canada, Estonia, Poland and Switzerland.

Favourable tax treatment for families, delivered in the form of allowances on earned income in support of a take up of a service (such as childcare) or for each child dependent in a household, are also included in the family spending packages. Tax breaks for families are an important tool for delivering family support in Belgium, France, Germany, Japan, the Netherlands and the United States where over 0.5% of GDP is allocated to working families through earned-income tax breaks and tax credits. Seven of the 33 OECD countries covered do not provide tax breaks to families in any form (see Adema *et al.*, 2011 for a detailed overview of spending on tax breaks with a social purpose).

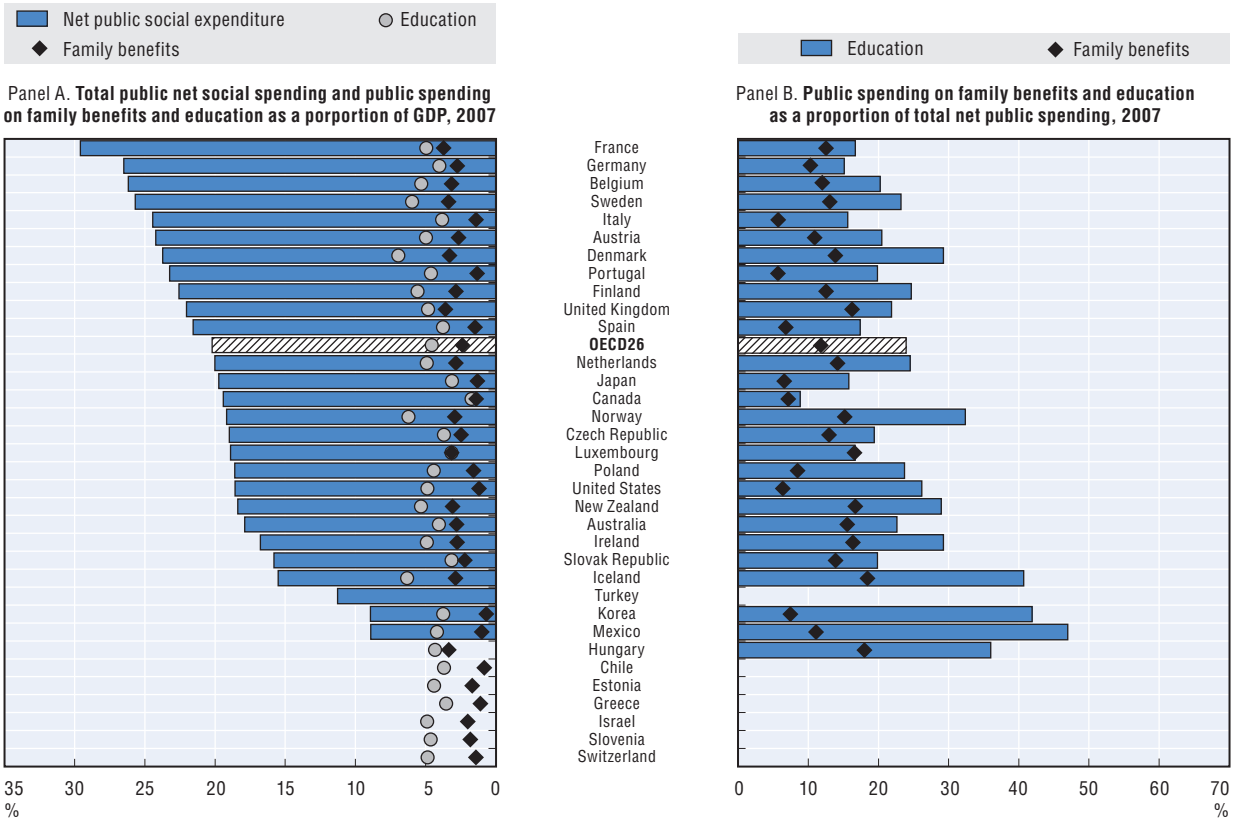
In relative terms, cash benefits dominate the family benefit picture. Panel B of Figure 2.1 shows cash transfers, in-kind and tax breaks transfers as proportions of overall spending on families. On average one in every two family budget dollars is transferred in cash, ranging from over four in every five dollars in Estonia and Luxembourg, to less than one in every 10 dollars transferred in Korea and the United States. Tax breaks make up 10% of social transfers on average, amounting to around 40% of the Japanese family budget and nearer 45% of the United States budget. In-kind spending, on average, makes up over one third of the total family policy transfers. In Chile, Denmark, Iceland, Italy, Korea, Mexico, Spain, and Sweden over half of the total family spend is committed to service delivery; less than 20% is committed in the budgets of the Canada, Czech Republic, Ireland, Luxembourg, Poland and the Slovak Republic.

Public benefits and services in support of child-raising make up only part of the public support available to families with children, and are low in comparison to total net public spending on benefits and services. Figure 2.2 superimposes the spending on public family benefits and spending on public education over total public net social spending. On average transfers to families amount to around half of total transfers via public education, which in turn make up one quarter of total spending. The largest in-kind support for families comes in the form of public spending on compulsory education. For those countries with data, only Luxembourg spends as much on family transfers as on public education. The largest relative difference is seen in the Korea where the education budget is around five and a half times that of spending on family benefits.

The rise of in-kind spending

Trends in average OECD family spending in the past two decades show that countries have strongly favoured expansions in in-kind benefits compared to cash transfers and education spending. Panel A of Figure 2.3 compares the spending types (cash, in-kind and

Figure 2.2. **In most countries spending on family benefits is around one-tenth of total net social spending and half of public spending on education**



Note: Countries are ranked in decreasing order of net public social expenditure in 2007. Total public net social spending data is missing for Chile, Estonia, Greece, Israel, Slovenia and Switzerland. Data on education for Greece have been estimated.

Source: OECD (2010a), OECD *Social Expenditure Database*; OECD (2010b), *OECD Education Database*, Hungarian Ministry of National Resources.

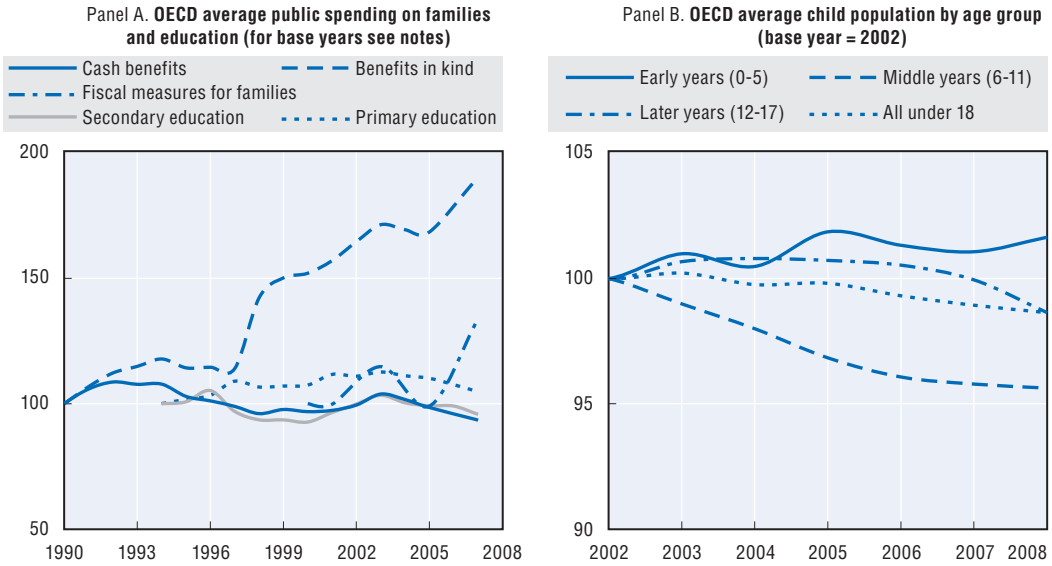
StatLink http://dx.doi.org/10.1787/888932392913

tax breaks for families) to public spending on education over time. The increase in in-kind spending should be read in the context of the relatively low share of in-kind spending in total public family spending.[2]

Increases in in-kind spending are partly explained by increasing number of children aged 0-5 (inclusive) and the demands this puts on the childcare system. Figure 2.3 shows the changing trend in the numbers of children in OECD countries on average. Despite a small overall decline in the child population, spending on family services has increased and cash benefits and education spending have been relatively stable. Falls seen in the older child population may explain small reductions in compulsory educational spending since 2003.

With the unfolding of the financial crisis in late 2007, spending on family benefits was initially maintained (and sometimes increased), but the development of austerity policies in the recovery phase has introduced spending cuts in many countries (Box 2.2).

Figure 2.3. **Since 1990 spending on in-kind benefits for families has almost doubled while cash benefits and education spending have remained constant; since 2002 the population of older children has fallen**



Note: Panel A: The OECD average is calculated as the unweighted average of all available OECD data. Cash benefits and benefits in-kind base year = 1990; primary and secondary education base year =1995; fiscal measures for families base year = 2000. For other spending notes and coverage (federal countries for instance) notes see Figure 2.1 above. The 2000 data for tax break for social purposes is estimated based on a linear regression of 2001-07 data. Secondary education comprises of both lower secondary and upper secondary education. Panel B: the OECD average is calculated as the unweighted average of all OECD countries for which data is available.

Source: Panel A: OECD (2010a), *OECD Social Expenditure Database*; Panel B: OECD (2010b), *OECD Education Database*.

StatLink http://dx.doi.org/10.1787/888932392932

Box 2.2. **Spend then save: public family policies during the crisis**

The analysis in this chapter draws heavily on information on social protection systems for 2007 and 2008. Although detailed and comprehensive cross-national data has not yet become available, the situation is likely to have changed in 2009-10. This box provides a summary of policy change during the evolution of the crisis.

The early response

The global financial crisis started in late 2007 (OECD, 2010c) quickly affecting the real economy, with GDP declining and unemployment increasing. Governments intervened quickly and decisively but expansionary monetary policy, often with unprecedented fiscal stimulus packages and bailout programmes to rescue some financial institutions.

Almost all EU countries, except Hungary and the Netherlands, expanded their level of support to families as part of established policies (*e.g.* indexed or planned increases to benefits). Fewer measures, either expanding or reducing the coverage of family transfers, were instead introduced as a direct response to the crisis. Crisis response measures mostly came in the form of cash transfers, childcare supports and housing subsidies: moreover, many of them were set up only temporary (Gauthier, 2010).

Box 2.2. **Spend then save: public family policies during the crisis** *(cont.)*

The later responses

In some European countries, notably Greece, Ireland, Portugal, Spain and United Kingdom, rising government deficits and debt has led to austerity packages and budget cuts, in some cases directly affecting family policy. At the end of July 2010, OECD countries fitted broadly into four groups:

- Austerity packages approved: Czech Republic, Denmark, Estonia, Germany, Greece, Hungary, Iceland, Ireland, Italy, the Netherlands, Portugal, Spain, and the United Kingdom;
- Austerity packages announced: United Kingdom (further to first cuts), France, Luxembourg, and Slovenia;
- Talks, but the process is not complete: Belgium, Japan, and Slovak Republic;
- No planned austerity packages: Austria, Australia, Canada, Chile, Finland, Israel, Mexico, New Zealand, Norway, Poland, Korea, Sweden, Switzerland, Turkey, and United States.

In countries with approved austerity packages, cuts are affecting family policy to various degrees. Denmark will reduce the child allowance paid to parents by 5% and will remove funding for couples seeking "in vitro fertilisation" treatment. In mid-2010, Germany announced a reduction by 2% of the monthly allowance (Elterngeld) given to parents taking care of a child until the 14th month of life, and a plan to abolish it for unemployed parents. Ireland has lowered the age of children eligible for family allowances. Spain has abolished the birth grant of EUR 2 500 for each new-born. By mid-2010, only Greece and Portugal hadn't altered family policy directly.

In the second group, Luxembourg, has announced a reduction of parental leave from six to four months. The United Kingdom reduced the number of families eligible for child tax credit, the "Health in Pregnancy Grant" and coverage of the Sure Start maternity allowance, before announcing a means-test to the universal child benefit in October 2010 as part of the *Comprehensive Spending* Review (HM Treasury, 2010).

It is too early to draw a conclusion on the extent to which family outcomes (including income poverty, employment participation and fertility choices) will be affected by the austerity packages. Overall, family benefits may not have been affected as much as other policy areas in many countries, but cuts in these other areas will also affect families, for example, reductions of Social Assistance and Housing Benefit, and freezing or reducing public salaries.

Public spending on family benefits and education by the age of the child

Public spending on family benefits and education varies widely by the age of the child (relative to national wealth). In 2007, social spending per child up to age 18 was on average USD PPP 152 000. On average, one quarter of the 2007 budget was transferred during early childhood (0-5 years), rising to just over a third during middle childhood (6-11 years), up to 39% for children during late childhood (12-17 years). Spending thus appears to be tilted towards older children – reflecting in part their additional schooling and consumption costs – while the theory and evidence on child well-being and development that suggests it is most efficient to start investing early in childhood.

Why review public family interventions by the age of the child?

The analysis of spending patterns by child age gives an overview of policy portfolios in different countries for children on average, and for different family types, and helps

identify critical and sensitive periods for intervention. Analysis of spending by age is an important tool for policymakers wishing to identify which points in the lifecycle are under or overinvested in relative to other periods.[3]

In both academic and policy circles there is growing recognition that investing early in children and sustaining this investment throughout compulsory schooling is beneficial for them and for society. OECD (2009) reviewed work by Heckman and others who show how investing early in children increases the efficiency of later investment, saving money in the process and offsetting costs of long term underinvestment in human capital (for example see Heckman, 1999; Heckman and Masterov, 2007). Although further empirical evidence in support of these hypotheses is needed (particularly on how such investments play out in countries with welfare and education systems different to those in the United States), recent results suggest that early interventions in particular can provide cognitive and attainment gains for children during their school careers and employment and earnings gains in adulthood (see for example Goodman and Sianesi, 2005; or Aakvik *et al.*, 2005).

OECD (2009) also outlines arguments for treating early childhood as a distinct period of life in terms of policy development (Duncan and Magnuson, 2003 and 2004). Arguments in the literature for increasing spending on children, and particularly younger children, have been developed on basis of empirical evidence of the predictive nature of early year's environments for later periods of childhood in terms of achievements and behaviours (Magnuson *et al.*, 2003). Cunha and Heckman (2007) found evidence of different sensitive periods for child development, which tend to differ according to the child outcomes, while Duncan and Brooks-Gunn (1997), Morris *et al.* (2004) and Dahl and Lochner (2005) show how the accrual of income in certain periods of life affect child development. Finally, brain development theory suggests that age matters. For instance, peaks in the development of grey matter associated to higher cognitive ability are found in children between 7.5 and 10 years of age (Lenroot and Giedd, 2006). Although it is hard to link spending on family policies and education directly to a range of well-being outcomes, this evidence provides a foundation for more detailed exploration of the age-related affects of public spending; particularly in terms of identifying the optimal level of investment, by type of intervention, for the various outcomes of interest.

Young children cost more in terms of care time than older children (Bradbury, 2008; and Folbre *et al.*, 2005), and have specific needs in regards to items (pushchairs, feeding equipment, specific medical care such as immunisations). Older children require less care time, but are likely to impose more monetary costs (including more food, school equipment, pocket money, or clothing of a certain type required to "fit in" with their peers, see Bradbury, 2008). Moreover, adults can pass on household tasks to older children that would otherwise take up parental time or income. Clearly, the types of costs vary as children age, and as such different types of interventions are likely to be appropriate.

OECD-wide more money is being spent on children, but spending profiles have retained an "inverted U" pattern

Figure 2.4 contains thirty-two detailed country profiles by individual year of age. These include public spending on education, family benefits and active labour market policies for individuals over their early life cycle (Annex 2.A1 discusses methodological and data issues). The profiles do not include public spending on health which also benefits families with children, especially when they are young (Box 2.3). The spending profiles for 2007 are shaded

Figure 2.4. **Average social expenditure by child by intervention as a proportion of median working-age household income, 2007**

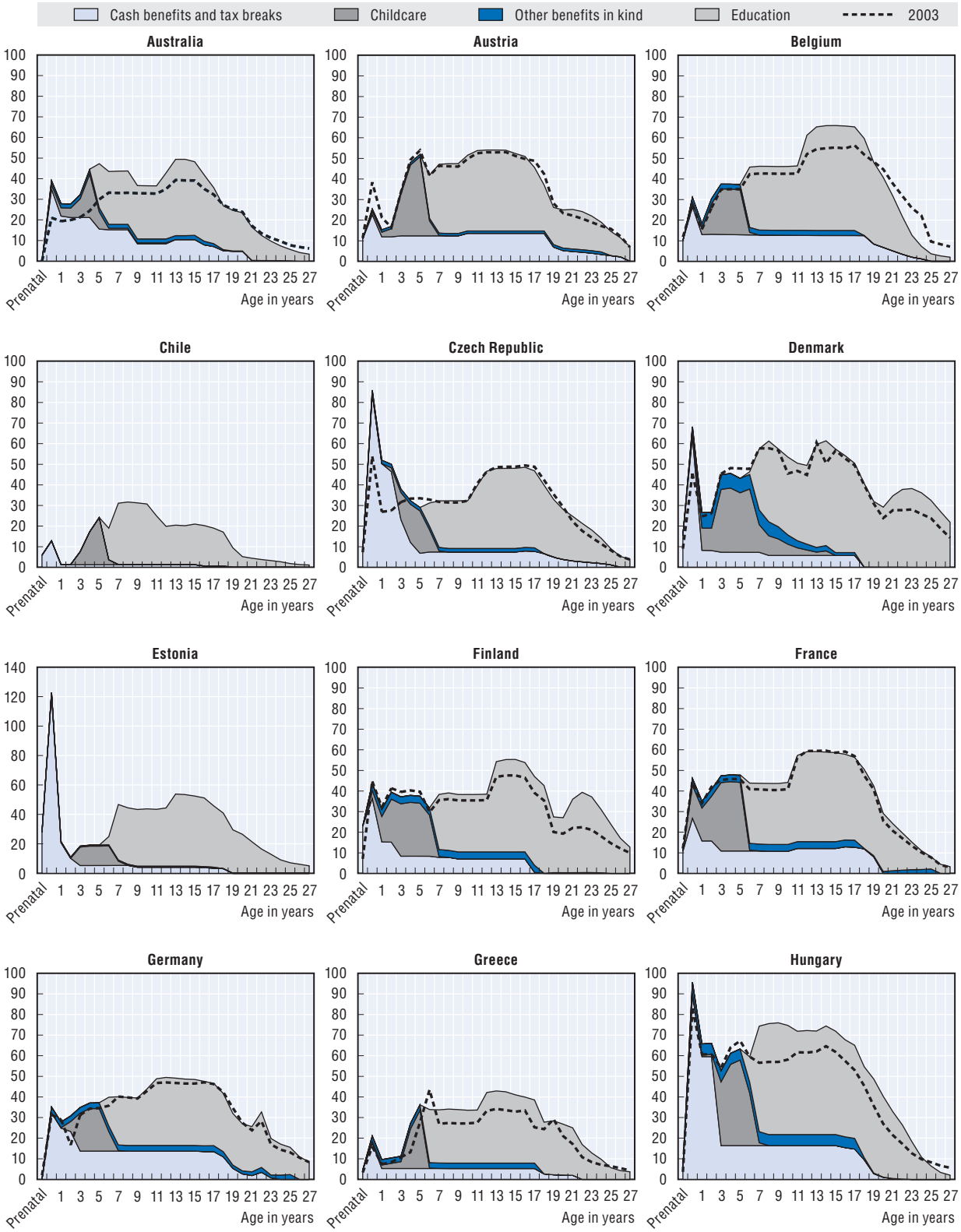


Figure 2.4. **Average social expenditure by child by intervention as a proportion of median working-age household income, 2007** *(cont.)*

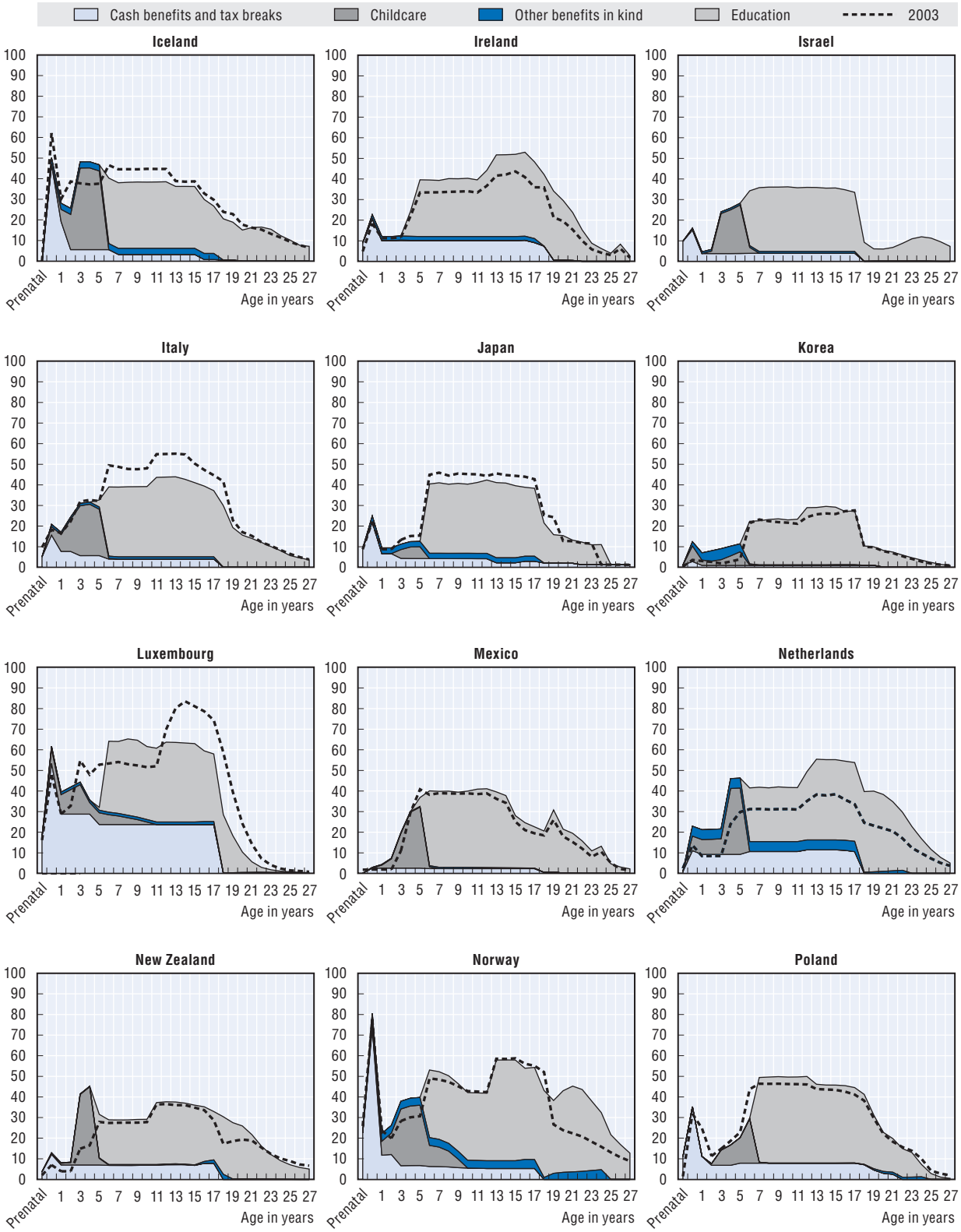
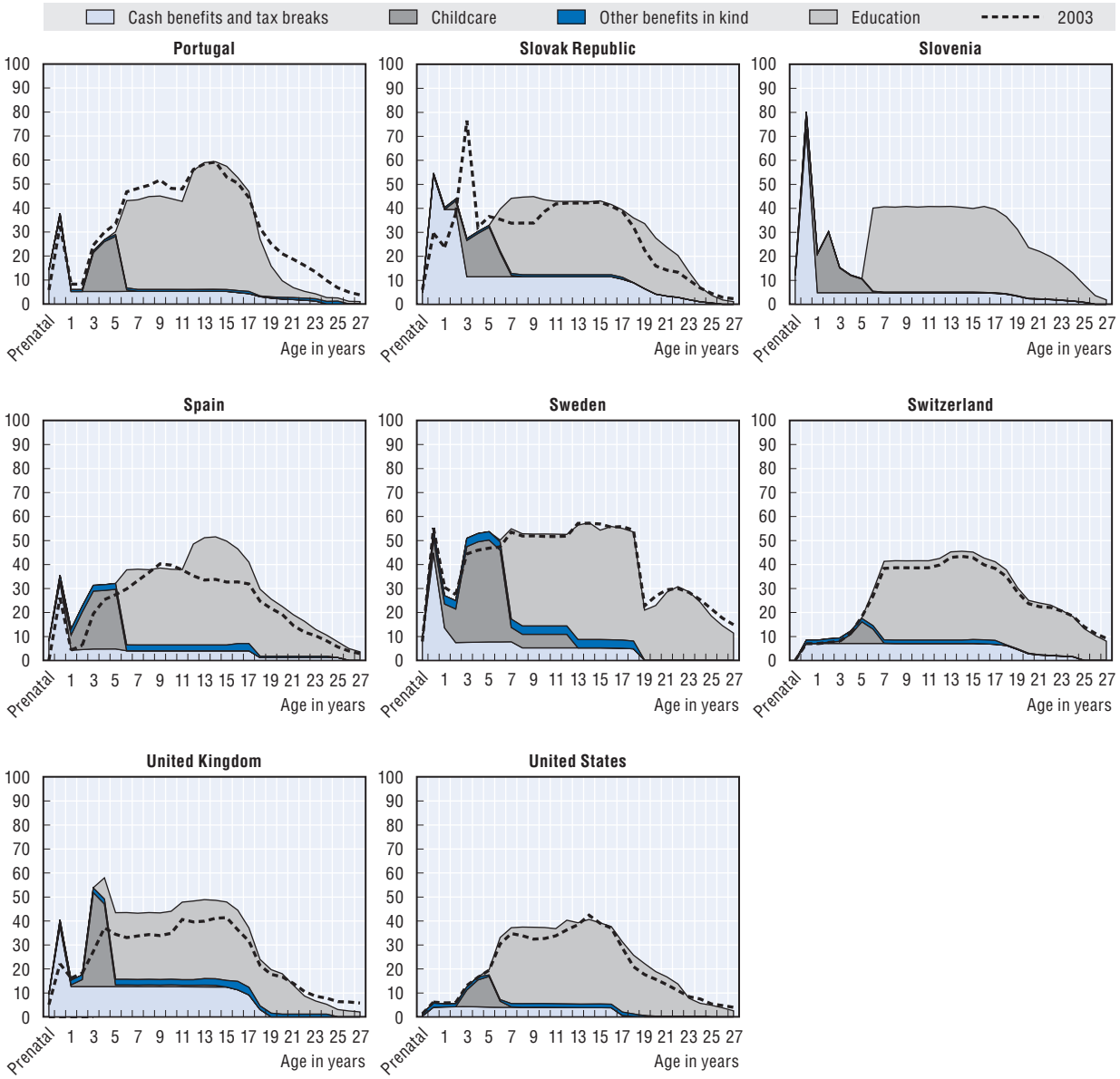


Figure 2.4. **Average social expenditure by child by intervention as a proportion of median working-age household income, 2007***(cont.)*



Note: Data missing for Canada and Turkey. No data for 2003 for Chile, Estonia, Israel or Slovenia.

Source: OECD's Secretariat's calculations from OECD (2010a), *OECD Social Expenditure Database*.

StatLink http://dx.doi.org/10.1787/888932392951

to represent the different types of spending accruing to each age cohort. Dotted lines are used to depict the 2003 profiles – the first year for which these data are available (OECD, 2009). Results show that the shape of spending by age has not changed substantially in most countries, although some increase – particularly in early years' cash and childcare transfers – can be seen.

Compared to 2003, the amount of money, in real terms, spent on children under 18-years old increased in each stage of childhood. Spending on early childhood grew most, but this did not lead to a fundamental change in the distribution of spending on children

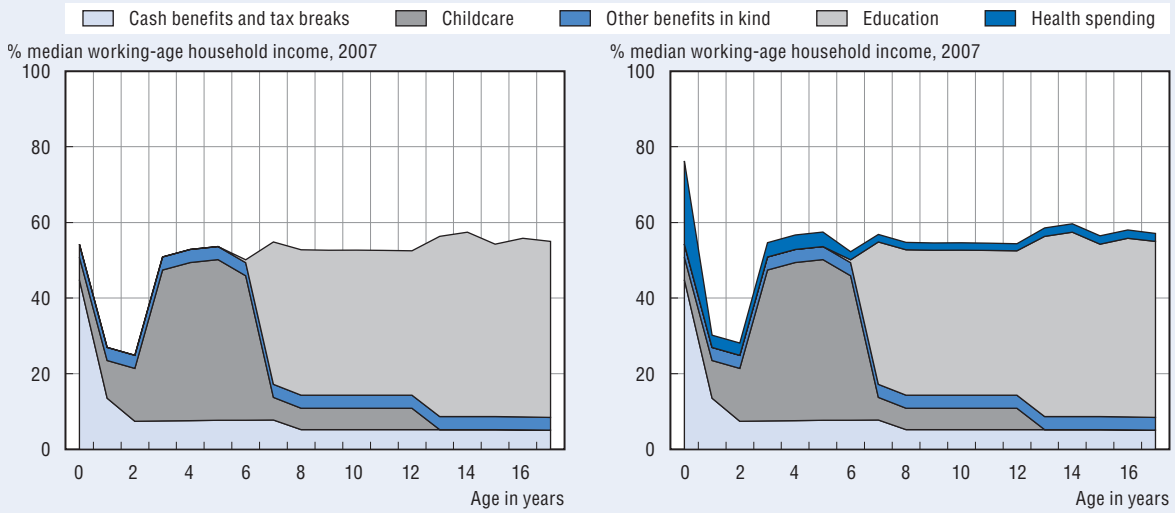
Box 2.3. **Exploring the effects of health spending on the age spending profiles**

The vast majority of OECD countries provide health care services free at the point of consumption to complement leave policies during pregnancy, at birth and in the early postnatal years. In some countries there is a direct link between cash benefits around birth and access to health services: in Japan, Turkey and Greece birth grants provide in part for the cost of health services and hospitalisation at the birth of a child (in other countries birth grants are intended for the purchase of baby items). The Australian immunisation allowance pays a grant to mothers whose children have had a full immunisation schedule in order to promote high rates of coverage of preventative health care.

Because of a lack of age-related health spending data it has not been possible to include health spending in the spending profiles for all countries. However, using available 1995-data for Sweden (Dalman and Bremberg, 1999) an example of the effect of including health spending on spending profiles can be derived. Health expenditure boosts overall public spending in the first year (pre-natal policies were not included in the Swedish study), but is only a very small part of overall public spending on children up to age 18 (see the dark blue section on the top of the right hand panel of the figure below). Services in the first year will include birth and postnatal care as well as the first round of immunisations and visits from health professionals.

Child age spending profiles before and after the inclusion of health spending in Sweden, 2007

Cash benefits and tax breaks take-up adjustment as a proportion of median working-age household income, 2007



Note: The values taken from the Dalman and Bremberg study on health spending and have been inflated to 2007 prices for the purpose of this analysis.

Source: Estimates based on Dalman and Bremberg (1999) and OECD (2010a), *OECD Social Expenditure Database*.

StatLink http://dx.doi.org/10.1787/888932393027

across early, middle and late childhood (Annex 2.A1). Around half of the OECD countries have increased the relative share of social expenditure going to early childhood since 2003, but most countries still spend considerably more on older children, as most readily explained by spending on universal compulsory education.

As in 2003, for most countries the broad pattern of the spending profile is an "inverted U". Social spending on children is comparatively low during early childhood before it rises to a peak in the early to mid-teens, and thereafter tails off. Much of this peak in spending, which is dominated by compulsory education, is ostensibly universal, but the money spent is most likely to benefit those who have already succeeded through early and middle childhood. Consequently, weighting spending at this stage of the life cycle is likely to

reinforce inequality, at least in qualitative terms. This pattern is particularly pronounced in the Anglophone countries, as well as in Chile, Greece, Italy, Mexico, Poland and Switzerland. Starker increases and falls are seen in Israel, Japan and to a lesser extent Korea.

Countries that place a stronger emphasis on spending early in the child lifecycle "front-load" their spending have a stylised left-to-right sloping triangular shape. Several countries place a stronger relative weight on early childhood than the majority of the OECD. The Czech, Hungarian and Icelandic profiles are much more heavily front-loaded in comparison to most other OECD countries, as they spend relatively more money on benefits and early childhood education and care. The Estonian, Norwegian and Slovenian profiles have elements of front-loading as well.

Chile and Korea stand out as having the least spending at most points in the child life cycle, with around 30% of median household income spent at all points. Evidence for Korea suggest an increase in spending between 2003 and 2007 in the early years. On the other hand, Nordic countries, Hungary and Luxembourg spend amounts equivalent to around half or more of median household income.

Spending by age on children under 18 rarely peaks outside of the birth year or during the compulsory school years. Austrian spending peaks around age 5, and spending in New Zealand peaks about age 4, yet despite these early peaks, overall there is a heavy preponderance of late childhood spending. Several countries have flatter profiles where levels of investment are higher after the birth period, but relatively little difference is seen throughout the mid- and later childhood periods: Israel, Japan, Poland and the United Kingdom are the most prominent examples. With few exceptions, spending per child in the years between the end of parental leave policies and the beginning of compulsory school falls (between ages 1 and 3).

The composition of spending by the age of children

In terms of spending composition, profiles typically show a peak in *cash benefits* early on, reflecting forms of maternal and parental leave. The most prominent examples are the Czech Republic (a combination of a birth grant[4] and maternity leave paid at higher rates for higher earners), Denmark (maternity leave is paid at 100% to an hourly cap of EUR 13), Estonia (a combination of a birth grant and 100% earnings replacement during maternity leave for 20 weeks), Hungary (a birth grant and 24 weeks of maternity leave paid at 70%), Norway and Slovenia (both countries have a birth grant and 100% earnings-replacement during maternity leave). The least prominent are in Korea (government contribution to leave is minimal), Mexico (no parental leave policy), Switzerland (cantonal payments are not captured here) and the United States (unpaid leave).

Family cash benefit spending stops around the age of 17 or 18 in the Nordic countries and the Netherlands, or tails-off gradually based on experiences of unemployment following compulsory school or enrolment in further or higher education or training (either condition can be a reason for extending family allowances). Many OECD countries continue cash payments or tax breaks for dependent children well into their twenties (for example Austria, Australia, Belgium, the Czech Republic, France, Germany, Greece, Japan, Luxembourg, Portugal and the Slovak Republic).

As to *formal childcare*, direct public provision and/or childcare supplements can come into play as early as the months following parental leave and before age 1. The general trend is for the childcare enrolment, and so family receipt of services and/or benefits, to

increase as children get closer to compulsory school age. In Denmark, Luxembourg, Sweden and Norway, high rates of enrolment in out-of-school-hours care ensure that this type of payment continues through the primary school period. The Irish profile stands out as the only one without sizeable childcare spending – this is because pre-primary spending amounted to less than EUR 5.5 million in 2007, and almost half of all 4-year-olds were enrolled in primary school. Since 2007, Ireland has introduced and then replaced the Early Childcare Supplement in favour of a free preschool year, starting in September of 2010, which will increase the childcare spending considerably.

Few countries make *other in-kind transfers* that can be distinguished by age; mainly Nordic countries and Hungary stand out as big investors on policies such as home help, travel subsidies, and child protection and support services available to children of all ages. In some cases, in-kind spending after the end of compulsory schooling (*e.g.* Portugal) is related to active labour market policies for youth.

Finally, patterns in *education* spending show that countries are making choices about resources invested on children at different stages of their educational career. Three broad types of spending patterns can be identified. The first includes countries with a sizable increase in spending after most children have entered the secondary schooling system, these include: Belgium, France, Norway, Portugal and Spain. Second are those countries who spend more in primary school, including: Chile and Poland, and to a lesser extent Iceland. A third and final group have quite balanced spending per child across the compulsory school period, these include: Israel, Japan, Slovenia, the United Kingdom and the United States.

In general, education spending patterns are highly path-dependent, *i.e.* historical spending patterns can drive future spending patterns, for example maintaining school-buildings. Countries could do more to reorient public resources towards the early years. For example, whilst maintaining overall investment in tertiary education, countries could envisage a greater role for private investment and a well-developed system of student loans (*i.e.* a system that recoups costs from later earnings whilst minimising disincentives on educational aspirations of older children regardless of their socio-economic background). The public resources so freed up could be geared towards young children.

Take up

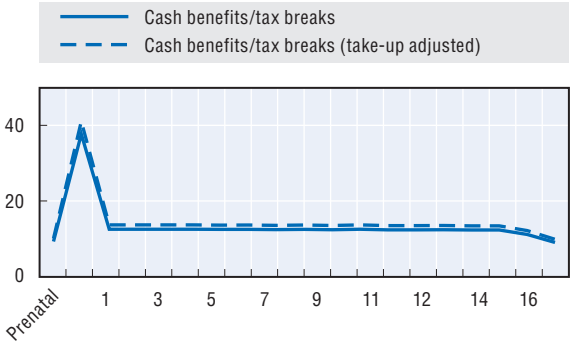
The estimates of the age profile of cash spending are limited insofar as they map the actual spending on children and not the spending committed to every child as outlined in policies. This is of concern when comparing cash amounts allocated as an average of the total child population by age because higher take-up would increase average spending per child.

Benefits for families and children (both universal and means-tested, cash and services) are often underutilised for various reasons, including: lack of knowledge about eligibility, complex administration, family instability/mobility, and stigma. Figure 2.5 sheds some light on the profiles under the assumption that benefits spending were maximised to full child coverage, using the United Kingdom as an example where the actual take up rates (from financial years overlapping 2007) range from 76% for Working Tax Credits to 96% for the universal Child Benefit. The result shows a very small increase in the amount of cash spending although the shape of the profile is not affected. This result does not account for age-related variations in take-up, and does not account for error or fraud in the benefit system, as information on both these features is not readily available.

Figure 2.5. **Adjusting for less than full take-up of benefits in the United Kingdom makes little difference to the profile shape or size**

Take-up rates of family cash benefits and tax breaks and its overall effect as a proportion of median working-age household income, 2007

Cash benefit	Take-up rate (%)
Maternity (SMP)	84
Child tax credits	89
Working tax credits	76
Child benefit	96



Notes: 16% of women did not take up the full 26 weeks statutory leave in maternity (estimated at a sum total of 8% of non-take up of expenditure). Other benefit expenditure is inflated to represent full take-up rates. Take-up rates for Child Tax Credits and Working Tax Credits are expenditure take-up (means-tested benefits). Child benefit rate is based on caseload take-up.
SMP: Statutory maternity pay.

Source: HMRC (2010) and DWP (2008).

StatLink http://dx.doi.org/10.1787/888932392970

Families with very young children: "missing earners" drive poverty risks

The age-spending profiles above do not consider the distributional effects of the welfare systems as children from different family backgrounds age. However, a comparison of the treatment of various family types as children age can be made on basis of the OECD tax and benefit models (Annex 2.A2).

Figure 2.6 provides two comparable graphs per country side by side: the left-hand Figure maps the equivalised income changes net of taxes and transfers to families earning the national average wage as their youngest child goes through early childhood. The right-hand Figure "re-runs" the analysis for families on half the national average wage. The shaded area at the bottom of each Figure represents the national poverty threshold for the total population set at 50% of the median equivalised household income in 2008. The lines on each Figure represent the net incomes of *dual-earner couples* with *two* and *four children* and one-earner *sole-parent families* with two children as a ratio of the poverty threshold. The vertical axis on each Figure reflects this ratio value and the horizontal axis depicts the age of the "focal child" (this is always the last child born into the family).

For example, in the case of Australia, couple families with two children, where both parents are earning the average wage, live on incomes just under 3.5 times the poverty threshold (AUD 16 143) before their second child is born. Following the birth of their second child the income level falls to just below two times the poverty threshold as one of the parents takes unpaid parental leave even though additional family benefits are made. Figure 2.6 assumes that parents take all available employment-protected leave, regardless of income replacement levels, which in the Australian case for 2008 is one year unpaid leave. When the parent who has taken leave returns to work, the two-child couple family income is lower than the income before birth because of the additional costs associated with a larger family (income is equivalised using the square root of the household size). Similar patterns are seen for larger families and sole-parent families on average wages because specific parental leave policies for these family types did not exist in Australia

Figure 2.6. **Working families' poverty risks are highest when infants are at home**

Income ratios of net disposable family income by family type over poverty threshold for the total population[1]

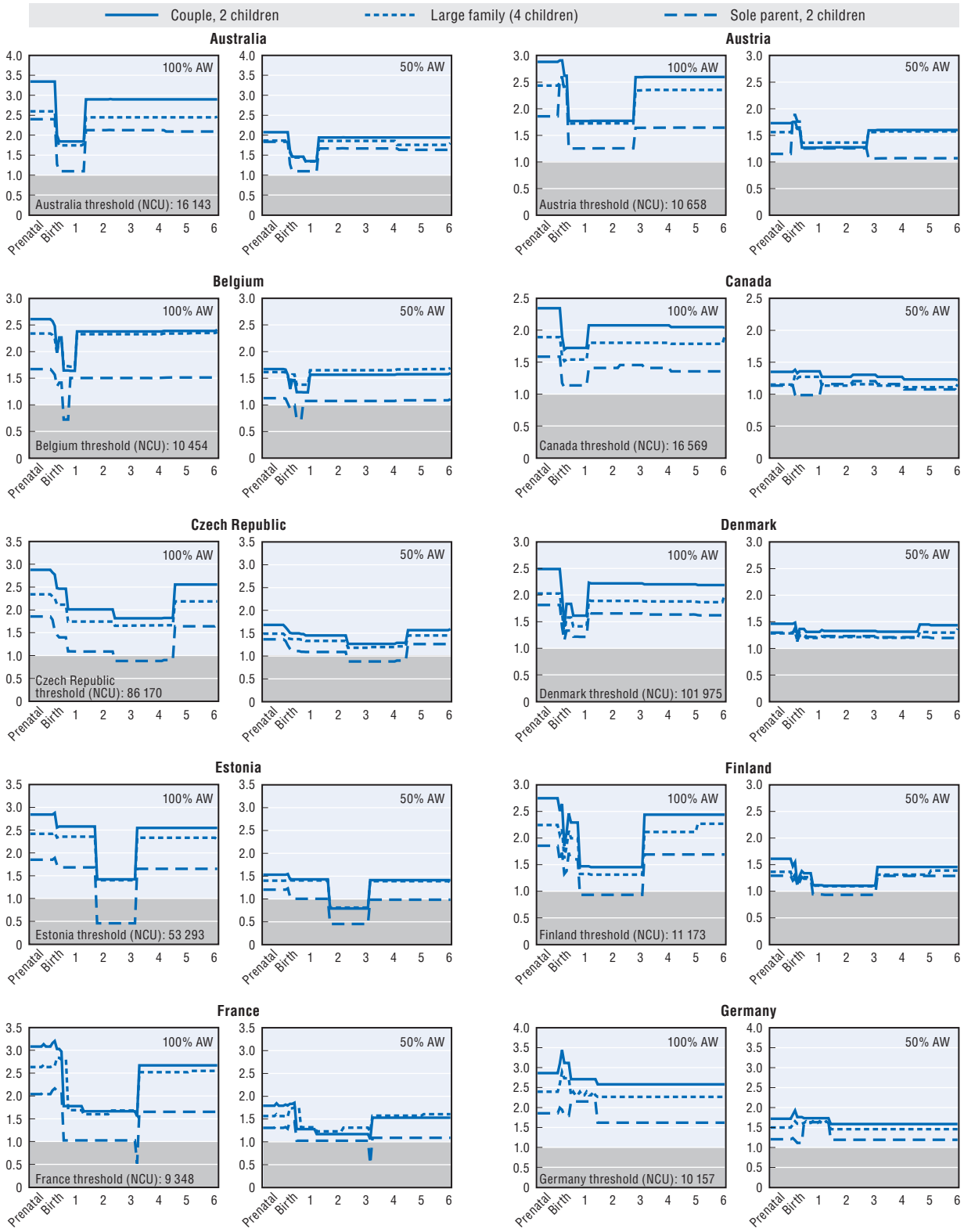


Figure 2.6. **Working families' poverty risks are highest when infants are at home** *(cont.)*

Income ratios of net disposable family income by family type over poverty threshold for the total population[1]

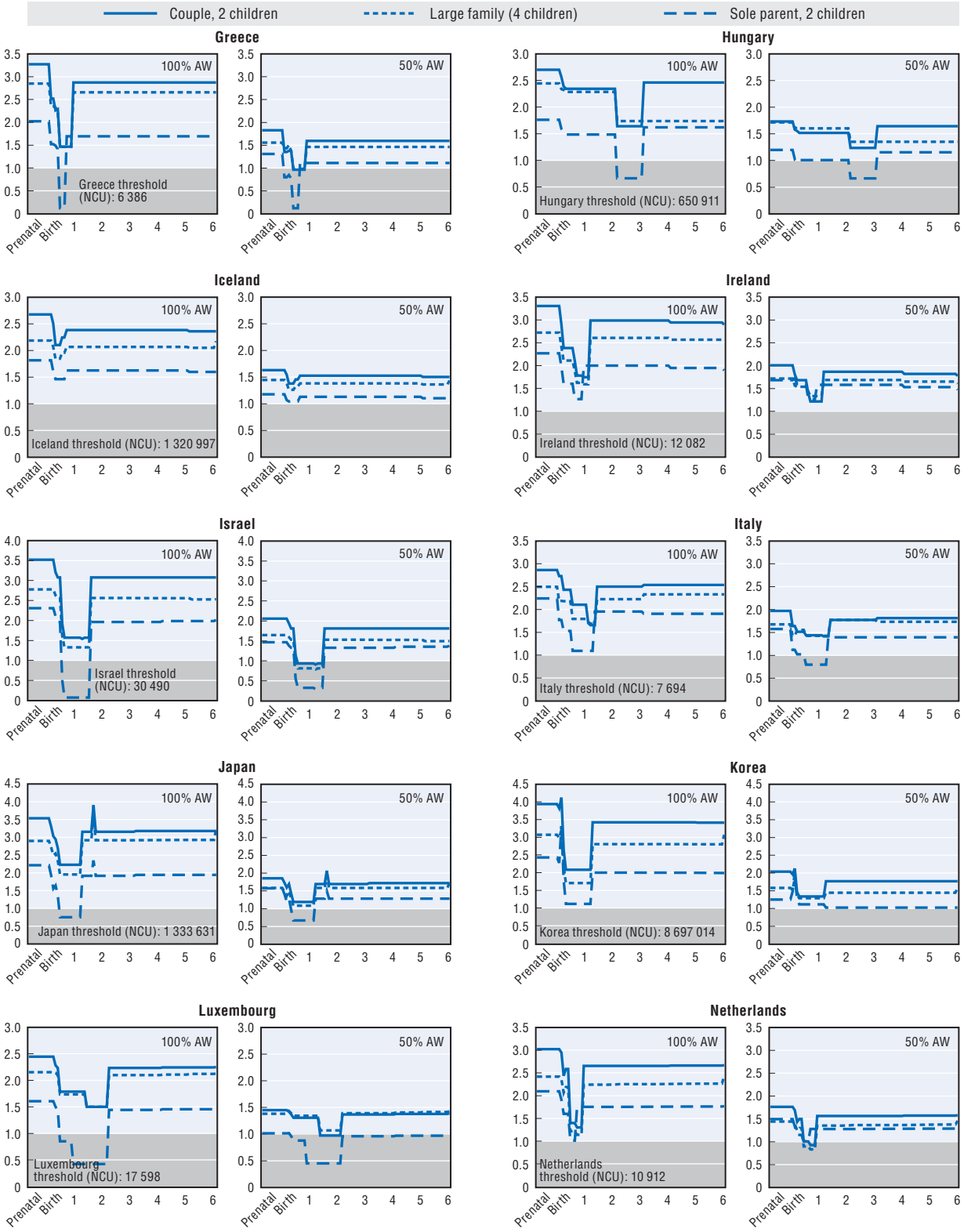


Figure 2.6. **Working families' poverty risks are highest when infants are at home** *(cont.)*

Income ratios of net disposable family income by family type over poverty threshold for the total population[1]

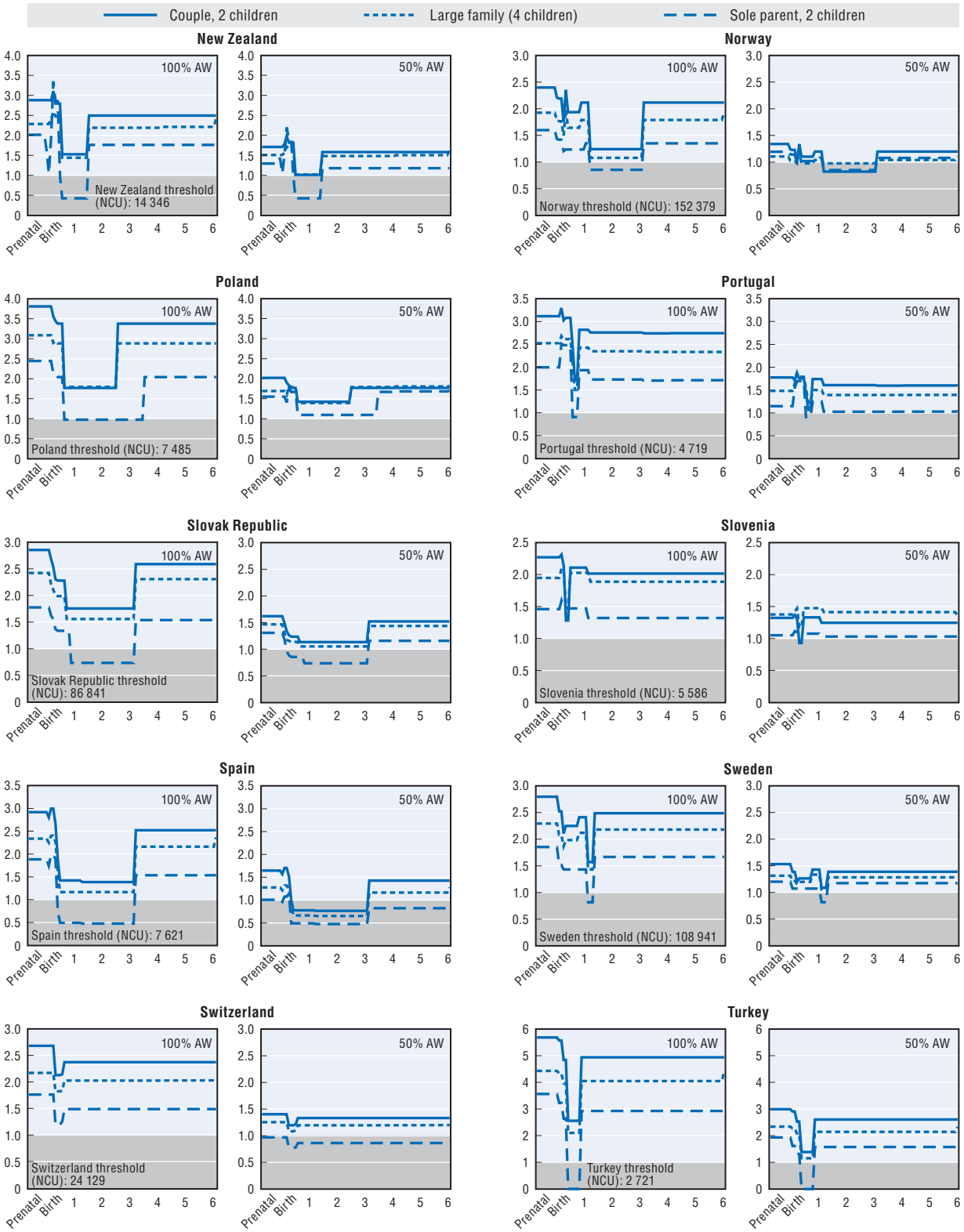
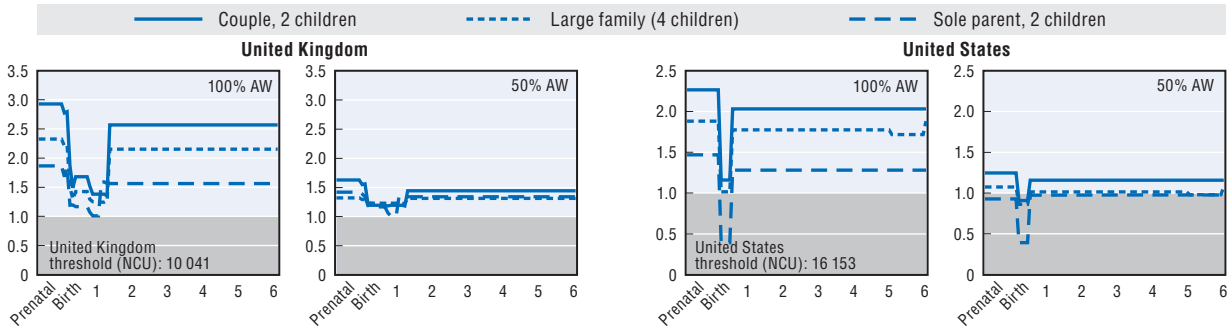


Figure 2.6. **Working families' poverty risks are highest when infants are at home** *(cont.)*

Income ratios of net disposable family income by family type over poverty threshold for the total population[1]



Note: Left-hand figures represent income variations in the early years for families earning 100% of the national average wage (parents are always in full-time work except during leave periods); the right-hand figures are for families earning 50% of the national average wage.

1. Couple families have two full-time earners; sole-parent households have one full-time earner. Shaded areas represent incomes below the national relative poverty line (50% of the median equivalised household income). Values on the y-axis are the ratio values relative to the poverty line. It is assumed in the model that parents take all available leave regardless of the payment level. Poverty thresholds are estimates based on OECD *Income Distribution Questionnaire* data. NCU refers to National Currency Unit. Slovakian threshold is presented in Slovak koruna (SKK) converted from euros using May 2008 exchange rate of SKK 30.13 to euro. Chile and Mexico are missing.

Source: OECD's Secretariat's calculations of adapted OECD tax and benefits models in 2008 (OECD, 2010d); and Provisional data from OECD (2010e), *Income Distribution Questionnaires*.

StatLink http://dx.doi.org/10.1787/888932392989

in 2008. All Australian families have an increased risk of income poverty whilst taking leave, but sole-parent families face the highest risk (Chapter 4 includes an overview of parental leave policies across countries; see also OECD 2010f, indicator PF2.1).

Poverty risks in the early years are mainly driven by initial earnings; earnings-replacement levels during leave; and, family structure.

Initial earnings

In around one-third of OECD countries, all family types with workers on average *earnings* are protected from the risk of poverty whilst caring for children, including in Australia, Austria, Canada, Denmark, Germany, Iceland, Ireland, Italy, Korea, the Netherlands, Slovenia,[5] Switzerland, and the United Kingdom. Earning half of the average wage exposes all families – couple families, sole-parent and large families alike – to poverty risks. On occasion, flat-rate leave benefits can protect low-wage families from falling below defined income levels (*e.g.* income support payments during parental leave in Austria). On some occasions, low-income large families and two-child families are not protected from poverty during leave by their second income. Low-income couples with two children fall into poverty during leave in Estonia, Greece, Israel, Luxembourg, the Netherlands, Norway, Slovenia, Spain and the United States. Of these countries only Norway protects large low-wage families from poverty by means of family payments.

In all countries, the income differences by family type experienced during the early years are much lower when earned-income levels are low (the lines in the 50% panels in Figure 2.6 are much closer together). The Scandinavian countries, Australia, Germany, Ireland, the Netherlands, and the United Kingdom are relatively successful at closing net income gaps across family types in low-income families.

Length and depth of income shifts during leave

Across the OECD there is notable variation in the *length and depth of income shifts* during leave periods, which are related to the duration of leave and the level of income support paid during this period (see Chapter 4 and the *OECD Family Database*). The *combined length of child-related leave* (maternity, paternity, parental or childcare leaves) in OECD countries can last as long as the first four years of life (from birth until age 3) and beyond. Prolonged periods of leave are available in Austria, Estonia, the Czech Republic, Poland (especially for sole parents), Finland, France, Hungary (especially for parents in large families),[6] Norway, the Slovak Republic, and Spain. The shortest combined leave periods are seen in Greece, Slovenia, Switzerland, Turkey and the United States. Many other countries have combined maternity and parental leave provisions of around one year (Chapter 4).

Differences in the *replacement of earnings* create the variation in the decline in income during periods of child-related leave. The relative fall in income is almost always smaller for low-wage families given the mix of universal or near-universal child benefits and minimum leave payments or grant alternatives. On occasion there appears to be an improvement in income levels following the period of birth for all family types although for a short period. For instance the spike in income found in the Japanese model following the return to work reflects the payment of 20% of replacement earnings to workers six months after their return to the job.[7] Less noticeable are spikes around birth in countries providing birth grants at sufficient rates to momentarily raise family income above previous earning levels (France, and Japan). Declines in income are smallest for average earners in Canada, Denmark, Germany, Iceland, and Switzerland.

In some cases, income replacement rates are different in the maternity period and the parental leave; more often than not giving a stylised downwards step in net income in the first six months of life. Where periods of parental leave can be extended (for example, the Czech Republic, Estonia, and Hungary), income replacement during this period is lower, and further downwards steps are seen as time goes on.

In fact whether countries apply *earnings-related benefits* with ceilings and/or floors or universal *flat-rate payments* can affect poverty risks. When the lines representing low-wage families in Figure 2.6 dip below those representing average-wage families, replacement rates are used without floors (or floors are low) and other non-leave benefits do not make up the income difference (see Italy for example). Lines that mirror each other at different wage levels are seen in countries that do not have income replacement rate policies (or they are tightly restricted), and pay no- or flat-rate benefits, or other non-leave policies make up the income difference. Flat rate benefit payments keep all family types out of poverty in Denmark, but draw average-wage sole parents into poverty during parental leave in Hungary. In the rare cases where low-wage family lines are above average-wage family lines, this accounts for the fact that combined flat-rate leave and family benefits pay higher total benefits to poorer people *(e.g.,* consider sole-parent families by earnings as in Poland).

Overall, the analysis shows that there is no real evidence that countries with shorter leave have higher payments, or that in the context of other family benefits a short leave is a guarantee of maintaining living standards when caring for children. Some countries provide parents with longer leave and protect them from poverty risks; in other countries taking a break from paid work to raise a child brings with it a risk of experiencing a short and sharp period of income poverty.

Family structure: Sole parents are particularly exposed to poverty during the early years

Tax/benefit systems try to *account for family structure* in determining net transfers to households. Before taxes and transfers, sole-parent families in Figure 2.6 earn half of what couples earn. However, after equivalising this income to account for the additional costs of an extra adult in the household, the couple family has 1.7 times more gross income than the sole-parent family. For large families, income is subject to greater economies of scale: dual-earner couples with two children on the same gross wage start out 1.22 times better-off than a family with four children because costs are lower.

In most countries, tax and benefit systems do not fully account for these additional costs in large average-wage families. Although family benefits include family size supplements in over half of the OECD countries, few countries consider family size differences when paying maternity or parental leave. Figure 2.6 shows that, for the majority of the early years' period, outcomes for large families consistently run closer the poverty thresholds than for couple families.

Across a large part of the earnings range, *sole-parent families* face the highest poverty risk because policies cannot fully overcome the loss of income from a missing second earner.[8] During periods of maternity and parental leave, sole parents with two children on average wages register sharp falls in income due to a total loss of earnings, particularly in Estonia, Israel, Luxembourg, New Zealand (where during parental leave payments are low or unpaid) and Greece, Turkey and the United States (where leave is not paid and sole parents have to rely on other low income support payments).

The decline in income is less dramatic for sole parents on 50% of average earnings, but regardless of the initial earnings sole parents' incomes often fall below the relative income poverty line at some point following childbirth. Only in Australia, Austria, Denmark, Germany, Iceland, Ireland, Korea, Poland, Slovenia and the United Kingdom do net transfers through the tax/benefit system ensure that sole parents previously in employment do not experience poverty at any point in time after childbirth.

Notes

1. In this chapter, the statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.
2. Information on fiscal measures (tax allowances and credits) for families is limited to the period 2000 to 2008, where after a brief rise and fall, spending on this measure has increased.
3. All OECD countries, as well as accession countries and enhanced engagement countries, have signed the UN convention on the rights of the child (only the United States is yet to ratify the convention). The convention expresses the absolute rights children should be helped to achieve in countries around the world, and expresses the needs for appropriate pre and post natal care, as well as the attainment of education in the primary years (UN, 1989/1990).
4. As of 1 January 2011 the birth grant in the Czech Republic is payable only to low-income families (with incomes less than 2.4 times the minimum living standard for the family) on the birth of their first child.
5. The fall in income following birth in Slovenia in Chart 2.6 is less stark for sole parents than for couples. This is related to higher levels of family benefits for sole parents and the assumption that fathers take 75 days of unpaid paternity leave (after 15 days paid leave), which runs concurrently with maternity leave.
6. Parents of three or more children in Hungary can stay at home until the youngest is eight years, the benefit was paid at a flat rate of HUF 28 500 or EUR 121 in 2008.

7. The Japanese return to work payment was temporarily increased from 10% to 20% between April 2007 and April 2010. Since April 2010 the return to work payment has been consolidated with the leave period payment. Korea has recently introduced changes to their maternity leave policy including a rise to 40% of salary for mothers taking leave, a part of which will be saved and paid six months after the return to work. The justification of the delayed payment is to encourage mothers to return to work after the end of maternity leave (*see http://english.chosun.com/site/data/html_dir/2010/11/18/2010111801273.html*).
8. Chapter 6 discusses variation of the policy approach to sole parents in some detail, and includes a discussion of child support or child maintenance payments which are not covered in the in Hungary for large families (parents of three or more children can stay at home until the youngest is 8 years, the benefit pays at a flat rate of HUF 28 500 or EUR 121 in 2008) calculations here.

References

Aakvik, A., K.G. Salvanes and K. Vaage (2005), "Educational Attainment and Family Background", *German Economic Review.* Vol. 6, No. 3, pp. 377-394.

Adema, W., P. Fron and M. Ladaique (2011), "The Real Cost of Welfare States and the Crisis", *OECD Social, Employment and Migration Working Paper*, OECD Publishing, Paris, *www.oecd.org/els/workingpapers*.

Bradbury, B. (2008), "Time and the Cost of Children", *Review of Income and Wealth*, Vol. 54, No. 3, pp. 305-323, September.

Dahl, G.B. and L. Lochner (2005), "The Impact of Family Income on Child Achievement", *NBER Working Paper,* No. 11279, Cambridge.

Dalman, C. and S. Bremberg (1999), *Formal and Informal Resources Used by Children in Stockholm County 1996,* Centrum för Barn- & ungdomshälsa (in Swedish), Huddinge.

Di Mario, S. *et al.* (2005), *What is the Effectiveness of Antenatal Care?,* WHO Regional Office for Europe, *Health Evidence Network Report*, Supplement, Copenhagen.

Duncan, G. and J. Brooks-Gunn (1997), *The Consequences of Growing Up Poor*, Russell Sage, New York.

Duncan, G. and K. Magnuson (2003), "Promoting the Healthy Development of Young Children", in I. Sawhill (ed.), *One Percent for Kids*, Brookings, Washington, DC, pp. 16-39.

Duncan, G. and K. Magnuson (2004), "Individual and Parent-based Intervention Strategies for Promoting Human Capital and Positive Behavior", in P. Lindsay Chase-Lansdale, K. Kiernan and R. Friedman (eds.), *Human Development Across Lives and Generations: The Potential for Change*, Cambridge University Press, Cambridge, pp. 93-135.

DWP – Department for Work and Pensions (2008), *Maternity Rights and Mother's Employment Decisions, Research Report* No. 496, HMSO, London.

Folbre, N. *et al.* (2005), "By What Measure? Family Time Devoted to Children in the United States", *Demography*, Vol. 42, No. 2, pp. 373-390.

Gauthier, A.H. (2010), *The Impact of the Economic Crisis on Family Policies in the European Union,* Employment, Social Affairs and Equal Opportunity DG, European Commission, April.

Goodman, A. and B. Sianesi (2005), *Early Educaiton and Children's Outcomes: How Long Do the Impacts Last?,* UK Institute for Fiscal Studies, *www.ifs.org.uk/docs/ee_impact.pdf*.

Heckman, J. (1999), "Policies to Foster Human Capital", *NBER Working Paper,* No. 7288, Cambridge, August.

Heckman, J. and D. Masterov (2007),"The Productivity Argument for Investing in Young Children", *NBER Working Paper*, No. 13016, Cambridge.

HMRC – Her Majesty Revenue and Customs (2010) *Child Benefit, Child Tax Credit and Working Tax Credit; Take-up Rates 2007-2008,* Crown Copyright, London.

HM Treasury (2010), *Spending Review 2010*, Crown Copyright, London.

Immervoll, H. and M. Pearson (2009), "A Good Time for Making Work Pay? Taking Stock of In-work Benefits and Related Measures across the OECD", *OECD Social, Employment and Migration Working Paper*, No. 81, OECD Publishing, Paris, *www.oecd.org/els/workingpapers*, March.

Lenroot, R.K., and J.N. Giedd (2006), "Brain Development in Children and Adolescents: Insights from Anatomical Magnetic Resonance Imagingé", *Neuroscience and Biobehavioral Reviews,* Vol. 30, pp. 718-729.

Magnuson, K., G. Duncan and A. Kalil (2003), *The Contribution of Middle Childhood Context to adolescent Achievement and Behaviour*, *www.northwestern.edu/ipr/publications/papers/2004%20/duncan%20/4middlechildhood.pdf*.

Maslin-Prothero, S.E. and A. Bennion (2010), "Integrated Team-working: A Literature Review", *International Journal of Integrated Care*, Vol. 29, April.

MISSOC – Mutual Information System on Social Protection (2010), *Social Protection in the Member States of the European Union of the European Economic Area and Switzerland,* Situation on 1 January 2007 and 1 July 2008, European Commission, Brussels.

Morris, P., G. Duncan and C. Rodrigues (2004), *Does Money Really Matter? Estimating Impacts of Family Income on Children's Achievement with Data from Random-Assignment Experiments*, *www.northwestern.edu/ipr/people/duncanpapers.html*, 14 September.

OECD (2009), *Doing Better for Children*, OECD Publishing, Paris, *www.oecd.org/els/social/childwellbeing*.

OECD (2010a), *OECD Social Expenditure Database*, OECD Publishing, Paris, *www.oecd.org/els/social/expenditure*.

OECD (2010b), *OECD Education Database*, "Education Spending and Enrolment Estimates", OECD Publishing, Paris, *http://dotstat.oecd.org*.

OECD (2010c), *OECD Economic Outlook,* No.88, OECD Publishing, Paris, November.

OECD (2010d), "Benefits and Wages Website", OECD Publishing, Paris, *www.oecd.org/els/social/workincentives*.

OECD (2010e), *Income Distribution Questionnaires*, OECD Publishing, Paris, *http://dotstat.oecd.org*.

OECD (2010f), *OECD Family Database*, OECD Publishing, Paris, *www.oecd.org/els/social/family/database*.

Social Security Programmes throughout the World (2010), *Europe in 2008, Policies for Asia and the Pacific in 2008; Policies for the Americas in 2007, www.ssa.gov/policy/docs/progdesc/ssptw/*.

United Nations (1989/1990), *United Nations Convention for the Rights of Children*, *hwww.unhchr.ch/html/*.

Woolley, F. (2004), "Why Pay Child Benefits to Mothers?", *Canadian Public Policy*, Vol. XXX, No. 1, pp. 47-69.

ANNEX 2.A1

Age-Spending Profiles, Methods, Sources and Limitations

The age-spending profiles record public spending on children by age and by type. Spending figures are central government spending amounts, and do not include spending at a local or regional level since this data is not readily available. This limitation needs to be borne most strongly in mind for more decentralised federal member countries like Switzerland.

OECD age-spending profiles for children run until age 27. Although the cut-off point for children is at age 18, conforming to the United Nations definition of the child, many OECD countries child benefits continue to accrue to people after age 18. The profiles include both welfare spending and education spending, and cover 32 out of 34 OECD countries.

Social expenditure data from 2007 is used to map the age-spending profiles. As with the 2003 profiles before (OECD, 2009), the 2007 data is sliced into different age groups, giving the expenditure by age in that year. Therefore, if there were no policy changes since 2007, this approach would show the average spending that a child born in 2007 would be exposed to over every single year of their life cycle from birth until when the final child benefit is paid.

All spending comparisons are made in relation to median household working-age incomes (and so are relative to working-age wealth in each country). The models provide only approximate spending patterns by age in the countries, developed as they are from aggregate data and spending rules. National experts in each country will have access to more detailed information in terms of spending and programme rules, and so could produce better individual country profiles. The advantage of the approach taken here is cross-OECD comparability.

The profiles only represent public government spending on family social protection interventions and education, although children can receive financial support from other sources. Families support their children using earned income, and income from benefits from different sources (social assistance, unemployment assistance or housing benefit for instance). Health services also free up household income for investment on children. The results above therefore should be read in context of other forms of support available to families with children.

Changes in spending since 2003

In 2003, average social spending per child was USD 126 000 in total up to the age of 18. By 2007, the total had risen by around 6% to USD 135 000 (in 2003 prices). Around one-quarter (23.9% or USD 30 000) of the 2003 budget was transferred during early childhood (0-5 years), rising to over a third during middle childhood (35.4% or USD 45 000: 6-11 years), up to over two in every five available dollars for children during late childhood (40.7% or USD 51 000: 12-17 years) (OECD, 2009). In 2007, this distribution had changed very little, with average spending on the youngest children rising by 1.3% to 25.2%, spending on late childhood falling by 1.4% and spending on middle childhood remaining stable.

Data sources

The main data source for the age-spending profiles is the *OECD Social Expenditure Database* (or SOCX, OECD, 2010a), which lists family programmes and information on active labour market policies for youth.* Profiles are presented using expenditure after direct tax. Data on direct taxes are published as part of SOCX. The adjusted figures are disaggregated using the rules for each benefit (eligibility by age or enrolment in education, payment amounts and so on) into child age-cohorts. The sizes of child age-cohorts are defined by population figures by age of children and are taken from OECD official data sources. For instance, if parental leave payments stop when the child reaches 18 months the SOCX figure is split between these 18 months (two-thirds in the first year and one-third in the second year). As another example, if policy allows mothers to take three of these 18 months before the birth of their child, then one-sixth of the money is allocated to before birth and the remainder to the time following birth.

The second source used for profiling expenditure is the *OECD Education Database* (2010b). Spending in pre-primary years (where not included in SOCX), by primary school, secondary and post-secondary non-tertiary education, and tertiary expenditure are used. Enrolment figures by level of education are used to allot spending to each year of age.

A range of sources was used to identify the eligibility rules, conditions and amounts of the family benefits, including country chapters for OECD tax-benefit models in 2007 (available via the Benefits and Wages website in OECD, 2010d), MISSOC (for 2007), international reviews of social security and family policies (*Social Policies throughout the World, 2010*), as well as other national government and academic sources. Enrolment rates in childcare were derived from government-reported statistics in the *OECD Family Database* (2010f): it also includes the information used to allocate spending across childhood.

Limitations

The difference between spending directly accruing to the child and that which is accrues to the family is not distinguished. When cash transfers are provided to the family it is typically adults in these families make decisions on how the money is spent, and spending may or may not be on the child. On the other hand, in-kind benefits, such as education, accrue directly to the child (if they are taken up).

Cash transfers with different conditions are used. Some child-related transfers simply provide money – for example, child benefits – but impose no other requirements. On the

* Administrative costs are included in the active labour market policy spending but not in other forms of social expenditure.

other hand, certain benefits may require social insurance contribution, require that parent is taking leave, or have work conditions. The approach taken here makes no distinction in value between the two forms of cash transfer. Conditions, in this case on formal human capital accumulation, are also made for paying child benefits in some countries beyond a certain age. Yet such transfers are also aggregated together, dollar for dollar, with unconditional benefits.

Equal cost assumptions are also applied where spending by age is estimated. The equal cost assumption is sensitive to spending patterns where there are clear differences in the approaches to providing the same service for children of different ages. For example, older children in childcare will require fewer carers per head, and as such costs for this group are likely to be lower. The exact differences between countries cannot be clearly identified, and so no attempt has been made to account for such difference. It is important to note, however, that these variations in age-sensitive costs per child are minimised, and in the cases of some countries nullified, when data is aggregated into the three major childhood stages (see Annex Figure 2.A1.1).

The approach provides an average age-spending profile. The countries included in this study will vary in terms of what is being spent on high or low-risk groups at each point in the child life cycle. For example, average spending per child is likely to be lower on high-risk children past the end of compulsory schooling, as those children disproportionately drop out of the education system. Averaging conceals these individual country contexts and relative policy responses to social risk.

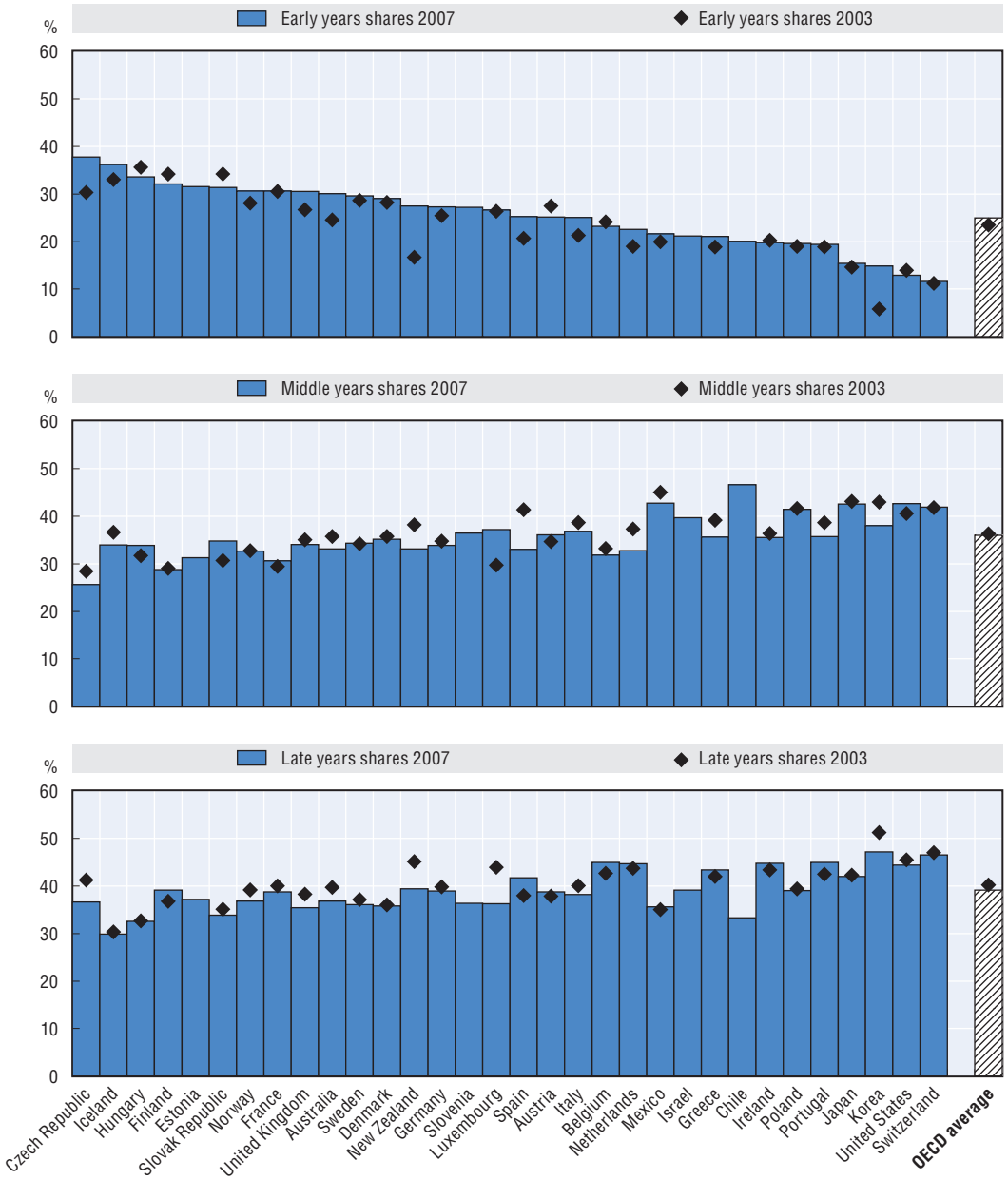
The lack of equivalisation of cash payments over-emphasises the role of transfer income for children compared to in-kind services in the profiles. Family income is typically equivalised to adjust for the fact that children are in families, and the families differ in size. Moreover, government services in-kind are valued at the cost of their provision to government. This approach to valuation is common, but ideally valuation would be at the value of the services to families and children, which may well be less than their cost.

Among the social programmes excluded from the age-spending profiles are mandatory and voluntary private social spending. Quality of coverage in the data set for voluntary private expenditures varies across countries. Including such measures might give a misleading impression of comprehensiveness without improving comparability. In any case, spending detail by programme is not readily available. Mandatory private spending could in theory be included more easily than voluntary private spending, but these are trivial in size. Their absence from the following calculations would make very little difference to the age-spending profiles.

Finally, public social expenditure is not the only form of investment to children over the lifecycle. Private determinants include a nurturing family environment, access to informal support in the community for families, opportunity for participation in the community and society for children, and the quality of the living environment, such as safety and access to outdoor spaces. The quantity and quality of parental time invested in children, considered for example in Dalman and Bremberg's (1999) approach for Sweden, are obviously important omissions from consideration of overall investment in children. The omission of health spending is discussed in Box 2.3. Information on health spending by age would improve the assessment of extent and timing of investment for children in OECD countries.

Figure 2.A1.1. **Large shifts in spending patterns by age are seen in only a few countries; in most of these cases early years gains are seen**

Change in the share of public spending by age group in OECD countries between 2003 and 2007



Note: Data is missing for Australia in 2007, for Chile, Estonia, Israel, and Slovenia for 2003, and for Turkey and Canada in both 2003 and 2007.

Source: OECD's Secretariat's calculations from OECD (2010a), *OECD Social Expenditure Database*. For country notes and assumptions please see OECD (2010f), *OECD Family Database* (*www.oecd.org/els/social/family/database*).

StatLink http://dx.doi.org/10.1787/888932393008

ANNEX 2.A2

Dynamic Tax and Benefit Models in the Early Years: Methods and Assumptions

To analyse the tax and benefit treatment of families as children age, the OECD Social Policy Division's 2008 Tax-Benefit Models are updated to include maternity benefits, paternity benefits, parental leave benefits, birth grants and other child raising allowances. The benefit details used to model the early years' interventions are available in an online annex.

The models are made dynamic by incorporating a child-age evolution pattern: models keep track of the evolution of tax and benefits, month by month, from a year before birth, until age 27. The analysis below only present the first six years of the focal child's life as it represented the period of greatest fluctuation in disposable incomes for all family-types (in no small part due to exit from the labour market for periods of parental or maternity leave).

Assumptions

As part of the modifications some model assumptions have been made. The focal child in the analysis is always the youngest, and at the moment of birth, siblings in the family are aged 2 years in a two-children family and two, seven and 12 in a four-children family. The focal child is born on the first day of the fiscal year to minimise the potential variation in disposable income, arising if parental leave is spread over different fiscal years and the benefit increases are indexed.

When a child is entitled to receive family or child benefits conditioned on educational participation, it is assumed that the child attends. This is important for those countries where family benefits are paid until a child is in their 20s.

Parents are assumed to be working, both in two- and sole-parent households, unless they are on leave. In each family parents' earned income is the same (100% of average wage or 50%). Therefore unemployment benefits and unemployment insurance are not modelled. Moreover parents are supposed to have fulfilled the conditions (*e.g.* social security contributions) required to receive the various benefits included in the models.

It is also assumed that the parent always takes the full quota of leave available to them regardless of the benefit payment levels. This assumption saves any attempt to assume parental cut short their leave for unobservable reasons, maintains comparability, and allows for a full assessment of the cost maximising time at home with the new child.

Specific treatment of early years benefits

The majority of OECD countries pay a birth grant. In most of the cases it is an universal benefit that ranges from around EUR 260 in Slovenia to EUR 1 740 in Luxembourg, in other countries the grant is mean-tested or given to uninsured mothers that are not entitled to maternity benefits, as in Norway or Germany. Few countries pay a higher amount for the first child. For the purpose of the model, the grant is supposed given at birth, to make the moment of receipt uniform, since in most countries it is paid just after birth. The exception to this rule is France where the mean-tested grant is given at the seventh month of pregnancy (reflected in the model).

Most of the countries expressly reserve a period of maternity leave before confinement, which could range from 11 weeks before birth in the United Kingdom to two weeks before birth in Ireland and Poland. The pre-confinement period may be divided into compulsory or optional parts. Maternity leave is always modelled as if mothers go on leave as soon as they can, even if the post-confinement period is reduced, to highlight to which extent the pre-confinement period is prioritised. Countries where only post-natal leave is provided are Australia, Switzerland and United States, the latter two being the only two countries offering neither paid maternity leave nor paid parental leave in 2008.

When a clearly defined paternity leave is available (in 14 out of 32 countries) it is modelled directly following birth; allowing for paternity leave to overlap with maternity leave (the period in which paternity leave can be taken is often short, for instance four weeks from birth in the Netherlands or 30 days in Belgium, and therefore would be taken at the same time as maternity leave).

Parental leave is directly after the end of maternity leave. Leave is modelled as if parents take the longest leave available, even if the leave extension is unpaid. Where countries provide two distinct, usually non-transferable, periods for each parent, leave is modelled first for the mother and then the father, even when joint leave is available, to maximise time at home with the child. Where countries offer a unique period of leave for one parent, or where leave can be shared or transferred between parents, the entire leave is modelled as maternal leave. These specific adjustments do not introduce any bias in the analysis since it is assumed that in a two-parent family that both parents earn the same wage.

Finally, the models allow tracking the evolution of families' net income along three dimensions: number of children, level of gross earnings, and sole-parent/two-parents family. The net income figures obtained are equivalised to take into account the size of the household (using the square root of the household size). The equivalisation is dynamic as well, changing to account for an increase in the family size as a child is born.

Limitations and strengths

The sole focus on taxes and cash benefits in this analysis means it is inevitably narrower than the age-spending analysis, as education and in-kind benefits are not included. Services provided in-kind to families (such as childcare) may have further impact on final levels of disposable income not observed here.

The analysis does however move beyond simple averaging to incorporate a risk dimension to the age-spending analysis, focusing on the early years. In addition, the models deal with transfers to the family, not average transfers per child, and has the added strength of adjusting payment amounts to account for interactions with the other benefits

available to working families (such as housing benefits). The analysis also captures variations in cash transfers that are family form, size or income dependent, as well as those based on age variations. Together these developments allow for the effect on family income of age-related events such as childbirth, and parental exit and re-entry into the labour market to be tracked more precisely. The analysis therefore allows inferences to be drawn about how the benefits treatment of different families during transitions can influence choices, such as whether to take leave or return to work.

Chapter 3

Fertility trends: What have been the main drivers?

Total fertility rates have declined steadily in most OECD countries since the late 1960s. However, since the late 1990s there has been a fertility rebound in a large number of countries. Is this a temporary phenomenon, or a significant change in trend?

To try and answer the question, it is important to establish the main drivers of fertility trends and how they have evolved recently. This chapter first reviews the mechanics involved: the postponement of family formation, smaller family sizes and the choice to remain childless. It then looks at the factors which may affect fertility decisions, including the direct cost of children (education and housing), and the indirect cost of foregone labour market opportunities. These vary with education and skill levels. The effects of fluctuations in economic growth are also considered.

The chapter concludes with a discussion of the most promising policy initiatives to narrow the fertility gap.

Introduction

Since the late 1960s, birth rates have been falling across the OECD area. The timing, intensity and persistence of the fertility decline vary across countries. In some countries the decline is ongoing, but in a growing number of countries total fertility rates have started to increase. Is this just a temporary increase in birth rates or are fertility rates in OECD countries structurally rebounding to higher levels on a sustained basis?

To address this issue, this chapter disentangles the underlying mechanics and drivers of fertility trends. In past decades, many potential parents decided to postpone family formation, have fewer children, or have no children at all. These choices were influenced by many different and often inter-related factors, including the wish to establish a career before taking time off to care for children or elderly relatives, the direct cost of children, including cost of housing or education, and growing acceptance of childlessness as a life-choice. The upswing in birth rates since the late 1990s can also be related to a combination of factors, including the increase in "late motherhood" after years of postponement, economic growth as well as the development of policies to reduce the barriers to family formation.

The role of policy in influencing fertility is contested. This chapter reviews evidence on how policies in-cash, in-kind and/or in-time (*e.g.* leave entitlements) may affect fertility behaviour. In particular, it seems that it is the package of policies which helps reconcile work and family commitments (including flexible workplace practices, parental leave arrangements and early childhood education and care services) rather than each single component which exerts a positive influence on fertility outcomes and intentions, and helps maintain total fertility rates close to two children per woman in France, New Zealand and the Nordic countries.

This chapter begins by presenting evidence on fertility trends and the postponement of childbirth, increased childlessness and the diminished prevalence of larger families. It then discusses the factors which help explain the variations in fertility patterns over time and across countries, including the effect of cross-national policy differences. The chapter concludes with some suggestions as to which approaches may be most effective in sustaining the fertility rebound.

Main findings

- *Despite the rebound in total fertility rates (TFRs) which occurred in many countries since the mid-1990s, the vast majority of OECD countries have fertility rates below replacement level.* Cross-country differences in fertility rates are large, from 2.1 children per woman in Turkey to 1.2 in Korea. Korea is among the "lowest-low" fertility countries which have experienced significant postponement of family formation, a decrease in the number of large families, and often an increase in childlessness. Childlessness remains rare in Japan and Korea which also stand out from other OECD countries in that fertility remains closely associated with marriage, and the decline in TFRs is related to a sharp decline in the number of large families.

- *Relatively high TFRs are found in Anglophone and Nordic Countries and France*. Ethnic minorities, migrants, and low-income households having a larger contribution to overall fertility in Anglophone countries than in France and in Nordic countries, where fertility differentials by educational and occupational status are also limited.
- *In contrast to 30 years ago, the countries with the highest female employment rates today are also among the countries with high fertility rates*. In view of the aspiration of both parents to combine work and family life, it is no surprise that policies which support the reconciliation of work and care responsibilities have proven to have a positive effect on fertility patterns. However, there is considerable diversity across countries in the emphasis on individual family-friendly support measures (financial, in-kind, or in time), the coherence between these different policy measures, their continuity over the child's life cycle, and their stability and permanence (Chapter 2). These factors influence the overall effectiveness of policy in reducing the gap between intended and achieved fertility.
- *Financial support to families aimed at alleviating the direct cost of children has a positive but small effect on TFRs*. Moreover, financial transfers – temporary or permanent – seem to accelerate the timing of births but their effect on completed family size is limited at best, although there is some evidence that financial transfers, when sufficiently large, could contribute to an increased prevalence of families with more than one child. Similarly, paid parental leave seems to affect the timing of births, but the effect depends on payment rates during the period of leave.
- *The availability of formal childcare solutions appears to be a factor in explaining cross-national differences in fertility between countries, and seems also to affect fertility rates on a structural basis*. Also, for policies to be effective in a structural manner, they need to involve a degree of permanence, as this is important to helping adults make their family plans.
- *Fertility policies can affect different socio-economic groups in different ways and can strengthen polarisation between these groups*. Medium and higher-income workers are frequently the primary beneficiaries of policies reconciling work and the family, while lower-income households are more likely to take up home-care cash benefits and stay out of work for a long period of time. The latter groups are most susceptible to financial support. By contrast, in countries without a comprehensive childcare system, the fertility of women with higher levels of educational attainment seems to be more sensitive to opportunities for part-time work.
- *The overall effect of policies on total fertility rates seems to be relatively small, and exaggerated expectations on their influence are unfounded*.

Fertility trends and underlying dynamics

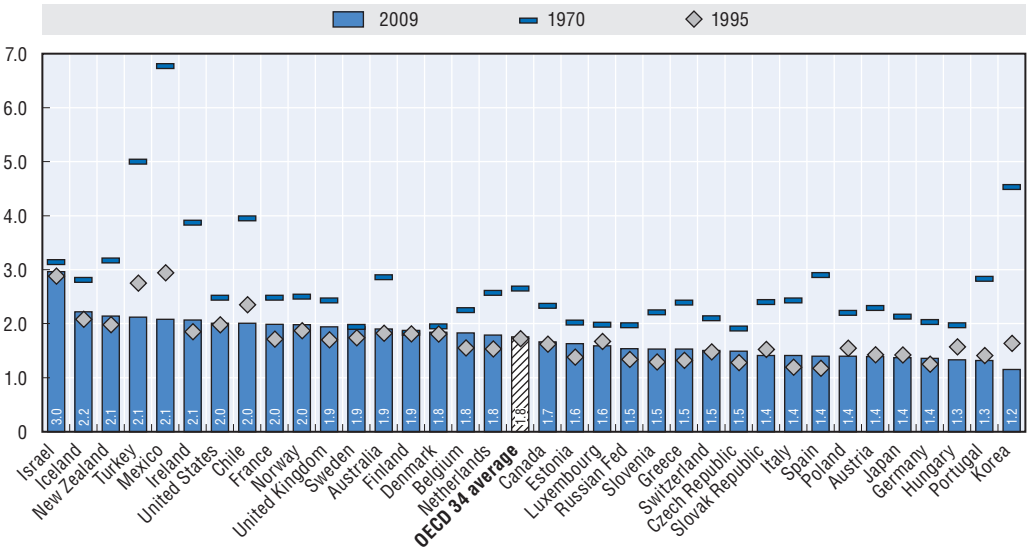
Trends in fertility, life expectancy and migration are among the factors that affect the face of future societies. Assuming that fertility rates will remain at or close to current levels, the OECD population is projected to grow from 1.22 billion people in 2009 to 1.37 billion in 2050 (OECD, 2011a). Fertility trends also affect the age-distribution within populations, and over the 2009-50 period the old-age dependency ratio on average across the OECD will increase from 14.5 to 27.7%, with all its consequences on demands on pension systems and for long-term care services. An upward reversal of fertility trends would slow down the ageing of populations and contribute to sustaining trends in future working-age populations and economic growth (United Nations, 2004).[1]

Fertility rates declined since 1980, but many countries experience a rebound

Chapter 1 showed that the sharp decline of total fertility rates (TFRs) has been the dominant feature of fertility patterns in OECD countries over the past four decades.[2] Compared with 2.7 children per woman in the early 1970s, TFRs have fallen to 1.7 in 2008 on average across the OECD, which is well below 2.1 children per woman, the rate required to maintain populations at current levels without migration. The lowest fertility rates are recorded in Asian, central and southern European OECD countries, whereas Iceland, New Zealand and in particular Israel have the highest fertility rates.[3]

The magnitude of the decline in birth rates varies across countries. The fall has been comparatively limited in Belgium, France, Anglophone (except Canada) and Nordic countries, where TFRs remain relatively close to replacement level. In Ireland, Mexico and Turkey, TFRs also remain close to replacement level, but in these countries TFRs have more than halved since 1970 (Figure 3.1).

Figure 3.1. **Total fertility rates (TFRs) have rebounded in many countries from 1995 onwards**[1]



Note: Countries are ordered by decreasing TFR in 2009.

1. 2009 data refers to 2007 for Canada, the Czech Republic, Estonia and Slovenia; 1970 data refers to 1971 for Chile; 1995 data refers to 1980 for Estonia and Israel.

Source: OECD (2010b), *OECD Family Database*.

StatLink http://dx.doi.org/10.1787/888932393046

Asian, central and southern European OECD countries experienced significant declines in total fertility rates (TFRs), which continue to remain low. These so-called "lowest-low fertility countries" have TFRs persistently around or below 1.3 children per woman (Kohler *et al.*, 2006). In 2008, Korea had the lowest TFR at 1.2. The persistency of these low fertility rates raises concerns about the decline of the overall population in these countries.

Since the late 1990s, there has been a rebound of TFRs in many OECD countries (Figure 3.1). It is unclear whether the rebound in TFRs is of a structural nature, but the initial fall and subsequent rise of birth rates suggests that there may have been a permanent change in the timing of childbirths.[4]

Postponement of childbirth

The postponement of childbirth can be best reviewed by considering trends in age-specific fertility rates. Broadly speaking, there are two relevant features: 1) a sharp decrease in fertility rates of women aged less than 30 which started almost five decades ago in most OECD countries,[5] and 2) a significant increase in fertility of women in their 30s. Figure 3.2 shows a marked increase in fertility for women aged 30-34 in most OECD countries since the mid-1990s. Korea, Mexico and Japan deviate from this general pattern, as age-specific fertility rates continue to decline for all age groups (except Japanese women aged 35-39). It seems that the rebound in TFRs heralds an end to a period of childbirth postponement that started several decades ago (Goldstein *et al.,* 2009). However, it is unlikely that the increase in the "postponed" births will lead to a recovery in TFRs to levels recorded in 1980.

The average postponement of births is the result of different factors, including, younger people spending longer in education than previous generations, and the increasing number of women who wish to establish themselves in the labour market before having children. Postponement is also facilitated by increased control of fertility timing as related to the diffusion of modern contraceptive methods which varies across countries, however (Frejka, 2008a). The use of modern contraceptives reduces the number of unwanted and mistimed pregnancies and births. It is very likely that modern contraceptive methods have facilitated the changes towards new and more restrictive norms on the ideal family size, but they cannot be seen as a principal cause of contemporary low fertility (Leridon, 2006). Postponement of births until parents are in their 30s increases the likelihood that parents face biological difficulties in having (more) children. Assisted-reproductive techniques can help in individual case, but are unlikely to significantly increase fertility rates (Box 3.1).

Box 3.1. **Do assisted-reproductive techniques significantly affect fertility rates?**

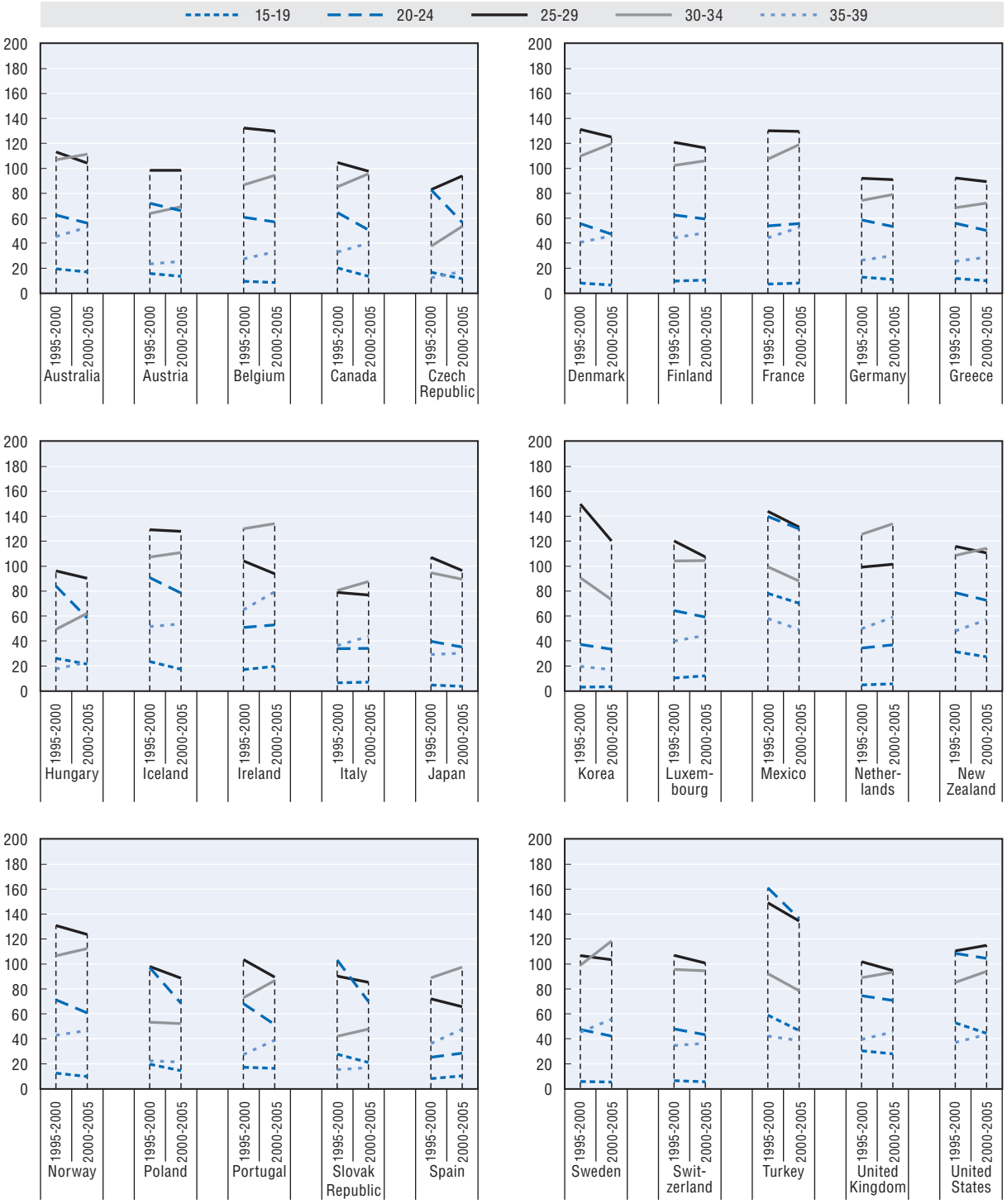
The postponement of childbirth has led to an increase in the mean age at births of women across generations as has been observed across generations of women over the past decades. The menopause sets a natural age limit to the ability to have children, and there are also many women who are unable to have children before the menopause starts and this risk increases with age (ESHRE, 2010). For example, 5% of French women aged 25 cannot have children and this proportion rises to 10% at age 30, 20% at age 35 and 40% at age 40 (Léridon, 2008). In many sterile couples sterility is caused by men (*e.g.* in 40% of the sterile couples in France, de la Rochebrochard, 2001). However, the evolution of male sterility with age is less marked than for women.

On average, older couples on average have often more difficulty to have children, and the probability that a conception leads to live birth decreases with age. Assisted-reproductive techniques (ART) can help sterile couples to realise their fertility intentions, and it is sometimes argued that ART potentially contributes to raising TFRs although the cost per child is high (Hoorens *et al.*, 2007; Ziebe and Devroey, 2008). However, these studies overestimate the effectiveness of ART as they count pregnancies to couples before and after access to ART (ESHR, 2010), and also do not consider the effects of premature births on health throughout childhood.

The available evidence suggests that the effect of ATR on fertility rates is limited. Léridon and Slama (2008) found that ART adds about 0.05 to the TFR in France. In Denmark, where ART utilisation is high – 3.9% of national births are children born after ART procedures: ART was estimated to contribute to an increase in the completed fertility rate (CFR) of women born in 1975 by between 0.049 and 0.079 children (Sobotka *et al.*, 2008). On basis of microsimulation, Habbema *et al.* (2009) suggest that if all couples with infertility issues were to have access to *in vitro fertilisation*, the effect on the fertility rate would be limited: TFRs may increase by 0.08 to 0.12 children per woman depending on the timing of fertility treatment.

Figure 3.2. **Increasing fertility after 30 years of age**

Age-specific fertility rates, number of births per 1 000 women



Source: *Demographic Yearbook 2008*, United Nations Statistics Division.

StatLink http://dx.doi.org/10.1787/888932393065

Childlessness and smaller families curtail the fertility rebound

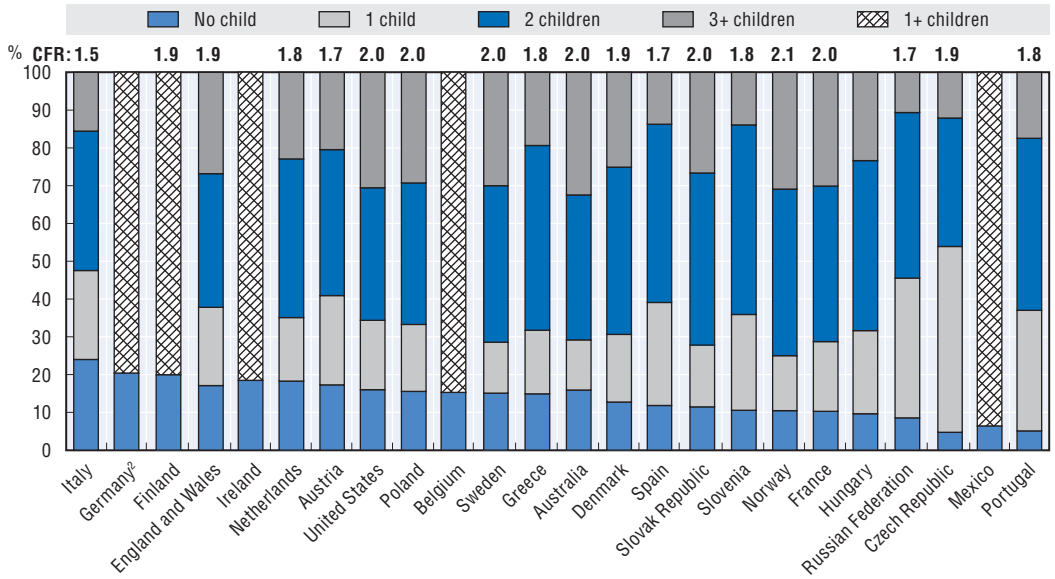
Two features restrict the recovery in total fertility rates (TFRs): childlessness and, for those parents who have children, a decline in the number of large families, *i.e.* those with three or more children.

Figure 3.3 shows the distribution of women born around 1960 (*i.e.* for women whose fertility period has been "completed") by number of children. In all countries, women are most likely to have two children at the end of their reproductive period (the numbers in the Figure 3.3 are completed fertility rates (CFR see notes to Figure 3.3). But otherwise there are large variations across countries in the number of children women have.

Cohort data suggest that definite childlessness among women at the end of their reproductive period is highest in Italy, Germany and Finland, but 15% of women born around 1960 have also remained childless in Austria, Belgium, England and Wales, Greece, Ireland, the Netherlands, Poland, Sweden and the United States. In general, countries with relatively high rates of definitive childlessness (over 15% of the women age over 45) have completed fertility rates (CFRs) below 1.8 children per woman, but Finland and Germany are exceptions with a rate above 1.9. High rates of childlessness do not always lead to differences in CFRs. For example, Austria and Spain have very different rates of cohort-childlessness, 22% and 13%, respectively, but the same CFRs of 1.7 children per woman.

Figure 3.3. **Many women have two children, but otherwise there is large cross-national variation in the number of children women have**

Achieved fertility by parity distribution: in per cent, 1965 or latest available birth cohort[1]



Note: Countries are ranked by decreasing proportion of women with no child at the end of their reproductive period. The numbers above the columns reflect the completed fertility rate (CFR) which is the number of children actually born per woman in a cohort of women by the end of their childbearing years (normally, women who are 45 or over are considered to have completed their childbearing years; this end-year is often set at 49). CFRs are not available for Belgium, Germany, Hungary, Ireland and Mexico.

1. 1962-66 for Australia; 1963 for Greece, Portugal and Spain; 1964 for Hungary; 1960 for Canada, England and Wales, Sweden; 1959 for Finland; 1955 for Belgium, Germany and the United States; 1953 for Norway. Unfortunately, cohort data for the same year are not readily available, but the use of data on cohorts of women born within ten years of each other provides an adequate picture of the main cross-country differences.
2. Estimates for the Western Länder of Germany only.

Source: Australian Bureau of Statistics; Andersson *et al.* (2009); Frejka (2008b); Sardon (2006); Frejka and Sardon (2007); Speder and Kamaras (2008); and McDonald (2010).

StatLink http://dx.doi.org/10.1787/888932393084

In almost all countries, about 10 to 20% of the women have only one child at the end of their reproductive period, but this proportion is over 30% in the Czech Republic, Portugal and the Russian Federation, where large families are also relatively rare.

By contrast, at least 30% of women have three or more children in France, Norway, Poland, Sweden, and the United States (Anglophone countries have a relatively low incidence of one-child families and a high incidence of large families, see McDonald, 2010). These five countries with a relatively high proportion of large families have high CFRs compared with most European countries (Frejka, 2008b). In all, high rates of childlessness do not necessarily lead to low fertility rates, if there are many women who have large families. This is crucial to policy development as the factors affecting the number of large families are different from those encouraging childlessness (see below).

"Lowest-low fertility" countries

Asian, and many central and southern European OECD countries are facing persistently low fertility rates:

1. The lowest-low fertility countries have all experienced a sharp decline in the number of large families. For example, less than 15% of cohorts born in 1965 have had three children or more in Italy or Spain. In Japan and Korea, the share of women with four children or more in the cohorts with completed childbearing fell from 60% to about 10% in Korea and 5% in Japan.[6]
2. Childbearing, when it occurs, is often very late: increases in the age of women at birth of the first child were particularly pronounced in Germany, Greece, Italy or Spain (Chapter 1).
3. The propensity to remain childless is higher than in most other countries. Definitive childlessness is highest in Austria, Italy, Poland (Figure 3.3), Germany and Switzerland.[7] However, childlessness still remains a marginal phenomenon in Japan and Korea with childlessness rates below 4% for the cohorts of women born in 1945 or later. These two countries also stand out among OECD countries because of the resilience of traditional norms regarding the entry into motherhood and the extremely low proportion of births outside marriage (see below).

Does ethnic diversity affect fertility rates?

Fertility behaviour is not homogeneous within countries and varies across population groups. Different ethnic groups can behave differently[8] and differences are likely to be largest for recent migrants. However, since recent migrants often constitute only a small proportion of populations, their effect on TFRs is often small.[9] Table 3.1, Panel A presents fertility rates of native and foreign-born women; the last column provides an estimation of the net contribution of ethnic minorities to TFRs for European countries (Sobotka, 2008). Panel A clearly shows that while TFRs for foreign-born populations are relatively high, their overall effect on birth rates is limited and ranges from 0.05 to 0.1 children per woman (*e.g.* between 3% and 8%). The contribution of recent migrants to fertility trends in Europe is also found to be weak; it is largest in England and Wales (Table 3.1, Panel B).

Furthermore, fertility behaviour of recent migrants and native women converges over time as the former group increasingly behaves like the latter. In most countries where the issue has been studied, fertility among recent migrants declines to "native levels" within a decade of migration (Garssen and Nicolaas, 2008; Schoorl, 1995; and Toulemon and Mazuy,

Table 3.1. **"Net contribution" of different population groups to total fertility rates (TFRs)**

	Period	All women	"Native nationals"	Foreign born	Net contribution	Source
Panel A. Effect of women with foreign nationality on the TFR						
Australia	2006-08		1.93	1.81		McDonald (2010)
Austria	2008	1.41	1.31	2.01	0.1	Statistics Austria (2009)
Belgium	1995	1.56	1.49	2.13	0.07	Poulain and Perrin (2002)
Flanders (Belgium)	2001-05	1.59	1.5	3	0.09	van Bavel and Bastiaenssen (2006)
France	1999	1.79	1.72	2.8	0.07	Héran and Pison (2007)
	2004	1.9	1.8	3.29	0.1	
Germany[1]	2006	1.34	1.29	1.66	0.05	Schmid and Kohls (2010)
Greece	2005	1.33	1.24	2.11	0.09	Tsimbos (2008)
Italy	2008	1.41	1.33	2.12	0.08	ISTAT (2009)
New Zealand	2006	2.05	Asians 1.52 Europeans 1.92 Maori 2.78 Pacific Islanders 2.95.			McDonald (2010)
Spain	2006	1.38	1.3	2.42	0.08	Goldstein *et al.* (2009)
Switzerland	2008	1.48	1.37	1.85	0.11	SFSO (2009)
United States[2]	2007	2.12	Hispanics 2.99 Non-Hispanic Blacks 2.13 Non-Hispanic Whites 1.87			McDonald (2010)
Panel B. Effect of immigrant women on the TFR						
Australia	2006-08		1.93	1.81		McDonald (2010)
Austria	2008	1.41	1.31	2.01	0.1	Statistics Austria (2009)
Belgium	1995	1.56	1.49	2.13	0.07	Poulain and Perrin (2002)
Flanders (Belgium)	2001-05	1.59	1.5	3	0.09	van Bavel and Bastiaenssen (2006)
France	1999	1.79	1.72	2.8	0.07	Héran and Pison (2007)
	2004	1.9	1.8	3.29	0.1	
Germany[1]	2006	1.34	1.29	1.66	0.05	Schmid and Kohls (2010)
Greece	2005	1.33	1.24	2.11	0.09	Tsimbos (2008)
Italy	2008	1.41	1.33	2.12	0.08	ISTAT (2009)
New Zealand	2006	2.05	Asians 1.52 Europeans 1.92 Maori 2.78 Pacific Islanders 2.95.			McDonald (2010)
Spain	2006	1.38	1.3	2.42	0.08	Goldstein *et al.* (2009)
Switzerland	2008	1.48	1.37	1.85	0.11	SFSO (2009)

1. Data pertain to West Germany only (the former Federal Republic of Germany, excluding Berlin).
2. Fertility rates are given by ethnic origin disregarding nationality.
3. Not including the second generation of immigrant women whose mother was born in the Netherlands.
4. Including second-generation migrants, *i.e.,* women born in the Netherlands and having at least one immigrant parent.

Source: Sobotka (2008); Mc Donald (2010). Net contribution calculated by T. Sobotka.

StatLink http://dx.doi.org/10.1787/888932394034

2004). Fertility intentions seem also to follow the same pattern of adaptation (Kahn, 1994). Furthermore, the path of adaptation is quicker for migrants with higher education levels and those who migrated at a younger age (Andersson, 2004, for Sweden; Toulemon and Mazuy, 2004, for France; and Coleman and Dubuc, 2010, for the United Kingdom).

What explains the fertility trends?

There are different factors which affect fertility patterns. Economic development is one of them. Other factors include social norms and attitudes, the direct costs of raising children and the indirect costs related to difficulties with the reconciliation of work and family life.

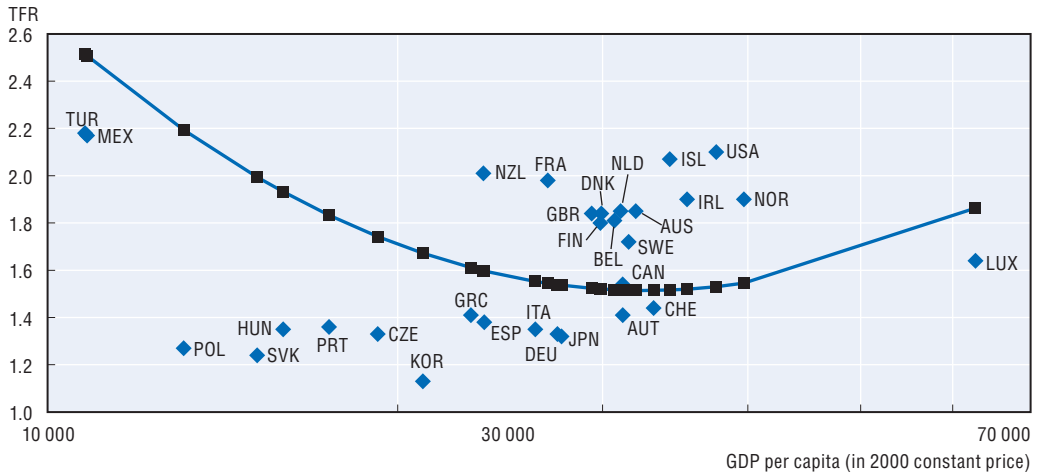
Economic development

The relationship between fertility and economic development is non-linear and changing. Considering the period from the early 1960s onwards across 30 OECD countries, it appears that economic development, as measured by GDP per capita, and fertility are negatively associated at first, but the relationship turns positive once a certain level of economic development is reached (Luci and Thévenon, 2010; and Myrskylä *et al.*, 2009).

Figure 3.4 shows the inversed-J shaped relationship for OECD countries as estimated by Luci and Thévenon (2010) for the period 1960-2006. The line depicts the estimated path linking the TFR to GDP per capita. A fixed-effects model is applied to capture time trend and control for country-level effects, and countries are expected to be located close to the predicted line, in the absence of strong country-specific characteristics. The "turning point" for fertility trends is estimated to be around a GDP per capita of USD PPP 32 600 in constant prices (on average across the OECD GDP per capita is USD PPP 28 000).[10] This threshold corresponds to a minimum TFR of 1.51 children per woman, which is higher than the actual level of TFRs in "lowest-low fertility countries".

Figure 3.4. **As income grows, its relationship with fertility patterns changes**

Total fertility rates and GDP per capita for 30 OECD countries in 2006



Note: Figure 3.4 presents the predicted path, as estimated by a fixed-effect model with the cross-sectional variations of the 30 OECD countries in 2006.

Source: Luci and Thévenon (2010).

StatLink http://dx.doi.org/10.1787/888932393103

Figure 3.4 also shows how the 30 OECD countries in 2006 relate to the estimated historical relationship. Austria, Canada, Luxembourg, Mexico, Switzerland and Turkey are quite close to the estimated path. For Mexico and Turkey, this suggests that further economic growth will lead to a reduction in the TFR, whereas for the other four countries a further increase in income is projected to lead to an increase in TFRs.

Many countries deviate significantly from the estimated path, however. Anglophone and Nordic countries as well Belgium, France and the Netherlands achieve higher TFRs than would be predicted on basis of their level of income per capita. In France and New Zealand, TFRs are high while GDP per capita is below the estimated turning point. Thus, in these two countries the fertility "rebound" took place at a stage of economic development at which a further decrease in fertility rates could have been expected in the absence of country-specific factors. High fertility countries such as Iceland, Ireland, Norway and the United States are at a stage of economic development which predicts a positive influence of income and consumption growth on fertility.

By contrast, the "lowest-low fertility countries" have much lower fertility levels than the predicted values and the "minimum" set at 1.51. In Japan and Germany, income levels are only somewhat below the estimated turning-point value and very close to those of New Zealand or France: economic development does not explain the persistence of low fertility in Japan and Germany.

Strikingly, the line dividing countries below and above predicted fertility levels coincides with the classification of countries with and without significant public and/or flexible workplace supports for the reconciliation of work and family life (see below and Thévenon, 2011). A further decomposition of GDP into different components also shows that fertility rates co-vary with the increase in female employment rates. In fact, the increase in GDP per capita captures increased female labour market participation as well as greater reconciliation possibilities that can be bought with increased household income.

In all, it seems that subject to cross-country variation in current outcomes, many OECD countries can expect an increase in economic development to coincide with an increase in TFRs. However, the increase in fertility rates is likely to be small, unless economic development is accompanied by other institutional change in the areas of work and family reconciliation, norms and attitudes towards childbearing, and the direct cost of children.

Social norms towards childbearing

Social norms towards childbearing influence fertility decisions as they affect accepted behaviour among relatives, friends and/or other groups in society. Norms help shape preferences regarding childbearing and timing of births, but also concern who should care for children and how work should be matched with family-life choices. Norms are not fixed, however, and expectations regarding childbearing and household division of work have been changing considerably over the past decades (Lesthaeghe, 2010).

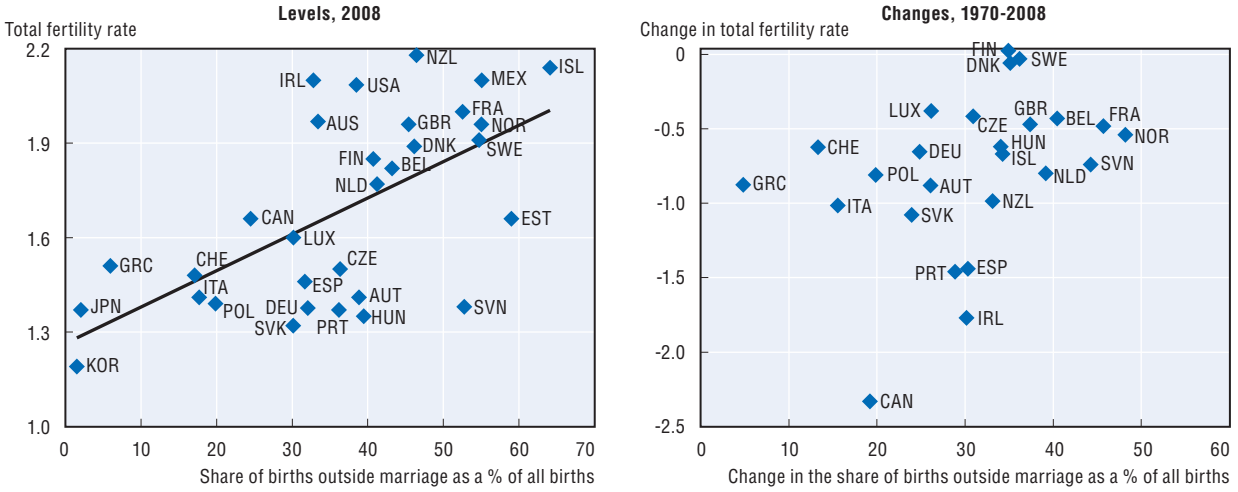
The postponement of parenthood is partially related to changes in the behaviour of younger generations. Young people remain longer in education and leave the parental home later than before (Van de Velde, 2008; and Billari *et al.*, 2006).[11] The difficulties in securing a firm foothold in the labour market or in acquiring a separate home explain partly this trend. Furthermore, partnership formation pathways have evolved and there is an increasing propensity of both young men and women to live alone before forming a cohabiting partnership or marriage (Toulemon, 2010).

Marriage and childbirth

An important change in attitudes is that marriage is no longer widely regarded as a prerequisite for having children. On average across the OECD, the age of first marriage for young women is now higher than the age of first childbirth (OECD, 2010b, SF2.3 and SF3.1). The decrease in marriage rates coincided with an increasing acceptance of births outside marriage. Figure 3.5 shows that the number of births outside marriage has increased since the early 1970s in almost all OECD countries while their contribution to the total of births remain nowadays especially low in Japan, Korea or Greece. By contrast, over half of births are now outside marriage in Estonia, France, Norway, Mexico, Slovenia and Sweden.

Figure 3.5. **The proportion of births outside marriage is increasing**

Total fertility rates and births outside marriage as a proportion of all births



Note: For births outside marriage, 2008, data refers to 2007 for Japan, Italy, Ireland, Australia, the United States, Belgium and New Zealand; 2006 for Korea; 2005 for Canada.

Source: OECD (2010b), *OECD Family Database*, SF2.4.

StatLink http://dx.doi.org/10.1787/888932393122

TFRs are also higher in countries with higher rates of extramarital births, and the decrease in the TFR since 1970 has been significantly smaller – by less than 0.5 children per woman – in countries where the percentage of births outside of marriage has increased by 25% or more. In addition, countries which experienced a significant rebound in fertility rates (*e.g.* by 0.2 children per woman) since the mid-1990s were also among those where the share of extramarital births has increased significantly. However, some countries, including Austria or Hungary, experienced a significant increase in the number of births outside marriage without any rebound of fertility rates. Compared with other countries, Canada also had a disproportionate drop in fertility rates from 1970 onwards, despite having a sizeable (20%) increase in the share of births outside marriage.

Japan and Korea are the two OECD countries where childbirth remains strongly associated with marriage. In these two countries, the postponement and subsequent decline in marriage rates has been the main determinant of the TFR decline up to the late 1990s. The increase in the proportion of never-married women has been particularly steep in Japan (from 7.2% in 1970 to 26.6% in 2000) while in Korea the proportion increased from 1.4% to 10.7% over the same period (Lesthaeghe, 2010). In both Japan and Korea, very few married couples remain childless, and in Japan, marital fertility has remained quite

stable over time (Atoh *et al.*, 2004). There has been a recent decline of marital fertility in Korea (Lee, 2009, 2010; and Suzuki, 2009) which contributes to the growing number of smaller families in that country.

The sharp decline in marriage rates in these countries give some indication of the ongoing change: with educational attainment among young women equal or superior to that of young men, it is no wonder that young women want to participate in the workforce, and find it increasingly difficult to abandon paid work for homemaking. Hence, they delay and/or forego marriage as prospective partners while large parts of society still expect them to sacrifice their labour market aspirations to their husbands (Eun, 2007; and Suzuki, 2010). By contrast, other countries with traditional attitudes towards family formation such as Greece and Spain are experiencing a modernisation of norms which contributes to a recent increase in TFRs in these countries (Billari, 2008; and Lesthaeghe, 2010). In general, countries where labour market aspirations of young women are most at odds with prevailing traditional norms on marriage, childbearing and gender roles at home are also the countries where low fertility is most persistent.

The cost of children

Economic theory typically considers fertility as the outcome of a rational decision: a utility-maximisation process balancing costs and benefits of children, subject to an income constraint and preferences for children (Becker, 1981). Raising and educating children are activities that require income, goods and time especially. Having children competes with other time-consuming activities, such as work and leisure, and the decision to have children will also depend on the "quality" of the investments made in children (Becker, 1960). Thus, having children incurs both a direct and visible cost and an indirect and less visible one (Willis, 1973), and the increase of these costs is considered as a key driver of falling TFRs since the early 1970s (*e.g.* Hotz *et al.*, 1997):

- Direct costs of children involve the additional consumption incurred by households because of their presence: including housing, food, clothing, childcare, education, transport, leisure, etc.
- The "indirect" costs refer to the "opportunity costs" due to the fact that parents, usually mothers, will invest time in caring, educating and raising children, rather than paid employment. These costs can be measured by the earnings forgone by parents reducing their working hours or stopping work altogether. Taking full-time leave or temporary reductions of working hours can also incur costs through any long-term damage to career prospects.

Direct costs of children

The direct costs of children can be gleaned from budget surveys by comparing household budget spending of families with and without children with the same standard of living. This facilitates measuring the additional consumption of households (for each item, housing, education etc) with otherwise similar characteristics due to the presence of children.

Despite different methodologies, three broad results emerge from the literature:

1. A child accounts for approximately 15 to 30% of the budget of a couple without children. The variation depends on several factors like the child's rank of birth, their age, the parents' education and income level and the bargaining power of household members.[12]

2. The cost of the first child is often found to be greater than that for each subsequent child, because of economies of scale related to shared infrastructure (*e.g.* bedrooms) or the re-use of clothes and other articles.
3. The cost of children increases with the age, and growth is concentrated during adolescence and the transition towards adulthood. During the early years, costs mainly concern food and housing (Ekert-Jaffé, 1998), but later on increase with entry into post-secondary education, and consumption of transport and leisure (*e.g.* Claus *et al.*, 2009, for New Zealand; Hourriez and Olier, 1997, for France; Henman, 2005, for Australia; Lino and Carlson, 2009, for the United States; and Oyama, 2004).[13]

The cost of housing. Figure 3.6 shows that housing costs are a key item of spending for European families, amounting up to 25% or more of budgets for households with children in Germany, Luxembourg, Poland, the Slovak Republic, Spain and Sweden. The strong increase in house prices in recent years in the vast majority of OECD countries will only have reinforced constraints that the cost of housing may impose on fertility patterns (André, 2010; Girouard *et al.*, 2006; and OECD, 2010c). Housing is also the biggest budget item for families with children in the United States. Although not directly comparable with data in Figure 3.6, Lino and Carlson report that housing costs represented around one-third of the estimated cost of children.

The overall effect of housing costs on fertility patterns is unclear. Ideally, families can adjust dwellings to changes in family size. A sufficiently large affordable rental sector is likely to increase options for families, and making home-ownership more accessible will smooth young people's entry into the housing market (Mulder and Billari, 2010). By contrast, a small rental market and high costs associated with home-ownership can impose barriers to fertility: the housing market matters (Box 3.2).

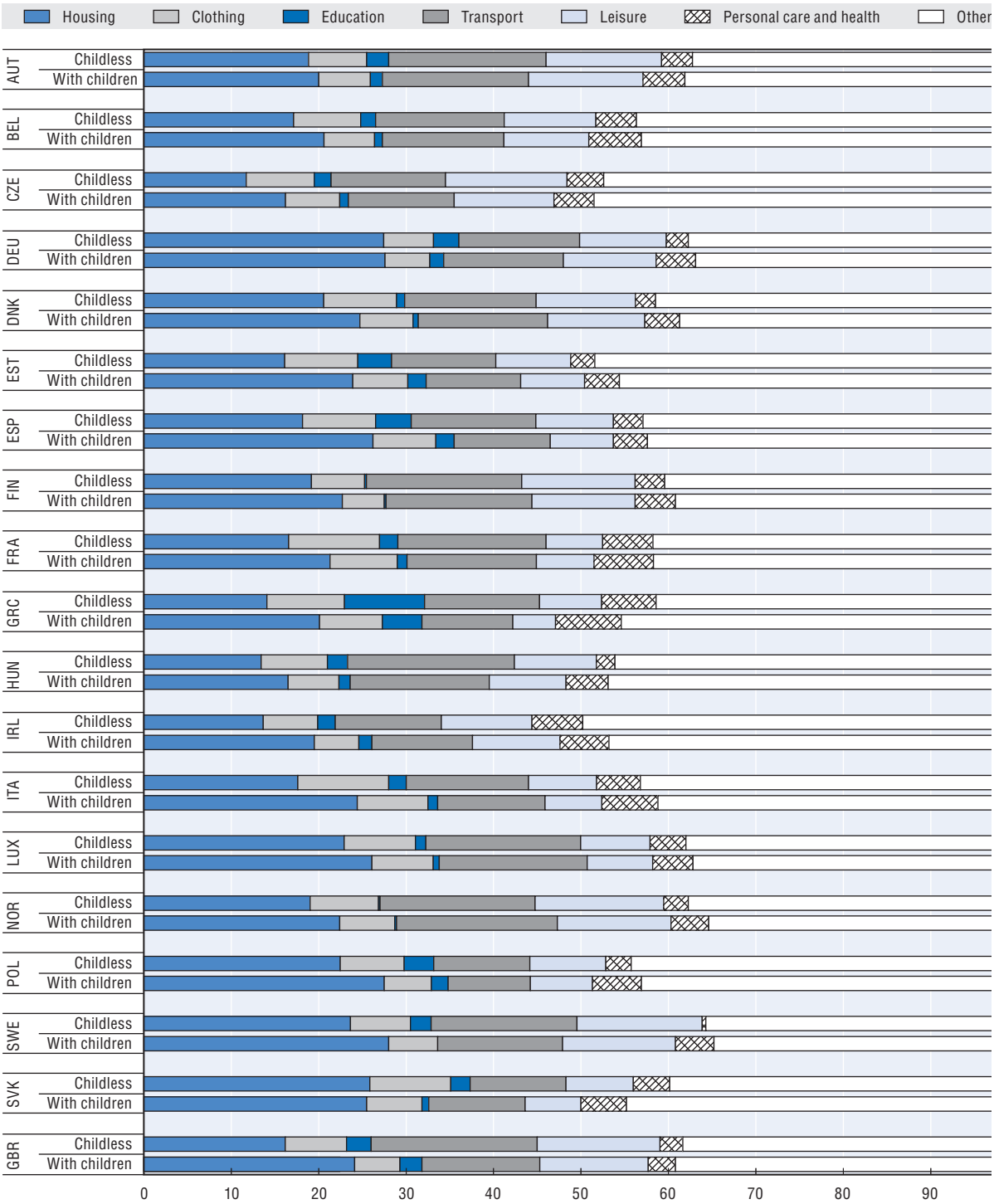
Housing costs are all the more likely to establish a barrier to fertility if households perceive them as a big burden. Evidence suggests that the perception of their importance varies considerably across countries. Eurobarometer (2008) shows that a large majority of Hungarians (71%) see housing cost as one of three of the most important cost items to deal with, while this was only 35% in neighbouring Austria.

The cost of education. Figure 3.6 also shows that in most European countries the share of income allocated to clothes, education and transports makes up only a small part: no more than 4.5% of the household budget with dependent children below age 17 is spent on education. The share of households' budget dedicated to education is frequently higher for those households with no dependent children, but this is partly because many of them include children at university. Yet the overall expenditures of households on education are generally quite limited because public funds cover more than 80% of the education costs, except in Australia, Chile, Japan, Korea, Mexico, New Zealand, United States or the United Kingdom where households contribute more than 15% of the education expenditure (Figure 3.7).

In most countries, private costs of education are thus unlikely to affect fertility patterns significantly. However, the higher costs borne by parents in some countries, for example Japan and Korea, is one reason that prevents adults from having additional children. To a question on why the actual number of children is lower than the number of people wished for, two-thirds of all respondents – and more than 83% of those aged between 25 and 29 years – answered that "education and care cost too much" (MEXT, 2010);

Figure 3.6. **A fifth or more of household's budget is spent for housing**

% of household income spent on each item – households with and without children,[1] 2005



1. Dependent children include only those under 17 years of age; children above this age are counted as adult. Households with children above this age and no other dependent children are included in the childless category.

Source: Household Budget Surveys, Eurostat (2006).

StatLink http://dx.doi.org/10.1787/888932393141

Box 3.2. **Housing markets can affect family formation**

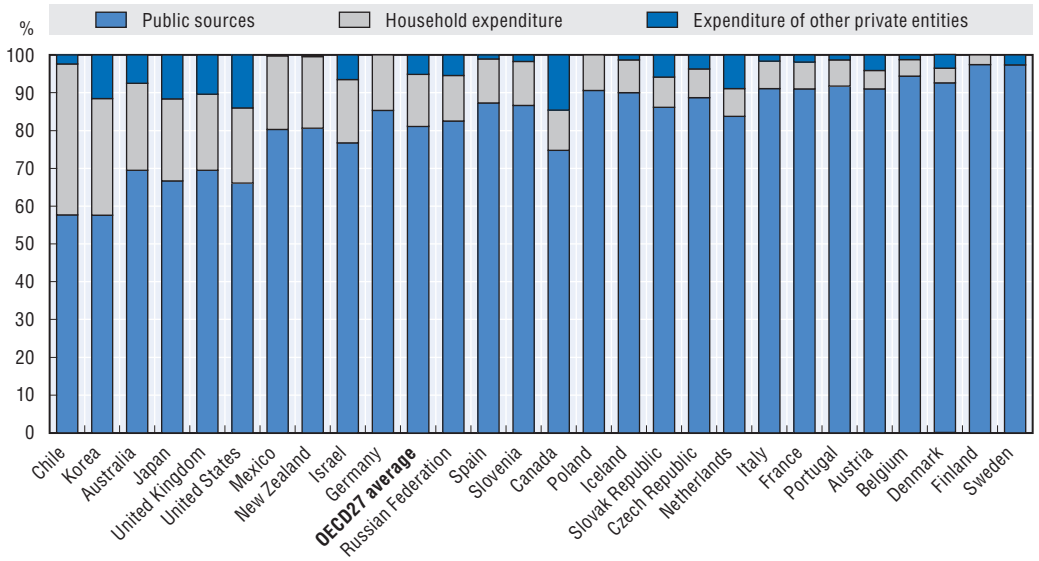
Housing markets exert an important influence on family formation. In the absence of suitable housing opportunities, young people can postpone leaving the parental home, partnering and parenthood (Kulu and Vikat, 2007; Mulder, 2006a; and Mulder and Billari, 2010). Couples often prefer to secure housing of suitable quality before they have their first child or before they increase family size.

For young people to start thinking about having a family, it is important that they can enter the housing market and have opportunities to progressively move to higher-quality and more expensive housing as they settle into their labour-market and household careers. At the same time, family formation also seems to speed up the process of house-acquisition in Germany and the Netherlands (Mulder and Wagner, 2001; and Feijten and Mulder, 2002). However, when resources are limited, becoming a home owner can lead to competition between housing costs and additional children curtailing fertility (Courgeau and Lelièvre, 1992; Mulder, 2006b). For example, in the United Kingdom homeowners have fewer children and have them later than tenants (Hakim, 2003).

Lovenheim and Mumford (2010) found that an increase in the price of a home-owned house has a positive but small effect on fertility due to the wealth effect associated with this increase. By contrast, Kryger (2006) found that a rise in house prices by 54% from 1998 to 2006 curtailed the TFR in Australia by 0.14 children per woman.

Figure 3.7. **Households contribute to less than one-tenth of education costs in most countries**

Share of expenditures on education by source, 2007



Note: Countries are ranked by decreasing share of education costs borne by households. Expenditures include all money transferred to educational institutions from private sources, including public funding via subsidies to households, private fees for educational services or other private spending (*e.g.* on accommodation) which goes through the institution.

Source: OECD (2010d), *Education at a Glance*, Paris.

StatLink http://dx.doi.org/10.1787/888932393160

similarly, 44% of Korean women aged between 20 and 39 cite such costs as a key barrier to having children (Lee, 2009).

In both countries, many parents send their children to private schooling after the standard school-days to prepare for entrance exams for the best pre-college schools and subsequent universities. *Juku* classes provide private extra-school education of a couple of hours per day for many Japanese children: 48% of elementary students and around 62% of early secondary students attended these extra-school classes in April 2010 (MEXT, 2010). The cost born by households varies with the grade but is highest for households with elementary students: a yearly average of USD 2 246 (JPY 184 130) is spent by households with children attending *juku classes* and USD 2 968 (JPY 243 288) for private classes. Similarly, in addition to attending largely publicly financed primary and secondary schools, many Korean children also attend tutoring or the after-school learning institutes, in order to increase their chances of gaining entrance to the most prestigious universities. This is expensive: in the mid-2000s this cost up to about USD 25 000 per child per annum (OECD, 2007).

Particularly, when education costs are high, there is a "quantity-quality" trade-off (Becker, 1960). Richer families can afford to invest a larger share of household budgets in education. At the same time these families are also more likely to have fewer children, and to invest more in education per child. Variations in the share of household budgets allocated to education in the United States illustrate this, with lower income groups allocating 31% of household income on education while, for middle and higher-income groups, this share is 45% and 56%, respectively (Lino and Carlson, 2009).

The indirect costs of children

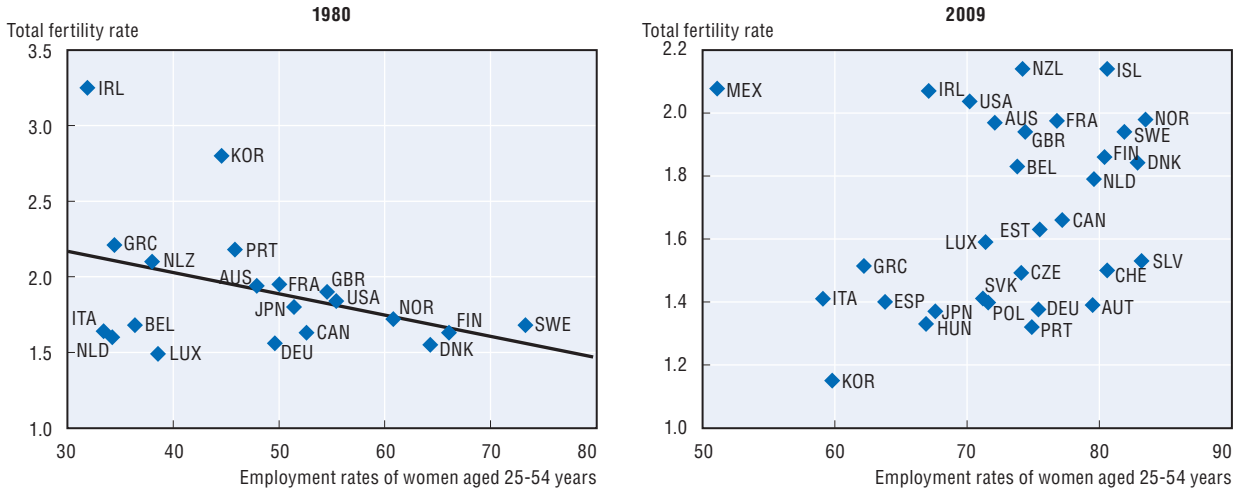
The indirect costs of children are related to the opportunity costs of parents due to the reduction in labour market participation because of child-caring commitments. As wives are often paid less than their husbands in employment, it makes perfect economic sense for most households if it is the mother rather than the father who reduces working hours. One way of measuring these costs is to compare the total earnings forgone by mothers during their career after childbirth with the earnings profile of childless women. The earnings profile of the former compares unfavourably with the latter, the so-called "family gap" (OECD, 2002; Harkness and Waldfogel, 2003; and Davies and Pierre, 2005). For example, Sigle-Rushton and Waldfogel (2007) estimate that a working mother with two independent children (age 25 and 27) in Germany and the Netherlands has, on average, only 42 to 46% of the cumulative earnings of otherwise similar female employees. This is 58% in the United Kingdom, but the "family gap" is much smaller in Finland, Norway, Sweden or the United States where mothers earn 80 to 89% of non-mothers' earnings. Income losses incurred by mothers in the first two years upon childbirth are also substantial in Canada (Zhang, 2010). However, Canadian mothers returning to work seem to regain the lost earnings in about seven years upon childbirth, and this effect is strongest for mothers going back to work with their original employer.

Female educational attainment has increased markedly in recent years (Chapter 1), which has led to a large increase in the "opportunity cost" of children. Women thus have greater financial incentives than before to work and build a career. This rise in the opportunity cost of children is seen as a key driver of the fertility decline in OECD countries since the early 1970s (Hotz *et al.*, 1997).

At the same time, public and workplace policies have been progressively introduced (Chapter 4) to help parents combine work and care responsibilities, thus reducing the costs of having children. Figure 3.8 illustrates the change in the relationship between female employment and TFRs at the aggregate level across countries. In 1980, most of the countries with higher female employment rates had low fertility levels. By contrast in 2009, Greece, Italy, Hungary, Japan, Korea, Poland and Spain had both relatively low female employment and fertility rates. Also, and although work and family reconciliation is achieved by different means, Nordic and English-speaking countries are able to combine high female employment rates with high TFRs. A continuum of publicly provided reconciliation support is available in Nordic countries, while the Anglophone countries combine flexible workplace practices with income-tested childcare support and in-work benefits, as helped by the low cost of domestic services in the United States (Thévenon, 2011). As a result, in these countries the choice between employment and motherhood is least stark, even though there often remains a trade-off between having large families and female employment at an individual level (Englehart *et al.*, 2004; and Kögel, 2004).

Figure 3.8. **Motherhood and employment are less incompatible now than in 1980**

Female employment and total fertility rates, 1980-2009



Note: The y-axis (total fertility rate) scale is 1.0-3.5 for 1980 and 1.0-2.2 for 2009.

Source: OECD (2010b), *OECD Family Database*, SF2.1.

StatLink http://dx.doi.org/10.1787/888932393179

The intensity of work is also negatively associated with the presence and number of children. Thus, the chance to be employed full-time was of 1.5 times higher or above for childless women than for mothers with children aged 20 to 44 in Spain in Austria, Spain, Hungary, the Netherlands, Poland or the United Kingdom over the 1990s until the mid-2000s (Thévenon, 2009). The likelihood of working part-time increases with the number of children in all OECD countries, but especially in the Netherlands where the vast majority of employed women works part-time.

Evidence of cohort analysis on fertility and childlessness

Education is found to influence strongly the postponement of births everywhere, but its effect on ultimate family size varies. In general, differences by level of education matter least in terms of fertility rates in countries where notions of gender equity and work/life

balance are most developed. For example, in Scandinavian countries higher education levels are not systematically associated with lower fertility outcomes. Women with higher levels of educational attainment may delay entry into motherhood but fertility differentials among women progressively decrease with age the since women with higher education progressively recuperate the differential in birth rates and differences in CFRs by educational level are small, especially in Finland and Sweden (Andersson *et al.*, 2009). Also, education levels only seem to have a limited effect on childlessness: its incidence ranges from 11.6 in Norway to 17.3% in Finland for the cohort of women born in 1955-59, and the differences between women with high and low education of 6 percentage point in Norway, but of less than 2 in the other countries.[14]

Policies to reduce barriers to family formation

Intended and achieved fertility: mind the gap

Across the OECD area policy is careful not to interfere directly in fertility issues as these are generally considered to be part of the private sphere. However, the decrease in fertility rates and its persistence has pressured policy into action in many countries, often with reference to demographic renewal and/or reducing barriers to family formation so that adults can have as many children as they desire. In other words, policies aim to reduce the gap between intended and achieved fertility in most OECD countries, in contrast to policies implemented in China, India and, to a much lesser extent, Indonesia (Box 3.3).

The actual magnitude of the gap between intended and achieved fertility is difficult to measure.[15] Measurement of childbearing preferences is difficult as responses may be influenced by perceived social norms, personal circumstances, but importantly preferences change with age and the number of children already born to parents. For this reason, demographic surveys generally ask adults on their intention to have either a first child or additional children within a given period of time (OECD, 2010b, SF2.2).

Figure 3.9 shows the "ultimately intended family size" as presented by the additional number of "intended" children to those already born to women aged 25 to 39. Childbearing intentions are considered together with the number of children women in this age-group already have in order to approximate what may be the "ultimately intended family size". The ultimate intended size is particularly small in Italy, Spain and Austria where ideals of fertility below the replacement rates have emerged (Goldstein *et al.*, 2003). Nevertheless, the significant number of "intended" births highlights the potential barriers households may face in seeking to realise their fertility intentions.

The effect of policy on fertility

Policy can affect fertility patterns in different ways. First, they may help households fulfil their fertility intentions by reducing the direct financial cost to parents or by reducing the indirect cost of children by relaxing the constraints that adults face in combining work and family. Second, reducing the costs of children may influence preferences on family size. However, for this to occur, policy support has to be sufficiently comprehensive and consistent over time (Thévenon and Gauthier, 2011).

Also, parents have been postponing having children, and this may ultimately lead to parents not having as many children as intended. If policy were to help convince prospective parents that having a family is a realistic option when they are relatively young and face low infertility risks (Box 3.1), then affecting the timing of fertility decisions could contribute to limit postponement of childbearing and have a long-lasting effect on fertility rates.

Box 3.3. **Birth control policies in China, India and Indonesia**

Population trends in China, India or Indonesia are very different from the experience in most OECD countries, as the population of these three countries doubled over the 1965-2005 period. Population growth was particularly pronounced between the early 1950s and the mid-1970s, because of the combination of increasing life expectancy while birth rates remained high. The annual rate of population growth has slowed down from above 2% in these three countries in 1960-65 to 0.7% in China and just over 1% in Indonesia in 2000-2005 (Attané and Barbieri, 2009). India's population continues to grow by 1.5% per annum.

The traditional life-course pattern involved women being wed as teenagers, often in pre-arranged marriages to have children in quick succession. The improvement of educational and labour market opportunities for women has contributed to the delay in family formation and declining birth rates. From above five children per woman at the beginning of the 1960s, the TFR dropped in 2008 to 2.7 children per woman in India, 2.2 in Indonesia and 1.7 in China.

In India, central government has set population targets, but state governments play a key role in policy development to limit birth rates. Some States have done little, while others have introduced stringent rules, for example, by forbidding parents with more than two children from holding local office, or disqualifying workers from certain benefits if they have larger families. Current pilot programmes include initiatives in Satara where local health officials have led campaigns to curb teenage weddings, and a "honeymoon package" of cash bonuses and contraceptives so that couples wait to start a family. Other states also use cash bonuses to reduce birth rates. For example, in Maharashtra, the government pays around USD 106 if couples wait to have children after marriage.

Public initiatives to curb fertility rates in Indonesia have been taken since 1968, with their implementation dependent on local and religious organisations. The measures included a focus on restricting fertility to two children per woman, birth spacing, improvement of the role and status of women, and education of young people. The fertility transition was not marked by an increase in the mean age of first marriage. A conscious desire by a large part of Indonesia's population to reduce their number of children has played an important role in reducing fertility rates (Courbage, 2002).

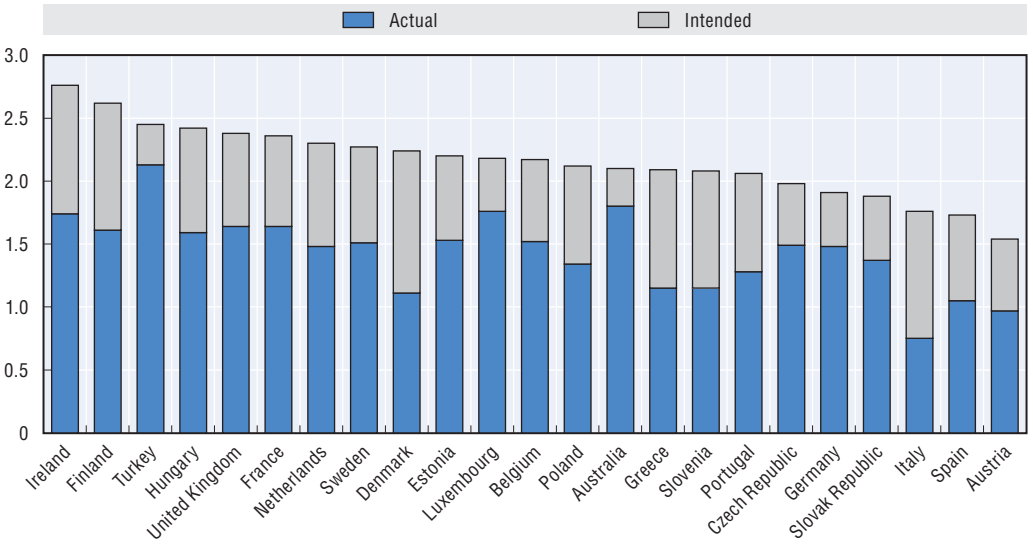
Since the early 1970s, Chinese policy initiatives contributed to a marked decline of the fertility rate. Late marriages and late childbearing, in addition to birth spacing and smaller family size were enforced. In 1979 the drastic "one-child" policy was implemented and applied to 95% of couples in urban areas and 90% of couples in rural areas. Initially, couples were encouraged through education and propaganda to have one child, but in the early 1980s there was widespread sterilisation of women, especially in rural areas. Resistance to these policies led to relaxation of the restrictions on having a second child for rural couples in 1984. Since the 1980s, China's birth control policy is subject to provincial regulations that take account of local conditions to define the maximum authorised number of children per woman, which varies between 0.8 and 3.4 children per woman on average in the different provinces (Guo *et al.*, 2003).

The decline of TFRs to below replacement level at the beginning of the 1990s and the current limited rate of population growth are yet to have an effect on national birth control policies, which remain restrictive, especially in China. As a result, in China the process of population ageing unfolds rapidly, and by 2050 the country will have more than 438 million people over 60, and over 100 million octogenarians. There will be just 1.6 working-age adults to support every person aged 60 and older, compared with 7.7 in 1975.

Furthermore, gender-biased birth control policies have led to high increase in the ratio of male to female children. Usually, the sex ratio at birth is around 105 boys to 100 girls. In China, the ratio is around 1.19 and in some provinces 1.3. A deficit of 24 million women is anticipated for the next decades, according to the Chinese Association of Social Sciences. At 1.12, the male to female birth ratio is also high in India, but reflects the international norm in Indonesia at 1.05.

Figure 3.9. **The fertility gap varies across countries, but exists everywhere**

Actual and ultimately intended number of children of women age 25-39, 2006



Note: Countries are ranked by the decreasing number of ultimately intended family size of respondents. This information is based on survey responses to the question: "And for you personally, what would be the ideal number if children you would like to have or would have liked to have?"

Source: Eurobarometer 2006: "Childbearing Preferences and Family Issues in Europe".

StatLink http://dx.doi.org/10.1787/888932393198

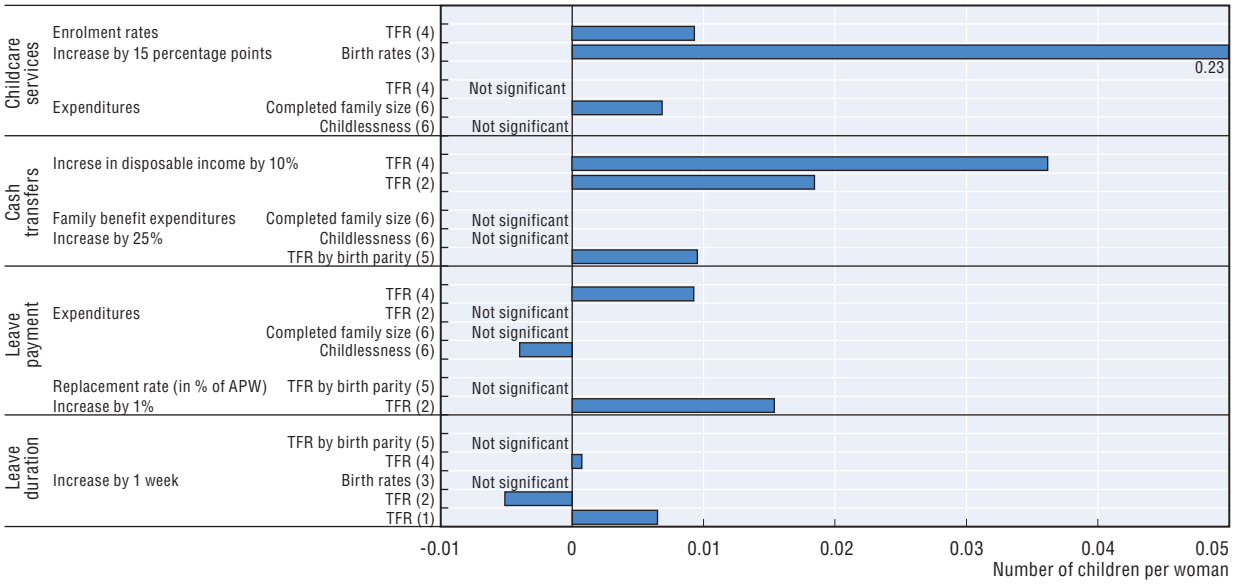
Chapter 2 provided an overview of different family benefits. Cash, fiscal and in-kind supports have been introduced and developed at different times and serve a variety of family policy objectives, and were often not specifically introduced to address fertility concerns. Nevertheless, family benefits can influence fertility behaviour as they reduce the direct and/or indirect costs of having children. It is frequently impossible to disentangle effects that specific policies on fertility may have, as often only aggregated information is available or policies have not been in place long enough for their effect to be measured. In general, the evidence suggests that while family benefits do significantly reduce the direct and indirect costs of children, their effect on fertility *per se* is limited. Furthermore, while family benefits have an effect on the timing of births, their effect on the final fertility choices of individuals is contested (Sleebos, 2003; Gauthier, 2007; and Thévenon and Gauthier, 2011).

Figure 3.10 summarises the key results of the most recent cross-national studies on the effect of policy in the areas of financial support, parental leave and childcare on fertility patterns. Annex Table 3.A1.1 gives more details on the differences in geographical and period coverage, and the way these studies capture fertility trends and use different explanatory variables.

The results of these studies are quite diverse but some general conclusions can be drawn. Cash transfers have a positive effect on the TFR, although most of their effect seems to concern the "timing" of births. The influence of leave entitlements is more controversial while the rare studies considering the incidence of spending and coverage of childcare services suggest a positive effect on fertility rates and on completed family size, in particular.

Figure 3.10. **A positive effect of family-friendly policies on fertility**

Effect measured in number of children per woman



Note: Column 2 shows the fertility indicator used in a particular study to measure the effect of policies: TFR in (1) Adsera (2004); (2) D'Addio and Mira d'Ercole (2005); and (4) Luci and Thévenon (2011). The TFR by number of children is used in (5) Gauthier and Hatzius (1997). The number of children ever born to women aged 18 to 45 years is used by (3) Hilgeman and Butts (2009); (6) Kalwij (2010), considers the probability to have children and achieved fertility at age 36-40 as a proxy of completed fertility. For more details, see Annex Table 3.A1.1.

Source: References are listed at the end of this chapter.

StatLink http://dx.doi.org/10.1787/888932393217

Financial transfers: a limited contribution to differences in fertility

There is some evidence to suggest that financial transfers have a positive but small and temporary effect on TFRs. Cash benefits are found to affect TFRs in the 3 studies dealing with their trends (Figure 3.10). D'Addio and Mira d'Ercole (2005) and Luci and Thévenon (2011) suggest that an increase of disposable income of families with children by 10% through the tax/benefit system may at most increase the TFR by less than 0.02 children. This is larger than the effect of an increase in the rate of family allowances by 25%, as estimated by Gauthier and Hatzius (1997). Kalwij (2010) considers that most of this effect is spurious and finds no significant effect of gross public family spending per child on the probability to have children or on completed family size (this analysis did not consider, however, the net transfers received by families through the tax and benefit system).

There are several interrelated reasons why the effect is likely to be quite small in total (Thévenon and Gauthier, 2011):

1. Financial transfers do little to reduce the opportunity costs in fertility processes, which have increased with rising female labour market aspirations.
2. Financial transfers only cover a small part of the direct cost of children, but there is some evidence that financial transfers can affect the fertility behaviour of low-income households.[16]
3. Financial transfers can be of a short-term nature. "Baby bonuses" and/or parental-care-related income support are often paid in the period around childbirth (Box 3.4). Such measures do not substantially reduce the cost of children over the life-course, but they can affect the timing of births.

4. The micro-level evidence seems to suggest that financial transfers have more effect on the choice to have second or more children rather than a first child. To increase fertility rates, stimulating larger families rather than reducing childlessness seems most effective.[17]
5. There is a delay between the introduction of policy changes and the time at which consequences on fertility outcomes can be observed. This delay arises because it takes some time to decide to have more children and then for a successful conception to materialise. In 2005, this period was seven months in France on average, but increasing with the age of the mother (Léridon, 2008).

Financial transfers (*e.g.* family allowances) which cover the whole period of childhood are most likely to have a positive effect on fertility behaviour, but their magnitude should not be overestimated. For example, Gabos *et al.* (2009) estimate a positive but moderate effect in Hungary, with a 1% increase in financial transfers generating a 0.2% increase in fertility. For France, Laroque and Salanié (2005 and 2008) estimate that financial transfers which generate a 25% reduction in the cost of a child would lead to only a 5% increase in fertility.

The French system of supports also has a positive but small fertility effect among richer households as they benefit most from the favourable tax treatment through the "Quotient Familial" (Thévenon, 2010). Landais (2003), who considered the effect of the 1981 reform which increased favourable tax treatment of the third child, estimated that an increase in the tax rebate for families with three children of 1% would generate an increase in the probability of a third child being born in the family by only 0.05%. Chen (2009) finds a much larger effect and estimates that a 1% increase in "net household income" would generate an average increase of 0.09 children.

Benefits primarily targeted at poverty alleviation can, as a side-effect, also raise fertility. For example, the Working Families Tax Credit (WFTC) (Chapter 4) was introduced in the United Kingdom in 1999. In combination with the increase in Income Support for unemployed families, this led to an increase in public spending per child on the families concerned of around 50% in real terms between 1999 and 2003. Brewer *et al.* (2009) found that these measures led to an increase in births of around 15% among beneficiaries with low education and low incomes. The effect was largest for partnered women, and much smaller for sole parents (Ohinata, 2008). Similarly, the "Oportunidades" programme in Mexico was designed to increase investment in children's human capital. Apart from small cash and nutritional supplements, the programme's school subsidy was conditional on school participation, and eligible low-income families could receive support worth up to a quarter of average family income. The programme was not intended to raise fertility (the TFR in Mexico is well above replacement level), and only had a very small positive effect on fertility rates (Todd and Wolpin, 2006).

In all, much of the effect of financial transfers on fertility patterns concerns the timing of births, rather than completed fertility rates. Such effects may be desirable in view of the age structure of the current population, but also to halt ongoing processes of childbirth postponement (Lutz and Skirbekk, 2005). Furthermore, such measures can alleviate the negative consequences recessions may have on fertility patterns (see below).

Reconciling work and family: a "fertility booster"?

Public and workplace policies aimed at reconciling work and family life can by reducing the tension between child and work commitments have a considerable effect on fertility patterns, certainly in view of the changed female labour market aspirations. There

Box 3.4. **Baby bonuses: accelerating or raising births?**

Several countries have introduced lump-sum grants that are paid on the birth of a child. These "baby bonuses" can affect the fertility decision at different stages. They reduce abortions in case of unplanned pregnancies and raise intentions to have a child in the near future. Also, considered in view of household budgets baby bonuses obviously have the largest income effect on low-income families and there is some evidence to suggest that these grants have contributed to births in low-income families. However, on the whole the evidence on their overall effect on fertility patterns is not overwhelming.

In Australia, a baby bonus was introduced in May 2004 and raised from AUD 3 000 (about EUR 1 950) to AUD 5 000 (EUR 3 250) in July 2008. By lowering the direct cost of childbirth, the bonus seems to have had an effect on decision to have children (Drago *et al.*, 2009), especially the decision to have a second child. However, the effect is small, and statistically insignificant (Parr and Guest, 2010).

Many regions or cities introduced their own "baby bonus" scheme in Italy, but evidence on their effect is scant. For example, the region of Friuli-Venezia Giulia introduced such a scheme on 1 January 2000. It included a birth *bonus* for which only married women and Italians were eligible, and payment rates differed by birth order (no payments for first births, EUR 3 000 for a second birth and EUR 4 600 for a third or subsequent birth). Payments were income tested and substantially reduced in January 2004. Boccuzzo *et al.* (2008) evaluated the scheme and found it had led to both a reduction in abortions and an increase in births among women with low education and income levels.

The Canadian province of Québec had a childbirth grant from 1988 to 1997: the "Allowance for Newborn Children" was paid to parents starting with the birth of their first child. The policy was found to have a fairly strong effect as it may have boosted fertility by 12% on average, and up to 25% for low-income households eligible for the highest benefit (Milligan, 2005). However, the scheme was discontinued because of its high budgetary costs and was replaced by multiple new programmes (including the Quebec Parental Insurance Program and the universal childcare spaces initiatives). In 2008, the Provinces of Newfoundland and Labrador also had "baby bonuses": CAD 1 000 for each child born/adopted and CAD 100 per month "parental support benefit" while on parental leave. There has been an increase in the number of births but there is no evidence that this effect can be attributed to the baby bonuses.

In 2007, the Russian authorities introduced a so-called "family capital" benefit of considerable value, about USD 11 000, for the birth (or adoption) of a second child and higher-order children in a family (OECD, 2011b; and Sinjavskaya, 2011). This amount is deposited in the capitalised part of the Pension Fund of the Russian Federation, and can be used for different reasons, *e.g.* to improve housing conditions (as most beneficiaries do), increase pension entitlements of mothers and help with the cost of education. The TFR in Russia has increased recently and this introduction of family capital may well be a contributing factor, but it is unclear whether this effect is permanent or temporary.

Arguably, Spain experienced the most short-lived "Baby-cheque", which was worth EUR 2 500 and was paid to 400 000 families. The scheme was introduced in 2007, and has recently been scrapped in view of austerity cuts (Chapter 2).

are different work/life balance measures, but in particular leave around childbirth, formal childcare services, and opportunities to work part-time or flexible hours are policies which have been tested individually in terms of their overall effect on fertility rates.

Duration and payment of leave: two parameters that can accelerate childbearing. A priori, the effect of paid and employment-protected leave on fertility is ambiguous. On the one hand, these entitlements support household income and labour market attachment around childbirth, which will have a positive effect on fertility. However, as entitlements are often conditional on employment, they encourage men and women to postpone childbirth (which has a negative effect on overall fertility) until they have established themselves in the labour market (policies relating to leave around childbirth differ considerably across OECD countries, see Chapters 4 and 5 and OECD, 2010b, PF2.1 and PF2.2 for more detail).

This ambiguity is likely to explain the variable results reporter in Figure 3.10 for the effect of leave entitlements on fertility rates from cross-country comparisons. Thus, it is not clear whether the duration of leave entitlements increases or decreases fertility, but in any case its effect is small (Figure 3.10; Annex Table 3.A1.1).[18]

Payment conditions during the leave period can also affect fertility behaviour. *prima facie* one would expect a positive effect of payment rates on fertility, but the evidence suggests the effect is small and affects the timing of births rather than the size of the completed family. D'Addio and Mira d'Ercole found a significant effect of the income replaced during the period of maternity leave on fertility rates, although the effect was statistically insignificant for Gauthier and Hatzius; Luci and Thévenon corroborate this finding with a measure of the average payment per birth due to maternity, paternity or parental leave as well as baby bonuses and grants for a childbirth. Kalwij (2010) found, however, that payment rates affect the timing of births but not completed fertility levels: a 10% increase in leave benefits is estimated to generate a 3% reduction in childlessness at age 36-40, but has no effect on the CFR (see also Ronsen, 2004, and Ronsen and Skrede, 2008).[19]

Some countries have institutionalised periods (up to three years) of home-care leave or childcare leave benefits paid at a flat rate. Payment rates are low, much lower than earnings-related parental leave payments but, taken together with other financial transfers can amount to up to one-third of net average income in Finland (OECD, 2005). As with other cash transfers, these payments can have a positive effect on fertility rates, particularly by promoting second and third children, often among low-income families.[20] Furthermore, as home-care leave payments are not employment-conditional, they may help stem the fall of fertility rates (Vikat, 2004), which is often associated with a decline in "trust in the future" as related to an economic crisis (Box 3.5; Adsera, 2005a and 2009; Kravdal, 2002).

Availability of formal childcare has a positive effect on fertility intentions. Evidence from cross-country (Figure 3.10) and national studies almost invariably points to a positive effect of formal childcare on fertility patterns. Kalwij (2010) found that childcare subsidies seem to have no effect on the timing of births, but do have a positive effect on second and higher-order births and completed family size. Hilgeman and Butts (2009) also found a significant effect of childcare enrolment on the total number of children ever born for women aged from 18 to 45 in the early 2000s. Luci and Thévenon (2011) also found a strong positive effect of cross-national differences in enrolment rates on TFRs, but a smaller influence of an increase in childcare availability over time – this latter being illustrated in Figure 3.10. The effect of overall public spending on childcare services per child under age 3 on TFRs was found to be not significant. National studies for Nordic countries corroborate the positive effect of childcare on fertility rates (Rindfuss *et al.*, 2010). They also find that reductions in the parental fee paid for affordable good-quality childcare can have a

Box 3.5. **The effect of recessions on fertility behaviour: evidence from previous experiences**

The recent economic crisis has changed the context in which decisions regarding fertility are taken. In particular, the rise in unemployment creates economic uncertainties which may lead households to put off the decision to have children. The consequences can be short term – if births are simply postponed – or longer term if recession persists over time, and if no catch-up process is observed after the recession.

The evidence from the literature on the effect of economic fluctuations on fertility patterns suggests that fertility declines in response to a crisis with a time lag of a few years (Sobotka *et al.*, 2010). The decline is, however, temporary and fertility catches up when economic growth resumes.

The effect of unemployment on fertility varies across the genders. Most studies find that male unemployment has a negative effect on fertility (Mills *et al.*, 2005 for 14 industrialised countries; Kravdal, 2002, for Norway; and Lündström, 2009, for Sweden). Findings on the effect of female unemployment on fertility are more diverse. A positive effect is found for Germany and Finland (Schmitt, 2008); the Netherlands and Flanders (Liefbroer and Corinj, 1999); Sweden (Andersson, 2000), and the United Kingdom (Francesconi and Golsh, 2005), By contrast, the effect is found to be negative in France (Méron and Widmer, 2002) and Norway (Kravdal, 2002). The effect of unemployment differs by birth parity and duration. Adsera (2004 and 2005b) and Kravdal (2002) found that unemployment has a positive influence on the entry into motherhood, but negative for subsequent births. In France, female labour market status influences the timing of the first childbirth, but not those of subsequent births (Pailhé and Solaz, 2009).

Responses in fertility behavior to economic downturns differ across socio-economic status. Low-educated and low-skilled men are likely to show the largest decline in birth rates. For women, available evidence for Germany and Sweden suggests that those with high levels of educational attainment are most likely to postpone childbirth, especially when they have no children; the lower-educated often maintain or increase their rate of entry into motherhood (Hoem, 2000; and Kreyenfeld, 2010).

Available evidence suggests that unemployment spells seem to affect the timing of births, but not the achieved family size (Adsera, 2005b and Kravdal, 2002). In France, only repeated spell of long-term unemployment among males seem to have a small negative effect on family size (Pailhé and Solaz, 2009).

In the aftermath of a recession, the prevalence of temporary work contracts could increase. Such employment conditions often lead young people to postpone their entry into parenthood, as is common in the segmented labour markets of southern Europe (Adsera, 2004 and 2005a; De la Rica and Iza, 2005). In France too, women in temporary employment postpone births more than their counterparts with a permanent contract (Pailhé and Solaz, 2009).

Chapter 2 illustrated the variation in policy response across countries and time to the unfolding financial crisis. Increasingly countries have to curtail public spending and family benefits do not escape this trend (Gauthier, 2010). Some countries have experienced important cuts in family spending in recent history, and their experience holds important lessons. For example in Hungary, the transition to a market economy and subsequent volatility in policy reforms (sometimes increasing and sometimes reducing generosity of family benefits) have led to young cohorts of to delay the timing of first birth (Aassve *et al.*, 2006; and Speder and Kamaras, 2008). The reform of leave benefits into flat-rate payments and income-testing of both childcare leave and family allowances contributed to women with relatively high levels of educational attainment postponing childbirth the most.

substantial effect on fertility rates, especially when coverage of childcare is widespread (Mörk, *et al.*, 2009).[21] Part-time employment and a more equitable sharing of unpaid work can contribute to higher birth rates.

Workplace practices such as long working hours and working weeks make it harder to match work and care commitments and have been found to negatively affect fertility rates (Luci and Thévenon, 2011). By contrast, part-time employment opportunities have a positive effect on fertility rates in OECD countries, especially among women with a higher level of educational attainments (D'Addio and Mira D'Ercole, 2005; Del Boca *et al.*, 2009). However these results are not replicated by all research (*e.g.* Hilgeman and Butts, 2009), and effects are likely to be country-specific. Rather than the length of working time being the driving force, Mills *et al.* (2008) suggest that control over working time (Chapter 4) strengthens intentions to have children in European countries.

The opportunities for mothers to combine work and family life increase when fathers take on a larger share of unpaid work. Emerging evidence from the Nordic countries suggests that involvement of fathers in caring for the first child brings forward the birth of second child (Skrede, 2005; Duvander and Andersson, 2006; Duvander *et al.*, 2008; Lappegard, 2009). A more equitable division of unpaid work within households contributes to couple families having additional children.

Notes

1. In this chapter, the statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.
2. The total fertility rate (TFR) is highly sensitive to the timing of births: children born later in the life cycle induce a decline in the TFR, and final fertility will be underestimated. Some authors have therefore proposed TFR estimates adjusted for variations in the age of mothers at childbirth (Bongaarts and Feeney, 1998; and Goldstein *et al.*, 2009).
3. OECD (2010a) showed that high fertility rates in Israel are due to high fertility rates among Arab, and especially Ultra-Orthodox Jewish population groups where there are often seven to eight children in a household.
4. Teenage birth rates are generally too low to have a big effect on fertility trends, but cross-national differences in the incidence of teenage motherhood (before age 19) are nevertheless considerable. Teenage births are highest at over 35 births per 1 000 female teenagers in Chile, Mexico, Turkey and the United States (OECD, 2010b, SF2.4). Amongst European countries, teenage birth rates are highest in the United Kingdom at 24 births per 1 000 teenage girls.
5. OECD (2010b, SF2.3) shows long-term trends in age-specific fertility rates for few countries.
6. In Japan, 73% of women born in 1905-09 had three or more children, but this was only 31% for women born in 1935-39 and 27% for those born in 1948-52. Korea shows a similar trend: of women born in 1916-20, 87% had three or more children, but this was only 36% for women born in 1950-54 (Atoh *et al.*, 2004).
7. In 2008, about 22% of German women aged between 40 and 44 years have had no child according to Microcensus data; 21% of women born in 1965 remained childless in Switzerland (Konietzka and Kreyenfeld, 2007; OECD, 2010b, SF2.5A).
8. For example, fertility rates of Caribbean, Chinese, and Indian minorities in the United Kingdom are well below fertility rates among Bangladeshi and Pakistani women in the United Kingdom (Coleman and Dubuc, 2010). Similarly, there are also significant differences in fertility rates between Aboriginal and non-Aboriginal women in Canada: in 2001 the TFR was 2.6 for the first group, well above the TFR of 1.6 for all Canadian women.

9. The contribution of the foreign-born population to TFRs is substantial in Australia, Canada, New Zealand and the United States where more than 20% of the population was born abroad (McDonald, 2010).

10. To estimate the "turning point" different model specifications were used to capture issues around "endogeneity" and "non-stationarity". All model specifications identify a "turning point", but estimates on the absolute value range from about USD PPP 26 000 to 32 600 (Luci and Thévenon, 2010).

11. Trends differ across countries. For example, young people in central and southern countries leave the parental home and form households much later than their counterparts in other European countries, and giving birth before having a full-time job is more common among women in central Europe than in southern Europe (Van de Velde, 2008; Toulemon, 2010). Trends also differ between sexes, for example, in Japan where men leave parental home as early as northern Europeans while women leave as late as southern Europeans (Suzuki, 2009).

12. The relationship between household income and the proportion spent on children is contested, and depends on estimation method and the type of consumption being considered. For example, for France, Ekert-Jaffé and Trognon (1994) and Glaude and Moutardier (1991) find little or negative correlation between the household income and the child's budget share, whereas Wittwer (1993) found that the child's budget share increases with the household's income. Lino and Carlson (2009) find that in the United States households in the lowest income group spend on average 24% of their pre-tax income on a child; those in the middle-group, 16% and those in the highest group, 12%.

13. For example in France, Hourriez and Olier (1997) estimated that a child below age 14 accounts for 10 to 20% of a the budget of a childless household, 33% on average for a child between 14 to 25 years and 40% for the age of 20 to 24. Oyama (2004) estimated for Japan that the cost of an additional child aged 0-18 was on average 13% of the cost of an adult, but this was 26% for children aged from 14 to 18 years.

14. An interesting trend change took place in Norway and Denmark: in the early cohorts highly educated women remained childless most frequently; in later cohorts, women with low education are more likely to remain childless. Across Nordic countries there is little variation in levels of childlessness for highly educated women. For the cohorts of highly educated women born in 1955-59, the incidence of childlessness is highest in Finland at 17.1% and lowest in Norway (14.6%). Childlessness differs most among women with low levels of educational attainment, which in Finland is 19.2% for this cohort and 8.6% in Norway.

15. Traditional measurement of the fertility gap compares the mean number of desired children with actual TFRs. However, since the TFR is sensitive to the changes in the timing of births, an increase in the fertility gap may simply reflect a postponement of births rather than a change in the difference between the actual and desired number of children. Adjustment of fertility rates taking account of changes in the mean age of mothers at births lead to lower estimates of the fertility gap (Lutz, 2007; and Bongaarts, 2008).

16. For example, in Israel, Cohen *et al.* (2007) estimated that the increase in financial support to families until the early 2000s generated a 7.8% increase in fertility, and that the rise was concentrated among low-income households, of whom many are ultraOrthodox Jews with large families (OECD, 2010d). Boccuzzo *et al.* (2008) found a comparable result for Italy on introduction of the Baby Bonus in Friuli-Venezia (see below).

17. For example, Gabos *et al.* (2009) determine that the effect of financial support increases with birth order in Hungary. For France, Laroque and Salanié (2005 and 2008) also estimate a stronger response to financial incentives for subsequent children, and in France third children contribute more to TFRs than anywhere else in Europe (Breton and Prioux, 2005).

18. D'Addio and Mira d'Ercole (2005) find a small but negative relationship between the length of paid leave and fertility rates. By contrast, Adsera (2004), and Gauthier and Hatzius (1997) find that fertility rates increase with an extension of leave, but the estimated effect is not statistically significant in the latter study. This finding is corroborated by Luci and Thévenon (2011) also when taking account of formal childcare differences across countries – and controlling for country-specific fixed factors.

19. The generous Swedish system of paid parental leave involves financial incentives to have second children soon after having the first, but it is unclear as to whether this has raised the completed fertility rate (Andersson and Neyer, 2008). However, there is evidence to suggest that the design of the Swedish paid leave system has contributed to minimising differences in fertility behaviour among women with different levels of educational attainment (Andersson, 2008).

20. Aassve and Lappegard (2009) and Lappegard, (2009) find the childcare benefit speeds up the birth of second and third children in Norway. Vikat (2004) found that the probability of having a third child was highest among recipients of the home-care allowance in Finland. Piketty (2005) found that the extension of parental leave in France to parents of two children accounted for at most 20% to 30% of the increase in births observed between 1994 and 2001 (at most 10% of births of third children, and between 10% and 20% of births of second children).

21. It is more difficult to find such effects in countries with low childcare coverage. Hank and Kreyenfeld (2002) found that the (lack of) availability of childcare had no effect on fertility in the western länder of Germany. Data limitations will play a role, but it may also be that the limited availability of childcare feeds the polarisation between women having children and not working (or working short hours), while those women who work full-time are likely to be childless (Thévenon, 2009). Access to formal childcare for children under 3 partly explains why fertility intentions are higher in France compared with Germany and Russia (Pailhé, 2009).

References

Aassve A. and T. Lappegard (2009), "Childcare Cash Benefits and Fertility Timing in Norway", *European Journal of Population,* Vol. 25, No. 1, pp. 67-88.

Aassve, A., F. Billari and Z. Spéder (2006), "Societal Transition, Policy Changes and Family Formation: Evidences from Hungary", *Journal of European Population,* Vol. 2, pp. 127-152.

Adsera A. (2004), "Changing Fertility Rates in Developed Countries: The Impact of Labor Market Institutions", *Journal of Population Economics*, Vol. 17, pp. 17-43.

Adsera, A. (2005a), "Where Are the Babies? Labour Market Conditions and Fertility in Europe", *IZA Discussion paper,* No. 1576, Institute for the Study of Labour, Bonn.

Adsera, A. (2005b), "Vanishing Children: From High Unemployment to Low Fertility in Developed Countries", *American Economic Review, Papers and Proceedings,* Vol. 95, No. 2, pp. 189-193.

Adsera, A. (2009), "Employment Uncertainty and Fertility in Europe", Paper presented at the workshop on "Economic uncertainty and fertility dynamics", Berlin, 3-4 July, 2009.

Ahn, N. and P. Mira (2002), "A Note on the Relationship between Fertility and Female Employment Rates in Developed Countries", *Journal of Population Economics,* Vol. 15, No. 4, pp. 667-682.

Andersson, G. (2000), "The Impact of Labour-force Participation on Childbearing Behaviour: Pro-cyclical Fertility in Sweden during the 1980s and the 1990s", *European Journal of Population,* Vol. 16, No. 4, pp. 293-333.

Andersson, G. (2004), "Childbearing after Migration: Fertility Patterns of Foreign-born Women in Sweden", *International Migration Review,* Vol. 38, No. 2, pp. 747-775.

Andersson, G. (2008), "A Review of Policies and Practices Related to the 'Highest-low' Fertility of Sweden", *Vienna Yearbook of Population Research*, pp. 89-102.

Andersson, G. and G. Neyer (2008), "Consequences of Family Policies on Childbearing Behavior: Effects or Artifacts ?", *Population and Development Review*, Vol. 34, No. 4, pp. 699-724.

Andersson, G., A.S. Duvander and K. Hank (2004), "Do Child-care Characteristics Influence Continued Child Bearing in Sweden? An Investigation of the Quantity, Quality and Price Dimension", *Journal of European Social Policy*, Vol. 14, No. 4, pp. 404-418.

Andersson, G., L. Knudsen, G. Neyer, K. Teschner, M. Ronsen, T. Lappegard, K. Skrede and A. Vikat (2009), "Cohort Fertility Patterns in the Nordic Countries", *Demographic Research*, Vol. 20, Article 14, pp. 314-352.

André, Ch. (2010), "A Bird's Eye View of OECD Housing Market", *OECD Economics Department Working Papers*, No. 746, OECD Publishing, Paris.

Atoh, M., V. Kandiah and S. Ivanov (2004), "The Second Demographic Transition in Asia? Comparative Analysis of the Low Fertility Situation in East and South-East?", *Japanese Journal of Population*, Vol. 2, No. 1, pp. 42-75.

Attané, I. and M. Barbieri (2009), "The Demography of East and Southeast Asia from the 1950s to the 2000s: A Summary of Changes and Statistical Assessment", *Population* (English), Vol. 64, No. 1, pp. 7-146.

Australian Bureau of Statistics (2008), "How Many Children Have Women in Australia Had?", *Australian Social Trends*, Catalogue No. 4102.0.

Becker, G. (1960), "An Economic Analysis of Fertility", *Demographic and Economic Change in Developed Countries,* Princeton University Press, Princeton, N.J. and NBER, Cambridge.

Becker, G. (1981), *A Treatise on the Family,* 1st edition, Harvard University Press, Cambridge.

Bélanger, A. and S. Gilbert (2002), "The Fertility of Immigrant Women and the Canadian-Born daughters", Report on the Demographic Situation in Canada, Statistics Canada Catalogue No. 91-209, Ottawa, pp. 127-151.

Billari, F. (2008), "Lowest-low Fertility in Europe: Exploring the Causes and Finding some Surprises", *Japanese Journal of Population*, Vol. 6, No. 1, pp. 2-18.

Billari, F., A. Liefbroer and D. Philipov (2006), "The Postponement of Childbearing in Europe: Driving Forces and Implications", *Vienna Yearbook of Population Research*, pp. 1-17.

Blanchet, D. and O. Ekert-Jaffé (1994), "The Demographic Impact of Family Benefits: Evidence from a Micro-Model and from Macro-Data", in J. Ermisch and N. Ogawa (eds.), *The Family, the Market and the State in Ageing Societies*, Clarendon Press, Oxford, pp. 79-104.

Bloom, D., D. Canning, G. Fink and J. Finlay (2010), "Fertility, the Demographic Dividend and Economic Growth", Fourth Annual Research Conference on Population, Reproductive Health, and Economic Development, Kaapstad, January.

Boccuzzo, G., M. Caltabiano, G. Dall Zuana and M. Loghi (2008), "The Impact of the Bonus at Birth on Reproductive Behaviour in a Lowest-low Fertility Context: Friuli-Venezia Giulia (Italy) from 1989 to 2005", *Vienna Yearbook of Population Research*, pp. 125-148.

Bongaarts, J. (2008), "What Can Demographic Indicators Tell Us about Pro-natalist Policy Options?", *Vienna Yearbook of Population Research*, pp. 39-55.

Bongaarts, J. and G. Feeney (1998), "On the Quantum and Tempo of Fertility", *Population and Development Review*, Vol. 24, pp. 271-291.

Breton, D. and F. Prioux (2005), "Two or Three Children? Influence of Family Policy and Socioeconomic Factors", *Population (English edition)*, Vol. 60, No. 4, pp. 415-445.

Brewer, M., A. Ratcliffe and S. Smith (2009), "Does Welfare Reform Affect Fertility? Evidence from the UK", *Institute for Fiscal Studies Working Paper*, No. 08/09, London.

Brewster, K. and R. Rindfuss (2000), "Fertility and Women's Employment in Industrialized Nations", *Annual Review of Sociology*, Vol. 26, pp. 271-296.

CBS – Central Bureau of Statistics Netherlands (2010). *CBS Statline,* Tables on births and fertility rates by country of birth of the mother, first and second generation. [*Geboorte; herkomstgroepering en leeftijd moeder, vruchtbaarheidscijfers*], Internet database of the Centraal Bureau voor de Statistiek, accessed 2 February 2010, *http://statline.cbs.nl/StatWeb/*.

Chen, D. (2009), "Can Countries Reverse Fertility Decline? Evidence from France's Marriage and Baby Bonuses: 1929-1981", *International Tax and Public Finance*, *DOI 10.1007/s10797-010-9156-6*.

Claus, I., G. Leggett and X. Wang (2009), *Costs of Raising Children*, New Zealand Association of Economists Conference, Wellington.

Cohen, A., R. Dehejia and D. Romanov (2007), "Do Financial Incentives Affect Fertility?", *NBER Working Paper*, No. 13700, Cambridge.

Coleman, D. and S. Dubuc (2010), "The Fertility of Ethnic Minorities in the UK 1960s-2006", *Population Studies*, Vol. 64, No. 1, pp. 19-41.

Coleman, D., P. Compton and J. Salt (2002), "Demography of Migrant Populations: The Case of the United Kingdom", in W.P. Haug, P. Compton and Y. Courbage (eds.), *The Demographic Characteristics of Immigrant Populations,* Population Studies, No. 38, Council of Europe Publishing, Strasbourg, pp. 497-552.

Courbage, Y. (2002), "L'Indonésie: la transition dans le plus grand pays d'Islam"; in J.C. Chasteland and J.C. Chesnais (eds.), *La population du monde, Géants démographiques et défis internationaux*, INED, Paris, pp. 245-264.

Courgeau, D. and E. Lelièvre (1992), "Interrelations between First Home Ownership, Constitution of the Family, and Professional Occupation in France", in J. Trussel, R. Hankinson and J. Tilton (eds.), *Demographic Applications of Event History Analysis*, Oxford University Press, Oxford, pp. 120-140.

D'Addio A. and M. Mira d'Ercole (2005), "Trends and Determinants of Fertility Trends: The Role of Policies", *OECD Social, Employment and Migration Working Papers*, No. 27, OECD Publishing, Paris, *www.oecd.org/els/workingpapers*.

Daugstad, G. (2009), *Immigration and Immigrants 2008,* Statistics Norway, Oslo.

Davies, R. and G. Pierre (2005), "The Family Gap in Pay in Europe: A Cross-country Study", *Labour Economics*, Vol. 12, No. 4, pp. 469-486.

De la Rica, S. and A. Iza (2005), "Career planning in Spain: Do fixed-term contracts delay marriage and parenthood?", *Review of the Economics of the Household*, Vol. 3, pp. 49-73.

de La Rochebrochard, E. (2001), "Sterility, Fecundity: What about the Men?", *Population and Societies*, Vol. 371, September.

Del Boca, D., S. Pasqua and Ch. Pronzato (2009), "Market Work and Motherhood Decisions in Contexts", *Oxford Economic Papers*, Vol. 61, No. 1, pp. 147-171.

Drago, R., K. Sawyer, K. Sheffler, D. Warren and M. Wooden (2009), "Did Australia's Baby Bonus Increase the Fertility Rate?", *Melbourne Institute Working Paper Series*, No. 1/09.

Duvander, A.-Z. and G. Andersson (2006), "Gender Equality and Fertility in Sweden: A Study on the Impact of the Father's Uptake of Parental Leave on Continued Childbearing", *Marriage and Family Review,* Vol. 39, No. 1-2, pp. 121-142.

Duvander, A.-Z., T.T. Lappegård and G. Andersson (2010), "Family Policy and Fertility: A Comparative Study on the Impact of Fathers' and Mothers' Use of Parental Leave on Continued Childbearing in Norway and Sweden", *Journal of European Social Policy*, Vol. 20, No. 1, pp. 45-57.

Ekert, O. (1986), "Effets et limites des aides financières aux familles: une expérience et un modèle", *Population,* Vol. 41, No. 2, pp. 327-348.

Ekert-Jaffé, O. (1998), "Le coût de l'enfant: des résultats qui varient selon les types de familles et les hypothèses formulées", *Dossiers Solidarité Santé Politiques Familiales et Redistribution*, pp. 69-80.

Ekert-Jaffé, O. and A. Trognon (1994), "Évolution du coût de l'enfant avec le revenu : une méthode", in O. Ekert-Jaffé (ed.), *Standards of Living and Families : Observation and Analysis*, Congress & Colloquia, Paris, John Libbey and INED.

Engelhardt H., T. Kögel T. and A. Prskawetz (2004), "On the Changing Correlation Between Fertility and Female Employment Over Space and Time", *European Journal of Population,* Vol. 20, pp. 35-62.

Ermish, J. (1988), "Econometric Analysis of Birth Rate Dynamics in Britain", *Journal of Human Resources*, Vol. 23, No. 4, pp. 563-576.

ESHRE – *European Society of Human Reproduction and Embryology* (2010), "Europe: The Continent with Lowest Fertility", *Human Reproduction Update*, Vol. 16, No. 6, pp. 590-602.

Eun K.-S. (2007), "Lowest-low Fertility in the Republic of Korea: Causes, Consequences and Policy responses", *Asia-Pacific Population Journal*, Vol. 22, No. 2, pp. 51-72.

Eurobarometer (2008), *Family Life and the Needs of an Ageing Population*, Vol. 247, European Commision.

Eurostat (2006), "Household Budget Surveys", Eurostat, *http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-BF-03-003/DE/KS-BF-03-003-DE.PDF*.

Feijten, P. and C. Mulder (2002), "The Timing of Household Events and Housing Events in the Netherlands: A Longitudinal Perspective", *Housing Studies*, Vol. 17, No. 5, pp. 773-792.

Francesconi F. and K. Golsch (2005), "The Process of Globalization and Transitions to Adulthood in Britain", Chapter 10 in H.P. Blossfeld, E. Klijzing, M. Mills and K. Kurz (eds.), *Globalization, Uncertainty and Youth in Society,* Routledge Advances in Sociology Series, London/New York, pp. 249-276.

Frejka, T. (2008a), "Birth Regulation in Europe: Completing the Contraceptive Revolution", *Demographic Research*, Vol. 19, No. 1, pp. 73-84.

Frejka, T. (2008b), "Parity Distribution and Completed Family Size in Europe. Incipient Decline of the Two-child Family Model", *Demographic Research*, Special collection No. 7, *Childbearing Trends and Policies in Europe*, Vol. 19, Chapter 2, pp. 47-72.

Frejka, T. and J.P. Sardon (2007), "Cohort Birth Order, Parity Progression Ratio and Parity Distribution Trends in Developed Countries", *Demographic Research*, Vol. 16, No. 11, pp. 315-374.

Gabos, A., R. Gal and G. Kezdi (2009), "Birth Order Fertility Effects of Child-related Benefits and Pensions – A Test on Hungarian Data", *Population Studies: A Journal of Demography*, Vol. 63, No. 3, pp. 215-231.

Garssen, J. and H. Nicolaas (2008), "Fertility of Turkish and Moroccan Women in the Netherlands: Adjustment to Native Level within One Generation", *Demographic Research*, Vol. 19, No. 33, pp. 1249-1280.

Gauthier, A. (2007), "The Impact of Family Policies on Fertility in Industrialised Countries: A Review of the Literature", *Population Research Policy Review,* Vol. 26, No. 3, pp. 323-346.

Gauthier, A. and J. Hatzius (1997), "Family Benefits and Fertility: An Econometric Analysis", *Population Studies,* Vol. 51, pp. 295-306.

Girouard, N., M. Kennedy, P. van den Noord and Ch. André (2006), "Recent House Price Developments. The Role of Fundamentals", *OECD Economics Department Working Papers,* No. 75, OECD Publishing, Paris, *www.oecd.org/eco/workingpapers*.

Glaude, M. and M. Moutardier (1991), "Une évaluation du coût direct de l'enfant 1979 à 1989", *Économie et Statistique*, Vol. 248, pp. 33-49.

Goldstein, J., W. Lutz and M.R. Testa (2003), "The Emergence of Sub-replacement Family Size Ideals in Europe", *Population Research and Policy Review*, Vol. 22, pp. 479-496.

Goldstein, J.R., T. Sobotka and A. Jasilioniene (2009), "The End of 'Lowest-low Fertility?'", *Population and Development Review*, Vol. 35, No. 4, pp. 663-699.

Guo, Z., E. Zhang, B. Gu and F. Wang (2003), "Cong zhengce shengyu lu kan zhongguo shangyu zhengce de duo yangxing (The diversity of fertility policies in China from the viewpoint of 'political' fertility)", *Renkou yanjiu* (*Population Research*), Vol. 27, No. 5, pp. 1-10.

Habbema, J.D., M.J.C. Eijkemans, G. Nargund, G. Beets, H. Leridon and E.R. te Velde (2009), "The Effect of *in vitro* Fertilization on Birth Rates in Western Countries", *Human Reproduction*, Vol. 24, pp. 1414-1419.

Hakim, C. (2003), *Models of the Family in Modern Societies: Ideals and Realities,* Ashgate, Aldershot.

Hank, K. and M. Kreyenfeld (2002), "A Multilevel Analysis of Childcare and the Transition to Motherhood in West Germany", *Discussion Paper,* No. 290, DIW, Berlin.

Harkness, S. and J. Waldfogel (2003), "The Family Gap in Pay: Evidence from Seven Industrialized Countries", *Research in Labor Economics*, Vol. 22, pp. 369-414.

Henman, P. (2005), *Updated Costs of Children Using Australian Budget Standards*, School of Social Work and Applied Human Science, University of Queensland, Australia.

Héran, F. and G. Pison (2007), "Two Children per Woman in France in 2006: Are Immigrants to Blame?", *Population and Societies,* Vol. 432, March.

Hilgeman, Ch. and C. Butts (2009), "Women's Employment and Gertility: A Welfare Regime Paradox", *Social Science Research*, Vol. 38, pp. 103-117.

Hoem, B. (2000), "Entry into Motherhood in Sweden: The Influence of Economic Factors on the Rise and Fall in Fertility, 1986-1997", *Demographic Research*, Vol. 2, No. 4, pp. 1-28.

Hoem, J. (1993), "Public Policy as the Fuel of Fertility: Effects of a Policy Reform on the Pace of Childbearing in Sweden in the 1980s", *Acta Sociologica,* Vol. 36, pp. 19-31.

Hoorens, S., F. Gallo, J.A.K. Cave and J.C. Grant (2007), "Can Assisted-reproductive Technologies Help to Offset Population Ageing? An Assessment of the Demographic and Economic Impact of ART in Denmark and UK", *Human Reproduction*, Vol. 22, pp. 2471-2475.

Hotz, V.J., J.A. Klerman and R. Willis (1997), "The Economics of Fertility in Developed Countries", in M. Rosenzweig and O. Stark (eds.), *Handbook of Population and Family Economics,* Vol. 1A, Elsevier, Amsterdam, pp. 276-347.

Hourriez, J.M. and L. Olier (1997), "Niveau de vie et taille des ménages : estimation d'une échelle d'équivalence", *Economie et Statistique*, Vol. 308-309-310, pp. 65-94.

ISTAT – Istituto Nazionale di Statistica (2009), *Indicatori demografici – anno 2008,* Istituto Nazionale di Statistica, Roma, *http://demo.istat.it/altridati/indicatori/index_e.html*.

Kahn, J.R. (1994), "Immigrant and Native Fertility during the 1980s: Adaptation and Expectations for the Future", *International Migration Review*, Vol. 38, No. 3, pp. 501-519.

Kalwij, A. (2010), "The Impact of Family Policy Expenditures on Fertility in Western Europe", *Demography,* Vol. 47, No. 2, pp. 503-519.

Kaneko, R., S. Tsukasa, S. Kamano, M. Iwasawa, F. Mita and R. Moriizumi (2008), "Marriage Process and Fertility of Japanese Married Couples", *Japanese Journal of Population*, Vol. 6, No. 1, pp. 24-50.

Kögel, T. (2004), "Did the Association between Fertility and Female Employment within OECD Countries Really Change its Sign?", *Journal of Population Economics,* Vol. 17, pp. 45-65.

Kohler, H.-P., F. Billari and J. Ortega (2006), "Low Fertility in Europe: Causes, Implications and policy options", in F.R. Harris (ed.), *The Baby Bust: Who Will Do the Work? Who Will Pay the Taxes?*, Rowman & Littlefield Publishers, Lanham, United States, pp. 48-109.

Konietzka, D. and M. Kreyenfeld (2007), *Ein Leben ohne Kinder: Kinderlosigkeit in Deutschland*, VS Verlag für Sozialwissenschaften, Wiesbaden.

Kravdal, Ø. (2002), "The Impact of Individual and Aggregate Unemployment on Fertility in Norway", *Demographic Research,* Vol. 6, No. 10, pp. 263-294.

Kreyenfeld, M. (2010), "Uncertainties in Female Employment Careers and the Postponement of Parenthood in Germany", *European Sociological Review,* Vol. 26, pp. 351-366.

Kryger, T. (2006), "House Prices", *Research Note,* No. 7, *Parliamentary Library*, Canberra.

Kulu, H. and A. Vikat (2007), "Fertility Differences by Housing Type: The Effect of Housing Conditions or of Selective Moves?", *Demographic Research*, Vol. 17, pp. 775-802.

Landais, C. (2003), " Le quotient familial a-t-il stimulé la natalité française", *Économie Publique,* Vol. 13, pp. 3-31.

Lappegard, T. (2009), "Family Policies and Fertility in Norway", *European Journal of Population,* online first *DOI 10.1007/s10680-009-9190-1.*

Laroque, G. and B. Salanié (2005). "Does Fertility Respond to Financial Incentives?", *IZA Discussion Paper,* No. 3575.

Laroque, G. and B. Salanié (2008), "Does Fertility Respond to Financial Incentives?", *Working Paper*, CREST, Paris.

Lee, S.-S. (2010), "Causes of Low Fertility and Appropriateness of Pronatal Policy Measures in Korea", *International Conference on Population Prospects and Policy Responses*, Seoul, 14-15 July.

Lee, S.-S. (2009), "Low Fertility and Policy Responses in Korea", *Japanese Journal of Population*, Vol. 7, No. 1, pp. 57-70.

Léridon, H. (2006), "Demographic Effects of the Introduction of Steroid Contraception in Developed Countries", *Human Reproduction Update*, Vol. 12, No. 5, pp. 603-615.

Léridon, H. (2008), "A New Estimate of Permanent Sterility by Age: Sterility Defined as the Inability to Conceive", *Population Studies,* Vol. 62, No. 1, pp. 15-24.

Léridon, H. and R. Slama (2008), "The Impact of a Decline in Fecundity and of Pregnancy Postponement on Final Number of Children and Demand for Assisted-reproduction Technology", *Human Reproduction*, Vol. 23, pp. 1312-1319.

Lesthaeghe, R. (2010), "The Unfolding Story of the Second Demographic Transition", *Population and Development Review,* Vol. 36, No. 2, pp. 211-251.

Liefbroer, A.C. (2005), "The Impact of Perceived Costs and Rewards of Childbearing on Entry to Parenthood: Evidence from a Panel Study", *European Journal of Population*, Vol. 21, pp. 367-391.

Liefbroer, A.C. and M. Corijn (1999, "Who, What, Where, and When? Specifying the Impact of Educational Attainment and Labour Force Participation on Family Formation", *European Journal of Population,* Vol. 15, pp. 45-75.

Lino, M. and A. Carlson (2009), *Expenditures on Children by Families, 2008*, US Department of Algriculture, Center For Nutrition Policy and Promotion, Miscellaneous Publications, No. 1528-2008.

Lovenheim, M. and K. Mumford (2010), "Do Family Wealth Shocks Affect Fertility Choices? Evidence from the Housing Market Boom and Bust", *Purdue University Economics Working Papers,* No. 1228, Department of Economics, Purdue University.

Luci, A. and O. Thévenon (2010), "Does Economic Development Drive the Fertility Rebound in OECD Countries?", *INED Working Paper*, No. 167, Paris, *www.ined.fr/fichier/t_publication/1514/publi_pdf1_dt_167.pdf.*

Luci, A. and O. Thévenon (2011), "The Impact of Family Policy Packages on Fertility Trends of OECD Countries", *Population American Association*, Washington, 30 march-2 April.

Lundström, K.E. (2009), "Labour Market Status and Fertility Behaviour for Swedish and Foreign-born Men and Women", Paper presented at the workshop on "Economic uncertainty and fertility dynamics", Berlin, 3-4 July, 2009.

Lutz, W. (2007), "Adaptation versus Mitigation Policies on Demographic Change in Europe", *Vienna Yearbook of Population Research,* pp. 19-27.

Lutz, W. and V. Skirbekk (2005), "Policies Addressing the Tempo Effect in Low-fertility Countries", *Population and Development Review,* Vol. 31, No. 4, pp. 699-720.

McDonald, P. (2010), "Pourquoi la fécondité est-elle élevée dans les pays anglophones?", *Politiques Sociales et Familiales*, Vol. 100, pp. 23-40.

Meron, M. and I. Widmer (2002), "Les chômeuses retardent l'arrivée du premier enfant", *Population*, Vol. 57, No. 2, pp. 327-358.

MEXT (2010), *White Paper*, Ministry of Education, Culture, Sports , Science and technology, Japan, *www.mext.go.jp/b_menu/houdou/22/06/__icsFiles/afieldfile/2010/06/22/1294984_02_2.pdf*.

Milligan, K. (2005), "Subsidizing the Stork: New Evidence on Tax Incentives and Fertility", *Review of Economics and Statistics*, Vol. 87, No. 3, pp. 539-555.

Mills, M., H.-P. Blossfeld and E. Klijzing (2005), "Becoming an Adult in Uncertain Times. A 14-Country Comparison of the Losers of Globalization", Chapter 17 in H.-P. Blossfeld, E. Klijzing, M. Mills and K. Kurz (eds.), *Globalization, Uncertainty and Youth in Society*, Routledge Advances in Sociology Series, London/New York, pp. 423-441.

Mörk, E., A. Sjörgen and H. Svaleryd (2009), "Cheaper Childcare, More Children", *IZA Discussion Paper*, No. 3942, Bonn.

Mulder, C. (2006a), "Population and Housing: A Two-sided Relationship", *Demographic Research*, Vol. 15, pp. 401-412.

Mulder, C. (2006b), "Home-ownership and Family Formation", *Journal of Housing and the Built Environment*, Vol. 21, No. 3, pp. 281-298.

Mulder, C. and F. Billari (2010), "Home-ownership Regimes and Low Fertility", *Housing Studies*, Vol. 25, No. 4, pp. 527-541.

Mulder, C. and M. Wagner (2001), "The Connection between Family Formation and First-time Home-ownership in the Context of West Germany and the Netherlands", *European Journal of Population*, Vol. 17, pp. 137-164.

Myrskylä, M., H.P. Kohler and F. Billari (2009), "Advances in Development Reverse Fertility Declines", *Nature*, Vol. 460, No. 6, pp. 741-743, *DOI:10.1038/nature 08230*.

OECD (2002), "Women at Work: Who Are They and How Are They Faring?", Chapter 2 in *OECD Employment Outlook*, OECD Publishing, Paris, pp. 61-126.

OECD (2005), *Babies and Bosses: Reconciling Work and Family Life. Canada, Finland, Sweden and the United Kingdom*, OECD Publishing, Paris, *www.oecd.org/els/social/family*.

OECD (2007), *Facing the Future: Korea's Family, Pension and Health Policy Challenges*, OECD Publishing, Paris.

OECD (2010a), *OECD Reviews of Labour Market and Social Policies: Israel*, OECD Publishing, Paris, *www.oecd.org/els/israel2010*.

OECD (2010b), *OECD Family Database*, OECD Publishing, Paris, *www.oecd.org/els/social/family/database*.

OECD (2010c), *Housing Price Indices*, OECD Publishing, Paris.

OECD (2010d), *Education at Glance*, OECD Publishing, Paris, *www.oecd.org/edu/eag2010*.

OECD (2011a), *OECD Population Statistics – Historical Population Data and Projections (1950-2050)*, OECD Publishing, Paris, *http://dotstat.oecd.org/Index.aspx*.

OECD (2011b), *OECD Reviews of Labour Market and Social Policies: Russian Federation,* OECD Publishing, Paris.

Ogawa, N., A. Mason, A. Chawla, R. Matsukura and A.-C. Tung (2009), "Declining Fertility and the Rising of Children. What Can NTA Say about Low Fertility in Japan and Other Asian Countries?", *Asian Population Studies*, Vol. 5, No. 3, pp. 289-307.

Ohinata, A. (2008), "Fertility Response to Financial Incentives. Evidence from the Working Families Tax Credit in the UK", *Warwick Economic Research Paper*, Vol. 851.

Oláh, L. and E. Bernhardt (2008), "Sweden: Combining Childbearing and Gender Equality", *Demographic Research,* Special Collection 7, Vol. 19, No. 25, pp. 1105-1143.

Østby, L. (2002), "The Demographic Characteristics of Immigrant Populations in Norway", *Reports 2002/22*, Statistics Norway, Oslo.

Oyama, M. (2004), "Cost of Raising Children and the Recent Fertility Decline in Japan", *Jinkogaku Kenkyu* (*Journal of Population Studies*), Vol. 35, pp. 45-57.

Pailhé, A. (2009), "Work-family Balance and Childbearing Intentions in France, Germany and the Russian Federation", Chapter 3 in UNECE (eds.), *How Generations and Gender Shape Demographic Change. Towards Policies Based on Better Knowledge*, United Nations, Geneva, pp. 58-82.

Pailhé, A. and A. Solaz (2009), "Does Economic Uncertainty Affect Plans, Timing or Level of Fertility? Evidence from France", Paper presented at the workshop on "Economic uncertainty and fertility dynamics", Berlin, 3-4 July.

Parr, N. and R. Guest (2010), "The Contribution of Recent Increases in Family Benefits to Australia's Early 21st Century Fertility Increase: An Empirical Analysis", *European Population Conference*, 4-6 September, Vienna.

Percival, R. and A. Harding (2005), *The Estimated Costs of Children in Australian Families in 2005-06,* Research Report for the Ministerial task Force on Child Support.

Philipov, D., O. Thévenon, J. Koblas, L. Bernardi and A. Liefbroer (2009), "Reproductive Decision-making in a Macro-micro Perspective (REPRO): State-of-the-Art Review", *European Demographic Research Paper,* Vol. 1, Vienna Institute for Demographic Research.

Piketty, Th. (2005), "L'impact de l'allocation parentale d'éducation sur l'activité féminine et la fécondité en France, 1982-2002", in C. Lefèvre (ed.), *Histoires de familles, histoires familiales*, *Les Cahiers de l'INED*, Vol. 156, INED, Paris, pp. 79-109.

Poulain, M. and N. Perrin (2002), "The Demographic Characteristics of Immigrant Populations in Belgium", in W. Haug, P. Compton and Y. Courbage (eds.), *The Demographic Characteristics of Immigrant Populations, Population Studies*, No. 38, Council of Europe Publishing, Strasbourg, pp. 57-130.

Rindfuss, R. and S. Brauner-Otto (2008), "Institutions and the Transition to Adulthood: Implications for Fertility Tempo in Low Fertility settings", *Vienna Yearbook of Population Research,* pp. 57-87.

Rindfuss, R., D. Guilkey, Ph. Morgan and Ø Kravdal (2010), "Childcare Availability and Fertility", *Population and Development Review*, forthcoming.

Rindfuss, R., G. Guilkey, S. Morgan, Ø. Kravdal and K.B. Guzzo (2007), "Child Care Availability and First-Birth Timing in Norway", *Demography,* Vol. 44, No. 2, pp. 345-372.

Ronsen, M. (2004), "Fertility and Family Policy in Norway – A Reflection on Trends and Possible Connections", *Demographic Research,* Vol. 10, No. 10, pp. 265-286.

Ronsen, M. and K. Skrede (2008), "Fertility Trends and Differentials in the Nordic Countries – Footprints of Welfare Policies and Challenges on the Road Ahead", *Vienna Yearbook of Population Research 2008,* pp. 103-123.

Sardon, J.P. (2006), "Recent Demographic Trends in Developped Countries", *Population* (*English Edition*), Vol. 61, No. 3, pp. 225-300.

Schmid, S. and M. Kohls (2010), "Reproductive Behaviour of Migrant women in Germany: Data, Patterns and Determinants", *Vienna Yearbook of Population Research* 2009.

Schoorl, J. (1995), "Fertility Trends of Immigrant Populations", in S. Voets, J. Schoorl and B. de Bruijn (eds.), *The Demographic Consequences of International Migration,* Proceedings of symposium, NIAS, Wassenaar, 27-29 September 1990, Report No. 44, NIDI, pp. 97-121, The Hague.

SFSO – Swiss Federal Statistical Office (2009), *Demografisches Porträt der Schweiz. Ausgabe 2009,* Swiss Federal Statistical Office, Neuchâtel.

Sigle-Rushton, W. and J. Waldfogel (2007), "Motherhood and Women's Earnings in Anglo-American, Continental European, and Nordic Countries", *Feminist Economics*, Vol. 13, No. 2, pp. 55-91.

Sinyavskaya, O. (2011), "Reconciliation of Familialism? Delusive Aims and Real Features of Russian Family Policies in Soviet and Post-Soviet Times", Draft mimeo, University of Moscow, forthcoming.

Skrede, K. (2005), "Foreldreskap i forandring – færre menn blir fedre", *Tidsskrift for kjønnsforskning*, Vol. 29, No. 2, pp. 4-22.

Sleebos, J. (2003), "Low Fertility Rates in OECD Countries: Facts and Policy Responses", *OECD Labour Market and Social Policy Occasional Papers*, Vol. 15, OECD Publishing, Paris.

Sobotka, T. (2004), "Postponement of Childbearing and Low Fertility in Europe", Doctoral thesis, University of Groningen, Dutch University Press, Amsterdam.

Sobotka, T. (2008), "The Rising Importance of Migrants for Childbearing in Europe", in T. Frejka, T. Sobotka, J.M. Hoem and L. Toulemon (eds.), *Childbearing trends and policies in Europe. Demographic Research*, Special Collection 7, Vol. 19, No. 9, pp. 225-248.

Sobotka, T. (2010), "Les migrants exercent-ils une influence croissante sur la fécondité en Europe?", *Politiques Sociales et Familiales*, Vol. 100, pp. 41-59.

Sobotka T., V. Skirbekk and D. Philipov (2010), "Economic Recession and Fertility in the Developed World: A Literature Review", *Vienna Institute for Demography*, Report for the European Commission.

Sobotka, T., M.A Hansen, T.K. Jensen, A.T. Pedersen, W. Lutz and N.E. Skakkebæk (2008), "The Contribution of Assisted Reproduction to Completed Fertility: An Analysis of Danish Data", *Population and Development Review*, Vol. 34, pp. 79-101.

Speder, Z. and F. Kamaras (2008), "Hungary: Secular Fertility Decline with Distinct Period Fluctuations", *Demographic Research*, Vol. 19, Special Issue "Childbearing Trends and Policies in Europe", pp. 599-664.

Statistics Austria (2009), *Demographisches Jahrbuch* 2008, Statistics Austria, Vienna.

Statistics Denmark (2009), *Befolkningens udvikling 2008 – Vital statistics 2008,* Danmarks Statistik, Copenhagen.

Statistics Sweden (2009), *Tabeller över Sveriges befolkning 2008,* Statistiska centralbyrån, Stockholm.

Suzuki, T. (2009), "Fertility Decline and Governmental Interventions in Eastern Asian Advanced Countries", *Japanese Journal of Population*, Vol. 7, No. 1, pp. 47-56.

Suzuki, T. (2010), "Very Low Fertility and Pronatal Policy Interventions in Japan", *International Conference on Population Prospects and Policy Responses*, Seoul, 14-15 July.

Takahashi, S. (2004), "Demographic Investigation of the Declining Fertility Process in Japan", *Japanese Journal of Population*, Vol. 2, No. 1, pp. 93-116.

Thévenon, O. (2009), "Increased Women's Labour Force Participation in Europe: Progress in the Work-Life Balance or Polarization of Behaviours?", *Population* (*English Edition*), Vol. 64, No. 2, pp. 235-272.

Thévenon, O. (2010), "Does Fertility Respond to Work and Family-life Reconciliation Policies in France?"; in N.I. Takayama and M. Werding (eds.), *Fertility and Public Policy: How To Reverse the Trend of Declining Birth Rates,* Chapter 10, MIT-Press, Cambridge and London.

Thévenon, O. (2011), "Family Policies in OECD Countries: A Comparative Analysis", *Population and Development Review*, Vol. 37, No 2, forthcoming.

Thévenon, O. and A. Gauthier (2011), "Family Policies in Developed Countries: A 'Fertility-Booster' with Side-effects", *Community, Work and Family*, Vol. 14, No. 2, forthcoming.

Tsimbos, C. (2008), "Immigrant and Native Fertility in Greece: New Estimates and Population Prospects (2005-2025)", *Population Review*, Vol. 47, No. 2, pp. 67-84.

Todd, P.E. and K.I. Wolpin (2006), "Assessing the Impact of a School Subsidy Program in Mexico: Using a Social Experiment to Validate a Dynamic Behavioural Model of Child Schooling and Fertility", *American Economic Review*, Vol. 96, No. 5, pp. 1384-1418.

Toulemon, L. (2004), "Fertility among Immigrant Women: New Data, New Approach", *Population & Societies*, Vol. 400, April, pp. 1-4.

Toulemon, L. (2006), "La fécondité est-elle encore naturelle. Application au retard des naissances et à son influence sur la descendance finale", *Entre nature et culture : quelle(s) démographie(s) ?*, Academia-Bruylant, Louvain-la-Neuve, Belgium, pp. 15-42.

Toulemon, L. (2010), *Transition to Adulthood in Europe: Is there a Convergence between Countries and between Men and Women?,* Research Note for the European Commission, INED, Paris.

Toulemon, L. and M. Mazuy (2004), "Comment prendre en compte l'âge à l'arrivée et la durée de séjour en France dans la mesure de la fécondité des immigrants?", *Documents de travail,* No. 120, INED, Paris.

Tromans, N., E. Natamba and J. Jefferies (2009), "Have Women Born Outside the UK Driven the Rise in U.K. Births since 2001?", *Population Trends*, Vol. 136, pp. 28-42.

United Nations (2004), *World Population to 2300*, Department of Economic and Social Affairs, Population Division, New York.

United Nations (2009), *World Contraceptive Use 2009*, United Nations, New York.

Van Bavel, J. and V. Bastiaenssen (2006), "De evolutie van de vruchtbaarheid in het Vlaamse Gewest tussen 2001 en 2005", *Interface Demography Working Paper,* No. 2006-1, Vrije Universiteit Brussel, Brussels.

Van de Velde, C. (2008), *Devenir adulte. Sociologie comparée de la jeunesse en Europe,* Presses Universitaires de France, Paris.

Vikat, A. (2004), "Women's Labour Force Attachment and Childbearing in Finland", *Demographic Research*, Special Collection, Vol. 3, No. 1, pp. 175-212.

Willis, R. (1973), "A New Approach to the Economic Theory of Fertility Behaviour", *Journal of Political Economy*, Vol. 81, pp. S14-S64.

Wittwer, J. (1993), "Le coût de l'enfant en termes relatifs est fonction croissante du budget des ménages", *Économie et Prévision*, No. 110-111, pp. 183-195.

Zhang, X. (2010), "Can Motherhood Earnings Losses Be Ever Regained? Evidence from Canada", *Journal of Family Issues*, Vol. 31, No. 12, pp. 1671-1688.

Ziebe, S. and P. Devroey, on behalf of the State of the ART 2007 Workshop Group (2008), "Assisted-reproductive Technologies Are an Integrated Part of National Strategies Addressing Demographic and Reproductive Challenges", *Human Reproduction Update*, Vol. 14, pp. 583-592.

ANNEX 3.A1

A Summary of Cross-National Evidence on the Effects of Policy on Fertility Patterns

The total fertility rate (TFR) is used by the first three studies to capture fertility trends, but this indicator does not capture changes in timing of family formation. Therefore, Kalwij (2010) separately uses retrospective data on the timing of births and the completed family size, while Luci and Thévenon (2011) use both TFRs and tempo-adjusted fertility rates. Hilgeman and Butts (2009) use the number of children ever born for women aged between 18 and 45 at the time of the survey.

The indicators used to account for policy variation differ across studies:

- A first difference lies in the way the generosity of financial support to families is captured. D'Addio and Mira d'Ercole (2005) use the difference in net disposable income of a single-earner family with two children and average earnings compared with those of a childless household with same earnings to approximate the financial support received by families. This covers family support provided through the tax system (although variations across household types are not accounted for). By contrast, Gauthier and Hatzius (1997), Kalwij (2010) and Luci and Thévenon (2011) consider the financial assistance transiting through family benefit only. Gauthier and Hatzius measure the generosity of family benefits as a percentage of average the wage; Kalwij (2010) considers the average amount of public expenditures per child below age 16 for employed women – but fiscal support is not included.
- As for leave policies, all the four studies (Gauthier-Hatzius, D'Addio-Mira d'Ercole, Hilgeman-Butts and Luci-Thévenon) consider the differences in the duration of leave entitlements. Luci-Thévenon consider the addition of maternity and parental leave, while D'Addio, Mira d'Ercole and Gauthier-Hatzius considered maternity leave only. Payment conditions are also assessed differently: replacement rates during maternity leave are taken into account by Gauthier-Hatzius and D'Addio-Mira d'Ercole; Kalwij only considers average leave-related expenditure per child under age 1; and Luci-Thévenon consider both the replacement rate obtained during maternity leave and the yearly expenditures on maternity, paternity or parental leave per birth, including as well the other birth grants.
- Finally, only Kalwij, Hilgeman-Butts and Luci-Thévenon use information on childcare expenditures and/or enrolment of children under age 3 in formal childcare. Only Luci-Thévenon include these two parameters.

Table 3.A1.1. **The effect of family policies on fertility: results from cross-country analyses**

	Explained variable	Financial transfer	Leave entitlements			Childcare provisions		Country and period covered – methodology
			Duration	Payment rate of maternity leave	Spending per child (all leave included)	Spending per child	Enrolment rates	
Gauthier and Hatzius (1997)	Total fertility rates (for women with 1, 2 or 3 and more children separately)	Positive	Positive but statistically insignificant	Negative but statistically insignificant	–	–		22 OECD countries 1970-1990 – Panel data methods
Adsera (2004)	Total fertility rates	–	Positive	–	–	–		28 OECD countries 1960-1997 – Panel data methods-
D'Addio and Mira d'Ercole (2005)	Total fertility rates	Positive	Negative	Positive	–	–		16 OECD countries 1980-1999 – Panel data methods
Hilgeman and Butts (2009)	Achieved fertility at age 18-45	–	Negative	Not significant	–	–	Positive	20 OECD countries, 1995-2000 waves of European or World Value Surveys – Cross-sectional multilevel approach
Kalwij (2010)	Timing of birth	No effect	Not included	–	Positive	No effect	Not included	16 European countries – Event history analysis Information on individual fertility history from the European Social Survey 2004
	Completed family size	No effect			No significant effect	Positive		
Luci and Thévenon (2011)	TFR	Positive	Positive	–	Positive	Not significant	Positive	OECD countries 1982-2007 – Panel data methods

Source: Studies are listed in references at the end of this chapter.

StatLink http://dx.doi.org/10.1787/888932394053

Chapter 4

Reducing barriers to parental employment

This chapter provides an overview of how the design of parental leave policy, childcare policy, flexible workplace practices, national tax/benefit systems and financial incentive structures may affect the parental decision to engage in paid work.

If paid parental leave is too short, mothers may not be ready to return to work and instead drop out of the labour force. At the same time, if paid leave is too long, skills may deteriorate and an extended absence from paid work can make the return to work difficult. Using data on parental leave reform, this chapter considers the overall effects of 40 years of changes in parental leave on female labour supply. The chapter also looks at how policy uses parental leave arrangements to promote more gender equity in leave taking.

Childcare constraints play an important role in parents' work decisions. Cross-national variations in childcare participation of 0-2 year-olds tend to be related to the degree of public financing of childcare. The price of childcare also plays an important role, and in some countries it does not pay to work once childcare costs are considered.

This chapter also includes an overview of flexible workplace practices, such as measures to facilitate nursing, flexible working times, time-saving opportunities and statutory entitlements to change working hours.

Introduction

The decision and timing of parents to (re-)enter the workplace after childbirth can be influenced by many different factors including: individual preferences regarding return to work, the duration of paid child-related leave schemes, the availability of informal childcare, the availability and cost of formal childcare, the earnings of spouses and workplace support for parents. This chapter discusses the effect of parental leave policy (including additional leave to care for sick children), childcare policy, flexible workplace practices, national tax/benefit systems and financial incentive structures on parental decisions to engage in paid work.

There are different child-related leaves and these can serve different objectives. Maternity or pregnancy leave provides direct health protection for mothers and infants. Employment-protected parental leave is generally supplemental to maternity leave and additional home-care leave (payments which are not restricted to employed parents) help parents to provide personal care for very young children. Such measures may be good for children's development (Chapter 5), but long parental leave periods harm women's attachment to the labour market. This chapter considers the overall effects of 40 years of parental leave reform on female labour supply. Parental leave design and paternity leave arrangements also provide policy makers with a rare direct tool to generate more gender equity in paid and unpaid work, and this chapter looks at how policy tries to stimulate leave-taking among fathers.

The availability of childcare solutions and out-of-school hours care services are often crucial for parental labour market decisions. Apart from capacity and quality issues, the price of childcare plays an important role in the overall work incentives for parents. In some countries, after accounting for childcare costs, it does not pay for some parents to be in paid work, even though the longer-term positive earnings effect of staying in work may outweigh the direct childcare costs.

Formal childcare constraints can also lead to reliance on informal carers, often grandparents, and adjustment of working hours. The chapter concludes with an overview of flexible workplace practices, such as measures to facilitate nursing during infancy, and more generally during childhood, including flexible working times, time-saving opportunities, and statutory entitlements to change working hours.

Main findings

- *Except in the United States, OECD countries have an average paid maternity leave of 19 weeks.* Maternity benefit payment rates are often earnings-related, but capped at an upper income threshold. In about one-third of OECD countries, maternity payments replace previous earnings in full.
- *There is considerable variation in the duration of paid parental leave (or childcare or home-care leave) arrangements.* Ten OECD countries do not grant any paid parental leave and duration varies. In countries where paid parental leave was introduced before the

early 1980s, leave duration often exceeds two years, except in Germany where the 2007 reform reduced the paid leave period that most parents take. In Austria and the Czech Republic, the duration of income support payments to families with young children is longer than the period of employment-protected leave, which increases the risk of employees not returning to work when leave runs out. Making the final leave payment conditional to the actual return of leave-takers to their original employer, as in Korea, may reduce employer aversion to introducing and extending leave entitlements.

- *Parental leave payment rates, often flat-rate, are considerably lower than for maternity leave.* Nevertheless, such income support limits the incentives to work for low-income earners (Chapter 2), while using leave entitlements carries high opportunity costs for middle and high-income earners. Similarly, as fathers often have higher earnings than their spouses, mothers make far more use of parental leave entitlements than fathers.
- *There has been some progress towards a more gender equitable use of leave entitlements.* Entitlements to parental leave in OECD countries are often "family-based", *i.e.* rights can be transferred between parents. In practice, however, mothers predominantly use parental leave. A strategy combining different elements, possibly including greater opportunities for flexible use of leave, increased payment rates for shorter duration, and an increase in the non-transferable paternal entitlement to paid leave will increase chances of more equal leave sharing between mothers and fathers.
- *Many countries provide parents with a limited number of short-term sick days to care for children.* Prolonged periods of publicly paid leave to care for sick, disabled or otherwise dependent relatives exist in some countries and seem most comprehensive in Austria, France Hungary, Sweden and Italy.
- *Financial support for (public and private) childcare providers and parents reduce a key barrier to employment participation for many parents with young children.* During the past ten years, childcare participation rates have increased in OECD countries, but, rates tend to vary across countries according to the degree of public childcare supports, especially for children under 3. Even though childcare support is targeted at low-income families in many OECD countries, they often face higher average effective tax rates than workers in higher income groups. Across countries, participation in formal childcare services tends to increase with household's income.
- *Informal care, frequently provided by grandparents, is an important part of work/family reconciliation strategies.* Some countries have started to make care supports and/or leave entitlements available to grandparents.
- *Out-of-school-hours care services are widely available in some OECD countries (Australia, Denmark, Estonia, Hungary and Sweden).* But in the majority of countries these services are still in a developmental stage. Children from disadvantaged backgrounds tend to benefit most from these services, but seem to be under-represented among users of these services.
- *There is potentially a "business case" for family-friendly workplace support.* Having a family-friendly workplace can motivate current staff, reduce staff turnover and sickness absenteeism, help attract new staff, reduce workplace stress and generally enhance worker satisfaction and productivity. The "business case" is strongest for workers who are difficult to replace, and for flexible workplace arrangements that least affect the production process. Employers frequently offer part-time employment opportunities, but the business case for working time flexibility with employees choosing their own start and finishing times, or teleworking is less evident.

- *There should be no barriers to work part-time for those who wish to do so, but barriers to move from part-time to full-time employment should also be removed.* The 2010 edition of *OECD Employment Outlook* showed that many parents remain in part-time employment for prolonged periods. Reform of the tax/benefit system to increase financial incentives to work more, greater support from employment services for part-time workers, and legal entitlements to increase working hours after a period of part-time work, are among the measures that could contribute to more parents engaging in full-time employment, and further reduce family poverty risks and promote labour supply, gender equity and economic self-sufficiency. At the same time about 83% of part-time workers do so voluntarily, and particularly the large group of female part-time workers is broadly satisfied with their employment outcomes. Evidence on job-satisfaction suggests that women working part-time voluntary often accept lower earnings potential and less job security in exchange for better working-time arrangements and less stress.

Child-related leave

Duration and payment across countries

Maternity (or pregnancy), paternity and parental leave entitlements grant employment protection to parents who are absent from work as they provide personal care to their very young children. This period is often covered by public income supports, which can be topped-up by employers. In some countries, parental leave is supplemented by a further period of leave (home-care leave/childcare leave) that parents can take to care for a young child, often up to age 3: income support during this period is considerably lower than during periods of maternity/parental leave (Box 4.1).[1]

Box 4.1. **Defining different types of parental leave**

Maternity leave (or pregnancy leave): Employment-protected leave of absence for employed women at around the time of childbirth, or adoption in some countries. Almost all OECD countries have ratified the International Labour Organisation (ILO) recommended minimum period of 14 weeks of paid leave, but many countries have fixed maternity leave entitlements above this minimum (ILO, 2010). In most countries, beneficiaries may combine pre- with post-birth leave; in some countries a short period of pre-birth leave is compulsory as is a six- to ten-week leave period following birth. Almost all OECD countries provide for specific public income support payments that are tied to the maternity leave period.

Paternity leave: Employment-protected leave of absence for employed fathers at the time of childbirth. Periods of paternity leave are much shorter than for maternity leave, and are two weeks at maximum. Because of the short period of absence, workers on paternity leave often continue to receive full wage payments.

Parental leave: Employment-protected leave of absence for employed parents, which is often supplementary to specific maternity and paternity leave periods (as above), and usually, but not in all countries, follows the period of maternity leave. Entitlement to the parental leave period is individual, while entitlement to public income support is often family-based, so that only one parent claims such support at any one time.

Home-care leave: Leave to care for children until they are about three years old. These leaves can be a variation or an extension of parental leaves, and payments are not restricted to parents with a prior work attachment. In Finland, relevant income support payments are contingent on not using public day-care facilities, while in Norway payment rates vary with the number of hours that public day-care is used.

OECD countries introduced maternity (or pregnancy) leave entitlements to protect the health of working mothers and their newborn children. Therefore, it is often part of social insurance systems, alongside health insurance and paid sick leave. It provides women with a period of rest around childbirth and guarantees a return to the previous job within a limited number of weeks after childbirth. Maternity or pregnancy leave is generally available to mothers only, but in some countries (Belgium, Finland, Germany, Israel, Italy, Portugal, Poland, Slovenia and Spain) part of the leave can be transferred to fathers under certain circumstances. A minimum period out of work around childbirth is mandatory, but the exact timing of leave varies across countries, and in any case, can be adjusted for medical reasons or by employer-employee agreement.

Across the OECD, the average duration of maternity leave was around 19 weeks in 2008 (Figure 4.1, Panel A). Women are entitled to the longest period (52 weeks) in the United Kingdom. By contrast, the period was shortest in Australia where within the 52 week parental leave entitlement only 6 weeks were reserved for the mother.[2] In the United States, the only country without federal or central government legislation on paid maternity leave, programmes in some individual States provide income support during leave through either sick-leave insurance or maternity leave programmes (Kamerman and Waldfogel, 2010).

Entitlements to parental leave including additional home care or childcare leave periods (Annex 4.A1 and OECD, 2010d, PF2.1) vary widely in duration across the OECD: from no parental leave (Chile, Israel, Mexico, Switzerland and the United States) to 156 weeks in 2008 in Poland (Figure 4.1).[3]

Parental leave payment rates are often considerably lower than maternity pay, and income support often only covers a limited part of the parental leave period (Figure 4.1, Panel B). In 2008, parental leave was unpaid in eight countries (Australia, Greece, Ireland, New Zealand (assuming paid leave is taken by the mother), Portugal, Spain, Turkey, the United Kingdom); 12 countries supply benefits covering the complete period of leave; and 14 countries only make payments during part of the period of employment-protected leave. The gap between duration of unpaid and paid leave is largest in Germany where since 2007 parents can claim a three-year period of employment-protected leave, while payments are generally limited to 12 months (see below). In Austria and the Czech Republic, the period of income support exceeds the period of employment-protected leave. Policy design thus provides financial incentives to leave the labour force, which are strongest for those on low earnings.

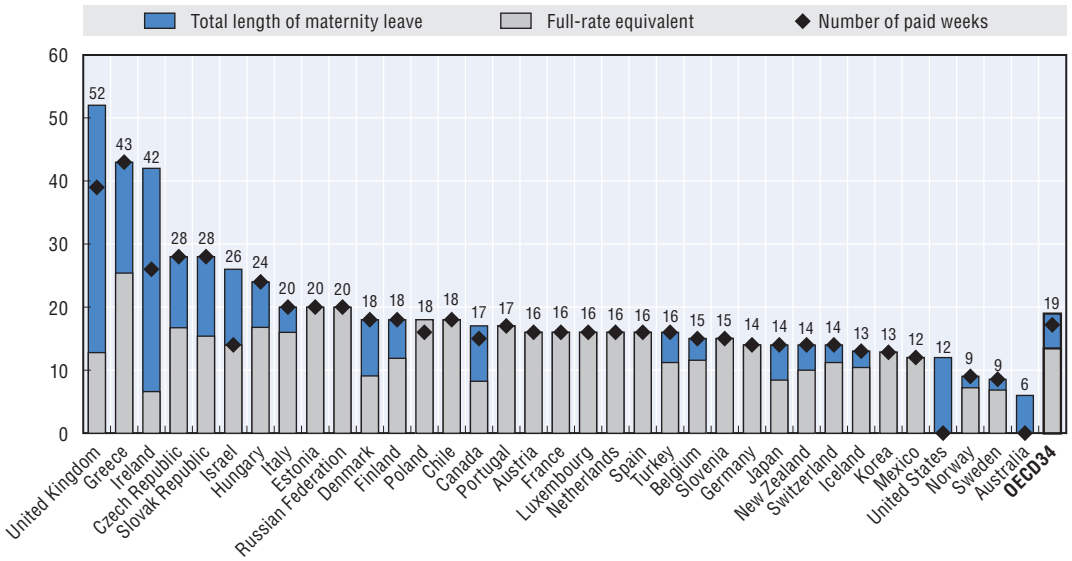
In addition to parental leave entitlements, working parents can make use of a range of additional leave entitlements, *e.g.* holidays, sick-day entitlements to help them deal with family care needs, which often arise at short notice (Box 4.2 and OECD, 2010d, PF2.3).

Promoting greater gender equality

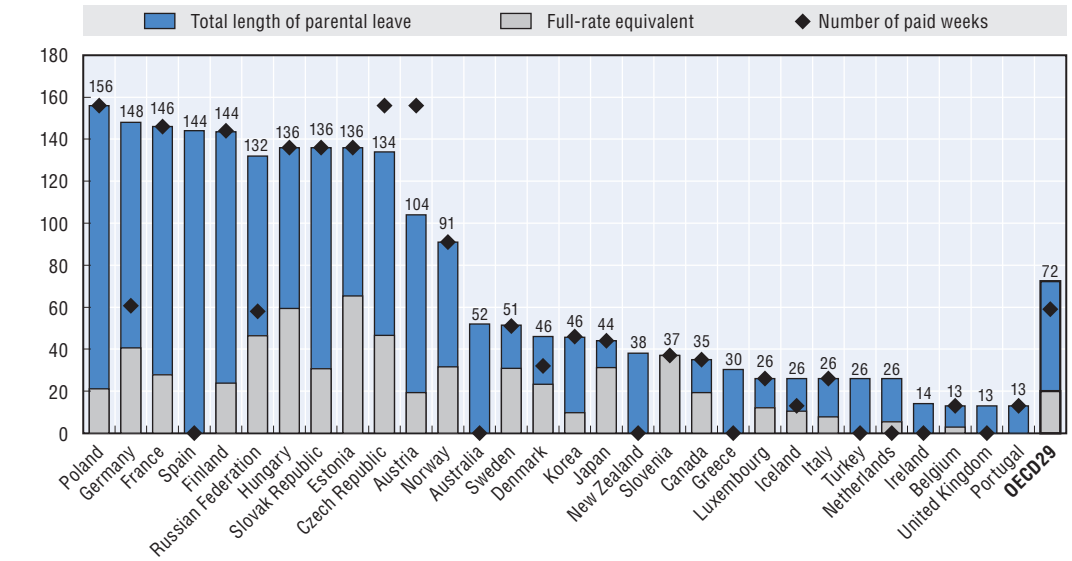
Often introduced as supplementary rights for mothers only, parental leave entitlements have been extended to fathers in most countries, with leave being available as: *i)* a *family right* that parents can divide between themselves as they choose; *ii)* an *individual right* which can be transferred to the other parent; and *iii)* a *non-transferable individual right* (*e.g.* both parents have an entitlement to a specified amount of leave). The latter, often called "mommy and daddy quotas", have to be taken by fathers and mothers on a use it or lose it basis. In addition to parental leave, about half of OECD countries have

Figure 4.1. **In contrast to parental leave, maternity leave is mostly paid in OECD countries**

Panel A. **Length in weeks of maternity leave[1] and full-rate equivalent[2] for the average worker, 2008**



Panel B. **Length in weeks of parental leave[3] and full-rate equivalent[2] for the average worker, 2008**



1. Total length of maternity leave refers to the sum of paid and unpaid entitled weeks: the numbers above the bars refer to the total length of employment-protected maternity/parental leave in 2008.
2. Full-rate equivalent (FRE) = Duration of (maternity/parental) leave in weeks' payment as a percentage of average wage earnings received by the claimant over this period.
3. Information refers to parental leave and subsequent prolonged periods of paid and unpaid leave women can take after maternity leave to care for young children (sometimes under a different name as for example, "childcare leave" or "home-care leave", or the "Complément de libre-choix d'activité" in France). In all, prolonged periods of home-care leave can be taken in Austria, the Czech Republic, Estonia, France, Finland, Germany, Norway, Poland and Spain (Annex 4.A1) and since 2008 in Sweden. Values for parental leave refer to the number of weeks women can take after maternity leave, and thus can be added to the weeks of maternity leave. Weeks of maternity leave to be taken after childbirth are deducted from the length of parental leave in countries where entitlements are set up to an age limit of the child. Parental leave is unpaid in the Netherlands, but there is a tax advantage to stimulate take-up, which is reflected in this Figure. For Canada, the 17 weeks in Panel A refer to the situation in most provinces and territories, but, for example, the provinces of Québec and Saskatchewan provide 18 weeks. In Panel B, the federal Employment Insurance programme provides for 35 weeks of paid parental leave; unpaid leave periods can be longer. For example, the province of Québec provides up to 52 weeks of unpaid leave, during which period eligible clients can claim benefits under the Québec Parental Insurance Plan.

Source: Moss and Korintus (2008); Missoc tables: Social Protection in EU Member States; and information provided by national authorities in non-EU countries.

StatLink http://dx.doi.org/10.1787/888932393236

separate paternity leave entitlements which often concern the first 5-15 days immediately following childbirth (OECD, 2010d, PF2.1).

The overall period of father-specific leave remains quite short – about four to five weeks on average – compared with the total amount of time allotted to maternity and parental leave. Nordic countries (except Denmark) have the longest leave periods reserved for fathers, and often these are paid at about 80% of individual earnings (Figure 4.2).

Fathers often earn more than their spouses (OECD, 2007), so that the income loss to households is smallest when the mother takes leave. Also, societal attitudes towards the role of mothers in caring for young children may contribute to mothers rather than fathers taking leave. OECD (2010d, PF2.2) shows that in 2007 the ratio of fathers to mothers using parental leave was highest (at over half) in Nordic countries, France, the Netherlands and Portugal. Directly comparable data on the intensity of use of parental leave entitlements are not available, but mothers are the main users everywhere.

There is some evidence to suggest that fathers who take leave for relatively long periods, are most likely to be those with relatively secure jobs and high levels of education (*e.g.* Duvander, 2008 on Sweden; Haas and Rostgaard, 2011 on Nordic countries; and Reich,

Box 4.2. **Additional leave entitlements to provide care**

Many OECD countries grant employees specific entitlements to care for a close relative, and/or sick and disabled children. Relevant leave arrangements are in three broad groupings: *i)* additional days leave granted to care for sick children and other family events; *ii)* longer-term specific leave periods to care for disabled children or dependent relatives; and *iii)* long-term leave for unspecified personal reasons. On the basis of country responses to a questionnaire on entitlements to additional leave, it emerges that the nature of such leaves varies considerably across countries, both in terms of duration, eligibility criteria, and whether such leaves are legal entitlements or subject to employer agreement. Nevertheless, the information in the Figure below suggests that:

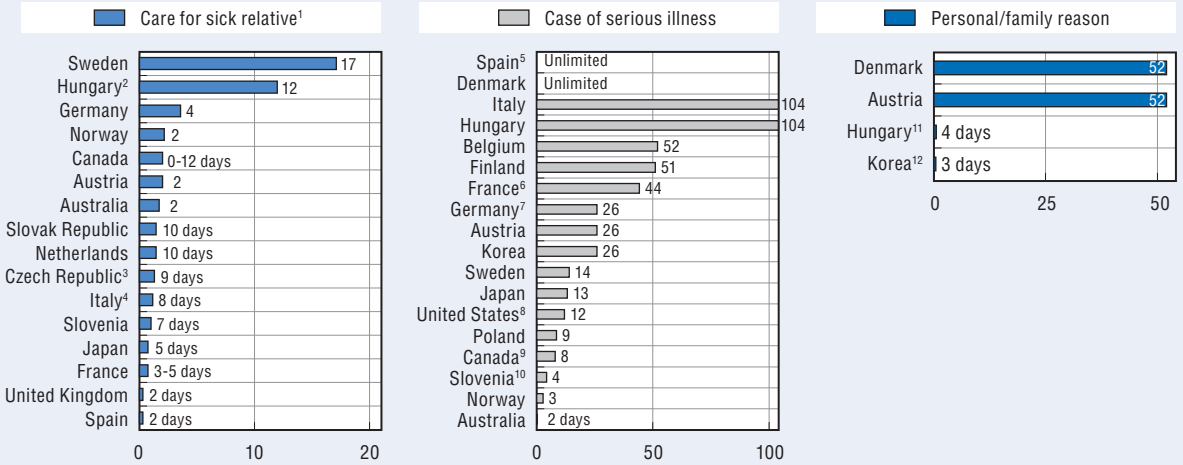
- Entitlements to provide care for sick children or dependent relatives range from two days to 17 weeks per year;
- Parents who care for a relative with severe illness or disabilities are frequently entitled to longer periods of leave (Austria, Denmark, France, Hungary, Italy, Korea and Sweden); parents in Austria, Denmark and France could also use their "personal leave entitlement, as subject to employer agreement" for this purpose.

In general, prolonged periods of leave to care for sick relatives are unpaid. However, carers can sometimes claim a "carers–benefit" during this period (for example Australia or Canada). In Austria, low-income carers can receive payment during six months of "family hospice leave", and in France and Sweden parents of disabled children can claim specific allowances. In Australia, Italy, Japan and Korea, employers can provide payments for part of the leave period.

More generous provisions exist in Sweden, Hungary and Italy. In Sweden, employees can take between 3 and 12 months leave from work for several purposes – including family needs – under certain conditions (the replacement worker must be an unemployed person). Employees taking leave will receive 85% of the unemployment benefit which is earnings-related up to a maximum ceiling. In Hungary, parents of a child under age 12 with serious illness or disabilities can claim child home-care allowance until age 10. Instead of the home-care allowance or upon the 10th birthday of the child, parents can also be partly reimbursed for the nursing fee, which is paid to a person who is taking care of a relative in need of permanent care. In Italy, a family entitlement of two years with public income support replacing earnings is granted to employees taking leave to care of disable relatives, on return to work an additional three days of paid leave per month are made available.

Box 4.2. **Additional leave entitlements to provide care** *(cont.)*

Duration of additional leave to care for sick relatives or children with disabilities in weeks



1. No Federal entitlements in Canada, duration varies across Provinces: up to three days in Manitoba, New Brunswick, Nova Scotia, Prince Edward Island; five days in British Columbia; seven days in Newfoundland and Labrador; up to ten days in Ontario; ten days in Quebec; and 12 days in Saskatchewan.
2. Hungary: refers to specific entitlements for parents with a child between 1 and 3 years of age: duration is unlimited when the child is under 1, limited to 42 days when the child is under six and 14 days when the child is between 6 and 12 years.
3. Czech Republic: for parents with children under 10: unlimited, but a parent can take no more than nine days in one block of time.
4. Italy: for parents caring for a child aged 3 to 8 years, duration is unlimited for a child under 3.
5. Spain: since 1 January 2011, parents are entitled to reduce their working hours by half (or more) with a proportionate reduction in wages during the periods of hospitalisation or other medical treatment of seriously ill children until 18 years.
6. France: employees are entitled to 44 weeks of leave to care for children and up to 13 weeks for other relatives.
7. Germany: emergency leave for medical reasons is also possible up to ten days if a relative needs assistance because of very serious illness.
8. United States: for workers in private companies with 50 or more employees.
9. Canada: federal compassionate care benefit rules provide for eight weeks, in some provinces duration of employment-protected leave is longer (*e.g.* Saskatchewan, 16 weeks, and Québec up to 104 weeks).
10. Slovenia: an employee is entitled to 30 days of leave in case of severe illness of a relative (can be extended to six months).
11. Hungary: for parents with two children (two days for one child and seven days for more than two children).
12. Korea: leave for emergency reason can be taken for a maximum of 40 hours per year, but for no more than three consecutive days at a time.

Source: OECD questionnaire on additional leave entitlement, and Moss (2010).

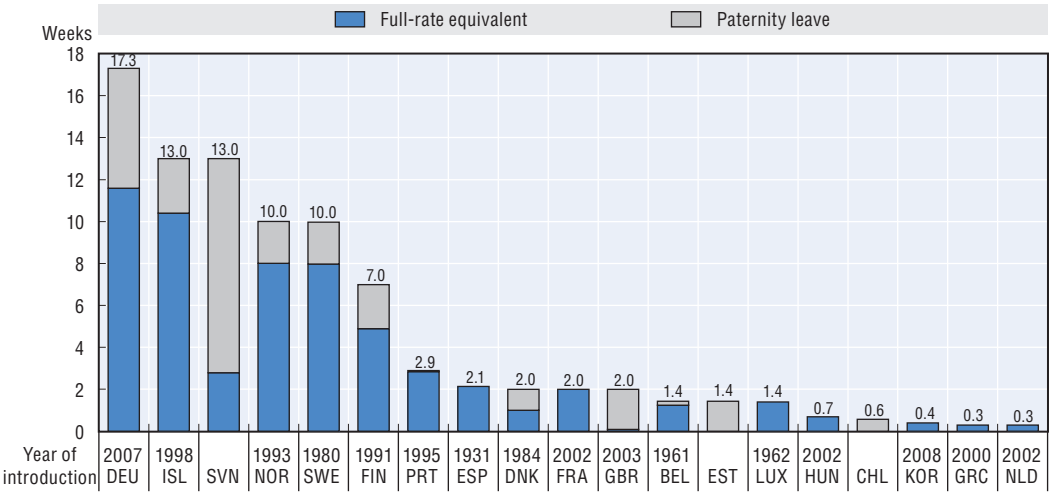
StatLink http://dx.doi.org/10.1787/888932393445

2010 on Germany). Furthermore, being partnered with a woman with relatively high levels of educational attainment (*i.e.* with women who are most likely to have relatively high earnings and thus have most to lose from reducing working hours) increases the likelihood of taking leave for fathers: a significant proportion of French and German fathers taking leave has a spouse who is the main breadwinner of the family (Boyer, 2004; and Reich, 2010). In Japan and Korea, take up of leave by fathers is very limited. One of the reasons is that fathers are concerned this would have negative effects on their career and relationship with colleagues (OECD, 2003 and 2007). Such workplace and employer attitudes may be less pronounced in many other OECD countries, but even in Sweden, working in small, male-dominated workplaces keeps fathers from using parental leave (Duvander, 2008).

Furthermore, maternal attitudes sometimes also stand in the way of a more gender-equitable division of paid and unpaid work. In Sweden, about a quarter of mothers report they take parental leave as that incurs the least cost to household income; almost 20% refer

Figure 4.2. **Nordic countries (except Denmark), Germany and Slovenia have the most generous leave entitlements for fathers**

Weeks of leave entitlements for fathers, 2008



Note: Estimates of the weeks' entitlements include paternity leave and father-specific "quotas" in parental leave entitlements.

Source: See Figure 4.1.

StatLink http://dx.doi.org/10.1787/888932393255

to the negative effect on paternal employment of leave taking; and 25% of mothers explicitly state "it is their wish to be at home to care for children" (Duvander, 2008).

Changes in leave-taking among men and women are unlikely to generate an immediate and fundamental change in the division of paid and unpaid work.[4] However, parental leave design is one of the few policy tools that are available to governments to directly influence behaviour among parents. To promote a more gender equitable division of care (and paid) work, and encourage fathers to spend more time with their children (Lamb, 2010; Ray *et al.*, 2010; and Rosemberg and Wilcox, 2006), policy can pursue (a mix of) different options:

- *Increase payment rates.* This will reduce the loss of income of fathers when using parental leave entitlements. However, this approach has direct budgetary implications and also makes it more attractive for mothers to use leave entitlements, so the effect on a more gender-equitable use may be small.
- *Other financial incentives to stimulate fathers to take leave.* For example, in 2008, Sweden introduced a gender-equality bonus in the tax system, which aims to promote a more gender equal use of parental leave entitlements. However, benefits are relatively small[5] and are paid one year after actual use of parental leave entitlement, which helps to explain why an initial assessment of the reform found no clear effect on paternal leave-behaviour (Duvander and Johansson, 2010).
- *Increase individual paternal entitlements to leave.* This could be done by increasing existing "father's quota" in paternity leaves, or further reform to the part of family entitlements available to both partners to transform it into individual non-transferable rights for the specific use of fathers. Reform in Iceland in 2001 followed this path and led to an increase in the proportion of parental leave days taken by fathers from 3% to around 35% nowadays (Eydal and Gislason, 2008; and OECD, 2007). Similarly, recent reform in

Germany provides for a bonus of two months earnings-related paid parental leave if taken by the father. While about 8.8% of children born in 2007 had fathers that took parental leave, the percentage doubled to over 17% in 2008 (Federal Statistical Office, 2010).

- *Facilitate flexible leave options* by means of part-time leave (*e.g.* one day per week), leave taken in separate blocks (*e.g.* around holidays) over different years, and or allowing shorter leave periods at higher payment rates (Table 4.A1.2). However, as with increasing payment rates, flexible parental leave measures make their use more attractive to both parents, not just fathers, so the effect in reducing gender gaps in use is likely to be small.

Strategies that just increase payment rates or flexibility in use are not likely to be effective in generating a more gender-equitable use of parental leave benefits: more successful approaches include a mix of these elements, but in any case include a non-transferable leave entitlement for fathers. For countries with prolonged leave entitlements, reform could be close to fiscally neutral by shortening child-related leave entitlements but paying them at a higher rate. For example, in 2007, in Germany the flat-rate income tested childcare payment for 22 months was reformed into an earnings-related income-support payment during 12 months, or 14 months if the father takes at least two months of leave (Erler, 2009).

In general, employers are most likely to support reform if it increases the likelihood that the employee in question actually returns to his/her job. Making payment rates of leave payments conditional on the effective return to work could help. For example, in Korea about 85% of the parental leave benefit is paid during leave and a maximum of 15% is withheld and paid after six months upon the return to work for the same employer.

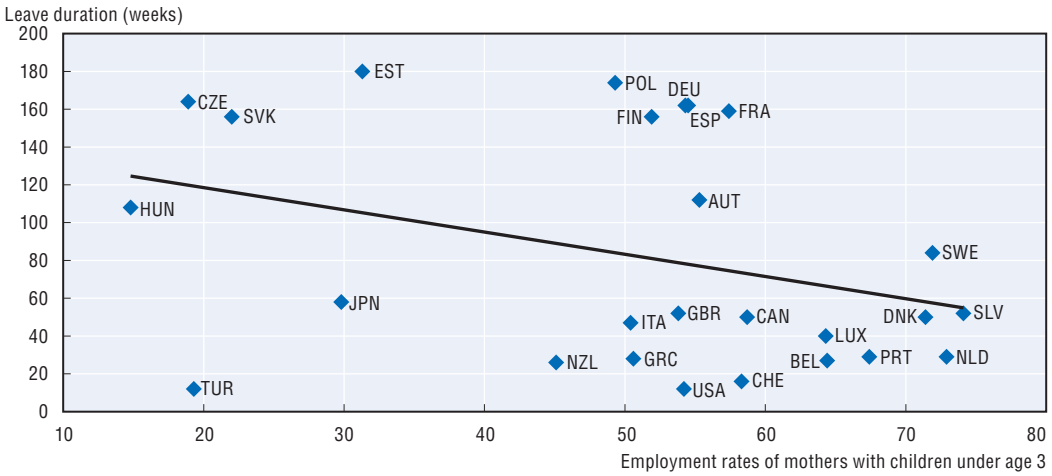
Parental leave and labour market outcomes

In 2008, employment-protected leave periods were longest (at above 78 weeks) in countries which were the first to introduce parental leave entitlements in the 1960s (Austria, the Czech Republic and Poland), and 1970s (Finland, France, Hungary, Norway, Spain, and Sweden (OECD, 2010d). Other OECD countries, which introduced parental leave in the 1980s or later, have much shorter leave periods (less than one year), except in Germany where unpaid employment-protected leave can still be taken for up to three years (for paid leave reform, see above). Across the OECD, parental leave periods have generally increased since they were introduced. However, in Sweden after the steep economic downturn in the early 1990s, the duration of employment-protected leave was reduced from 450 to 360 days in 1994 (OECD, 2010d).

In general, countries with shorter periods of leave have higher employment rates among mothers with young children than countries with prolonged periods of paid leave (Figure 4.3). Leave entitlements immediately around childbirth are likely to strengthen female labour market attachment, as they limit the risk of dismissal during pregnancy and provide a way back to paid work when leave runs out. However, because of a deterioration of skills during the period of leave and a perceived lack of commitment to employers and careers, a prolonged absence from the workplace limits the chance of return to work for the same employer (and future earnings), and the labour force more generally (Jaumotte, 2003). It may also contribute to the relatively high share of women on temporary contracts – compared with men – in, for example, Finland (OECD, 2005).

Figure 4.3. **Lower employment rates for mothers with children below age 3 in countries with longer leave**

Cross-country relation between female employment rates and duration of female parental leave, 2006



Note: Many mothers in Austria, Finland and Germany who are on prolonged employment-protected leave are counted as employed in contrast to ELFS guidelines (OECD, 2010d, LMF2.1). Hence, in cross-national comparison, the employment rates for mothers with young children are "artificially" high in these countries.

Source: Employment rates: ELFS 2006 for European countries and OECD employment statistics for non-European countries; *Leave duration*: OECD (2010d, PF2.1).

StatLink http://dx.doi.org/10.1787/888932393274

Leave duration and return to work

The introduction of short and/or unpaid leave has a positive effect on female employment. In the United States, among mothers who were employed before childbirth, those who were entitled to 12 weeks leave were more likely to return to work after this period than women without any leave entitlements (Berger and Waldfogel, 2004). Espinola-Arredondo and Mondal (2009) and Han *et al.* (2009) found that State-level introduction of paid parental leave also had a statistically significant effect on the employment probability of women, and these effects increased with levels of educational attainment. Similarly, Baker and Milligan (2008) found for Canada that modest leave mandates of 17-18 weeks decreased in the 1980s the proportion of women quitting their jobs, and increased the proportion of mothers on leave returning to their pre-birth employers. It is unclear how a longer leave period of about 70 weeks affects the probability of return, but it increases time spent at home by mothers, thereby reducing effective female labour supply at least temporarily. Evidence for Austria and Germany suggests that effects of changes in leave duration seem to be most significant when it concerns leave periods of short duration: broadly proportional changes to prolonged leave entitlements seem to have a much smaller effect on female employment.

Cross-national evidence for some EU countries between 1994 and 2001 suggests that at least 25% of women with a newborn child are back at work on expiry of the basic maternity leave. In fact, in Belgium and Portugal most women returned to work after four months leave. In Austria, France and Finland, prolonged leave periods for mothers with children under age 3 contribute to the delay in return to work, while in Greece, Italy and Spain the absence of policies for work/family life balance means that it took more than eight years before 75% of the mothers taking leave had returned to work (Pronzato, 2009).

Overall, there is much evidence[6] suggesting that:

- extending parental leave durations can have a negative effect on female labour supply, especially in the short term; and/or,
- low-income earners are most likely to make full use of prolonged leave arrangements. Highly skilled female workers face the highest opportunity costs to taking leave and can also afford more expensive childcare solution; they are therefore less likely to take a long time out of work.

Prolonged periods out of work also affect career development and are key determinants of the so-called "family pay gap" that measures the lifetime differential in earnings between mothers and childless women (Chapter 3 presented evidence in the context of the discussion of the indirect cost of children). For example, in Sweden taking 16 months of parental leave negatively affects career profiles (Eversston and Duvander, 2010). Available evidence for France and Germany suggests extending paid leave increased the likelihood of precarious employment conditions after the return to work, and wage growth reductions of those who take prolonged leaves by 5 to 20%; while differences decrease over time they are still observable long after the return to work.

Extending leave and female employment: a cross-national assessment

Detailed information on parental leave reform across 30 OECD countries from 1970 and 2008 (OECD, 2010d), facilitates a cross-national analysis of the effect of these reforms on employment rates of women aged 25 to 54 years. A "difference-in-difference estimator approach" is used with male employment as the control group (see note to Table 4.1).[7]

Table 4.1. **Extending paid parental leave has a negative effect on female employment**

	Dependent variable: natural log of female employment rates (25-54 year-olds)			Dependent variable: natural log of the female-to-male employment ratio[1] (25-54 year-olds)		
Regression coefficients						
Leave	–0.404***	–0.592***	–0.005	–0.104***	–0.0542***	–0.0613
	(0.0654)	(–0.0553)	(0.00958)	(–0.0209)	(–0.0151)	(–0.00958)
Control factors	No	Yes	Yes	No	Yes	Yes
Country-specific linear time trends	No	No	Yes	No	No	Yes
Country and time dummies	Yes	Yes	Yes	Yes	Yes	Yes
Number of observations	859	715	715	859	715	715
R^2	*0.987*	*0.992*	*0.998*	*0.9503*	*0.977*	*0.996*

Note: *, ** and ***: significant at 10%, 5% and 1%, respectively. Standard errors in parentheses. "Leave" refers to the number of weeks of employment-protected paid parental (irrespective of the wage replacement rate) divided by 100. Control variables include fertility and unemployment rates.

1. The dependent variable is the difference in natural log of female and male employment-to-population ratio for those aged 25 to 54 years. Weeks of paid maternity and parental leave are combined to measure the overall period of parental leave for mothers. Furthermore, identifying the effect of parental leave legislation on labour market participation requires controlling for any systematic shocks that may affect labour market participation. Therefore, year dummies are included to capture year-specific shocks on participation rate. Also included are country dummies to control for secular differences in women's labour market participation in each country. Finally, country-specific (linear) time trends are also introduced to control for country-specific development of employment over the period under consideration, which might bias estimates if leave entitlements are especially extended when employment is increasing rapidly. This estimate suggests that there is no significant effect of leave extension on female employment given the secular upward trends in employment rates. Finally, the robustness of our results was tested with additional covariates (fertility and unemployment rates).

Source: OECD Secretariat's calculations from OECD (2010a), *OECD Family Database*.

StatLink http://dx.doi.org/10.1787/888932394072

The ambiguous influence of leave mandates suggests that weeks of leave have a positive effect on female labour supply up to a limit above which the marginal effect of further leave extension becomes negative.[8] Ruhm (1998) found that an increase in parental paid leave mandates that occurred in nine European countries from 1969 to 1993 was associated with an increase in female employment rates. Extensions of parental leave entitlements also had modest but negative effects on weekly working hours and the gender wage gap.

However, these results are no longer corroborated once country and time coverage is extended to account for the expansion of parental leave policies which occurred since the early 1990s in most OECD countries. Table 4.1 provides an update of Ruhm's analysis investigating the influence of the increase in paid leave entitlements on female employment rates and on the gender gap in 30 OECD countries from 1970 to 2008. Results summarised in the table suggest that the extension of paid leave entitlements – irrespective of payment rates – has had rather a negative effect – if any – on the employment rate of women aged from 25 to 54 years, as well as on the female-to-male employment ratio.[9] The results offer no support for earlier findings that suggested a positive effect of birth leave durations on female employment rates. This result might be due partly to the fact that leave periods have been further extended since the early 1990s.[10]

Childcare

Childcare supports are another key factor in the determination of maternal employment behaviour during the early years. The increase in female labour force participation since the 1960s (Chapter 1) went hand-in-hand with the development of work/family life balance policies of which access to affordable childcare of good quality[11] is an important element.

The development of formal childcare[12] policies is often related to the range of work/family policy objectives. Countries differ in the emphasis they put on underlying objectives on gender equity, having children (Chapter 3) and promoting child well-being and child development (Chapter 5). But concerns on labour supply often play an important role when policy measures are taken, as for example, recently in Mexico (Box 4.3).

Public spending on childcare and pre-school services from birth up to and including 5-year-olds as a percentage of GDP varies considerably across the OECD (Figure 4.4). It is highest in Denmark, other Nordic countries, France and the United Kingdom at 0.8% of GDP or above. These countries are generally among the countries with the highest participation rates, except for Finland, because of the widely used entitlement to home-care leave (see above).

Relatively low child-to-staff ratios (*i.e.* high wage costs per child in care) in Nordic countries (OECD, 2010d, PF4.2), and high intensity of use, around 35 hours per child per week, help explain why spending per child in formal care is higher in Nordic countries than in most OECD countries (see also NOSOSCO, 2009).

Accounting for the intensity of use, differences in enrolment rates and their "full-time equivalent" (measured per 30 hours of care per week) are largest in Australia, the Netherlands, New Zealand and the United Kingdom (OECD, 2010d, PF3.2). In these countries, children often use formal childcare facilities on a part-time basis.

Box 4.3. **Developing formal childcare in Mexico**

Parents in poor families without access to care options face particularly difficult work/family choices: they need to work, often under difficult circumstances, to provide for a basic family income, but they do not wish to leave their children uncared for. In Mexico, around 3.5 million households with children between 1 and 4 years old (*i.e.,* more than 50% of all households with children in this age range) do not have access to public childcare centres and cannot afford private care. Mothers either do not work while their children are young or they work leaving their children in the care of relatives, neighbours or friends, or in some cases they end up taking children to work. In January 2007, the Mexican government launched a national child day-care programme – Programa de Estancias Infantiles para Madres Trabajadoras (PEIMT) – which aims to provide parents in paid work and/or study with access to child day-care services. In 2009, public spending on childcare amounted to 0.04% of GDP, of which 20% was allocated to PEIMT.

Parents are eligible for support if they have a child between 1 and 4 years old (or up to 6 years old if the child has some disability) and their household income is less than 6 times the minimum wage (about USD 770), which is equivalent to the mean income of couples with two children. PEIMT has grown rapidly, and by December 2009, the programme included 8 923 day care centres covering 261 728 children and 243 535 parents. However, this is only 6% of all children between 1 and 4 years old in Mexico, of whom 26% grow up in poverty. Day-care centres are open for a minimum of eight hours per day, five days a week (Monday to Friday). The programme supports supply and demand of formal child day-care services in the following way:

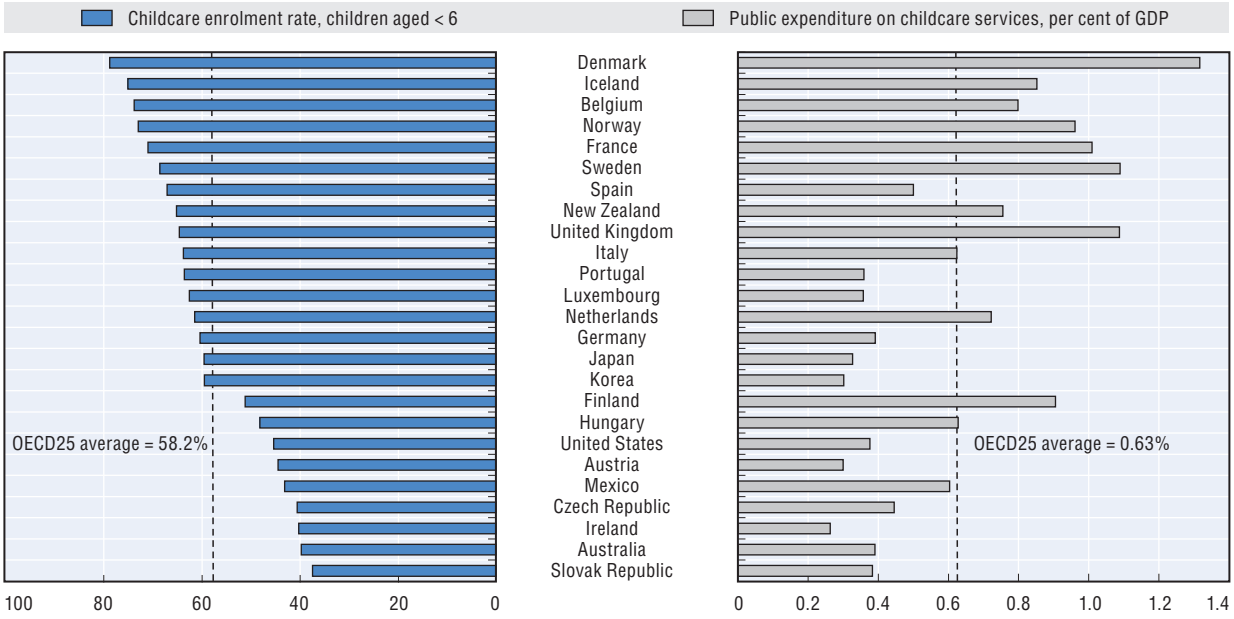
- *Supply*: PEIMT provides a financial support to those who wish to operate a child day-care centre and who meet a series of requirements, including qualifications (having finished secondary school), a psychological test and having the facilities needed for offering services to at least ten children. In 2010, the amount was USD 4 200 for creating a new facility and USD 2 600 for adapting a private residence or retail space into a day care centre. Providers set fees, but they have to admit those children selected by the PEIMT authorities as eligible.
- *Demand*: monthly subsidies to eligible families to partially cover the childcare fees. This monthly subsidy or "voucher" (up to about USD 53) is directly transferred to the centre on behalf of the child, conditional on the child attending services for more than 11 days per month. Parents have to pay a small fee (up to around 23 USD) to the childcare provider, except in very poor areas. This fee represents less than 10% of household's income. Parents who cannot pay this fee may pay in-kind (fruit, tortillas, eggs) or may do some voluntary work *(e.g.,* cleaning day-care centres, sewing uniforms) as agreed with the childcare provider.

PEIMT has generated around 45 000 paid jobs for providers and their assistants. Most providers (around 80%) were working before opening a day-care centre and many of them (60%) were doing so in occupations related with children *(e.g.,* school teachers, head of schools, nannies).

Pre-school education for 3-, 4- and 5-year-olds is often heavily subsidised or provided for free. On average across the OECD, 76% of children in this age-group participated in all early education services in 2008, up from 64% in 1998, and increases in participation were largest in Chile, Mexico, Norway and Sweden. Cross-county variation in participation remains significant: from below 40% in Korea and Turkey to over 95% in Belgium, France, Iceland, Italy and Spain (OECD, 2010b).

Figure 4.4. **Public investment in formal childcare generates high participation rates in childcare**

Proportion of children aged less than six enrolled in formal childcare services, 2008[1]



1. Childcare enrolment rates refers to estimates on childcare enrolment rates of children aged < 3 and children aged 3-5; data refer to 2005 for the United States and 2009 for Mexico. Numbers do not reflect intensity of use: each child is counted regardless of the number of hours of participation per week. For comparative purposes, indicators were adjusted for cross-national differences in the compulsory age of entry into primary school. For example, in Nordic countries, where children enter primary school at age 7, expenditure on 6-year-olds was excluded from these figures. Similarly, for countries where children enter school at age 5 (*e.g.* Australia, New Zealand and the United Kingdom), pre-school expenditure data were adjusted by adding up the expenditure corresponding to 5-year-old children enrolled in primary school.

Source: For childcare enrolment rates: Australia, ABS Childcare Service (2008); New Zealand, Education Counts' Statistics (2008); European countries, EU-SILC (2008); Germany, administrative data (2008); Nordic countries, NOSOSCO (2008); United States, Early Childhood Program Participation Survey (2005)); other countries, national authorities. For spending on childcare: *OECD Social Expenditure Database* (*www.oecd.org/els/social/expenditure*).

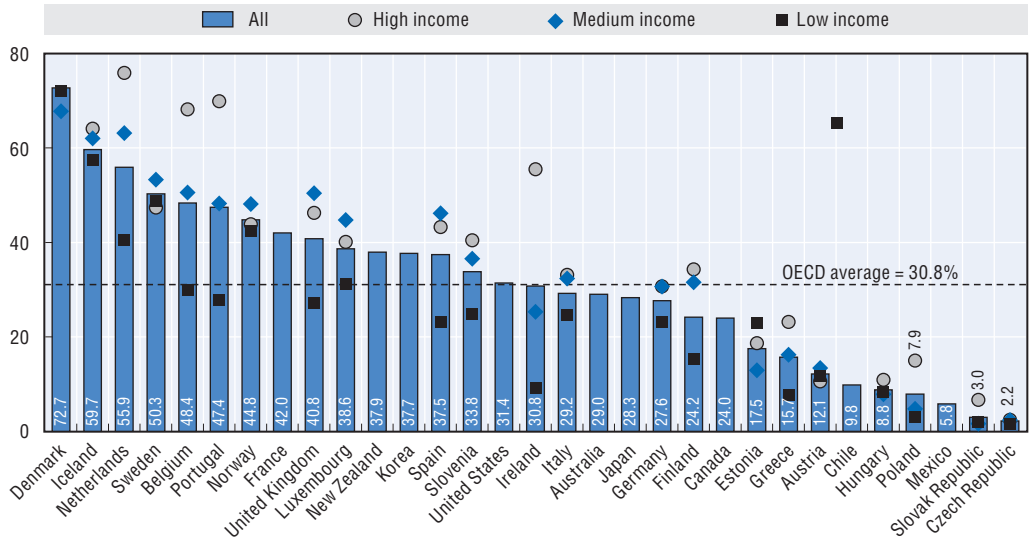
StatLink http://dx.doi.org/10.1787/888932393293

On average across OECD countries, about one third of children under 3 participated in some form of formal childcare arrangement in 2008 (Figure 4.5). Cross-national variation in participation rates of very young children is much larger than for 3- to 5-year-olds. Participation rates were less than 10% in Chile, the Czech Republic, Hungary, Mexico, Poland and the Slovak Republic, but 50% or above in Denmark, Iceland and Sweden as well as the Netherlands, where participation was mostly part-time. Historical series exist for only a few countries, but the available information suggests that in countries with low levels of participation in 1998 such as Korea, Portugal and Spain, childcare participation rates have tripled over the past decade. Childcare participation rates for under 3s also increased by about 10 percentage points in Nordic countries, except Finland (where home-care leave is widely used on a full-time basis).

Financial supports for childcare are particularly important for poor and sole-parent families (Chapter 6) who often face major time and money constraints. Access to affordable formal childcare helps parents in these families to participate in paid work, reduces poverty risks and supports child development (Chapter 5). However, Figure 4.5 shows that children in low-income families (here defined as the lowest 30% of the income distribution) are less likely to use formal childcare services than their better-off peers. Differences between income groups are largest in Belgium, Ireland, the Netherlands and

Figure 4.5. **Use of formal childcare services is lower among children in low-income families**

Proportion of children aged less than three enrolled in formal childcare services, 2008[1]



1. Data for Canada refer to 2006; data for Mexico refer to 2009; and data for the United States concern 2005.

Source: Australia, ABS Childcare Service (2008); Canada, National Longitudinal Survey of Children and Youth (2006); New Zealand, Education Counts' Statistics (2008); European countries, EU-SILC (2008); Germany, administrative data (2008); United States, Early Childhood Program Participation Survey (2005).

StatLink http://dx.doi.org/10.1787/888932393312

Portugal (gaps of more than 30 percentage points) for a mix of different reasons. These include: high net childcare costs for parents in Ireland (see below), capacity constraints in subsidised childcare in Portugal and migrant children of this age in Belgium and the Netherlands being less likely to attend formal services unless participation is mandatory (OECD, 2010c). By contrast, in Austria and the Nordic countries, childcare participation rates show little variation with household income.

Informal care and the role of grandparents

Parents use a mix of formal and informal care[13] providers to care for their children. These different types of care can complement each other. For example, parents might choose one type of care for work commitments and another type of care for other needs. The mix of care used can depend on a range of factors including the availability, affordability and quality of formal care and the availability of unpaid carers (grandparents, relatives, friends or neighbours) but also on the presence of older children.

The proportion of European children using informal care varies widely across countries. Less than 10% of Nordic parents use some form of informal care in a typical week because of the comprehensive formal care system. By contrast, more than half of Dutch and Greek toddlers (under 3 years old) are cared for by an unpaid childminder (OECD, 2010d, PF3.3).

Grandparents are one of the main providers of informal care. In 2006, around 50% of European grandparents reported looking after their grandchildren within the past 12 months (Gimbert and Godot, 2010). However, the intensity of care provision varies significantly. In Nordic countries and France, more than 50% of grandparents look after their grandchildren regularly, but only 2% of Danish and Swedish grandparents do so on a

daily basis. By contrast, in Spain, the proportion of grandparents reporting to regularly care for their grandchildren is somewhat lower, but about a quarter of grandparents take care of their grandchildren on a daily basis (Gimbert and Godot, 2010). Emerging evidence for the United States suggests that the number of children cared for by their grandparents increased with the unfolding of the financial crisis: in 2008, around 2.9 million children were being raised primarily by a grandparent up from 2.7 million in 2007 (Livingston and Parker, 2010). In all, in Nordic countries care by grandparents seems to complement parental and formal care; in other countries (central and southern Europe) it often substitutes for parental care (CAS, 2010).

Policy makers in some countries explicitly recognise the role grandparents play in the provision of childcare. For example, in 2005, the Australian Government introduced the Grandparent Child Care Benefit. This benefit is given to grandparents who are on income support and who are the sole or major responsible carer of the child. The government covers the full cost of childcare fees charged by approved childcare providers for up to 50 hours a week. Alternatively, parental benefit can be taken by Czech, Russian or Slovenian grandparents or other persons if they provide day care for the child and the parents agree to transfer their entitlement. In Hungary, child home care allowance can be provided also to grandparents, if they take care for their grandchildren older than one year in the household of the parent. In Portugal, a working grandparent is entitled to 30 days leave following the birth of a grandchild to an adolescent still living at home, and in France there is a pilot scheme (for some collective agreements) involving the right for grandparents to work part-time (CAS, 2010). In the Netherlands, grandparents can be recognised as childcare providers and receive relevant financial support; this led to a rapid increase of childcare spending, but had little effect on formal labour supply (Jongen, 2010). Spending is currently being scaled back in view of austerity measures introduced in the Netherlands (Chapter 2).

Out-of-school hours care

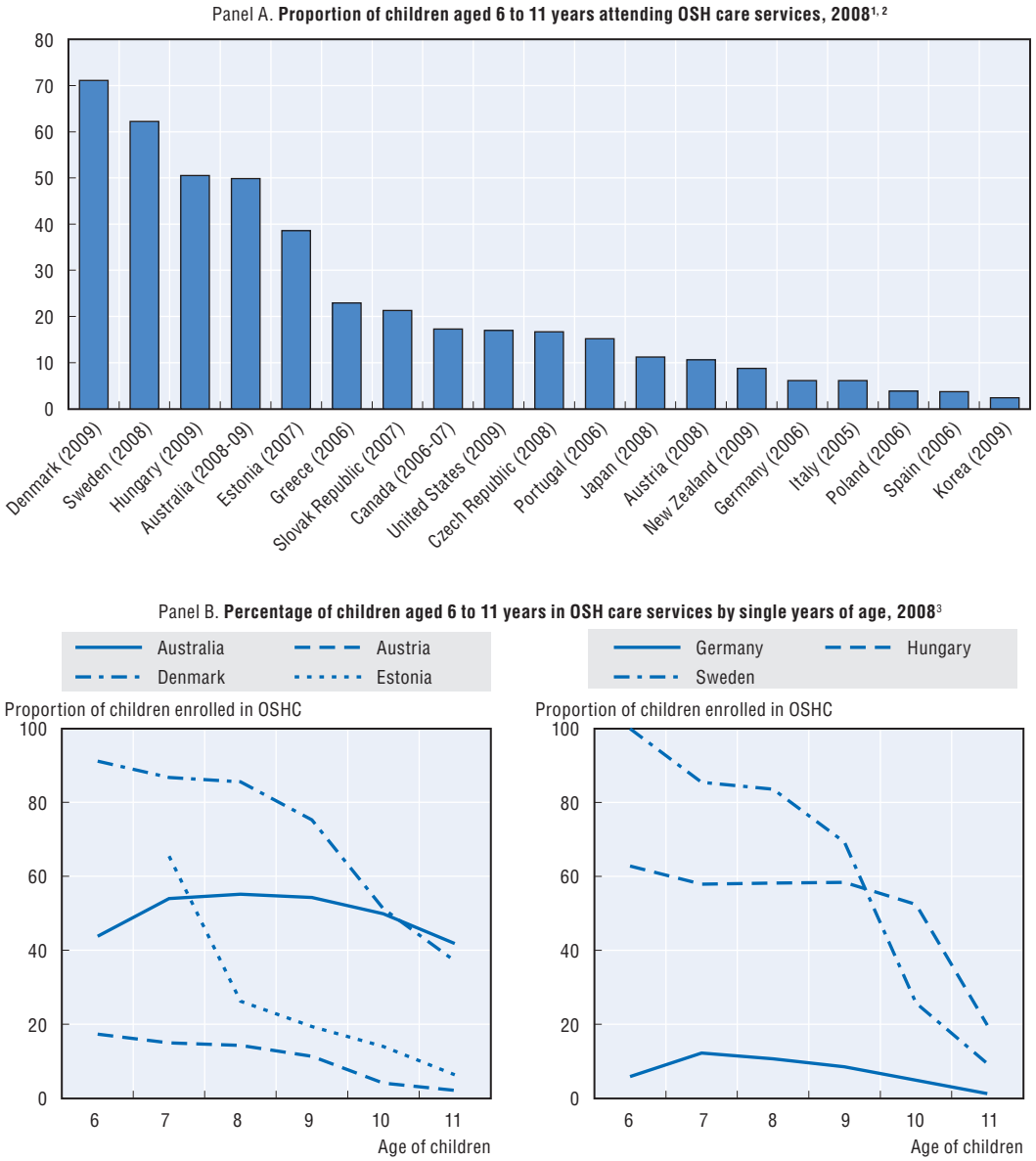
Childcare issues do not stop when children enter primary school. A full-time working week is not directly compatible with school hours, and working families therefore need to find care solutions in the morning, at lunchtime, after school hours and during school holidays. The number of children affected is considerable, for example, evidence from the United States suggests that 26% (or 15 million) of children between 6 and 18 years old are left alone or unsupervised after school hours (After School Alliance, 2009). Among the unsupervised children, the majority are in high school (9.2 million), but a substantial number are in middle school (4.2 million) and elementary school (1.7 million) (After School Alliance, 2009).

To some extent, parents in couple families may be able to find solutions by adjusting start and finishing hours at work (see below), but sole parents are less able to do so. Informal care solutions are important, but increasingly OECD countries provide formal out-of-school-hours (OSH) care services at some point during the day, as well as during school holidays, although availability and nature of such services may differ. They are frequently, but not always, based in school facilities or youth centres, and provide recreational activities and/or help with homework.

In most countries, OSH-type schemes are still in the early stages of development and the lack of data availability reflects the absence of capacity to a large extent. In Germany, Italy, Korea, Poland and Spain, coverage is below 10% of children in primary school. But in

some countries such as Estonia and Hungary, coverage is extensive with around 40% of children in primary school using an OSH-care service, and in Australia, Denmark, Sweden and Hungary coverage is even higher at above 50% (Figure 4.6, Panel A). However, across countries OSH services are most important for 6- to 9-year-olds: enrolment rates for teenagers drop sharply as they are starting to become independent and prefer to spend their time with their peers outside an organised venue (Figure 4.6, Panel B).

Figure 4.6. **Use of out-of-school-hours care services varies widely across countries**



1. Data refer to children aged 5-11 in Germany, 6-11 in Australia, 5-13 in New Zealand, 6-9 in Canada, 6-13 in Italy, 6-14 in the Czech Republic and the Slovak Republic.
2. The year to which the data refer to is shown in brackets for each country.
3. Data refer to 2006 for Germany; 2007 for Estonia; and 2009 for Denmark and Hungary.

Source: Panel A: National Statistical Offices, 2010; Canada National Longitudinal Survey of Children and Youth, 2006-07; New Zealand Childcare Survey, 2009; United States: After School Alliance (2009); Panel B: national authorities.

StatLink http://dx.doi.org/10.1787/888932393331

Children from lower income families, from sole-parent families or ethnic minority background participate less in OSH services that their better-off peers (Harvard Family Research Project, 2006; MORI, 2009; and Peters *et al.*, 2009). The mix of reasons for not using these services includes cost, lack of transport and migrant mothers staying at home. However, children of disadvantaged socio-economic groups who are most at risk are likely to benefit most (socially, emotionally and academically) from OSH activities (Box 4.4).

Box 4.4. **Out-of-school-hours programmes for disadvantaged children**

Denmark: "*all day school programme*." Denmark provides a comprehensive system of affordable and good-quality childcare, school and OSH services, and Danish children perform well above the OECD average in most dimensions of child well-being (Chapter 5). However, migrant children in Denmark fare less well, also in terms of resources available for learning. A number of schools located in areas characterised by ethnic and social segregation face difficulties in meeting the learning needs of students within the maximum number of school hours set by law. Since 2006, the Danish Government has therefore established 11 "all-day-schools" in disadvantaged areas which provide services beyond the maximum number of school hours to strengthen language and other academic skills among disadvantaged children. Evaluations of the "all-day school" project are underway, and if experiences are positive, the project may be extended to other schools.

United Kingdom: "*extended schools and services*". Since 2010, by legislation every pupil in primary education in the United Kingdom is entitled to a range of services delivered around school from 8am to 6pm, 48 weeks a year, including school holidays. The range of activities and services include: study support, play and recreation, sport, music, arts and craft, parenting and family support, easy access to specialist support services (for example, speech and language therapy) and many school facilities are available to the community to use. Some of these services are free, but others, like supervised care, are not. Schools work with local authorities, local providers and other schools to deliver these services, which are not necessarily provided on site. Service provision is based on the principle of "progressive universalism": services are available to all, but not everybody needs all services, services need to be effectively targeted at those who are most likely to benefit.

Also, some local authorities through the "Extended Schools Subsidy Pathfinder" received funding to support schools to subsidise extended school services that are not free to disadvantaged children and young people. The Pathfinder subsidy was first evaluated in 2009. School respondents (80%) agreed that the subsidy is key for participation of disadvantaged children in extended school activities. However, around a third of schools struggle to find the best method to identify children eligible for the subsidy. Another drawback is that participation in the programme involves stigma, which further limits the effective use of the services on offer (Peters *et al.*, 2009).

United States: "*LA's Best Afterschool Program*". LA's BEST is one of the first and most successful OSH programmes in the United States targeted at children from disadvantaged backgrounds. The key features that have contributed to the success of the programme include: engagement and interest of students in academic and recreational activities; consistent student attendance; recruitment of highly motivated volunteers from the same community; and setting clear objectives that are monitored on a regular basis (Goldschmidt and Huang, 2007). The programme started in 1988 and currently serves from 3 to 6pm 28 000 children at 180 elementary schools in Los Angeles. It is located in neighbourhoods that are most vulnerable to gangs, drugs, crime and that have the lowest

Box 4.4. **Out-of-school-hours programmes for disadvantaged children** *(cont.)*

student test scores in the district. Evaluations of this programme have shown that students who participate have more regular school attendance; higher academic achievement on a number of test scores (math, reading and language); improve their behaviour and participate more in class than non-LA's Best students. Moreover, drop-out rates among LA's Best students are 20% lower than the overall district drop-out rate. Those who participate most frequently and for the longest period are the ones who are least likely to drop out of school (Huang *et al.*, 2005). In addition, students who attend LA's Best activities on a regular basis are 30% less likely to commit juvenile crime (Goldschmidt and Huang, 2007).

Financial incentives to work

Direct financial incentives to work help determine parental labour force participation decisions. Parents have to weigh earnings from paid work or working more against the additional taxes, the loss of any benefits associated with the additional income and, importantly, the cost of childcare.

A first indication on the financial incentives to work for couple families can be gleaned from considering the income situation of couple families with two young children age 4 and 6 (OECD, 2011).[14] Assuming that these families face no childcare costs, information on marginal effective tax rates (METRS)[15] for parents who start work or wish to work more hours, generate the following stylised results (Annex 4.A2 contains more detail):

- In most OECD countries it pays for parents to enter employment. However, for most parents in jobless families the financial returns to taking up a (part-time) job at 50% of average earnings are small and in Ireland, Norway, Sweden and Switzerland, such work does seem not to pay (Table 4.A2.1, column 2). In general, returns to low-paid work are limited as income-tested tax/benefit support is reduced sharply when entering work.
- With one adult in a couple already on 67% of average earnings, it clearly pays for the partner to start working part-time: METRs for such families, are generally below 50%, except in Denmark (Table 4.A2.1, column 3).
- The financial incentives to increase part-time to full-time hours are generally strong, particularly when the partner is in paid work (Table 4.A2.1, compare columns 6 and 5).

In their paid work decisions, couple households also have to consider how the tax/benefit system treats earnings by different partners in couple families. In general, net tax/transfer payments to dual-earner couples are lower than to single-earner families with the same gross earnings levels. Only in Germany does the mix of tax and benefit policies significantly favour single-earner over dual-earner couples (OECD, 2010d, PF1.4).

The cost of childcare

The estimates presented so far do not include the cost of childcare, and implicitly assumed that parents have adequate access to informal care solutions. However, childcare costs can be considerable, especially for families with children not yet of school-age. The "net" cost of childcare accounts for direct fees but also possible fees reductions, cash benefits and tax concessions. Across OECD countries, the "net" average cost of childcare is 18% of the average wage and around 12% of the family's net income for dual-earner couples with earnings around 150% or 200% of the average wage (see Annex 4.A2; information on childcare costs and financial incentives to work for sole parents is provided in Chapter 6).

Figure 4.7 shows the average effective tax rates (AETR) before and after childcare costs for families with two children aged 2 and 3. Panel A describes AETRs faced by families that double their income from a single-earner family at average earnings to dual-earner couples with twice average earnings. On average in the 30 OECD countries taken into consideration these families face extra taxes amounting to 18% of gross employment income for income taxes, 11% for social security contributions, 4% for an increase in benefits and 27% for (increased) childcare fees. Overall, families pay a 34% effective tax rate before childcare costs (diamond marker in the graph) and 52% once costs of childcare are accounted for (bar marker in the graph). In Switzerland (Zürich), it does not pay to work in the short-term for a family with the given characteristics as AETRs exceeded 100% after childcare fees are included.

High childcare costs are often the reason for high AETRs and limited financial incentives to work: the larger gap the between the "diamonds" and the "bars" in Figure 4.7, the less tax concessions and benefits neutralise childcare fees. The gap is large in Switzerland (Zürich), Ireland, United States (Michigan), and the United Kingdom while it is considerably smaller in Nordic countries (with heavily subsidised comprehensive childcare systems) and central and southern Europe, where costs in subsidised centres may not be high, but supply of such facilities is limited (EGGE, 2009, pp. 40-41).

Across the OECD, once childcare costs are factored in, AETRs are higher for lower income families than for higher income ones. Figure 4.7, Panel B shows that families with income at 150% of average earnings face an AETR of 62% with childcare costs, compared with 52% for dual-earner couples at twice average earnings. In other words, financial incentives to work for second earners (usually mothers) with small children are weaker relative to the additional earnings of the family for lower income families than for higher income families. This is because low-income families generally face lower net childcare costs, but higher AETRs as a consequence of the limited income gains relative to childcare costs. Only in France, Belgium, Portugal, the Netherlands, Luxembourg, Greece, Hungary and New Zealand do families that earn 150% of the average earnings face lower AETR than families with twice average earnings, and except for New Zealand and Hungary, the difference is small. Similarly, the gap between the AETR with childcare costs and the AETR without childcare cost is on average larger for families with lower earnings, except in New Zealand, where childcare supports are most effectively targeted at lower income families.

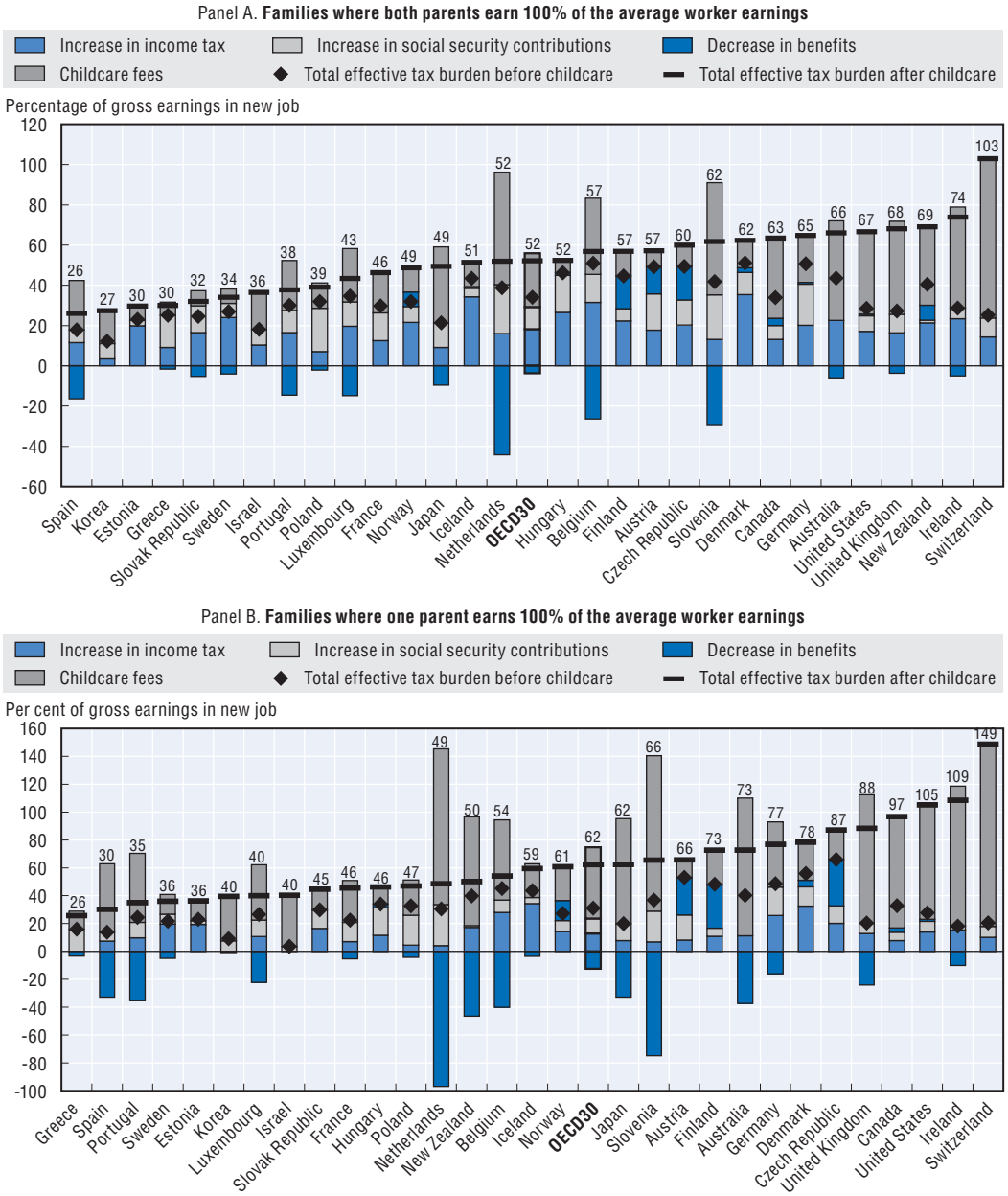
Flexible workplace practices

Flexible workplace practices (*e.g.* part-time work, flexible start and finishing times, teleworking, etc.) can also improve the work/family balance, and in a manner which is consistent with enterprise needs. Flexible workplace practices are particularly important when other policies reviewed in this chapter are underdeveloped (Hegewish and Gornick, 2011). Workplace practices are often governed by collective agreements or informal employer rules, particularly in smaller enterprises, but many countries have set statutory entitlements on flexibility in working hours (OECD, 2010a; and Gornick and Heron, 2006).

Regular part-time work is the most commonly used form of working-time flexibility (Table 4.4) and it helps many parents to match work and family life on long-term basis (see below).[16] Other forms of flexible working times appear to be less prevalent, as the "business case" for such measures is less clear (Box 4.5). These measures are nevertheless

Figure 4.7. **Formal childcare costs significantly reduce returns to paid employment in Anglophone countries, Japan, Israel and Switzerland**

Net transfers to government (percentage of gross household earnings) and childcare fees, for couples with two children aged 2 and 3, 2008



Note: The childcare cost calculations for Austria reflect the situation in Vienna; for Belgium, the French community; Canada, the province of Ontario; the Czech Republic in villages and towns with more than 2 000 inhabitants; for Germany, Hamburg; for Iceland, Reykjavík; for Switzerland, Zürich; for the United Kingdom, England; and for the United States, Michigan. These results do not represent the situation in the rest of the country. For example, net childcare costs in the Canadian provinces of Alberta or Québec will be different from Ontario.

Source: OECD (2011), *Benefits and Wages 2008*.

StatLink http://dx.doi.org/10.1787/888932393350

Box 4.5. **The business case for family-friendly workplaces**

There is a "business case" for having a family-friendly workplace and introducing flexible workplace measures as these can contribute to the quality of the enterprise workforce by reducing employee turnover and absenteeism, increasing retention rates of working parents, especially mothers (EHRC, 2009) and by attracting those workers who value family-friendly workplaces. Moreover, these benefits could at least partially pay for themselves through a combination of increased productivity and lower wages. Since labour turnover is expensive both in terms of replacement costs (Pricewaterhouse Coopers, 2009; and Blatter *et al.*, 2009) and loss of skills and knowledge (Bloom *et al.*, 2010), its reduced rate contributes to cost savings. Increased job satisfaction and commitment, as well as reduced stress, absenteeism and sick leave amongst employees due to flexible working arrangements (Institut Köln, 2010; Lefèvre *et al.*, 2010) can also contribute to increase the productivity of the workforce and profitability. However, these considerations are most pertinent to employees with skills that are sought after. Also, the business case is relatively weak in times of economic slowdown, when employers have a larger pool of workers to choose from.

A wide range of case studies provide support for the beneficial effects of family-friendly workplace practices. These include: improved retention rates (up to 99%) of female employees after taking maternity leave; reduced overhead costs through home-working and flexible contractual arrangements; and increased productivity and creativity of workers (Family Taskforce, 2010; BMFSFJ, 2010a and b; BWFJ, 2009; Catalyst, 2010a and b).

However, empirical evidence linking family-friendly policies and enterprise performance still remains mixed and scarce. Some studies find a positive relationship between flexible working hours and workers' productivity (Georgetown University Law Center, 2010), while others state that the significant association between family-friendly measures and performance disappears if general management quality is controlled for (Bloom *et al.*, 2010).

Thus, the evidence on the business case for family-friendly workplace practices is not overwhelming. The strength of the business case in general and for each type of arrangement individually varies with the nature of its production process, the size of the firm, the proportion of female employees and the proportion of skilled workers (Bloom *et al.* 2010; Executive Office, 2010; and Heywood and Jirjahn, 2009). Because of its predictable nature, regular part-time employment is most likely to fit into production processes. The business case for working time flexibility (flexible start and end times, teleworking, etc) is far less evident and much more dependent on the nature of production processes (Kerkhofs *et al.*, 2008).

Unions and worker representatives could play an important role in improving the provision of family-friendly work practices, but either they lack bargaining power, and/or do not prioritse demands in this area (Gregory and Milner, 2009).

Governments are naturally reluctant to intervene in industrial bargaining. However, considerations about "externalities" to employers and unions may trigger government intervention to ensure a more widespread diffusion of flexible measures. It is likely that some employers will introduce such measures, for only some employees – particularly those who are high-skilled, and policy may wish to ensure that workers with weak bargaining positions also gain access to family-friendly supports. Policy may also wish to promote gender equity and greater female labour force participation to ensure future economic growth and financial sustainability of social protection systems particularly in the face of ageing populations (Chapter 3).

important for many workers, especially those without access to part-time work solutions (*e.g.* managers, employees working in industry, etc.). Entitlements to flexible working time arrangements most often concern workers with very young children and/or children not yet in compulsory education.

Flexible work arrangements around childbirth

Pregnant employees are a first category benefiting from specific work arrangements protecting the health of mothers and children. When duties at work pose health risks for mothers and unborn children, job contents may be adjusted or employees re-assigned during pregnancy, and sometimes such measures can be extended after the return to work (Table 4.2).

During the months after childbirth, mothers are frequently entitled to breaks during the working day in order to nurse a newborn child. Often such breaks can be up to 30 minutes without loss of earnings, but duration is not always specified, for example, in Ireland or New Zealand. These entitlements can be extended to all parents with care responsibilities in about a quarter of OECD countries – Canada, Chile, the Czech Republic, France, Greece, Italy, Portugal and Spain.

Flexible start and working hours and time saving

There are many workers who succeed in finding a satisfactory balance between work and family life, but there are many others who find this difficult. For example, the European Survey on the Quality of Life (Kotowska *et al.,* 2010) shows that 40% of workers report they do not have enough time for the family and other social activities while one quarter of workers report no difficulties.[17] To help parents and/or workers in general achieve a better work/life balance, in many OECD countries policy has moved to grant workers the right to adjust working hours, or to request their employer to do so. This signals the importance of work/life balance considerations to employers, while generally granting them the right to refuse for compelling business reasons (Table 4.2 and OECD, 2010d, for more detail).

Broadly speaking, flexible working-time arrangements fall into two groups (Riedman *et al*., 2010): *i)* basic flexitime arrangements which allow employees to vary the start and end time of work on a day-to-day basis, but which do not allow for variations in the length of the daily work schedule; and *ii)* more advanced schemes in which flexitime regulations are combined with either parental leave entitlements or so-called "time accounts" which allow for a much broader variability of working times, including variations in the length of the working day or week.[18]

Figure 4.8 shows that on average, more than half (56%) of all establishments with ten or more employees in the European Union offer employees flexitime arrangements which allow for an accumulation of leave hours that can result in taking additional days leave. By contrast, the proportion of employers allowing employees to simply vary the start and end on a daily basis is much lower, except in the United Kingdom and Ireland where about half of employers grant this type of flexibility to their employees.

Flexitime options also exist in other Anglophone countries and in Japan (OECD, 2010d, LMF2.4). For example, in New Zealand, flexible start and finish times on a regular basis were available to some or all staff in 63% of workplaces in 2008, and in 89% on an occasional basis (DoL, 2008). Similarly in the United States, only 10% of employers with

Table 4.2. **Statutory rights for flexible work arrangements**

	Work arrangements around childbirth		Right to request flexible working hours or part-time work for family reasons					
				Part-time work (*acceptable grounds for refusing requests: N = None; SB = serious business grounds; AG = any grounds*)				
	Work shift for medical reason during pregnancy and after childbirth	Working time arrangement for nursing and breastfeeding	Flexible working hours	To care for a child	To care for an adult	Right to revert to full-time hours	Share of part-time work in total employment (2009)[2]	Share of women in part-time work
Australia	Covered by right to request for flexible arrangements		Yes	SB	–	By negotiation	24.7	70.9
Austria		Yes	No	SB	–	Yes	18.5	80.6
Belgium	No		No	N	SB		18.2	80.6
Canada	Yes[1]	No	No		No		19.1	67.5
Chile[2]		Yes	No		No		9.1	56.4
Czech Republic	Yes	Yes	No	SB		No	3.9	68.7
Denmark	. .	. .	No	AG	–	. .	18.9	62.3
Estonia	No	Yes	No	AG		No	8.4	68.1
Finland	. .	. .		SB	AG	Yes	12.2	63.6
France	Yes	Yes		N	SB, in firms with more than 20 employees	Yes	13.3	79.8
Germany	No	No	No	SB		Yes	21.9	80.4
Greece	. .	Yes	No	SB	–	Yes	8.4	67.7
Hungary	Yes	Yes	No	By agreement	AG	No	3.6	65
Iceland			Yes	No			17.5	70
Ireland	No	Yes	No	AG	–	Yes	23.7	76.8
Israel[2]	. .	. .	No				14.6	73.3
Italy		Yes	Yes	AG			15.8	77.6
Japan	Yes	Yes	Yes	N	Yes		20.3	69.9
Korea	No	. .	No	AG	. .		9.9	59.3
Luxembourg				AG	–	Yes	16.4	81.2
Mexico		Yes	No				17.9	58.2
Netherlands	. .	. .		N	SB	Yes	36.7	75
New Zealand		Yes		SB		By agreement	22.5	71.9
Norway		Yes		SB		Yes	20.4	70.8
Poland				N	–	Yes	8.7	68.4
Portugal		Yes	Yes	SB	–	Yes	9.6	67.7
Russian Federation[2]	. .	Yes		SB		. .	3.2	61.9
Slovak Republic	Yes	Yes	Yes	SB		No	3	59
Slovenia		Yes		N	–	Yes	8.3	57.3
Spain	Yes	Yes	Yes	N		No	11.9	79.3
Sweden	. .	. .	No	SB	–	Yes	14.6	64.2
Switzerland	. .	. .	No	No		–	26.2	81.1
Turkey	. .	. .		AG		No	11.1	58.4
United Kingdom	. .	. .	SB			No	23.9	75.8
United States	No	No	No	AG	N	No	14.1	66.5

– indicates that the policy does not apply.

. .: indicates that information is not available. Many countries have additional eligibility criteria for requesting part-time work (*e.g.* length of service or size of firm), see OECD (2010d), the *OECD Family Database*.

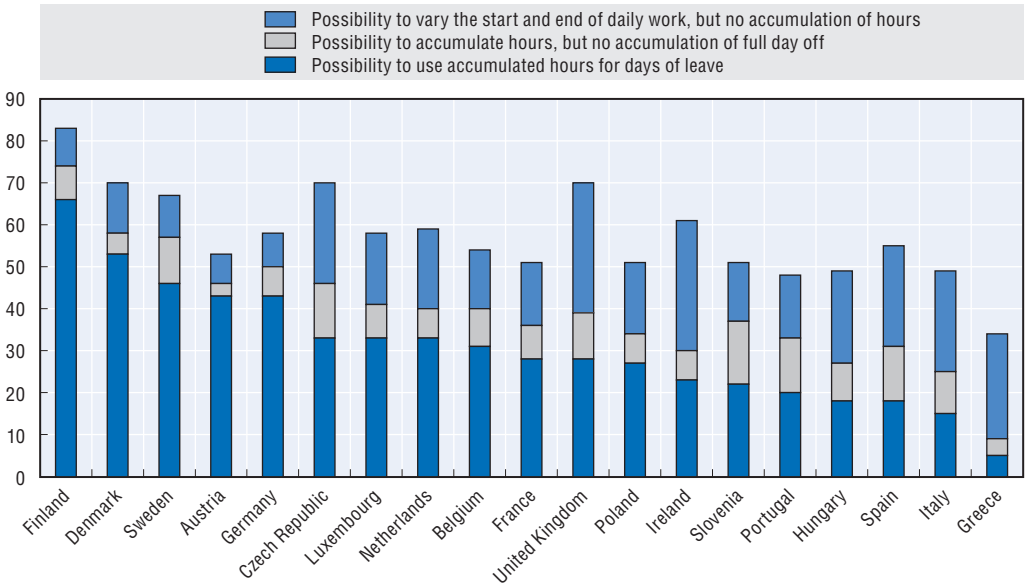
1. Only the federal jurisdiction and the provinces of Quebec and Manitoba have specific provisions.
2. 2008 for Chile, Israel and the Russian Federation.

Source: Response to OECD Part-time Work and Workplace Practices Questionnaires; OECD (2010a); Moss (2010), *International Review of Leave Policies and Related Research 2010*. BIS (2010), *Employment Relations Research Series* No. 115.

StatLink http://dx.doi.org/10.1787/888932394091

Figure 4.8. **Most companies that facilitate flexible working time entitle more than two-thirds of their employees**

Proportion of companies providing flexi-time by type, 2009[1]



Note: Countries are ranked by decreasing percentage of establishment allowing employees to either use accumulated hours for full days off or for longer periods of leave.

1. Establishments with 10 or more employees; all economic sectors are covered, except for agriculture.

Source: Eurofound, European Companies Survey 2009.

StatLink http://dx.doi.org/10.1787/888932393369

at least 50 employees allow most of their employees – generally those in more senior position – to vary the start and end on a daily basis, and 37% grant it periodically (Galinsky *et al.*, 2008).

Employees' *access to* and *use of* flexible working time practices depends on several factors including, company size, sector of activity, the composition of the workforce, and the workers family situation, as well as his/her position in the company. However, data on access to and use of flexible working time practices by employees in general, or working parents in particular, is limited. Available information on the use of teleworking suggests that at maximum across the OECD 15% of employees use this form of workplace flexibility on a regular basis in Belgium, the Czech Republic, Denmark, Finland and the Netherlands (OECD, 2010d, LMF2.4). Otherwise, recent cross-nationally comparable evidence on the access to and use of flexitime by employees is limited.

Recent evidence for some countries may serve to illustrate the relative importance of flexible workplace practices, and suggests that flexible working hours can be important in helping parents to meet work and family commitments (OECD, 2007 contains some country-specific evidence for the early 2000s). For example, in 2008, almost two-thirds (64%) of all Australian working families with children 12 years and under had a parent who made use of flexible working time to help care for their children. Flexible working hours (43%) and part-time work (30%) were the most commonly used work arrangements used by these families (ABS, 2010).[19]

Survey-based information on employers providing family-friendly supports and employees using it is available from recent British and French surveys. The majority of British employees (53%) have access to flexible hours and about half of these workers made

recent use of it (Table 4.A3.1). The proportion of workers using part-time work and flexible working times is similar. However, part-time employment is largely a regular feature while it is unclear whether flexible starting times are used regularly or only occasionally.

Evidence for France shows that flexible working times are widely accessible, particularly when they are used occasionally (Pailhé and Solaz, 2010). Almost 60% of workers feel they can arrange working times when on an ad-hoc basis, especially when they work long hours. However, only 10% of workers (mostly women) can adjust their working times on a regular basis to work around childcare and OSH care services (Table 4.A3.2). It appears that many workers use flexitime on an occasional basis, but regular use seems much lower than in case of part-time employment. French evidence also suggests that workers who have greater access to occasional flexitime are those who have least control over their working hours in general (Leturcq and Wierink, 2010; and Boyer and Nicolas, 2010).

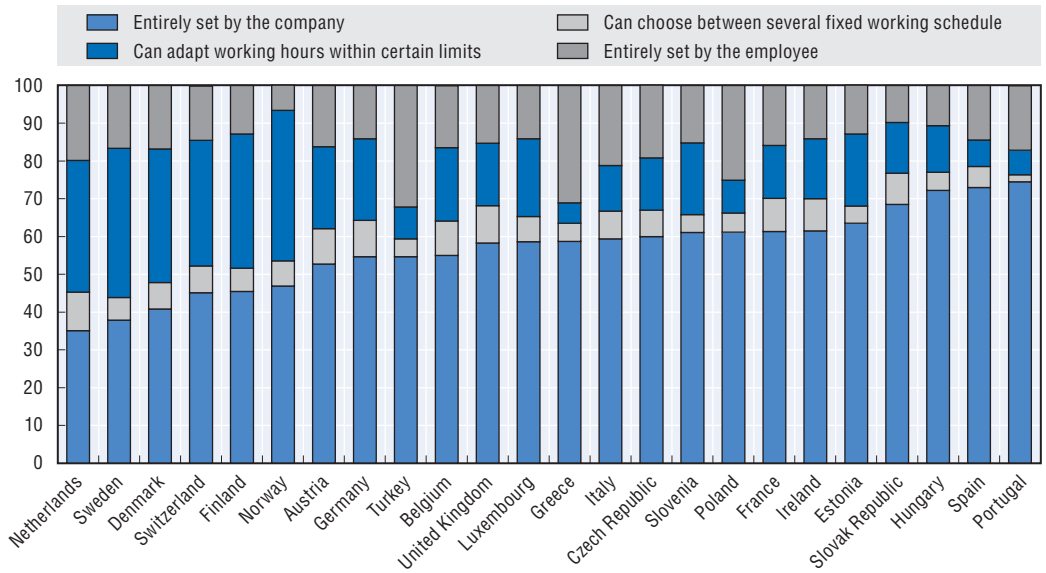
Control over working hours

In practice, many of the flexible workplace schemes are, naturally, designed to address employer needs in the production process, and their use as work-family reconciliation tool is determined by the extent to which employees can use these arrangements towards their preferred working time schedule (Chung *et al.*, 2007).

Figure 4.9 shows that in Sweden, the Netherlands, Switzerland, Denmark and Finland, employees frequently have at least some freedom in choosing their working hours. Also, in New Zealand, 40% of employees report having some flexibility in choosing when to work, while 54% report flexible start and finish times in 2008 (DoL, 2008). Similarly, just over 42% of Australian employees had some say in their regular working times in 2008, while almost

Figure 4.9. **In European countries at least one-third of employees have some say in their working times**

Proportion of employees having working time set, 2009



Note: Countries are ranked by decreasing proportion of employees having some opportunity to adapt their working time. Data refer to 2005 for Switzerland.

Source: Fifth European Survey on Working Conditions, 2010.

StatLink http://dx.doi.org/10.1787/888932393388

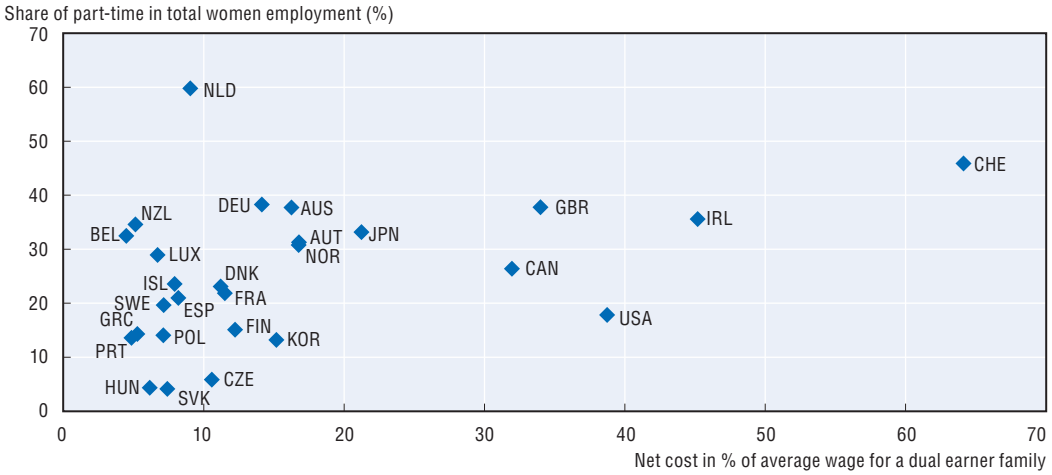
60% of employees had some say in start and finishing times on a daily basis (ABS, 2009). By contrast, control over working time among employees is most limited in Greece, Hungary and Portugal where more than 85% of employees report that working hours are entirely fixed by the employers.[20]

Part-time work: work/family balance opportunity and career pitfall[21]

Part-time work can help balance work and family life as it better matches care commitments and school-hours. Strong growth in part-time work since the 1980, has in many OECD countries facilitated the mobilisation of hitherto unused labour supply particularly among women. Across the OECD, one in ten men and one in four women work part-time (OECD, 2010c). In view of the development of part-time work, many OECD countries have set statutory rights for parents to request part-time work (Table 4.2), and the period of part-time work must usually be taken before the child reaches primary school age (some countries also grant specific rights to part-time work to workers who have to care for a dependent adult).

Caring responsibilities are one of the main reasons for part-time work and labour force inactivity among prime-age women. For many parents the choice to work part-time is constrained by lack of access to affordable childcare of good quality, and short and/or unpredictable school-hours. In fact, there appears to be a positive relationship between the part-time share in female employment and child care costs (Figure 4.10).

Figure 4.10. **Women are more likely to work part-time in countries with high childcare costs**



Note: Net childcare costs at 150% of average earnings; information on fees for the Netherlands concerns guidelines, and fees are often considerably higher.

Source: OECD (2010a), *OECD Employment Outlook*; OECD (2011), *Benefits and Wages 2008*.

StatLink http://dx.doi.org/10.1787/888932393407

The regulatory framework was developed by many OECD countries in the past decade to ensure equal treatment of part-time and full-time workers. However, there is a *penalty* for part-time work as on average it is characterised by lower hourly earnings, less training and promotion opportunities, less job security and less access to unemployment insurance. Having young children, a partner and low levels of educational attainment reduce the probability, particularly for women, of moving to full-time work. Part-timers living in households with low disposable incomes are more likely to become inactive than

staying in employment. For the most disadvantaged, working part time does not seem to act as a springboard to full-time employment and does not seem to help maintain the link with the labour market (OECD, 2010a). The associated self-sufficiency concerns come most to the fore when relationships break down, and parents have to match work and care commitments without a partner in the household (Chapter 6).

At the same time, there is also a *premium* to part-time work in terms of control over working time, stress and health, and it appears that for the vast majority of part-timers the advantages outweigh the disadvantages. OECD (2010a) showed that across the OECD about 83% of part-time workers do so voluntarily, and particularly the large group of female part-time workers is broadly satisfied with this employment outcome. Evidence on job-satisfaction suggests that women working part-time voluntary often accept lower earnings potential and less job security in exchange for better working-time arrangements and less stress. There should be no barriers to work part-time for those who wish to do so, but barriers to move from part-time to full-time employment should also be removed.

Notes

1. In this chapter, the statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.
2. The *Fair Work Act 2009* included the extension (from 1 January 2010) of the maximum period of unpaid parental leave from 12 to 24 months, subject to employer agreement for any time taken off after the first year. Paid parental leave was introduced on 1 January 2011 (Alexander *et al.*, 2010).
3. Since 2010, EU Directives on parental leave stipulate that countries should provide parents a minimum entitlement of four months unpaid leave from work upon childbirth or after the adoption of a child to be taken before the child turns 8. This entitlement is non-transferrable among parents. It is up to individual countries to decide on income support during the leave period.
4. Chapter 1 showed that women spent more time in unpaid work than men, and the gender difference is lower in countries where female employment rates are higher. The gender gap in unpaid work is also higher in the presence of children of pre-school age and diminishes when children get older (Anxo *et al.*, 2007). There is some evidence for Sweden which suggests that greater use of parental leave by fathers contributes to increased female earnings (Johansson, 2010).
5. The scheme offers EUR 10 per day to parents (usually the mother) if the other parent (usually the father) uses a day leave (*i.e.* does not transfer it) up to a maximum of about EUR 1 000 spanning about 4.5 months.
6. For example, for EU countries, see Pronzato (2009); for Austria: Lalive and Zweimüller (2005 and 2009); for France: Legendre *et al.* (2011), Ananian (2010), Lequien (2011), Marc (2004), Meurs *et al.* (2011), Moschion (2011) and Piketty (2003); for Germany: Ondrich *et al.* (2002); and Schönberg and Ludsteck (2006); for Norway: Aassve and Lappegard (2009); Ronsen (2009); and Schone (2004).
7. In general, parental leave measures are available for both parents. However, fathers generally only take short leave periods and mothers continue to be the main users of parental leave entitlements. This asymmetrical division offers us the opportunity to consider men as the control group. Another strategy would be to consider childless persons and compare their outcomes to those of parents. However, childlessness will diminish with the age of workers, and the identification of "permanent" childlessness among different age groups of workers is difficult. Also, it is unclear to what extent childlessness is voluntary (and may be affected by career considerations) or not.
8. Using data for 17 OECD countries from 1985 to 1999, Jaumotte (2003) found a positive effect of leave entitlements on employment rates of women aged 25 to 54 as long as the leave period did not exceed an equivalent of 20 weeks with full replacement of earnings. Above this point, additional weeks had a negative influence on female employment rates.
9. Coefficient values are noticeably reduced and lose statistical significance, however, when time trends are included to control for potential spurious correlation that might occur, for example, if nations choose to increase entitlements when employment is rising.

10. In addition to already existing maternity leave, countries which introduced parental leave after 1990 include: Australia, Belgium, Canada, Ireland, Japan and the Netherlands. The period of parental leave has been extended in few countries where these already existed before 1990 (Iceland, Denmark and Germany).
11. The OECD has started a work programme on policies which improve quality in early childhood education and care services. The project aims to identify the factors defining quality, policies that promote and enhance quality and how such policies can effectively be put in place. In future, results will become available through *www.oecd.org/edu/earlychildhood/quality*.
12. Formal childcare arrangements include: care in daycare centres, registered childminders based in their own homes looking after one or more children and care provided by a registered carer at the home of the child.
13. Informal care is generally defined as care arranged by the child's parent either in the child's home or elsewhere, provided by relatives, friends, neighbours, babysitters or nannies and it is generally unregulated. This type of care is not necessarily unpaid.
14. OECD (2010d) presents results for a wide range of earnings levels and different family compositions on: *www.oecd.org/els/social/workincentives*.
15. The average effective tax rate (AETR) is the proportion of gross earnings foregone as tax increases and benefit reductions that result from *taking up employment* [AETR = 1 – (Δ ynet/Δ ygross)]. The marginal effective tax rate (METR) is computationally the same, but measures the proportion of any increase in earnings which is lost either to taxation or benefit income withdrawals for *those already working*.
16. Hijzen and Venn (2011) discuss the effects of a particular form of working time reduction, the short-term work schemes, during the 2008/09 crisis.
17. Successive waves of the European Survey on Working Conditions from 2000 to 2010 also report that 18% of workers in EU countries are not satisfied with their work-life balance, and that this proportion has changed little over the years. Men are most likely to experience problems with their work-life balance when in their 30s and 40s; women are less likely to be dissatisfied and with less variation across age groups.
18. In these time-account schemes, hours worked above or below the contractually or collectively-agreed norm are banked as "credit hours" or "debit hours", respectively. Differences between the agreed and actual hours usually have to be balanced out within a certain reference period – *e.g.* per month, per annum –, the length of which varies from employer to employer. Belgium and the Netherlands have schemes that facilitate time saving over the life cycle.
19. The use of flexible work arrangements, in the week prior to the survey, by Australian working families has risen over time, from 53% in 1999 to 64% in 2008. This has been driven in part by an increase in the use of flexible working hours from 33% in 1999 to 43% in 2008. The use of part-time work to help care for children aged 0-11 years also increased from 23% to 31% over this same time period. The increase in the use of flexible working hours was particularly evident amongst employed fathers, increasing from 18% in 1999 to 30% in 2008. For employed mothers, there was an increase in the proportion using part-time work arrangements to help care for their children from 34% in 1999 to 42% in 2008 (ABS, 2010).
20. Control over working time is likely to be related to the position of employees within companies, and more senior staffers are most likely to have access to flexible working time schedules. As men are more likely to be in senior positions than women, they are likely to have more control over their working hours than women (OECD, 2010d, LMF2.4). Nevertheless, the proportion of working women with some control over their working hours is higher than for men in France, Hungary and Turkey.
21. OECD (2010a), *OECD Employment Outlook*, provides a full discussion of these and many other issues related to part-time employment.

References

Aassve, A. and T. Lappegard (2009), "Childcare Cash Benefits and Fertility Timing in Norway", *European Journal of Population,* Vol. 25, No. 1, pp. 67-88.

ABS – Australian Bureau of Statistics (2009), "Working Time Arrangements – Australia", Vol. 6342, *www.abs.gov.au*.

ABS – Australian Bureau of Statistics (2010), "Child Care", *Australian Social Trends*, Vol. 4102.0, June.

After School Alliance (2009), "America After 3pm. The Most In-depth Study of How America's Children Spend their Afternoons", After School Alliance, Washington, DC, *www.afterschoolalliance.org/AA3_Full_Report.pdf*.

Alexander, M., G. Whitehouse and D. Brennan (2010), "Australia", in P. Moss (ed.), *International Review of Leave Policies and Related Research* 2010, *Employment Relations Research Series,* No. 115, Department for Business Enterprise and Regulatory Reform.

Ananian S. (2010), "L'activité des mères de jeunes enfants depuis la mise en place du complément de libre choix d'activité", *Études et Résultats*, Vol. 726.

Anxo, D., L. Flood, L. Mencarini, A. Pailhé, A. Solaz and M.L. Tanturri (2007), "Time Allocation between Work and Family over the Life-Cycle: A Comparative Gender Analysis of Italy, France, Sweden and the United States", *IZA Discussion Paper,* No. 3193, Bonn.

Baker, M. and K. Milligan (2008), "How Does Job-protected Maternity Leave Affect Mother's Employment?", *Journal of Labor Economics,* Vol. 26, No. 4, pp. 655-691.

Berger, L. and J. Waldfogel (2004), "Maternity Leave and the Employment of New Mothers in the United States", *Journal of Population Economics,* Vol. 17, No. 2, pp. 331-349.

BIS (2010), *Employment Relations Research Series,* No. 115, London.

Blatter, M., S. Muehlemann and S. Schenker (2009), "The Cost of Hiring Skilled Workers", *Working Paper,* No. 15, Swiss Leading House, Zürich.

Bloom, N., T. Kretschmer and J. van Reenen (2010), "Are Family-friendly Workplace Practices a Valuable Firm Resource?", *Strategic Management Journal*, Vol. 32, No. 4 , pp. 343-367.

BMFSFJ (2010a), "Erfolgreich für mehr Vereinbarkeit von Familie und Beruf", Bundesministerium für Familie, Senioren, Frauen und Jugend, Germany, *www.bmfsfj.de*.

BMFSFJ (2010b), "Familienbewusste Arbeitszeiten", Bundesministerium für Familie, Senioren, Frauen und Jugend, Germany, *www.bmfsfj.de*.

Boyer, D. (2004), "Les pères bénéficiaires de l'APE : révélateurs de nouvelles pratiques paternelles ?", *Recherches et Prévisions*, Vol. 75, pp. 53-62.

Boyer, D. and M. Nicolas (2010), "La conciliation dans les entreprises : une mise en œuvre sexuée", in A. Pailhé and A. Solaz (2010), *Entre famille et travail : des arrangements de couples aux pratiques des employeurs*, La Découverte/INED, Paris, pp. 345-361.

BWFJ (2009), "Aktualität familienfreundlicher Maßnahmen in Krisenzeiten", Bundesministerium für Wirtschaft, Familie und Jugend, Austria, *www.bmwa.gv.at*.

CAS (2010), "La 'grand-parentalité' active, un triple enjeu de solidarité, de conciliation travail/hors travail et d'emploi des seniors", *Note d'Analyse*, No. 199, Centre d'Analyse Stratégique, Paris.

Catalyst (2010a), "Axiom – A New Model in Law Firm Work-Life Effectiveness", *www.catalyst.org*.

Catalyst (2010b), "Capital One – Flexible Work Solutions (FWS)", *www.catalyst.org*.

Chung, H., M. Kerkhofs and P. Ester (2007), *Working Time Flexibility in European Companies*, European Foundation for the Improvement of Living and Working Conditions, Dublin.

DoL (2008), "Work-life Balance and Flexibility in New Zealand. A Snapshot of Employee and Employer Attitudes and Experiences in 2008", Department of Labour, New Zealand.

Duvander, A.-Z. (2008), "Family Policy in Sweden", *Social Insurance Report*, Vol. 2008:15, *www.forsakringskassan.se*.

Duvander, A.-Z. and M. Johansson (2010), "How Effective Are Reforms Promoting Fathers' Parental Leave Use?", European Population Conference, Vienna, 1-4 September.

EGGE (2009), *The Provision of Childcare Services: A Comparative View of 30 European Countries*, European Commission's Expert Group on Gender and Employment Issues European Commission, Belgium.

EHRC (2009), "Working Better: Meeting the Needs of Families, Workers and Employers in the 21st Century", Equalities and Human Rights Commission, London.

Erler, D. (2009), "Germany: The Nordic Turn?", in S. Kamerman and P. Moss (2009), *The Politics of Parental Leave Policies*, Policy Press, Bristol, pp. 119-134.

Espinola-Arredondo, A. and S. Mondal (2009), "The Effect of Parental Leave on Female Employment: Evidence from State Policies", School of Economic Sciences, Washington State University, *Working Paper*, No. 2008-15.

Eurofound (2010), "Changes Over Time – First Findings from the Fifth European Working Conditions Survey", European Foundation for the Improvement of Living and Working Conditions, Dublin.

Eversston, M. and A.-Z. Duvander (2010), "Parental Leave – Possibility or Trap? Does Family Leave Length Effect Swedish Women's Labour Market Opportunities?", *European Sociological Review*, Advance Access published, *DOI:10.1093/esr/jcq018*.

Executive Office of the President Council of Economic Advisers (2010), "Work-life Balance and the Economics of Workplace Flexibility", *Federal Publications Paper*, No. 714, Washington, DC.

Eydal, G.B. and I.V. Gislason (2008), "Equal Rights to Earn and Care – Paid Parental Leave in Iceland", Felags og Tryggingamala Raduneytid.

Family Friendly Working Hours Taskforce (2010), "Flexible Working: Working for Families, Working for Business", United Kingdom.

Federal Statistical Office (2010), "Geburten und Sterbefaelle", online database: *www.destatis.de*, accessed 26 September 2010.

Galinsky, S., J. Bond and K. Sakai (2008), *2008 National Study of Employers*, The Families and Work Institute, New York.

Georgetown University Law Center (2010), "Flexible Work Arrangements: Selected Case Studies", Washington, DC.

Gimbert, V. and C. Godot (2010), "Vivre ensemble plus longtemps. Enjeux et opportunités pour l'action publique du vieillissement de la population française", *Centre d'analyse stratégique*, France.

Glaser, K., E. Ribé, U. Waginger, D. Price, R. Stuchbury and A. Tinker (2010), "Grandparenting in Europe and the US", Grandparents Plus, London.

Goldschmidt, P. and D. Huang (2007), "The Long-Term Effects of After-School Programming on Educational Adjustment and Juvenile Crime: A Study of the LA's BEST After-School Program", US Department of Justice, Los Angeles.

Gornick, J.C. and A. Heron (2006), "The Regulation of Working Time as Work-Family reconciliation Policy: Comparing Europe, Japan and the United States", *Journal of Comparative Policy Analysis*, Vol. 8, No. 2, pp. 149-166, June.

Gregory, A. and S. Milner (2009), "Trade Unions and Work-Life Balance: Changing Times in France and the UK?", *British Journal of Industrial Relations*, Vol. 47, No. 1, pp. 122-146.

Haas, L. and T. Rostgaard (2011), "Fathers' Rights to Paid Parental Leave in the Nordic Countries: Consequences for the Gendered Division of Leave", *Community, Work and Family*, forthcoming.

Han, W-J., Ch. Ruhm and J. Waldfogel (2009), "Parental Leave Policies and Parent's Employment and Leave-Taking", *Journal of Policy Analysis and Management*, Vol. 28, No. 1, pp. 29-54.

Han, W.-J., Ch. Ruhm, J. Waldfogel and E. Washbrook (2009), "Public Policies and Women's Employment after Childbearing", *NBER Working Paper Series,* No. 14660, Cambridge.

Harvard Family Research Project (2006), "Demographic Differences in Patterns of Youth Out-of-School Time Activity Participation", *Journal of Youth Development*, Vol. 1, No. 1.

Hayward, B., B. Fong and A. Thornton (2007), *The Third Work-Life Balance Employer Survey: Main findings*, BMRB Social Research, Department for Business, Enterprise and Regulatory Reform, *Employment Relations Research Series,* No. 86, London.

Hegewisch, A. (2009), *Flexible Working Policies: A Comparative Review*, Institute for Women's Policy Research, Manchester, *www.iwpr.org/pdf/Flexibleworking.pdf*.

Hegewish, A. and J.C. Gornick (2011), "The Impact of Work-Family Policies on Women's Employment: A Review of Research from OECD Countries", *Community Work and Family*, forthcoming.

Heywood, J.S. and U. Jirjahn (2009), "Family-friendly Practices and Worker Representation in Germany", *Industrial Relations*, Vol. 48, No. 1, pp. 121-145.

Hijzen, A. and D. Venn (2011), "The Role of Short-Time Work Schemes during the 2008-09 Recession", Social, *Employment and Migration Working Paper,* No. 115, OECD Publishing, Paris, *www.oecd.org/els/workingpapers*.

Hooker, H., F. Neathay, J. Casebourne and M. Munro (2007), *The Third Work-Life Balance Employee Survey: Main findings*, Institute for Employment Studies, Department for Trade and Industry, *Employment Relations Research Series,* No. 58, London.

Huang, D., S.K. Kyung, A. Marshall and P. Pérez (2005), "Keeping Kids in School: An LA's BEST Example. A Study Examining the Long-Term Impact of LA's BEST on Students' Dropout Rates", National Center for Research on Evaluation, Standards, and Student Testing (CRESST), University of California.

ILO (2010), "Maternity Protection Convention 2000", *www.ilo.org/ilolex/cgi-lex/convde.pl?C183*, October.

Institut der deutschen Wirtschaft Köln (2010), "Europäischer Unternehmensmonitor Familienfreundlichkeit 2010", im Auftrag des BMFSFJ.

Jaumotte, F. (2003), "Female Labour Force participation Past Trends and Main Determinants in OECD Countries", *OECD Economics Department Working Papers,* No. 376, OECD Publishing, Paris.

Johansson, E.-A. (2010), "The Effect of Own and Spousal Parental Leave on Earnings", Institute for Labour Market Policy Evaluation (IFAU), *Working Paper,* No. 2010:4, Uppsala.

Jongen, E. (2010), "Child Care Subsidies Revisited", CPB Document No. 200, February, *www.cpb.nl*.

Kamerman, S. and P. Moss (2009), *The Politics of Parental Leave Policies*, Policy Press, Bristol.

Kamerman, S. and J. Waldfogel (2010), "United States", in P. Moss (ed.), *International Review of Leave Policies and Related Research 2010*, *Employment Relations Research Series,* No. 115, Department for Business & Skills, London, pp. 240-243.

Kerkhofs, M., H. Chung and P. Ester (2008), "Working Time Flexibility Across Europe: A Typology Using Firm-level Data", *Industrial Relations Journal*, Vol. 39, No. 6, pp. 569-585.

Lalive, R. and J. Zweimüller (2005), "Estimating the Effect of Maximum Parental Leave Duration on Mother's Subsequent Labour Market Careers", mimeo, University of Lausanne & University of Zürich.

Lalive, R. and J. Zweimüller (2009), "How Does Parental Leave Affect Fertility and Return-to-Work? Evidence from Two Natural Experiment", *Quarterly Journal of Economics,* Vol. 124:3, pp. 1363-1402.

Lamb, M. (2010), *The Role of Fathers in Child Development*, Wiley and Sons, New York.

Le Bihan-Youinou, B. and C. Martin (2009), "Working and Caring for a Dependent Elderly Parent: Comparative Analysis of Six European Countries", Espanet Conference, Urbino.

Lefèvre, C., A. Pailhé and A. Solaz (2010), "Les employeurs, un autre acteur de la politique familiale ?", in A. Pailhé and A. Solaz (2010), *Entre famille et travail : des arrangements de couples aux pratiques des employeurs*, La Découverte/INED, Paris, pp. 287-306.

Legendre, E., Vanovermeir S. and O. Sautory (2011), "Situations professionnelles à l'entrée et à la sorite du Complément de Libre Choix d'Activité (CLCA)", *Études et Résultats*, No. 750.

Lequien, L. (2011), "L'impact sur les salariés de la durée d'une interruption de carrière suite à une naissance", *Annales d'Économie et de Statistiques*, forthcoming.

Leturcq, M. and M. Wierink (2010), "Temps de travail et bien-être des mères de famille nombreuse", in A. Pailhé and A. Solaz (eds.), *Entre famille et travail : des arrangements de couples aux pratiques des employeurs*, La Découverte/INED, Paris, pp. 99-120.

Livingston, G. and K. Parker (2010), "Since the Start of the Great Recession, More Children Raised by Grandparents", *Social and Demographic Trends*, Pew Research Centre, Washington, DC.

Marc, C. (2004), "L'influence des conditions d'emploi sur le recours à l'APE : une analyse économique du comportement d'activité des femmes", *Recherches et Prévisions*, No. 75, pp. 21-38.

Meurs, D., A. Pailhé and S. Ponthieux (2011), "Child-related Career Interruptions and the Gender Wage Gap in France", *Annales d'Économie et de Statistique*, forthcoming.

MORI (2009), "Extended Schools Survey of Schools, Pupil and Parents. A Quantitative Study of Perceptions and Usage of Extended Services in Schools", *DCSF Research Report,* No. RB068, London.

Moschion, J. (2011), "Reconciling Work and Family Life: The Effect of the French Paid Parental Leave", *Annales d'Économie et de Statistique*, forthcoming.

Moss, P. (2010), "International Review of Leave Policies and Related Research 2010", *Employment Relations Research Series*, No. 115, Department for Business Enterprise and Regulatory Reform.

Moss, P. and M. Korintus (2008), "International Review of Leave Policies and Related Research 2008", *Employment Relations Research Series*, No. 100, Department for Business Enterprise and Regulatory Reform.

NOSOSCO (2009), *Social Protection in the Nordic Countries, 2007/2008*, Nordic Social Statistical Committee, Copenhagen.

OECD (2003), *Babies and Bosses: Reconciling Work and Family Life. Vol. 2, Austria, Ireland and Japan*, OECD Publishing, Paris, *www.oecd.org/els/social/family*.

OECD (2005), *Babies and Bosses: Reconciling Work and Family Life: Vol. 4, Canada, Finland, Sweden and the United Kingdom,* OECD Publishing, Paris, *www.oecd.org/els/social/family*.

OECD (2007), *Babies and Bosses: Reconciling Work and Family Life: A Synthesis of Findings for OECD countries*, OECD Publishing, Paris, *www.oecd.org/els/social/family*.

OECD (2010a), *OECD Employment Outlook*, OECD Publishing, Paris, *www.oecd.org/els/employment/outlook*.

OECD (2010b), *OECD Education Database,* OECD Publishing, Paris, *www.oecd.org/education/database*.

OECD (2010c), *OECD Reviews of Migrant Education: The Netherlands*, OECD Publishing, Paris.

OECD (2010d), *OECD Family Database,* OECD Publishing, Paris, *www.oecd.org/els/social/family/database*.

OECD (2011), *Benefits and Wages: OECD Indicators,* OECD Publishing, Paris, *www.oecd.org/els/social/workincentives*.

Ondrich, J., K. Spiess and Q. Yang (2002), "The Effect of Maternity Leave on Women's Pay in Germany 1984-1994", DIW, German Institute for Economic Research, Berlin, *www.diw.de/documents/dokumentenarchiv/17/39209/ondrich_spiess_yang.pdf*.

Pailhé, A. and A. Solaz (2010), *Entre famille et travail : des arrangements de couples aux pratiques des employeurs*, La Découverte/INED, Paris.

Peters, M., H. Carpenter, O. Norden, L. Todd and C. Cummings (2009), "Extended Schools Subsidy Pathfinder Evaluation Interim Report", *DCSF Research Report*, No. DCSF-RR132, London.

Piketty, Th. (2003), "L'impact de l'allocation parentale d'éducation sur l'activité féminine et la fécondité, 1982-2002", *Working Paper*, No. 2003.9, CEPREMAP.

PricewaterhouseCoopers, PwC LLP (2009), "US Human Capital Effectiveness Report", New York.

Pronzato, Ch. (2009), "Return to Work after Childbirth: Does Parental Leave Matter in Europe?", *Review of the Economics of Households*, Vol. 7, pp. 341-360.

Ray, R., J. Gornick and J. Schmitt (2010), "Who Cares? Assessing Generosity and Gender Equality in Parental Leave Policy Designs in 21 Countries", *Journal of European Social Policy,* Vol. 20, No. 3, pp. 196-216.

Reich, N. (2010), "Who Cares? Determinants of the Fathers' Use of Parental Leave in Germany", *European Population Conference*, Vienna, 1-4 September.

Riedmann, A., G. Van Gyes, A. Roman, M. Kerkhofs and S. Beckmann (2010), *European Company Survey 2009 – Overview*, European Foundation for the Improvements of Working Lives, Dublin.

Ronsen, M. (2009), "Long-term Effects of Cash for Childcare on Mothers' Labour Supply", *Labour,* Vol. 23, No. 3, pp. 507-533.

Rosemberg, J. and W.B. Wilcox (2006), "The Importance of Fathers in the Healthy Development of Children", US Department of Health and Human Services.

Ruhm, Ch. (1998), "The Economic Consequences of Parental Leave Mandates: Lessons from Europe", *Quarterly Journal of Economics*, Vol. 113, No. 1, pp. 285-317, MIT Press, February.

Schönberg, U. and J. Ludsteck (2006), "Maternity Leave Legislation, female, Labour Supply, and the Family Wage Gap", *IZA Discussion Paper,* No. 2699, Bonn.

Schone, P. (2004), "Labour Supply Effects of a Cash-for-Care Subsidy", *Journal of Population Economics*, Vol. 17, pp. 703-727.

SCP (2009), *Emancipatiemonitor 2008*, Sociaal en Cultureel Planbureau, 's-Gravenhage, The Hague.

ANNEX 4.A1

Further Information on Parental Leave Arrangements

Parental and childcare leave

In addition to maternity or pregnancy leave, parental leave arrangements facilitate the provision of personal care to children by fathers and mothers in all OECD countries except in Mexico, Switzerland, and Turkey. Often introduced as supplementary rights for mothers only, parental leave entitlements have been extended to fathers in most countries. For that reason in most countries, parental leave is now available equally to mothers and fathers, either as *i)* a non-transferable individual right (*e.g.* both parents have an entitlement to an equal amount of leave); or *ii)* an individual right that can be transferred to the other parent; or *iii)* a family right that parents can divide between themselves as they choose.

Table 4.A1.1 provides some key characteristics of leave systems. The first column shows whether the duration of unpaid leave is defined with reference to adults in a couple family (*e.g.* the maximum duration of leave to be taken by the two parents in a household cannot exceed one year) or for each parent individually (*e.g.* both parents are entitled to 1 year of leave irrespective of how the partner use his/her entitlement). The second column indicates whether leave was paid or not, and on what basis (earnings-related, flat-rate) in 2008, and the third column shows how the time-limit for parents to take up parental leave varies across countries with the age of children.

In some countries, parental leave is supplemented by a further period of leave (home-care leave or childcare leave) that parents can take to care for a young child, often up to age three. Eligibility criteria are different than for parental leave, as all parents are often entitled to home-care leave payment regardless of work history.

Flexible leave options

Leave arrangements in many countries include elements which facilitates a more flexible use of parental leave entitlements. Most frequently parental leave legislation allows for use of parental leave entitlements on a part-time basis (Table 4.A1.2). Also, leave entitlements can often be used in separate blocks over a few years, *e.g.* to cover for pre-school holidays.

Austria, the Czech Republic (when eligible to maternity benefits), France, Germany, and Norway give parents the possibility to choose their preferred parental leave duration with shorter period being paid at a higher rate. Finally, parents of large families, or with multiple births are sometimes entitled to extended leave benefits.

Table 4.A1.1. **Statutory paid parental and child or home-care leave arrangements, 2008**

	Parental leave			Additional childcare leave
	Basis of the entitlement and transferability between partners	Payment basis	Age limit of children to take parental leave	
Australia	Family	Unpaid	No mandatory limit but leave has to be taken around childbirth.	None
Austria	Family	Flat-rate	Up to the 2nd birthday.	No, but leave for personal reasons can be used to care for children.
Belgium	Individual	Flat-rate	Up to the 6th birthday.	No, but time credit account can be used to care for children.
Canada[1]	Family	Flat-rate	Should be consecutive to maternity leave.	None
Chile	None	–	–	None
Czech Republic	Individual (but only one parent is entitled to the benefit)	Flat-rate	Up to the 3rd birthday.	None
Denmark	Family	Full earnings up to a ceiling	Until the child is 48 weeks old.	None
Estonia	Family	100% of the average earnings get for the 12 months preceding the leave up to a ceiling, followed by flat-rate benefit.	Up to the 3rd birthday.	Two weeks of unpaid leave per year for children below 14 years.
Finland	Family	Parental leave: 70-75% of earnings up to a ceiling. Childcare leave: flat-rate.	No mandatory limit.	Yes, until a child's third birthday.
France	Family	Flat-rate	Up to the 3rd birthday.	None
Germany	Individual	67% of earnings up to a ceiling for 12 months.	Up to the 3rd birthday.	None
Greece	Individual	Unpaid	Until the child turns three and half years.	None, but parents can take time off as part of "flexible working".
Hungary	Family	70% of earnings up to a ceiling	Up to child's 3rd birthday.	Yes, for family with three or more children.
Iceland	Three months Individual, and three other months as family entitlement.	80% of earnings up to a ceiling, followed by an unpaid leave.	Until 18 months after the birth.	13 unpaid weeks for each parent until the child is 8 years old.
Ireland	Individual	Unpaid	Up to the child's 8th birthday (16th is case of children with disabilities).	None
Israel	None	. .	. .	None
Italy	Individual, but the total taken by two parents cannot exceed ten months (11 months if the father takes at least three months).	30% of earnings, up to a ceiling after 6 months. Unpaid if child aged 3-8.	Up to the child's 8th birthday.	None
Japan	Family	40% of earnings up to a ceiling.	Up to the child's 1st birthday.	None, but parents in needs can extend child-care leave for an additional 6 months.
Korea	Individual	Flat-rate	Up to the child's 5th birthday.	None
Luxembourg	Individual	Flat-rate	After maternity leave.	None
Mexico	None	. .	. .	. .
Netherlands	Individual	Unpaid, except civil servant or favourable collective agreements.	Up to the child's 8th birthday.	None
Norway	Individual	% of earnings, up to a ceiling + additional unpaid leave.	Up to the 3rd birthday.	One year of unpaid leave for each parent, but can be combined with cash-for-care benefit for children below age 3.
Poland	Family	Flat-rate	Up to the child's 4th birthday.	None
Portugal	Individual	Unpaid, except for 15 "daddy days"	Up to the child's 6th birthday.	Up to two years of unpaid leave.
Russian Federation	Family	40% of average earnings until child is 18 months.	Up to the 3rd birthday .	None
Slovak Republic	Individual	Flat-rate	Up to the 3rd birthday.	None
Slovenia	Individual, but transferable	100% of the average earnings get for the 12 months preceding the leave, up to a ceiling.	Up to the child's 8th birthday.	None

Table 4.A1.1. **Statutory paid parental and child or home-care leave arrangements, 2008** *(cont.)*

	Parental leave			Additional childcare leave
	Basis of the entitlement and transferability between partners	Payment basis	Age limit of children to take parental leave	
Spain	Individual	Unpaid	Up to the 3rd birthday.	None, except for employees in the public sector.
Sweden	Family, but two months are a non-transferable individual right	80% of earnings, up to a ceiling for 390 days - flat-rate after..	Up to the child's 8th birthday.	– Unpaid leave Until 18 months after the birth[1]. – Home care allowance paid by municipalities to parents not using childcare facilities.
Switzerland	None	–	–	–
United Kingdom	Family	Unpaid	Up to the 5th birthday.	None
United States	Individual	Unpaid	Up to the 1st birthday.	None

Note: Legislation as applied the 1st July 2008. More information of parental leave replacement rates in OECD (2010d, PF2.4).
1. These are entitlements to parental benefits under Federal Employment Insurance and the Quebec Parental Insurance Plan Benefit. However, in some jurisdictions, parental leave is an entirely individual entitlement.
Source: National authorities and Moss and Korintus (2008).

StatLink http://dx.doi.org/10.1787/888932394110

Table 4.A1.2. **Statutory parental and childcare leave arrangements**

	Part-time option	Separate block option	Short/long payment option[1]	Extended leave for larger families
Australia	No	No	. .	No
Austria	Yes	. .	Yes	No
Belgium	Yes	Yes	No	. .
Canada	No	No	No (except in Quebec)	No
Czech Republic	Yes	Yes	Yes	No
Denmark	Yes	Yes	No	No
Estonia	No	Yes	No	No
Finland	Yes	Yes	No	Extra weeks for multiple births
France	Yes	Yes	Yes, from a third child	Extra weeks from the 2nd child
Germany	Yes	Yes	Yes	Higher payment in case of multiple births
Greece	No	Yes	. .	Extra weeks for multiple births and sole parents
Hungary	Yes	No	No	No
Iceland	No	Yes	No	Extra weeks for multiple births
Ireland	No	Yes	. .	Extra weeks for multiple births
Israel	. .	. .	. .	. .
Italy	No	Yes	No	Extra weeks for multiple births
Japan	Yes	No[2]	No	No
Korea	No	No	No	. .
Luxembourg	Yes	No	No	. .
Netherlands	Yes	Yes	. .	Extra weeks for multiple births
Norway	Yes	Yes	Yes	Extra weeks for multiple births
Poland	No	Yes	No	No
Portugal	Yes	Yes	No	No
Russian federation	Yes	No	No	No
Slovak Republic	No	No	No	No
Slovenia	Yes	Yes	No	Extra weeks for multiple births
Spain	Yes	No	. .	Extra weeks for multiple births
Sweden	Yes	Yes	No	. .
United Kingdom	No	Yes	. .	Extra weeks for multiple births

Note: . . not relevant because leave is unpaid.
1. Possibility to choose leave of different duration, with shorter leaves paid at a higher rate.
2. As an exception, if a father takes child care leave within the eight weeks after childbirth, he is entitled to take child care leave once more in the future.
Source: National authorities and Moss and Korintus (2008).

StatLink http://dx.doi.org/10.1787/888932394129

ANNEX 4.A2

Background Information on Financial Incentives to Work

Financial incentives to work

Table 4.A2.1 provides estimates of the marginal effective tax rates associated with entering the labour market or with increasing the number of hours worked. Effective tax rates are estimated for married couples with two children aged 4 and 6 and no formal childcare costs (the tax/benefit position of sole parents is discussed in Chapter 6). In all cases, the estimated taxes relate to the labour income of spouse doing the transitioning. Importantly, the estimated effective tax rates are sensitive to the level of earnings.

The left half of the table looks at the tax rates for a transition from inactivity to part-time employment. In one-earner couples both partners are assumed to be initially inactive; tax rates are estimated for a transition of one of the partners into part-time employment at 50% of the annual average full-time wage (column 2). Dual-earner couples, instead, start from a situation where one of the partners is inactive and the other has full-time earnings equal to 67% of the average wage; tax rates are computed for a transition of the inactive partner to part-time employment at 50% of the average wage (column 3).

In most OECD countries one-earner married couples have very little financial incentive to transition from inactivity to part time employment: in 16 out of 29 countries the effective tax rate is 80% or more of earnings; in four of these countries (Sweden, Switzerland (Zürich), Ireland and Norway; column 2) there is actually no incentive as the effective tax rates is 100% or above. The incentives to enter the labour market part-time are much stronger for those who already have a partner in work: the effective tax rate is below 50% for all countries except Denmark and is especially low in Korea and Spain (less than 20%, column 3). Only in Italy, Turkey, Greece and the United States the incentives to work part-time are stronger for single-earner families.

The right half of the table looks at tax rates for families that move from part-time to full-time employment. In one-earner couples one partner initially earns 50% of average earnings and then increases hours to full-time employment at 100% of the average wage; the second partner is inactive throughout (column 5). Column 6 illustrates the same increase from part-time to full-time work at average earnings, but then for someone with a partner who has earnings equal to 67% of the average wage (column 6).

About half of the countries included in the model offer strong financial incentives (METR < 50%, column 5) to increase the number of worked hours from part-time to full-time employment for single-earner families. The incentives are strongest in the Slovak Republic, Spain, Portugal and the Czech Republic (METR < 30%, column 5) and weakest in

Table 4.A2.1. **Marginal effective tax rates for part-time employees**

Different working-hours transitions, 2008, in percentage[1]

	Inactivity >> 1/2[2]			1/2 >> full		
	Sole parent	One-earner married couple	Two-earner married couple	Sole parent	One-earner married couple	Two-earner married couple
	[1]	*[2]*	*[3]*	*[4]*	*[5]*	*[6]*
Australia	46	61	42	58	60	47
Austria	80	95	26	45	45	45
Belgium	82	71	42	61	54	57
Canada	55	63	49	60	60	38
Czech Republic	75	94	36	53	29	33
Denmark	97	99	86	55	94	47
Finland	63	90	28	58	72	41
France	73	83	24	44	43	35
Germany	82	82	49	64	60	51
Greece	11	2	33	46	46	33
Hungary	67	81	25	55	55	56
Iceland	68	98	41	43	34	43
Ireland	60	103	24	65	49	28
Italy	–2	–2	37	36	32	43
Japan	85	85	20	62	73	22
Korea	82	72	9	16	39	13
Luxembourg	83	80	26	40	57	35
Netherlands	78	91	37	62	68	47
New Zealand	61	69	37	56	55	47
Norway	81	105	29	68	61	37
Poland	45	67	44	72	41	29
Portugal	65	84	20	31	28	32
Slovak Republic	32	67	24	57	18	30
Spain	60	60	13	24	22	28
Sweden	62	100	23	47	43	32
Switzerland	101	100	31	30	48	27
Turkey	21	20	30	33	33	33
United Kingdom	67	75	46	72	75	33
United States	27	27	41	51	54	26

1. Hourly earnings correspond to the average wage level throughout so that a half-time employee would have earnings equal to 50% of average wage. Social assistance and any other means-tested benefits are assumed to be available subject to the relevant income conditions. Children are aged 4 and 6 and neither childcare benefits nor childcare costs are considered. In-work benefits that depend on a transition from unemployment into work are not available since the person changing working-hours is already in employment prior to the change. The percentage of average wage relates to one spouse only; the second spouse is assumed to be "inactive" with no earnings in a one-earner couple and to have full-time earnings equal to 67% of average wage in a two-earner couple. Figures for Ireland, Korea and Turkey are based on the APW (Average Production Worker wages).
2. Results relate to the situation of a person who is inactive and receives no unemployment benefits. In-work benefits that depend on a transition from unemployment into work are available.

Source: OECD (2011), *Benefits and Wages*.

StatLink http://dx.doi.org/10.1787/888932394148

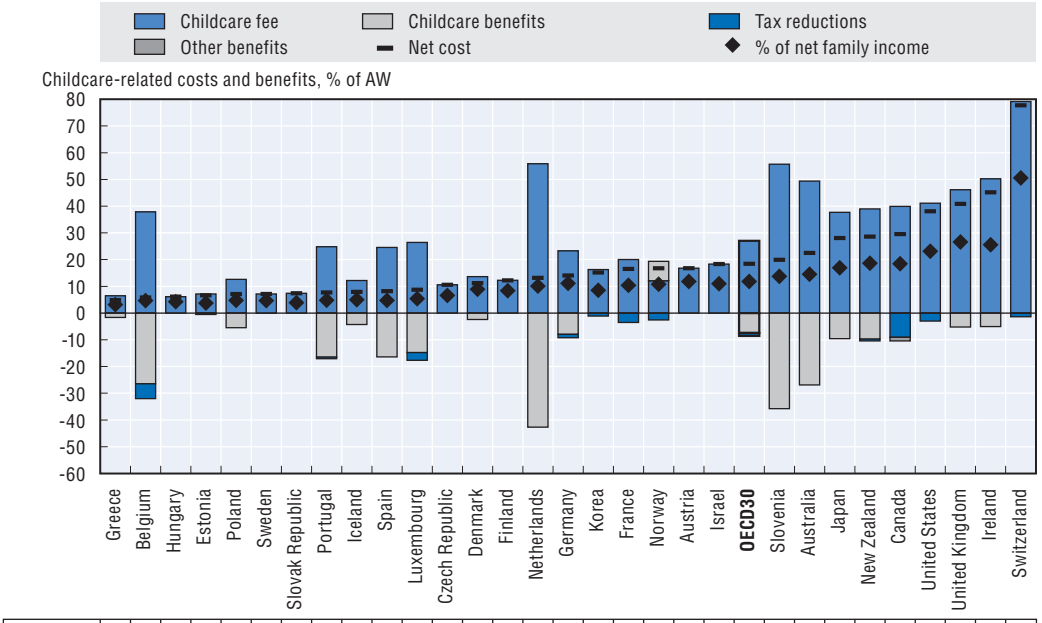
Finland, Japan, the United Kingdom and Denmark (METR > 70%, column 5). Again the incentives to increase labour supply from part-time to full-time are generally stronger for dual-earner families, even though this is true for fewer countries compared to incentives to transition from inactivity to part-time work.

Childcare costs

Across OECD countries, the average cost of childcare is 18% of the average wage and 12% of the family's net income for families where both parents earn 100% of the average worker earnings (Figure 4.A2.1, Panel A); families with lower earnings (*i.e.* families where

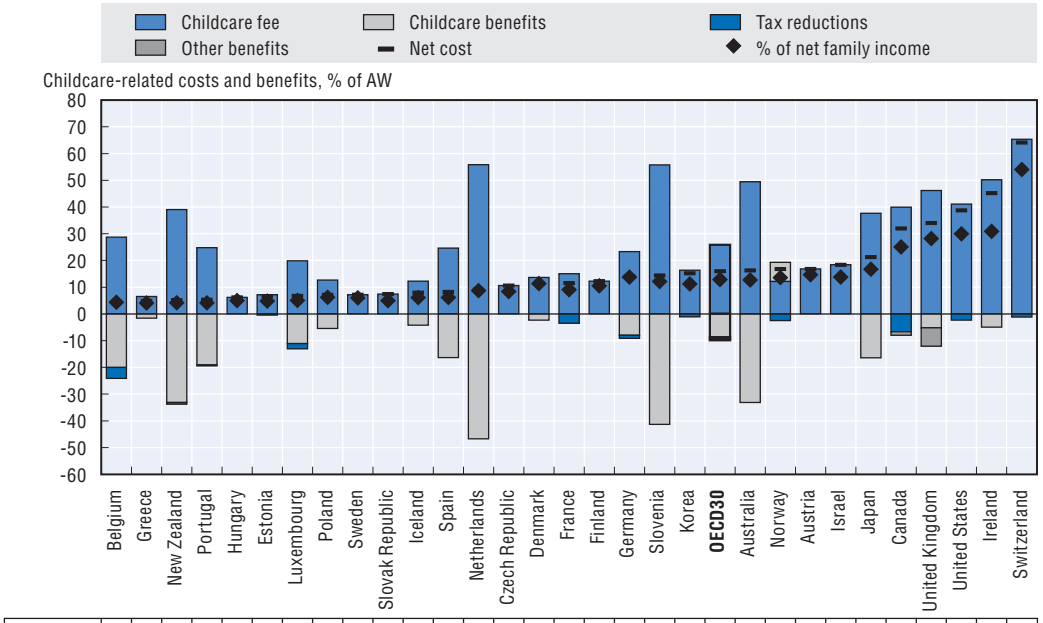
Figure 4.A2.1. **Components of net childcare costs, couple families, 2008**

Panel A. **Couple where male earns 100% of average wage and female earns 100% of average wage**



	Greece	Belgium	Hungary	Estonia	Poland	Sweden	Slovak Republic	Portugal	Iceland	Spain	Luxembourg	Czech Republic	Denmark	Finland	Netherlands	Germany	Korea	France	Norway	Austria	Israel	OECD30	Slovenia	Australia	Japan	New Zealand	Canada	United States	United Kingdom	Ireland	Switzerland
Net cost	5	6	6	7	7	7	7	8	8	8	9	11	11	12	13	14	15	17	17	17	18	18	20	23	28	29	30	38	41	45	78
% net family income	3	5	4	4	5	5	4	5	5	5	5	7	9	8	10	11	9	10	11	12	11	12	14	15	17	19	18	23	27	26	51

Panel B. **Couple where male earns 100% of average wage and female earns 50% of average wage**



	Belgium	Greece	New Zealand	Portugal	Hungary	Estonia	Luxembourg	Poland	Sweden	Slovak Republic	Iceland	Spain	Netherlands	Czech Republic	Denmark	France	Finland	Germany	Slovenia	Korea	OECD30	Australia	Norway	Austria	Israel	Japan	Canada	United Kingdom	United States	Ireland	Switzerland
Net cost	0	3	3	4	5	5	5	5	5	6	6	7	7	7	8	8	11	11	12	12	12	14	14	15	15	17	18	20	38	39	45
% net family income	0	4	4	4	6	6	5	6	7	7	7	6	9	7	9	9	13	13	12	14	14	18	17	21	18	19	20	21	43	47	44

Note: The childcare cost calculations for Austria reflect the situation in Vienna; for Belgium, the French community; Canada, the province of Ontario; the Czech Republic in villages and towns with more than 2 000 inhabitants; for Germany, Hamburg; for Iceland, Reykjavík; for Switzerland, Zürich; for the United Kingdom, England; and for the United States, Michigan. These results do not represent the situation in the rest of the country. For example, net childcare costs in the Canadian provinces of Alberta or Quebec will be different from Ontario.

Source: OECD (2011), *Benefits and Wages*.

StatLink http://dx.doi.org/10.1787/888932393426

one of the parents earn 100% and the other earns 50% of the average worker earnings) spend a slightly lower share of the average wage (16%) but a slightly higher share of their net income (13%) on childcare (Figure 4.A2.1, Panel B). Within the OECD, total childcare costs as a percentage of the average wage are highest for Switzerland (Zürich), Ireland, the United Kingdom and the United States (Michigan) while they are lowest for Belgium and Greece. Net childcare costs for sole-parent families are discussed in Chapter 6.

ANNEX 4.A3

Availability and Use of Flexible Time Policies in France and the United Kingdom

There are not many recent surveys which provide information on the extent to which employers provide flexible working time policies *and* their use by employees. However, the United Kingdom *Third Work-Life Balance Survey* is an exception.

Table 4.A3.1 shows that employers in the United Kingdom are far more likely to offer part-time employment than other flexible working time policies. At the same time, a similar proportion of employees (27%) worked part-time and/or flexible hours. However, many employees take up part-time work on a permanent basis while use of other schemes, such as flexitime, is often temporary (Hooker *et al.*, 2007). Along with part-time work (69%) and flexible hours (53%), most employees could also reduce their hours of work (54%). In general, less than 30% of the employees who could use flexible working time policies, actually make use of them; "compressed weeks" and "job share" (see notes to the table) are least common.

Large companies provide the greatest variety of flexible working time schemes with 87% of large companies (with more than 10 000 employees) offering part-time work as an option to some or all of their staff. Staff working in the public sector have more access to flexible time schemes than staff in the private sector; the six flexible time policies studied are all offered by a larger proportion of public sector organisations compared with private sector organisations.

The French Survey "Familles et Employeurs" carried out in 2005 provides similar information. Table 4.A3.2 suggests that about two/thirds of French employers offer part-time employment for care reasons, and 80% of workplaces cater for occasional adjustment of working hours. However, only one/third of workplaces facilitates the regular adjustment of parental working times to match school hours (or the hours of childcare and OSH providers). Employers do not always offer these opportunities to all of their employees. Larger companies tend to offer greater opportunities to adjust working hours, but this also varies by type of economic activity (Boyer and Nicolas, 2010).

About a quarter of employees in France could work part-time. A much larger share of employees (57%) can easily adjust their working time in case of unexpected circumstances, especially those who normally work long hours (Leturcq and Wierink, 2010). However, only 9% of employees can adjust their working times to school or care hours on a regular basis.

Two/thirds of employers allow flexible working time to care for a sick child and about half of the French employers grant some paid days-off for this purpose. About 40% of the entitled parents with children under age 12 make use of this: women are twice as likely to do so as men.

Table 4.A3.1. **Part-time work is the most common form of flexible time policy offered in the United Kingdom**

Proportion of British workplaces providing access, and the proportion of employees with access to and using, flexible working time policies, 2006-07

	Part-time work	Flexible hours	Compressed week	Reduced hours	Job share	Home working (Teleworking)
Employer responses						
Proportion of workplaces where the policy has been used at least once in the last 12 months						
All workplaces	79	25	11	22	15	15
Company size						
Less than 100	76	24	9	19	12	18
100-999	82	29	11	27	13	19
1 000-9 999	76	24	15	23	16	10
10 000+	87	28	12	34	18	8
Ownership						
Private sector	77	24	10	20	11	15
Public sector	89	31	17	34	36	17
Employee responses						
Proportion of employees with access to the policy (availability) and who have used the policy in the last 12 months (recent take-up)						
Availability	69	53	35	54	47	23
Recent take-up	27	27	9	12	6	10

Definitions:

Compressed week: Employees work full-time hours over four days or a nine-day fortnight.

Flexible hours: Employee has no set start or finish time but a required number of hours per week. In some cases, specific core hours might be required.

Job share: A full-time job is divided between two people, who normally work at different times.

Part-time: Less than 30 working hours per week.

Reduced hours: Hours are reduced from the original working hours for a limited amount of time (usually several months).

Teleworking: Arrangement to work at home for all or part of working hours.

Employer and employee observations are not matched by workplace.

Source: For employers: The Third Work-Life Balance Employer Survey: Main findings (Hayward *et al.*, 2007). For employees: The Third Work-Life Balance Employee Survey: Main findings (Hooker *et al.*, 2007).

StatLink http://dx.doi.org/10.1787/888932394167

Table 4.A3.2. **Occasional working time arrangements are widely available in France**

Proportion of employers providing access, and proportion of employees access to flexitime policies

	Part-time work[1]	Occasional working time arrangement[2]	Regular arrangement to cope with childcare or school hours	Flexible hours to care for a sick child	Paid days off to care for a sick child[3]	Home working (Teleworking)
Employer responses						
Proportion of workplaces where the work arrangement was possible in 2004						
All workplaces	65	80	33	67	52	10
Company size						
Less than 50	59	77	36	74	41	15
50-499	63	85	32	67	53	12
500-1 999	71	80	31	59	53	5
2 000+	76	91	34	59	82	11
Ownership						
Private sector	62	78	35	66	39	7
Public sector	74	89	27	69	91	19
Employee responses[1]						
Proportion of employees with access to the policy (availability) and who use the policy						
Availability[2]						
Men	21	57	4	. .	26	. .
Women	25	57	14	. .	53	. .
Total	24	57	9	. .	40	. .

Note: Field: Companies with 20 employees and more.

1. Data on employers reflect employers allowing employees to work part-time for care or family reasons: data on employees concern all those who considered they would be authorised to work part-time if they wished, regardless of their motivation.
2. This is the proportion of employers who allow their employees to adjust working time when schools restart after holidays: data on employees reflect all those who consider their employers would authorise an adjustment of working time in case of an unexpected event.
3. For employees, the data reflect parents with children under 12 who have used these "sick days".

Source: Enquête Familles et Employeurs, INED, 2005. Pailhé and Solaz (2010).

StatLink http://dx.doi.org/10.1787/888932394186

Chapter 5

Promoting child development and child well-being

Despite increases in average family incomes, child poverty has edged up over the past three decades. Today, more than one in ten OECD children lives in poverty. Beyond poverty, infant mortality rates are falling and the proportion of children born weighing less than 2.5 kilograms is on the rise. Moreover, inequalities in health, education and material well-being raise concerns about children being left behind in a number of OECD countries.

More mothers with young children are in paid work than in the past. There is a long-running debate on possible negative effects of maternal employment on child development. For the first time, this chapter presents results from panel data studies on child outcomes in different OECD countries to help answer the question: what is a good moment for mothers to go back to paid work? The evidence suggests that a return to paid work by mothers within six months after childbirth may have negative effects on child outcomes, but the effects are small and, in certain circumstances, balanced by positive effects related to earning extra family income.

The evidence in the literature on the effects of parental leave policies on child well-being is mixed, and the cross-national analysis in this chapter finds no evidence of significant positive or negative effects of parental leave reform on child well-being either.

Introduction

Poverty in childhood can have a damaging and lasting effect on children's development and well-being. Child poverty in OECD countries has edged up over the past two decades despite a relatively consistent growth in average family incomes. Other measures of child well-being show similarly mixed results over a generation, and the health and education of children continues to vary widely both across and within countries. Analysis of efficiency and equity in child well-being measures, and changes over time, suggest that those countries with better average outcomes are also more equal. This suggests that efforts to ensure that children in disadvantaged socio-economic groups are not left behind does not come at the cost of improving outcomes for all.

With more and more mothers of young children in paid work, the potential trade-off between maternal employment and child development is increasingly coming to the fore. This chapter presents an initial comparative analysis of longitudinal data on maternal leave and employment patterns after birth on infant health and cognitive and behavioural developments. In general, there is little evidence that maternal employment during infancy affects cognitive and behavioural outcomes of children. Other factors such as family income, parental education and quality of interaction with children have greater influences on child development than early maternal employment *per se*.

The new evidence on maternal employment and child well-being directly feeds into the issue of how to best support families during the period they need to care for their very young children. Child-related leave policies develop in view of the sometimes conflicting interests of employers, parents and children. A minimum period of paid child-related leave has positive effects on maternal and child well-being, but the optimal duration of this period is not clear. Almost all OECD countries have ratified the International Labour Organisation (ILO) recommended minimum period of 14 weeks of paid leave (ILO, 2010). Periods of leave shorter than six months may be related with small negative effects on children's cognitive outcomes, but the evidence on this is mixed. However, prolonged periods outside the labour market can have negative effects on maternal employment and earning profiles (Chapter 4).

This chapter contains three parts. The first section addresses poverty outcomes, trends and its effect on families with children. Second, the chapter presents an initial comparative analysis of longitudinal data on child well-being in the context of mothers returning to work. The third section considers the effect of maternity and parental leave policy changes on children's and maternal well-being outcomes.

Main findings

How children fare through critical points of development during their early years is important, because of the cumulative and enduring effects of development over time. Evidence on income poverty and material well-being, and on child health and education outcomes suggests that indicators are evolving in different directions (such as falling infant mortality and

increasing low birth weights), and some are more malleable over the short term than others (*e.g.* child reading literacy rates in comparison with child poverty rates). Moreover, trends in aggregate well-being measures, including income measures, show that in countries where average outcomes are improving, inequalities do not necessarily increase.

Closing gaps in outcomes for the most disadvantaged children need not imply lowering average outcomes. Education indicators, for instance, provide strong evidence at the aggregate level that closing gaps for the lowest performing children does not come at the cost of achieving higher average outcomes. Moreover, prioritising outcomes on one indicator should not come at the cost of other related indicators. On average across the OECD, infant mortality has been reduced simultaneous to low birth weights going up, but cross-country evidence shows above-average gains on both measures can be achieved at the same time.

In the past 20 years, child poverty rates have edged up despite increases in the average incomes of families over the same period. Efforts to reduce child poverty need to be stepped up in all OECD countries. Longer term approaches to income poverty and disadvantage need to be considered that make greater use of in-kind support: Child poverty is lowest in countries with strong service and childcare based interventions.

Parental employment is essential to reducing poverty, but time constraints to personal care provided by mothers and fathers at too early an age can hamper child development and family functioning. This chapter uses panel data for five OECD countries to help find an answer to the question at what time should mothers go back to work? The evidence of this analysis suggests:

- Mothers' return to work within six months upon childbirth may be negatively related to children's cognitive outcomes, especially if this is on a full-time basis, but the association is small and not universally observed.
- The small negative associations of early maternal employment with children's outcomes are largely observed among children in intact families[1] or in families with parents with high levels of education. Children in these families are more likely to have parents who engage in stimulating parenting activities, hence they have more to lose when parents are in paid work than children from less advantaged backgrounds. On average, parents with low levels of educational attainment are less likely to engage in such parenting activities and the smaller negative relationship between maternal return to work and children's outcomes in such households is more likely to be counterbalanced by the positive association of maternal income and formal childcare participation.
- Formal childcare and pre-school participation generally is positively associated with cognitive development of children, but in some countries it is negatively related with behavioural outcomes. These associations are generally small but long-lasting; as they persist into compulsory education.
- The evidence also suggests that maternal employment is only one of many factors influencing child development, and by no means the most relevant. Both formal childcare participation and parenting activities are often more significant than maternal employment in determining cognitive and behavioural outcomes of children. This emphasizes the importance of investing in good-quality childcare (Chapter 4) and promoting parenting activities that contribute to child development.

The literature holds some evidence that breastfeeding has a positive effect on child health, and recent evidence also suggests it may positively affect children's IQ. Early (within six months) maternal employment on a full-time basis is negatively associated with breastfeeding rates and duration. This suggests that making workplace practices more conducive to

breastfeeding (*e.g.* via part-time work, breastfeeding facilities or extending maternity leave) may have positive effects on child development. The cross-national studies reviewed in this chapter provide mixed evidence as to the effects of parental leave reform on child well-being.

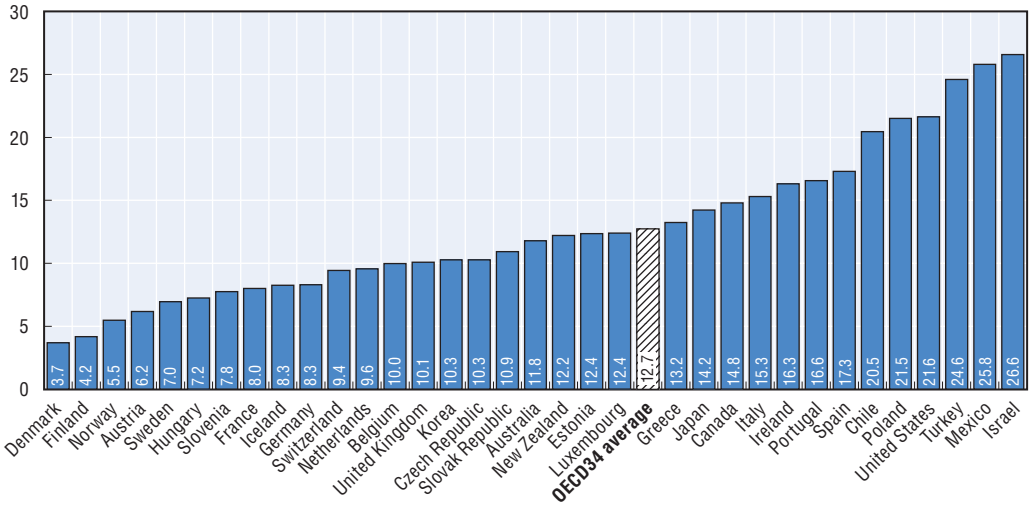
Income poverty among families and children, and child well-being

Proportions of children living in income poverty

Figure 5.1 shows child poverty rates for the most recent years available. On average across the OECD, the proportion of 0- to 17-year-olds living below the poverty line, as measured against the threshold of 50% of equivalised household income, was 13% in 2007. The lowest rates of poverty are in the Nordic countries, Austria, France, Germany, Hungary and Slovenia ranging from around 3 to 8%. The highest rates are in the Americas (Chile, Mexico and the United States), Israel, Poland and Turkey, which all recorded child poverty rates of over 20%. Box 5.1 summarises some child well-being indicators in "enhanced engagement countries" (Brazil, China, India, Indonesia and South Africa).[2]

Figure 5.1. **Child poverty rates are seven times higher in Israel than in Denmark**

Percentage of children aged 0-17 living in households with less than 50% of the median equivalised household income, mid- to late-2000s



1. Most recent data is 2008 for Germany, Israel, Italy, Korea, Mexico, the Netherlands, New Zealand, Norway and the United States; 2007 for Canada, Denmark and Hungary; 2006 for Chile, Estonia, Japan and Slovenia; 2005 for France, Ireland, Switzerland and the United Kingdom; 2004 for Australia, Austria, Belgium, the Czech Republic, Finland, Greece, Iceland, Luxembourg, Poland, Portugal, the Slovak Republic, Spain and Turkey.

Source: Provisional data from OECD (2010a), *Income Distribution Questionnaires*.

StatLink http://dx.doi.org/10.1787/888932393464

Trends and projections in child poverty

Figure 5.2 shows trends in child poverty (OECD, 2010a). In the period 1985 to 2005 the OECD average child poverty rates rose from 11% to around 13%, but there is considerable variation across countries. Since 1985, child poverty rates have been below 5% in Scandinavian countries and above 20% in Mexico, Turkey and the United States. Since the early 2000s, Israeli child poverty rates have increased dramatically, where cuts in child benefits contributed to the high child poverty rates among Arab and ultra-Orthodox Jewish population groups – both groups tend to have above-average number of children (OECD, 2010b).

In the early 2000s, child poverty rates fell fastest among countries with historically high levels of poverty, including Mexico, the United States and the United Kingdom – in the latter case due to cash-transfer-focussed anti-child poverty policies during this period. Declining poverty rates in Mexico can in part be attributed to the expansion of social programmes including the "Oportunidades" programme[3] which delivers cash transfers to the poorest families in the country. In the United States, the beginning of the fall between 1990 and 1995 is likely, in part, to be attributable to the increase in earned income tax credit payments to larger families (two or more children) and the associated increase in female labour market participation (Adireksombat, 2010).

Poverty rates have doubled between 1995 and 2005 in the Czech Republic, Finland, and Israel, and have shown recent upward trends in Luxembourg, Portugal and Turkey. Child poverty rates in Finland and Portugal have risen at the same time as more general increases in income inequality in these countries (OECD, 2008). In Turkey, the decline in female employment (Chapter 1) is likely to have contributed to the upward trend in child poverty.

Child poverty trends can also be affected by relative income gains and poverty trends in other population groups. OECD (2008) shows that in 23 OECD countries the burden of poverty has shifted from the elderly to children since the mid-1980s, and since around 2000 the big jump has been for 18-25 year-olds OECD wide (Box 5.2 elaborates on the importance of the age at which poverty is experienced).

Evidence on how the recent financial crisis has affected poverty trends and child poverty in particular is not yet available on a cross-national basis. However, based on projections of non-employment rates (OECD, 2010c), the proportion of children living in households where no adult, one adult or two or more adults are in employment can be predicted (see notes to Figure 5.2) and the average poverty rate for children can be projected forward to 2010. On average across the OECD, the child poverty rate in 2010 is predicted to have increased a further 0.6 percentage points from 2005, rising to 13.3%. The largest increase is expected in Ireland, Mexico, Spain, Sweden and the United States with increases of more than three percentage points compared with 2005. However, the child poverty rate is projected to decrease by more than two percentage points in Poland, the Slovak Republic and Switzerland.

Box 5.1. **Child well-being in "enhanced engagement" countries (Brazil, China, India, Indonesia and South Africa)**

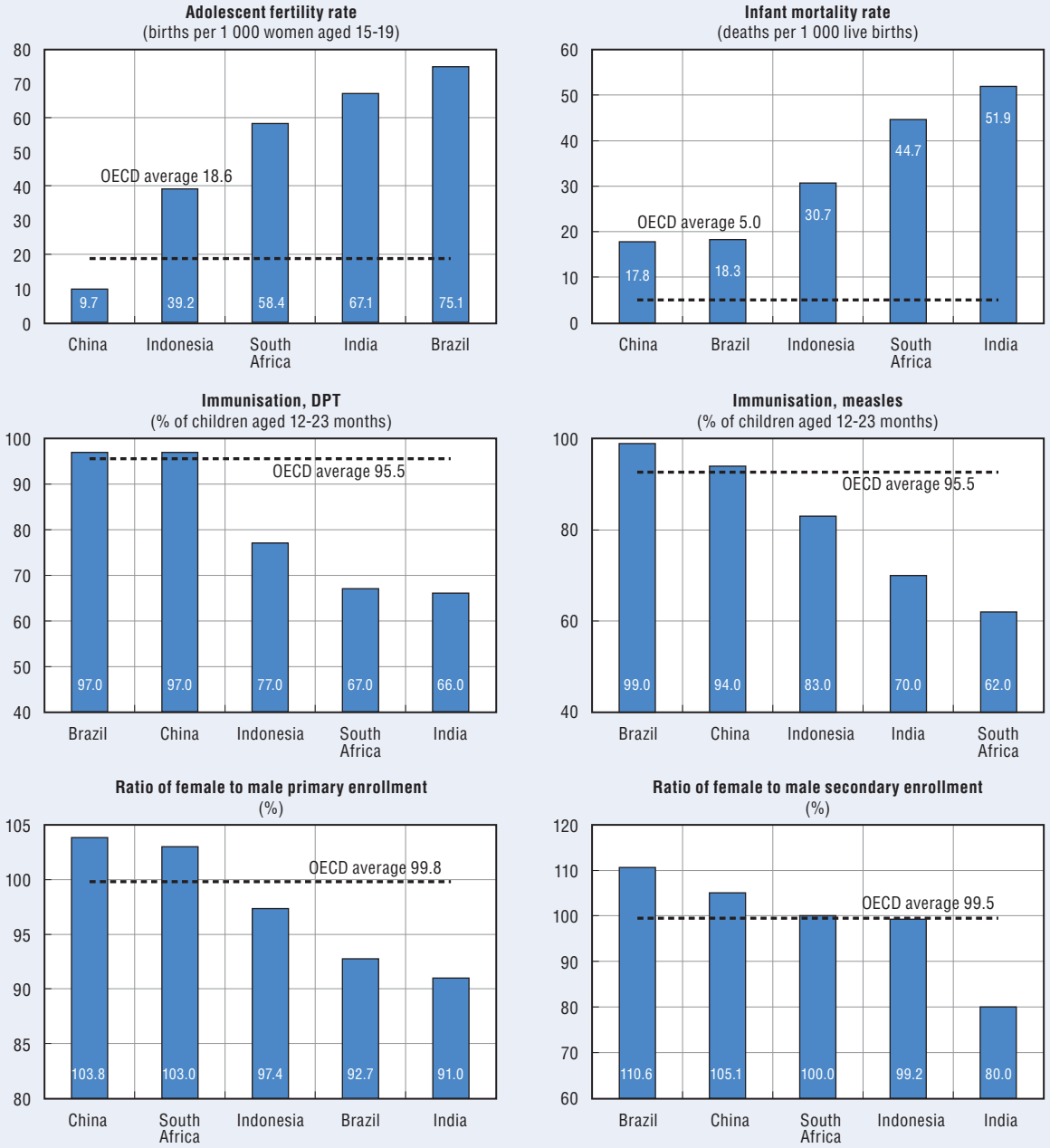
Depending on the level of economic development, countries may prioritise different aspects of child well-being and as such indicators, different to those compared in OECD reports, may be available and/or more appropriate for comparison (see, for an example, Richardson *et al.,* 2008). In the case of enhanced engagement countries, only a limited number of indicators are available. Below are six indicators looking at: motherhood and birth, immunisations, and gender equality in compulsory education.

With regard to motherhood and birth, both teenage fertility and infant mortality compare poorly with the OECD average. Chinese teenage fertility is the exception, where less than 1 in 100 females aged 15-19 are having babies. In India and South Africa, as many as 1 in 20 children can die before their first birthday. The story is different for immunisation rates. In Brazil and China, immunisation rates are above the OECD average. However, in India, Indonesia and South Africa, immunisations for measles, and diphtheria, pertussis and tetanus cover between 60 to 80% of the child population – often below the lowest rates in the OECD (around 75%).

Box 5.1. **Child well-being in "enhanced engagement" countries (Brazil, China, India, Indonesia and South Africa)** *(cont.)*

Finally, indicators for gender equality in compulsory education show that only Brazil and India are educating more boys than girls at the primary level – across the OECD the share is almost even. In secondary schooling, India educates four girls for every five boys, whilst boys in Brazil are less often enrolled.

Child well-being outcomes vary widely across "enhanced engagement" countries



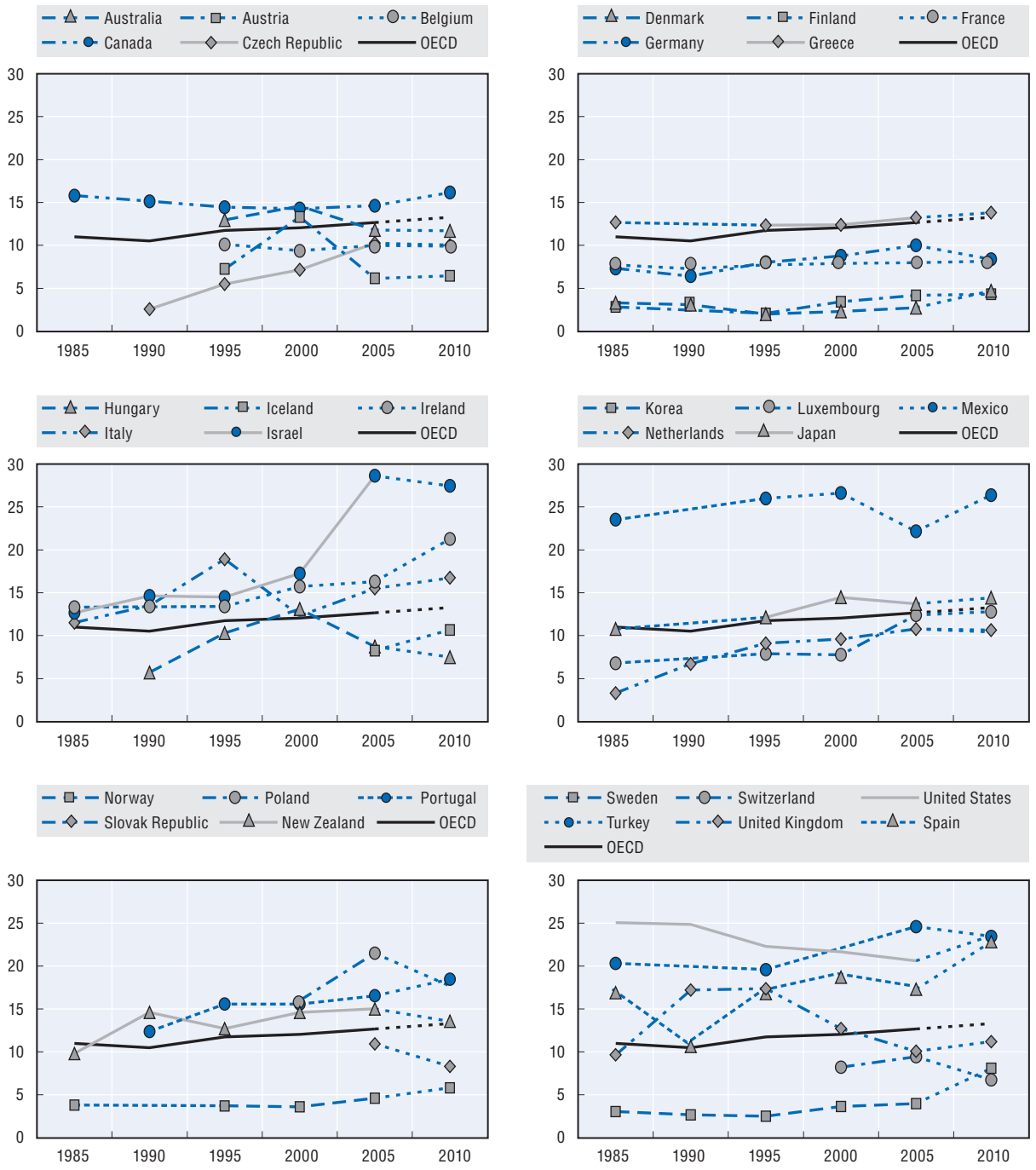
Note: All data refer to 2008. OECD averages are reported as aggregates in the *World Development Indicators* in 2008 and will not include new OECD members as of 2009 (Chile, Estonia, Israel and Slovenia).

Source: World Bank (2010), for India and South Africa education enrolment ratio data are taken from the Millennium Development goals (*www.unicef.org/mdg/index_genderequality.htm*).

StatLink http://dx.doi.org/10.1787/888932393654

Figure 5.2. **Child poverty rates have edged up OECD-wide, with considerable variation across countries**

Proportion of children aged 0-17 living in households with income less than 50% of the median equivalised household income, 1985 to 2005 and projections to 2010



Note: Income is equivalised using the square root of the household size. Predictions for 2010 are represented by dotted lines and are based on non-employment rate projections and latest available poverty rates (2004 to 2008) among employed and unemployed households with a single adult or two or more adults. While keeping the proportion of 5 types of household with children constant (single adult working; single adult not working; dual-earner couples; single-earner families; and jobless couple families), the change in the non-employment rate is then used to predict the proportion of 0-17 year-olds living in such households in 2010. Combined with the latest poverty rate for such households, an overall poverty rate is calculated for 0-17 year-olds in 2010.

Source: Provisional data from OECD (2010a), *Income Distribution Questionnaires*, and OECD's Secretariat projections.

StatLink http://dx.doi.org/10.1787/888932393483

Box 5.2. **Income poverty and child well-being: does the timing of experiences of child poverty matter?**

Children from poorer families are often hindered in terms of cognitive and behavioural development, subject to more turbulent home environments and malnutrition, and can be at a greater risk of a range of poorer health outcomes. The longer and deeper the poverty experienced, the larger is the likelihood of developmental trajectories being hindered. The age at which poverty is experienced also matters. Earlier experiences of poverty can establish gaps in the developmental trajectory for children in the formative years which culminate in more severe outcomes in the long term as children are less able to take full advantage of interventions designed to promote development during their childhood (Box 2.3).

There is some evidence on how *prenatal* experiences of poverty may affect life chances. Lindo (2010) estimates that experiencing job loss during pregnancy in the United States reduces birth weight of infants by around 4.5% in comparison to previous births in the same family. Kim *et al.* (2010) study the second-generation outcomes for in-utero malnutrition experiences during the famine that followed China's Great Leap Forward movement in 1958, and find that the generation born of the children in-utero during the famine are significantly less likely to enrol in junior school, and less likely to enrol in high school. The results reflect a transmission of disadvantage from first to third generations through the poor health and cognitive outcomes experienced by the second generation, and highlight the potential cycle of disadvantage created by income and deprivation shocks during the prenatal period.

Poverty during *early childhood* contributes to a range of problems. Berger *et al.* (2010) find that low income negatively affects home environments and emotional environments (mothers' stress or depression); more behavioural problems in children were also reported for young poor children by mothers (Kiernan and Huerta, 2008). Duncan *et al.* (2010) show that early childhood poverty can reduce adult working hours (and so earnings) increasing later poverty risks and welfare dependency. Preschool interventions can generate long-term public and private returns in terms of lower experiences of crime and higher earnings in adulthood (see Heckman *et al.*, 2010, for a re-evaluation of earlier Perry preschool evidence).

Poverty in *middle and late childhood* is likely to be less detrimental to cognitive outcomes given evidence on child brain development and IQ (see OECD, 2009a). More of an issue for older children is the increased expectation to provide support in a disadvantaged family through undertaking paid work themselves, or undertaking more housework or caring responsibilities in the home (*e.g.* to support parents taking on additional employment). The provision of such support can come at the cost of discontinuing education and/or social participation.

The Health Behaviour in School-aged Children Survey (Currie *et al.*, 2008) is a rich source for exploring the effect of family affluence on a range of well-being outcomes for children in middle and late childhood (aged 11 to 15 years). Evidence for many OECD countries shows that:

- Children with low family affluence are significantly more likely to report fair or poor health. Self-rated health declines significantly, especially for girls between ages 11 and 15 in most countries.
- In contrast, higher levels of family affluence mean children are significantly more likely to have received medical attention when injured.
- Life satisfaction is significantly higher for wealthier children, both boys and girls, in every country in the OECD. Life satisfaction declines significantly between ages 11 and 15, but more so for girls than for boys (see Chapter 1 for a discussion of subjective child well-being).
- In two-thirds of OECD countries, children from poorer families are more likely to be obese or overweight. Only in Turkey and the Russian Federation are affluent children more likely to be overweight.
- Fruit consumption is significantly more common amongst children in wealthier families, except in Israel, Sweden and Switzerland.
- Wealthier children undertake significantly more physical activity in about half of the OECD countries.
- Israel is the only country where affluent children (*i.e.* boys) are more likely to smoke. In no OECD country is bullying experienced significantly more by more affluent children.

Family incomes, inequality and child poverty

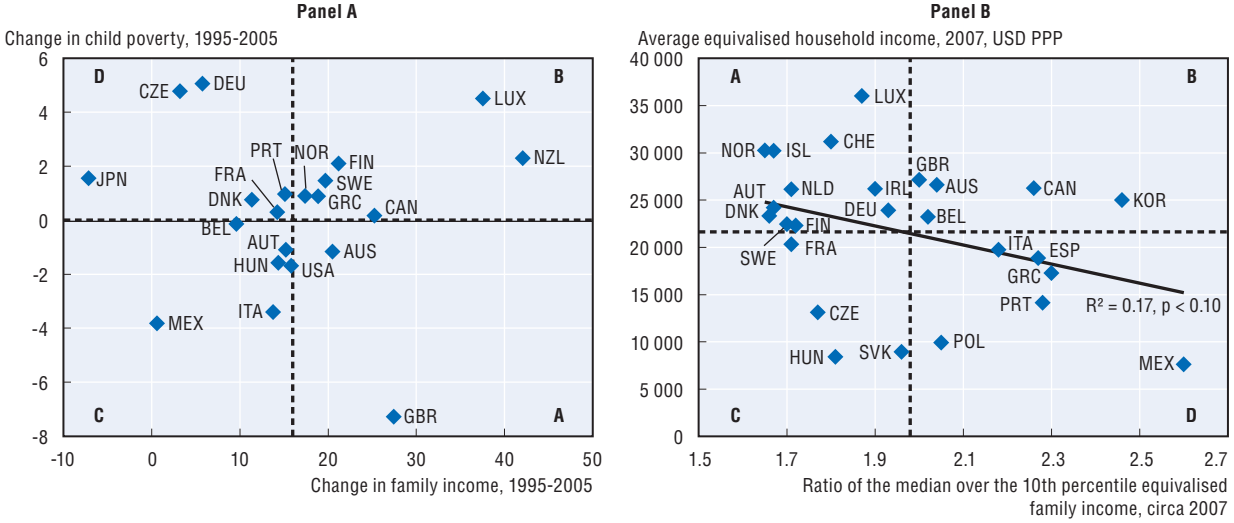
Are higher average family incomes associated with a greater family income inequality? Do higher average family incomes, and thus higher relative-income poverty thresholds, drive the upward trend in child poverty, or is increasing child poverty a product of other population groups in society getting richer quicker than families with children?

Figure 5.3 (Panel A) shows that changes in child poverty rates and changes in family income over time are not significantly associated. Countries in quadrant A (see notes), and in particular the United Kingdom show that above-average growth in family income can be achieved at the same time as making sharp gains in child poverty reduction. Also, Austria, Hungary, Italy and the United States experienced average income growth and poverty reduction in tandem. Japan, Germany and the Czech Republic in the top left of the Figure (quadrant D) experienced below-average growth in family income and above-average increases in child poverty rates.

Figure 5.3 (Panel B) cross-plots average equivalised family income in OECD countries using the most recent data in the period 2005-08 against the ratio of median family income over the level of income of the poorest 10% of families in each country. Countries with scores around two on the horizontal axis, including Australia, Belgium, the United Kingdom and Poland, are countries where half of the population have at least twice the income of the poorest 10% of families. One-third of OECD countries are found

Figure 5.3. **There is no clear relationship between increases in average family incomes and relative income poverty among children**

Associations between average incomes and income inequality and change in average incomes and child poverty



Note: Child poverty data are rates for the population aged 0-17, family income data are for households with children aged 0-17. Averages are for the countries in the plot only, and are shown using broken black lines on the Figures. Quadrant A represents an area where averages are increasing and distributions are decreasing at above-average rates, quadrant B where averages increase only, quadrant C where distributions decrease only, and quadrant D where averages are decreasing and distributions are increasing. Results for Panel A are not significant with or without the inclusion of the United Kingdom due to outliers in quadrant D. Data in Panel B is taken from EU SILC and national surveys in order to calculate ratio values from the unit data.

Source: Panel A: Provisional data from OECD (2010a), *Income Distribution Questionnaires*. Panel B: Authors calculations of EU SILC data 2008 (2007 for France), and surveys for Australia (HILDA, 2008), Mexico (ENIGH, 2006), Chile (CASEN, 2006), Switzerland (SHS, 2007) and Korea (KLIPS, 2007).

StatLink http://dx.doi.org/10.1787/888932393502

in quadrant A, where both average family incomes are high and inequalities are low. More generally, results show a negative relationship between high average family incomes and income inequality in the lower end of the distribution: average family incomes can be high whilst equality is maintained. (There is no clear pattern in terms of national wealth levels in these results. Population size also does not appear to affect results either.) Box 5.3 explores the relationship between better health and education outcomes on average and the degree of dispersion therein.

Public spending on families and associations with child income poverty rates

Using the age-spending profiles in Chapter 2, it is possible to explore how variations in spending patterns by type on children up to age 18 associate with child poverty rates for children aged 0-17 (Box 5.2 and Annex 5.A1). Cash, childcare and total spending are significantly associated with lower poverty rates at higher levels of real investment.

Higher overall spending on all family interventions is most strongly associated with lower poverty rates (Figure 5.4). The countries in the bottom left quadrant of the total social expenditure plot are countries with lower than average social expenditure and lower than average child poverty rates – the reason for their successes are due to factors not observed in the analysis. Former communist countries make up four of the seven, and are countries where lower relative poverty rates are driven in part by historically low levels of income inequality.[4]

By type, average spending per child aged 0-17 on cash transfers has the strongest association with the child income poverty rate, while spending on childcare has a weaker association although clustering around the trend line is particularly at the high spending end (see Figure 5.A1.1). Only Ireland has above average spending on cash benefits and above average poverty rates, only Italy and Spain have above-average spending on childcare combined with average child poverty rates (see Annex 5.A1).

Work is a key driver in exiting poverty

Poverty risks vary across family types (the number of adults or children in households) and the degree of employment participation among adults in households. Table 5.1 compares child poverty with poverty in the population as a whole and shows the family poverty rates by family type and by employment status. Children are generally at higher risk of poverty than the population as a whole (columns 1 and 2). Only in Slovenia is the overall poverty rate higher than the (low) child poverty rate.

Non-employment is the single biggest risk factor for poverty. Across the OECD, non-employment for sole-parent families (column 4) can almost triple the risk of poverty. Differences between working and non-working sole parents in Australia are particularly sharp, with a low poverty rate in-work of 6.1% increasing to 67.8% if the sole parent is not in work.

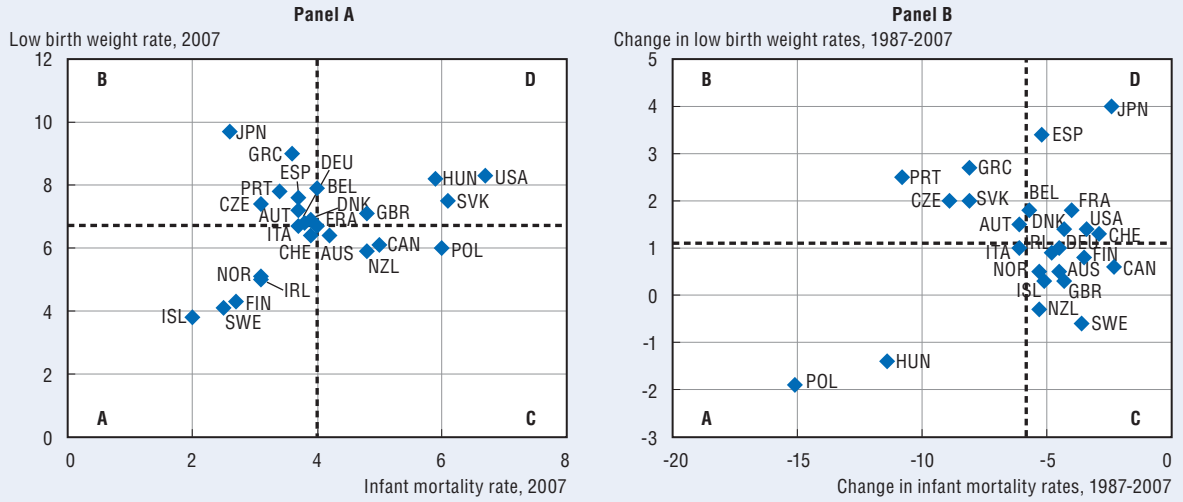
The poverty risk of jobless couple families (column 8) can be ten times as high as for couple families with two working adults (column 6). In Chile, Japan, Korea, Luxembourg, Poland and Spain having two incomes provides the least protection from poverty. Nevertheless, jobless poverty rates are still between 3 and 5 times higher than in-work poverty rates.

Box 5.3. **Trends and associations in child health and education outcomes**

Beyond income poverty, are trends in health and education outcomes of children in OECD countries moving in the same direction and/or do average improvements in country scores go hand-in-hand with increased risks of leaving groups of children further behind? Panel A in the figure below shows that in Nordic countries and Ireland low infant mortality and low rates of low birth-weight children are being achieved at the same time. Panel B shows there is no clear association of low birth weight and infant mortality over a generation of children in OECD countries. Countries that have experienced greater than average reduction of infant mortality do not necessarily have the greatest increase in low birth-weight rates: *e.g.* Hungary and Poland have both reduced infant mortality and low birth-weight rates.

The figure reports the associations between median reading literacy and reading literacy gaps (50th percentile over the 10th percentile) in 2009 and changes in average literacy and equality in reading literacy (90th over the 10th percentile) between 2000 and 2009. A broadly negative trend in Panel A shows that OECD countries with the highest median values are also among those countries with lowest levels of inequality below the median. In 2006 the association was significant and negative ($R^2 = 0.36$, $p < 0.01$), however increases in the 10th percentile scores in Mexico and Chile in 2009 – accompanied by increases in these countries average results over the same period – have weakened the correlation. Freeman *et al.* (2010), using TIMMS data on mathematical and science literacy for 9-11 years-olds between 1999 and 2007, report similar associations with countries with both higher median values and greater overall inequality outcomes (95th over the 5th percentile values). Their results show that countries where the variation of books at home associates strongly with literacy outcomes are those where differences in test scores are largest. Panel B shows that only Israel and Korea have made above average gains in terms of average reading literacy scores at the same time as reporting higher inequality in test scores. The combined evidence suggests that closing gaps in child educational achievement for the most disadvantaged children need not imply lowering average outcomes in educational achievement.

Low birth-weight rates are not markedly higher in countries with lower infant mortality



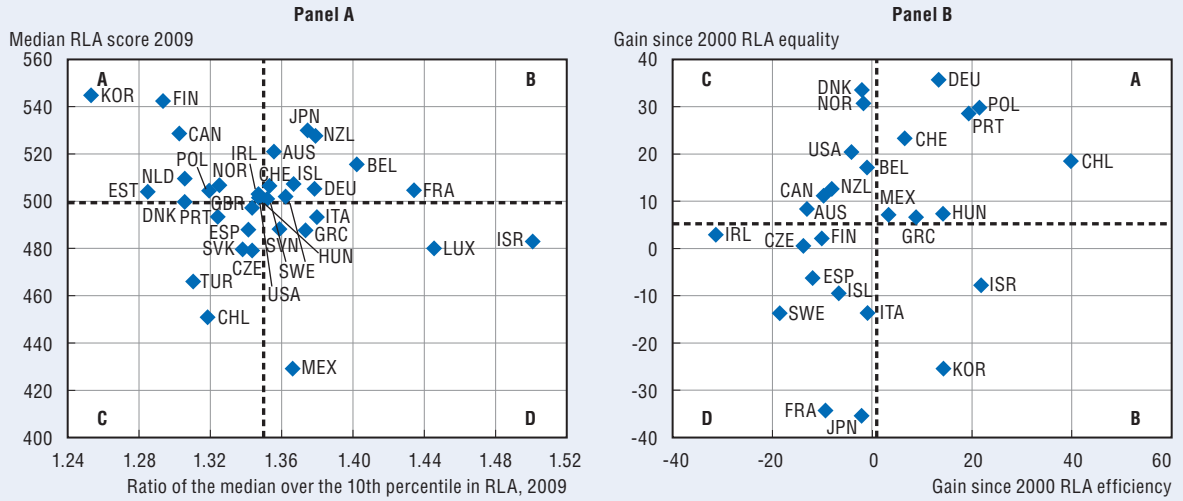
Note: Quadrant A represents an area where both infant mortality and low birth-weight rates are falling faster than, or lower than, average rates, quadrant B where low birth weights are falling faster than, or are lower than, average rates, quadrant C where infant mortality is falling faster than, or are lower than, average rates, and quadrant D where both indicators are increasing at or are higher than above-average rates.

Source: OECD (2009b), *OECD Health Data*.

StatLink http://dx.doi.org/10.1787/888932393673

Box 5.3. **Trends and associations in child health and education outcomes** *(cont.)*

Most countries with high reading literacy levels report lower than average rates of inequality in the bottom half of the educational distribution



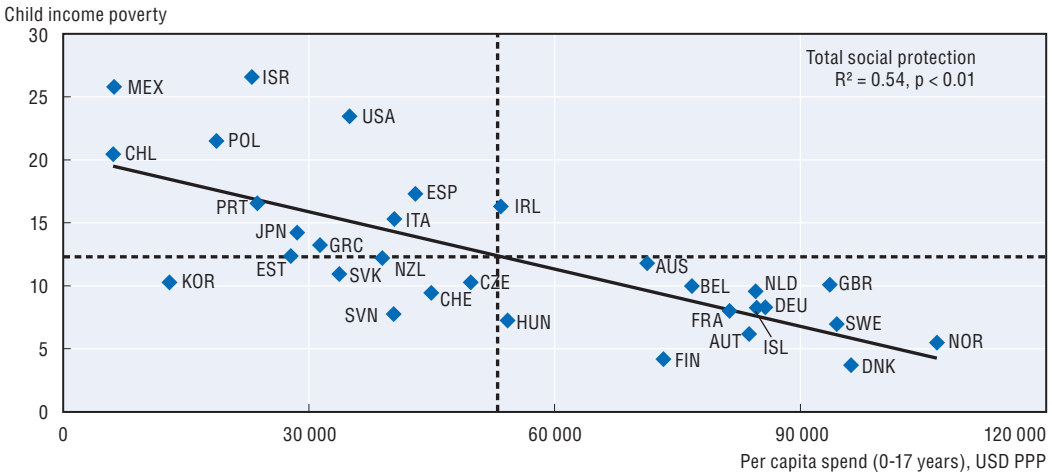
RLA: Reading literacy achievement.

Note: OECD average is unweighted. Panel A data is missing for Austria for reasons of incomparability in 2009. Panel B data is missing for Estonia, Slovenia, the Slovak Republic and Turkey (countries that did not take part in 2000) and for Austria, Luxembourg, the Netherlands and the United Kingdom because of incomparability between the 2000 and 2009 waves. Notes for the interpretation of quadrants A to D are found in notes for Figure 5.3. Median values were calculated using the downloadable student dataset.

Source: OECD (2010d), *PISA 2009 Results*.

StatLink http://dx.doi.org/10.1787/888932393692

Figure 5.4. **Overall age-related investment levels explain the most variation in poverty rates**



Note: For poverty data notes see Figure 5.1; see Chapter 2 for detail on spending profiles for children up to age 18. Luxembourg is excluded from the Figure as an outlier (spending data is available via the StatLink). Canada and Turkey are missing.

Source: OECD's Secretariat's calculations from OECD (2010e), *Social Expenditure Database*. For income poverty sources, see Figure 5.1.

StatLink http://dx.doi.org/10.1787/888932393521

Table 5.1. **Parental employment reduces poverty in families with children**

Child poverty rates and poverty rates for people in households with children (0-17 years) by family structure and employment status, mid- to late-2000s

			Poverty in households with children						
	1	2	3	4	5	6	7	8	9
	Child poverty	Total poverty rate (difference from 1)	Sole parent (emp.)	Sole parent (non-emp.)	Sole parent (emp.; 3+ children)	Couple families (2 emp.)	Couple families (1 emp.)	Couple families (non-emp.)	Couple families (emp., 3+ children)
Australia	11.8	–1.7	6.1	67.8	3.2	1.0	7.9	50.8	3.1
Austria	6.2	–0.6	17.1	50.8	11.4	2.4	8.1	59.7	3.3
Belgium	10.0	–1.0	10.1	43.2	11.3	2.5	10.6	36.1	6.3
Canada	14.8	–2.4	29.6	90.5	. .	4.1	28.7	79.4	. .
Chile	20.5	–3.1	37.6	87.2	56.3	5.8	27.2	32.8	14.9
Czech Republic	10.3	–2.5	10.3	71.4	. .	0.7	9.5	43.2	1.1
Denmark	3.7	–0.8	5.1	33.9	12.2	0.6	7.8	29.2	2.3
Estonia	12.4	–1.9	29.2	94.5	78.4	3.1	16.3	75.4	7.3
Finland	4.2	–0.4	5.6	46.3	6.6	1.1	8.9	23.4	2.5
France	8.0	–1.3	14.6	35.8	17.7	3.0	8.7	18.1	5.2
Germany	8.3	–0.7	11.6	46.2	. .	0.6	3.7	23.2	. .
Greece	13.2	–1.2	17.6	83.6	33.7	4.0	22.1	39.2	18.3
Hungary	7.2	–0.8	21.3	30.8	. .	3.1	6.5	9.6	. .
Iceland	8.3	–1.0	17.1	22.9	29.7	4.1	28.8	51.0	9.3
Ireland	16.3	–2.4	24.0	74.9	37.2	1.9	15.7	55.4	8.7
Israel	26.6	–4.1	29.6	81.1	. .	3.6	37.5	86.4	. .
Italy	15.3	–1.3	22.8	87.6	. .	2.7	22.5	79.3	. .
Japan	14.2	–2.0	54.6	52.5	. .	9.5	11.0	37.8	. .
Korea	10.3	–1.7	19.7	23.1	. .	5.3	9.5	37.5	. .
Luxembourg	12.4	–1.4	38.3	69.0	27.9	5.3	15.8	27.4	13.6
Mexico	25.8	–3.6	31.6	48.2	. .	11.2	34.7	68.7	. .
Netherlands	9.6	–1.8	23.2	56.8	. .	1.8	14.6	63.1	. .
Norway	5.5	–0.8	5.9	42.5	7.5	0.2	7.3	45.4	2.7
New Zealand	12.2	–2.6	14.0	75.7	. .	1.0	9.3	68.6	. .
Poland	21.5	–2.3	12.0	46.0	42.3	9.8	14.1	48.2	27.1
Portugal	16.6	–2.5	26.2	90.2	42.0	4.8	34.3	53.2	24.5
Spain	17.3	–2.6	32.2	78.0	. .	5.1	23.2	70.6	. .
Slovak Republic	10.9	–1.0	23.9	65.9	32.7	1.8	18.2	66.0	6.0
Slovenia	7.8	0.7	19.6	72.8	79.9	2.1	22.0	76.6	25.8
Sweden	7.0	–0.9	11.0	54.5	. .	1.4	18.5	46.0	. .
Switzerland	9.4	–1.0		21.6	. .		7.6		. .
Turkey	24.6	–4.3	31.9	43.6	. .	. .	18.9	28.1	. .
United Kingdom	10.1	–1.2	6.7	39.1	7.2	1.0	9.0	35.8	17.6
United States	21.6	–3.0	35.8	91.5	55.6	6.6	30.6	84.1	18.3
OECD34	**12.7**	**–1.7**	**21.1**	**60.5**	**31.2**	**3.5**	**17.0**	**50.0**	**10.9**

Note: Columns 3, 4, 6, 7 and 8 reflect sole-parent families and couple families by employment status of adults, regardless of the number of children in the household. Poverty rates are for all household types where the household head is of working age (15-65) and there is at least one child, aged 0-17, present. OECD averages are unweighted. Data for Switzerland are not disaggregated by employment status.

Source: Provisional data from OECD (2010a), *Income Distribution Questionnaires*.

StatLink http://dx.doi.org/10.1787/888932394205

Poverty risks for families with more than three children are particularly high for sole-parent families. Large working sole-parent families are at least twice as likely to be in poverty as the average working sole-parent family in Denmark, Estonia, Poland and Slovenia (in Italy this is six times as high). In Australia, Austria, and Luxembourg having a large family for a working sole parent (column 5) reduces the risk of poverty compared with working sole parents overall (column 3). This may be due to unobserved family characteristics specific to larger sole-parent families *(e.g.,* larger families may have older children contributing to household income), the prevalence of large sole-parent families, or due to family benefits supporting larger families in these countries.[5]

The average poverty rates for working couples (column 9) with large families is half of that of working sole parents (column 5). Compared with the average working-couple family (column 6), the relative risk of poverty for large couple families is at least ten times as high in Norway, Slovenia and the United Kingdom.

When is a good time for mothers to go back to work?

Chapter 1 showed that nowadays, more mothers with young children are in paid work than before. However, the appropriate timing to resume (or start) paid work after childbirth continues to be a hot subject of debate. Early maternal employment may deprive children of continuity in infant care, time and attention; it may impede the development of secure infant bonding as well as the opportunity of extended breastfeeding, all of which are associated with a number of cognitive, emotional and health benefits (Box 5.4 below). On the other hand, maternal employment means more family income, which has positive effects on child development, especially among children of low-income families, and leave periods of more than 20 weeks may have a negative effect on future maternal earnings profiles (Jaumotte, 2003).

The effect of early participation in formal care arrangements on child well-being is not straightforward. Early formal childcare can have a positive effect for children experiencing significant disadvantage whose parents are stressed or have poor parenting skills. But it may have more negative than positive effects for children from more advantaged backgrounds (Ruhm, 2000; Hill *et al.*, 2001; Gregg *et al.,* 2005) whose parents are able to provide a safe and nurturing environment. Formal childcare facilitates social interactions with other children as well as learning how to socialise and co-operate with others, but early participation involves the risk of being exposed to stressful interactions with peers when children are too young to deal with this. Also, participation in formal childcare increases the risk of early exposure to infectious diseases (see below).

What evidence does the literature hold?

Studies on the relationship between maternal employment and children's cognitive and behavioural development have found mixed results. Factors that influence the variation in results include the time of return to work, child and family characteristics, and the quality and intensity of childcare arrangements. Evidence based on longitudinal data from the United Kingdom and the United States generally suggests that full-time maternal employment during the first year of a child's life is associated with poorer child outcomes, especially poorer cognitive outcomes (Brooks-Gunn *et al.*, 2002; Ermisch and Francesconi, 2000; and Joshi *et al.*, 2009). However, a recent study suggests that the negative effects are offset by the positive effects of more use of centre-based care, higher quality home

Box 5.4. **Breastfeeding and child IQ**

Whether breastfeeding is good for child IQ has been subject to considerable investigation since the 1920s. Almost a century later, the general consensus is that much of the research finding a positive causal effect of breastfeeding on intelligence was of low quality. Recent evidence allows a cautious positive conclusion to be drawn – breastfeeding causes higher child IQ, with a small effect size (see Michaelson *et al.*, 2009). The best evidence on the causal effect of breastfeeding on child IQ is drawn from studies which control for mothers' IQ and use general populations. The table below summarises the evidence of these studies, ranking studies by increasing age of the child when IQ is measured. Where authors use multiple measures of breastfeeding or use several general measures of intelligence (only Clark *et al.*, 2006, is in the latter group), multiple results are provided – 26 in all.

Summary of studies of child IQ and breastfeeding using maternal IQ as a control

Study	Country	N	Child age	Reported breast-feeding control	Sign	Significance (5%)
Perroni *et al.* (2003)	MEX	79	1-6 months	Exclusive/non-exclusive breastfed	+	S
Gomez-Sanchez *et al.* (2004)	ESP	164	2	Formula fed, breastfed 0-4, 4 > months	+	SS
Morrow-Tlucak *et al.* (1988)[1]	USA	219	2	Formula fed, breastfed 0-4, 4 > months	+	S
Morrow-Tlucak *et al.* (1988)[2]	USA	219	2	Breastfed weeks	+	S
Torres-Sanchez *et al.* (2009)	MEX	270	2 1/2	Breastfed/not breastfed	+	NS
Gibson-Davis and Brooks-Gunn (2006)	USA	1 647	3	Breastfed < 1, 1 > months	+	NS
Johnson *et al.* (1996)[1]	USA	195	3	Breastfed/not breastfed	+	S
Johnson *et al.* (1996)[2]	USA	190	3	Breastfed months	+	NS
Johnson *et al.* (1996)[3]	USA	190	3	Exclusive breastfed months	+	NS
Johnson *et al.* (1996)[4]	USA	190	3	Breastfed months, months squared	+	S
Ghys *et al.* (2002)	NLD	124	4	Breastfed months	+	NS
Julvez *et al.* (2007)[1]	ESP	68	4	Breastfed < 2, 2-12, 12-20, 20-28, 28 > weeks	+	SS
Julvez *et al.* (2007)[1]	ESP	68	4	Breastfed weeks	+	S
Angelsen *et al.* (2001)	NOR, SWE	192	5	Breastfed < 3 months, breastfed 6 > months	+	S
Clark *et al.* (2006)[1]	CHL	718	5 1/2	Exclusive breastfeeding < 2, 2-8, 8> months	+	S
Clark *et al.* (2006)[2]	CHL	718	5 1/2	Exclusive breastfeeding < 2, 2-8, 8 > months	+	NS
Herbstman *et al.* (2010)	USA	92	6	Percentage of first year breastfed	–	NS
Fergusson *et al.* (1982)	NZL	954	7	Formula fed, breastfed 0-4, 4 > months	+	S
Richards *et al.* (1998)	GBR	511	8	Breastfed/not breastfed	+	NS
Gale *et al.* (2004)	GBR	221	9	Formula fed, breastfed 0-1, 1-4 months, 4 > months	+	SS
Der *et al.* (2006)[1]	USA	5 475	10	Breastfed/not breastfed	+	NS
Der *et al.* (2006)[2]	USA	2 454	10	Breastfed months	+	S
Der *et al.* (2006)[3]	USA	2 454	10	Formula fed, breastfed 1-5, 6-12, 13-28, 29 > weeks	+	SS
Hay *et al.* (2001)	GBR	115	11	Breastfeeding weeks in the first three months	+	S
Jacobsen *et al.* (1999)	USA	278	11	Breastfed/not breastfed	+	NS
Wigg *et al.* (1998)	AUS	343	12	Breastfed/mixed/bottle fed at six months	+	NS

Country codes: AUS = Australia, CHL = Chile, ESP = Spain, MEX = Mexico, NZL = New Zealand, NLD = Netherlands, NOR = Norway, SWE = Sweden, GBR = United Kingdom, USA = United States of America.
N: number of child-observations.
Child age: in years.
Sign: sign on the breastfeeding coefficients compared to no breastfeeding as a treatment. Where there are multiple coefficients for different breast feeding durations (*e.g.* Clark *et al.*, 2006 ; Der *et al.*, 2006; Fergusson *et al.*, 1982; Gomez-Sanchez *et al.*, 2004; Gale *et al.*, 2004; and Julvez *et al.*, 2007), the column is coded according to the sign of a simple majority of coefficients or, if these are equal, by the sign of the largest breastfeeding category.

1. Clark *et al.* (2006) use two general measures of intelligence, the BCA and the WPPSI-R. Results from both tests are consequently reported.
2. Julvez *et al.*'s detailed results (2007) were supplied to us by Jordi Julvez.
3. Luisa Torres-Sanchez and Lizbeth Lopez-Carillo provided unpublished results used here from Torres-Sanchez *et al.* (2009).
4. Jule Herbstman provided unpublished results for Herbstman *et al.* (2010). The additional assistance is much appreciated.

StatLink http://dx.doi.org/10.1787/888932394281

environments, and greater maternal sensitivity (Brooks-Gunn *et al.*, 2010). In any case, most studies show that the measured effects on cognitive development are small. Maternal employment may have more negative effects on child outcomes for children of two-parent families, high income or highly educated families (Gregg *et al.*, 2005; and Ruhm, 2004). By contrast, early employment is not linked to poorer outcomes of children in sole-parent families (*e.g.* Han *et al.*, 2001), nor of children from ethnic minorities such as African-Americans (Brooks-Gunn *et al.*, 2010).

Compared with mothers who are not in work (including "on leave") or in part-time employment, early (within six months) maternal employment on a full-time basis is negatively associated with breastfeeding rates and duration (Hawkins *et al.*, 2007; Cooklin *et al.*, 2008). In addition, longer periods of breastfeeding are more likely among women whose employers offer family-friendly or flexible work arrangements including part-time work (Hawkins *et al.*, 2007). Breastfeeding has multiple benefits for the healthy development of young children (in terms of nutritional benefits and protection against diseases, also after controlling for environmental factors that could be confounding this association) (Quigley *et al.*, 2007; Ladomenou *et al.*, 2010; and Liesbeth *et al.*, 2010). Breastfeeding is also related with positive maternal health outcomes such as a reduced risk of breast and ovarian cancer, type-two diabetes and maternal postpartum depression (Ip *et al.*, 2007). However, a review of the role of breastfeeding in promoting mother-child attachment is inconclusive (Jansen *et al.*, 2008). The literature also suggests that breastfeeding has a positive effect on cognitive development, but the effects are likely to be small (Box 5.4).

Beyond the first year, formal childcare participation may have positive effects on cognitive development (Waldfogel, 2002), but some negative effects on behavioural outcomes may be observed if children are in poor-quality care or in care for long hours (Belsky *et al.*, 2007; and Stamm, 2009). Hence, care intensity and quality matter. Long hours in care are problematic for young children, but effects are small (Langlois and Liben, 2003) and vary with child characteristics. Nevertheless, there is evidence that long periods in centre-based care are linked with more problem behaviours that manifest themselves through sixth grade (Belsky *et al.*, 2007). All studies that control for quality find that high-quality care is important for children's cognitive development (*e.g.* NICHD, 2003). In terms of physical health, participation in formal childcare can also lead to increased rates of respiratory diseases, ear infections and gastro-intestinal problems (Gordon *et al.*, 2007; and Zutavern *et al.*, 2007).

Participation in early years programmes is most beneficial for children from disadvantaged backgrounds. Examples of successful interventions include several programmes in the United States such as the Head Start Program, the Perry Preschool Project, the Abecedarian Program, and the Chicago Child-Parent Centres (Carneiro and Ginja, 2008). The combination of home visits and centre-based care appears to produce the greatest results. Other targeted interventions with a childcare component outside the United States include the Sure Start Programme in the United Kingdom. A recent evaluation of this programme found improvements in seven out of fourteen outcomes (NEES, 2008), in contrast to the mixed results found in earlier evaluations (NEES, 2005). This difference in results might stem from differences in research methods, from improvements in services or longer exposure of children and families to these services.

The establishment of a universal subsidised childcare programme in the Canadian province of Quebec in the late 1990s allowed researchers to compare outcomes of children in

this province with other Canadian children (Baker *et al.*, 2005; and Lefebvre *et al.*, 2008). The Quebec Family Policy began in 1997 with the extension of full-time kindergarten to all 5-year-olds and the offer of childcare subsidies to all 4-year-olds. The subsidies were extended to all 3-year-olds in 1998, all 2-year-olds in 1999, and finally all children aged less than 2 in 2000. Evaluations found that, in the aftermath of these changes, child socio-emotional outcomes (including hyperactivity, anxiety and aggressiveness), physical health measures as well as parental interactions with pre-school children worsened in the Canadian province of Quebec. However, this Quebec policy offered subsidies that parents could take to a range of providers, and it is not clear that the quality of providers was high. Also the policy increased the number of hours in formal childcare, which together with the uneven quality of care may explain the poor outcomes observed. However, it is important to note that the quality of childcare facilities in Quebec varies widely across providers (Giguere and Desrosiers, 2010). Hence, to better understand the association between non-parental care and child development, studies need also to control for the quality of providers.

Denmark is generally thought to have one of the highest quality universal childcare systems in the OECD. Gupta and Simonsen (2010) find that outcomes of eleven-year olds who were in non-parental care (centre-based care or family-day care) at age three are not statistically different from those of children who were in parental care. In addition, Deding *et al.*, (2007) do not find a negative effect of maternal employment in the first year of the child's life on children's behaviour in Denmark. In fact, they find that the association of early maternal employment, if any, is positive and stronger for boys than for girls.

In France, evidence suggests that attending pre-school (*école maternelle*) from the age of 2 has no negative effects on later cognitive outcomes (Caille *et al.*, 2001; and Goux and Maurin, 2010). On the contrary, there seems to be a small but positive effect on the chances of not repeating the second grade of primary school (CE2 – at age 8). Moreover, this positive association is mainly observed among children from disadvantaged backgrounds. The authors suggest that attending pre-school from age 2 may help reduce the social inequalities that prevail in elementary schools.

There is little evidence on the influence of father's employment on child development. Traditionally, the role of fathers in providing personal care for children is limited and there are data constraints in longitudinal datasets which prevent a detailed analysis of the issue. The few studies that exist on paternal employment find that it has a weaker influence on child development than maternal employment and that the small effects are either neutral or positive (Ermisch and Francesconi, 2000; Ruhm, 2004 ; Baxter and Smart, 2011).

A cross-national analysis of longitudinal data

To get a good view on the relationship between maternal employment and children's cognitive and behavioural outcomes, longitudinal datasets with sufficiently large sample sizes have to be used so as to follow children over time and measure their well-being at different stages of development. These datasets further facilitate the analysis of the effects of maternal employment by controlling for a wide range of child, mother and family characteristics, and they also cast light on how children in different population groups may be differently affected by maternal employment decisions.

The results presented here are a first cross-national study on the relationship between maternal employment and child development of birth cohorts of five OECD countries: Australia, Canada, Denmark, the United Kingdom and the United States

(the longitudinal datasets needed for such an analysis are increasingly being developed in other OECD countries). This is based on information on children born around the turn of the millennium, and by using a common framework and comparable data, the effect of maternal employment on child development can be considered cross-nationally (Box 5.5).

Box 5.5. **Using longitudinal datasets for the analysis of effects of maternal employment on child development**

The cross-national comparison of the relationship between maternal employment and child development is based on longitudinal datasets for: Australia, Canada, Denmark, the United Kingdom and the United States (Annex 5.A2). The data from the national studies concern children born around the year 2000, interviewed close to the time of birth and then followed up during early and mid-childhood. The advantage of using these large cohort studies is that the richness of the data facilitates controlling for background characteristics that could bias estimates of the relationship between maternal employment and child development. However, three caveats should be borne in mind while interpreting the results. First, these results reflect the experiences of individuals born in a specific year and living in a specific context. Second, estimates should be considered as indicative of associations rather than causal effects since it is not possible to completely eliminate individual heterogeneity and reverse causality problems. Third, estimates refer to the average child, which is informative for policymaking. However, what works for the average child does not necessarily work for all children.

Child developmental outcomes are assessed using information on cognitive ability, conduct problems and attention problems. Raw scores from cognitive tests were standardised to a mean of 100 and a standard deviation of 10, with higher scores meaning better outcomes. Behavioural outcomes were converted into binary variables, using specific cut-off points for high scores for each outcome; except for the United States (Annex 5.A2). These variables thus take a value of 1 if cohort members are considered to have high conduct or attention-hyperactivity problems. The conduct problems dimension includes reports on whether the child: *a)* frequently fights with other children; *b)* often has temper tantrums; *c)* is often disobedient; *d)* is often argumentative; and *e)* is often spiteful. Similarly, the variable measuring attention problems uses reports on whether the child: *a)* is squirmy or fidgety; *b)* cannot settle down to anything; *c)* is very restless; *d)* is easily distracted; and *e)* does not stop to think and does not finish task.

Maternal employment is assessed considering both intensity and timing. Outcomes of children whose mothers worked during infancy are compared with those of children whose mothers did not work during this period. In particular, the analysis considers children whose mothers were in paid work for up to (part-time) and over (full-time) 30 hours per week full-time (35 hours for the United States) by six months, in paid work between six and 11 months, and not in paid work in the first year of the child's life (which is used as the reference category). The reason for comparing employment before and after six months – instead of the broader 12 months interval – is that by six months paid maternity leave is over in most countries and because exclusive breastfeeding is typically recommended for a period of six months. The analysis examines *intensity of work* as previous research shows that the effects of early maternal employment vary by whether it is full-time or part-time.

Box 5.5. **Using longitudinal datasets for the analysis of effects of maternal employment on child development** *(cont.)*

A number of *child and family background factors* were included in the analysis to control for possible associations that might independently influence the link between maternal employment and child outcomes.

Child-related factors include: sex; age in months; ethnicity; whether child was born prematurely; weight at birth; and number of siblings at birth.

Maternal characteristics include: employment during pregnancy; employment at the time of data collection; age at child's birth; whether she was born outside the country of study; and post-partum depression.

Family-related variables considered include: family structure (always in intact family, always in a sole-parent family and living with separated parents or in a reconstituted family); parental education (highest level of educational attained by mother or father – if present); family income; and housing tenure. The model also includes some parenting behaviour measures, which could affect child outcomes: duration of breastfeeding; daily reading to children; having regular sleep or meal schedules; and physical punishment.

It is important to note that some of the factors included in the model might themselves be affected by maternal employment, in ways that might be associated with better or worse child outcomes. For example, mothers who work earlier will be less likely to breastfeed but at the same time their families would likely have higher incomes. By including such an extensive range of other factors in the model, the analysis presents estimates of the effects of maternal employment assuming all else is equal.

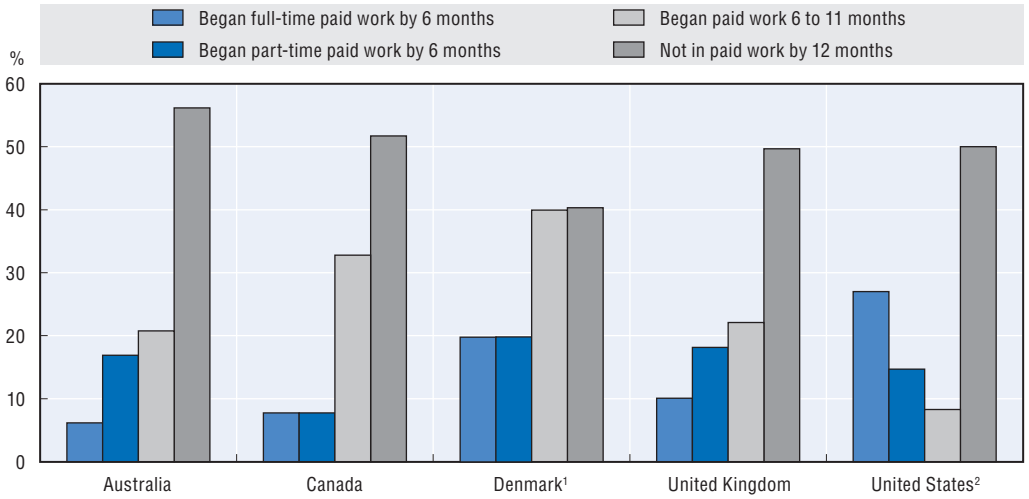
Patterns of maternal employment and non-parental childcare

Figure 5.5 shows that about half of mothers returned to (or started) work during their child's first year of life. There is, however, considerable cross-national variation in the timing and intensity of resuming (starting) work. In the United States, 42% of mothers were in paid work (mostly full time) by the time the child was 6-months old. In contrast, in Canada few women were in paid work before their child was aged 6 months (16%) and, among those who were working during this period, there was no difference in the number of working hours (around 8% in full-time and 8% in part-time). In Denmark, 40% of women started work between six and 11 months and only 20% were in work before this period. Moreover, fewer Danish women (40%) were not in paid work by the first birthday of their child. In Australia and the United Kingdom, there is little difference in the proportion of mothers working six months after childbirth (23% and 28%, correspondingly) and the proportion of mothers working by the time their child was aged 6 to 11 months (21% and 22%, correspondingly). Additionally, in these two countries, mothers who were in paid work by the time their child was 6-months old, work more in part-time jobs (17% and 18%, respectively) than in full-time jobs (6% and 10%, respectively).

Maternal characteristics play an important role in decisions on work after childbirth. In some countries, however, these characteristics have a stronger influence than in others. For example, Figure 5.6 shows that family structure in the United Kingdom has a clear association with early maternal employment. Sole mothers in the United Kingdom are less likely to be in paid work six months after childbirth than mothers in intact families

Figure 5.5. **About half of the mothers in Anglophone countries are in paid work on the first birthday of their child**

Proportion of mothers in paid work after childbirth by timing and intensity



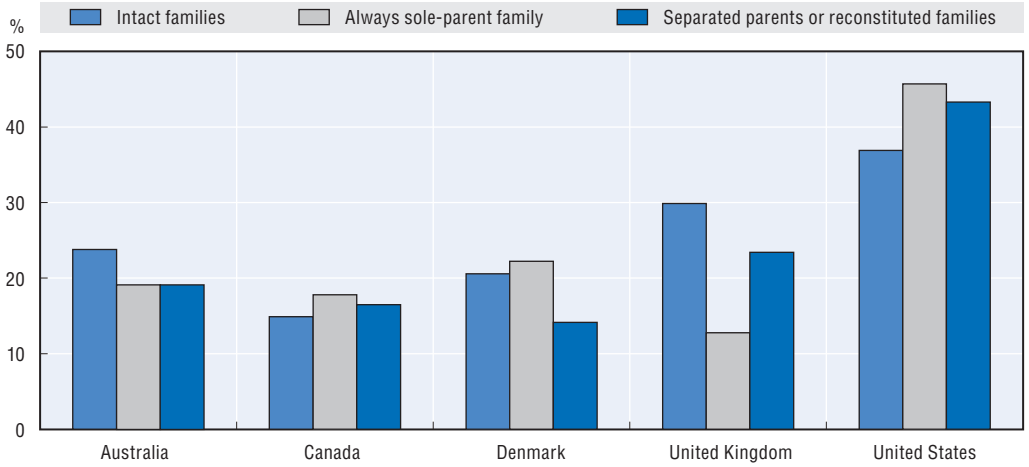
1. Data for Denmark do not distinguish between full-time and part-time work.
2. Data for the United States define full-time work as working 35 hours or more per week.

Source: See Annex 5.A2.

StatLink http://dx.doi.org/10.1787/888932393540

Figure 5.6. **British sole mothers are less likely to be in paid work by the time the child is 6 months old**

Proportion of mothers in paid work by the time the child is six months, by family structure



Note: The value of bars does not add to 100%. Sample sizes in Australia did not allow distinguishing children living always in sole-parent families from children in broken or reconstituted families.

Source: See Annex 5.A2.

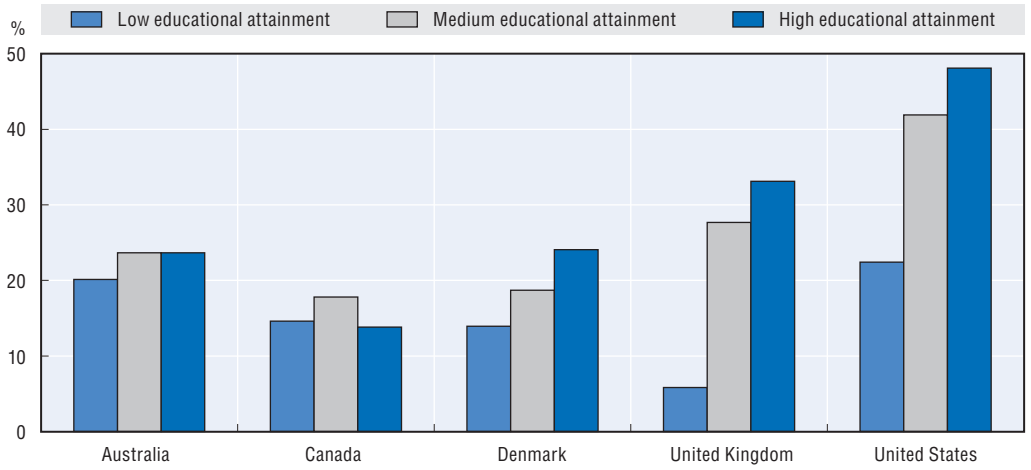
StatLink http://dx.doi.org/10.1787/888932393559

(13% and 30%, respectively). By contrast, in the United States sole mothers are more likely to be in paid work six months after childbirth than mothers always in intact families (46% and 37%, correspondingly). In Australia, Canada and Denmark, differences in maternal employment by family structure are less marked.

Figure 5.7 shows maternal employment rates by parental education among women in the different samples. In most countries, the higher the educational level of the parents, the more likely it is for children to have their mother in work by the time they are 6-months old. Mothers with higher levels of educational attainment are more likely to face higher opportunity costs when staying at home; they are most likely to have better jobs and to be more motivated to return to work.

Figure 5.7. **Mothers with high levels of educational attainment are more likely to go back to work early**

Proportion of mothers in paid work by the time the child is six months, by parental education



Source: See Annex 5.A2.

StatLink http://dx.doi.org/10.1787/888932393578

Cross-country differences in labour force participation reflect variations in a wide range of factors influencing maternal employment decisions. These include not only family policies (tax-benefit, parental leave systems and formal childcare systems) but also cultural attitudes towards maternal employment. For example, in Denmark the comprehensive parental leave and childcare support systems explain the high proportion of mothers with young children in employment, as well as the relatively small differences in employment outcomes by educational attainment or family structure. In addition, in Denmark, as in other Nordic countries, societal attitudes towards maternal employment are positive.

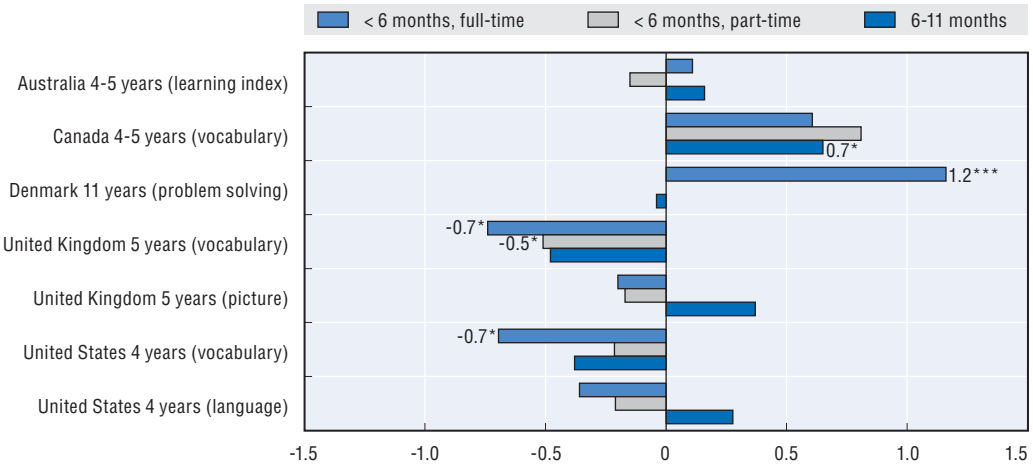
Early maternal employment and child outcomes

Cognitive scores. In general, maternal employment by the child's first six months of life was associated with somewhat lower cognitive scores on some items relative to mothers not working during the child's first year, even after holding constant a wide range of child, mother and family factors, including several that would be affected by maternal employment. However, these negative associations mainly concerned full-time employment, were of small size and only marginally significant (at the 10% level) in the United Kingdom and the United States.

Figure 5.8 presents the relationship between maternal employment and cognitive scores for 4-5 year-olds, except for Denmark where such information is not available before age 11 (for more detail on the results by age, see Annex 5.A2). For children in the United States, full-time employment at six months was negatively linked with vocabulary

Figure 5.8. **The effect of maternal employment on cognitive development is small, and only negative and statistically significant in the United Kingdom and the United States**

Associations between maternal employment and cognitive scores: benchmarked against mothers not in paid work during the child's first year[1, 2, 3]



Note: * p < 10; ** p < 05; *** p < 01.

1. This Figure presents estimates from multivariate regressions on cognitive scores at age 4-5. Although not presented here, estimates belong to models that control for child-related factors (sex; age in months; ethnicity; whether child was born prematurely; weight at birth; and number of siblings at birth), maternal characteristics (employment during pregnancy; employment at time of data collection; age at child's birth; born outside the country of study; and post-partum depression), and family-related factors (family structure, parental education, family income and housing tenure). Results for other age groups as well as for behavioural outcomes are presented in Annex 5.A2.
2. The bars represent estimates of the associations between maternal employment and cognitive scores. Results indicate how much test scores are expected to increase (if the sign of the coefficient is positive) or to decrease (if the sign of the coefficient is negative) relative to children whose mothers were not in employment during the child's first year of life (the benchmark or omitted category).
3. The mean value of the test scores is 100 and the standard deviation 10. Hence, a coefficient of minus 1 represents a reduction of 1% from the mean value.

Source: See Annex 5.A2.

StatLink http://dx.doi.org/10.1787/888932393597

test scores of children aged 4 years old, but the effect was small (–0.7 score points), and only marginally significant (at the 10% level). In the United Kingdom, early maternal employment (full-time and part-time) appeared to have a very small negative association with vocabulary test scores for children age 4-5. However, the association persists, and is somewhat larger for children aged 7 (Table 5.A2.2).

Figure 5.8 also shows that maternal employment by six months seems to have a positive relationship with cognitive scores of Danish children at age 11, compared with children of the same age whose mother was not in paid work when the child was 1-year old. Few Danish women are in paid work by six months. Hence, it is likely that those who are back in work at such an early stage are those with higher employment attachment, with higher opportunity costs of staying at home. Additionally, in Canada, positive links were also observed. Children whose mother was in paid work by the time they were between 6- and 11-months-olds had marginally significantly higher scores (0.7 score points) than children whose mothers were not in paid work by their first birthday.

Conduct and attention problems. There is little evidence that conduct problems are more likely amongst children of working mothers (Table 5.A2.2). Only in the United Kingdom is there some evidence that maternal employment by the time the child is

6-months old may have a small negative effect on children's behaviour: the odds of experiencing conduct problems are significant only for children aged 5 and 7.

Likewise, there is little evidence that attention-hyperactivity problems are negatively associated with maternal employment in the first year (either full-time by six months, part-time by six months or in work between 6 and 11 months). In general, results are not significant, except in Canada and the United Kingdom (Table 5.A2.2), though results do not show a consistent pattern.

It was not possibly to control for quality of care because not all cohort studies collect this information. This is an important gap because good (bad) quality of care arrangements is likely to affect the relationship between maternal employment and child outcomes. However, a consistent finding among studies that control for quality of services is that high-quality care is important for children's cognitive and social development, though the size of the association varies across studies (Waldfogel, 2002; Langlois and Liben, 2003; and Vandell *et al.*, 2010).

Child outcomes for different population groups. The relationship between maternal employment and child outcomes may differ across family types and families with different overall levels of parental education attainment. However, linkages between early maternal employment and child outcomes do not appear to differ within groups of family types in Australia and Denmark. By contrast, there are some differences in results for Canada, the United Kingdom and the United States (Huerta *et al.*, 2011).

In general, outcomes of children in intact families are more likely to be negatively related with early maternal employment than children in other type of family structures. Early maternal employment is also negatively associated with cognitive scores of children of parents with high educational attainment in the United Kingdom and the United States, and it is positively linked with behavioural problems amongst children whose parents have high levels of educational attainment. In general, the size of the associations is modest for both behavioural outcomes and small for cognitive scores. These findings are in line with recent studies on American and British children (Joshi *et al.*, 2009; and Brooks-Gunn *et al.*, 2010).

Participation in formal and informal childcare. Childcare arrangements are an important factor in considering children's cognitive and behavioural outcomes. Participation in formal care does not seem to have a negative effect on cognitive development. In fact, formal childcare participation seems to have a positive and statistically significant association with cognitive scores in the United Kingdom and the United States (for some age-groups). However, associations are small and non-significant in Australia, Canada or Denmark (Huerta *et al.*, 2011). As for the intensity of participation in formal care, there is no clear pattern showing larger effects for either short or long hours care.

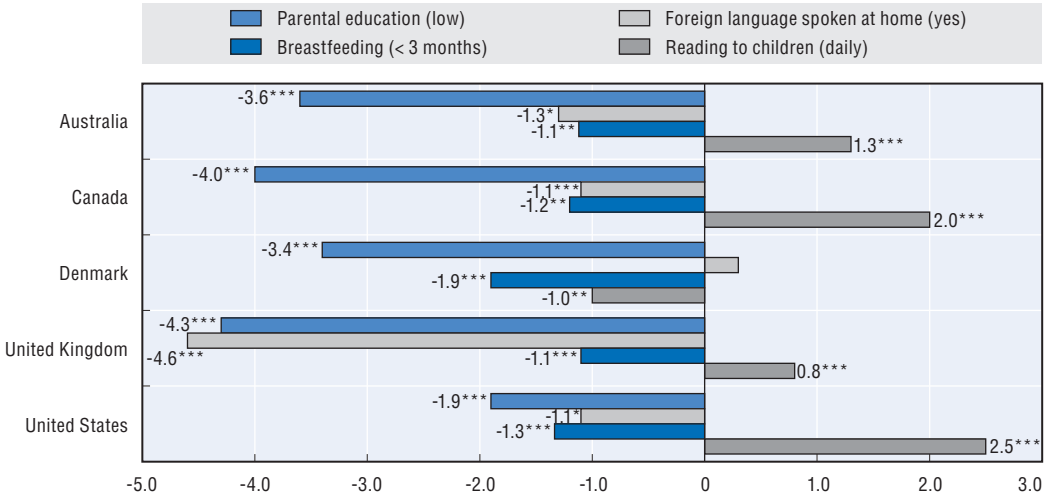
The evidence also suggests that informal care during infancy is not necessarily negatively related with child cognitive outcomes. For example, in Australia children in informal care had somewhat higher scores on cognitive outcomes than children who were mainly cared for by their parents. Grandparents are the most common provider of childcare in Australia when children are young. However, children being looked after grandparents tend to spend fewer hours per week in care than children in formal childcare (Gray *et al.*, 2005). It is possible that the result observed is related with intensity-of-care effect.

Other factors which affect cognitive outcomes

Other individual and family characteristics included in the model specifications appear to be more important predictors of child outcomes than maternal employment, although it is important to note that some of these factors could themselves be affected by maternal employment. Factors with stronger associations include gender, ethnicity, parental education, family's economic circumstances, maternal depression (for behavioural outcomes) and some parenting activities (breastfeeding duration and reading). Figure 5.9 shows that parental education is significantly associated with children's cognitive performance: on average, children whose parents had low levels of education obtained significantly lower test scores (between –4.3 and –1.8 point scores) than children whose parents had high educational levels. Speaking a foreign language at home is also negatively related to children's cognitive scores, except in Denmark. However, scores for Danish children were measured at a later age (age 11) than elsewhere, and older children will have had more time to catch up with their native peers.

Figure 5.9. **Background characteristics play an important role on children's cognitive outcomes**

Cognitive scores (omitted category: not in paid work in child's first 12 months of life)[1, 2]



Note: * p < 10; ** p < .05; ***p < .01.

1. Estimates presented here were drawn from multivariate regressions on cognitive scores at age 4-5. Although not presented here, estimates belong to models that control for child-related factors, maternal characteristics and family-related variables.
2. Coefficients for parental education here refer to children whose parents had low levels of education compared with children with parents in the high level category. Coefficients for foreign language spoken at home refer to children who spoke a foreign language at home compared with children who did not. Coefficients for breastfeeding refer to children who were breastfed for less than three months compared with children who were breastfed for six months or more. Coefficients for daily reading refer to children whose parents read to them daily compared with those of children who were read in a more sporadic basis. In Denmark, the latter variable is talking with children because the sample concerns children at age 11.

Source: Huerta *et al.* (2011).

StatLink http://dx.doi.org/10.1787/888932393616

Figure 5.9 also shows that parenting activities such as breastfeeding and reading daily to children have a positive influence on children's cognitive development. The importance of parenting activities is in line with other studies. For example, Belsky *et al.* (2007) observed that parenting is a stronger and more consistent predictor of child development until at least sixth grade than early childcare experiences.

The effects of birth-related leave on child and maternal well-being

In an early comparative study, using a panel of aggregate data from European OECD member states, Ruhm (2000) found that increases of paid parental leave policies improved birth weight and reduced infant or child mortality. The rationale is that paid leave provides parents with time to invest in taking care of their young children: effects mainly concern the post-neo-natal period where medicalised care does not play such a strong role. In an update and extension (including data for Japan and the United States) of this work, Tanaka (2005) generally upheld Ruhm's findings and also found that longer periods of paid leave reduce infant mortality while unpaid leaves have no significant effect.

A recent OECD analysis updated and extended the Ruhm and Tanaka parental leave databases to cover 30 OECD countries (Baldi and Chapple, 2011). The parental leave database differs in some significant ways from the earlier data used by Ruhm. The OECD data on job-protected and paid maternal and parental leave was used to replace Ruhm's data in his key country-panel regression explaining infant mortality (16 European countries in the panel, covering the years 1969-94). All other co-variates included were identical to those of Ruhm. The revisions in the birth-related leave data have a large and striking effect on the conclusions from the econometric analysis. The effect of using the OECD data in place of that of Ruhm was to reduce considerably the coefficient on the length of parental leave from –0.25 to –0.05. Additionally, the coefficient on the leave variable falls from a 1% level of significance in Ruhm's original regression to a level where it was statistically insignificant in its influence on infant mortality.

The data were also used by Baldi and Chapple on an expanded panel of 30 OECD countries over a longer time period (1969-2008) to examine the impact of leave on infant mortality and post-neo-natal infant mortality.[6] Data limitations restrict the set of regressors included in the econometric equations compared with those used by Ruhm.[7] Again, the expanded results shown in Table 5.2 offer little support for the notion that birth-related leave causes lower infant mortality.

Table 5.2. **No significant effect is found for differences in job-protected paid parental leave on infant mortality**

Estimates of the effects of paid, job-protected birth-related leave on infant mortality across the OECD, 1969-2008

	Dependent variable: natural log of the infant mortality rate			Dependent variable: natural log of the post-neonatal infant mortality rate		
Leave	–0.022 (0.021)	–0.033 (0.019)	0.030 (0.023)	0.023 (0.032)	0.023 (0.030)	–0.018 (0.047)
Fertility	–	0.149 (0.011)	0.139 (0.016)	–	0.210 (0.020)	0.008 (0.035)
Country-specific linear time trends	No	No	Yes	No	No	Yes
Country and time dummies	Yes	Yes	Yes	Yes	Yes	Yes
Number of observations	1 170	1 170	1 170	1 092	1 092	1 092
R^2	*0.96*	*0.966*	*0.986*	*0.903*	*0.912*	*0.944*

Note: All OECD countries are included except Chile, Estonia, Israel and Slovenia. Leave is divided by 100 to render the results comparable with Ruhm and Tanaka. Equations were estimated using OLS. Some missing values of variables were linearly interpolated, or extrapolated using the value of the variable closest in time to the missing variable.
Source: Baldi and Chapple (2011).

StatLink http://dx.doi.org/10.1787/888932394224

There is also a growing "natural policy experiment" literature on the effects of changes in leave policies on child health and development.[8] In this literature too, the evidence on the effects on child well-being is mixed and inconclusive (Box 5.6).

Variations and changes to parental leave policies and maternal well-being

The research considered above has focused on the effects of birth-related leave on children's health and wellbeing. There is less research on how changes to birth-related leave may affect maternal health and health behaviours, which in turn may have indirect effects on a range of child outcomes. The limited evidence is mixed.

Box 5.6. **Comparing leave systems before and after policy changes for effects on child well-being**

The table below summarises the results of the effect of expansions to birth-related leave policies on child well-being in Canada, Denmark, Germany, Norway and Sweden, as well as across the OECD. The results are mixed to negative. As has been discussed in the text, the Ruhm and Tanaka results may not be robust.

Summary of natural policy experiments on changes to birth-related leave

Authors	Country	Outcome	Size of birth-related leave policy change	Date of policy change	Age of Observation age	Significant
Ruhm (2000)	16 OECD countries	Low birth-weight, infant and child mortality	Various, depending on country/time	1969-1994	0-5 years	Yes
Tanaka (2005)[1]	18 OECD countries	Low birth-weight, infant and child mortality, immunisation	Various, depending on country/time	1969-2000	0-5 years	Yes
Baker and Milligan (2008b)[2]	Canada	Parent-reported child health, behaviour, family functioning	Rise of 27 weeks (from 25 weeks)	December, 2000	2 years	No
Zarrabi (2009)[3]	Canada	Wide range of health, behaviour, development and cognitive outcomes	Rise of 27 weeks (from 25 weeks)	December, 2000	7 months to 6 years	Mixed
Liu and Skans (2009)	Sweden	Test scores, grades	Rise of 12 weeks (from 52 weeks)	August, 1988	16 years	No
Liu and Skans (2009)	Sweden	Hospital admissions up to age 16	Rise of 13 weeks (from 52 weeks)	August, 1989	0-16 years	No
Dustmann and Schonberg (2008)	Germany	Wages, unemployment and educational track outcomes	Rise from 2 to 6 months	May, 1979	25-26 years	No
			Rise from 6 to 10 months	January, 86	18-20 years	
			Rise from 18 to 36 months	January, 92	13-14 years	
Rassmussen (2010)	Denmark	High school enrolment and grades	Rise of 6 weeks (from 14 weeks), 2 extra weeks for fathers	July, 1984	16 years	No
Carneiro, Loken and Salvanes (2010)[4]	Norway	High school dropout, college attendance, IQ, Male height	Rise of 6 weeks paid leave (from 12 weeks), 52 weeks unpaid (from 0 weeks)	July, 1977	15-29 year	Yes
Carneiro, Loken and Salvanes (2010)	Norway	Teen pregnancy	Rise of 6 weeks paid (from 12 weeks), 52 weeks unpaid (from 0 weeks)	July, 1977	15-19 years	No

1. No significant effect on immunisations.
2. Zarrabi extends and expands this work.
3. Temperament, cognitive development and breastfeeding positively and significantly affected. Some deterioration in behaviour that disappears by age 4-5 years.
4. Breastfeeding rises do not explain the positive educational results.

StatLink http://dx.doi.org/10.1787/888932394300

Early and small non-representative sample studies from the United States suggest that employed women have worse physical health following childbirth (Gjerdingen *et al.*, 1995), and provide mixed results on mother's mental health outcomes (Hyde *et al.*, 1995; and McGovern et *al.*, 1997). However, these research designs are not sufficiently sophisticated to make it clear whether the observed associations are causal. Other studies with more sophisticated methodologies and larger samples have been undertaken that overcome these problems.

Chatterji and Markowitz (2004) investigated the impact of the length of maternity leave on maternal overall health and depression of working mothers in the United States. Using an instrumental variables approach to account for the possible endogeneity of the return-to-work decision, the findings suggest that returning to work later reduces depressive symptoms, but not the probability of clinical depression or outpatient visits after childbirth. In a later paper, Chatterji and Markowitz (2008) consider the impact of leave on maternal depression, overall health status, and substance use; again employing an instrumental variables approach and including county-level employment conditions and state-level maternity leave policies as instruments to address reverse causality issues. Again results suggest that longer maternity leave from work is associated with declines in depression, as well as improvements in overall health, although the effects are small (to reduce the likelihood of depression by 5% and overall health by 1%, leave would need to be doubled from 9 to 18 weeks). Additionally, the authors find that if men take paternal leave, there is less maternal depression.

The doubling of Canadian birth-related leave from six months to one year was found by Baker and Milligan (2008b) to have resulted in a considerable increase in the time women take off work and an associated rise in breastfeeding rates.[9] However, maternal health, measured by a five-level indicator of mothers' self-reported health, an index of depression, a binary indicator of no post-partum depression, and a count of post-partum problems, in no cases was affected by the extension of birth-related leave. Similarly, Liu and Skans (2009) examination of the Swedish leave expansion identified no effect of the policy change on two measures of maternal well-being (divorce or mental health-based hospital admissions).[10]

Notes

1. "Intact families" refer to children growing up with both biological parents since birth.
2. In this chapter, the statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.
3. For detailed information on this programme, consult *www.oportunidades.gob.mx/Portal/*.
4. Swiss social spending may not be covered entirely by the *OECD Social Expenditure Database* as cantonal spending on social assistance and childcare may well push Switzerland's real spending level closer to the OECD average (Adema *et al.*, 2011).
5. Equivalence scales used to calculate costs in poverty statistics are not usually applied in benefit payments, so per child increments can have a bigger impact on large family poverty rates even though real amounts paid are the same per head.
6. Neo-natal mortality is defined as deaths between 28 days and one year, the latter outcome is arguably more likely to be influenced by the post-birth environment, including changes in leave duration (Ruhm, 2000).

7. Ruhm and Tanaka use a range of covariates in their regressions, including fertility, per capita GDP, health spending, health care coverage, the number of dialysis patients and the female employment-population ratio. For the countries considered here, only fertility was available for sufficient countries over the 1969-2007 time period. Thus, it was not possible to replicate exactly Ruhm and Tanaka's approach over the entire sample and period.
8. Policy reforms in some countries (for example, Australia) are relatively new. Their impact may not be discernable. Nevertheless, countries with recent reforms or no reforms are included in the analysis as a baseline comparison group.
9. At a national level, Baker and Milligan (2008a) use the panel approach to look at parental leave across Canadian Provinces between 1961 and 2001. During this period provinces had a very wide variation in weeks of unpaid job-protected parental leave – from zero to 70 weeks. Baker and Milligan find no evidence that increases in unpaid leave improve parent-reported infant health outcomes.
10. A methodological aspect of these studies that needs to be taken into account when reading these findings is that the majority calculate their estimates based on the parental leave duration parents were entitled to in the year when the child was born (*i.e.*, before or after the reform) and not on the actual use of parental leave. This is because the latter data are difficult to gather.

References

Adema, W., P. Fron and M. Ladaique (2011), "The Real Cost of Welfare States and the Crisis", *OECD Social, Employment and Migration Working Paper*, OECD Publishing, Paris, *www.oecd.org/els/workingpapers*.

Adireksombat, K. (2010), "The Effects of the 1993 Earned Income Tax Credit Expansion on the Labor Supply of Unmarried Women", *Public Finance Review*, published online January 19.

Alderman, H., J.R. Behrman, H.-P. Kohler, J.A. Maluccio and S.C. Watkins (2001), "Attrition in Longitudinal Household Surveys", *Demographic Research*, Vol. 5, Article 4.

Angelsen, N., T. Vik, G. Jacobsen and L. Bakketeig (2001), "Breastfeeding and Cognitive Development at Age 1 and 5 Years", *Archives of Disease in Childhood*, Vol. 85, pp. 183-188.

Baker, M., J. Gruber and K. Milligan (2005), "Universal Childcare, Maternal Labour Supply, and Family Well-being", *NBER Working Paper,* No. 11832, Cambridge, Massachusetts, December.

Baker, M. and K. Milligan (2008a), "How Does Job Protected Maternity Leave Affect Mothers' Employment?", *Journal of Labor Economics,* Vol. 26, No. 4, October, pp. 655-692.

Baker, M. and K. Milligan (2008b), "Evidence from Maternity Leave Expansions of the Impact of Maternal Care on Early Childhood Development", *NBER Working Paper*, No. 13826, Cambridge, Massachusetts, February.

Baldi, S. and S. Chapple (2011), "Birth-related Leave Durations across the OECD, 1969-2008", Social, *Employment and Migration Working Paper*, OECD Publishing, Paris, forthcoming.

Baxter, J. and D. Smart (2011), "Fathering in Australia among Couple Families with Young Children", *Occasional Paper*, No. 37, Department of Families, Housing, Commity services and Indegenous Affairs, Australian Government, Canberra.

Belfield, C.R. and I.R. Kelly (2010), "The Benefits of Breastfeeding across the Early Years of Childhood", *NBER Working Paper,* No. 16496, Cambridge, Massachusetts, October.

Belsky J., M. Burchinal, K. McCartney *et al.* (2007), "Are There Long-term Effects of Early Childcare?", *Child Development*, Vol. 2, No. 78, pp. 681-701.

Berger, L., C. Paxon and J. Waldfogel (2009), "Income and Child Development", *Children and Youth*.

Brooks-Gunn, J., H. Wen-Jui and J. Waldfogel (2002), "Maternal Employment and Child Cognitive Outcomes in the First Three Years of Life: The NICHD Study of Early Child Care", *Child Development*, Vol. 73, No. 4, pp. 1052-1072.

Brooks-Gunn, J., W. Han and J.Waldfogel (2010), "First-year Maternal Employment and Child Development in the First 7 Years", *Monographs of the Society for Research in Child Development*, Vol. 75, No. 2, pp. 144-145.

Caille, J.P. (2001), "Scolarisation à 2 ans et réussite de la carrière scolaire au début de l'école élémentaire", *Éducation et Formation*, No. 60, pp. 7-18.

Carneiro, P. and R. Ginja (2008), "Preventing Problem Behaviors in Childhood and Adolescence: Evidence from Head Start", *University College London Working Paper*, London.

Carneiro, P., K. Loken and K. Salvanes (2010), "A Flying Start? Maternity Leave and Long-term Outcomes for Mother and Child", *www.econ.yale.edu/seminars/labor/lap08/carneiro-081031.pdf*.

CASEN (2010), "The National Socio-economic Characterization Survey (CASEN) for Chile 2003 and 2006", *www.mideplan.cl/casen/en/index.html*, May.

Caspi, A. *et al.* (2007), "Moderation of Breastfeeding Effects on the IQ by Genetic Variation in Fatty Acid Metabolism", *Proceedings of the National Academy of Science USA.*, Vol. 104, No. 47, pp. 18860-18865.

Chatterji, P. and S. Markowitz (2004), "Does the Length of Maternity Leave Affect Maternal Health?", *NBER Working Paper*, No. 10206, Cambridge, Massachusetts, January.

Chatterji, P. and S. Markowitz (2008), "Family Leave after Childbirth and the Health of New Mothers", *NBER Working Paper,* No. 14156, Cambridge, Massachusetts, July.

Clark, K., M. Castillo, A. Calatroni, T. Walter, M. Cayazzo, P. Pino and B. Lozoff (2006), "Breastfeeding and Mental and Motor Development at 5½ Years", *Ambulatory Paediatrics*, Vol. 6, No. 2, pp. 65-71.

Cooklin, A.R., S.M. Donath and L.H. Amir (2008), "Maternal Employment and Breastfeeding: Results from the Longitudinal Study of Australian Children", *Acta Paediatrica*, Vol. 97, No. 5, pp. 620-623.

Currie, C. *et al.* (eds.) (2008), "Inequalities in Young People's Health: HBSC International Report from the 2005/2006 Survey", WHO Regional Office for Europe, Copenhagen.

Deding, M., M. Lausten and A.R. Andersen (2007), "Starting School: The Effect of Early Childhood Factors on Child Wellbeing", *SF1 Working Paper*, No. 2, Danish National Institute of Social Research, Copenhagen.

Del Bono, E. and J. Ermisch (2009), "Birth Weight and the Dynamics of Early Cognitive and Behavioural Development", *IZA Discusssion Paper*, No. 4270, Bonn.

Denny, K. and O. Doyle (2010), "The Causal effect of Breastfeeding on Children's Cognitive Development: A Quasi-experimental Design", *UCD Geary Institute Discussion Paper Series*, No. 201020.

Der, G., D. Batty and I. Deary (2006), "Effect of Breast Feeding on Intelligence in Children: Prospective Study, Sibling Pairs Analysis and Meta-analysis", *British Medical Journal*, Vol. 333, pp. 945-948.

Der, G., D. Batty and I. J. Deary (2008), "Results from the PROBIT Breastfeeding Trial May Have Been Over Interpreted", *Arch Gen Psychiatry*, Vol. 65, No. 12, pp. 1456-1457.

Doyle, O. and L. Timmins (2008), "Breast is Best, But for How Long? Testing Breastfeeding Guidelines for Optimal Cognitive Ability", *UCD Geary Institute Discussion Paper Series, Working Paper*, No. 21/2008.

Drane, D. and J. Logemann (2000), "A Critical Evaluation of the Evidence on the Association between Infant Feeding and Cognitive Development", *Paediatric & Perinatal Epidemiology*, Vol. 14, pp. 349-356.

Duncan, G. *et al.* (2010), "Early Childhood Poverty and Adult Attainment, Behaviour and Health", *Child Development,* Vol. 81, No. 1, pp. 306-325.

Dustmann, C. and U. Schönberg (2008), "The Effect of Expansions in Maternity Leave Coverage on Children's Long-Term Outcomes", *CSGE Research Paper*, Anglo-German Foundation, July.

ENIGH (2010), "National Survey of Household Incomes and Expenditures (ENIGH) for Mexico 2006 and 2008", *www.inegi.org.mx/inegi/default.aspx?s=est&c=10656*, May.

Ermisch, J. and M. Francesconi (2000), "The Effect of Parents' Employment on Children's Educational Attainment", *IZA Discussion Paper,* No. 215, Bonn.

EU SILC (2010), "The European Survey on Income and Living Conditions (EU SILC) for 2007 and 2008", *http://epp.eurostat.ec.europa.eu/portal/page/portal/microdata/eu_silc*, May.

Fergusson, D.M., A.L. Beautrais and P.A. Silva (1982), "Breast-feeding and Cognitive Development in the First Seven Years of Life", *Social Science and Medicine*, Vol. 16, pp. 1705-1708.

Fergusson, D.M., H. Grant, L.J. Horwood and E.M. Ridder (2005), "Randomized Trial of the Early Start Program of Home Visitation", *Pediatrics,* Vol. 116, pp. e803-e809.

Freeman, R.B., S. Machin and M. Viarengo (2010), "Variation in Educational Outcomes and Policies Across Countries and of Schools within Countries", *NBER Working Paper*, No. 16293. Cambridge, Massachusetts.

Gale C., F. O'Callaghan, K. Godfrey, C. Law and C. Martyn (2004), "Critical Periods of Brain Growth and Cognitive Function in Children", *Brain,* Vol. 127, pp. 321-329.

Gibson-Davis, C. and J. Brooks-Gunn (2006), "Breastfeeding and Verbal Ability of 3-Year-Olds in a Multicity Sample", *Pediatrics*, Vol. 18, No. 5, pp. e1444-e1451.

Gjerdingen, D., P. McGovern, K. Chaloner and H. Street (1995), "Women's Postpartum Maternity Benefits and Work Experience", *Family Medicine*, pp. 592-598.

Gómez-Sánchez, M. *et al.*, (2004), "Influence of Breast-feeding and Parental Intelligence on Cognitive Development in the 24-month-old Child", *Clinical Pediatrics*, Vol. 43, No. 8, pp. 753-761.

Gordon, R., R. Kaestner and S. Korenman (2007), "The Effects of Maternal Employment on Child Injuries and Infectious Disease", *Demography*, Vol. 44, No. 2, pp. 307-333.

Gormley, W. (2007), "Early Childhood Care and Education: Lessons and Puzzles", *Journal of Policy Analysis and Management*, Vol. 26, pp. 633-671.

Gray M., S. Misson and A. Hayes (2005), "Young Children and their Grandparents", *Family Matters,* No. 72, Australian Institute of Family Studies.

Gregg, P., E. Washbrook, C. Propper and S. Burges (2005), "The Effects of a Mother's Return to Work Decision on Child Development in the UK", *Economic Journal*, Vol. 115, pp. F48-F80.

Giguère, C. and H. Desrosiers (2010), "Child Care from Birth to Eight Years of Age: Its Use and Influence on Child Development", Vol. 5, Fascicule 1, Institut de la Statistique Quebec.

Goux, D. and E. Maurin (2010), "Public School Availability for Two-year Olds and Mothers' Labour Supply", *Labour Economics*, Vol. 17, pp. 951-962.

Gupta, N.D. and M. Simonsen (2010), "Effects of Universal Child Care Participation on Pre-teen Skills and Risky Behaviors", *Economics Working Paper*, No. 2010-07, School of Economics and Management, University of Aarhus.

Han, W., J. Waldfogel and J. Brooks-Gunn (2001), "The Effects of Early Maternal Employment on Later Cognitive and Behavioural Outcomes", *Journal of Marriage and the Family*, Vol. 63, pp. 336–354.

Hawkins, S. *et al.* (2007), "The Impact of Maternal Employment on Breast-feeding Duration in the UK Millennium Cohort Study", *Public Health Nutrition*, Vol. 10, pp. 891-896.

Heckman, J. *et al.* (2010), "A New Cost-Benefit and Rate of Return Analysis for the Perry Preschool Program: A Summary", *IZA Discussion Paper,* No. 17, Bonn.

Herbstman J. *et al.* (2010), "Prenatal Exposure to PBDEs and Neurodevelopment", *Environmental Health Perspectives*, Vol. 118, No. 5, pp. 712-719.

HILDA (2010), "The Household Income and Living Dynamics (HILDA) for Australia 2007 and 2008", *www.melbourneinstitute.com/hilda*, June.

Huerta, M.C, W. Adema, J. Baxter, M. Corak, M. Deding, W.J. Han and J. Waldfogel (2011), "Early Maternal Employment and Child Development in Five OECD Countries", *Social, Employment and Migration Working Papers*, OECD Publishing, Paris, forthcoming.

Hyde, J., M. Klein, M. Essex and R. Clark (1995), "Maternity Leave and Women's Mental Health", *Psychology of Women Quarterly*, Vol. 19, pp. 257-285.

ILO (2010), "Maternity Protection Convention 2000", *www.ilo.org/ilolex/cgi-lex/convde.pl?C183*, October.

Ip, S. *et al.* (2007), "Breastfeeding and Maternal and Infant Health Outcomes in Developed Countries", *Evidence Report/Technology Assessment*, Vol. 153, pp. 1-186.

Jacobsen, S., L. Chiodo and J. Jacobsen (1999), "Breastfeeding Effects on Intelligence Quotient in 4- and 11-Year-Old Children", *Pediatrics*, Vol. 103, No. 5, pp. 103: e71.

Jansen, J., C. de Weertha and J.M. Riksen-Walravena (2008), "Breastfeeding and the Mother–infant Relationship – A Review", *Developmental Review*, Vol. 28, No. 4, pp. 503-521.

Jaumotte, F. (2003), "Female Labour Force Participation: Past Trends and Main Determinants in OECD Countries", *OECD Economics Department Working Paper,* No. 376, OECD Publishing, Paris.

Johnson, D., P. Swank, V. Howie, C. Baldwin and M. Owen (1996), "Breast Feeding and Children's Intelligence", *Psychological Reports*, Vol. 79, pp. 1179-1185.

Joshi, H., E. Cooksey and G.Verropoulou (2009), "Combining Childrearing with Work: Do Maternal Employment Experiences Compromise Child Development?", *Working Paper*, No. 2009/1, Centre for Longitudinal Studies, London.

Julvez, J. *et al.* (2007), "Attention Behaviour and Hyperactivity at Age Four and Duration of Breast Feeding", *Acta Paediatrica*, pp. 842-847.

Kim, S. *et al.* (2010), "The Lasting Impact of Mothers' Fetal Malnutrition on their Offspring: Evidence from the China Great Leap Forward Famine", *IZA Discussion Paper,* No. 5194, Bonn.

Kiernan, K. and M.C. Huerta (2008), "Economic Deprivation, Maternal Depression, Parenting and Child's Cognitive and Emotional Development in Early Childhood", *British Journal of Sociology*, Vol. 59, No. 4, pp. 783-806.

KLIPS (2010), "Korean Labour and Income Panel Study (KLIPS) for Korea 2006 and 2007", *www.kli.re.kr/klips/en/about/introduce.jsp*, May.

Kramer, M. *et al.* (2008), "Breastfeeding and Child Cognitive Development. New Evidence From a Large Randomized Trial", *Archives of General Psychiatry*, Vol. 65, No. 5, pp. 578-584.

Ladomenou F. *et al.* (2010), "Protective Effect of Exclusive Breastfeeding against Infections During Infancy: A Prospective Study", *Archives of Diseases in Childhood,* Vol. 27.

Langlois, J.H. and L.S Liben (2003), "Child Care Research: An Editorial Perspective", *Child Development*, Vol. 74, pp. 969–975.

Lefebvre P., P. Merrigan and M. Verstraete (2008), "Childcare Policy and Cognitive Outcomes of Children: Results from a Large Scale Quasi-Experiment on Universal Childcare in Canada", *Cahiers de Recherche,* CIRPEE, No. 0823.

Liesbeth D. *et al.* (2010), "Prolonged and Exclusive Breastfeeding Reduces the Risk of Infectious Diseases in Infancy", *Pediatrics*, Vol. 126, No. 1, pp. 18-25.

Lindo, J. (2010), "Parental Job Loss and Infant Health", *IZA Discussion Paper*, No. 5213, Bonn.

Liu, Q. and O. Skans (2009), "The Duration of Paid Parental Leave and Children's Scholastic Performance", *IZA Discussion Paper*, No. 4244, Bonn.

McGovern, P. *et al.* (1997), "Time Off Work and the Postpartum Health of Employed Women", *Medical Care*, Vol. 35, pp. 507-521.

Michaelsen, K., L. Lauritzen and E.L. Mortensen (2009), "Effects of Breast-Feeding on Cognitive Function", in G. Goldberg *et al.* (eds.), *Breast-feeding: Early Influences on Later Health*, Springer Science.

Morrow-Tlucak, M., R.H. Haude and C.B. Ernhart (1988), "Breastfeeding and Cognitive Development in the First 2 Years of Life", *Social Science and Medicine*, Vol. 26, No. 6, pp. 635-639.

Nathan, G. (1999), "A Review of Sample Attrition and Representativeness in Three Longitudinal Studies. Government Statistical Service", *Methodological Series No. 13*, Office of National Statistics, United Kingdom.

NEES – National Evaluation of Sure Start Research Team (2005), *Early Impacts of Sure Start Local Programmes on Children and Families*, *Report* No. 13, Department for Education and Skills, London.

NEES (2008), *The Impact of Sure Start Local Programmes on Three Year Olds and Their Families*, Report No. 27, Department for Education and Skills, London.

NICHD – National Institute for Child Health and Human Development Early Child Care Network (2003), "Does Amount of Time in Child Care Predict Socio-emotional Adjustment During the Transition to Kindergarten?", *Child Development*, Vol. 74, pp. 976-1005.

OECD (2008), *Growing Unequal?,* OECD Publishing, Paris.

OECD (2009a), *Doing Better for Children*, OECD Publishing, Paris, *www.oecd.org/els/social/childwellbeing*.

OECD (2009b), *OECD Health Data*, OECD Publishing, Paris, *www.oecd.org/health/healthdata*.

OECD (2010a), *Income Distribution Questionnaires*, OECD Publishing, Paris, *www.oecd.org/els/social/inequality*.

OECD (2010b), *Labour Market and Social Policy Reviews: Israel*, OECD Publishing, Paris, *www.oecd.org/els/israel2010*.

OECD (2010c), *OECD Economic Outlook*, No. 87, OECD Publishing, Paris.

OECD (2010d), *PISA 2009 Results: Learning Trends: Changes in Student Performance Since 2000 (Vol. V)*, OECD Publishing, Paris, *www.oecd.org/edu/pisa/2009*.

OECD (2010e), *OECD Social Expenditure Database*, OECD Publishing, Paris, *www.oecd.org/els/social/expenditure*.

Perroni, M.E. *et al.* (2003), "Efecto de la lactancia sobre el desarrollo neuroconductual del niño", *Perinatol Preprod Hum*, Vol. 17, pp. 20-27.

Quigley, M.A., Y.J. Kelly and A. Sacker (2007), "Breastfeeding and Hospitalization for Diarrheal and Respiratory Infections in the United Kingdom", *Pediatrics*, Vol. 119, No. 4, pp. 837-842.

Rasmussen, A.W. (2010), "Increasing the Length of Parents' Birth-Related Leave: The Effect on Children's Long-Term Educational Outcomes", *Labour Economics,* Vol. 17, No. 1, pp. 91-100.

Richards, M. *et al.* (1998), "Infant Nutrition and Cognitive Development in the First Offspring of a National UK Birth Cohort", *Developmental Medicine & Child Neurology,* Vol. 40, No. 3, pp. 163-167.

Richardson, D., P. Hoelscher and J. Bradshaw (2008), "Child Well-being in Central and Eastern European Countries (CEE) and the Commonwealth of Independent States (CIS)", *Journal of Child Indicators Research*, Vol. 1, No. 3, pp. 211-250.

Ruhm, C. (2000), "Parental Leave and Child Health", *Journal of Health Economics*, Vol. 19, No. 6, pp. 931-960.

Ruhm, C. (2004), "Parental Employment and Child Cognitive Development", *Journal of Human Resources*, Vol. 39, No. 1, pp. 155-192.

SHP (2010), "Swiss Household Panel for Switzerland 2007", *www.swisspanel.ch/?lang=en*, June.

SHS (2010), "Survey of Household Spending for Canada 2004 and 2005", *www.statcan.gc.ca/*, June.

Stamm, M. (2009), "Frühkindliche Bildung in der Schweiz", Eine Grundlagenstudie im Auftrag der Schweizerischen, Swiss Commission for UNESCO.

Tanaka, S. (2005), "Parental Leave and Child Health across OECD Countries", *Economic Journal*, Vol. 115, pp. F7-F28.

Torres-Sánchez L. *et al.* (2009), "Prenatal Dichlorodiphenyldichloroethylene (DDE) Exposure and Neurodevelopment: A Follow-up from 12 to 30 Months of Age", *Neurotoxicology*, Vol. 30, No. 6, pp. 1162-1165.

Vandell, D.L., J. Belsky, M. Burchinal, L. Steinberg, N. Vandergrift and NICHD Early Child Care Research Network (2010), "Do Effects of Early Child Care Extend to Age 15 Years? Results From the NICHD Study of Early Child Care and Youth Development", *Child Development*, Vol. 81, pp. 737-756.

Waldfogel, J., W. Han and J. Brooks-Gunn (2002), "The Effects of Early Maternal Employment on Child Cognitive Development", *Demography*, Vol. 39, No. 2, pp. 369-392.

Wigg, N.R. *et al.* (1998), "Does Breastfeeding at Six Months Predict Cognitive Development?", *Australia and New Zealand Journal of Public Health*, Vol. 22, No. 2, pp. 232-236.

World Bank (2010), *World Development Indicators*, World Bank, *http://data.worldbank.org/data-catalog/world-development-indicators*.

Würtz, A. (2007), "The Long-Term Effect on Children of Increasing the Length of Parent's Birth-Related Leave", Aarhus School of Business, *Department of Economics Working Paper*, No. 07-11.

Zarrabi, M. (2009), "Short and Medium Term Effects of Maternity Leave on Child Outcomes: Evidence from the NLSCY", *economics.uwaterloo.ca/chesg2009/CHESG2009Program_000.htm*, May.

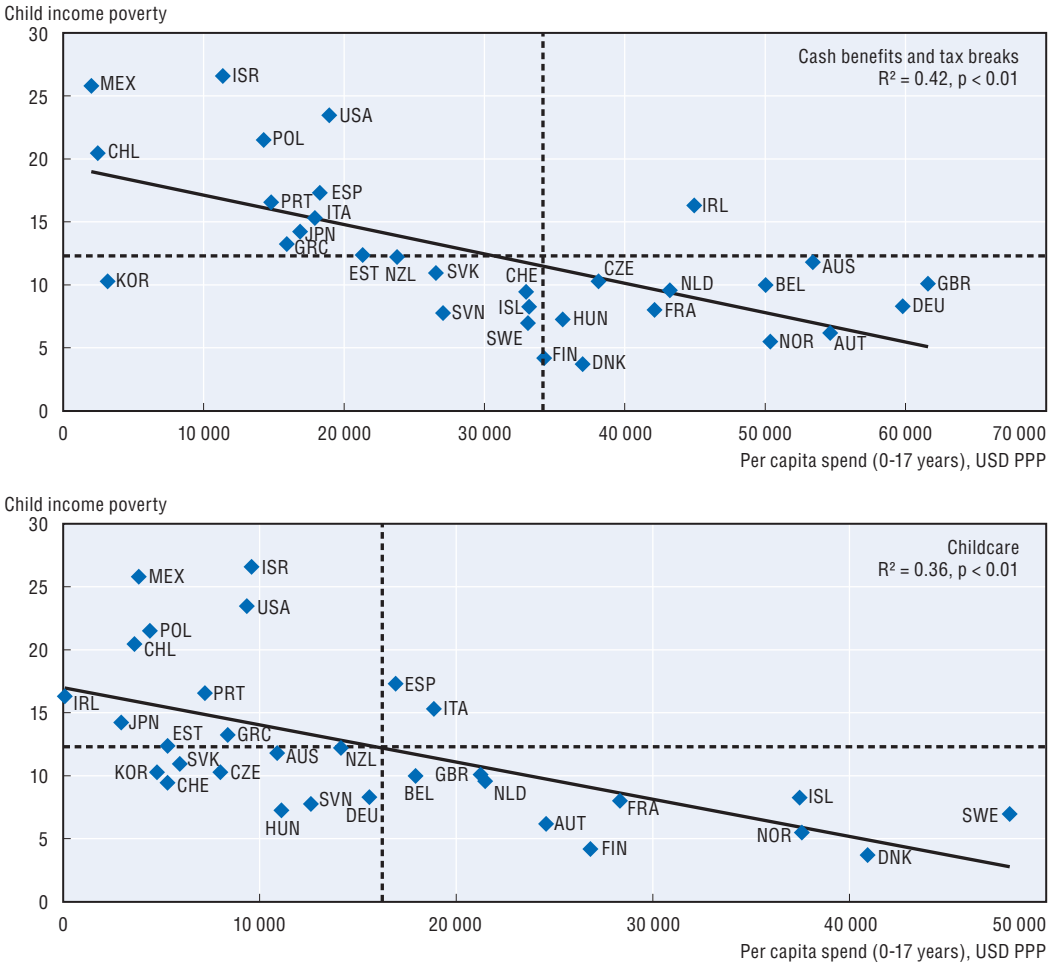
Zutavern, A. *et al.* (2007), "Day Care in Relation to Respiratory-tract and Gastrointestinal Infections in a German Birth Cohort Study", *Acta Pædiatrica*, Vol. 96, pp. 1494–1499.

ANNEX 5.A1

Associations Between Child Poverty and Spending by Type

Figure 5.A1.1 uses the spending analysis in Chapter 2 to explore the associations between spending on cash and childcare policies and poverty rates for children aged 0-17 years of age. Increased levels of spending of both types are significantly associated with lower child poverty rates; of the two, childcare spending has the strongest association.

Figure 5.A1.1. **Childcare spending explains more variation in poverty rates than cash and tax-break spending**



Note: For poverty data notes see Figure 5.1; see Chapter 2 for detail on spending profiles for children up to age 18. Luxembourg is excluded from the Figure as an outlier (spending data is available via the Statlink).

Source: OECD's Secretariat's calculations from OECD (2010e), *Social Expenditure Database*. For income poverty sources, see Figure 5.1.

StatLink http://dx.doi.org/10.1787/888932393635

ANNEX 5.A2

Cohort Studies, Methods and Detailed Results

Data for Australia have been taken from *Growing Up in Australia: The Longitudinal Study of Australian Children*. This study follows two cohorts of children. The analysis here uses data of one cohort only: children born between March 1999 and February 2000 (K cohort). This cohort has been followed up at three waves of data collection: 1) in 2004, when children were aged 4 to 5; 2) in 2006, when children were aged 6 to 7; and 3) in 2008, when children were aged 8 to 9. The sample was limited to children in couple-parent or sole-mother families, excluding a small number of families. The sample size is around 4 000 children.

Data for Canada come from the *National Longitudinal Survey of Children and Youth (*NLSCY). This is a long-running longitudinal study of children and youth in the ten Canadian provinces. The first data collection occurred in 1994/95 (Cycle 1). Here, information on two cohorts is considered: 1) children aged 0-1 years by 31 December 2000 (first introduced in Cycle 4), and 2) children aged 0-1 years by 31 December 2002 (first introduced in Cycle 5). Cohorts have been followed every two years: at ages 2-3, ages 4-5 and ages 6-7 (only available for cohort first introduced in Cycle 4). The sample size of the two cohorts combined is around 7 000 children.

Data for Denmark have been taken from the *Danish Longitudinal Survey of Children (*DALSC). This is a representative sample of Danish children, all born within six weeks in the fall of 1995. The sample size of DALSC is of around 6 000 children. This cohort has been followed up during four sweeps of data collection: 1) in 1996, when babies were about 6 months old; 2) in 1999, when children were about 3½ years old; 3) in 2003, when children were about 7½ years old; and 4) in 2007, when children were about 11 years old. Survey data has been merged with information from administrative registers at Statistics Denmark. The information used here comes from all four waves, as well as from registers.

Data for the United Kingdom come from the *Millennium Cohort Study (*MCS). This is a multi-disciplinary survey of around 19 000 children born in the four constituent countries of the United Kingdom in 2000-01. The study has tracked children during four waves of data collection: 1) in 2001-02, when children were 9–11 months old; 2) in 2004-05, when children were aged 3 years old; 3) in 2006, when children were aged 5 years old; and 4) in 2008, when children were aged 7 years old.

Finally, data for the United States are from the *Early Childhood Longitudinal Study (*ECLS) programme. ECLS gathers information of three longitudinal samples of children. Here the analysis considers data on children born in 2001 (ECLS-B) who were followed up when they

were 9-months old (2001-02), 2 years old (2003-04), 4 years old (2005-06) and while in kindergarten (fall of 2006 or fall of 2007). The sample is nationally representative and covers around 14 000 children.

Methods

Models are estimated using multivariate regression analysis. Models examining cognitive scores are estimated using ordinary least square (OLS) regressions and models for behavioural outcomes are calculated using logistic regressions. Outcomes are regressed on the maternal employment and childcare variables, together with the set of child and family background factors described above. Models are run separately for each outcome variable, each age group and each country. Here only results from two model specifications are presented (For more detail see Huerta *et al.*, 2011).

Cognitive outcome measures

The table below presents the different cognitive tests collected in the five cohort studies analysed here.

Table 5.A2.1. **An overview of cognitive outcome measures**

Australia[1]	Canada	Denmark	United Kingdom	Unitied States
			Age 3	**Age 2**
			– Bracken Basic Concept Scale (child's readiness for formal schooling)	– Bayley Short Form-Research Edition (cognitive development)
Age 4-5	**Age 4-5**		**Age 5**	**Age 4**
Learning outcome index: – Australian Council for Educational Research (ACER) Who Am I?; – Peabody Picture Vocabulary Test	– Peabody Picture Vocabulary Test		– British Ability Scale (naming vocabulary); – Pattern construction and picture similarity.	– Early reading; – Language development; – Mathematics; – Vocabulary; – Communication skills.
Age 6-7			**Age 7**	**Age 5-6**
Learning outcome index: – Peabody Picture Vocabulary Test; – Wechsler intelligence scale (matrix reasoning subscale); – Academic Rating Scale (language, literacy, and mathematics).			– British Ability Scale (word reading); – NFER progress in maths (numeracy test)	– Early reading; – Language development; – Mathematics.
Age 8-9		**Age 11**		
Learning outcome index: – Peabody Picture Vocabulary Test; – Wechsler intelligence scale (matrix reasoning subscale); – Academic Rating Scale (language, literacy, and mathematics).		– Children's Problem Solving Test (CHIPS)		

1. Australia calculates a learning outcome index that incorporates measures of language and literacy, which varies according to age.

Source: Huenta *et al.* (2011).

StatLink http://dx.doi.org/10.1787/888932394243

Behavioural outcome measures

Two measures of behavioural problems are examined: conduct problems and attention (or hyperactivity) problems. Both were examined using parental reports on children's behaviour. In most of the surveys considered here, the instrument used to examine these aspects of child development is the Strengths and Difficulties Questionnaire (SDQ), a 25 item behavioural screening questionnaire. The conduct problems dimension includes reports on whether the child: *a)* frequently fights with other children, *b)* often has temper tantrums, *c)* is often disobedient, *d)* is often argumentative and *e)* is often spiteful. Similarly, the variable measuring inattention problems uses reports on whether the child: *a)* is squirmy or fidgety, *b)* cannot settle down to anything, *c)* is very restless, *d)* is easily distracted and *e)* does not stop to think and does not finish task. Each attribute was rated by parents using a scale from 0 to 2 (not true, somewhat true, and certainly true). Responses were added to obtain a total score for each dimension, with higher scores indicating more problems. Total scores of each dimension were then converted into binary variables, considering cut-off points suggested by the literature (see Huerta *et al.*, 2011). These variables take a value of 1 if cohort members have high scores of conduct or attention issues. Data for the United States were classified differently: children with behavioural scores located at the top 15% of the distribution of the total score were considered as having conduct or attention problems. The classification was done differently as the US data did not include exactly the same items as those in the SDQ. Previous research by Waldfodgel using ECLS-B has shown that the top 15% of scores represents high levels of behaviour problems.

Attrition is one disadvantage of longitudinal studies, especially when lost observations have characteristics that differ from those of the rest of the population. However, attrition analyses of cohort studies suggest that, even when cumulative attrition is high, especially among disadvantaged groups, it does not affect the representativeness of the data (Nathan, 1999; Alderman *et al.*, 2001). Nevertheless, to ensure that results are not affected by non-response bias, for each variable included in the analyses, information was included on whether such data were missing for a particular respondent.

Summary of the results

Results on *cognitive scores* indicate how much test scores are expected to increase (if the sign of the coefficient is positive) or to decrease (if the sign of the coefficient is negative) relative to children whose mothers were not in employment during the child's first year of life (the benchmark or omitted category). The mean value of test scores is 100. Hence, a 1 point reduction represents a reduction of 1% of the mean value.

Behavioural outcomes (conduct problems and attention issues) are captured by odds ratios. An odds ratio with a value of one indicates that experiencing behavioural problems is equally likely in both groups, the employment category examined and the omitted category. An odds ratio greater than 1 suggests that experiencing behavioural problems is more likely in the category examined than in the omitted (or benchmark) category. An odds ratio below 1 indicates that experiencing behavioural problems is less likely in children in the category examined than in children whose mothers were not in employment (omitted category). Only the parameter estimates for which there is evidence that the result did not occur by chance – statistically significant – are presented.

Table 5.A2.2 presents results for the three child outcomes from age 3 onwards. The first section shows results for cognitive scores, the second for conduct problems and the last one for attention problems. In general, results indicate that maternal employment by the child's first six months of life was associated with somewhat lower cognitive scores relative to not working during child's first year of life. In the United Kingdom, for example, full-time employment by six months was linked with lower *cognitive scores* for most of the outcomes analysed. The largest association was observed for reading scores of children aged 7, which showed that children whose mothers were in full-time employment by six months had 1.2% lower test scores than children whose mothers were not in employment by child's first birthday. Part-time employment by six months was also negatively related with cognitive scores of British children but the associations were smaller and somewhat less consistent than for full-time employment. Employment between six and 11 months in the United Kingdom was related with significantly lower scores on one cognitive outcome, reading for children aged 7 years old (–0.6 score points).

For behavioural outcomes, results for British children suggest that at age 5 children whose mothers were in full-time work by six months were 1.37 times (or 37%) more likely to exhibit *bad behaviour* than children whose mothers were not in paid work by their first birthday. Similarly, at ages 5 and 7, children whose mothers were in part-time work by six months had higher odds of conduct problems (odd ratios of 1.42 and 1.10, respectively) relative to children whose mothers were not in work by their first birthday. However, only in the United Kingdom is there some evidence that maternal employment by the time the child is 6-months old may have a detrimental effect on children's behavioural adjustment.

In general, maternal employment does not have a large effect on *attention issues*. Results are not significant, except in Canada and the United Kingdom. For example, Canadian children at age 4 were more likely of experiencing attention problems (odd ratios of 2.2) if their mother worked part-time during their first six months of life than their peers whose mother was not in work during their first year of life.

Table 5.A2.2. **Effects of early maternal employment on child development**

COGNITIVE SCORES	Age 2-3			Age 4-5						Kindergarten		Age 6-7			Age 8-9	Age 11
	Denmark	United Kingdom	United States	Australia	Canada	UK – vocabulary	UK – picture	US – language	US – vocabulary	US – reading	US – language	Australia	UK – reading	UK – maths	Australia	Denmark
< 6 months in full-time work	0.83	–0.02	–0.31	0.11	0.61	–0.74*	–0.20	–0.36	–0.69*	0.60	–0.67	–0.80	–1.18***	–0.90**	–0.25	
		[0.39]	[0.38]	[0.78]	[0.74]	[0.38]	[0.42]	[0.45]	[0.37]	[0.49]	[0.54]	[0.76]	[0.41]	[0.42]	[0.86]	1.16**
< 6 months in part-time work	[0.12]	–0.49	0.26	–0.15	0.81	–0.51	–0.17	–0.21	–0.21	0.05	–0.71	0.09	–0.95**	–0.59*	0.08	[0.44]
		[0.31]	[0.47]	[0.52]	[0.65]	[0.31]	[0.34]	[0.51]	[0.50]	[0.48]	[0.71]	[0.50]	[0.34]	[0.34]	[0.50]	
6-11 mths in paid work	0.96	–0.20	0.48	0.26	0.6*	–0.48	0.37	0.28	–0.38	0.14	0.52	0.02**	–0.59*	–0.40	–0.34	–0.04
	[0.11]	[0.31]	[0.58]	[0.46]	[0.40]	[0.31]	[0.33]	[0.58]	[0.50]	[0.61]	[0.61]	[0.47]	[0.32]	[0.34]	[0.49]	[0.36]

CONDUCT PROBLEMS	Age 2-3		Age 4-5				Kindergarten	Age 6-7			Age 8-9	Age 11
	Canada	United Kingdom	Australia	Canada	United Kingdom	United States	United States	Australia	Denmark	United Kingdom	Australia	Denmark
< 6 months in full-time work	1.24	1.18	1.26	0.87	1.37*	1.13	1.12	1.33		0.96	0.69	
	[0.53]	[0.14]	[0.26]	[0.24]	[0.26]	[0.19]	[0.22]	[0.43]	1.04	[0.18]	[0.30]	0.84
< 6 months in part-time work	0.59	1.15	1.12	0.77	1.42**	0.96	1.06	1.32	[0.17]	1.31*	1.21	[0.21]
	[0.58]	[0.11]	[0.16]	[0.20]	[0.20]	[0.16]	[0.21]	[0.28]		[0.18]	[0.32]	
6-11 mths in paid work	1.00	1.10	1.04	0.95	1.16	1.03	1.08	1.18	0.88	1.16	1.10	0.78
	[0.23]	[0.10]	[0.13]	[0.14]	[0.17]	[0.19]	[0.27]	[0.26]	[0.13]	[0.16]	[0.29]	[0.16]

ATTENTION PROBLEMS	Age 2-3	Age 4-5				Kindergarten	Age 6-7			Age 8-9	Age 11
	United Kingdom	Australia	Canada	United Kingdom	United States	United States	Australia	Denmark	United Kingdom	Australia	Denmark
< 6 months in full-time work	1.23	1.21	1.48	1.18	1.06	0.92	1.56		1.19	0.78	
	[0.21]	[0.50]	[0.37]	[0.20]	[0.14]	[0.12]	[0.51]	0.98	[0.18]	[0.34]	0.99
< 6 months in part-time work	1.15	1.21	2.20**	1.11	1.00	0.90	1.42	[0.17]	1.23*	0.91	[0.20]
	[0.15]	[0.30]	[0.32]	[0.15]	[0.16]	[0.14]	[0.36]		[0.15]	[0.25]	
6-11 mths in paid work	1.25*	0.91	1.10	1.02	1.15	0.99	1.30	1.07	1.06	1.44	0.87
	[0.16]	[0.23]	[0.22]	[0.14]	[0.23]	[0.16]	[0.29]	[0.15]	[0.13]	[0.39]	[0.15]

Note: * p < .10; ** p < .05; ***p < .01.

Note: Although not presented here, estimates belong to models that control for child-related factors (sex; age in months; ethnicity; whether child was born prematurely; weight at birth; and number of siblings at birth), mothers' characteristics (employment during pregnancy; employment at time of data collection; age at child's birth; born outside the country of study; and post-partum depression), and family-related factors (family structure, parental education, family income and housing tenure).

Source: Huerta *et al.* (2011).

StatLink http://dx.doi.org/10.1787/888932394262

Chapter 6

Sole parents, public policy, employment and poverty

Sole-parent families across the OECD are changing. There are more employed sole-parent families than before, their families are smaller than they were a generation ago, and their children on average are older. Nonetheless, poverty risks remain higher for this family type than for other households with children.

Policies specifically targeted at sole parents can help, but outcomes in terms of economic participation and poverty depend on whether countries treat sole parents like any other parent and provide commensurate support to help them match their work and care commitments. Such a general and "active" policy stance is effective in reducing benefit dependency, even when financial incentives to work for low-income sole parents may be weak.

A considerable proportion of OECD children is eligible for child-support payments. Child-support policies can play an important role in improving the well-being of sole-parent families and in some countries they significantly reduce poverty risks for children in such families.

Introduction

Improving the living conditions of families, and supporting those at an increased risk of poor outcomes, such as sole-parent families and their children, is an important aim of social policy development. In most OECD countries, social policy places more and more emphasis on activation, *i.e.* the role of work in helping people achieve and maintain acceptable living standards. As spending on family policies grows, and increasing use is made of measures such as in-work benefits and tax credits, work-testing of social assistance benefits and extensions to childcare support for both younger and older children, the removal of barriers to employment and underemployment becomes a critical element for the success of family policy.

In the absence of a partner, combining work and family life puts unique pressures on both the single parent and the children and may limit the household's earnings potential. In addition, non-resident parents are likely to have difficulty investing as much time and money in their child(ren) as resident parents. To improve outcomes for children and parents, governments have been putting public policies in place to regulate custody, visitation rights and amounts of child support.

The chapter starts with an overview of the socio-demographic characteristics of sole-parent families across the OECD. It then considers the treatment of sole parents in tax/benefit systems, with a particular focus on barriers to taking up employment for sole parents with children of childcare age. The last section considers child-support or child-maintenance payments by non-resident parents, including estimates of the number of children concerned, the amounts of transfers involved, and their overall effect in reducing child poverty.

Main findings

Considering employment and poverty outcomes, an analysis of the tax and benefit treatment of sole parents in OECD countries shows the following:

- *Despite increasing sole-parent employment rates, poverty rates on average remain high.* Moreover, in recent years the net effect of social transfers on sole-parents' poverty rates has declined. Reducing income poverty will require additional support for working and non-working sole-parent families.
- *Low-income sole parents often have access to childcare support,* but in more than a third of OECD countries they spend a greater proportion of their family budget on childcare than those earning average wages. Considering the cost of childcare, immediate financial incentives to work are weak for sole parents with very young children: on average across the OECD, a sole parent working full-time and earning the average wage takes home less than a third of their employment earnings after allowances are made for taxes, loss of benefit income and childcare costs. After accounting for these costs, work does not pay for low-income sole parents in Slovenia, Canada (Ontario), the Czech Republic, Switzerland (Zürich) and Ireland.

- *An "active" policy stance combined with comprehensive work and care supports has the best results*. Countries with policies that expect sole parents to work from an early age of their child *and* have comprehensive employment and childcare supports in place to help them achieve these goals generally have the best outcomes for sole-parent families in terms of both employment and poverty rates.
- *When children are in school, most sole parents in OECD countries make net gains on low wages*. For low-wage sole parents with children in primary school, additional benefits and fiscal supports supplement take-home pay. Nevertheless, in some OECD countries incentives to increase earnings remain weak also when children are in primary and/or secondary school, as for example, in Korea, Spain, Switzerland (Zürich), and Turkey.

Child-support policies can play an important role in improving the well-being of children in sole-parent families. In some OECD countries, they make a significant contribution to reducing child poverty and they may also increase contact with the non-resident parent. Increasing rates of family dissolution across the OECD suggest that the number of sole-parent and "re-partnered" families and children that are likely to be affected by child-support schemes is growing. To make child-support systems more effective, the analysis suggests:

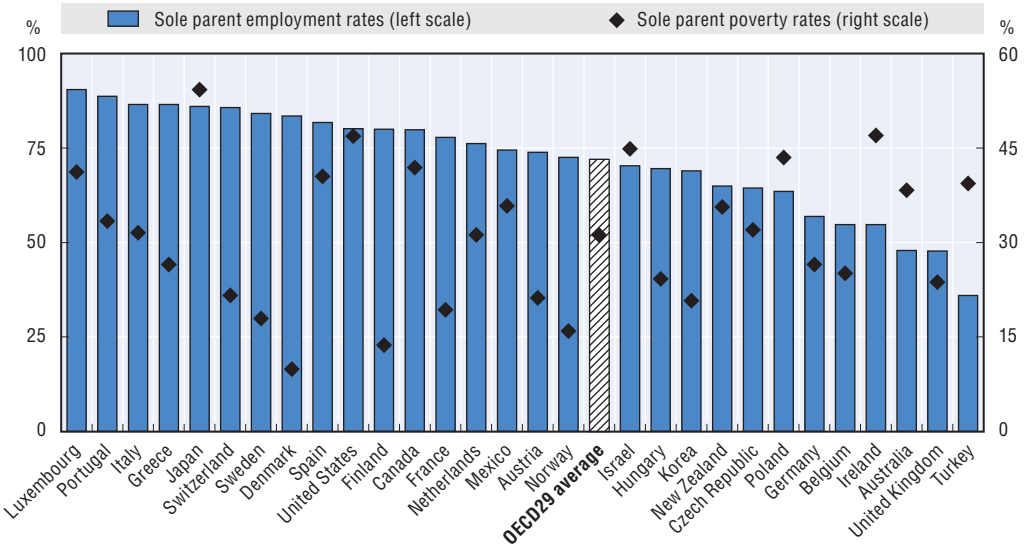
- *In the absence of a system of advance maintenance payments, at least some part of the payment by the non-resident parents should go directly to the child*. Currently, in some countries if the resident parent receives income support, the payment collected effectively goes to the government to offset the cost of income support being paid to the family in question. This may create disincentives for the non-resident parent to meet his/her commitments. Therefore, some portion of child-support payments should always go to the child for which support is being paid.
- *Shared parenting is becoming more common*. Countries could promote shared parenting through joint child custody and through reduction of payments to the resident parent when children spend part of their time with the non-resident parent. Current formulae for determining payments should be reassessed to make sure that the level of payments accounts for different parenting arrangements. Such measures could lead to greater compliance and increase the amount of time children spent with the non-resident parent.
- *Simplify payment formulae and procedures*. Greater compliance may also be achieved by: having simple formulas for the calculation of payments; setting payment rates while accounting for the income position of non-resident parents; and through simplified enforcement procedures.

The evolving experiences of sole-parent families in the OECD

In many OECD countries, the proportion of sole-parent families is on the rise: from 5.5% in the mid-1980s to 8.1% in the mid-2000s (Annex 6.A1).[1] Furthermore, the face of sole-parent families is changing. Children in sole-parent families are now, on average, older than before and the size of the sole-parent family is getting smaller. Sole-parent families are most common in Sweden and the United Kingdom and least prevalent in southern European countries.[2]

Chapter 1 showed that poverty risks for working sole parents are considerably lower than for jobless sole parents. Figure 6.1 shows that in most countries, more than 60% of sole parents are in work, while this proportion is closer to 50% in Australia, Belgium, Ireland and the United Kingdom. A system of income supports can alleviate the poverty

Figure 6.1. **Across the OECD the majority of sole parents are in paid employment, mid- to late-2000s**[1]



1. Data refers to latest year available (see Table 6.A1.1 in annex).

Source: Provisional data from OECD (2010a), *Income Distribution Questionnaires*.

StatLink http://dx.doi.org/10.1787/888932393711

risks when employment rates are low, as in Belgium and the United Kingdom. At the same time high employment rates (over 70%) are no guarantee that poverty among sole parents is low (*e.g.* Japan and the United States). In these countries, sole parents are often in low-paid jobs with in-work benefit support being insufficient to significantly reduce poverty risks among sole parents. Current outcomes determine which policy response is called for (Whiteford and Adema, 2007): in countries with high levels of in-work poverty, a policy focus on well-designed in-work benefits will be most effective; in countries with low employment rates, policy needs to focus on increasing work expectations and reducing benefit dependency among sole parents, as for example, in Ireland (see below).

On average across the OECD, employment rates among sole parents have been increasing over the past 20 years as have poverty rates (Annex 6.A1). This reflects the diminishing effect of net transfers on poverty reduction (OECD, 2008a and 2010a). However, Nordic countries have maintained a high level of sole-parent employment rates, as well as relatively low poverty rates (Figure 6.1 and Annex 6.A1). This is because Nordic social policy models generally focus on employment participation among *all* adults, regardless of the civil status, and seek to promote this via greater access to childcare supports, in-work benefits and general work-testing of (sole) parents on income support (see below).

Both work-related and non-work-related benefits and tax allowances play an important role in the link between sole-parent employment rates and poverty rates (see below). Moreover, both employment options and benefit receipt are affected by socio-demographic factors, in particular:

- *The age of the youngest child* in the sole-parent household affects employment participation decisions in different ways. In many countries eligibility to, and amounts of social security payments, vary with the age of children, while work-testing conditions attached to income support require sole parents with children above a certain age to be available for work and/or training. The presence of older children also makes it easier to

be in work, as they attend school. Therefore, many countries require sole parents to be available for work (see below) when the youngest child enters school (around age 5 or 6) or when access to subsidised pre-school services becomes widely available (about age 3; Chapter 4). The average age of children living in sole-parent families in the OECD is 9.5 years. In Italy, Korea and Poland, the average age of the youngest child is over 10.5 years; in Ireland, Mexico, the United Kingdom and the United States, the average age of the youngest child is between 7 and 8 years. Evidence for the United Kingdom suggests that sole parents who do not re-partner have older children (Box 6.1).

- *The size of the sole-parent family* also determines additional costs, caring responsibilities, and entitlement to benefits. On average, sole-parent households are smaller than couple-family households.

Figure 6.2 shows the association between the average age of the youngest child in sole-parent and couple families and the average family size (number of children) since the mid-1990s. Each different coloured diamond represents a different wave of data. Over time,

Box 6.1. **Sole parents, re-partnering and poverty**

The time spent living in a sole-parent family will increase the risk of experiencing poverty. Using British Household Panel Survey (BHPS) data to look at sole parents who re-partner and those that do not sheds light on the extent to which re-partnering is associated with barriers to labour market participation and poverty.

Results from five waves of the BHPS, covering the same families between 2002/03 and 2007/08, show that 72% of United Kingdom families were couple families across all five waves (where data was available); 14.5% were always sole parents; and just over 13% were sole parents for part of this period (see table below). Families always headed by a sole parent are families with older children (which can relate to additional consumption costs), and fewer children. Sole parents who do not re-partner are most often mothers who tend to be older than sole parents who re-partner. The table below identifies sole parents most at risk of poor outcomes. It shows that even short periods of sole parenthood are associated with increased risks of joblessness and poverty. Moreover, the results clearly show poverty and joblessness is most persistent among sole parents who do not re-partner.

Longer experiences of sole parenthood come with higher risks of poverty and unemployment

Differences in socio-demographic and socio-economic indicators by family type

	Percentage	Age of youngest child (mean)	Number of children (mean)	Sex of head (percentage male)	Age of head (mean)	Persistent child poverty (%)	Persistent worklessness (%)
Couple families	**72.1**	6.4	2.0	. .	41.0	40.6	3.1
Always sole parents	**14.5**	8.4	1.7	3.3	38.8	85.3	34.0
Sometimes sole parent	**13.3**	6.0	1.9	10.0	34.8	70.8	15.3
All families	**100**	6.7	1.9	. .	39.8	50.5	9.2

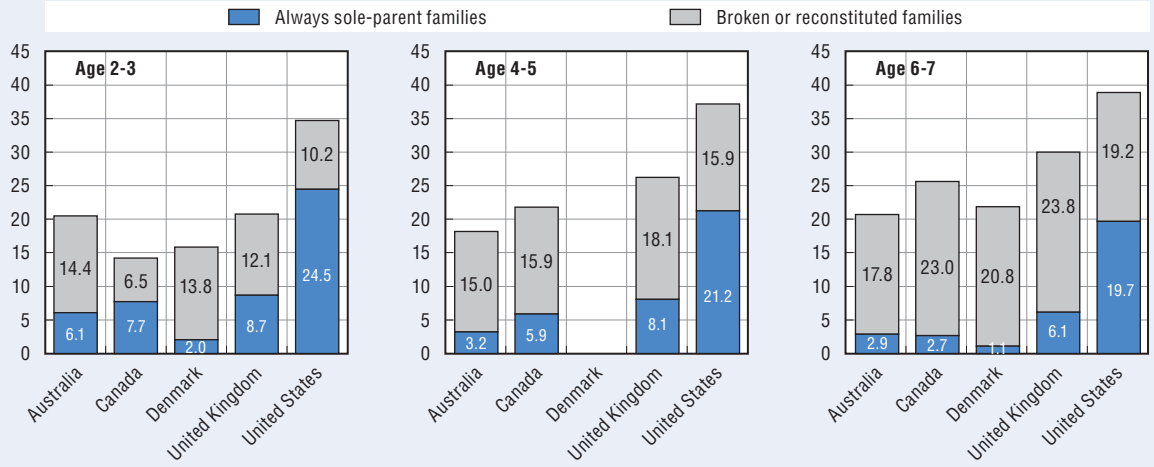
Note: Shaded areas show that result is significantly different from other categories at the level of $p < 0.05$. "Always couple families" refers to no change in two-parent family status over the five annual BHPS waves. "Always sole parents" refers to no change in sole-parent status in the five years between 2002/03 and 2007/08. "Sometimes sole parent" refers to at least one year's experience of sole parenthood in the same period. Only cases with data for all five survey waves were included in the analysis. Persistence in poverty and joblessness refers to reports of poverty or joblessness in three of the five survey years.
Source: BHPS waves 2002/03 to 2007/08, analysis carried out by Antonia Keung, University of York, November, 2010.

StatLink http://dx.doi.org/10.1787/888932394452

Box 6.1. **Sole parents, re-partnering and poverty** *(cont.)*

International evidence of re-partnering during the children's early years taken from the cohort studies introduced in Chapter 5 shows age-related patterns of re-partnering. Across countries, as children age, more families with two biological parents break up, and rates of re-partnering increase. In the United Kingdom and the United States, over 75% of people who are sole parents when their children are aged 2 to 3 years old have not re-partnered four years later.

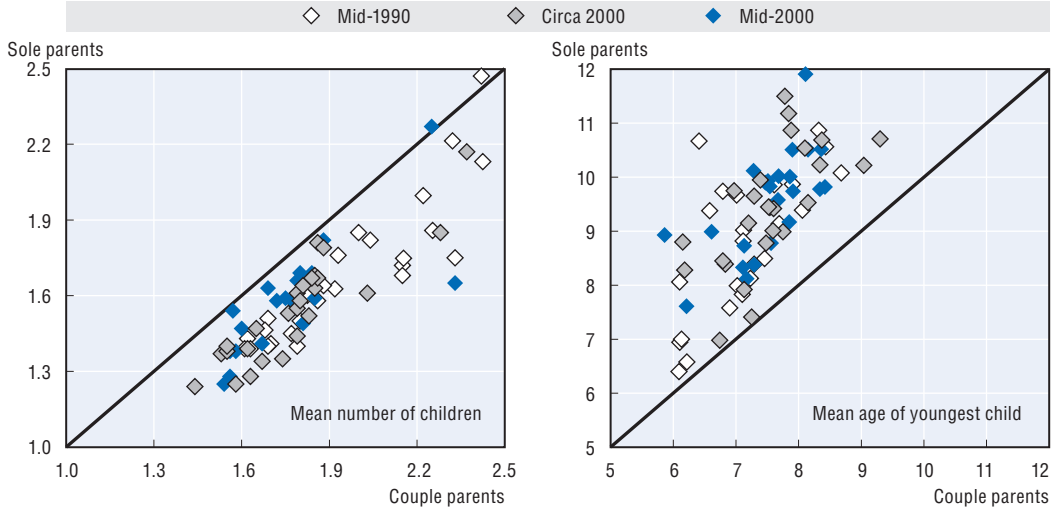
As children age, they are more likely to live in reconstituted families



Source: For Australia: age 2-3 (wave 2 of LSAC B cohort); age 4-5 (wave 1 of LSAC K cohort); age 6-7 (wave 2 of LSAC K cohort). For other countries see Chapter 5 annex for information on birth cohort studies.

StatLink http://dx.doi.org/10.1787/888932393844

Figure 6.2. **Sole parents have fewer children on average and their children are generally older than those in couple families**



Source: OECD's Secretariat estimates using the Luxembourg Income Study (LIS) data, various years.

StatLink http://dx.doi.org/10.1787/888932393730

the number of children aged 0-17 years has fallen in both family types, but overall couple families are shrinking faster and family size differences are becoming less distinct across countries (the dark blue diamonds are not only lower in the Figure, but closer together and

closer to the 45-degree line). Regarding the average age of the youngest child, an opposite pattern is seen. Children in both family types are getting older on average, and by the mid-2000s the youngest child in a sole-parent family was on average at least a year older than the youngest child in couple families.

The policy stance towards sole-parent families

An overview of policies for sole parents

Sole parents who are low-income earners almost always receive more favourable treatment in tax and benefit systems than either earner in a two-earner couple family. This is mainly because of the treatment of *total* household income in the minimum guarantees for social assistance or in-work benefits, rather than the result of policies that are specifically targeted to sole-parent families.

Across the OECD, policies to support sole parents vary widely in terms of timing, length, payments and earnings/income disregards.[3] Table 6.1 summarises the *policies that include particular sole-parent adjustments* highlighting which countries make use of these benefits.[4] Not included are benefits particularly important to sole parents that do not include explicitly expressed adjustments for this family type; two such examples being childcare and social-assistance benefits. Countries with comprehensive childcare systems and social-assistance benefits with high minimum-income guarantees capture all family types, and although these do not show up as policies specific to sole parents, such policies have a strong effect on income and employment opportunities in these families (Chapter 4).

Table 6.1. **Many OECD countries have a multi-policy response to supporting sole parents**

Family allowances supplements	Belgium, Denmark, Estonia, Finland, France, Greece, Hungary, Iceland, Italy, Korea, Norway, Poland, Portugal, Slovenia.
Tax breaks	Austria, Belgium, Canada, Estonia, France, Germany, Ireland, Israel, Italy, Luxembourg, the Netherlands, Poland, Portugal, the United Kingdom (working tax credit).
Parental leave	Austria, Poland, the Slovak Republic, Spain (birth grant in 2008 – now abolished).
Childcare benefits	Belgium, Canada, Iceland, Japan, Korea, Norway.
Social assistance or housing supplements	Belgium, the Czech Republic, France, Germany, Hungary, Israel, Japan, Korea, the Netherlands, the Slovak Republic, Slovenia, the United Kingdom.
Sole-parent income supports	Australia (Parenting Payment), France (API), Iceland (mother father allowance), Ireland (one parent family benefit), Japan (sole parent benefit), New Zealand (Domestic Purposes benefit), Norway (Transitional Benefit).
Advances of maintenance payments	Denmark, Estonia, Finland, Germany, Norway, Poland, the Slovak Republic, Slovenia, Sweden, Switzerland.
No specific policies	Chile, Mexico, Turkey, the United States.

Source: National authorities, 2010.

StatLink http://dx.doi.org/10.1787/888932394319

Main income-support programmes: a general or a specific policy approach?

Some OECD countries have specific benefit arrangements for jobless parents, including many sole parents. Until recently Australia, Ireland, New Zealand and the United Kingdom all provided support to sole parents for prolonged periods with very few work conditions attached. Consequently, employment rates were low (OECD, 2007) and benefit dependency and poverty was high.

Australia and the United Kingdom have decreased the age of the youngest child at which parents are entitled to income support without them having to be available for full-time work and/or training (the so-called "work-test", Table 6.2). Similarly, New Zealand has introduced a part-time work test when children enter school, but options to introduce the

Table 6.2. **Policy often expects sole parents to look for work when children enter pre- or primary school**

Specific treatment of sole parents in social assistance policies; age-related work tests for parents on income support (unemployment benefit and/or social assistance), 2008; and public spending on childcare (age 0 to 6), 2007

Country	Policy	Age-limit of payment (child)	Income support Work test	Childcare spending (% GDP)
Australia	Parenting Payment for sole parents	8th birthday (when transferred to New Start Allowance – also work-tested).	From 6	0.4
Austria	. .	. .	Age 3	0.3
Belgium	Supplement to Social Assistance (AFG)	Until child reaches 18, or 25 if in education.	Discretion	0.8
Canada	. .	. .	Varies across provinces: from 6 months to age 6	. .
Czech Republic	Social Assistance supplement	Until child reaches age 26.	From age 4.	0.4
Denmark			Discretion, generally after parental leave (age 1).	1.3
Finland			Discretion, generally after home care leave (age 3).	0.9
France	Sole parent benefit (API)	Until youngest child is age 3.	None	1.0
	Social Assistance (RMI) supplement when parents are in activation programmes	Until there are no dependent children in the household.	From 3.	
Germany	Additional needs allowance in Jobseekers allowance	Sole-parent supplement for one child under the age of 7 or two under the age of 16: general child age limit – 25 years.	From 3.	0.4
Greece				. .
Hungary				0.6
Iceland	Mother/Fatherhood Allowance	Two children under the age of 18.	None.	0.9
Ireland	One parent Family payment	Until age 18 or 22 if in education.	None.	0.3
Israel	Social Assistance supplement	Until there are no dependent children in the household.	From age 2.	. .
Italy				0.6
Japan	Sole Parent Benefit	Until age 18 (mothers only).	None.	0.3
	Social Assistance Supplement	Until 15, or 20 if receiving disability assistance.	Discretion (BB)	
Korea			None	0.3
Luxembourg			From 6	0.4
Mexico			None	0.6
Netherlands	Social Assistance Supplement	From 5.	0.7	
New Zealand	Domestic Purposes Benefit	Until age 18.	Part-time work-test from age 6	0.8
Norway	Transitional benefit	Until age 3.	Parents with one child can extend benefit receipt with two years (from age 3) if they engage in training.	1.0
Poland				. .
Portugal			None	0.4
Slovak Republic	Protective allowance in Social Assistance	Until age 31 weeks.	None.	0.4
Slovenia	Increase to Minimum income of Social Assistance	Until age 18.		. .
Spain			None	0.5
Sweden			Discretion, after parental leave (16 months/home care leave age 3).	1.1
Switzerland			Varies across Cantons	. .
Turkey			None	. .
United Kingdom	Income support	Until age 18.	Families with children aged 7 and over.	1.1
United States			Varies across states; often before age 1.	0.4

Source: OECD (2007), *Babies and Bosses. Reconciling Work and Family Life*; OECD (2008b), *Benefits and Wages*; OECD (2010b), *OECD Family Database;* and OECD (2010c), *OECD Employment Outlook*.

StatLink http://dx.doi.org/10.1787/888932394338

work test at an earlier stage (including when pre-school care becomes available around age 2-3) are being considered (Welfare Working Group, 2010). Only Irish policy still provides benefits to sole parents without work conditions until the age of 18.

By contrast, the generally "active" policy stance towards all parents on income support regardless of household status is key to high employment rates and relatively low poverty rates among sole parents in Nordic countries (Figure 6.1 and Table 6.A1.1. in the annex). Parents who are no longer entitled to parental leave (Denmark and Iceland) or home care or childrearing allowance (Finland, Norway and Sweden) are work–tested for benefit receipt (either unemployment insurance or social assistance). This policy stance is facilitated by a comprehensive system of employment supports (*e.g.* counselling, training and upskilling). In 2008, Denmark and Sweden spent more than 1% of GDP on such measures compared with an OECD average of 0.6% of GDP (OECD, 2010c).

Furthermore, when parental leave and/or home-care leave runs out in Nordic countries, municipalities provide a system of good-quality childcare services from an early age of the child. These countries spend more on childcare than most other OECD countries (Table 6.2), and childcare enrolment rates are high (Chapter 4). The social system in Nordic countries is one of mutual obligations: beyond child-related leave periods parents are obliged to look for work, and; in return governments are obliged to provide employment and childcare supports. The latter in particular is an essential factor in any policy system which aims to help parents earn and provide for their children.

Other OECD countries provide limited income and/or childcare supports to sole parents, which helps to explain the combination of relatively high employment and poverty rates among sole parents in, for example, Greece, Italy or Portugal (Figure 6.1).

Comparing the tax and benefit treatment of sole-parent and couple families

As many sole-parent supports are paid as supplements to mainstream benefits (*e.g.* family allowances or social assistance), it is difficult to compare the amount of public family expenditure dedicated directly to sole-parent households. The simplest way to estimate per household public support is to compare tax/benefit support for sole-parent families with net taxes and transfers for couple families.

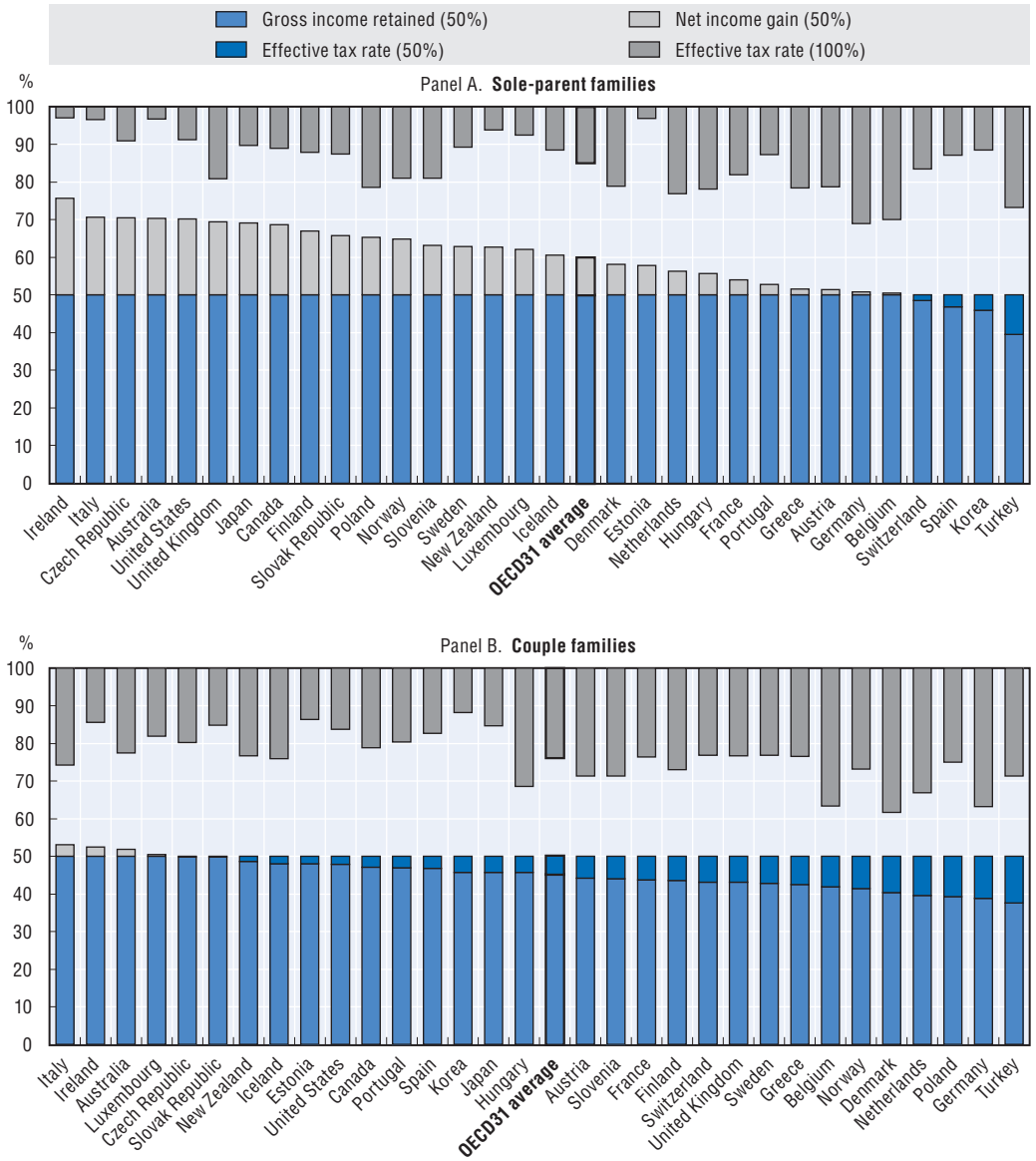
Figure 6.3 compares *net incomes* (after taxes and transfers) for households where all adults are in work as a proportion of average gross income at 100% of the average earnings per working adult. This is done for sole parents in work (Panel A) and for couple families (Panel B), while assuming in both cases that there are two children in the household aged 9 and 11 (the youngest child age is set on the basis of the OECD average in the mid-2000s identified above (see discussion of Figure 6.2).

Figure 6.3 highlights the following points:

- With the exception of four OECD countries, sole parents earning half of the average wage had higher net than gross incomes in 2008. Panel A shows that in Switzerland, Spain, Korea and Turkey sole parents earning 50% of the average wage take home less than their earnings because tax and social insurance contributions are higher than total cash transfers. By contrast, in Ireland and Italy total net income was around 40% higher than gross income due to tax breaks and family cash benefits.
- Only three OECD countries supplement earned-income for two-earner families earning half of the average wage per adult: Ireland, Italy and Australia (Panel B). In all other countries, net incomes per earner for such households are lower than gross incomes.

Figure 6.3. **Per worker, sole-parent households receive more public support in the majority of OECD countries**

Net income as a percentage of gross average wage (50% and 100% of gross average wage) per earner



Note: For each family each adult is assumed to be working. There are two children aged 9 and 11 years. Net income is income after cash transfers (include Social Assistance, Housing Benefits, In-work Benefits, Family Allowances and Tax Credits) and taxes and social contributions.

Source: OECD (2008b), *Benefits and Wages*.

StatLink http://dx.doi.org/10.1787/888932393749

- The bars at the top of each panel represent the average effective tax rate for *average* wage earners in different household types. In every OECD country, sole parents earning the average wage contribute more in terms of tax and social contributions than they receive in cash transfers and tax allowances. For sole-parent families, the average effective tax rate for average earners is around 15% (Panel A), for couple families, per earner, the average effective tax rate per worker is over 20% when taxes and benefits are equally spread over the two earners (Panel B). Chapter 4 showed that sole parents often have considerably weaker incentives to working more hours than second earners in couple families.[5]

- The gaps between the top bar (the average effective tax rate at 100%) and bottom bars in Figure 6.3 (net income at 50%), can be interpreted as the effective marginal gain in net income for moving from earning 50% to 100% of the average wage. For both sole parents and couple family earners, on average doubling gross income increases net income by around 25% on average. However, there is considerable variation across countries; *e.g.* in Poland and the United Kingdom sole parents face weak financial incentives to work more, even when children are of school age (see below for a discussion of childcare costs).

How much does work pay after childcare?

The total financial gains from work are determined by the combination of benefit entitlements, the tax treatment of earned income, and the cost of childcare for many parents of young children. Figure 6.4 shows the marginal effective tax rates faced by sole parents when entering full-time employment. It shows how individual policy instruments contribute to the overall erosion of the financial gains from work, and includes the influence of childcare fees alongside tax burdens and benefit withdrawals. Changes are shown relative to gross employment income in a new job for a sole parent with half average earnings (Panel B) and a sole parent with average earnings (Panel A). The horizontal markers indicate the fraction of in-work income that is effectively "taxed away" for the parent entering employment. The distance between these markers and the diamonds portray the part of this "tax" (or the additional wedge) generated as the result of needing to pay for childcare in order to take up employment. Whenever this gap is smaller than the fees, the country's childcare policy compensates working parents for at least part of the childcare fees.

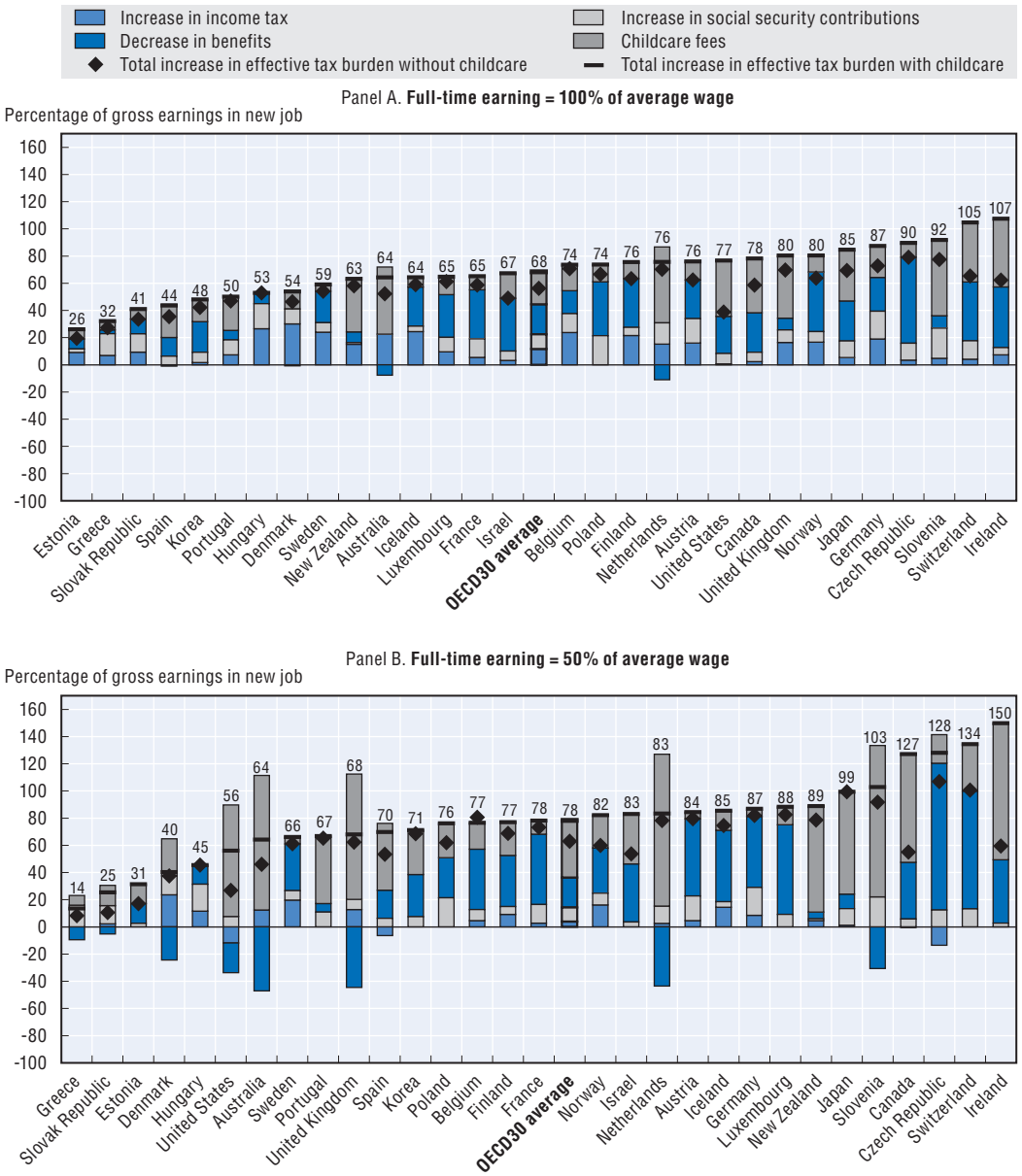
Figure 6.4 shows the percentage of gross wage which is effectively "taxed away", and the effect of childcare costs[6] on work incentives is unmistakable. Indeed, work incentives for most low-wage sole parents are often limited, despite an emphasis in many countries of promoting work as a means of reducing poverty, as well as targeting of childcare assistance to low earners.

- On average, low-wage sole parents are left with barely 20% of their gross earnings effectively available for the family to consume, and in several countries low-wage sole parents are not financially better off in paid work [Canada (Ontario), the Czech Republic, Ireland, Japan, Slovenia, and Switzerland (Zürich)].[7] The cost of childcare acts as a major barrier to work in Ireland and Canada (Ontario) where it more than doubles the effective tax rates faced by low-wage sole parents.
- In Switzerland, already weak work incentives are further diminished when the significant childcare costs are taken into account. By contrast, childcare costs are well supported for low-wage sole parents in Japan, Slovenia and the Czech Republic and high effective tax rates are largely the result of high benefit withdrawal before childcare costs are considered.

Examples of countries where employment after childcare costs does pay include Greece, the Slovak Republic, Estonia, Denmark and Hungary (where low-wage sole parents retain at least half their employment earnings) and in the United States, Australia, Sweden, Portugal and the United Kingdom (where they retain more than 30%).

- In many of these countries, particularly in southern and eastern Europe, making work pay is achieved by keeping fees low, often through public provision of childcare centres. However, capacity of such centres is limited and access, not costs of subsidised childcare, is the key constraint. In others, like Denmark, moderate fees are combined with income-based fee subsidies to reduce the impact of childcare costs on the work incentives of low earners.

Figure 6.4. **Sole parents moving into full-time employment: what is left over after childcare?**



Note: Results are for 2008. Two children aged 2 and 3. Transitions are from labour market inactivity (*i.e.* without unemployment benefits but maybe entitled to minimum income benefits) to a full-time job. Assumes full-time centre-based care while in work and no childcare costs when out of work. Benefits only available on a temporary basis immediately following the transition into work are not taken into account. The childcare cost calculations for Austria reflect the situation in Vienna; for Belgium, the French community; Canada, the province of Ontario; the Czech Republic in villages and towns with more than 2 000 inhabitants; for Germany, Hamburg; for Iceland, Reykjavík; for Switzerland, Zürich; for the United Kingdom, England; and for the United States, Michigan.

Source: OECD (2008b), *Benefits and Wages*.

StatLink http://dx.doi.org/10.1787/888932393768

- In Australia, United States and the United Kingdom, childcare is largely privately provided and the effect of relatively high market-based fees on work incentives is moderated by income-based fee subsidies or fully refundable tax credits. In United States particularly, income-based support for childcare fees is tightly targeted and the effect of childcare costs on work incentives for sole parents earning the average wage is much more evident, as reflected by its contribution to the effective tax rate.

Childcare costs have a considerable effect on take-home pay and labour market behaviour of sole parents. However, responses vary across countries. For example, consider the countries where childcare costs seriously reduce take-home pay. Employment rates[8] are above the OECD average in Canada, Japan, Slovenia, and Switzerland. This suggests that sole parents often do find solutions for their work/life balance issues using a mix of tools, including part-time employment and using cheap informal care (as in the United States, another place where formal childcare costs have a large effect on take-home pay of low-income sole parents). Childcare costs in the private sector can be higher than suggested here, which helps explain why so many mothers with young children in, for example, the Netherlands and Switzerland work part-time.

Denmark and Sweden are among the countries where childcare costs have little effect on the financial incentives to work, while in Finland and Norway home-care leave benefits give sole parents an alternative to work until children are three years of age (as in Sweden since 2008). Similarly, in the Czech Republic income supports are available until the youngest child is 26 years of age while in Ireland income support is available for sole parents until children become independent. In all OECD countries childcare costs are time-limited and most pertinent until children enter kindergarten or primary school. Many parents, sole parents included, will realise that it pays to stay in the labour force even when childcare costs significantly affect take-home pay and increase poverty risks.

Child-support systems

Child support (or child maintenance) is a monetary payment made by the non-resident parent[9] (NRP) to the resident parent (RP) following the end of a relationship, or if a relationship has not formed. Most OECD countries have formal child-support systems that aim to ensure compliance of non-resident parents with their payment obligations. Some countries, however, go one step further by making advance maintenance payments to resident parents in order to compensate for unpaid or late payments by non-resident parents.

Child-support systems can have a number of different aims, including: *i)* increasing the income of children living in sole-parent families, with direct positive consequences for child poverty and indirect positive consequences for other child outcomes; *ii)* reducing the fiscal burden on taxpayers from having to support resident parents and their children; *iii)* ensuring that non-resident parents take financial responsibility for their children; *iv)* promoting gender equality in family income (given women are more likely to be resident parents); and v) promoting shared parental care of children.

How many children could be affected by child-support payments?

The population of children in a country affected by child support may be larger than expected at first glance as such policies may affect both children receiving child support and children in families who pay child support. The population affected by *receipt* of child support includes *i)* children in sole-parent families; and *ii)* children in step-parent families

entitled to a child-support payment. In addition, children affected by *payment* of child support include *i)* subsequent biological children of non-resident parents in new relationships; and *ii)* step children of non-resident parents in new relationships. In terms of adults, in addition to the resident and the non-resident parents, the new partners of the biological parents may also be affected.

Sole-parent families are typically entitled to child-support payments. Using the most recent LIS data, Table 6.A1.2 shows that, on average, around the mid-2000s about one in six (15%) households with children in OECD countries were sole-parent families. Rates were lowest (less than one in ten) in Israel, Luxembourg and southern Europe and highest in Anglophone and Nordic countries (more than one in five). Table 6.A1.2 in the annex also includes estimates on the proportion of children in sole-parent families. On average, across the OECD 13% of all children under 18-year-olds were living in a sole-parent family in 2004/05. The rates were highest (above 20%) in Estonia, Ireland, Sweden, the United Kingdom and United States, and lowest (under 8%) in Israel, Luxembourg, Mexico and southern Europe.

Figure 6.5 looks beyond sole-parent families and provides a more comprehensive view of the share of children potentially eligible for child-support payments: it includes data on children aged 11, 13 and 15 in both sole-parent and step-parent families. Figure 6.5 shows that in every OECD country a considerable proportion of children are in families who may be eligible for child-support payment. The lowest figures are for Greece, Italy and Turkey. But even in these countries more than one in ten children aged 11-15 may be eligible for child support. In the United States, nearly four in every ten children aged 11-15 are in families who potentially may receive child support.[10] Child-support systems are thus an important element of child policy that can contribute to reducing family poverty and enhancing child well-being.

Most sole parents are mothers. But estimates in Table 6.A1.2 show that the proportion of sole father families in all sole-parent families can be close to 20% in some countries (and re-partnered parents may also receive child support). Child support is not paid exclusively by men. For example, in Norway, in more than 13% of the cases of separated families, the fathers are the resident parents (Tjøtta and Vaage, 2008). In New Zealand, 18% of those assessed to pay child support were women and 14% of resident parents were male (Chapple and Cronin, 2006). In the United States, in 2007, 17% of resident parents were male and 40% of these were awarded child support (Grall, 2009).

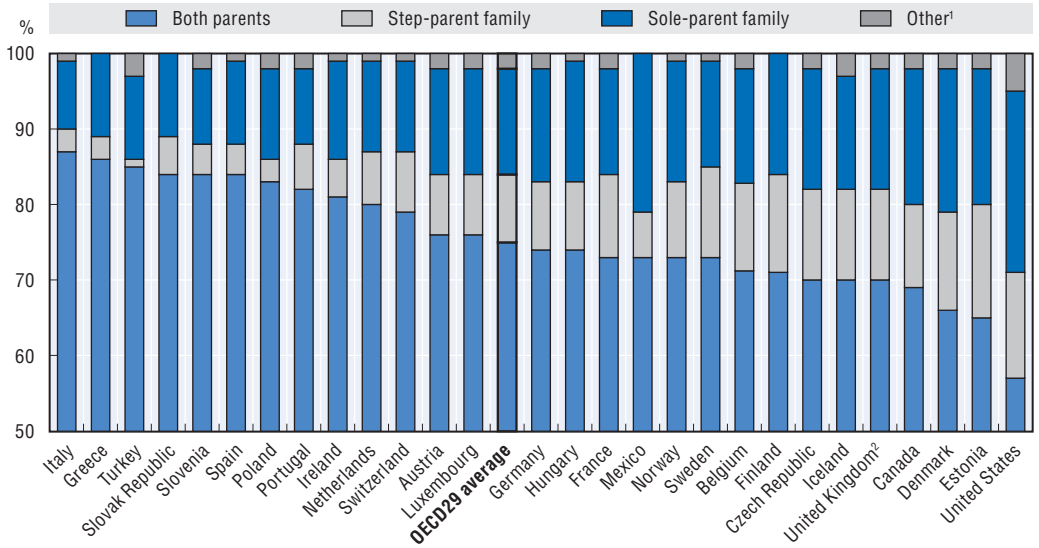
Policies and structures of child-support systems

The modalities of child-support payments are determined by a combination of parents, courts or administrative agencies. In the first instance, governments typically leave it up to parents to agree privately on child support (and possibly alimony) payments. Intervention only occurs when parents cannot reach an agreement (OECD, 2010b, PF1.5).[11]

The rules for determining amounts of child maintenance obligations vary widely across countries. Some systems apply fixed rules while others provide informal guidelines. Especially in countries where courts take the lead in setting maintenance amounts (OECD, 2010b, PF1.5), there is *in theory* a considerable degree of discretion. However, *in practice*, courts within a country often use the same formulae for the calculation of amounts so that variation is limited.

Figure 6.5. **Many children live in sole-parent and step-parent families**

Living arrangements of young adolescents (age 11, 13 and 15), 2005/06



Note: OECD average is unweighted. It is calculated over 29 member countries. Countries missing are: Australia, Chile, Israel, Japan and New Zealand.

1. Other includes foster homes or non-parental family members.
2. Data for the United Kingdom refer to England only.

Source: Currie *et al.* (2008), *Health Behaviour in School-aged Children, 2005/06*. For Mexico: *Encuesta Nacional de la Dinámica Demográfica* (2006), see *www.sinais.salud.gob.mx/demograficos/enadid/index.html*.

StatLink http://dx.doi.org/10.1787/888932393787

In general, the amounts of child payments are calculated mainly on basis of the NRP's income and living expenses. What is more, in many OECD countries [Austria, Canada (Ontario), Denmark, Germany, New Zealand, the United Kingdom], the income of the RP is not taken into account in the determination of child-support amounts (Skinner and Davidson, 2009). In most countries the NRPs financial obligations with the family he/she is currently living are also considered in the calculation of child maintenance. The most relevant differences in the methods used for calculating the child-support payments across countries include: the tax treatment of payment (for the NRP) and receipt (for RP) of child support; the extent to which child-support payments are used to offset welfare payments made to the RP; and the abatement of assessed child support on account of shared care time.

Shared parenting is becoming more common. In most countries the child support amounts are reduced or stopped when care is shared (equally) between resident and non-resident parents. For example, in the United Kingdom, when parents share the care of their children, the weekly amount of child maintenance is reduced for each day the child stays overnight with the non-resident parent. In several countries (*e.g.*, Australia, Belgium, France, Germany, Wisconsin in the United States), child-support systems have been adjusted to encourage shared parenting (Skinner and Davidson, 2009). In the United States, joint custody reform seems to have had a positive effect on child-support receipt rates among resident parents who do not receive public assistance (Allen *et al.*, 2010).[12] In Australia, however, analysis of recent Child Support data did not find a link between shared parental care and child support payment compliance.

Typically, formal child-support payments end when the child turns 18. However, this period can be extended until children finish full-time education (*e.g.* in Australia, Ireland, Mexico, Poland, the United Kingdom and the United States) or until they stop being financially dependent (*e.g.* the Czech Republic and New Zealand). Except for Germany and Poland, the determination of formal arrangements for children of unmarried parents is similar to those for children of divorced parents.

OECD countries are evenly divided between those where the government makes advance payments when the NRP does not meet his/her obligations and those that do not (Table 6.3). In countries where advance payments are made, the government takes on the cost of pursuing NRPs to re-claim the advanced funds, as for example, in Denmark. Such a system can be very effective in poverty reduction, but it does not encourage parents to find shared parental-care arrangements, as for example in Australia (Box 6.2). The generosity of advance maintenance schemes, however, varies widely between countries, with programmes in the Nordic countries being at the top end and programmes in France and Germany at the other end of the scale.

Table 6.3. **Public authorities make advance child-support payments in about half of the OECD countries**

	With advance maintenance schemes
Austalia	
Austria	✓
Belgium	✓
Canada (Ontario)	
Czech Republic	✓
Denmark	✓
Estonia	✓
Finland	✓
France	✓
Germany	✓
Greece	
Hungary	✓
Ireland	
Japan	
Korea	
Mexico	
Netherlands	
New Zealand	
Norway	✓
Poland	✓
Portugal	
Slovak Republic	✓
Spain	✓
Sweden	✓
Switzerland	✓
United Kingdom	
United States	

Note: Information for Chile, Iceland, Israel, Luxembourg, Slovenia and Turkey is missing.
Source: OECD (2010b).

StatLink http://dx.doi.org/10.1787/888932394357

Box 6.2. **Examples of child-support systems: comprehensive support in Denmark and promoting shared parental-care arrangements in Australia**

Existing legislation underlying the *Danish child-support system* was introduced in 1961. Its aim is to ensure that all eligible children receive child maintenance, and advances are an entitlement. When non-resident parents fail to pay child support or make late payments, resident parents can request the municipal social welfare office to make advance payments (up to age 18 at maximum). Income support for families and child maintenance payments are complementary: when the non-resident parent makes payments to the public agencies, this is off-set against the advance child maintenance payment, not against income-support payments. This helps to explain why child-support payment rates in Nordic countries do not lead to widespread poverty risks.

The main *advantages* of the Danish system include:

- They guarantee children and their families a minimum amount of financial support, regardless of the non-resident parent's socio-economic situation or his/her compliance with obligations;
- The flat-rate payment schedule is straightforward and transparent. Collection of child-support payments by public agencies avoids unnecessary conflict between parents;
- Low payment rates contribute to high compliance, as indicated by high child-support receipt rates.

Disadvantages include:

- They create disincentives for non-resident parents to meet their financial obligations;
- The flat-rate payment schedules does not account for the individual circumstances of children, and/or resident and non-resident parents;
- In itself, the system does not encourage shared parental care.

The *Australian Child-support Scheme* was introduced in 1988 to alleviate poverty of sole-parent families (Australia Child-support Agency, 2006). The system was progressively reformed during the mid- and late-2000s, with three main goals: *i)* reduce conflict between parents on parenting arrangements; *ii)* encourage shared parental responsibility; and *iii)* ensure child support is fully paid on a timely basis. These three goals were then translated into a three-staged reform process (Skinner *et al.*, 2007): first, simplify the payment schedule to make it less burdensome for non-resident parents; parents were given more time to reach parenting arrangements before their Family Tax Benefits (FTB) were affected, while powers of enforcement were broadened (and made subject to independent reviews); and most recently in 2008, a new payment formula was introduced which is based on the principle of sharing costs between parents. For example, care for a child for one night a week was recognised in terms of child-maintenance obligations.

Furthermore, children from first and second families are treated in a similar way. Under the new formula, parents with children living with them in a "new family" are treated in the same way as the children in the "old" family who receive child support. The income used for child support and family assistance assessments are now similar, and more types of income are included (foreign income, fringe benefits, and additional tax-free pensions and benefits). Parents who have a minimum child-support assessment and pay child support to more than one family pay a minimum amount to each family. There are now options for parents who reach private agreements between themselves for ongoing child support or lump-sum payments. In special circumstances, parents can apply to change their assessment to take into account care of step children.

Coverage of child-support systems

Table 6.4 provides information on families receiving and making child-support payments and average amounts using the most recent LIS data (Box 6.3). The first column presents the proportion of sole parents receiving child-support income. Differences in child-support receipt rates by sole parents are enormous (first column Table 6.4).[13] Rates vary from highs of 91% and 100% in Denmark and Sweden respectively, to lows of 10% in Ireland or 20% in the United Kingdom. Coverage in Denmark and Sweden[14] is particularly high because for these countries data include both payments received by non-resident parents and advanced maintenance from the state.

The second column of Table 6.4 details the proportion of couple families receiving child-support payments. In Denmark, Norway and Sweden, this proportion is around 10% and lowest in Italy and Ireland (where there are not many step-parent families, Figure 6.6).

The third column of Table 6.4 shows the percentage of families with children making child-support payments. Again, variation is considerable: about 8% of families with children make child payments in Denmark, Greece and Norway, while this proportion is negligible in Italy and Poland.

The fourth and fifth columns show the percentage of children in families receiving child support and the percentage of children in families paying child support (*i.e.*, children whose family income is reduced by child support). In every country the proportion of children in families receiving child support exceeds the proportion in families making child support. Almost 10% of children are in families *paying* child support in Denmark and Norway, while this proportion is close to zero in Italy and Poland. More than 20% of children in Denmark, Norway and Sweden grow up in families *receiving* child support compared with less than 3% in Italy and Spain. Estimates indicate that, on average across the OECD, about 11% of children received financial support in 2004, up from 8% in 1994. The lower rates of children in families paying child support compared with those receiving is mainly due to the fact that many non-resident parents do not repartner with someone with a child (Garfinkel *et al.*, 1998) and secondarily to underreporting of non-resident parents owing child support, especially those who have constituted a new family.

The last two columns of Table 6.4 show the average amount of child-support payment received (column 6) and paid (column 7) as a proportion of the disposable income of those families receiving and making child-support payments. Amounts range from highs of more than 020% of income received in Italy, Poland and Switzerland down to very low amounts in Nordic countries (6-7%), where the number of sole-parent families receiving support is high. Payments of child support account for a somewhat smaller proportion of the disposable income of families making payments. This may be related to higher net incomes and/or to underreporting of payments by adults in families who make child payments.

Some reasons for non-payment of child support

Table 6.4 showed that in some countries many children in sole-parent families are not covered by child-support payments. Low income of non-resident parents, especially regarding young fathers, is often cited as a main reason for no or minimal payment of child support (Mincy and Sorensen, 1998; Waldfogel, 2009). When income of the NRP is similar to or lower than that of the RP, effects of child-support systems can be minimal or even perverse (having little or no effect on the RPs incomes, but a clear negative effect on the NRP's living conditions).

Table 6.4. **Coverage of child-support schemes varies widely across OECD countries**

Child-support receipt rates and child-support amounts as a proportion of disposable income

	% of sole parents receiving child support	% of couple-parent families receiving child support	% of families making child support payments	% of children in families receiving child support (as a % of all children)	% of children in families paying child support (as a % of all children)	Average child-support payment received as a % of average disposable income	Average child-support payment made as a % of average disposable income
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Australia (2003)	37.3	3.8	4.1	11.2	3.8	10.9	11.7
Austria (2004)	54.2	5.4	7.0	11.0	6.7	13.2	10.9
Belgium (2000)	39.3	3.8	2.7	8.3	2.4	8.7	11.9
Canada (2004)	38.9	4.0	4.1	10.5	4.0	11.7	9.9
Denmark (2004)	90.5	12.2	8.6	26.6	8.3	6.6	5.4
Estonia (2004)	26.1	2.6	5.5	9.2	5.0	18.6	9.5
Finland (2004)	48.0	4.1	2.4	11.6	2.2	7.7	6.9
France (2000)	29.9	2.2	2.9	6.1	2.5	13.6	2.4
Germany (2004)	33.5	1.7	4.8	7.6	4.7	18.5	14.1
Greece (2004)	33.2	6.7	8.0	8.1	6.8	15.9	20.5
Hungary (2005)[1]	33.9	2.7	2.5	8.0	1.8	4.8	6.9
Ireland (2004)	14.6	2.3	7.6	5.2	7.1	18.4	10.0
Italy (2004)	22.2	0.1	0.7	1.4	0.6	20.4	13.1
Netherlands (2004)	36.5	6.7	9.9	10.5	9.0	12.6	10.8
Norway (2000)	76.0	11.3	8.7	23.8	9.3	7.0	7.8
Poland (2004)	30.8	1.2	0.5	4.9	0.4	22.3	15.0
Spain (2004)	26.7	1.2	4.4	2.8	4.3	17.7	10.2
Slovenia (2004)[1]	55.6	1.9	3.5	7.4	3.0	10.4	9.1
Sweden (2005)	100.0	9.0	4.1	29.8	4.3	7.8	5.9
Switzerland (2004)	66.8	3.1	. .	10.0	. .	26.4	. .
United Kingdom (2004)	21.9	3.7	2.8	8.7	2.6	12.1	11.4
United States (2004)	32.9	6.3	. .	13.2	. .	11.8	. .

Note: Families are defined as households with at least one child under 18. Figures do not represent take-up rates and cannot be interpreted as the proportion of families entitled to, and in receipt of, child-support payments. Alimony payments and advances on maintenance payments are included as child-support payments where these data are available.

. .: Data not available.

1. Denotes when a weighted country sample is small (< 200 cases).

The year that the data refers to is shown in brackets.

Source: OECD's Secretariat estimates using the Luxembourg Income Study (LIS) data.

StatLink http://dx.doi.org/10.1787/888932394376

In some countries, including New Zealand, the United Kingdom and the United States, when resident parents are on income support, child-support payments go to the government to off-set the costs of benefits the RP is receiving. This can create disincentives to the non-resident parent to meet his/her commitments. Therefore, some portion of child-support payments made by the non-resident parent should go to the resident parent (a child maintenance premium). For example, in the United Kingdom when the resident parent is on benefits, she/he receives the benefits she/he is entitled to plus a child maintenance premium of GBP 20 a week. Such a scheme also exists in the United States, but the premium rate differs across states. A recent evaluation showed that when resident parents keep the total amount of child-support awards, non-resident parents are more likely to pay support (Cancian *et al.*, 2008).

Box 6.3. **Luxembourg Income Study data for assessing child support**

Indicators on child-support amounts and coverage were constructed using data from the Luxembourg Income Study (LIS), a data archive that collects detailed information on income and its components from a large number of countries (*www.lisproject.org*). Unlike the OECD questionnaire on income distribution, the LIS methodology separately identifies maintenance payments, although such information is not always a priority area in the underlying national income surveys. LIS information on child-support payments has some limitations: *i)* it does not separately identify child maintenance and alimony (money for living expenses paid to the spouse over and above the money given for child support); *ii)* most countries do not identify whether child support is received by children in reconstituted couple families; and *iii)* it does not identify whether child-support payments are made voluntarily or by court order.

LIS gathers data for 29 OECD countries and allows identifying three dimensions of the child-support system:

- Advances on unpaid child support by the government (in some countries where such schemes exist);
- Receipt of alimony/child support; and
- Payment of alimony/child support.

Although covered by the LIS, the Czech Republic, Israel, Korea, Luxembourg and Mexico are not included in the analysis as they do not report information on child support. Some national data sets do not provide information on payments of child support by the NRP (as opposed to receipt of child-support payments by the RP, which are generally much more likely to be collected), or only provide it for more recent surveys. Unusually, in the case of Germany, it is only more recent surveys which provide information of receipt of child support, whereas information on payment of child support has a longer history in the data set. Finally, even where advances on maintenance are available as a matter of public policy, this information is provided for some countries (Denmark, Finland, France, Poland and Sweden) that provide this kind of support and not for others (Austria, Belgium, Estonia, Germany, Hungary, Norway, Spain and Switzerland). However, data on advanced maintenance payments for Denmark and Sweden, although being collected, it is not possible to differentiate them from private payments.

Data on payments and receipts of child support in household income studies may have a considerable degree of under-reporting. This is likely to vary across countries because, among other things, of different household survey designs. It seems reasonable to assume that under-reporting may be more likely when child-support payments and receipts are comparatively low, making them less significant from a household respondents' perspective. Also, non-resident parents who have set up a new family may not wish to declare maintenance payments so data in column 3 of Table 6.5 may well be biased downwards.

What is the effect of child-support payments on child poverty?

Table 6.5 illustrates the effect of child-support systems on child poverty. The first column shows child poverty rates *before* considering the child-support system – receipt, advances on maintenance and payment of child support. The second column factors in advanced maintenance payments where these exist. The third column further adds receipt of child-support payments from the NRP. Column 4 factors in the effect of payments of child-support on child poverty rates.

Table 6.5. **Child poverty rates (50% of median household equivalised income) and influence of child-support payments**

	Child poverty before consideration of the child-support system	Child poverty after advances on maintenance payments	Child poverty after advances on maintenance payments and receipt of child support	Child poverty after advances on maintenance payments and receipt of child support and payment of child support	Child poverty in sole-parent families before consideration of the child-support system	Child poverty in sole-parent families after advances on maintenance payments and receipt of child support and payment of child support
	(1)	(2)	(3)	(4)	(5)	(6)
	%	%	%	%	%	%
Australia (2003)	15.7	. .	14.1	14.0	42.0	33.7
Austria (2004)	8.7	. .	7.3	7.0	32.7	19.6
Belgium (2000)	8.3	. .	7.2	7.2	36.0	25.9
Canada (2004)	18.1	. .	17.1	16.8	50.6	45.0
Denmark (2004)	6.4	. .	4.0	3.9	23.3	8.5
Estonia (2004)	14.6	. .	13.9	13.9	39.7	34.3
Finland (2004)	5.4	4.7	3.7	3.7	22.8	11.2
France (2000)	8.7	8.6	7.9	7.9	34.2	28.0
Germany (2004)	13.3	. .	10.7	10.7	49.8	38.1
Greece (2004)	14.8	. .	13.7	13.2	43.4	35.5
Hungary (2005)[1]	10.3	. .	10.3	9.9	25.9	25.9
Ireland (2004)	17.0	. .	16.3	15.8	41.9	38.7
Italy (2004)	18.5	. .	18.4	18.4	29.0	26.7
Netherlands (2004)	10.4	. .	9.6	9.1	28.1	20.5
Norway (2000)	5.9	. .	5.0	4.9	17.1	12.7
Poland (2004)	19.6	18.2	17.3	17.2	40.4	22.5
Spain (2004)	17.7	. .	17.3	17.2	39.4	33.2
Slovenia (2004)	6.1	. .	5.7	5.5	33.0	26.5
Sweden (2005)	7.4	. .	4.9	4.7	21.2	9.7
Switzerland (2004)	12.5	. .	9.2	9.2	48.6	16.6
United Kingdom (2004)	14.8	. .	14.1	14.0	35.6	32.5
United States (2004)	22.2	. .	21.2	21.2	49.9	46.3

Note: Families are defined as households with at least one child under 18.
. .: Data not available.
1. Denotes when a weighted country sample is below 200 cases.
The year that the data refers to is shown in brackets. Data for Norway presented here refers to 2000 as estimates based on 2004 data were not reliable.
Source: OECD's Secretariat estimates using the Luxembourg Income Study (LIS) data.

StatLink http://dx.doi.org/10.1787/888932394395

Table 6.5 suggests that in the three countries (Finland, France and Poland) for which data on advanced maintenance payments are available,[15] their effect on poverty rates is small but significant (compare column 2 with colum 1). The effect is largest in Poland and smallest in France.

The effect of receipt of child-support payments on overall child poverty is considerable (compare column 3 with column 1). For example, in Denmark, Germany, Switzerland and Sweden (despite the low average amounts), the child-support system reduces child poverty by 2.5 percentage points. Given the low "initial" poverty rate, the effectiveness of the systems in Nordic countries is particularly high. By contrast, in the United States, the

country with highest poverty rate in the sample, the child-support system is far less effective in reducing child poverty (reduction of 1 percentage point).

Column 4 in Table 6.5 factors in the effect that *payments* of child support may have on children in families which make child-support payment. The available data suggests child-support payments have very little effect on overall child-poverty rates (compare with column 3) and therefore on the poverty risks of children in paying families.

Columns 5 and 6 show child-poverty rates in sole-parent families before and after accounting for child-support payments. The effects vary across countries, and they are largest in Nordic countries, Poland and Switzerland. In these countries, child-support schemes are an important policy tool in reducing child poverty in sole-parent families.

Finally, child-support policies can contribute to poverty reduction through stronger child-support enforcement which has been shown to reduce teenage pregnancy and teenage fertility (Plotnick *et al.*, 2004). Expecting to be required to pay child support and having a history of family members paying child support are also positively associated with contraceptive use (*ibid.*).

Notes

1. Chapple (2009) finds a similar trend in the proportion of sole-parent families over the 1980s and 1990s for about 10 countries for which such information is available.
2. In this chapter, the statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.
3. An overview of sole-parent policies and amendments to mainstream policies for sole parents across the OECD (cash supplements, income disregards, etc.) is available online via the *OECD Family Database*. Information is included on the eligibility criteria for the benefits, whether work-testing or work conditions exist, whether income or asset-testing is part of benefit payment, the maximum rates available to the sole parents, and whether and how this is reduced (OECD, 2010b).
4. Childcare policies and advances on maintenance payments are included but not discussed as they are covered in detail in later parts of the chapter.
5. Marginal effective tax rates (METRs) for sole parents moving into work were considerably higher than for second earners in couple families; the same holds when comparing METRs for sole parents and second earners who are considering increasing earnings from 50% of the average wage to 100% (Chapter 4, Annex 4.A1).
6. The childcare cost calculations for Austria reflect the situation in Vienna; for Belgium, the French community; for Canada, Ontario; the Czech Republic in villages and towns with more than 2 000 inhabitants; for Germany, Hamburg; for Iceland, Reykjavík; for Switzerland, Zürich; for the United Kingdom, England; and for the United States, Michigan. These results do not represent the situation in the rest of the country.
7. With the exceptions of Greece, the Slovak Republic, Hungary, Germany and Australia, the effective tax rates are higher for low-wage sole parents than for sole parents with average earnings.
8. It would be better to consider employment rates of sole parents who have children below age 5, but these data are not available on an OECD-wide basis.
9. The terms “resident parent” and “non-resident parent” are used here as they are considered to be the best terms available. However, they are less than perfect as they do not describe fully families’ new living arrangements. For example, nowadays, many children share their time between their mother’s and father’s home. Hence, they may also reside some part of the week at the non-resident parent’s home.
10. Grall (2009) estimated that in 2008, 21.8 million children under 21 years of age, or 25% of all children in this age group lived with a resident parent while the other parent lived elsewhere.

11. OECD (2010b) presents key characteristics of child-support systems in 27 OECD countries. It provides information on the institutions determining child-support entitlements and payments; whether systems have different arrangements for children of married and unmarried parents vis-à-vis legally partnered partners; who enforces child-support payments if they are not made voluntarily; and whether or not countries advance child-support payments if these are unpaid by NRPs.

12. Beyond child support, the Canadian 2010 budget has sought to make the sharing of family cash benefits easier in the case of joint custody.

13. Child-support receipt rates may differ according to the RP's marital status. In general, never-married parents are less likely to receive child support than other sole parents. Never-married mothers are less likely to have child support orders and, as a consequence, compliance of non-resident parents is low. For example, Allen *et al.* (2010) show that in 2008 in the United States child-support receipt rates were 52% for divorced mothers, 28% for separated mothers and 14% for never-married mothers.

14. Official estimates from Sweden show that in 2009, around 49% of children in sole-parent families received child support without involvement of the state, either by using private child support agreements or by having children living equal amount of time with either parent. The other 51% received maintenance allowance from the state.

15. The LIS collects data on advanced maintenance payments in some but not all countries that provide this kind of support. Thus, the figures presented here may underestimate the effect of child support systems on the reduction of poverty rates in those countries where these schemes exist but where data is not readily available.

References

Allen, B.D., J.M. Nunley and A. Seals (2010), "The Effect of Joint Child-custody Legislation on the Child-support Receipt of Single Mothers", *Journal of Family and Economic Issues*, Vol. 28, pp. 105-121.

BHPS (2010), British Household Panel Survey Waves 2002/03 to 2007/08, *www.iser.essex.ac.uk/survey/bhps*.

Cancian, M., D.R. Meyer and E.Caspar (2008), "Welfare and Child Support: Complements not Substitutes", *Journal of Policy Analysis and Management*, Vol. 27, No. 2, pp. 354-375.

Chapple, S. (2009), "Child Well-being and Sole Parent Family Structure in the OECD; An Analysis", *OECD Social, Employment and Migration Working Papers*, No. 82, OECD Publishing, Paris, *www.oecd.org/els/workingpapers*.

Chapple, S. and J. Cronin (2006), "A preliminary economic analysis of the impact of the Child Support scheme on labour supply and poverty in New Zealand", Ministry of Social Development, Wellington, New Zealand.

Currie, C. *et al.* (eds.) (2008), *Inequalities in Young People's Health: HBSC International Report from the 2005/2006 Survey*, WHO Regional Office for Europe, Copenhagen.

D'Addio, A. and H. Immervoll (2010), "Extended Private-sector Earnings Data for Pensions and Tax-benefit Modelling", *OECD Social, Employment and Migration Working Papers*, No. 108, OECD Publishing, Paris, forthcoming, *www.oecd.org/els/workingpapers*.

Garfinkel I., S. McLanahan and T. Hanson (1998), "A Patchwork Portrait of Non-resident Fathers", in I. Garfinkel, S. McLanahan, D. Meyer and J. Seltzer (eds.), *Fathers Under Fire: The Revolution in Child Support Enforcement*, Russell Sage Foundation.

Grall, T. (2009), "Custodial Mothers and Fathers and their Child Support: 2007", *Current Population Reports*, Issue Nov. 2009, US Department of Commerce, Economics and Statistics Administration, US Census Bureau, *www.census.gov/prod/2009pubs/p60-237.pdf*.

Mincy, R.B. and E.J. Sorensen (1998), "Deadbeats and Turnips in Child Support Reform", *Journal of Policy Analysis and Management*, No. 17, pp. 44-51.

MISSOC – Mutual Information System on Social Protection (2010), *Social Protection in the Member States of the European Union of the European Economic Area and Switzerland*, Situation on 1 January 2007 and 1 July 2008, European Commission, Brussels.

OECD (2007), *Babies and Bosses. Reconciling Work and Family Life: A Synthesis of Findings for OECD Countries*, OECD Publishing, Paris, *www.oecd.org/els/social/family*.

OECD (2008a), *Growing Unequal?*, OECD Publishing, Paris, *www.oecd.org/els/social/inequality*.

OECD (2008b), *Benefits and Wages*, OECD, Paris, *www.oecd.org/els/social/workincentives*.

OECD (2010a), *Income Distribution Questionnaires,* OECD Publishing, Paris.

OECD (2010b), *OECD Family Database*, OECD Publishing, Paris.

OECD (2010c), *OECD Employment Outlook*, OECD Publishing, Paris, *www.oecd.org/els/employment/outlook*.

Plotnick, R.D., I. Garfinkel, S. McLanahan and K. Inhoe (2004), "Better Child Support Enforcement: Can it Reduce Teenage Premarital Childbearing?", *Journal of Family Issues*, Vol. 25, No. 5, pp. 634-657.

Skinner, C. and J. Davidson (2009), "Recent Trends in Child Maintenance Schemes in 14 Countries", *International Journal of Law, Policy and the Family,* No. 23, pp. 25-52.

Skinner, C., J. Bradshaw and J. Davidson (2007), "Child Support Policy: An International Perspective", *Department of Work and Pensions Research Report,* No. 405.

Tjøtta, S. and K. Vaage (2008), "Public Transfers and Marital Dissolution", *Journal of Population Economics, Springer,* Vol. 21, No. 2, pp. 419-437.

Waldfogel, J. (2009), "The Role of Family Policies in Antipoverty Policy", *Focus*, Vol. 26, No. 2.

Welfare Working Group (2010), *Reducing Long-term Benefit Dependency: The Options*, Institute of Policy Studies, New Zealand, November.

Whiteford, P. and W. Adema (2007), "What Works Best in Reducing Child Poverty: A Benefit or Work Strategy?", OECD Social, Employment and Migration Working Papers, No. 52, OECD Publishing, Paris, *www.oecd.org/els/workingpapers*.

ANNEX 6.A1

Sole-Parent Employment and Poverty Trends

Table 6.A1.1 reports the trends in sole-parent employment as a proportion of all sole parents using data from the OECD *Income Distribution Questionnaire*. Since the mid-1980s, for countries with available data, the Figure points towards a convergence in sole-parent employment rates of between 70 and 90% of sole parents.

Table 6.A1.1. **Trends in sole-parent families, employment and poverty**

	Persons in sole-parent families as a proportion of all person in families with children			Sole-parent employment rate			Sole-parent poverty rate		
	Mid-1980s (%)	Mid-2000s (%)	2008 (%)	Mid-1980s (%)	Mid-2000s (%)	2008 (%)	Mid-1980s (%)	Mid-2000s (%)	2008 (%)
Australia (1995)	8.8	11.4	. .	26.9	47.9	. .	40.2	38.3	. .
Austria (1993	6.5	6.2	. .	63.8	73.9	. .	13.2	21.2	. .
Belgium (1995)	5.8	9.4	. .	66.5	54.7	. .	21.4	25.1	. .
Canada	6.5	9.4	9.4	61.5	77.9	79.8	57.8	43.6	41.9
Czech Republic (1995)	6.4	8.4	. .	77.3	64.4	. .	24.8	32.0	. .
Denmark	3.5	4.9	4.8	87.7	81.8	83.5	10.9	6.8	9.9
Finland	6.6	9.4	. .	92.5	80.0	. .	7.1	13.7	. .
France	7.3	12.7	. .	77.6	77.8	. .	20.0	19.3	. .
Germany	6.0	13.2	14.1	54.9	53.3	56.9	37.0	34.1	26.5
Greece	3.9	2.6	. .	50.5	86.5	. .	21.8	26.5	. .
Hungary (1995)	5.4	4.5	6.0	84.1	68.4	69.5	26.3	25.2	24.2
Ireland (1994)	. .	10.3	. .	. .	54.7	. .	. .	47.0	. .
Israel	2.3	3.7	3.7	57.0	66.4	70.3	28.2	45.2	44.9
Italy	1.2	2.9	4.0	84.1	89.0	86.5	31.2	25.6	31.5
Japan	1.5	4.1	4.6	79.0	81.2	86.0	53.7	58.7	54.3
Korea	. .	6.2	5.4	. .	71.2	69.0	. .	24.5	20.7
Luxembourg	2.7	4.3	. .	53.3	90.5	. .	59.8	41.2	. .
Mexico	3.1	5.9	5.3	83.0	73.7	74.4	43.8	32.6	35.8
Netherlands	4.5	9.2	9.6	25.0	67.2	76.2	14.4	36.7	31.2
New Zealand	8.1	10.5	13.6	55.8	49.1	64.9	17.3	39.0	35.6
Norway	8.8	13.7	13.2	63.6	67.9	72.5	18.2	13.3	15.9
Poland	. .	3.0	. .	. .	63.5	. .	. .	43.5	. .
Portugal (1995)	2.6	3.5	. .	77.2	88.7	. .	39.7	33.4	. .
Spain (1995)	1.6	2.8	. .	72.9	81.8	. .	40.5	40.5	. .
Sweden	14.1	16.1	16.2	91.7	86.1	84.2	6.8	7.9	17.9
Switzerland	. .	6.2	. .	. .	85.7	. .	. .	21.6	. .
Turkey	1.6	1.7	. .	. .	35.9	. .	. .	39.4	. .
United Kingdom	7.8	15.7	. .	53.6	47.7	. .	25.1	23.7	. .
United States	11.1	12.1	11.6	65.5	79.5	80.1	60.4	47.5	46.9
OECD	**5.5**	**7.7**	**8.7**	**66.9**	**70.6**	**75.3**	**30.0**	**31.3**	**31.2**

Note: For some countries data for mid-1980s is not available. For these countries data refers to mid-1990s (year of reference shown in brackets).
Source: Provisional data from OECD (2010a), *Income Distribution Questionnaires*.

StatLink http://dx.doi.org/10.1787/888932394414

Table 6.A1.2 presents estimates from the Luxembourg Income Study (LIS) on: sole-parent families as a proportion of all families; the proportion of sole-father families; and the proportion of all children living in sole-parent families.

Table 6.A1.2. **Background information on sole-parent families, 2004/05**[1]

	% of families headed by a sole parent	% of sole-parent families headed by a male	% of children living in sole-parent families
United Kingdom (2004)	25.9	8.4	24.1
Estonia (2004)	25.2	2.5	22.5
Sweden (2005)	24.0	19.0	21.4
United States (2004)	23.4	14.4	22.4
Ireland (2004)	22.8	7.8	20.7
Norway (2004)	21.2	19.3	17.5
Australia (2003)	21.1	18.6	19.5
Denmark (2004)	20.2	14.8	17.5
Canada (2004)	18.2	18.4	16.7
Germany (2004)	18.0	5	16.5
Finland (2004)	16.5	14.2	14.3
Mexico (2004)	15.5	8.0	8.0
OECD27 average	**15.4**	**11.7**	**13.5**
Czech Republic (2004)	14.7	4.1	12.7
France (2000)	14.5	11.8	12.6
Belgium (2000)	13.5	10.2	11.6
Austria (2004)	13.4	14	11.2
Korea (2006)	13.3	19.4	12.6
Hungary (2005)[1]	12.3	24.1	11
Netherlands (2004)	11.6	10.3	10.3
Poland (2004)	10.8	7.3	9.6
Slovenia (2004)[1]	10.8	13.9	8.8
Switzerland (2004)	10.6	13.2	9.7
Israel (2005)	9.7	7.6	6.8
Luxembourg (2004)	9.2	8.2	8
Italy (2004)	7.8	6.2	6.4
Spain (2004)	7.0	8.6	6.2
Greece (2004)[1]	5.4	7.6	5.4
Brazil (2006)	16.7	9.3	16.4
Russian Federation (2000)	17.6	5.7	14.5

Note: Data is sorted in descending order of the proportion of sole-parent families (column 1). OECD average is unweighted. It is calculated over 27 member countries. Countries missing include: Chile, Iceland, Japan, New Zealand, Portugal and Turkey. Years of reference shown in brackets.

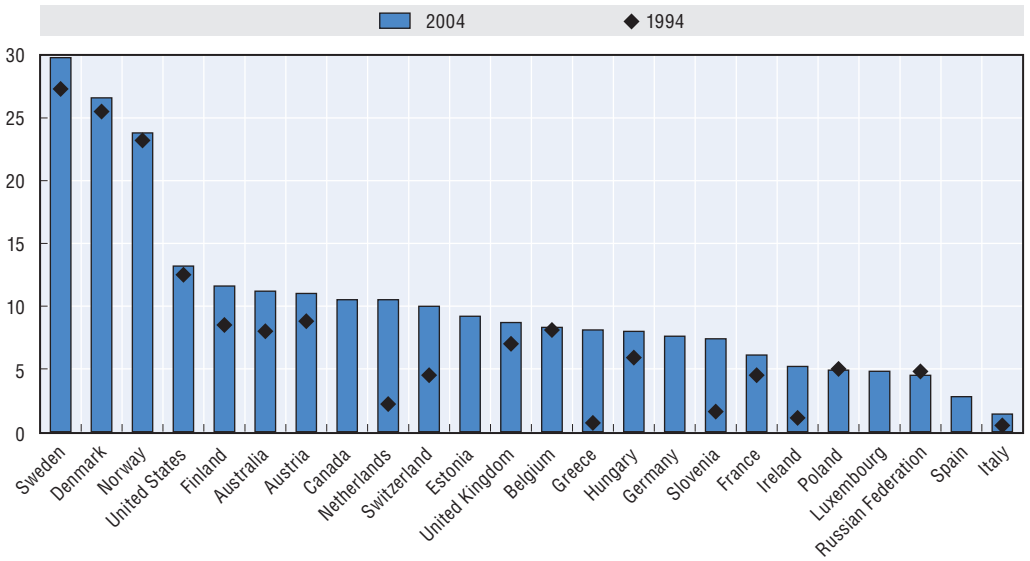
1. Denotes when a weighted country sample is below 200 cases.

Source: OECD's Secretariat estimates using data from the Luxembourg Income Study (LIS).

StatLink http://dx.doi.org/10.1787/888932394433

Figure 6.A1.1 shows that, according to the LIS data in most countries, the proportion of children receiving child-support payments increased over the 1994-2004 period. On average in 2004, 11% of children received financial support up from 8% in 1994.

Figure 6.A1.1. **The proportion of children in families receiving child support payments, 1994 and 2004**[1]



1. 2000 for Belgium, France, Luxembourg, Norway and the Russian Federation.

Source: OECD's Secretariat estimates using data from the Luxembourg Income Study (LIS).

StatLink http://dx.doi.org/10.1787/888932393806

ANNEX 6.A2

Sole-Parents and Childcare Costs

In the absence of a partner, sole parents with young children are more likely than couple households to need formal childcare to meet work commitments. As childcare costs can be substantial, they are critical for a sole-parent's decision to work.

Childcare fees are an incomplete measure of the cost of childcare as there are complementary policy measures which can substantially lower net costs. Such measures include fee reductions based on family circumstances (generally based on income and family composition) and/or cash benefits and tax concessions to help parents reduce the cost of purchased childcare. Figure 6.A2.1 shows childcare costs for sole parents in two different earnings scenarios: sole parents with low earnings (50% of the average wage) and sole parents with an average earnings position (the average wage) across countries.

In OECD countries with gender specific earnings distribution data, a sole parent with full-time earnings equivalent to the average wage would be in the top 40% of the female earnings distribution and, on average, between the 75th and 80th percentile. On the other hand, in over three-quarters of the OECD countries with gender specific earnings distribution a sole parent with full-time earnings equivalent to 50% of the average wage would be in the lowest quartile of the female full-time earnings distribution and all within the bottom 40%. In Switzerland, Norway, France, Finland, Denmark and Belgium earnings at this level fall in the lowest 10%. Of countries with minimum wages only in New Zealand is the minimum wage (at 53%) above this level (D'Addio and Immervoll, 2010).

The results can be explained in terms of averages, as well as by country, using the decompositions of incomes and outlays.

Out-of pocket costs can be considerable for sole parents

Relating the net cost of childcare in each country to the average full-time wage provides a common benchmark enabling comparison of absolute cost across countries. It also facilitates decomposition of these costs to identify which elements play significant roles in various countries. How affordable childcare is also depends on its relative cost, or how much of the family's budget (disposable income) it consumes.

In 2008, sole parents with average earnings had out-of-pocket expenses for two children in full-time care of about 12% of their earnings: accounting in total for 14% of the family's net income (Figure 6.A2.1, Panel A). The average out-of-pocket childcare expenses for sole parents earning 50% of the average wage are lower, at 8% of the average wage; though still on average around 12% of the family's budget. Formal childcare services

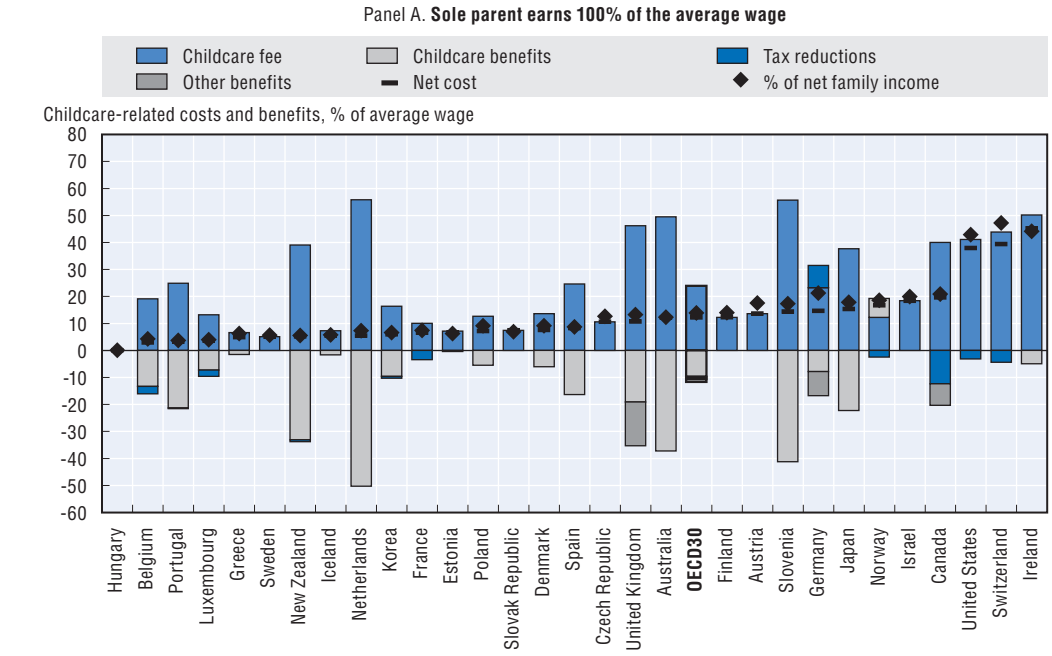
accounts for 20% or more of the sole-parent family budget in Israel and Ontario (Canada) and is most expensive in Ireland, Zürich (Switzerland) and Michigan (United States) where it accounts for more than 40% of the family budget.

Targeted childcare benefits and rebates in many OECD countries reduce the net cost of childcare for lower income sole parents

Figure 6.A2.1, Panel B, shows that in almost half of the OECD countries the net cost (in terms of the average wage) for a sole parent earning 50% of average earnings is less than half of those for sole parents on average earnings. Sole parents with 50% of average earnings in Austria, Denmark, France, Finland, Germany, Japan, Korea, and the United Kingdom pay only 5% of average earnings.

Despite targeted childcare benefits costs are still high for low-income earners in Zürich (Switzerland) (17% of the average wage) and Michigan in the United States (15% of the average wage). In Ontario (Canada) taxable income of those on 50% of the average wage is too low to take full advantage of the childcare expenses tax deduction or to lead to in an increase in the amount of the Ontario Childcare Supplement for Working Families (OCCS) once childcare expenses are taken into account. This means that in Ontario low-wage sole parents pay almost twice as much for childcare as sole parents earning the average wage (36% compared to 20%). Since 2007 Ontario has been phasing in the Ontario Child Benefit (OCB) to replace the OCCS (OCB rules in 2008 have been included in the analysis), in July 2009 the phasing in of OCB was accelerated and maximum payments to low-income families increased.

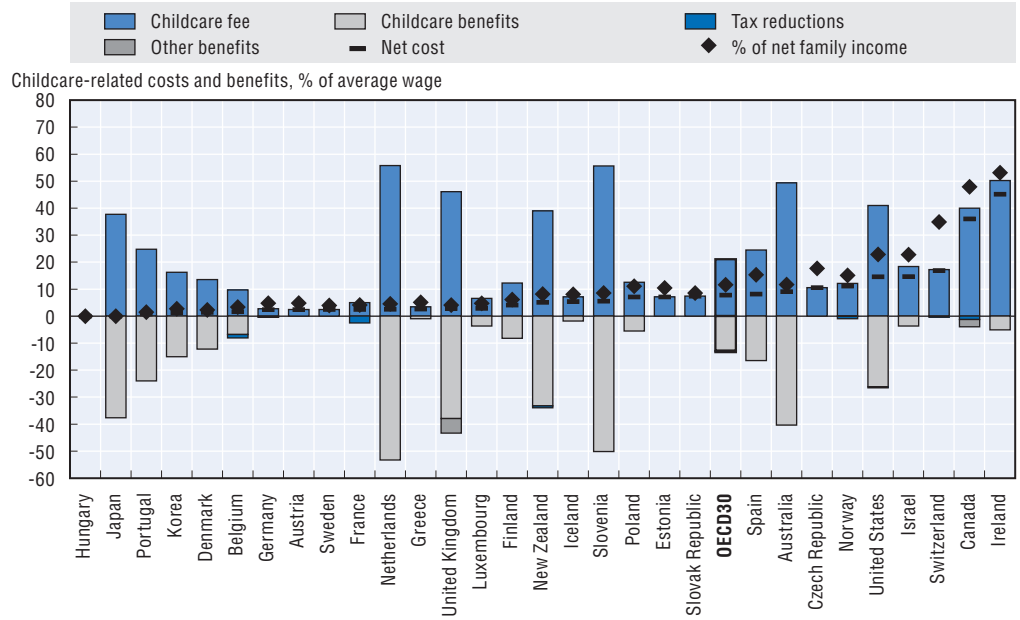
Figure 6.A2.1. **Components of childcare costs, sole-parent families, 2008**



	Hungary	Belgium	Portugal	Luxembourg	Greece	Sweden	New Zealand	Iceland	Netherlands	Korea	France	Estonia	Poland	Slovak Republic	Denmark	Spain	Czech Republic	United Kingdom	Australia	OECD30	Finland	Austria	Slovenia	Germany	Japan	Norway	Israel	Canada	United States	Switzerland	Ireland
Net cost	0	3	3	4	5	5	5	5	5	6	6	7	7	7	8	8	11	11	12	12	12	14	14	15	15	17	18	20	38	39	45
% net family income	0	4	4	4	6	6	5	6	7	7	7	6	9	7	9	9	13	13	12	14	14	18	17	21	18	19	20	21	43	47	44

Figure 6.A2.1. **Components of childcare costs, sole-parent families, 2008** *(cont.)*

Panel B. **Sole parent earns 50% of the average wage**



	Hungary	Japan	Portugal	Korea	Denmark	Belgium	Germany	Austria	Sweden	France	Netherlands	Greece	United Kingdom	Luxembourg	Finland	New Zealand	Iceland	Slovenia	Poland	Estonia	Slovak Republic	OECD30	Spain	Australia	Czech Republic	Norway	United States	Israel	Switzerland	Canada	Ireland
Net cost	0	0	1	1	1	2	2	2	3	3	3	3	3	3	4	5	5	6	7	7	7	8	8	9	11	11	15	15	17	36	45
% net family income	0	0	2	3	2	3	5	5	4	4	5	5	4	5	6	8	8	9	11	10	9	12	15	12	18	15	23	23	35	48	53

Note: Results are for 2008. Two children aged 2 and 3 in each family. "Family net income" is the sum of gross earnings plus cash benefits minus taxes and social contributions. All fee reductions, including free pre-school of childcare for certain age groups, are shown as rebates where possible. The childcare cost calculations for Austria reflect the situation in Vienna; for Belgium, the French community; Canada, the province of Ontario; the Czech Republic in villages and towns with more than 2 000 inhabitants; for Germany, Hamburg; for Iceland, Reykjavík; for Switzerland, Zürich; for the United Kingdom, England; and for the United States, Michigan. Childcare fees used are those determined by government, at either the national or local level, in Belgium, the Czech Republic, Finland, France, Hungary, Iceland, Israel, Japan, Korea, Latvia, Lithuania, Poland, the Slovak Republic and Slovenia. Childcare fees for Greece are calculated according to national guidelines.

Source: OECD (2008b), *Benefits and Wages*.

StatLink http://dx.doi.org/10.1787/888932393825

Nevertheless, targeting of support on low-income sole parents can be improved: in more than a third of OECD countries sole parents with 50% of average earnings spend a higher proportion of their family budgets on childcare than sole parents at average earnings.

Chapter 7

Child maltreatment

Child maltreatment has received less attention than other aspects of child well-being in international comparisons. The limited international comparable evidence nevertheless suggests it concerns a small but significant minority of children, and that child maltreatment causes considerable social and emotional damage, as well as economic costs to individuals and to society as a whole.

This chapter takes stock of what is known about the economic determinants and consequences of child maltreatment across the OECD. It considers the relationship between maltreatment and other important social outcomes and, insofar as information is available, it compares and contrasts policy stances and programmatic interventions.

Introduction

There has been an increased focus on child well-being in recent years, but despite good work at a United Nations and Council of Europe level, one important dimension – child maltreatment (abuse and neglect) – has received less attention. This is an important gap since the effect of maltreatment on individual children cannot be understated. The limited international comparable evidence suggests that it concerns a small but significant minority of children, who are also likely to have other life disadvantages. For example, these disadvantages might include living in a poor family, having less educated and socially isolated parents, lacking access to schooling, on becoming a young parent. Child maltreatment causes considerable social and emotional damage, as well as economic costs to those who experience it and to society as a whole.

Government efforts to promote child well-being can be justified on the grounds of equity, in terms of the rights of the child, as well as efficiency (OECD, 2009). From an equity perspective, maltreatment represents an unacceptable way for children to grow up, and responsible societies have an obligation to do all they can to prevent it: children have a right to a childhood free of abuse and neglect. The moral imperative to protect children is considered so strong that it can override the privacy of the family and the rights of parents. Every OECD country has established minimal conditions for child-rearing and has drawn a line where government will intervene, against parents' will if necessary, to protect children.

Perhaps less familiar is the efficiency argument for intervening against child maltreatment: it imposes long-term costs for the children involved and for society as a whole. Firm data is lacking, but rough estimates indicate that the annual costs of child abuse and neglect in the United States (costs to the health system, justice system and foregone earnings) is around 1% of GDP (Wang and Holton, 2007) and the cost of maltreatment of all those who were maltreated for the first time in 2007 in Australia is also estimated to be at least 1% of GDP (Taylor *et al.*, 2008). These costs justify investment in cost-effective programmes to prevent maltreatment.

This chapter takes stock of what is known about the economic determinants and consequences of child maltreatment across the OECD. It draws on theoretical and empirical studies from a range of academic disciplines. It also draws on material in the *OECD Family Database* (OECD, 2010), monitoring work and on previous work in this area, including the OECD (2009) and UNICEF (2001, 2003, and 2009) publications. It first considers the evidence on the relative extent of child maltreatment across the OECD by country, time and age. It then addresses the relationship between economic resources and child maltreatment, first by tracing the pathways through which economic resources may in theory influence maltreatment outcomes and then in terms of the empirical evidence. Evidence on the relationship between maltreatment and other important social outcomes is also considered. Policy stances across countries, insofar as there is available information, are compared and contrasted, as are programmatic interventions.

What is child maltreatment?

Child maltreatment includes acts of commission (abuse) and acts of omission (neglect), usually on the part of a parent or guardian, that "result in harm, potential harm, or threat of harm to a child", regardless of parental intent (Gilbert *et al.*, 2009). The main types of maltreatment fall into the categories of neglect, physical abuse, sexual abuse, and psychological/emotional maltreatment (including exposure to family violence). Legal definitions of maltreatment differ considerably by country (and sometimes by state, region, or province within a country), and these are typically subject to further definition by the court system.

Child neglect is by far the most common form of maltreatment in OECD countries, but often also the most difficult to establish (Gilbert *et al.*, 2009). Neglect is inadequate provision of basic necessities such as food, clothing, shelter, supervision, education, or medical care. Neglect may include a failure to meet children's emotional needs. Physical abuse is a deliberate act causing bodily harm to a child, often as a result of punishment. Sexual abuse, apparently the least prevalent form of abuse (though measurement problems are most difficult here), encompasses a range of sexual activities involving a child, spanning exposure to pornography to direct sexual contact and sexual exploitation. Finally, psychological or emotional maltreatment can be defined as actions or omissions that are likely to result in psychological harm to a child.

The ability to undertake international comparisons of the extent of child maltreatment for comparative research purposes, using either social survey information or administrative data sets, is extremely limited. These limits are imposed by definitional differences in maltreatment measures across countries and variations in reporting rates generated by different institutional choices and societal attitudes.

Some evidence on child maltreatment rates from the literature

Despite differences in reporting, investigating and categorising abuse, in all OECD countries it is likely that a minority of children suffer from child abuse and neglect. Annual rates of *reported* child maltreatment to child protection agencies range from 1.5% in England, 2.2% in Canada, 3.3% in Australia to 4.8% in the United States (Gilbert *et al.*, 2009).[1] Rates of *substantiated* maltreatment range from a high of 2.2% in Canada[2] to, 1.8% in Israel,[3] 1.2% in the United States, 0.4% in the Netherlands and 0.2% in the United Kingdom (Euser *et al.*, 2010). Recent comparable data based on the methodology used in the United States National Incidence Study generate an annual child maltreatment prevalence rate of 3% in the Netherlands and 4% in the United States (Euser *et al.*, 2010).

In terms of *self-reporting,* either by children or by parents reporting perpetration of severe parental violence, annual rates vary between 4% and 16% for a group of OECD countries including Finland, Italy, New Zealand, Portugal, the United Kingdom and the United States (Gilbert *et al.*, 2009). In one study in South Korea, 7% of children reported severe violence in the previous month (Hahm and Guterman, 2001). Over the entire child life course, a recent survey of literature including Australia, Canada, Finland, France, Israel, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, the United Kingdom and the United States, reported rates of sexual abuse (again, based on a wide variety of measures and definitions) ranging from 1% to 49% for girls and from 1% to 28% for boys (Pereda *et al.*, 2009). It is likely that much of the lack of precision in estimated rates is

determined by differences in definitions. With sexual abuse, the responsible adult is much less likely to be a parent than for physical abuse or neglect (Mullen and Fergusson, 1999). The relationship between child maltreatment and other covariates, especially economic ones, is examined further below.

"Iceberg indicators" of child maltreatment: child mortality rates by cause

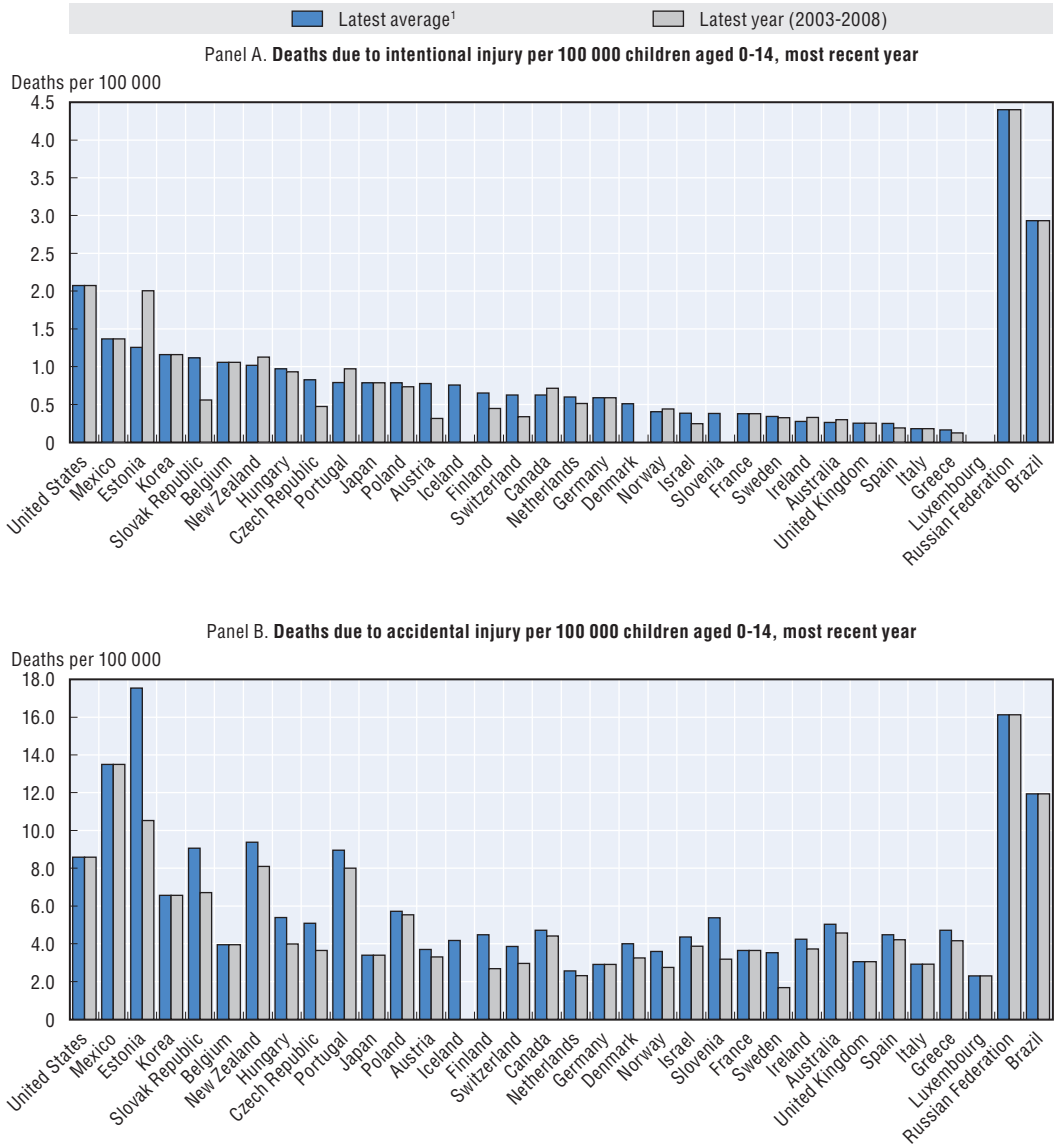
Child mortality by specified causes may serve as an indicator of extreme outcomes which, in turn, may be indicative of broader underlying rates of child maltreatment that can be compared across countries and time (UNICEF, 2001 and 2003). The so-called "iceberg" indicators chosen here are intentional child death and accidental child death, as these are the only possible broadly available indicators covering the vast majority of OECD countries (see sources to Figure 7.1). An additional reason for choosing these data is that there has been considerable international effort under the International Classification of Diseases (ICD) protocols to harmonise mortality causes data (Annex 7.A1).

Regarding intentional child death data, Trocmé and Lindsey's (1996) review of child homicide research outlines three major methodological issues. The first is that classification of child deaths as homicides is unreliable.[4] The second is that child homicides may not generally represent the endpoint of a continuum of violence ranging from inadequate parenting through maltreatment to death. The third is that child homicides do not occur sufficiently often to accurately measure the effect of child welfare policies. In the United States, perhaps 50% to 60% of all child maltreatment deaths (both intentional and neglect) are not identified as such by death certificates, but are identified as such using the state's child welfare agency, state child death review team data, or law enforcement reports of homicides made to the FBI Uniform Crime Report system (Shnizter *et al.,* 2008). Martin and Pritchard (2010) use a combination of coroner, police and child welfare records to identify 38 homicide deaths caused by family members of children *under age 16* in New Zealand in the five years between 2002 and 2006. The WHO data base records total homicides of children *under age 15* in New Zealand as 37 over the same period, which matches up well. For Japan, Yasumi and Kageyuma (2009) collect data on filicide (parental murder of a child) for the years 1994-2005 from newspaper reports and compare this to the number for all homicides recorded for children under age one in police and vital statistics databases. Their newspaper data sometimes exceed and sometimes falls short of both police and vital statistics data, indicating potential for data to be unreliable. For example, in 2003 they identify 43 infant filicides compared with police statistics which show 27 such deaths and vital statistics revealing 35 infant homicides. Their vital statistics data for all years exactly match the WHO records for infant homicides.

Accidental child death data can be indicative of child maltreatment as it may be a consequence of neglect. But only some – not all – child accidental deaths can be considered as maltreatment. Some child accidental deaths will be effectively beyond the responsibility of a caregiver. We emphasise that accidental child deaths is being used here as a clearly imperfect indicator of child maltreatment, not as a measure of child maltreatment in itself.

Figure 7.1 below shows child mortality rates for most OECD and "enhanced engagement countries" (Brazil, China, India, Indonesia and South Africa). The first panel is for intentional mortality and the second panel is for accidental mortality. For countries with smaller populations of children, for example Estonia, the latest average data has been included to remove, in an *ad hoc* way, some of the "data noise" associated with small child

Figure 7.1. **In most countries child mortality is very rare**



Note: Countries in both panels are ordered in descending order of latest average child mortality rates due to intentional injury.

1. Latest average based on most recent years for which the cumulative number of 0-14 years-olds exceeds 10 million, going back no further than the start of the WHO ICD10 classification system. The years considered for each country are as follows: Australia (2004-06), Austria (2003-08), Belgium (2004), Canada (2003-04), Czech Republic (2004-08), Denmark (1999-2006), Estonia (1997-2008), Finland (2000-08), France (2007), Germany (2006), Greece (2004-08), Hungary (2004-08), Iceland (2001-08), Ireland (2000-08), Israel (2005-07), Italy (2007), Japan (2008), Korea (2006), Luxembourg (2006), Mexico (2007), Netherlands (2006-08), New Zealand (2000-06), Norway (2002-07), Poland (2007-28), Portugal (2002-03), Slovakia (1998-2005), Slovenia (1997-2008), Spain (2004-05), Sweden (2003-07), Switzerland (2001-07), United Kingdom (2007), United States (2005), Brazil (2005), Russian Federation (1998).

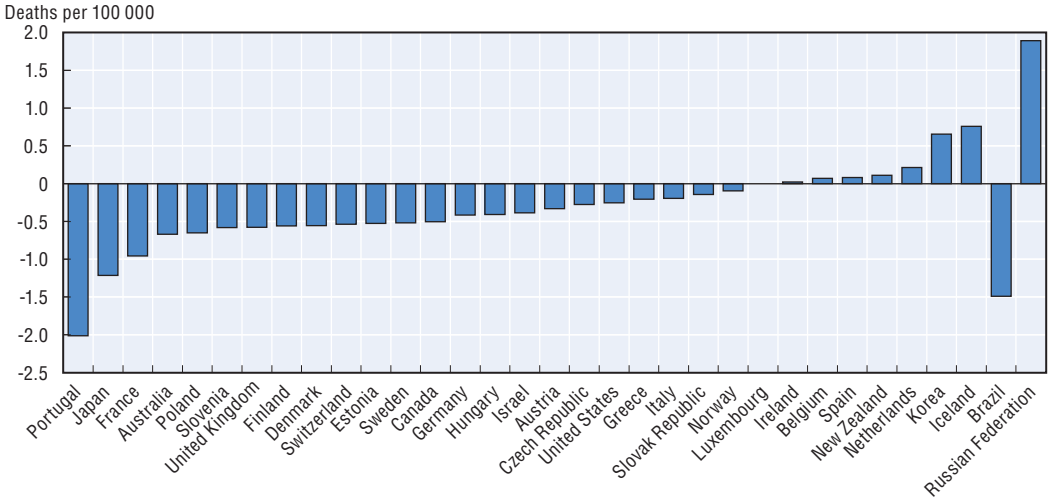
Source: WHO (2010), *WHO Mortality Database*.

StatLink http://dx.doi.org/10.1787/888932393863

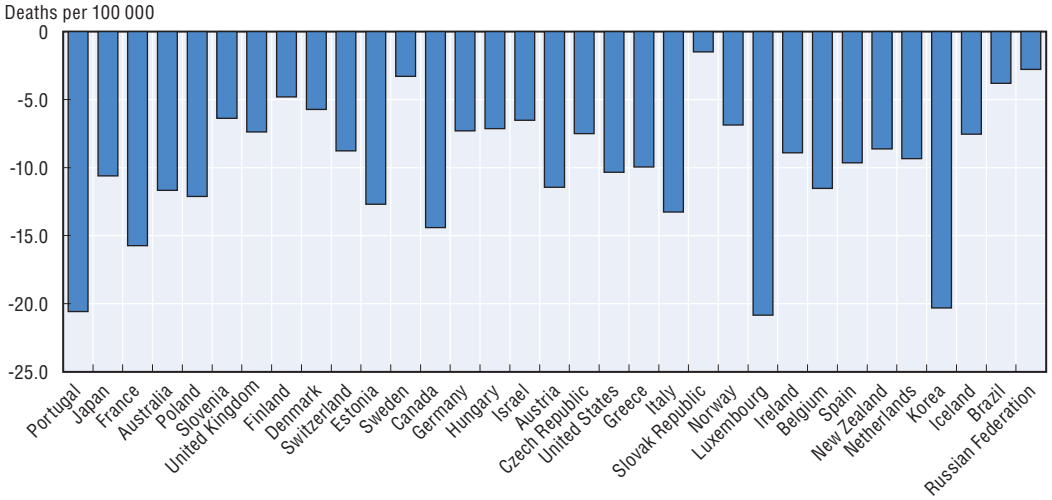
populations.[5] Figure 7.2 presents data on changes in intentional and accidental death, from the early 1980s until the latest figures (mid-2000s). Annex 7.A1 presents the detailed time series for each OECD country (except Turkey) from 1970 until the most recent date, in the mid- to late-2000s in most cases.

Figure 7.2. **Child mortality rates declined in almost all OECD countries since the 1970s**

Panel A. **Changes in child deaths due to intentional injury, early 1980s to latest figures, average deaths per 100 000 children aged 0-14**



Panel B. **Changes in child deaths due to accidental injury, early 1980s to latest figures, average deaths per 100 000 children aged 0-14**



Note: Countries in both panels are ordered in ascending order of change in child mortality rates due to intentional injury.

Figures are averages based on combined years such that the cumulative population of 0-14 year-olds exceeds 10 million.

Data from early 1980s are based on the ICD9 classification system; data from late 2000s are based on the ICD10 classification system. Annex 7.A1 to this chapter provides detail on which categories were included for intentional and accidental deaths. The categories are consistent with those used in UNICEF (2001 and 2003). Deaths by "undetermined intent" are considered as intentional here, to try and overcome classification problems (UNICEF, 2003).

Source: WHO (2010), *WHO Mortality Database*.

StatLink http://dx.doi.org/10.1787/888932393882

The following general observations can be made about patterns in the child mortality data:

- There is wide variation in most recent child mortality rates by country.
- The prevalence of both intentional and accidental deaths fluctuates considerably from year to year in countries with small numbers of children (*e.g.* Iceland) and is fairly stable for countries with large numbers of children, *e.g.* the United States (Figure 7.1).
- In almost all countries, accidental deaths show a strong trend decline (Figure 7.2).
- Declining trends in intentional death rates are harder to discern (Figure 7.2 and Annex 7.A1). This may be in part because rates were relatively low to start with. Defining a significant trend as correlation of the rate with time in excess of -0.50 to give the analysis some (arbitrary) objective benchmark, downward trends for at least one of the two age groups may be found in just over one-third of OECD countries: Australia, Canada, Chile, Denmark, Finland, Germany (note the short time period), Hungary, Italy, Japan, Mexico (although this trend is almost certainly due to the effect of the ICD definitional change), Poland, Sweden and the United Kingdom.[6]
- Mostly because of the faster decline in accidental death rates, accidental death rates have converged closer to intentional death rates (Figure 7.2 and Annex 7.A1).
- Young children under age 5 are on average at greater risk of both intentional and accidental death than older children aged 5 to 14 years in just about every country over the entire time period (Annex 7.A1).
- In addition to an overall fall in child accident death rates, there is a convergence over time in accidental death rates of older and younger children, in some cases to parity by the mid-2000s (Annex 7.A1).

Economic analysis of causes and consequences of child maltreatment

Child maltreatment is a new area of work for the OECD, but an economic perspective can make useful contributions to child maltreatment analysis. One major issue is that maltreatment may have economic causes; a second is that maltreatment may have economic (in the broadest sense) consequences.

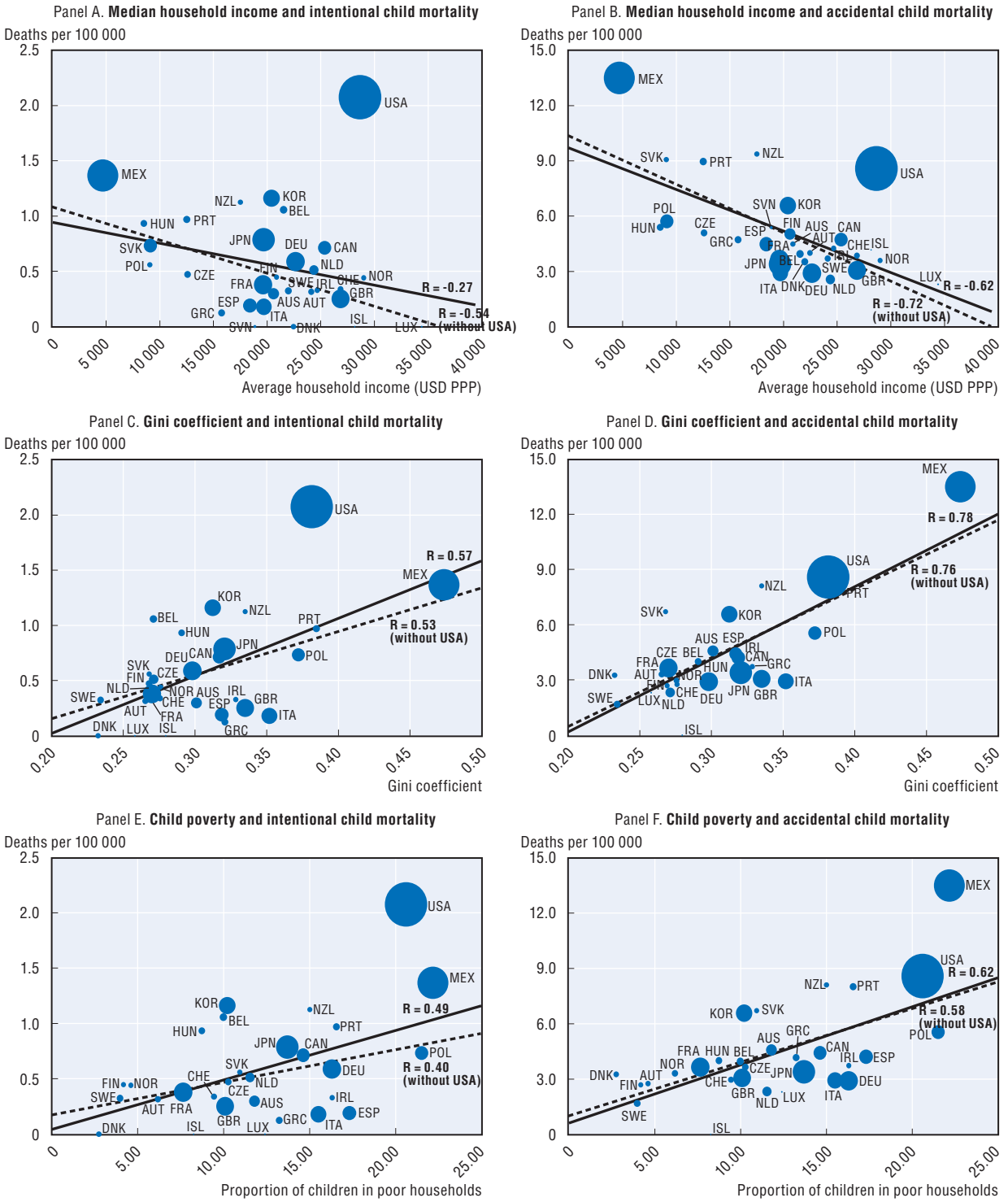
Child maltreatment and economic indicators at a country level

To what extent is child maltreatment linked to family income? Figure 7.3, Panels A, C and E consider the linkages between intentional child mortality indicators and indicators of the level and distribution of disposable household income at a national level (two distribution-related measures are used: a Gini measure of income inequality and a measure of child poverty). Figure 7.3, Panels B, D and F are similar but concern accidental child mortality. The Figures are presented as "bubble plots", with the size of the bubble proportional to the number of children under age 15 in the country concerned. This provides information on the size of child populations affected (implicitly it is an indicator of the risk of "data-noise" associated with small child populations). A simple line of best fit and correlation coefficient is reproduced on each Figure.

These simple cross-plots offer no evidence on causality issues, but they are suggestive at least of some linkage between economic domains and child maltreatment at a country level. In all cases the expected relationships are found. The associations are all lower for intentional child mortality than accidental child mortality, which is likely to be related to the small number of children affected by the former. In the case of median income and

Figure 7.3. **Richer, more equal and less poor countries have the lowest child mortality rates**

Number of deaths among children aged 0-14



Note: The size of the dot/bubble is proportional to the number of children aged 0-14 in the country for the latest year for which data are available.

Source: OECD (2008), *Growing Unequal?*, and WHO (2010), *WHO Mortality Database*.

StatLink http://dx.doi.org/10.1787/888932393901

intentional child mortality (Figure 7.3, Panel A), the relationship is negative: richer countries generally have less intentional child mortality. The United States is an outlier here, being among the richer OECD countries with a high rate of intentional child deaths. There is a stronger positive relationship of intentional child mortality with the Gini coefficient of income inequality (Figure 7.3, Panel C), but it is evident that this relationship is primarily driven by high intentional death rates, combined with high inequality, in the United States and Mexico. The relationship between child poverty and intentional mortality (Figure 7.3, Panel E) is also increasing and seems less influenced by observations for the United States and Mexico. The same inverse relationship with household income (Figure 7.3, Panel B) is found for accidental child mortality, but the relationship is stronger. The strongest relationship between the economic variables and an indicator of child maltreatment is the relationship between income inequality and accidental child mortality (Figure 7.3, Panel D), closely followed by the relationship between accidental mortality and child poverty rates (Figure 7.3, Panel F).

Income and child maltreatment[7]

There is considerable evidence, at the micro-level of a child's family, that low income is significantly correlated with child abuse and neglect (Crittenden, 1999; Stith *et al.*, 2009). Of course, this should not be read as suggesting that all low income parents maltreat their children or all high income parents do not maltreat their children. Additionally there are reasons to think that low income and child maltreatment might be causally linked, however, on average (Berger, 2007):

1. Low income may directly restrict a parent's ability to meet a child's basic needs. This is particularly relevant with regard to neglect, defined by inadequate provision of food, shelter, clothing, and medical care, as well as inadequate physical conditions of the home or care-giving environment.
2. Low income is adversely associated with higher parental stress and depression, which in turn may result in harsh or neglectful parenting (Conger *et al.*, 2002; Conger *et al.*, 1994; Duncan and Brooks-Gunn, 1997; McLeod and Shanahan, 1993; McLoyd, 1998; McLoyd and Wilson, 1991; Votruba-Drzal, 2003).
3. Economic theory suggests that low-income parents might invest less in their children because they expect lower returns on this investment than high-income parents. If child maltreatment, especially neglect, reflects underinvestment in children, it can be expected to occur more frequently among lower-income families (Berger, 2004).
4. Low income may imply fewer parental disciplinary options. For example, Weinberg (2001) argues that low-income parents are more likely to utilise physical forms of discipline, which may exceed a legally defined threshold for maltreatment, as a means of altering their children's behaviours because they lack the income to offer their children gifts or allowances in exchange for behavioural compliance.
5. Maltreatment-related behaviours may be influenced by whether a family receives child-conditioned transfers. Parents should be less likely to maltreat their children if maltreatment means that they risk losing children and thus income via child removal (Berger, 2004).

If low income and child maltreatment are causally linked, this may explain the observed correlation between non-intact family structure and child maltreatment. Sole-parent and step-parent families tend to have lower incomes than two-biological-parent

families. Additionally, for sole-parent families, the dual parental role of caregiver and breadwinner is characterised by considerable time constraints and high levels of stress, both of which may lead to elevated maltreatment rates. With regard to stepfamilies, non-biological parents may have fewer incentives than biological parents to invest in children. Stepfamilies may be characterised by higher levels of intra-familial conflict and parental role ambiguity (with regard to the non-biological parent) than two-biological-parent families. Each of these factors, independent of lower income, may help to explain why maltreatment rates are higher among sole-parent families and stepfamilies than two-biological-parent families.

Despite theory supporting the existence of a relationship, it is also possible that correlations between low income and child maltreatment are not causal. Rather they may be driven by factors like limited parental education, poor quality jobs, substance abuse, child behavioural problems and mental health problems that affect both parental income and child maltreatment. A related concern when considering administrative maltreatment records is that low-income families are more likely to become involved with child welfare services even if they are no more likely to actually maltreat their children. High administrative reporting may arise for low-income parents because of higher levels of exposure to potential reporters, a lower inability of low-income parents to negotiate themselves out of the system before they become part of the records, or a greater tendency for low-income parents to be placed on the record because of an observable feature like race/ethnicity or age that is used as a discriminatory marker in the system.

Empirical research on the low-income maltreatment link

Empirical research has made limited progress toward determining whether this income-maltreatment association is causal. Answering this question has crucial implications for public policy. If child maltreatment and low income are spuriously correlated, then public policies that increase family income but do not address other factors associated with both income and maltreatment will not affect maltreatment rates. If low income is causally related to maltreatment, income support policies may play an important policy role, also reducing the wide range of associated economic and social consequences with which maltreatment has been linked.

Likewise, little is known about whether absolute or relative income may be more important with regard to child maltreatment or whether the association between low income and child maltreatment may be linear or non-linear, such that it is constant or varies in magnitude throughout the income distribution. Little is known on the impact of income stability or instability on maltreatment. Changes in income, especially precipitous declines, may influence the likelihood that parents will maltreat over and above the influence of a family's overall level of income, due perhaps to heightened levels of parental stress and inter-parental conflict. Additionally, families experiencing persistent but stable low income may be at greater risk of maltreatment than those experiencing only brief periods of low income, as the adverse effects of low income may accumulate over time in adverse parental behaviours toward and lower investments in children across family types (Berger, 2004, 2005, and 2007; Berger *et al.*, 2009). These are all critical issues for policy design.

Existing studies on the income-maltreatment link are almost exclusively observational (rather than experimental) in nature (Box 7.1). Thus, they have been unable to control convincingly for selection bias. Furthermore, most existing research has utilised cross-sectional and/or retrospective data. It has tended to focus on samples of exclusively

Box 7.1. **Some evidence from the United States on the causality of the income-maltreatment link**

There are three studies from the United States which provide evidence that the low income-maltreatment link may be causal. Results from an experimental evaluation of a welfare reform programme in the State of Delaware demonstrated that the treatment group, subject to a less generous benefit package (including harsher work requirements, eligibility conditions, and penalties for noncompliance) and lower cash benefits than the control group, exhibited a higher rate of substantiated child neglect reports (Fein and Wang, 2003). Unfortunately, the study could not identify whether lower income or other components of the package were the cause.

A quasi-experimental study from the state of Illinois provides some further evidence suggesting that income and child maltreatment are causally linked. Shook and Testa (1997) used an identification strategy based on inefficiencies in programme implementation and resulting in exogenous variation in benefit receipt. The aim was to test the efficacy of a programme providing short-term, relatively limited cash assistance to families at risk of having a child placed in foster care due to neglect. They found that families who received cash assistance were less likely to have their child placed in foster care over the subsequent 15-month period. Thus, even short-term and relatively limited economic supports may play a protective role with regard to intensive child welfare system involvement.

Cancian *et al.* (2010) used data from a randomised child support and welfare reform experiment in the state of Wisconsin. Their aim was to test whether an exogenous increase in income reduced the likelihood that a family is the subject of a child maltreatment investigation. They found that families eligible for the exogenous income transfers were less likely to experience a child maltreatment investigation than controls. This result provides the strongest evidence to date in support of a causal link between family income and child maltreatment.

low-income families or families who have *a priori* been defined as being at risk of or having already experienced child maltreatment. Longitudinal, prospective, and population-based studies of child maltreatment are exceedingly rare.

Consequences of maltreatment

Maltreated children are also likely to have other life-disadvantages, like being in a poor family with poorly educated and socially isolated parents, lacking access to good education, becoming young parents and so on. Reviews of recent empirical evidence (in particular, Gilbert *et al.*, 2009; Krug *et al.*, 2002; and WHO, 2006) consider the effects of maltreatment on health, cognitive development and academic achievement, and employment and earnings. Estimates derived in these studies are subject to selection bias and cannot be considered as definite proof of causality.[8] Additionally, effects are likely to vary according to the type and intensity of maltreatment.

- Experiences of childhood maltreatment have been found to be associated with poorer adult physical and mental health on a range of outcomes (Felitti *et al.*, 1998; Springer *et al.*, 2007; see also review in Gilbert *et al.*, 2009). In particular, several studies have established an association between child maltreatment and elevated risk of obesity in adolescence and adulthood and adolescent substance abuse (Johnson *et al.*, 2002; Lissau and Sorensen, 1994; Noll *et al.*, 2007; Thomas *et al.*, 2008; Tommyr *et al.*, 2010).

- Evidence from the United States suggests that children who were maltreated are more likely to be reported to have learning difficulties, and to have lower school attendance and achievement, and are less likely to complete high school than children who did not suffer abuse or neglect (Jonson-Reid *et al.*, 2004; Lansford *et al.*, 2002; Leiter, 1997; and Perez and Widom, 1994). Furthermore, the effects on *cognitive development and academic achievement* appear to persist into adulthood. Following a sample of US children who had been referred to the courts for maltreatment and comparing them to similar children who were not referred, Perez and Widom (1994) found that at age 28, the maltreated group had lower IQ scores and reading ability, had completed one year less of schooling, were more likely to have repeated a grade, were more likely to have been truant, and were more likely to have been suspended or expelled from school. However, a study in New Zealand found that most of the differences in educational outcomes between maltreated and non-maltreated children were explained by other family characteristics (Boden *et al.*, 2007).
- Much of the evidence on the long-run effects of child maltreatment on adult employment and earnings comes from a US study following a sample of children referred to the courts for child maltreatment. Comparing outcomes at age 29 for these children versus matched controls, the maltreated children were less likely to be employed and, if employed, less likely to be in skilled or professional occupations (Widom, 1998; and Currie and Widom, 2010).[9] Finally, analyses by gender indicated that women were more strongly affected: although both women and men who had been maltreated had poorer labour market outcomes at age 29, by age 41, significant earnings differences between those who had been maltreated and controls were present only for women.

Maltreatment experienced in *early childhood* may have larger adverse developmental consequences (and higher individual and societal costs) than maltreatment experienced in later childhood or adolescence (Hildyard and Wolfe, 2002). This is consistent with a large literature documenting the importance of early experiences for later life outcomes (*e.g.* Shonkoff and Phillips, 2000).[10] The evidence is, however, somewhat contradictory (Thornberry *et al.*, 2001).

Experiencing maltreatment in childhood has also been linked to the risk of adverse outcomes into the next generation. Two mechanisms, in addition to the risks posed by having parents who suffer from the poor outcomes discussed above, appear to be particularly important in explaining these links.

- Children who are maltreated are more likely to become teen parents (Lansford *et al.*, 2007; Thornberry *et al.*, 2001). Young parental age is consistently identified as a risk factor for child maltreatment (Fundudis *et al.*, 2003; Lee and Goerge, 1999). In addition, although many children of teen parents do well, on average teen parenthood creates a host of developmental risks for the child of the teen parent who will be more likely to grow up in an unstable or sole-parent household and in a household with fewer resources to draw upon (Furstenberg, 2007).
- There is strong intergenerational persistence in parenting behaviour. Children who are maltreated are more likely to go on to become maltreating parents themselves, thus perpetuating the cycle of abuse and neglect and exposing another generation of children to maltreatment (*e.g.* WHO, 2006). On a more positive note, this means that the benefits of preventing maltreatment are also potentially intergenerational – programmes that reduce maltreatment in the current generation of children should provide additional pay-offs in the form of reduced maltreatment in the next generation.

Policy to reduce maltreatment and neglect

The protection of children from abuse and neglect is a policy goal in all OECD countries. Countries work to allocate and combine their resources in various ways, largely through their child protection services, to produce the lowest possible rate of maltreatment.[11] The stakes are high as inappropriate assessment and intervention may leave the child without protection, result in unnecessary child-parent separations, or lead to serious violations of the rights of parents and children (Kindler, 2007). For reasons of brevity, this section focuses on prevention, rather than the additionally important issue of secondary prevention or treatment of children already identified as maltreated.

Child protection services

Child Protection Services (CPSs) are a main mechanism to respond to reports of child maltreatment and prevent reoccurrence of maltreatment in OECD countries.These agencies are typically part of the child welfare or social services departments with broader responsibilities, housed within local, regional or national social services (Schene, 1998). Child protection services encompass a broad spectrum of child and family services aimed at prevention and intervention in order to address child maltreatment. This spectrum of services can include: family support (regular and intensive), domestic violence intervention, statutory child protection and child and family advocacy services. Another important part is the preventive services, which aim at identifying families early enough to change risky behaviour and prevent maltreatment (Melton, 2005). Box 7.2 provides a concise overview of child protection services in Australia.

Child protection services work closely with other government institutions including the judicial system, law enforcement agencies and educational authorities. They also are required to work closely with child health professionals like early years providers and general practitioners. Reports of abuse or neglect that warrant investigation are typically assigned to a CPS staff member, who investigates the validity of the allegations, the identity of the perpetrator, and the condition of the children. The worker also determines the need for further agency involvement, the need to remove the child or perpetrator from the home, and the need to involve other services (Pence and Wilson, 1994; Schene, 1998).

The definition of child maltreatment – which child protection systems seek to minimise – varies by OECD country according to both national legislation and the accumulation of case law (Katz and Hetherington, 2006). There can be sub-national differences in legal definitions in federal jurisdictions (*e.g.* Australia). One difference across countries in definition of child maltreatment that is relatively easy to document is whether physical punishment of children (also known as spanking or smacking) is legally sanctioned or not (see Table 7.1 for this information and when it was introduced). About half of the OECD countries have made it illegal to physically punish children, with laws being introduced largely during the past decade. A recent systematic review indicates that legal bans on physical punishing of children reduce both support for and use of such punishment against children (Zolotor and Puzia, 2010; see also Durrant, 1999 for Sweden). Box 7.3 discusses the limited availability of cross-nationally comparisons of child protection systems and relevant indicators.

Just as precise definitions of maltreatment differ by country, so too do mandated reporting laws on professionals and public policies regarding child maltreatment investigations, and the nature of child welfare system intervention (Gilbert, 1997;

Box 7.2. **Child protection systems in Australia: a short overview**

Australia is a federal country and statutory child protection is a state and territory government responsibility (see Lamont and Bromfield, 2010, for an overview of the history of child protection services in Australia). State and territory departments (usually the child or community offices) are responsible for protection of vulnerable children who are suspected of being abused, neglected, harmed, or whose parents are unable to provide adequate care or protection. Although each of these jurisdictions has its own legislation and practices towards child protection, there are a lot of similarities across the jurisdictions.

A recent policy development was the establishment of the National Framework for Protecting Australia's Children 2009-20. This initiative aims to achieve a substantial and sustained reduction in child abuse and neglect, through ongoing reform of child protection systems including an emphasis on early prevention and intervention programmes. The framework specifies "indicators of change" that will serve as benchmarks for measuring progress (AIHW, 2010). The system is also supplement by the provision of a considerable amount of detail on outcomes and spending by the Australian Productivity Commission 2008.

Child protection processes

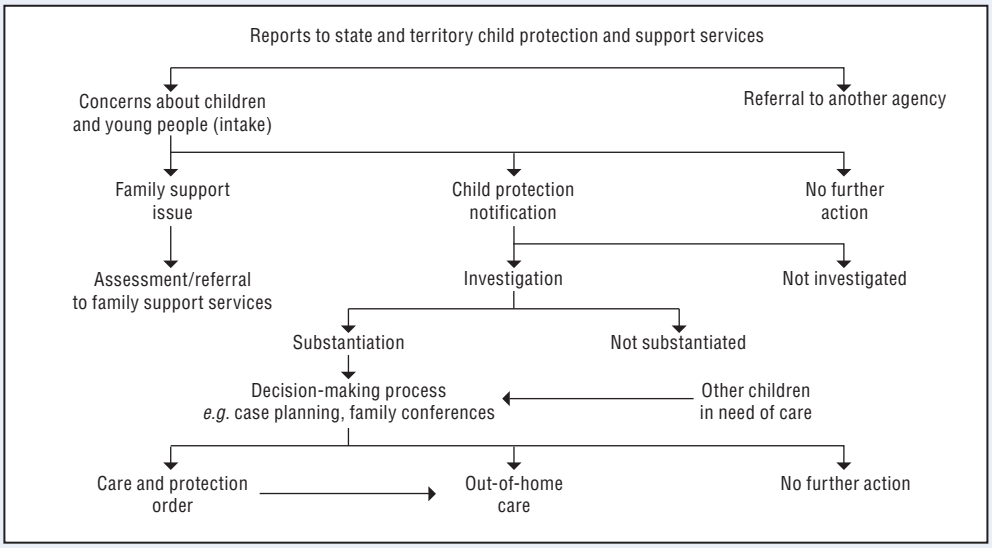
Whilst health and welfare professionals, teachers, police, or other community members usually report incidents of suspected cases of child abuse and neglect, in the first instance, government departments' reports can come from a variety of avenues including community members, professionals, organisations, the child themselves, their parent(s) or another relative. In some jurisdictions, selected professions are mandated to report suspected child abuse or neglect, whereas in other jurisdictions anyone who suspects child abuse or neglect is legally obliged to report it to the appropriate authority. Legislation covers all young people up to the age of 18. In most jurisdictions, the identity of those who report is protected. All jurisdictions have a 24-hour reporting facility.

Reports requiring further action are classified as either a family support issue or a child protection notification. Child protection notifications are assessed to determine whether it requires an investigation; whether it should be referred to other organisations or to family support services; or whether no further protective action is necessary. Investigations involve authorities obtaining more detailed information about a child and assessing the degree of harm or risk of harm for the child. The timeframe for completion of investigations ranges from 28 to 90 days across jurisdictions. Upon completion of an investigation, a notification will either be "substantiated" or "not substantiated" according to whether it was concluded that the child has been, is being or is likely to be abused, neglected or otherwise harmed. The Figure below provides an overview of the main processes used in child protection systems across Australia.

At any point in the process, authorities can apply to the courts to place the child on a "care and protection order". Care and protection orders are legal or administrative orders or arrangements which give community services departments some responsibility for a child's welfare. The level of responsibility that authorities take on varies with the type of order as they include guardianship and custody orders; third-party parental responsibility arrangements, supervision and other final orders as well as interim and temporary orders.

Box 7.2. **Child protection systems in Australia: a short overview** *(cont.)*

The main processes used in child protection systems in Australia



Source: Australian Institute of Health and Welfare (2010).

StatLink http://dx.doi.org/10.1787/888932393939

Indicators

The departments in each jurisdiction provide aggregate data to the Australian Institute of Health and Welfare (AIHW) for five national child protection collections: notifications, investigations and substantiations; care and protection orders; out-of-home care; intensive family support services; and foster care.

In 2009, there were 207 462 *notifications*, of which 32 641 cases were substantiated (6.9 per 1 000 children). Over the past five years the number of *substantiated* notifications has declined somewhat (from 7.5 per 1 000 children), but it more than doubled since 1999. The most common source of notifications in 2008-09 was police. Emotional abuse was the most common type of substantiated abuse and sexual abuse the least common type in almost all jurisdictions (Bromfield and Horsfall, 2010). By contrast, over the past five years the number of *children on care and protection orders* increased by 47% from 24 075 to 35 409 (from 4.8 to 7.0 per 1 000 children). The increase is related to different factors, including: a broadening of the definition of child abuse and neglect in some jurisdictions, changes in child protection policies and greater community awareness. However, campaigns to stimulate awareness on the issue are not always very effective (Horsfall *et al.*, 2010).

The number of children in *out-of-home care* rose by 44% from 23 695 in 2004 to 34 069 in 2009 (from 4.9 to 6.7 per 1 000 children). Only 5% of these children were in residential care, and most of children in non-residential care were either in *foster care* (47%), or living with relatives (45%). This pattern of distribution has not changed much over the past 5 years. In almost all jurisdictions, the majority of the children have been in their current out-of-home care placement for less than five years.

In 2008-09, more than AUD 2.2 billion (about 0.2% of GDP) was spent nationally on child protection services (AUD 0.75 billion), out-of-home care services (about AUD 1.4 billion) and *intensive family support services* (AUD 0.25 billion) (Bromfield *et al.*, 2010). In addition, Taylor *et al.* (2008) estimated that spending on child abuse prevention amounted to just over AUD 1 billion in 2007.

Table 7.1. **Abolition of corporal punishment against children**

	Type of legislation	Year of introduction		Type of legislation	Year of introduction
Australia[1]	0	–	Korea	0	–
Austria	1	1989	Luxembourg	1	2008
Belgium	0	–	Mexico	0	–
Canada[2]	2	–	Netherlands	1	2007
Chile	0	–	New Zealand	1	2007
Czech Republic	3	–	Norway	1	1987
Denmark	1	1997	Poland[4]	3	–
Estonia	2	–	Portugal	1	2007
Finland	1	1983	Slovak Republic	2	–
France	0	–	Slovenia	2	–
Germany	1	2000	Spain	1	2007
Greece	1	2006	Sweden	1	1979
Hungary	1	2004	Switzerland	0	–
Iceland	1	2003	Turkey	0	–
Ireland	3	–	United Kingdom	0	–
Italy[3]	1	1996	United States	0	–
Japan	0	–			

Note: 0: no explicit provisions for children or unknown; 1: specific legislation; 2: specific legislation, being planned, drafted or reviewed; and 3: non-specific legislation.

1. Australia: laws vary across the jurisdictions, which may result in women and children being subject to different levels of protection depending upon where they live.
2. Canada: 2004 Criminal Code allows parents, teachers and caregivers the use of corporal punishment to correct the behaviour of children aged 2-12 years, if the force does not exceed what is reasonable under the circumstances, but not using objects and not involving slaps or blows to the head.
3. Italy: in1996, the Supreme Court in Rome declared all corporal punishment to be unlawful; this is not yet confirmed in legislation.
4. Poland: corporal punishment prohibited at home in 1997 constitution, but not confirmed in law.

Source: OECD (2010), *OECD Family Database*, SF3.4.

StatLink http://dx.doi.org/10.1787/888932394471

Hetherington *et al.*, 1997). At one side of the continuum there are countries such as Israel that apply mandatory reporting to every citizen (Ben-Arieh and Haj-Yhaia, 2006). Other countries (*e.g.* the United States and most of the Australian States) introduced mandatory reporting only in relation to certain professions and some countries (*e.g.* the United Kingdom) have adopted policies based on a voluntary professional duty reinforced by strong inter-agency protocols across health, education and social services (O'Donnell *et al.*, 2008).

In some systems, child maltreatment is defined as a problem that demands the protection of children from harm (child saving approach), while in others it is considered a family conflict or dysfunction stemming from social or psychological difficulties that can be treated (Gilbert, 1997). The scope of mandatory reporting (*i.e.* who is mandated to report) is also a central indicator of child protection systems. The broader the population who is mandated to report, the more criminally orientated and legalistic is the nature of the child protection system.

Programmatic interventions to reduce child maltreatment

Evidence is limited on which specific programmatic interventions prevent maltreatment at the micro level (these programmes can be publicly provided and funded by the government child support system, or run by NGOs and church and charity groups). Most programmes intended to prevent maltreatment have not been evaluated. Even when evaluations have been carried out, they have rarely used rigorous methods or direct measures of maltreatment (MacMillan *et al.*, 2009; Waldfogel, 2009).

Box 7.3. **International comparison of child protection systems and relevant indicators**

The international material comparing child protection is hampered by the lack of country-specific data; the lack of systematic depth in data collection of child maltreatment outcomes; and the way that information on systems to minimise maltreatment is collected.

There are inter-country comparisons of child protection systems, few in number, somewhat dated and with relatively limited country coverage. One major effort, now somewhat outdated, is Daro *et al.* (1992). This study included 16 developed countries, as well as 14 developing regions. Data was obtained by questionnaires to professionals and community leaders involved in child maltreatment prevention and treatment. Data collected focused on four main areas: the scope of child maltreatment in the country; the intervention system; public awareness efforts; and methods of policy. The study found a major consensus regarding the minimal definition of maltreatment. However, the standards determining the point of government intervention were far from universal. Further, the study identified two paths in regard to reporting of child maltreatment. Some countries followed the mandatory reporting model, but others, especially in Western Europe, adopted a voluntary reporting system. In all of the developed countries and in most of the developing countries, the most common response to child maltreatment reports is the provision of case management services and, if necessary, foster care. In all, countries the representatives admitted that treatment and prevention services were underserved and unevenly distributed, leaving many areas and many communities unserved.

Bromfield and Higgins (2005) compared the child protection systems in the eight states and territories of Australia. The study included a detailed comparison of policy documents, procedure manuals and telephone interviews with relevant child protection personnel. While the study did find variation between the states, it also demonstrated a general common direction for child protection systems in Australia with a focus on mandatory reporting but a "softer" one than in the United States, for example.

A series of qualitative studies since the early 1990s by Katz and Hetherington (2006) tried to create a typology regarding cross-national child protection systems. These studies were all based on a "core" research method that involved developing a vignette, which provides the basic details of a case to which various audiences were asked to respond. For example, in one of the studies, social workers from eight systems of child welfare were asked to respond to a case vignette trying to identify the elements of structuring and functioning of child protection services in each country (Hetherington, 1998).

Indicators

One of the basic technical and data issues in any comparative analysis of child protection services is the number of cases the systems deals with. *Notification rate* is one of the main measures used to evaluate CPS work and compare between them. While it is an important indicator of the CPS work, it is not known why the notification rate varies significantly between countries and within countries (Cameron and Freymond, 2006).

Another frequently used measure is the rate of *children in state care* (*i.e.* children in foster care or boarding houses). In 2004/05, it was similar at 5.3 children per 1 000 in Australia and 5.0 children per 1 000 in England (O'Donnell *et. al.*, 2008) even though the same study found far more significant differences in the notification rate. Other measures include: *rate of substantiated cases out of notifications*; *rate of children in "out of homecare"; number of placement for each child in "out of homecare"* (Freymond and Cameron, 2006). Yet, when any of these measures are used to compare across cities, regions or countries, different patterns are discovered and no coherent picture is obtained.

There is no comparable national evidence across the OECD on the amount of funding annually set aside for child protection purposes, the number of staff in the child protection sector, their training, the ratio of investigating officers to other staff, etc.

One programme that has been rigorously evaluated and shown to substantially reduce maltreatment is the much studied early years home-visiting Nurse Family Partnership (NFP) (see Olds *et al.*, 1986 and 1997 for more detail). The NFP provides intensive in-home support and services, delivered by trained nurses, to first-time young mothers, with the goal of reducing the risk of maltreatment. A random assignment evaluation in the initial site (Elmira, New York) found that the programme reduced subsequent maltreatment by 50%, as measured by objective indicators such as emergency room visits and referrals to child protective services. Additionally, parents who received the home visits were less likely than parents in the control group to report punishing or physically restraining their children. The programme is now being rolled out nationally in the United States,[12] as well as in several locations in other countries including Australia, Canada, the Netherlands, and the United Kingdom.

Currie and Tekin (2006) have compared the cost of the NFP with the benefits that would be obtained in terms of reduced adult crime or improved adult earnings. Based on data from the Elmira, New York programme, these estimates assume that NFP costs about USD 4 000 per year per child and reduces the risk of maltreatment by 50%. Currie and Tekin (2006) also found that maltreatment doubled the risk of adult crime. Because the costs of crime are so high, these costs alone would justify investing in a preventive programme such as the NFP. Currie and Widom (2010) found that those who had been maltreated in childhood earn, on average, about USD 5 000 per year less in mid-life than comparable individuals who had not been maltreated. These losses add up considerably over the course of a working life. Again, these costs alone would justify investing in a programme such as NFP. And, these costs are only a subset of the total costs of maltreatment, making the case for intervention even stronger.

The real challenge is to identify programmes that pass a rigorous benefit-cost test. Looking across different types of preventive programmes, one recent review identified only two proven programmes – the NFP home visiting programme, which has the strongest evidence base, and the Early Start home-visiting programme, which reduced some indicators of maltreatment (but not others) in an experimental trial (MacMillan *et al.*, 2009).

Howard and Brooks-Gunn (2009) review the evidence on nine *home visiting programmes*. Although they find some positive results for selected programmes, the evidence is mixed, and the NFP programme is the only one where the evidence, from multiple sites, is consistently positive. They therefore conclude that "overall, researchers have found little evidence that home-visiting programs directly prevent child abuse and neglect". Understanding why the NFP programme has been more consistently effective in preventing maltreatment than other home visiting programmes remains an important challenge. But it is likely that the intensive and long-term nature of the programme, its strict adherence to a defined programme model, and its reliance on nurses for service delivery, all play an important role in its success.[13]

In the United States and many other countries, *parent education programmes* are the most commonly provided type of prevention service. Yet a review of the evidence on parent education programmes prepared for the US Department of Health and Human Services concluded "taken as a whole, little is known about the impact of these programs on child maltreatment in the long term" (Thomas *et al.*, 2003). Moreover, only one programme (the University of Maryland's Family Connections programme for at-risk families with children age 5-11) met the standards to be judged as a demonstrated effective programme, having

been evaluated using a random assignment design and having demonstrated significant effects on protective and risk factors for child abuse and neglect. An additional two programmes were reported as effective but lacked a random assignment evaluation. The programmes reviewed, in addition to Nurse-Family Partnership for which they found the strongest evidence, included five other programmes in the United States (Hawaii Healthy Start, Healthy Families America, the Comprehensive Child Development Programme, Early Head Start, and the Infant Health and Development Programme); the Early Start Programme in New Zealand; a demonstration programme in Queensland Australia; and a programme for depressed new mothers in the Netherlands.

The originally Australian Triple P Positive Parenting Programme has been trialled in many OECD countries including: Belgium, Canada, Germany, Ireland, New Zealand, Japan, the Netherlands, Sweden, Switzerland, the United Kingdom and the United States. A recent geographically randomised trial targeted at community level rather than at-risk groups, as the services considered above typically do, delivered lower rates of substantiated abuse cases, child out-of-home placements, and reductions in hospitalisations and emergency room visits for child injuries in nine South Carolina counties where the programme was implemented over a two-year time window. In an area containing 10 000 children under age 8, the programme meant 33 fewer cases of substantiated child maltreatment (22% reduction in numbers), seven fewer out-of-home placements (16% reduction), and three fewer child with injuries requiring hospitalisation or emergency room treatment (17% reduction) (Prinz *et al.*, 2009).

Identifying additional effective programmes through better evaluation should be a high priority. More evidence is needed on programmes in settings other than the United States.

Conclusion

Child maltreatment is a significant and neglected family issue in terms of equity and in terms of the high social costs. It poses thorny policy questions regarding trade-offs between rights and responsibilities and privacy. There is much that is not known about how different countries address the issue, how much resources they commit to it, how they allocate these resources and design their incentives and institutions, and how successful their policies are.

A large number of studies has been conducted on the determinants of maltreatment. Results point to economic resources playing an important role in influencing risk for child abuse and (particularly) child neglect. However, conclusive causal evidence has been elusive. But the evidence that maltreatment imposes large long-term costs both to the children involved and to society is clear.

This chapter has highlighted several important gaps and weaknesses in current knowledge:

- For developing a stronger information base on what does and does not work utilising international variation, it would be helpful to establish a consistent set of research definitions of abuse and neglect across countries. Equally, a cross-national database containing information on the full range of maltreatment-related policies of member countries with regard to definitions and indicators of abuse and neglect, as well as (mandatory) reporting, investigation, and indicators on child protection systems (including case findings, types and intensity of interventions, and out-of-home placement) would be of value. This is essential for the development and exchange of information about effective practices.

- Further research should be undertaken to identify whether associations between low income and child maltreatment are causal in nature, and how this relationship may vary across family and income groups and (groups of) countries. This is crucial to designing effective public policies for preventing child maltreatment.

Thus far, most empirical research regarding the economic causes and consequences of maltreatment has been conducted in Anglophone countries, especially the United States. The extension of these lines of inquiry to a wider range of countries would seem a high priority.

Given the limited evidence on which interventions are most effective in preventing (particular types of) child maltreatment, it is crucial that future prevention programmes be rigorously evaluated. These evaluations should include detailed cost-benefit analyses.

Notes

1. Some countries do not record this type of data centrally. For example, in Germany child maltreatment reports received by local child and youth authorities at a local level are not collated at a State (*Länder*) or Federal level (Kindler, 2007).
2. Euser *et al.* (2010) uses 2003 data for Canada, while Gilbert *et al.* (2009) draw on 1998 data. There was a significant increase in maltreatment between the two dates.
3. In this chapter, the statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.
4. The complex process by which a death is classified as "intentional" varies greatly between countries and over time (UNICEF, 2003).
5. A major issue with using intentional child death data as an iceberg indicator of overall abuse across countries is the very low numbers of children involved in some countries (extreme cases being Luxembourg or Iceland, where the total population is more or less one-third of a million people). In these countries, child mortality rates can be unstable on a year-by-year basis, as a few extra or fewer deaths will make a big difference to the observed rate.
6. The United Kingdom result is consistent with the recent conclusions of Pritchard and Williams (2010).
7. This section draws heavily from Waldfogel and Berger (2011, forthcoming).
8. The evidence base ranges from small-scale studies of select populations to larger-scale studies of more representative populations; some studies use prospective methods and others rely on retrospective data (see Gilbert *et al.*, 2009 for a useful discussion of the strengths and limitations of existing research designs in this area). For the most part, studies are observational. Although all of the studies control for other differences between maltreated and non-maltreated children, they can only control for a limited set of characteristics that are captured in their data.
9. There are also two studies focusing specifically on the long-run effects of sexual abuse on employment and earnings. Hyman (2000) finds that sexual abuse is linked to lower earnings in a United States sample, while Mullen *et al.* (1994) find it is linked to a higher likelihood of engaging in unskilled work in a New Zealand sample at age 41. The latter study found that, consistent with the results at age 29, those who had been maltreated as children were less likely to be employed and, if employed, less likely to be in skilled or professional occupations. In addition, those who had been maltreated had lower earnings and fewer assets (they were less likely to own stock, a car, or a home). These results were not confined to those who had been physically or sexually abused but were also present when the sample was restricted to those who had been neglected.
10. The effects of different types of maltreatment or the developmental timing of effects within childhood are not considered here. Such factors are important for a more nuanced understanding of linkages between maltreatment and later outcomes (Cicchetti and Carlson, 1989).
11. In many OECD countries including the United Kingdom, social ministries have the primary policy advice function. However, this is not the case in some other countries, as, for example, Germany.

12. A random assignment trial in Memphis, Tennessee, found that children in the treatment group had fewer injuries and accidents requiring medical treatment, and lower mortality rates, than the controls. A third random assignment trial, in Denver, Colorado, did not collect data on these outcomes but did find beneficial effects of the programme on intermediate outcomes such as the sensitivity of mothers' parenting (Howard and Brooks-Gunn, 2009).

13. Reynolds *et al.* (2009) review 14 programmes for children under age 5. They estimate that the average effect of programme participation was to reduce maltreatment by 31%. However, only five of the 14 programmes showed significant reductions and 3 of 5 these showed strong evidence. Only Child-Parent Centres and Nurse-Family partnerships had long-term preventive effects. The vast majority of the interventions reviewed were implemented in the United States.

References

AIHW (2010), *Child Protection Australia 2008-09, Child Welfare Series,* No. 47, Australian Institute of Health and Welfare, January, *www.aihw.gov.au/publications/index.cfm/title/10859*.

Australian Productivity Commission (2008), "Report on Government Services", *www.pc.gov.au/__data/assets/pdf_file/0006/93966/61-chapter15.pdf*.

Ben-Arieh, A. and M. Haj-Yhaia (2006), "The 'Geography' of Child Maltreatment in Israel: Findings from a National Data Set of Cases Reported to the Social Services", *Child Abuse & Neglect: The International Journal*, Vol. 30, No. 9, pp. 991-1003.

Berger, L.M. (2004), "Income, Family Structure, and Child Maltreatment Risk", *Children and Youth Services Review,* Vol. 26, No. 8, pp. 725-748.

Berger, L.M. (2005), "Income, Family Characteristics, and Physical Violence Toward Children", *Child Abuse and Neglect*, Vol. 29, No. 2, pp. 107-133.

Berger, L.M. (2007), "Socioeconomic Factors and Substandard Parenting", *Social Service Review,* Vol. 81, No. 3, pp. 485-522.

Berger, L.M., C. Paxson and J. Waldfogel (2009), "Mothers, Men, and Child Protective Services Involvement", *Child Maltreatment*, Vol. 14, No. 3, pp. 263-276.

Boden, J.M., L. Horwood and D. Fergusson (2007), "Exposure to Childhood Sexual and Physical Abuse and Subsequent Educational Achievement Outcomes", *Child Abuse and Neglect,* Vol. 31, pp. 1101-1114.

Bromfield, L.M and D.J. Higgins (2005), "National Comparison of Child Protection Systems", *Child Abuse Prevention Issues*, No. 22, Autumn, pp. 1-31.

Bromfield, L.M and B. Horsfall (2010), "Child Abuse and Neglect Statistics", *National Child Protection Clearinghouse Resource Sheet,* Australian Institute of Family Studies, June, *www.aifs.gov.au/nch/pubs/sheets/rs1/rs1.pdf*.

Bromfield, L.M., P. Holzer and A. Lamont (2010), "The Economic Costs of Child Abuse and Neglect", *National Child Protection Clearinghouse Resource Sheet*, Australian Institute of Family Studies, June, *www.aifs.gov.au/nch/pubs/sheets/rs2/rs2.html*.

Cameron, G. and N. Freymond (2006), "Understanding International Comparisons of Child Protection, Family Service and Community Caring Systems of Child and Family Welfare", in N. Freymond and G. Cameron (eds.), *Towards Positive Systems of Child and Family Welfare: International Comparisons of Child Protection, Family Service, and Community Caring Systems,* University of Toronto Press, Toronto, pp. 3-25.

Cancian, M., K.S. Slack and M.Y. Yang (2010), "The Effect of Family Income on Risk of Child Maltreatment", Manuscript, Institute for Research on Poverty, University of Wisconsin, Madison.

Conger, R.D., X. Ge, G.H. Elder Jr., F.O. Lorenz and R.L. Simmons (1994), "Economic Stress, Coercive Family Processes, and Developmental Problems of Adolescents", *Child Development*, Vol. 65, No. 2, pp. 541-561.

Conger, R.D., L.E. Wallace, Y. Sun, R.L. Simons, V.C. McLoyd and G.H. Broday (2002), "Economic Pressure in African American Families: A Replication and Extension of the Family Stress Model", *Developmental Psychology*, Vol. 38, No. 2, pp. 179-193.

Crittenden, P.M. (1999), "Child Neglect: Causes and Contributors", in H. Dubowitz (ed.), *Neglected Children: Research, Practice, and Policy*, Sage Publications, Thousand Oaks, pp. 47-68.

Currie, J. and E. Tekin (2006), "Does Child Abuse Cause Crime?", *NBER Working Paper,* No. 12171, *www.nber.org/papers/w12171 [accessed July 15, 2010*.

Currie, J. and C.S. Widom (2010), "Long-term Consequences of Child Abuse and Neglect on Adult Economic Well-Being", *Child Maltreatment,* Vol. 15, No. 2, pp. 111-120.

Daro, S., B. Downs, K. Keeton, K. McCurdy, S. Bread and A. Keaton (1992), *World Perspective on Child Abuse: An International Resource Book,* National Committee for Prevention of Child Abuse, Chicago, Illinois.

Duncan, G. and J. Brooks-Gunn (eds.) (1997), *Consequences of Growing Up Poor,* Russell Sage, New York.

Durrant, J. (1999), "Evaluating the Success of Sweden's Corporal Punishment Ban", *Child Abuse and Neglect*, Vol. 23, No. 5, pp. 435-448.

Euser, E., P. Prinzie and M. Bakermans-Kranenburg (2010), "Prevalence of Child Maltreatment in the Netherlands", *Child Maltreatment*, Vol. 15, No. 1, pp. 5-17.

Fein, D.J., and S.L. Wang (2003), "The Impacts of Welfare Reform on Child Maltreatment in Delaware", *Children and Youth Services Review,* Vol. 25, No. 1-2, pp. 83-111.

Felitti, V., R. Anda, D. Nordenberg, D. Williamson, A. Spitz, V. Edwards, M. Koss and J. Marks (1998). "Relationship of Childhood Abuse and Household Dysfunction to Many of the Leading Causes of Death in Adults", *American Journal of Preventive Medicine,* Vol. 14, pp. 245-258.

Freymond, N. and G. Cameron (2006), "Learning from International Comparisons of Child Protection, Family Service, and Community Caring Systems of Child and Family Welfare"; in N. Freymond and G. Cameron (eds.), *Towards Positive Systems of Child and Family Welfare: International Comparisons of Child Protection, Family Service, and Community Caring Systems,* University of Toronto Press, Toronton, pp. 289-317.

Fundudis, T., C. Kaplan, C. and H. Dickinson (2003), "A Comparison Study of Characteristics of Parents of Abused and Non-Abused Children", *Educational and Child Psychology*, Vol. 20, pp. 90-108.

Gilbert, N. (1997), *Combating Child Abuse: International Perspectives and Trends,* Oxford University Press, New York.

Gilbert, R., C.S. Widom, K. Brown, D. Fergusson, E. Webb and S. Janson (2009), "Burden and Consequences of Child Maltreatment in High-Income Countries", *The Lancet*, Vol. 373, pp. 68-81.

Hahm, H.C. and N.B Guterman (2001), "The Emerging Problem of Physical Child Abuse in South Korea", *Child Maltreatment*, Vol. 6, No. 2, pp. 169-179.

Hetherington, R. (1998), "Issues in European Child Protection Research", *European Journal of Social Work*, Vol. 1, No. 1, pp. 71-82.

Hetherington, R., A. Cooper, P. Smith and G. Wilford (1997), *Protecting Children: Messages from Europe,* Russell House Publishing, Lyme Regis.

Hildyard, K.L. and D.A. Wolfe (2002), "Child Neglect: Developmental Issues and Outcomes", *Child Abuse and Neglect*, Vol. 26, pp. 679-695.

Horsfall, B. L.M. Bromfield and M. McDonald (2010), "Are Social Marketing Campaigns Effective in Preventing Child Abuse and Neglect", *National Child Protection Clearinghouse Issues,* No. 32, Australian Institute of Family Studies, *www.aifs.gov.au/nch/pubs/issues/issues32/index.html*.

Howard, K. and J. Brooks-Gunn (2009), "The Role of Home Visiting Programs in Preventing Child Abuse and Neglect", *Future of Children,* Vol. 19, No. 2, pp. 119-146.

Hyman, B. (2000), "The Economic Consequences of Child Sexual Abuse for Adult Lesbian Women", *Journal of Marriage and the Family*, Vol. 62, pp. 199-211.

Johnson, J.G, P. Cohen, S. Kasen and J.S. Brook (2002), "Childhood Adversities Associated with Risk for Eating Disorders or Weight Problems during Adolescence or Early Adulthood", *American Journal of Psychiatry,* Vol. 159, pp. 394-400.

Jonson-Reid, M., B. Drake, J. Kim, S. Porterfield and I. Han (2004), "A Prospective Analysis of the Relationship between Reported Child Maltreatment and Special Education Eligibility Among Poor Children", *Child Maltreatment,* Vol. 9, pp. 382-394.

Katz, I. and R. Hetherington (2006), "Co-operating and Communicating: A European Perspective on Integrating Services for Children", *Child Abuse Review,* Vol. 15, pp. 373-458.

Kindler, H. (2007), "Developing Evidence-Based Child Protection Practice: A View From Germany", *Research on Social Work Practice*, OnlineFirst, published on 6 November 2007 as *doi:10.1177/1049731507308997*.

Krug, *E.G.,* L.L. Dahlberg, J.A. Mercy, A.B. Zwi and R. Lozano (eds.) (2002), *World Report on Violence and Health,* World Health Organization, Geneva.

Lamont, A. and L. Bromfield (2010), "History of Child Protection Services", *National Child Protection Clearinghouse Resource Sheet*, Australian Institute of Family Studies, October, *www.aifs.gov.au/nch/pubs/sheets/rs22/index.html*.

Lansford, J.E., L. Berlin, J. Bates and G.S. Pettit (2007), "Early Physical Abuse and Later Violent Delinquency: A Prospective Longitudinal Study", *Child Maltreatment,* Vol. 12, pp. 233-245.

Lansford, J.E., K.A. Dodge, G.S. Pettit, J.E. Bates, J. Crozier and J. Kaplow (2002), "A 12-Year Prospective Study of the Long-Term Effects of Early Child Physical Maltreatment on Psychological, Behavioral, and Academic Problems in Adolescence", *Archives of Pediatric and Adolescent Medicine,* Vol. 156, pp. 824-830.

Lee, B.J. and R.M. Goerge (1999), "Poverty, Early Childbearing, and Child Maltreatment: A Multinomial Analysis", *Children and Youth Services Review*, Vol. 21, pp. 755-780.

Leiter, J. (1997), "Child Maltreatment and School Performance Declines: An Event-History Analysis", *American Educational Research Journal,* Vol. 34, pp. 563-589.

Lissau, I. and T.I. Sorensen (1994), "Parental Neglect during Childhood and Increased Risk of Obesity in Young Adulthood", *The Lancet,* Vol. 343, pp. 324-327.

MacMillan, H., C.N. Wathen, J. Barlow, D.M. Fergusson, J.M. Leventhal and H.N. Taussig (2009), "Interventions to Prevent Child Maltreatment and Associated Impairment", *The Lancet*, Vol. 373, No. 9659, pp. 250-266.

Martin, J. and R. Pritchard (2010), "Learning from Tragedy: Homicide within Families in New Zealand 2002-2006", *New Zealand Ministry of Social Development Working Paper*, Wellington, April.

McLeod, J. and M. Shanahan (1993), "Poverty, Parenting, and Children's Mental Health", *American Sociological Review*, Vol. 58, pp. 351-366.

McLoyd, V. (1998), "Socioeconomic Disadvantage and Child Development", *American Psychologist*, Vol. 53, pp. 185-204.

McLoyd, V.C. and L. Wilson (1991), "The Strain of Living Poor: Parenting, Social Support, and Child Mental Health", in A.C. Huston (ed.), *Children in Poverty: Child Development and Public Policy,* Cambridge University Press, Cambridge, pp. 105-135.

Melton, G.B. (2005), "Mandated Reporting: A Policy without Reason", *Child Abuse & Neglect,* Vol. 29, pp. 9-18.

Mullen, P. and D. Fergusson (1999), *Childhood Sexual Abuse: An Evidence Based Perspective*, Sage publications, California.

Mullen, P.E., J.L. Martin, J.C. Anderson, S.E. Romans and G.P. Harbison (1994), "The Effect of Child Sexual Abuse on Social, Interpersonal and Sexual Function in Adult Life", *British Journal of Psychiatry,* Vol. 165, pp. 35-47.

Noll, J.G., M.H. Zeller, P.K. Trickett and F.W. Putnam (2007), "Obesity Risk for Female Victims of Childhood Sexual Abuse: A Prospective Study", *Pediatrics,* Vol. 120, pp. 361-367.

O'Donnell, M., D. Scott and F. Stanley (2008), "Child Abuse and Neglect: Is It Time for a Public Health Approach?", *Australian and New Zealand Journal Public Health,* Vol. 32, No. 4, pp. 325-330.

OECD (2008), *Growing Unequal?*, OECD Publishing, Paris, *www.oecd.org/els/social/ineqaulity*.

OECD (2009), *Doing Better for Children,* OECD Publishing, Paris, *www.oecd.org/els/social/childwellbeing*.

OECD (2010), *OECD Family Database*, OECD Publishing, Paris, *www.oecd.org/els/social/family/database*.

Olds, D., C. Henderson, R. Chamberlin and R. Tatelbaum (1986), "Preventing Child Abuse and Neglect: A Randomized Trial of Nurse Home Visitation", *Pediatrics*, Vol. 78, pp. 65-78.

Olds, D., J. Eckenrode, C. Henderson, H. Kitzman, J. Powers, R. Cole, K. Sidora, P. Morris, L. Pettitt and D. Luckey (1997), "Long-term Effects of Home Visitation on Maternal Life Course and Child Abuse and Neglect: Fifteen-Year Follow-Up of a Randomized Trial", *Journal of the American Medical Association*, Vol. 278, pp. 637-643.

Pence, D.N. and C.A. Wilson (1994), "Reporting and Investigating Child Sexual Abuse", *The Future of Children*, Vol. 4, No. 2, pp. 70-83.

Pereda, N., G. Guilerab, M. Fornsa and J. Gómez-Benitob (2009), "The International Epidemiology of Child Sexual Abuse: A Continuation of Finkelhor (1994)", *Child Abuse and Neglect,* Vol. 33, No. 6, June, pp. 331-342.

Perez, G.M. and C.S. Widom (1994), "Childhood Victimization and Long-Term Intellectual and Academic Outcomes", *Child Abuse and Neglect,* Vol. 18, pp. 617-633.

Prinz, R., M. Sanders, C. Shapiro, D. Whitaker and J. Lutzker (2009), "Population-based Prevention of Child Maltreatment: The US Triple P System Population Trial", *Preventive Science*, Vol. 10, pp. 1-12.

Pritchard, C. and R. Williams (2010), "Comparing Possible 'Child-Abuse-Related-Deaths' in England and Wales with the Major Developed Countries 1974-2006: Signs of Progress?", *British Journal of Social Work*, Vol. 40, pp. 1700-1018.

Reynolds, A.J., L.C. Mathieson and J.W. Topitzes (2009), "Do Early Childhood Interventions Prevent Child Maltreatment?: A Review of Research", *Child Maltreatment,* Vol. 14, May, pp. 182-206.

Schene, P.A. (1998), "Past, Present, and Future Roles of Child Protective Services", *The Future of Children*, Vol. 8, No. 1, pp. 23-38.

Schnitzer, P., T. Covington, S.J. Wirtz, W Verhoek-Oftedahl and V. Palusci (2008), "Public Health Surveillance of Fatal Child Maltreatment: Analysis of Three State Programs", *American Journal of Public Health*, Vol. 98, No. 2, pp. 296-303.

Shonkoff, J. and D. Phillips (2000), *From Neurons to Neighborhoods: The Science of Early Childhood Development*, National Academy Press, Washington, DC.

Shook, K. and M. Testa (1997), *Cost-Savings Evaluation of the Normal Program: Final Report to the Department of Children and Family Services,* Illinois Department of Children and Family Services, Chicago.

Springer, K.W., J. Sheridan, D. Kuo and M. Carnes (2007), "Long-term Physical and Mental Health Consequences of Childhood Physical Abuse: Results from a Large Population-Based Sample of Men and Women", *Child Abuse and Neglect*, Vol. 31, pp. 517-530.

Statistics Canada (2005), *Comparability of ICD-10 and ICD-9 for Mortality Statistics in Canada*, Catalogue No. 84-548-XIE, November, *www.statcan.gc.ca/pub/84-548-x/84-548-x2005001-eng.pdf*.

Stith, S.M., T. Liu, L.C. Davies, E.L. Boykin, M.C. Alder, J.M. Harris, A. Som, M. McPherson and J.E.M.E.G. Dees (2009), "Risk Factors in Child Maltreatment: A Meta-Analytic Review of the Literature", *Aggression and Violent Behavior*, Vol. 14, pp. 13-29.

Taylor, P., P. Moore, L. Pezzullo, J. Tucci, C. Goddard and L. De Bortoli (2008), *The Cost of Child Abuse in Australia*, Australian Childhood Foundation and Child Abuse Prevention Research Australia, Melbourne.

Thomas, C., E. Hypponen and C. Power (2008), "Obesity and Type 2 Diabetes Risk in Mid-Adult Life: The Role of Childhood Adversity", *Pediatrics,* Vol. 121, pp. 1240-1249.

Thomas, D., C. Leicht, C. Hughes, A. Madigan and K. Dowell (2003), *Emerging Practices in the Prevention of Child Abuse and Neglect,* Report prepared for the US Department of Health and Human Services, Children's Bureau Office on Child Abuse and Neglect, *www.childwelfare.gov/preventing/programs/whatworks/report/Accessed 28 July 2008*.

Thornberry, T.P., T.O. Ireland and C.A. Smith (2001), "The Importance of Timing: The Varying Impact of Childhood and Adolescent Maltreatment on Multiple Problem Outcomes", *Developmental Psychopathology,* Vol. 13, pp. 957-979.

Tommyr, L., T. Thornton, J. Draca and C Wekerle (2010), "A Review of Child Maltreatment and Adolescent Substance Abuse", *Current Psychiatry Reviews*, Vol. 6, No. 3, pp. 223-234.

Trocmé, N. and D. Lindsey (1996), "What Can Child Homicide Rates Tells Us about the Effectiveness of Child Welfare services?", *Child Abuse & Neglect*, Vol. 20, No. 3, pp. 171-184.

UNICEF (2001), "A League Table of Child Deaths by Injury in Rich Nations", *Innocenti Report Card,* No.2, UNICEF.

UNICEF (2003), "A League Table of Child Maltreatment Deaths in Rich Nations", *Innocenti Report Card,* No.5, UNICEF.

UNICEF (2009),"Progress of Children. A Report Card on Child Protection", Convention on the Rights of the Child, No. 8, UNICEF.

Votruba-Drzal, E. (2003), "Income Changes and Cognitive Stimulation in Young Children's Home Learning Environments", *Journal of Marriage and Family*, Vol. 65, pp. 341-355.

Waldfogel, J. (2009), "Prevention and the Child Protection System", *Future of Children,* Vol. 19, No. 2, pp. 195-210.

Waldfogel, J. and L.M. Berger (2011), "Economic Determinants and Consequences of Child Maltreatment", *OECD Social, Employment and Migration Working Papers*, OECD Publishing, Paris, forthcoming.

Wang, C.T. and J. Holton (2007), *Total Estimated Cost of Child Abuse and Neglect in the United States,* Prevent Child Abuse America, Chicago.

Weinberg, B.A. (2001), "An Incentive Model of the Effect of Parental Income on Children", *Journal of Political Economy*, Vol. 109, pp. 266-280.

WHO (2006), *Preventing Child Maltreatment: A Guide to Taking Action and Generating Evidence,* World Health Organization, Geneva.

WHO (2010), *The WHO Mortality Database*, World Health Organisation, Geneva, *www.who.int/healthinfo/statistics/mortality/en/index.html*.

Widom, C.S. (1998), "Childhood Victimization: Early Adversity and Subsequent Psychopathology", in B.P. Dohrenwend (ed.), *Adversity, Stress, and Psychopathology,* Oxford University Press, New York, pp. 81-95.

Yasumi, K. and J. Kageyama (2009), "Filicide and Fatal Abuse in Japan, 1994-2005: Temporal Trends and Regional Distribution", *Journal of Forensic and Legal Medicine,* Vol. 16, No. 2, February, pp. 70-75.

Zolotor, A. and M. Puzia (2010), "Bans against Corporal Punishment: A Systematic Review of the Laws, changes in Attitudes and Behaviours", *Child Abuse Review*, Vol. 19, pp. 229-247.

ANNEX 7.A1

Mortality Data and the Internnational Classification of Diseases (ICD)

Classification of cause of death

Different countries used different WHO coding systems (ICD8, ICD9 and ICD10) at different times. Classification of causes of death under the ICD8 and ICD9 systems are broadly similar and comparable in most countries. However, classification of causes of death under ICD9 and ICD10 are not comparable and causes a break in series. Statistics Canada (2005) provides a country specific study of the effects of changing from ICD9 to ICD10 on mortality rates. Data on suicides is not included.

The data here are thus drawn from three different databases depending on country and year and Tables 7.A1.1 and 7.A1.2 present the categories of data that have been used.

Table 7.A1.1. **Deaths due to maltreatment, *accidental* injury**

ICD8	ICD9	ICD10
A138 (motor vehicle accidents)	B47 (transport accident)	1096 (transport accident)
A139 (other transport accidents)	B48 (accidental poisoning)	1097 (falls)
A140 (accidental poisoning)	B49 (misadventures during medical care, abnormal reactions, late complications)	W20-W49 (exposure to inanimate mechanical forces)
A141 (accidental falls)	B50 (accidental falls)	W50-W64 (exposure to animate mechanical forces)
A142 (accidents caused by fires)	B51 (accidents caused by fire and flames)	1098 (accidental drowning and submersion)
A143 (accidental drowning and submersion)	B52 (other accidents, including late effects)	W75-W84 (other accidental threats to breathing)
A144 (accidents caused by firearm missiles)	B53 (drugs, medicaments causing adverse effects in therapeutic use)	W85-W99 (exposure to electrical current, radiation and extreme ambient temperature and pressure)
A145 (accidents mainly of industrial type)		1099 (exposure to smoke, fire and flames)
A146 (all other accidents)		X10-X19 (contact with heat and hot substances)
		X20-X29 (contact with venomous animals and plants)
		X30-X39 (exposure to forces of nature)
		1100 (accidental poisoning by and exposure to noxious substances)
		X50-X57 (overexertion, travel and privation)
		X58-X59 (accidental exposure to other and unspecified factors)

StatLink http://dx.doi.org/10.1787/888932394490

Table 7.A1.2. **Deaths due to maltreatment, *intentional* injury**

ICD8	ICD9	ICD10
A148 (homicide and legal interventions)	B55 (homicide)	X85-Y09 (assault including homicide)
A149 (undetermined intent – see discussion under ICD10)	B560 (undetermined intent – see discussion under ICD10)	Y10-Y34 (undetermined intent – undetermined causes of death are treated as maltreatment for statistical purposes to better align WHO figures with national surveys (UNICEF, 2003).
A150 (operations of war)	B561 (legal interventions and operations of war)	Y35-Y36 (legal interventions and operations of war)
	B569 (other assault)	Y87, Y89 (other assault)

StatLink http://dx.doi.org/10.1787/888932394509

Country specific issues

All countries

Most countries either use less detailed or more detailed classification system but not both. This is especially true for ICD10. To overcome this problem calculations were done based on both more detailed and less detailed classifications and the larger number is used for this analysis.

Mexico

Population data for 2002-08 are not available from WHO Mortality database. Thus for 2002-08 population data was derived from the *2010 OECD Education Database*.

Switzerland

The disaggregation of deaths by undetermined intent, other assault, and other accidents is not available; numbers are aggregated under "other external causes" in ICD10. Deaths due to "other external causes" are included in figures for accidental deaths but excluded from figures for maltreatment deaths, as this produces figures more in line with historic figures in ICD9. Thus, deaths due to maltreatment are a slight undercount, while deaths to accident are a slight overcount.

Turkey

No data on child mortality classified under causes of death.

Figure 7.A1.1. **Intentional and accidental child mortality rates, 1970 to latest year available**

Number of deaths among children of specified age

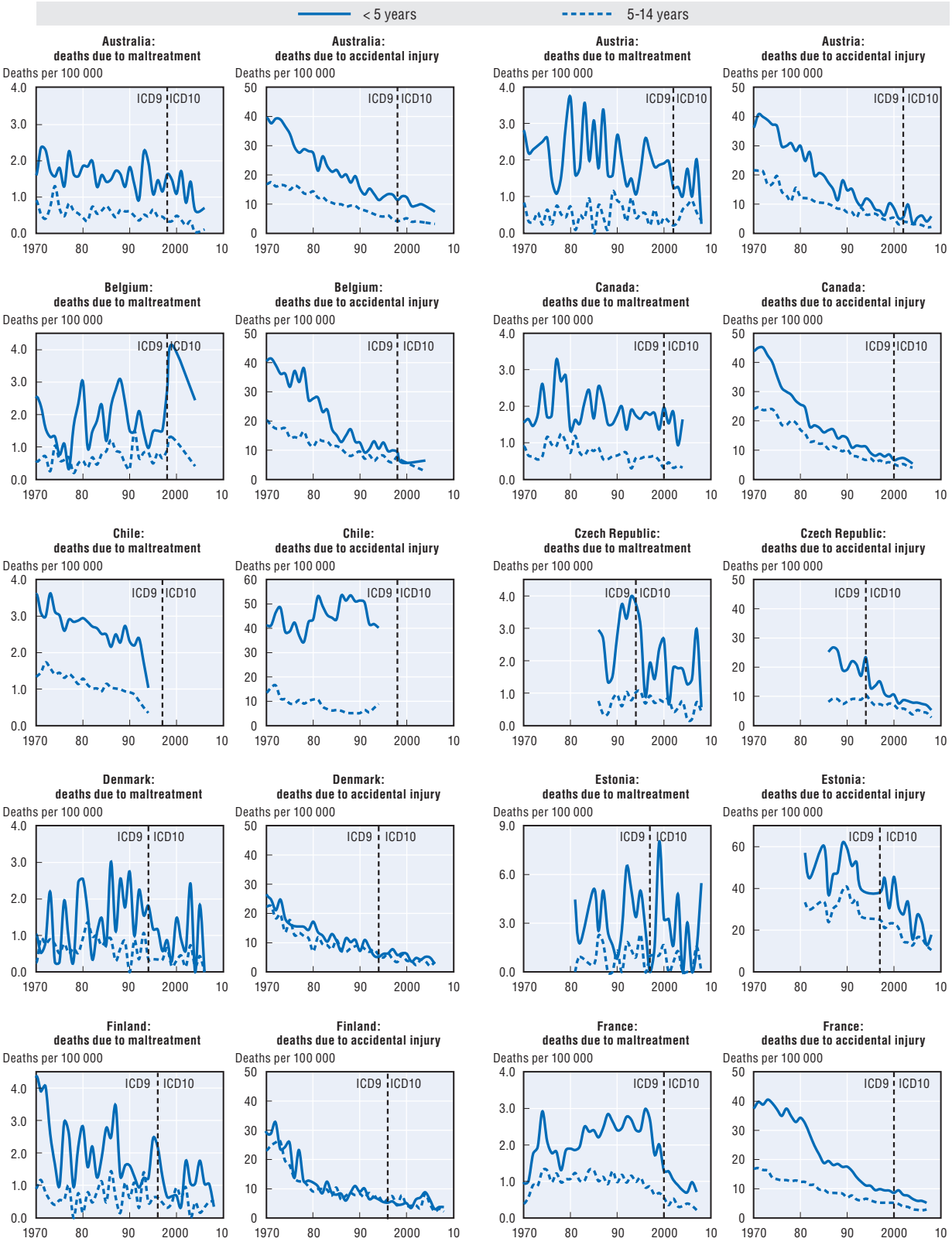


Figure 7.A1.1. **Intentional and accidental child mortality rates, 1970 to latest year available** *(cont.)*

Number of deaths among children of specified age

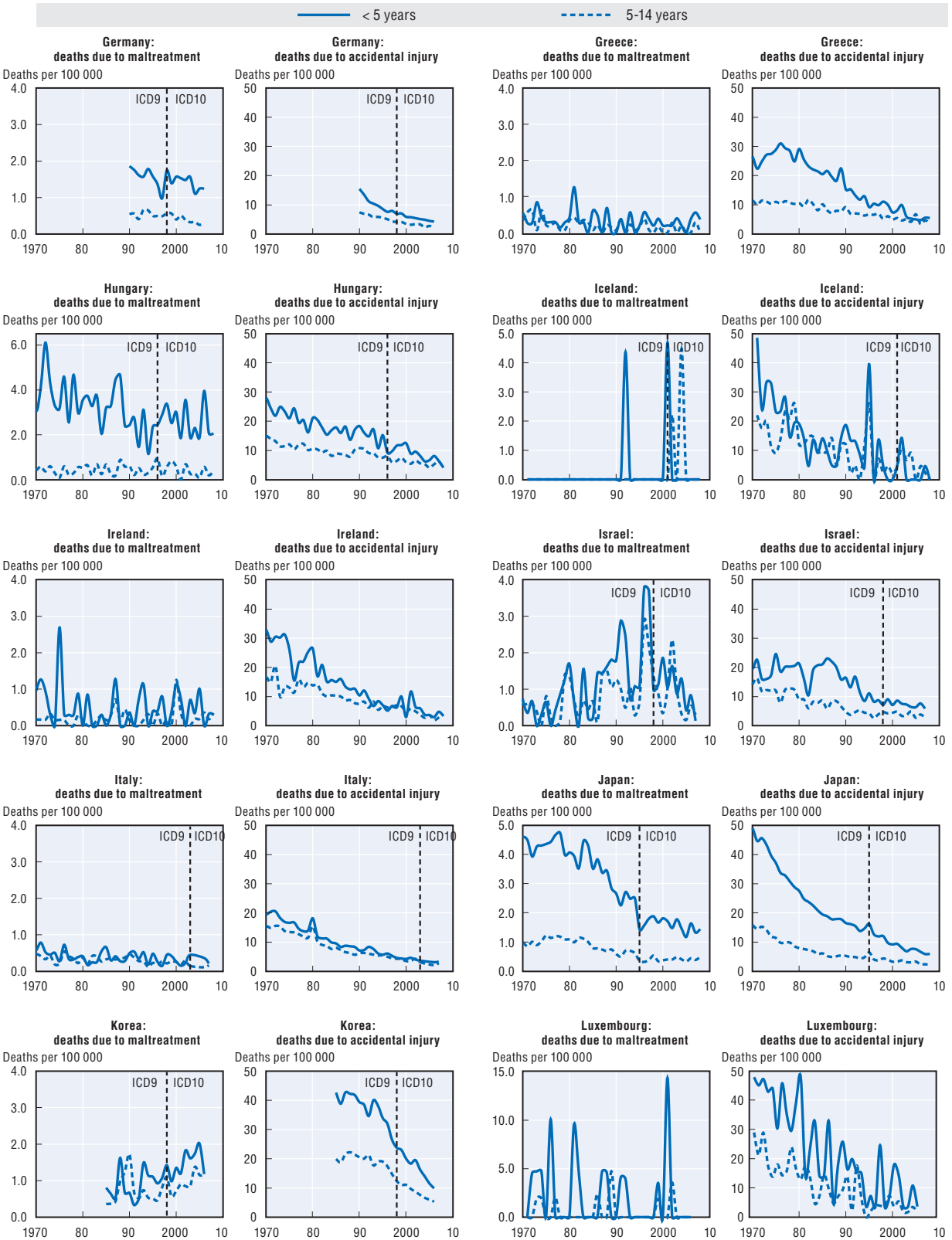


Figure 7.A1.1. **Intentional and accidental child mortality rates, 1970 to latest year available** *(cont.)*

Number of deaths among children of specified age

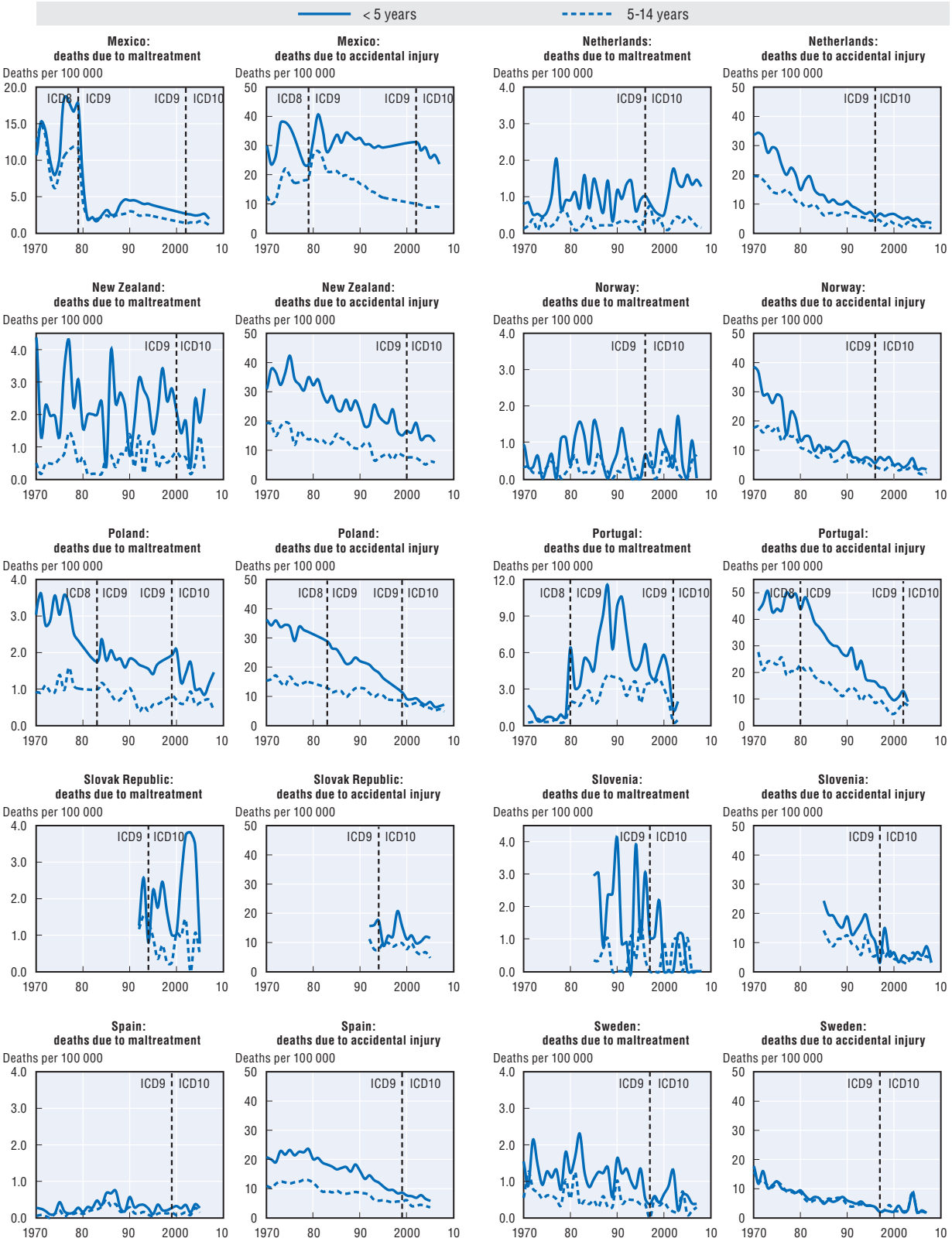
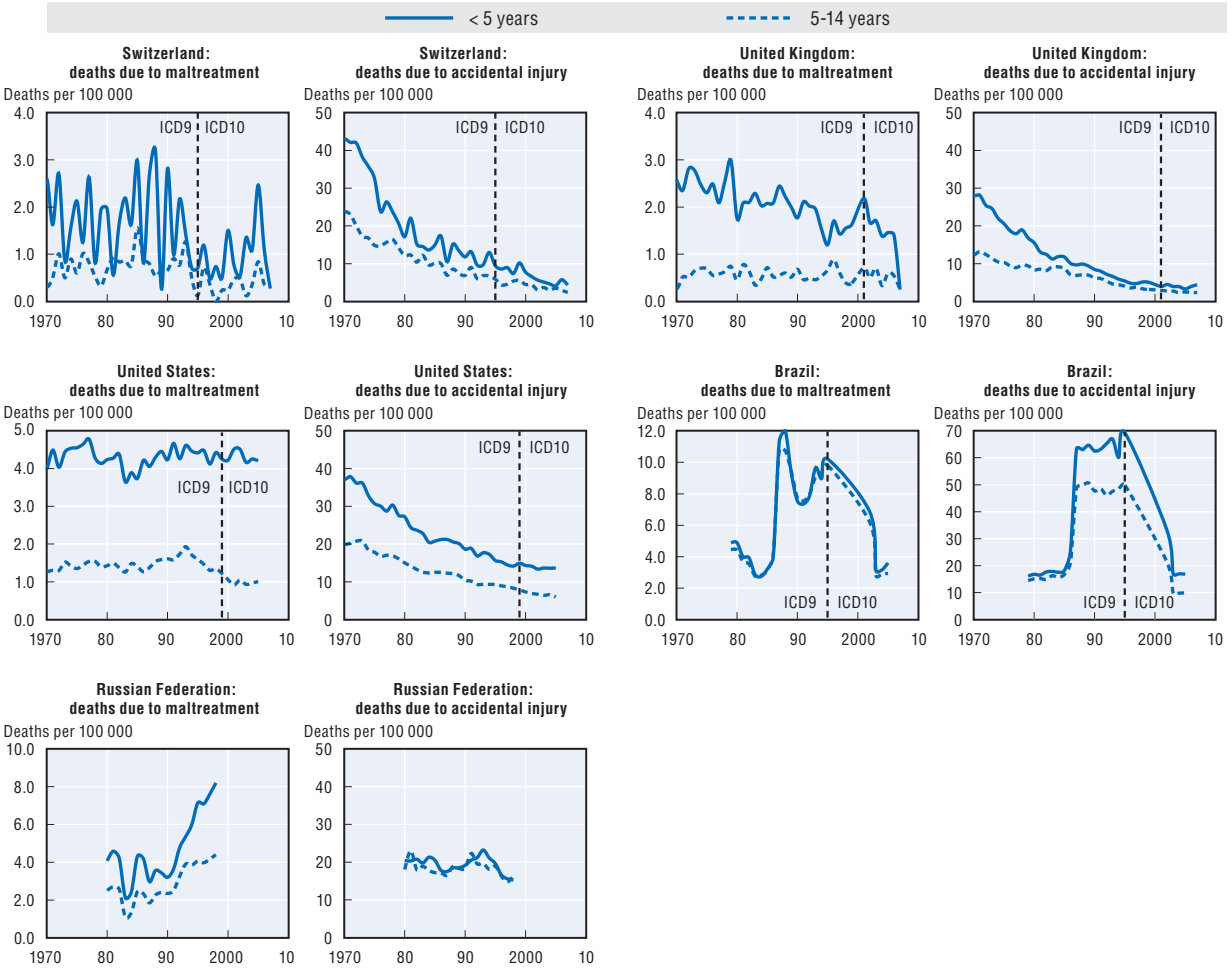


Figure 7.A1.1. **Intentional and accidental child mortality rates, 1970 to latest year available** *(cont.)*

Number of deaths among children of specified age



ICD: International Classification of Disease.

1. The classification of causes of death under ICD9 and ICD10 are not fully comparable and causes a break in series. A dotted line is used to denote this break in the series from one classification system. Although ICD coding changes may cause a break in the series, there does not appear to be an evident data discontinuity in most data when the ICD changes. There are a couple of possible exceptions, the most evident being declines in Mexico when shifting from ICD8 to ICD9 for intentional injury and rises for Portugal for the same shift.

Source: WHO (2010), *WHO Mortality Database*.

StatLink http://dx.doi.org/10.1787/888932393920

ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

The OECD is a unique forum where governments work together to address the economic, social and environmental challenges of globalisation. The OECD is also at the forefront of efforts to understand and to help governments respond to new developments and concerns, such as corporate governance, the information economy and the challenges of an ageing population. The Organisation provides a setting where governments can compare policy experiences, seek answers to common problems, identify good practice and work to co-ordinate domestic and international policies.

The OECD member countries are: Australia, Austria, Belgium, Canada, Chile, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Korea, Luxembourg, Mexico, the Netherlands, New Zealand, Norway, Poland, Portugal, the Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, the United Kingdom and the United States. The European Commission takes part in the work of the OECD.

OECD Publishing disseminates widely the results of the Organisation's statistics gathering and research on economic, social and environmental issues, as well as the conventions, guidelines and standards agreed by its members.

OECD PUBLISHING, 2, rue André-Pascal, 75775 PARIS CEDEX 16
(81 2011 05 1 P) ISBN 978-92-64-09872-5 – No. 58023 2011-02

Doing Better for Families

All OECD governments want to give parents more choice in their work and family decisions. This book looks at the different ways in which governments support families. It seeks to provide answers to questions like: Is spending on family benefits going up, and how does it vary by the age of the child? Has the crisis affected public support for families? What is the best way of helping adults to have the number of children they desire? What are the effects of parental leave programmes on female labour supply and on child well-being? Are childcare costs a barrier to parental employment and can flexible workplace options help? What is the best time for mothers to go back to work after childbirth? And what are the best policies to reduce poverty among sole parents?

Contents

Further reading

Doing Better for Children (2009)

Growing Unequal? Income Distribution and Poverty in OECD Countries (2008)

Babies and Bosses – Reconciling Work and Family Life: A Synthesis of Findings for OECD Countries (2007)

Please cite this publication as:

OECD (2011), *Doing Better for Families*, OECD Publishing.
http://dx.doi.org/10.1787/9789264098732-en

OECD*publishing*
www.oecd.org/publishing

ISBN 978-92-64-09872-5
81 2011 05 1 P