

Doing Better for Children



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Foreword

Doing Better for Children reviews the range of policies designed to improve child well-being in OECD countries, and a range of associated child well-being outcomes. Given the high degree of ongoing interest in policies for children, the timing of the publication is opportune. The publication builds on earlier OECD work on families and contains six substantive chapters describing child well-being across the OECD, presenting country age-spending profiles for children across their life cycle (the first time such a comparative exercise has been undertaken across the OECD), considering policies towards children under age 3, analysing the impact of single parenthood on child well-being, discussing the implications of inter-generational mobility for child well-being, and making broad policy recommendations to enhance child well-being.

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This book has...



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Executive Summary

This publication is about enhancing well-being for children. It considers child well-being outcomes, compares public spending and policies for children, and investigates the social environments in which children grow across the OECD. Broad policy recommendations for enhancing child well-being in the OECD are derived.

How does child well-being compare across OECD countries? Chapter 2 compares policy-focussed measures of child well-being in OECD countries across six dimensions: material well-being; housing and environment; education; health and safety; risk behaviours; and quality of school life.

- No one country does well across all six dimensions. Turkey and Mexico rank low on all dimensions where they can be compared.
- All indicators show a good deal of variation in child outcomes between OECD countries. The greatest variation is in the health and safety dimension, the least is seen in risk behaviours.
- Where indicators can be compared by sex and migrant status, boys typically have worse outcomes than girls and non-native children have worse outcomes than native children.
- Results shown by age are mixed. Children smoke and drink more and exercise less with age, but rates of bullying decline.

How do interventions which aim to enhance child well-being compare across OECD countries? Chapter 3 explores how 28 out of 30 OECD countries distribute government social spending and transfers across the child's life cycle. The composition of government spending and transfers is also examined.

- More is typically spent on older children than young children. On average across the OECD in 2003, about USD 126 000 is cumulatively spent on children up to age 18. USD 30 000 (24%) occurs during the first third of childhood (0-5 years), rising to USD 45 000 (36%) during the middle third (6-11 years) and rising again to USD 51 000 (41%) during the last third (12-17 years inclusive).
- Most of the variation in spending between countries occurs during early childhood. This variation reflects the markedly different country approaches to parental leave and early childhood education.
- Tax-benefit analysis by child age also shows large variations in tax-benefit treatment of families by income, family structure and family size by eight OECD countries.

What are the different policy approaches taken by OECD countries to enhance child well-being during the very earliest part of the life cycle? Chapter 4 explores in more detail the earliest policy interventions for children, outlining interventions with a child well-being focus that take place for mothers and children in the pre-natal, birth and post-natal

periods of a child's life. Public health and nutrition, child-care and education, and various tax and benefit policies are considered.

- Many OECD countries provide excessive amounts of universal pre-natal care, and there is an argument for a greater evidence-based focus on services for those at-risk during pre-natal care.
- There is little evidence that expensive post-natal hospital stays in many OECD countries for normal births (on average, four days or more in a third of OECD countries) benefit children. Spending these resources elsewhere may do more good.
- Over-investment may also occur in universal post-natal care. Resources could be more focussed on young children at higher risk at this point of the life cycle.
- The evidence for vaccinations and other early interventions suggests that conditional cash transfers may have an important role to play by increasing take-up of universal services by those at-risk.

Does being raised in a single-parent family cause lower child well-being? The family is a critical environment for influencing child well-being. Single-parent family structures in particular have increased in all OECD countries over the last generation, although to varying degrees. Chapter 5 assesses whether and how the rise in single parenthood is affecting child well-being. To identify the potential size of the impact of growing up in a single-parent family, a meta-analysis of a large number of studies is undertaken looking at different dimensions of child well-being in different countries. Results are compared to recent research in the United States.

- The cross-OECD meta-analysis suggests that the maximum effect of growing up in a single-parent family on children's well-being is small.
- The highest maximum negative effects are found in Nordic countries, similar in size to effects shown in previous United States research. In most other OECD countries, the single-parent effect is slightly smaller on average than in the United States.
- A review of sophisticated techniques for identifying whether observed small effects are in fact the result of cause-and-effect from single parenthood to child well-being delivers a mixed picture. The more sophisticated methodologies typically give a lower or no effect on child outcomes of being brought up by a single parent.

Are parents' outcomes and children's outcomes when they become adults related? Childhood is the time when family and government investments most influence the extent to which the future adult earnings trajectories of children mirror those of their parents – or inter-generational inequality. Chapter 6 assesses this inter-generational inequality in terms of earnings and education.

- Different OECD countries have different degrees of inter-generational inequality. Intergenerational earnings inequality is low in the Nordic countries, Australia and Canada. On the other hand, it is high in Italy, the United States and the United Kingdom where each new generation is more likely to find themselves in the same position in the earnings distribution as their parents.
- Within countries, if parents are at the top or at the bottom, the mobility of their children as adults is less than for children whose parents find themselves in the middle of the earnings distribution.

- For policy makers, there is little evidence that the level of inter-generational inequality has changed over recent years, indicating if there is a problem it does not appear to be worsening.

What are the appropriate policies to improve child well-being? The final chapter, Chapter 7, addresses this question by offering a range of policy recommendations.

- Early investment in children is vital. Investment needs to rise during in the “Dora the Explorer” years of early childhood relative to the “Facebook” years of later childhood.
- For fairness and effectiveness, this investment also needs to concentrate on improving the lot of vulnerable children. Success generated by early policies for such children should not be allowed to wither on the vine. Investment in the vulnerable early years needs to be reinforced through later parts of childhood.
- Concentrating investment early and on the vulnerable is also most likely to be effective in breaking the dependence of children’s outcomes on those of their parents – inter-generational inequality – which is a widely held concern in many countries.
- Interventions for children should be designed to reinforce positive development across the child’s life cycle and across a range of well-being outcomes. Policy should coherently support the present and future well-being of children across a range of dimensions of well-being.
- Targets for child well-being outcomes should be established. Targets create positive incentives for politicians and policy makers to meet their stated goals. Targets need to be clear, achievable through policy change and attainable within the specified time period. Well-being targets should be well aligned with the information collected for monitoring child well-being.
- Children are too often statistically invisible. Countries need to regularly collect more high-quality information on children’s well-being that is nationally and internationally comparable. Such information is urgently required to regularly and independently monitor child well-being over time at all stages of the child life cycle.
- Governments should continuously experiment with policies and programmes for children, rigorously evaluate them to see whether they enhance child well-being, and reallocate money from programmes that don’t work to those that do. This approach ensures resources allocated to children progressively enhance child well-being.

Chapter 1

Summary of Key Findings

Child well-being is of considerable public interest in many OECD countries. While each country's child policy discussion has its own distinct national aspect, there are shared concerns across the OECD. In this context, examining child well-being and policies to improve it is a timely endeavour. What do government programmes and spending achieve? What can be done to improve child well-being? This report aims to answer these questions. This chapter sets out the report's structure and summarises its key recommendations. It explains how governments should invest to enhance child well-being and outlines things they should do less of and things they should keep an eye on.

Introduction

We were all once children. Today, most of us either have our own children, plan to have them, or have regular contact with them through family and friends. It is easy to empathise with their lives and have concern for their well-being. Concern is often greatest for the least advantaged children. Empathy comes easily for those who are in a difficult situation through no choice of their own. We are also interested in children because their well-being can affect our own. If all goes well, the children of today create an environment that makes the current and future lives of today's adults easier. If all does not go well for children, the remedial costs must be faced now and into the future.

Countries need to pay better attention to the lives of their children for the sake of their economies and their societies. Child well-being is of considerable public interest in many OECD countries and has attracted much policy discussion. While each country's child policy discussion has its own distinct national flavour, there is a shared international dimension which makes a general consideration of child well-being and policies to improve it across the OECD a timely undertaking.

Children have a right to well-being as children. As with other citizens, their current quality of life is an important end in itself. But because children are at the beginning of their life cycle, policy to enhance their well-being must have a strong future focus too.

Governments undertake significant policy interventions, including spending considerable sums of money, directly and indirectly on behalf of children. But what do they achieve? What are the appropriate government policies to enhance the well-being of children? Answering these questions is the aim of this report.

Structure and summary of the report

This section presents the structure of the report and a summary of the work undertaken on which the policy recommendations are based.

The next chapter, Chapter 2, considers a variety of child well-being indicators by six outcome dimensions, chosen partly because they are relatively amenable to policy choices across OECD countries. It lays out the theory, methodology and data sources behind the measures and presents the indicators for each member country in a comparable fashion.

Chapter 3 examines age patterns in education and social spending on children. Recent theoretical and empirical work reveals the importance of age patterns in interventions for child well-being. While the differences in per capita spending on children between countries have been explored, little has been known about actual age patterns in spending on children across OECD countries. By undertaking the first analysis of spending patterns by child age and showing that more is typically spent in the last third of childhood than during the first third, this chapter fills a large gap in the policy literature on interventions for children.

Overall on average across the OECD in 2003, USD 126 000 is cumulatively spent on children up to age 18. Of this USD 126 000, USD 30 000 (24%) of child spending occurs during early childhood (0-5 years), rising to USD 45 000 (36%) during middle childhood (6-11 years), and rising again to USD 51 000 (41%) during late childhood (12-17 years). When year-by-year patterns are considered, for most countries the broad pattern is an “inverted U”. Social spending on children is comparatively low during early childhood. Spending rises to a peak in the early to mid-teens, and thereafter tails off. This pattern is particularly pronounced in the Anglophone countries. In a few countries, such as Finland, Iceland and Hungary, there is a more monotonic decline with age, with a stronger weight towards the younger years. This latter pattern is on account of greater spending on parental leave and child care. There is also low pre-natal spending on children in all countries. At the older end of the child life cycle, spending on children tails off more rapidly in some countries than others. Some “child” payments last well into a person’s twenties in Austria, Australia, Belgium, the Czech Republic, France, Germany, Greece, Hungary, Japan, Luxembourg, Portugal and the Slovak Republic.

The ways that income transfers are distributed to the family across the child’s life cycle are of considerable interest. Chapter 3 also examines tax-benefit policies across the child life cycle for eight OECD countries – Denmark, France, Germany, Hungary, Italy, Japan, the United Kingdom and the United States – and considers how responses differ according to family risk factors. Three risk dimensions are examined – family earned income (high, medium and low income), family structure (single- compared to a two-parent family) and family size (two children compared to four children). The analysis reveals substantial variation in the way that these eight countries respond to these risk dimensions across the child life cycle.

What countries do for children under age 3, where Chapter 3 reveals spending levels are relatively weak, is the topic of Chapter 4. Policies for under-3s are also under-analysed in the international context. Chapter 4 demonstrates that governments implement a wide variety of interventions for this age group. Typically these include comprehensive pre- and post-natal health and development programmes for pregnant women and infants. In some cases, there are also more intensive services in higher risk situations. There are a wide range of welfare transfers provided during this period, including pre- and post-natal maternal benefits and “baby bonuses”. One theme emerging from Chapter 4 is the need to see early life cycle interventions as a package, co-ordinated and integrated with other services.

Virtually all OECD countries in the last generation have had a rise in the numbers of children brought up in single-parent families. Concerns have arisen regarding the implications of this shift for child well-being, both in the immediate period of childhood and when children go on to become adults. These concerns are stronger in countries with high rates of single parenthood. How might being raised in a single-parent family influence child well-being? Chapter 5 considers the size and causal impact of single-parent family structure on child well-being. Overall, if there are indeed negative effects of being raised in a single-parent family, the effect is small. Such effects, surprisingly, seem somewhat higher on average in the Nordic countries than in Anglophone countries (excluding the United States). These findings cannot prove that single parenthood has no negative impact on child well-being. But they do not provide strong support for the proposition that child well-being will be definitively enhanced by policy encouraging parents who would otherwise have split up to remain together for the benefit of the children.

There is considerable current interest in the strength of the relationship between the well-being of parents and the well-being of their children when they become adults. Chapter 6 focuses on the rapidly growing literature on the strength of the relationship between parents' income and children's income (when adults), or inter-generational inequality, from a policy perspective. Inter-generational inequality originates to a considerable extent in the family and during the earlier part of childhood. This literature is stronger on describing the extent of inequality than it is on examining the processes that cause inequality, or on indicating whether inequality is too high, too low or about right, which limits policy applicability. Nevertheless, this literature has yielded a number of unexpected conclusions that are at odds with the previous received wisdom. One conclusion is that intergenerational inequality in the United States is relatively greater than in other OECD countries. Another is that the relationship between the incomes of parents and the incomes of their children does not seem to be becoming stronger over time across the OECD.

The final chapter, Chapter 7, synthesises the results of the previous chapters as well as a range of other academic and OECD work to address recommendations for public policy. A range of evidence-based recommendations to enhance child well-being are made, including investing early and in at-risk children, and reinforcing this investment through childhood. The report underlines the importance of experimenting with different interventions, of evaluating whether these work for children, and of trying something different if they do not.

How to invest to enhance child well-being

Early investment is vital to ensure that all children live better lives. Investment needs to be higher in the “Dora the Explorer” years of childhood – early childhood – than during the “Facebook” years – late childhood. During the Dora the Explorer years, this investment needs to concentrate on improving the lot of more vulnerable children. Investment during these vulnerable years needs to be reinforced through later parts of childhood, including the Facebook phase.

Concentrate spending early in the child life cycle. Countries should invest more resources early when outcomes are more malleable and foundations for future success are laid. If well designed, universal interventions concentrated early in the life cycle can enhance both social efficiency and social equity. All children may be aided, but benefits may be greater for those who are most disadvantaged in the first place. Concentrating investment early means that it is also most likely to be effective in breaking the dependence of children's outcomes on those of their parents – inter-generational inequality – which is a widely held concern in many countries.

Risk-load spending disproportionately on vulnerable children at all parts of the child life cycle. Children from disadvantaged backgrounds who face higher risks across their life cycle can benefit more from greater spending. Policy can ensure that later investments in high-risk children complement risk-loaded investments in the same children earlier in their life cycle. Early successes for such children should not be allowed to wither on the vine.

Structure interventions for children to reinforce positive development across the child's life cycle and across a range of well-being outcomes. Policy should focus on outcomes for the individual child over time. Policy should not be compartmentalised into unco-ordinated health, education and welfare components. There needs to be a coherent approach to the child's

life cycle and to the social risks children face. This system needs to support the present and future well-being of children across a range of dimensions of well-being. Since children have the longest life expectancy of any group in society, child policy needs a stronger focus on the future than does policy for any other population group.

Establish targets for child well-being outcomes. Child well-being targets, for example on lowering child poverty or reducing infant mortality, are of considerable value in focusing attention on a problem and ensuring a strong child outcome focus. Targets create positive incentives for politicians and policy makers to meet their stated goals. Targets need to be clear and achievable through policy change and to be attainable within specific time periods. Countries should set child well-being targets unless these can be shown to create strong perverse incentives (for example, shifting children from just below to just above a poverty line). Well-being targets should be well aligned with the information to be collected for monitoring child well-being.

Regularly collect more high-quality information on children's well-being that is nationally and internationally comparable. Children are often statistically invisible. Compared to other population groups (like the working-age or the elderly) there is a dearth of high-quality information across many OECD countries on child outcomes, particularly during early and middle childhood. Such information is urgently required to regularly and independently monitor child well-being over time at all stages of the child life cycle and to identify improvements in well-being and areas needing policy attention. The information collected should be internationally comparable.

Continuously experiment with policies and programmes for children. Rigorously evaluate them to see whether they enhance child well-being, and reallocate money from programmes that do not work to those that do. It is common to compare spending on children to an investment. The investment metaphor reflects the strong future focus in child policy. Different forms of spending on children can be considered as part of an investment portfolio in children. A systemic approach would subject the portfolio to a continuous iterative process of informed experimentation, evaluation, reallocation and further evaluation. This approach can ensure interventions are actually improving child well-being. Strong, cross-OECD monitoring, research, and especially policy evaluation of child well-being outcomes are necessary to ensure that country child investment portfolios become more effective and that child well-being is progressively enhanced.

What to do across a child's life cycle

The report identifies a number of interventions for children that merit more attention and potentially a greater weight in countries' child policy packages. The following are types of policies at specific points in the child's life cycle that are worth considering for experimentation, evaluation and – if they work – expansion. The policies are structured in line with the child life cycle.

Improve the quality of the in-utero environment, for example, by reducing parental smoking and improving maternal diet. There is increasing evidence that the in-utero environment matters for longer term child well-being. Pre-natal care can influence the in-utero environment.

Introduce greater targeting in pre- and post-natal care towards mothers and infants at higher risk of poor outcomes within the overall framework of a universal system. A universal system can provide a minimum universal service plus universal screening to identify where resources are needed more intensively. Where a need for greater resources is identified, an

intensified service can be delivered. Using such a system, any universal pre- and post-natal care visits in excess of needs can be reduced. The resources thus freed up can be used to intensify services when poor early outcomes or adverse risk factors are present for mothers and infants.

Make policy changes to support the choice of exclusive breastfeeding for infants. There is good evidence that breastfeeding infants has long-term cognitive benefits. Policies to allow the choice of six months of exclusive breastfeeding in accordance with World Health Organisation recommendations may include legislation to support breastfeeding in the workplace, changing the way maternity services in hospitals are provided, and adjustments to parental leave durations.

Provide targeted, quality and intensive early childhood education and home visiting programmes for vulnerable children. The educational programmes may need to place a strong focus on cognitive outcomes as these are likely to be more malleable early in the life cycle. Successfully evaluated targeted programmes such as the Perry Project in the United States have been cognitively focused, and cognitive skills are important for long-term development, including during adulthood.

Re-allocate existing resources within compulsory schooling to disadvantaged children. All OECD countries spend most on children in compulsory schooling. Only some children – usually from advantaged backgrounds – have sufficiently strong early foundations to fully take advantage of this universal spending. Policies need to reinforce early interventions for at-risk children when these children move into compulsory schooling. This may mean re-directing existing school resources away from advantaged and towards disadvantaged children. To take one example, methods could be explored that allocate the best quality teachers to the least advantaged children. Governments may also need to ensure that earlier investments in high-risk children are complemented by interventions like out-of-school programmes and mentoring.

Things to do less of and things to keep an eye on

Spend less on highly medicalised, universal programmes surrounding childbirth. A good example of such unnecessary spending would be long maternal stays in hospital following a normal birth. Hospital care is costly. Evidence suggests that extra days in hospital add nothing to child well-being. The money could be better spent elsewhere. Equally, using over-qualified medical professionals for much pre- and post-natal care is not justified. For example, in France highly trained paediatricians administer many vaccinations and measure and weigh infants, work that could readily be done by a nurse. Many OECD countries provide more universal pre- and post-natal care visits for women and children than both research and WHO recommendations suggest is necessary. Savings generated by reducing the number of universal treatments may be used to intensify services for those mothers and infants who show up in the universal services as being more vulnerable.

Spend less on interventions captured by advantaged children late in the child life cycle. A good example of such programmes are “child” benefits paid past the age of compulsory schooling in Austria, Australia, Belgium, the Czech Republic, France, Germany, Greece, Hungary, Japan, Luxembourg, Portugal and the Slovak Republic, which are often conditional on participation in higher education. Paying child benefits to those in post-compulsory education may reinforce inter-generational inequality. Equally, by rewarding children who have already succeeded until then, much of the considerable subsidies that

almost all governments devote to tertiary education actively promote inter-generational inequality.

Re-assess long-duration single-parent benefits. Some countries, such as Australia, Ireland, New Zealand and the United Kingdom, spend considerable amounts on single-parent benefits which last until children are into their teens with the notion that this promotes child well-being. There is little or no evidence that these benefits positively influence child well-being, while they discourage single-parent employment. Payments could be phased out when children reach compulsory schooling and the resources re-directed to improve family income or improve pre-compulsory education up until this stage for single-parent families.

Monitor the results of evaluations of programmes to keep families with children together and their effects on child well-being. There is considerable interest in the impact on child well-being of single-parent family structure, partly because these family forms have been growing in importance across the OECD. The evidence that single-parent family structure causes reductions in child well-being compared to when the same parents stay together is not overwhelming. But nor can this possibility be ruled out. If being brought up in a single-parent family has any impact on child well-being, it is small. Evaluations underway in the United States will cast a high quality light on whether programmes intended to keep families together can actually enhance well-being of the children in them.

Chapter 2

Comparative Child Well-being across the OECD

This chapter offers an overview of child well-being across the OECD. It compares policy-focussed measures of child well-being in six dimensions, chosen to cover the major aspects of children's lives: material well-being; housing and environment; education; health and safety; risk behaviours; and quality of school life. Each dimension is a composite of several indicators, which in turn have been selected in part because they are relatively amenable to policy choices. This chapter presents the theory, methodology and data sources behind the measures, as well as the indicators for each member country in a comparable fashion. It is at the individual level that the indicators can best inform policy and comparisons can be most readily made. The data is reported by country and, where possible, by sex, age and migrant status. All indicators presented in the framework are already publically available. There has been no attempt to collect new data. Note that no single aggregate score or overall country ranking for child well-being is presented. Nevertheless, it is clear that no OECD country performs well on all fronts.

Introduction

How does child well-being compare across OECD countries? This chapter presents a child well-being framework and compares outcome indicators for children in OECD countries across six dimensions: material well-being; housing and environment; education; health; risk behaviours; and quality of school life.

The first section of this chapter presents a multi-dimensional child well-being framework for OECD countries, before going on to review the theoretical and empirical literature on child well-being from a policy perspective in the second section. The third section explains the dimensions and indicator selection criteria used in the OECD child well-being framework. The fourth and final section presents and discusses the child well-being indicators one by one. It is at this level that the indicators can best inform policy and that countries can be most readily compared. Where data is available, the country indicators are also broken down to look at variations by age, sex and migrant status.

No one country performs well on all indicators or dimensions of child well-being. Where indicators can be compared by sex, age and migrant status, boys often have worse outcomes than girls and non-native children have worse outcomes than native children. However girls' health behaviours are sometimes worse, as they exercise less and smoke more than boys. Results shown by age are mixed; children smoke and drink more and exercise less with age, but rates of bullying decline.

An overview of child well-being across OECD member countries

The policy-focused measures of child well-being are summarised in Table 2.1. The table provides a country-comparison of child well-being measured across dimensions of material well-being, housing and environment, educational well-being, health, risk behaviours, and quality of school life. Each of the six dimensions is a composite of several core indicators. Each country has a colour and rank assigned for each well-being dimension. Blue or dark grey colours are assigned when countries are respectively well above or well below the average for the OECD area. White values indicate countries around the OECD average. The greater the number of white values in a dimension, the closer the clustering of OECD countries across that dimension. Ranks are also assigned that give an order to the countries, with lower numbers reflecting a better child well-being performance along each of the six dimensions. Though more statistically sophisticated algorithms are possible, the clustering of countries into three groups using this simple approach is robust to alternatives.

The well-being indicators are presented in an index by dimensions, but not aggregated into a single over-arching child well-being index. No over-arching index is presented due in part to the limitations in the coverage of available data. In addition there is little theory to guide which aggregation method to use. Given a lack of good theory and data, it was considered that creating an over-arching index would distract the focus towards discussion of the aggregation method, and away from more important practical issues of improving child well-being.

Table 2.1. **Comparative policy-focused child well-being in 30 OECD countries**
1 ranks the best performing country

	Material well-being	Housing and environment	Educational well-being	Health and safety	Risk behaviours	Quality of school life
Australia	15	2	6	15	17	n.a.
Austria	5	9	18	27	27	11
Belgium	11	11	20	26	13	19
Canada	14	n.a.	3	22	10	16
Czech Republic	18	24	19	5	23	17
Denmark	2	6	7	4	21	8
Finland	4	7	1	6	26	18
France	10	10	23	19	12	22
Germany	16	18	15	9	18	9
Greece	26	19	27	23	7	24
Hungary	20	21	12	11	25	7
Iceland	8	4	14	2	8	1
Ireland	17	5	5	25	19	10
Italy	19	23	28	17	11	20
Japan	22	16	11	13	2	n.a.
Korea	13	n.a.	2	10	2	n.a.
Luxembourg	3	8	17	7	14	23
Mexico	29	26	29	28	30	n.a.
Netherlands	9	17	4	8	9	3
New Zealand	21	14	13	29	24	n.a.
Norway	1	1	16	16	4	2
Poland	28	22	8	14	20	15
Portugal	25	20	26	18	6	21
Slovak Republic	27	25	24	1	22	25
Spain	24	13	21	12	16	6
Sweden	6	3	9	3	1	5
Switzerland	7	n.a.	10	21	5	13
Turkey	30	n.a.	30	30	29	12
United Kingdom	12	15	22	20	28	4
United States	23	12	25	24	15	14

Note: To create the table, each indicator was converted into a standardised distribution. Then a within-dimension average was taken. This within-dimension standardised average was then used to rank countries in each dimension. Using standardised figures each country with half a standard deviation higher than the OECD average is coloured blue on that dimension, whilst countries in dark grey are at least a half standard deviation lower.

n.a.: no country data.

Source: OECD based on analysis in this chapter.

StatLink  <http://dx.doi.org/10.1787/710786841304>

Twenty-four OECD countries have at least one dimension where a blue value is recorded. Italy, Mexico, New Zealand, Poland, Turkey and the United States have no blues. Thirteen countries record blues on two or more dimensions. On the other hand, 20 countries have a dark grey in at least one dimension. Eleven countries have two or more dark greys. No one country does well across all dimensions. Iceland and Sweden are the strongest performers, with each having five blues and one white. Greece and Mexico, with five dark greys, have the least strong performance.

There are two main reasons to identify differences in country performance across these child well-being dimensions. First, it shows the dimensions of child well-being where countries are comparatively successful or unsuccessful. Table 2.1 consequently highlights where significant improvement in child well-being may be possible and so provides countries with information that can help in developing child policy priorities. Second,

Table 2.1 allows comparative leaders and laggards to be identified. The question of how leaders arise, and why laggards fall behind can then begin to be addressed, and examples of best country practices can be drawn for future policy changes.

What is child well-being?

Child well-being measures the quality of children's lives. However, as simple as the concept sounds, there is no unique, universally accepted way of actually measuring child well-being that emerges from the academic literature.

There are two broad approaches to defining and measuring child well-being. The first approach is to consider well-being as a multi-dimensional concept. Researchers decide on the important life dimensions and populate these dimensions with indicators. The second approach is to directly ask children about how they view their well-being.

In a recent literature survey, child well-being is defined as "a multi-dimensional construct incorporating mental/psychological, physical and social dimensions" (Columbo, cited in Pollard and Lee, 2003, p. 65). This definition, however, omits a material aspect, which is important in many other studies which consider child poverty or child material deprivation. More recently, Ben-Arieh and Fronese (2007a, p. 1) have offered the following definition, also indicators-based: "Child well-being encompasses quality of life in a broad sense. It refers to a child's economic conditions, peer relations, political rights, and opportunities for development. Most studies focus on certain aspects of children's well-being, often emphasising social and cultural variations. Thus, any attempts to grasp well-being in its entirety must use indicators on a variety of aspects of well-being."

Alternatively, child well-being can be expressed in terms of the over-arching self-reported subjective well-being of the child. This approach not only allows children to express their own well-being, but avoids decisions about which life dimensions are covered, which indicators are included, and if aggregation takes place which weights are assigned to each dimension. Some of the multi-dimensional approaches have used over-arching subjective measures as component indicators, rather than as part of a conceptually different approach. A limitation of the subjective approach is that younger children cannot respond to such questions. From a policy perspective a second limitation is that little is known about policy amenability of child measures of subjective well-being.

For the purposes of this report, child well-being is measured using multiple, policy-amenable measures. In practice, and partly for pragmatic reasons, child well-being is usually considered as a multi-dimensional concept. This pragmatism is determined by the limited theory and data and by an understandable scepticism regarding the ability of younger children to respond to questions about their global subjective well-being. The dimensions are identified by consensus, with justifications drawn from the child research literature and the United Nations Convention on the Rights of Children.

Cross-national comparisons of child well-being require decisions about how many and which dimensions to include, how many indicators in each dimension, and the placement of which indicators in what dimensions. There are also aggregation decisions to be made. Various methods can be used to add up indicators within dimensions and then add up dimensions to arrive at country aggregate measures of child well-being. A problem with aggregation approaches is that they infer common priorities for all countries across all dimensions by placing the same country valuation on outcomes.

A closer look at child well-being

This section locates the OECD work by taking a closer look at some critical issues behind existing multi-dimensional measures of child well-being. It starts with a review of positions in the academic literature on child well-being before moving on to review the empirical research undertaken in the cross-country field.

Review of the child well-being literature

There are two prominent divides in the literature on child well-being. The first divide is between what might be termed a “developmentalist perspective” and a “child rights perspective”. The second is between those who consider well-being outcomes from the point of view of socially and individually costly outcomes (that is to say, indicators that measure undesirable things like poverty, ignorance and sickness) and those who wish to take a more positive perspective. The developmentalist perspective is more likely to be associated with a greater focus on poor child outcomes and the child rights perspective with a focus on the positive side of child well-being.

Child well-being today and tomorrow

The developmentalist perspective focuses on the accumulation of human capital and social skills for tomorrow. This long view of child well-being has been described as focusing on “well-becoming”. The child rights perspective, on the other hand, places a strong rights-based emphasis on children as human beings who experience well-being in the here-and-now. The rights perspective also seeks the input of children in the process of deciding what their well-being might be and how it might be best measured (Casas, 1997; Ben-Arieh, 2007a).

In some cases, the differences between the two perspectives are more apparent than real, since what is self-evidently good for the child’s current well-being may also be important for the child’s future. For example, child abuse harms the well-being of children in the here-and-now, as well as damaging their longer-term well-being outcomes as adults (Hood, 2007; Currie and Tekin, 2006). However, in other situations there are clear trade-offs. A child may favour his or her current well-being, for example playing with their friends (which a child rights perspective might support), over learning in school to improve future life-time prospects (which a developmentalist perspective might support).

The indicators chosen in this report place a strong focus on future well-being for children. A future focus is reasonable in child policy given that children have the longest futures of any age group. Nonetheless, the well-being of children today should not be neglected. Childhood is a considerable period of time. If the United Nations age definition of a child as a person under age 18 is used, then during a typical life cycle people in OECD countries spend about one-quarter of their lives as children.

Positive versus negative measures of child well-being

A second divide in the child well-being literature is between those who place a focus on poor child well-being outcomes and those who prefer to conceive of child well-being as a positive continuous variable. The latter group sometimes describe the former approach as a “deficit approach” and their own approach as a “strengths-based” one (Ben-Arieh and Goerge, 2001; Pollard and Lee, 2003; Fattore et al., 2007).

Historically, the measurement of child well-being has focused on children with behaviour problems, disorders, and disabilities rather than attempting to measure a continuum of well-being for all children. A focus on deficits is often criticised in the academic literature. Taking a “deficit approach” is used pejoratively. However, there are some very good reasons why policy makers may choose to focus on well-being for children in terms of so-called deficit measures. These policy reasons encompass both efficiency and equity rationales.

An efficiency rationale for a policy focus on child deficits is that they often generate high costs for the rest of society. These include the monetary and non-monetary costs of crime and anti-social behaviour. These costs can be large for example in countries such as the United States where crime rates are high compared to the OECD average. Preventing the multifarious costs of crime is one of the strong arguments behind intervention early in the life cycle of socially disadvantaged children. Similarly, deficits in terms of human capital formation or health create third-party costs via raising claims made on the welfare state, thus necessitating higher average tax rates (Currie and Stabile, 2007).

A focus on deficits can also be rationalised by equity concerns for the more disadvantaged in society. For example, including indicators of child abuse or child mortality in the measure of well-being may be important in an equity sense, even though such problems do not affect a sizeable majority of children. Considering child well-being as a positive continuous variable directs policy attention away from the less well-off children who are picked up by deficit measures.

However, it certainly remains the case that relying only on deficit measures misses the positive strengths and abilities that children possess, and on which society must build to enhance child well-being.

Child participation in measuring well-being

Theory and measurement work on child indicators has moved to viewing children as acting subjects with their own perspectives. One view is that, “if we are to adequately measure children’s well-being, then children need to be involved in all stages of research efforts to measure and monitor their well-being” (Fattore *et al.*, 2007, p. 5). Such an approach, although well-intentioned, raises serious issues. First, it treats childhood as a lump, as if an 8-month-old were the same as an 8-year-old, and voids childhood of a developmental focus. Second, it does not address the problem of how to involve a newborn, or the youngest children.

In addition, participation is conceived of as taking place only between the researcher and the child. This fails to recognise that children typically have parents who bear the primary legal responsibility for them and, by implication, for their safety and their material, social and emotional well-being. Parents have known their child since birth, across multiple environments. Yet parental participation receives limited consideration in this approach.

Cross-country comparisons of child well-being

In recent years the measurement of child well-being in terms of aggregate international comparisons and country studies has grown rapidly (Ben-Arieh and Goerge, 2001). In addition to the international comparative level, child well-being has also been examined at a national and sub-national level (see Hanifin *et al.*, 2007 for Ireland; Land, 2007a for the United States; and at city level, see Hood, 2007 for London). There is a small literature that combines multiple, dimension-based outcomes into an aggregate overall well-being at a country level and

provides international league tables of child well-being performance (UNICEF, 2007; Heshmati et al., 2007; Bradshaw et al., 2007; Richardson et al., 2008). The most prominent example is the recent UNICEF child well-being report. UNICEF takes a multi-dimensional dimension-based indicator approach. They then use a simple algorithm to derive a child well-being league table for a sample of OECD member states.

The UNICEF league table data are shown in Table 2.2, with the country ranking results from each of the six dimensions, and the overall country result, which is a simple average of the rankings. The results are for 21 out of 30 OECD member countries. Due to insufficient data, nine countries – Australia, Iceland, Japan, Korea, Luxembourg, Mexico, New Zealand, the Slovak Republic, and Turkey – are missing from the table.

High overall levels of child well-being are achieved by the Netherlands and Sweden and low levels by the United States and the United Kingdom. Even at the top performing end, both the Netherlands and Sweden have a dimension along which performance is at best only adequate (material well-being for the Netherlands and Family relationships for Sweden). At the bottom, both the United States and the United Kingdom perform worse than the median country on all dimensions.

The UNICEF data have been re-analysed by Heshmati et al. (2007) using several more complex aggregation algorithms to arrive at a global child well-being index and rich

Table 2.2. UNICEF shows high overall levels of child well-being are achieved by the Netherlands and Sweden and low levels by the United States and the United Kingdom

1 ranks the best performing country

	Dimension number	1	2	3	4	5	6
	Average dimension rank	Material well-being	Health and safety	Educational well-being	Family and peer relationships	Behaviours and risk	Subjective well-being
Netherlands	4.2	10	2	6	3	3	1
Sweden	5	1	1	5	15	1	7
Finland	7.3	3	3	4	17	6	11
Spain	8	12	5	16	8	5	2
Switzerland	8	5	9	14	4	10	6
Denmark	8.2	4	4	8	9	12	12
Norway	8.3	2	8	9	10	13	8
Belgium	10	7	12	1	5	19	16
Italy	10	14	6	20	1	9	10
Ireland	10.2	19	19	7	7	4	5
Germany	11.2	13	11	10	13	11	9
Greece	11.8	15	18	17	11	7	3
Canada	12	6	14	2	18	17	15
France	12.5	9	7	15	12	14	18
Poland	12.5	21	16	3	14	2	19
Czech Republic	12.7	11	10	11	19	8	17
Austria	13.7	8	20	19	16	15	4
Portugal	14	16	15	21	2	16	14
Hungary	14.5	20	17	13	6	18	13
United States	18	17	21	12	20	20	
United Kingdom	18.5	18	13	18	21	21	20

Source: UNICEF (2007), *Child Poverty in Perspective: An Overview of Child Well-being in Rich Countries*, Innocenti Report Card 7, Florence.

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country league table. The different approaches change the league table somewhat, but not greatly. A further feature of Heshmati *et al.*'s approach is that more countries are included as a consequence of relaxing some of the data requirements of the UNICEF Report. The additional four OECD countries included are Australia, Iceland, Japan, and New Zealand. Of these countries, Iceland ranks well, Australia and Japan rank moderately well, and New Zealand ranks poorly.

Dijkstra (2009) also recalculates the child well-being ranks produced by UNICEF, using both new weightings and harmonic means aggregation. Dijkstra finds that the methods applied by UNICEF to group countries (and assign ranks at the higher and lower level) are sufficiently robust.

Overall, while these studies have added considerably to the sum of knowledge on child well-being in rich countries, they share certain problems:

- There is little analytical argument regarding which indicators and what number of indicators are suitable for each dimension. In fact, rather than a comprehensive theory of well-being, the availability of data is a primary driver behind these reports.
- Most approaches rely on surveys that are not designed to monitor child well-being overall. These surveys focus on specific well-being dimensions like health, income and education. These surveys typically also have less-than-full OECD coverage.
- In the absence of any good theory pointing the way, aggregation methods weight indicators and dimensions on statistical or *ad hoc* grounds.
- The indicator data is sometimes out-dated and dates can vary across countries and dimensions.
- The indicator data are mainly adolescent-focused. Additionally, it is often impossible to disaggregate within countries by social grouping (by sex, ethnicity, socio-economic status and so on).
- Lastly, these indexes do not allow a ready disaggregation of child well-being at different points in the child life cycle, a result again reflecting the paucity of purpose-collected information.

Until new data designed for the purposes of monitoring child well-being across countries is collected, not all of the problems identified in previous work can be addressed. However, for the purposes of the analysis undertaken here, some improvements can be made.

Selecting child well-being dimensions and indicators

This section addresses the rationale for selecting the child well-being dimensions and indicators to consider in relation to child policy choices. As discussed above, because there is no obvious rationale for aggregating across dimensions and because of limited data, this report does not present a single aggregate score or overall country ranking for child well-being.

The six dimensions

Six dimensions of child well-being have been identified here to cover the major aspects of children's lives: material well-being, housing and the environment, education, health, risk behaviours, and quality of school life.

Each dimension has roots in the international standards agreed for children in the United Nations Convention on the Rights of the Child (United Nations, 1989). All previous cross-country research uses the UNCRC as a defining text in determining the framework in

which to assess child well-being outcomes (UNICEF, 2007; Bradshaw *et al.*, 2007). The work presented here is no exception. To a large extent, the dimensions covered within the OECD framework follow influential research by UNICEF (2007) and Bradshaw *et al.* (2007).

The advantage of applying the UNCRC to cross-country analysis of child well-being, and specifically to the selection of dimensions within a multidimensional framework, is that disagreements as to which dimensions of children's lives require policy support are reduced. As signatories to the UNCRC, each OECD member country agrees in principle to meet the standards set for children by the Convention. Without the Convention, finding a consensus on a cross-national set of standards for children would be a more complex task, with each country potentially prioritising certain national-specific factors over others.

The approach here contains the same number of dimensions as the UNICEF report. Four of the six dimensions are effectively the same. The "family and peer relationships" and "subjective well-being" dimensions included in the UNICEF report are omitted. The reason is not because they are unimportant for child well-being, but because this report has a strong policy focus. It is unclear how governments concerned with family and peer relationships and subjective well-being would go about designing policies to improve outcomes in these dimensions. On the other hand, the newly included dimensions of "housing and the environment" and "quality of school life" are much more influenced by policy. Governments typically intervene considerably in the housing market, especially for families with children, and fund, provide and regulate the schooling system, with direct implications for child well-being (Box 2.1).

Selection of indicators

Each of these six dimensions of child well-being must be populated with indicators. Across the six dimensions, 21 indicators of child well-being have been selected. A number of ideal selection requirements were borne in mind in choosing indicators.

- *The child is taken as the desirable unit of analysis, rather than the family.* A child-centered approach is now the norm in studies of child poverty and child well-being.
- *Indicators should be as up-to-date as possible.* Indicators cannot reliably inform comparative policy unless they paint a picture of child well-being reasonably close to the here-and-now.
- *Indicators should be taken from standardised data collections which collect comparable cross-country information.* If data is not reasonably comparable, it will fail to meet one of the most basic needs of a cross-country, data-driven study.
- *Indicators should cover all children from birth to 17 years inclusive.* The United Nations definition of a child as a person under age 18 is used here. Given evidence about the importance of the in-utero environment for the child's future health and development and the fact that in most countries a foetus legally becomes a child in utero, it may also be desirable to extend the definition of childhood to the period before birth.
- *Indicators need a policy focus.* As child well-being measures in this chapter are policy-focused, indicators with a relatively short causal chain from government action to improvements in well-being are favoured over indicators for which relationships between policy actions and outcomes were more speculative and the causal chain was longer.
- *Indicators should cover as many OECD member countries as possible.*

Box 2.1. Child well-being by age: what indicators would be desirable?

Structuring the child well-being indicators presented here around the three stages of early, middle and late childhood was carefully considered by the OECD. There are a variety of reasons why such a structure was attractive, including the importance of considering childhood developmentally and the fact that well-being can be measured in different ways for children at different ages. Such an approach has been already taken in, for example, the Australian Institute of Health and Welfare's *Making Progress. The Health, Development and Wellbeing of Australia's Children and Young People* (2008) report.

The reason for not choosing the child-age-based structure was a lack of data. While the period of late childhood can be well-populated with a broad range of indicators, there is almost no good data across the breadth of child outcomes during early and middle childhood for a sufficient number of OECD countries. Moving beyond birth-weight data and breastfeeding data at the beginning of early childhood and vaccination data at age 2, only mortality data meets comparability and country coverage requirements until the end of middle childhood is reached.

Some of the indicators used in this chapter are child-age specific. Where possible, indicators are broken down by the three age stages of childhood. Finally, there are a number of age-specific indicators included such as birth-weight, breastfeeding, vaccination (all early childhood) and indicators in the risk behaviour dimension (late childhood).

In an ideal world, a consideration of well-being could have been organised around the stages of childhood if there were more data available. So what data would be desirable? There is a need for comparable indicators of child cognitive and behavioural development covering the points of entry into pre-school and into compulsory schooling. Equally, cognitive and behavioural indicators several years into the compulsory schooling period, around ages 8-10, would be of value. Data on child nutrition, height and weight, and oral hygiene at the same ages would be of interest. Consistent and comparable data on breastfeeding durations of children from birth would add to the nutrition information. Breaking down child poverty rates by stages of childhood would be informative, and could be done readily enough. Self-assessed life satisfaction data could be collected from about age 8. Data on chronic child physical health conditions such as asthma could be collected. Comparable information on parental time investment in children would be of value, as would information on the proportion of a family's monetary resources that was devoted to children.

There is also an important data gap relating to the pre-natal period. Comparable data on the in-utero environment, including information on pre-natal maternal leave taken and maternal stress, smoking, drinking, drug taking and diet during pregnancy, would be of a great deal of value to policy makers.

Within each of the six child well-being dimensions, the selection of indicators emphasises complementarity. This complementarity comes in a number of distinct forms.

- *Child age.* If one indicator focuses on children of a certain age, other indicators within the dimension should provide information about children of other ages.
- *Efficiency and equity considerations.* Indicators within a dimension should use some measure of the spread of outcomes within a country, which gives an indication of equity, but also provide average country outcomes, which gives a complementary indication of efficiency.
- *Child well-being for today and development for the future.* Indicators within each dimension should have regard to both current child well-being and developmentalist perspectives of

child well-being, to assess both living standards today and how well a society is preparing for its children's futures.

- *Coverage of outcomes within a dimension.* It is desirable to cover a range of important sub-dimensions within each dimension, such as both mental and physical health within the health dimension. There is little point in having several very good indicators of almost the same outcome.

Practical limitations

A summary of the indicators and a qualitative assessment of their performance relative to the selection requirements is provided in Table 2.3. Despite a desire to cover all the OECD countries, there was incomplete coverage for the majority of indicators. Complete country coverage was possible for eight of the 21 indicators. Equally, in many

Table 2.3. **Selection of child well-being indicators: summary**

	Indicator characteristics					Country coverage	Complementarity in dimension				
	Child centred	Year	Standard collection	Age coverage (years)	Policy relevance ¹		Age coverage (years)	Efficiency measures	Equity measures	Today and tomorrow	Concept coverage
Material well-being							0 to 17	✓	✓	✓	✓
Average disposable income	x	2005	x	0 to 17	High	30					
Children in poor homes	x	2005	x	0 to 17	High	30					
Educational deprivation	✓	2006	✓	15	Med	30					
Housing and environment							0 to 17	✓	✓	x	✓
Overcrowding	✓	2006	x	0 to 17	High	26					
Poor environmental conditions	✓	2006	x	0 to 17	Med	24					
Educational well-being							15 to 19	✓	✓	✓	✓
Average mean literacy score	✓	2006	✓	15	Med	30					
Literacy inequality	✓	2006	✓	15	Med	30					
Youth NEET rates	✓	2006	x	15 to 19	High	28					
Health and safety							0 to 19	✓	✓	✓	x
Low birth weight	✓	2005	x	0	Med	30					
Infant mortality	✓	2003-05	x	0-1	Med	30					
Breastfeeding rates	✓	1998-06 ³	x	0	High	29					
Vaccination rates (pertussis)	✓	2003-05	x	2	High	29					
Vaccination rates (measles)	✓	2003-05	x	2	High	29					
Physical activity	✓	2005-06	✓	11 to 15	High	26					
Mortality rates	✓	2001-06 ²	✓	0 to 19	Med	28					
Suicide rates	✓	2001-06 ²	✓	0 to 19	Med	28					
Risk behaviours							13 to 19	✓	✓	✓	✓
Smoking	✓	2005-06	✓	15	High	24					
Drunkennes	✓	2005-06	✓	13 to 15	Med	24					
Teenage births	✓	2005	✓	15 to 19	Med	30					
Quality of school life							11 to 15	✓	✓	x	x
Bullying	✓	2005-06	✓	11 to 15	Med	24					
Liking school	✓	2005-06	✓	11 to 15	Med	25					

1. *Policy relevance: High:* governments can directly intervene with the family or individual through established policies, or through multiple secondary interventions. *Medium:* government relies on third-party intervention (professional or community [non-familial] actors). *Low:* no established routes for government intervention. In practice, no "low" policy relevant indicators were retained. An example of such an indicator might be, for example, peer relationships.

2. Belgian data is for 1997.

3. Swiss data is for 1994.

"✓" refers to where selection criteria for the indicator or dimension are met.

"x" refers to where selection criteria for the indicator or dimension are not well met.

cases it was not possible to find indicators that gave good coverage of child outcomes across the child life cycle. Only 6 out of 21 indicators cover all children from birth to age 17. No indicators of well-being were available for the pre-natal period on any dimension, few for the period of early childhood (from birth to 5 years) and even fewer for middle childhood (from 6 to 11 years). For good reasons, the available international survey-based data collections tend to follow children during late childhood, with a strong educational emphasis or health emphasis. Unfortunately, this focus creates considerable difficulties for good child age coverage across many dimensions.

Another practical limitation concerns the complementarity of coverage within some dimensions, for example health. Despite acceptable coverage of physical health indicators, there was a lack of complementary mental health indicators available for children.

An ability to break down national indicators by sub-categories was not an explicit criterion for indicator selection in Table 2.4. Nevertheless, such breakdowns can be interesting. Finding common sub-categories to compare, say, differences by child ethnic origin across countries is obviously impossible. More readily available were breakdowns by child age and sex. The indicators able to be broken down by child age, sex, and migrant status are shown in Table 2.4. Age breakdowns in terms of the risk behaviour and quality of school life dimensions are not available across the entire child life course, but just across parts of middle and late childhood (ages 11, 13 and 15).

Table 2.4. **Breakdown of child well-being indicators by sex, age and migrant status**

	Reported by sex	Reported by age	Reported by migrant status
Material well-being			
Average disposable income	No	No	No
Children in poor homes	No	No	No
Educational deprivation	Yes	No	Yes
Housing and environment			
Overcrowding	No	Yes	No
Poor environmental conditions	No	Yes	No
Educational well-being			
Average mean literacy score	Yes	No	Yes
Literacy inequality	Yes	No	Yes
Youth NEET rates	Yes	No	No
Health and safety			
Infant mortality	No	...	No
Low birth weight	No	...	No
Breastfeeding rates	No	No	No
Vaccination rates (pertussis)	No	No	No
Vaccination rates (measles)	No	No	No
Physical activity	Yes	Yes	No
Mortality rates	Yes	Yes	No
Suicide rates	Yes	No	No
Risk behaviours			
Smoking	Yes	No	No
Drunkenness	Yes	Yes	No
Teenage births	...	No	No
Quality of school life			
Bullying	Yes	Yes	No
Liking school	Yes	Yes	No

“...” denotes that the breakdown is not applicable to that indicator.

The OECD child well-being indicator rationalised and compared

The following analysis compares child well-being indicators across OECD member countries by well-being dimension. Each dimension is introduced and rationalised in light of the commitments taken on by signatories of the United Nations Convention on the Rights of the Child (UNCRC). Next, the indicators included are discussed in terms of the selection requirements outlined above. Finally, the cross-country patterns of indicators are considered, indicator by indicator.

Material well-being

The children's rights outlined in the UNCRC commit governments to ensuring that children have a standard of living adequate to ensure physical, mental, spiritual, moral and social development. To this end, governments are not only committed to supplementing the family income, but "in case of need" to provide material assistance (UNCRC art. 27). Further parts of the convention define the right of children to access diverse material for their development, such as educational items, like children's books (art. 17).

Three indicators are chosen to measure the material well-being of children. The first is the average disposable income in families with children under age 18 (median family income would have been more desirable than average family income as a measure, but was not available). The second is a relative poverty rate for children under 18. The third is the proportion of 15-year-old children deprived of the basic necessities for education relevant to school performance.

All three indicators are child-centred, in that the child is the unit of analysis. However, in the case of both the disposable income and poverty measures, it is the family income that is attributed to the individual child. Ideally, it is the material living standards of the child, rather than that of his or her family, which is of interest. In the case of the educational items, the child is asked directly about his or her material situation. This indicator is thus more strongly child-focused than the income and poverty measures.

The material well-being indicators are comparatively up-to-date. Income and poverty data come from national household surveys from 2005 or thereabouts. These surveys, while measuring broadly the same concepts, are not highly standardised across countries. The data on educational items comes from a 2006 international survey, and is thus well-standardised across countries.

The first two indicators cover children in all age groups, whereas educational items data is for 15-year-old children only, which represents an unavoidable compromise.

All OECD countries have cash transfer policies for families with children, providing a short causal chain for reducing income poverty for families with children. In addition, the design of the tax-benefit system and work-related incentives, and the provision of child care and active labour market policies provide other direct routes for governments to influence parental employment, which is in turn strongly related to child poverty. As for educational items, in many cases these can be supplied in schools, or offset in other ways through the school environment, again providing a short causal chain for public policy intervention.

Country coverage of the indicators in the material well-being dimension is excellent. All countries are included in each indicator.

Complementary equity and efficiency indicators are covered by including average family income as a measure of efficiency and child poverty as a measure of equity. The

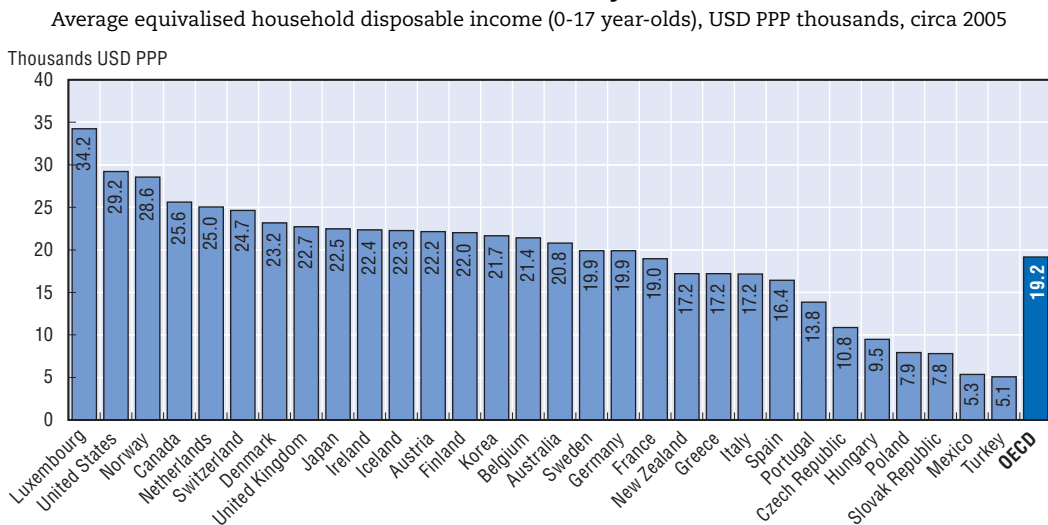
former identifies how countries achieve good incomes for families with children overall, whilst the latter identifies children in families at the lower end of the income distribution.

The indicators within the dimension are also complementary in terms of a child rights versus a developmentalist perspective. Income and poverty matter for children's current well-being, but they also affect the amount of resources parents have available to invest in the futures of their children, especially their educational futures. The educational items may reflect child well-being in terms of social inclusion in school and peer environments. But more importantly, they give an indication of the future educational development of the child and the degree of parental support for longer-term child outcomes.

The average income of children's families

There is considerable variation in children's average family income across OECD countries (Figure 2.1). Much of the differences in average family income reflects differences in per capita gross domestic product (GDP) (the correlation of family income with per capita GDP is 0.92). Turkey and Mexico are at the lowest income end, while children in Luxembourg and the United States enjoy average family incomes six or seven times higher.

Figure 2.1. **Average income of children is seven times higher in Luxembourg than in Turkey**



Note: Income data is average family income for children aged 0-17 years. Data is for various years between 2003 and 2005. It is drawn from national household panel surveys of all OECD countries. Data is converted to common USD using OECD purchasing power parity exchange rates, and equivalised using the square root of the family size.

Source: OECD Income Distribution database, developed for OECD (2008b), *Growing Unequal: Income Distribution and Poverty in OECD Countries*

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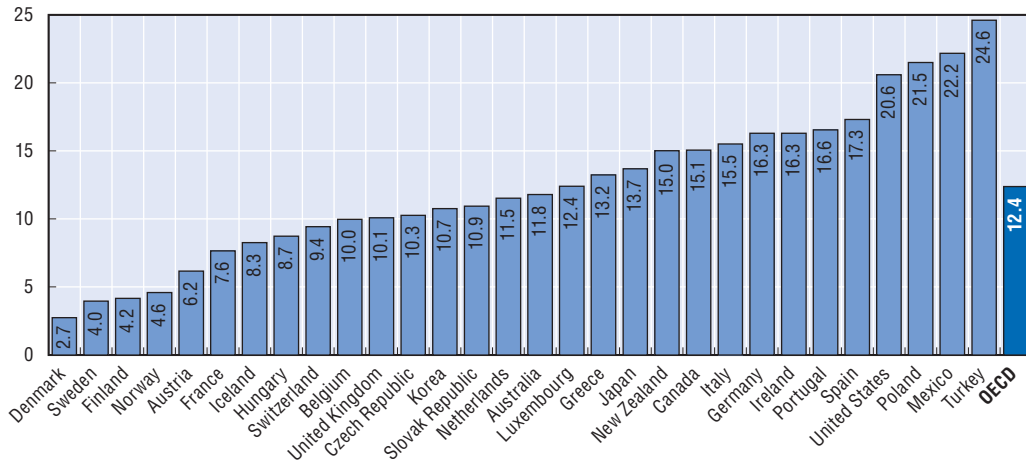
Child income poverty

Child poverty is measured here by the proportion of children who have an equivalised family income below 50% of the median family income of the total population. Child poverty rates across OECD countries vary considerably. Denmark has the lowest proportion of children living in poor families, with around one in 40 children being poor. The other Nordic countries – Sweden, Finland, and Norway – are also outstanding performers on this indicator. On the other hand, as many as one in five or more children in the United States,

Poland, Mexico, and Turkey live in poor families. The United States stands out as one of the richest countries for children (Figure 2.1) but also has one of highest rates of child poverty (Figure 2.2). The chapter's annex shows that high income is more typically associated with low poverty at a country level.


Figure 2.2. Child poverty is nine times higher in Turkey than in Denmark

Percentage of children living in poor households (below 50% of the median equivalised income), circa 2005



Note: The child poverty measure used is the proportion of households with children living on an equivalised income below 50% of the national median income for the year 2005. Children are defined as those aged 0-17 years. All OECD countries are included.

Source: OECD Income Distribution database, developed for OECD (2008b), *Growing Unequal: Income Distribution and Poverty in OECD Countries*.

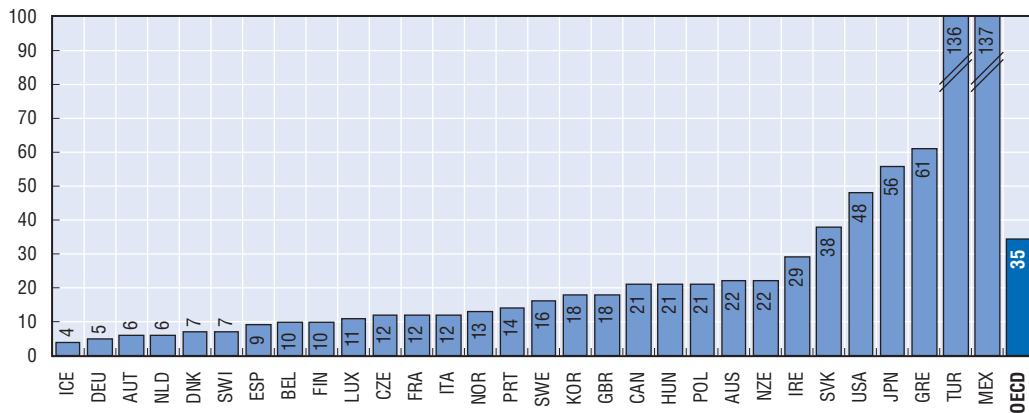
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Educational deprivation

The educational deprivation indicator measures the resources available for children's learning. Fifteen-year-old children are considered deprived when they have fewer than four of eight basic items. The eight items include a desk to study, a quiet place to work, a computer for schoolwork, educational software, an internet connection, a calculator, a dictionary, and school textbooks. As with the variation in child poverty rates, the variation between countries in terms of educational deprivation is large. Only around one in 200 children in Iceland and Germany are educationally deprived. However, more than one in ten children in Mexico and Turkey have fewer than four of the eight basic educational items. The rate of educational deprivation in Mexico is 34 times greater than that of Iceland – much higher than the range of differences in family income or poverty rates across the OECD. It is also interesting to note that several high family income countries, such as the United States and Japan, report relatively high levels of educational deprivation. In those countries, high incomes do not automatically translate into more educational resources for children, at least not of the sort measured here. The country-level correlation between the average family income of a child and educational deprivation is negative, as expected, but this relationship is not especially strong ($r = -0.52$, see annex of Chapter 2).

Finally, it is of interest to observe small but persistent tendencies across the large majority of countries for boys to be more educationally deprived than girls, with the exceptions of Denmark, Iceland and Sweden. Overall across the OECD 3.6% of boys are educationally deprived, compared to 3.3% of girls. It is unclear why such a tendency is found (Figure 2.3).

Figure 2.3. **Most 15-year-old children have the basic school necessities**
15-year-old children reporting less than four educational possessions per 1 000 15-year-olds
in the school population, 2006




Breakdown by sex

	All	Females	Males
Australia	22	20	24
Austria	6	4	9
Belgium	10	9	11
Canada	21	16	26
Czech Republic	12	11	14
Denmark	7	7	8
Finland	10	8	13
France	12	8	16
Germany	5	4	7
Greece	61	57	65
Hungary	21	20	23
Iceland	4	5	4
Ireland	29	28	29
Italy	12	10	14
Japan	56	44	68
Korea	18	17	19
Luxembourg	11	6	16
Mexico	137	139	135
Netherlands	6	5	7
New Zealand	22	19	25
Norway	13	9	17
Poland	21	19	22
Portugal	14	11	17
Slovak Republic	38	30	46
Spain	9	7	12
Sweden	16	16	16
Switzerland	7	5	9
Turkey	136	106	163
United Kingdom	18	16	21
United States	48	48	49
OECD average	35	33	36

Note: Educational deprivation data are derived from PISA 2006 (OECD, 2008). PISA asks questions about the possession of eight items, including a desk to study, a quiet place to work, a computer for schoolwork, educational software, an internet connection, a calculator, a dictionary, and school textbooks. The proportion of children reporting less than four of these educational items is used (less than four items best represented results for cut off points at three, four, five and six items). PISA collection processes employ standardised questionnaires, translation, and monitoring procedures, to ensure high standards of comparability.

Source: OECD Programme for International Student Assessment database 2006 (OECD, 2008).

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Housing and environment

As part of recognising each child's right to a living standard adequate for physical, mental, spiritual, moral and social development, the UNCRC gives a specific role to governments in regard to children's housing conditions (art. 27.3).

Two indicators are included in the housing and environment dimension. The first indicator is a simple measure of the quality of housing for children, recording the number of children living in overcrowded conditions. The second indicator records how many children experience noise in their house and dirt and grime in their local area.

Housing and environment indicators are child-centred insofar as they refer to a child's experienced conditions. The data themselves are not directly collected from the children. The collection of data for the EU countries is standardised. For additional countries, similar items have been drawn from nationally representative surveys and reported for the same age groups. Although the best efforts have been made to ensure comparability, a cautious interpretation of the results is required.

The indicators in the housing and environment dimension are for children aged 0 to 17. Data are representative for all families with children in each country.

Housing and environmental conditions are the defining aspects of the living conditions of children and their families. They are directly amenable to policy, for example through ownership and maintenance of public housing stock, the availability of housing benefits, and laws against local pollution.

Both efficiency and equity are addressed in the housing and environment dimension. While the measures deal with the bottom tail of a distribution, the size of this tail likely correlates strongly with the average child experience of housing and environmental conditions. While Housing and environment indicators may relate to some child developmental outcomes, the dimension has a strong focus on the here-and-now and is not primarily future-focused.

Overcrowding

Children live in overcrowded conditions when the number of people living in their homes exceeds the number of rooms in the household (excluding kitchens and bathrooms). Though the extent of crowded housing for children varies considerably between OECD countries, in every country at least one in ten children lives in an overcrowded home. Overall, on average around one in three OECD children live in crowded conditions. Children in eastern Europe experience overcrowding the most, and crowding is also high in Italy and Greece, while children in the Netherlands and Spain are least likely to suffer from overcrowding.

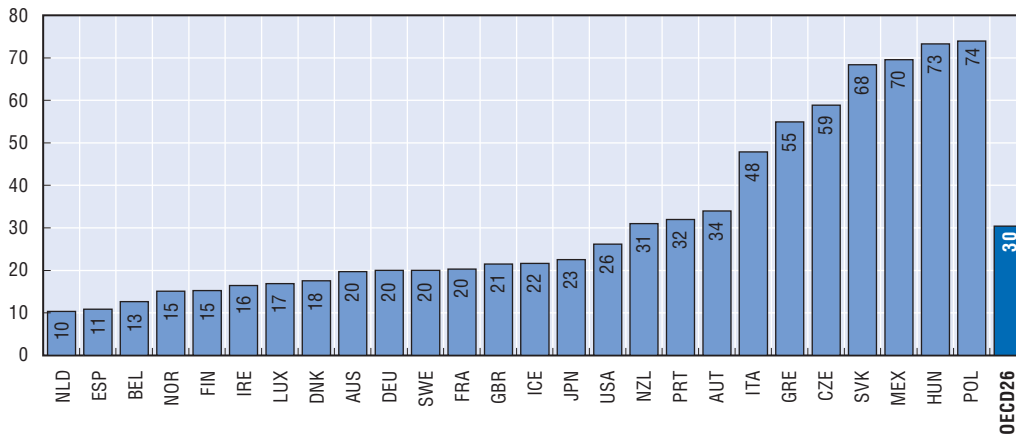
Overcrowding varies by child age. It is highest in families where the youngest child is in early childhood and lowest during late childhood. It is generally more acceptable for younger children (especially infants) to share a room with parents or siblings. Where the focal child is older, siblings are also more likely to be older and have left home, freeing up space. Equally, where the focal child is older, parental labour supply and earnings are also likely to be higher, also leading to better housing and thus less crowding (Figure 2.4).

Quality of the local environment

The quality of the local environment is measured using indicators of noisy conditions at home and in the local area, and dirt, grime, pollution or litter around the home and in the area. On average one in four children in the OECD experiences poor local

Figure 2.4. **On average, one in three children across the OECD lives in overcrowded conditions**

Percentage of 0-17 year-old children living in overcrowded homes by age of the youngest child, 2006



Breakdown by age

	0-17	0-5 years	6-11 years	12-17 years
Australia	20	...	...	...
Austria	34	44	30	20
Belgium	13	20	7	6
Czech Republic	59	65	57	52
Denmark	18	23	16	14
Finland	15	22	12	7
France	20	28	14	10
Germany	20	30	17	8
Greece	55	57	55	51
Hungary	73	80	74	60
Iceland	22	29	15	10
Ireland	16	21	19	6
Italy	48	51	48	40
Japan	23	...	...	...
Luxembourg	17	26	10	4
Mexico	70	...	...	...
Netherlands	10	9	10	11
New Zealand	31	...	...	...
Norway	15	22	10	8
Poland	74	80	75	63
Portugal	32	42	25	21
Slovak Republic	68	76	66	62
Spain	11	14	10	6
Sweden	20	29	16	9
United Kingdom	21	29	20	9
United States	26	...	...	...
OECD26	32	38	29	23

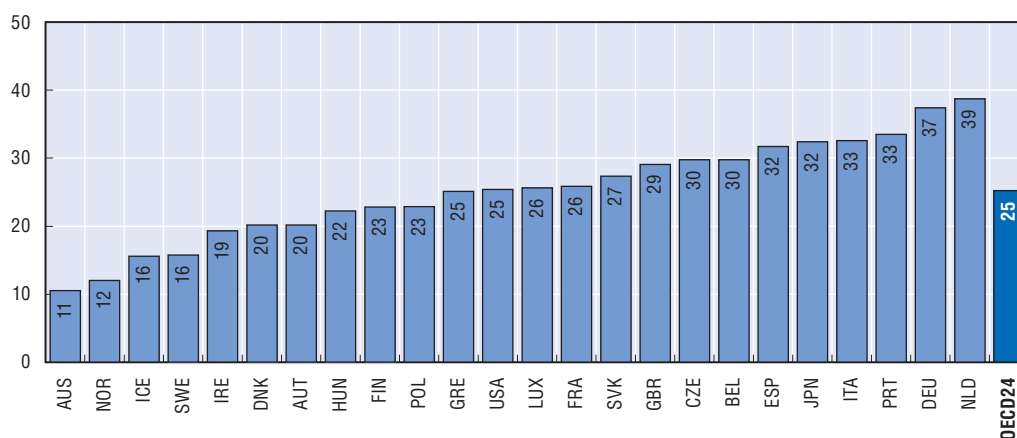
Note: Overcrowding is assessed through questions on “number of rooms available to the household” for European countries from the *Survey on Income and Living Conditions (EU-SILC)* conducted in 2006; on the “number of bedrooms” in Australia; on whether the household “cannot afford more than one bedroom” or “cannot afford to have a bedroom separate from eating room” in Japan; and on the “number of rooms with kitchen and without bath” in the United States. Overcrowding is when the number of household members exceeds the number of rooms (i.e. a family of four is considered as living in an overcrowded accommodation when there are only three rooms – excluding kitchen and bath but including a living room). Data is for various years from 2003 to 2006. The Japanese survey is an unofficial and experimental survey designed by the National Institute of Population and Social Security Research, with a nationally representative sample limited to around 2 000 households and around 6 000 persons aged 20 years and above. Canada, Korea, Switzerland, and Turkey are missing.

Source: Data for 22 EU countries are taken from EU-SILC (2006). Data for Australia are taken from the survey *Household Income and Labour Dynamics in Australia (HILDA)* 2005. Data for Japan are from the *Shakai Seikatsu Chousa (Survey of Living Conditions)* 2003. Data for the United States are taken from the *Survey of Income and Program Participation (SIPP)* 2003. Aggregate data for Mexico was provided by the Mexican Delegation to the OECD.

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Figure 2.5. Local environmental conditions are poor for a quarter of OECD children

Percentage of 0-17 year-old children living in homes with poor environmental conditions by age of the youngest child, 2006




Breakdown by age

	0-17	0-5 years	6-11 years	12-17 years
Australia	11	...	...	...
Austria	20	19	21	20
Belgium	30	31	31	26
Czech Republic	30	28	29	33
Denmark	20	19	21	20
Finland	23	21	24	23
France	26	27	25	25
Germany	37	39	36	37
Greece	25	26	23	26
Hungary	22	23	19	24
Iceland	16	15	17	14
Ireland	19	20	19	19
Italy	33	31	34	33
Japan	32	...	...	...
Luxembourg	26	26	27	23
Netherlands	39	39	40	38
Norway	12	13	10	12
Poland	23	21	24	25
Portugal	33	34	31	36
Slovak Republic	27	29	25	28
Spain	32	30	32	35
Sweden	16	16	15	16
United Kingdom	29	31	26	29
United States	25	...	...	...
OECD24	25	26	25	26

Note: Local environmental conditions are assessed through questions on whether the household's accommodation "has noise from neighbours or outside" or has "any pollution, grime or other environmental problem caused by traffic or industry" for European countries; whether there is "vandalism in the area", "grime in the area" or "traffic noise from outside" for Australia; whether "noises from neighbours can be heard" for Japan; and whether there is "street noise or heavy street traffic", "trash, litter, or garbage in the street", "rundown or abandoned houses or buildings" or "odors, smoke, or gas fumes" for the United States. Data is for various years from 2003 to 2006. Canada, Korea, Mexico, New Zealand, Switzerland, and Turkey are missing.

Source: Data for 21 EU countries are taken from EU-SILC (2006). Data for Australia are taken from the survey *Household Income and Labour Dynamics in Australia (HILDA) 2005*. Data for Japan are from the *Shakai Seikatsu Chousa (Survey of Living Conditions) 2003*. Data for the United States are taken from the *Survey of Income and Program Participation (SIPP) 2003*.

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environmental conditions. Australia and several Nordics perform well, with between one in ten and two in ten children experiencing problems. However, over one-third of children in the Netherlands and in Germany live in homes that report experiencing poor environmental conditions (both countries have comparatively low crowding within the home). There is no systematic pattern pointing to differences in local environmental conditions for children in different age groups (Figure 2.5).

Education

The UNCRC states that each child has the right to an education, and that this right should be developed on the basis of equal opportunity (art. 28). The UNCRC also commits signatories to providing an education system to develop the child's personality, talents and mental and physical abilities to their fullest potential (art. 29a). Ensuring the highest possible levels of educational achievement for all children addresses this commitment.

Three indicators are chosen to make up the educational well-being dimension. The first indicator is the PISA 2006 country score for education performance, averaged across reading, mathematics and science literacy test scores. The second explores inequality in achievement around these scores using the ratio of the score at the 90th percentile to the 10th percentile averaged across the three PISA literacy measures. The final indicator identifies the proportions of 15-19 year-olds not in education and not in employment or training (NEET).

All three indicators are child centred in that the child is the unit of analysis, and outcomes are directly those of the child. Data for educational achievement is collected directly from children. However coverage is limited to children attending schools and those without physical or learning disabilities. Data is up-to-date. Additionally, PISA data is standardised, as it comes from an international survey. The NEET data come from national labour force surveys, which are intended to be internationally comparable but typically have their own national idiosyncrasies.

Unfortunately, however, the age spectrum covered is only one point in late childhood. PISA surveys only children at age 15. It is not possible to assess educational achievement across the child's life cycle. Nonetheless, the timing of the survey in the child's life cycle means that accumulated learning from a compulsory school career is well represented by this cohort.

Although family factors are predominantly associated with variation in educational achievement in most OECD countries, there are a number of intervention points for governments to address both average educational achievement and educational inequality. Schools provide an important environment for children to prepare for adult life, both socially and economically. School environments are strongly influenced by government policy. In all OECD countries, by the time a child reaches age 15, a considerable amount of government investment has been spent on a child's education. There is a very short chain of causal logic from government educational policy to child educational outcomes. In terms of the policy amenability of NEET, all OECD countries have made policy decisions about the age of compulsory school completion and about the provision of post-compulsory education and training and active labour market policies regarding youth. Furthermore, family benefits may continue for youth, conditional on their taking up post-compulsory education and training.

The country coverage in PISA data is excellent, with all OECD countries being included. NEET data is available for 28 countries, with only Iceland and Korea missing.

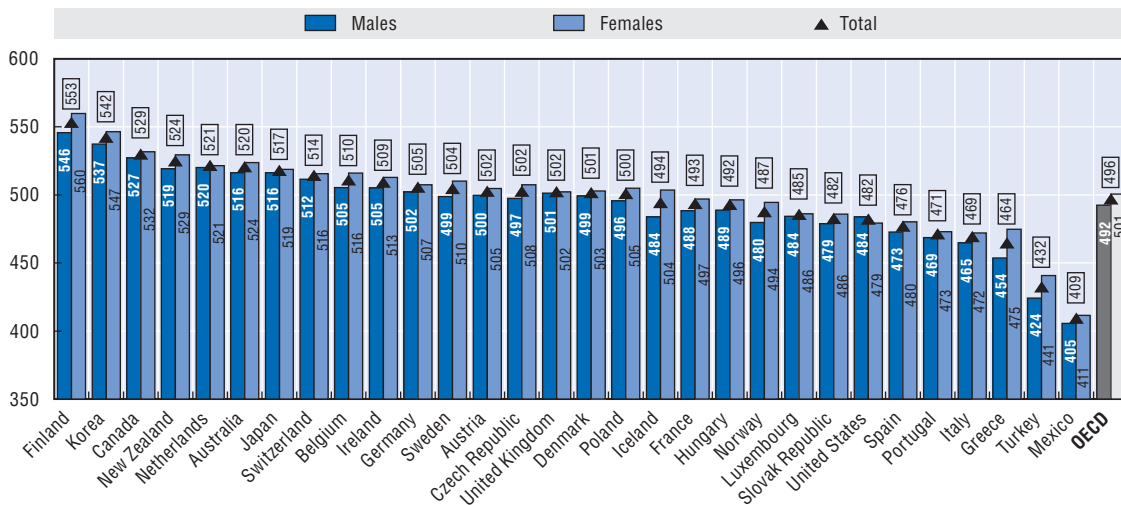
The education dimension contains indicators that complement each other in terms of efficiency and equity. The inclusion of two indicators derived from PISA cover efficiency via the average country performance and also equity, by looking at the inequality of outcomes within the country. Complementarity between the well-being of children today and in the future is achieved by including school performance and measures of NEET immediately following post-compulsory education. That said, education data is predominantly focused on children's future well-being.

Educational achievement

Compared to other indicators, country variation in educational achievement is comparatively low. High-scoring countries on average literacy performance include Finland, Korea and Canada, whilst Greece, Italy, Mexico and Italy score poorly. Turning to inequality, Finland, Korea, and Canada are the most educationally equal countries. The Czech Republic, Mexico and Italy are the least equal countries. The three top performing countries in literacy – Finland, Korea, and Canada – have the most compressed distribution of educational outcomes, indicating it is possible to be both equitable and efficient in educational outcomes at age 15. There is a strong negative relationship between average country educational performance and inequality in educational outcomes (see Annex 2.A1, $r = -0.61$). High country educational performance is thus strongly associated with low educational inequality (Figure 2.6).


Figure 2.6. **Average educational achievement of 15-year-olds across the OECD**

Mean PISA literacy achievement for 15-year-olds by sex, 2006



Note: Mean literacy performance is the average of mathematics, reading and science literacy scores. Data is for 15-year-old students. Reading literacy data was not available for the United States in 2006 results. United States results are therefore averages for mathematics and science literacy only.

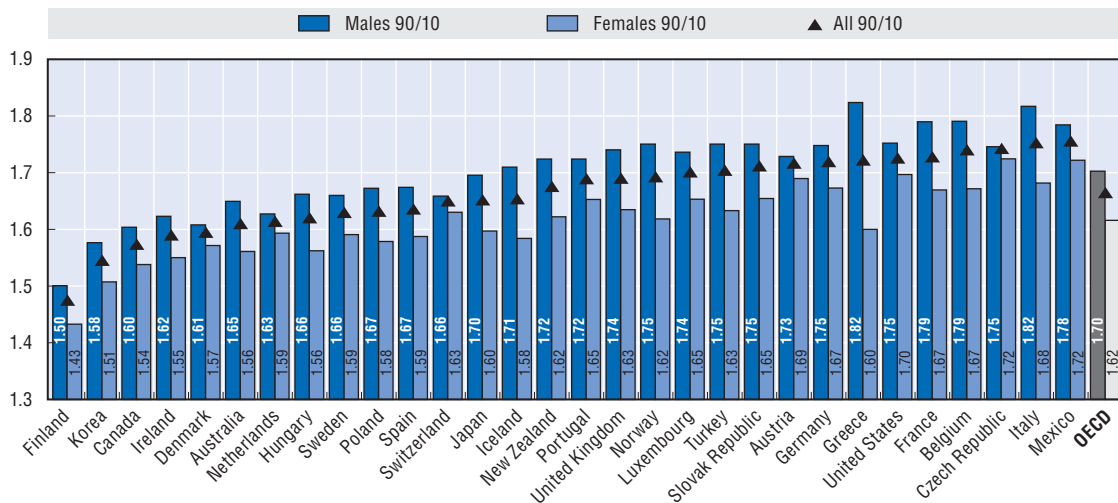
Source: OECD Programme for International Student Assessment database 2006 (OECD, 2008).

StatLink  <http://dx.doi.org/10.1787/711016460350>

The average educational performance for girls is systematically better than for boys in 29 OECD countries (the one exception is the United States, where reading was not tested. Reading is an outcome where there is typically a strong female advantage). At the same time, inequality in boys' scores is considerably higher than inequality in girls' scores in all OECD countries (Figure 2.7).


Figure 2.7. **Inequality in educational achievement for 15-year-olds across the OECD**

Ratio of 90th to 10th percentile score in mean PISA literacy achievement for 15-year-old children by sex, 2006



Note: The measure is of country inequality in scores, averaged across the three literacy dimensions. The measure of inequality used is the ratio of the score at the 90th percentile to that at the 10th percentile. Data is for 15-year-old students. Reading literacy data was not available for the United States in 2006 results. United States results are therefore averages for mathematics and science literacy only.

Source: OECD Programme for International Student Assessment database 2006 (OECD, 2008).

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Youth not in employment, education or training (NEET)

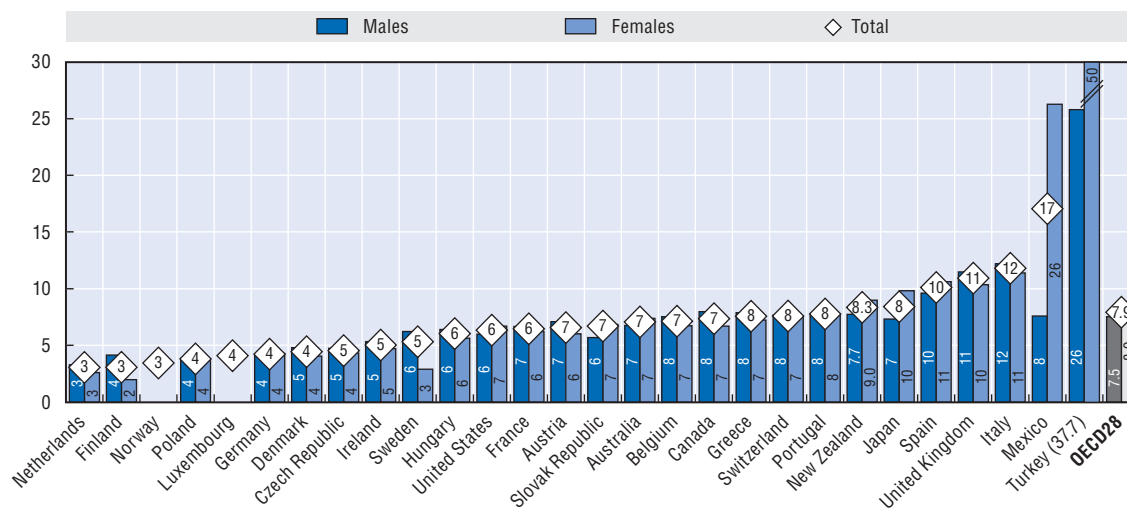
This indicator measures older children who, after compulsory schooling, fail to find employment, training or further educational opportunities. Around one in 12 youth are not in education, training or employment on average across OECD countries. Five OECD countries have more than 10% of children not in education, training or employment between the ages of 15 and 19 (Spain, the United Kingdom, Italy, Mexico and Turkey). Poland, Finland, Norway, and the Netherlands stand out as countries with minimal NEET, at less than 4% of the 15-19 year-old population. There is a considerable variation in NEET across the OECD, with the Turkish rate 12 times higher than the Dutch rate. More often than not NEET rates are higher for boys than for girls in OECD countries, with Japan, New Zealand, Mexico and Turkey being notable exceptions (Figure 2.8).

Health and safety

A basic tenet of children's rights states that all children have a right to life and that governments should ensure, to the maximum extent possible, child survival and development (art. 6). The UNCRC regards child health as an absolute priority, committing governments to investing in health to the highest attainable standard (art. 24). Specific measures in the convention address the reduction of infant mortality, the provision of pre- and post-natal healthcare, preventive health care, access to appropriate information and education on child health and nutrition, and the prevention of accidents. The UNCRC also outlines obligations for countries in regard to the physical and mental development of children (art. 29.1) and the accessibility of recreational pastimes (art. 31.1).

Figure 2.8. **Youth not in education, training or employment (NEET) varies greatly across the OECD**

Percentage of the 15-19 population not in education and unemployed by sex, 2006



Note: Data records children not in education and not in employment or training. The data cover those aged 15 to 19 years of age in 2006. Data for Mexico is from 2004 and data for Turkey is from 2005. Data for Japan is for the population aged 15 to 24. Education and training participation rates are self-reported. Surveys and administrative sources may record the age and activity of the respondent at different times of the year. Double counting of youth in a number of different programmes may occur. Data for Iceland and Korea are missing from this comparison.

Source: OECD (2008), *Education at a Glance*.

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The health dimension draws on eight indicators that are organised in line with the child's life cycle. The first three indicators are for infancy – infant mortality, low birth weight and breastfeeding. The following two indicators report the national coverage of immunisation for pertussis and measles by the age of two. Physical activity in mid to late childhood is included in the health dimensions through reporting the proportion of children aged 11, 13 and 15 partaking in at least one hour of moderate to vigorous activity every day in the past week. The final two indicators record mortality rates for children aged 1 to 19, by all causes and by suicide.

Another health indicator considered but not included was child asthma. Data covering virtually all member countries can be sourced from Patel *et al.* (2008). However, data for the majority of countries was from the 1990s, the sample frame typically was not representative of the country as a whole, the date covered a wide variety of different, overlapping child age bands, the respondents were a mixture of children and parents depending on the survey, and the asthma questions differed between many surveys.

All indicators are child-centred in that the child is the unit of analysis. In the case of physical activity, the information was collected by directly asking the child about their experiences.

The data cover a range of years between 2001 and 2006 for many indicators, with some countries being more up to date than others.

Whilst the three mortality indicators come from data sets that have a degree of international standardisation in classification and the physical activity indicator comes from an international survey, data on birth weight, breastfeeding and vaccination are collected

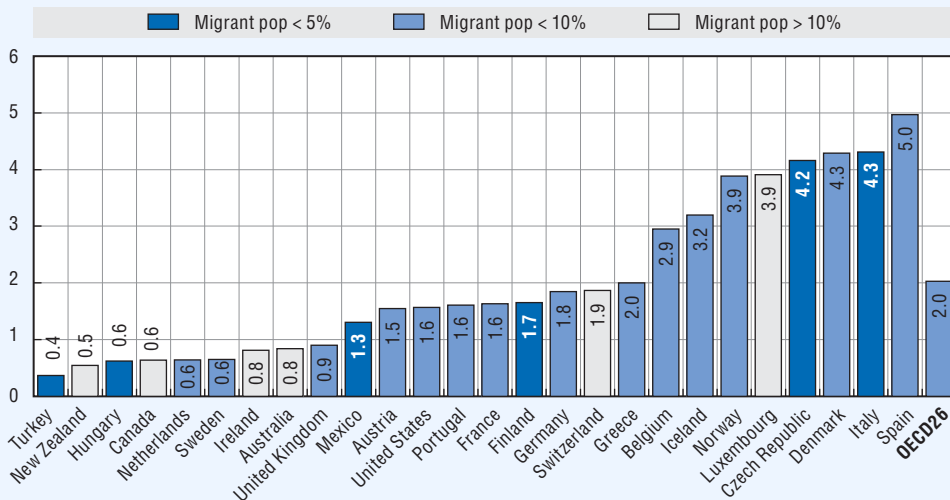
Box 2.2. The well-being of child migrants

In many OECD countries there is a particular concern about outcomes of the children of immigrants. There is little in the way of internationally comparable data on outcomes for these children. However, the PISA survey records the student's birth place, allowing an exploration of experiences of non-native relative to native-born children for educational deprivation in the Material well-being dimension and for the two indicators in the Education dimension.

The data show that non-native students are more educationally deprived than native children in 17 out of 26 OECD countries. Migrant educational deprivation is particularly marked amongst the Nordic and continental European member countries (with the Netherlands and Sweden as exceptions) and is less strong amongst the Anglophone countries (the United States, Australia, United Kingdom, New Zealand, and Canada).

Migrant students are more educationally deprived than native students

Ratio of non-native students/native students educational deprivation by migrant student population



Note: Countries where the migrant student population makes up less than 1% of the 15-year-old student population have been excluded from the comparison.

Source: OECD Programme for International Student Assessment database 2006 (OECD, 2008).

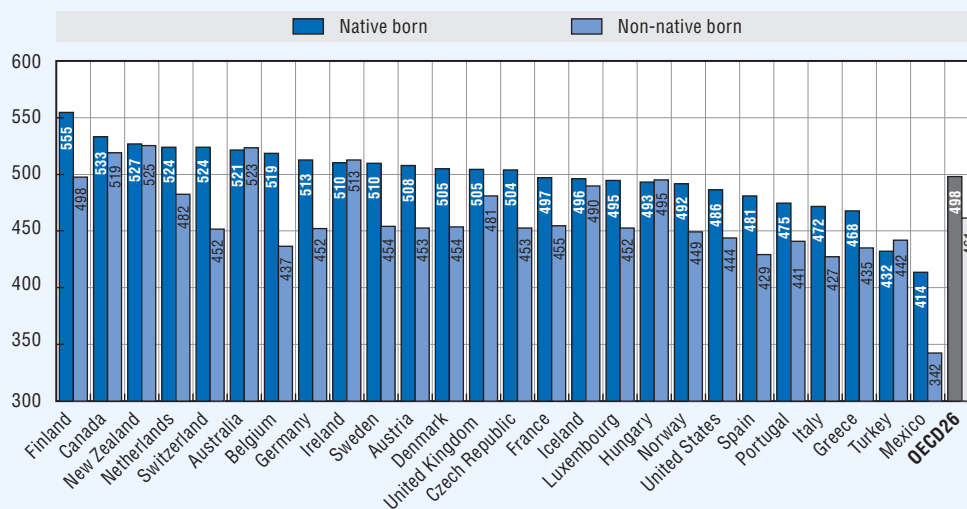
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The greater degree of educational deprivation for non-natives is also echoed in the data on educational achievement. Migrant test score gaps are especially high in Belgium and Mexico. Differences are however positive or negligible in New Zealand, Australia, Ireland, Iceland, Hungary and Turkey. The differences will in part reflect the different processes for selecting migrants in different countries. Finally, inequalities in literacy scores are most marked amongst non-native children, in virtually all countries. It is not clear why this may be so.

Box 2.2. The well-being of child migrants (cont.)

Migrant students often perform worse than their native-born peers

Mean PISA literacy achievement for 15-year-old children by migrant status, 2006



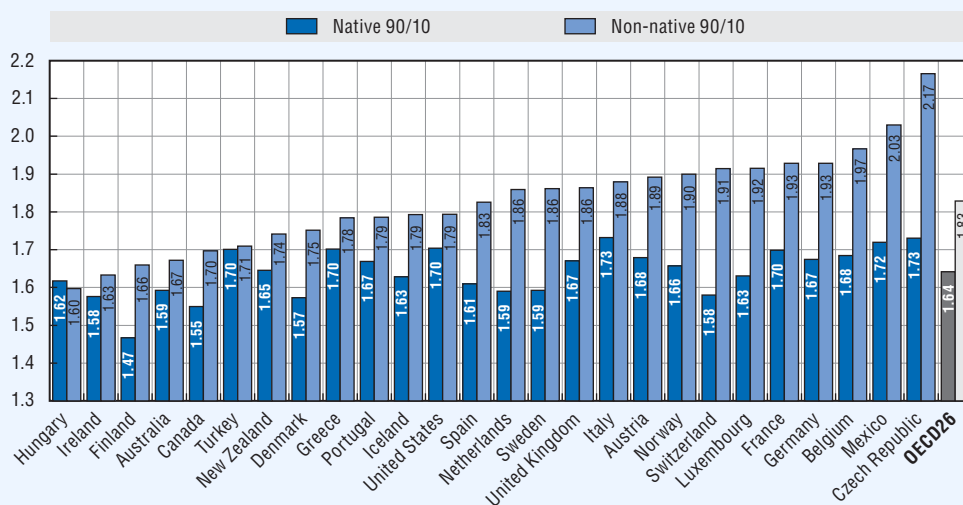
Note: Countries where the migrant student population makes up less than 1% of the 15-year-old student population have been excluded from the comparison.

Source: OECD Programme for International Student Assessment database 2006 (OECD, 2008).

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Inequalities in literacy scores are most marked in the migrant population

Ratio of 90th to 10th percentile score in mean PISA literacy achievement for 15-year-old children by migrant status, 2006



Note: Countries where the migrant student population makes up less than 1% of the 15-year-old student population have been excluded from the comparison.

Source: OECD Programme for International Student Assessment database 2006 (OECD, 2008).

StatLink  <http://dx.doi.org/10.1787/711088506346>

differently in different countries. However, the outcomes are reasonably standardised and unambiguous.

The health dimension has more indicators than any other dimension. Health also provides the best coverage of all the child age groups, with early childhood covered by low birth weights, infant mortality, breastfeeding and immunisations, and with data on physical health for late-middle and late childhood. Avoidable death rates cover the whole of childhood from age 1 to 19.

Country coverage is mixed. Data is complete for birth weight and infant mortality, and coverage is high for breastfeeding and the other mortality outcomes. Physical activity data covers just 25 countries.

Whilst in some cases the measures chosen are from the left tail of a distribution, these measures are likely to correlate highly with the average and thus also provide a good representation of efficiency. For example, the proportion of low birth weight children correlates strongly with average birth weight by country, where such data is readily available. In terms of complementarity, it is noteworthy that all indicators, with the potential exception of suicide, deal with physical health. Apart from youth suicides, there is almost nothing in the way of cross-country comparative data on the state of children's mental health.

All OECD governments provide a range of interventions before, during and after birth during infancy, which are designed to offer the healthiest start in life. A wide range of regulations are in place to promote safe environments for children in order to minimise accidents. In all countries immunisation is highly subsidised or free. Thus immunisation rates also measure the extent to which parents act to promote the well-being of their young children. Primary health care for children is typically highly subsidised or free. Children's physical activity can be changed by changing the school curriculum. Direct public policy mechanisms exist to provide children with the time and space for physical activity during school time, and to provide venues for physical activity like parks and green spaces. Mechanisms also exist to inform parents of basic exercise requirements for children, through primary health care services.

Infant mortality rates

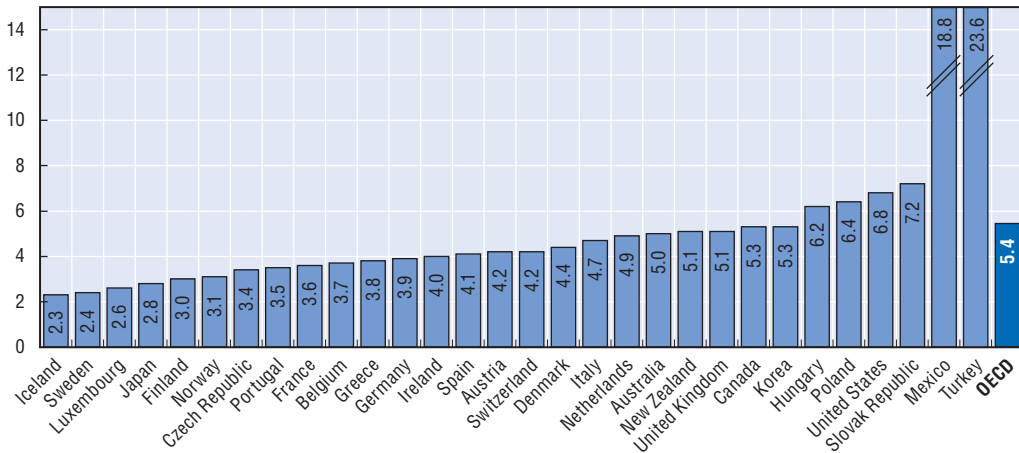
Infant mortality is low or extremely low in most OECD countries. Japan, along with a group of Northern European countries, had the lowest rate of infant deaths in 2005 (2 to 3 per 1 000). Mexico and Turkey are outliers and had substantially higher infant mortality rates than other OECD countries. The United States is a higher-income country that has infant mortality rates above the OECD average. As with most previous indicators, there is a considerable variation between top and bottom performers, with the Turkish mortality rate being ten times the rate of Iceland (Figure 2.9).

Low birth weight

Low birth weight data for the years 2003 to 2005 shows a number of Nordic countries among the countries with the lowest rates. On the other hand, Japan, a good performer in terms of infant mortality, switches position to become one of the countries with a high rate of low birth weight children. Taken together, these results may reflect successful medical care for low birth weight newborns (OECD, 2007, p. 36). Only Turkey reports more than 10% of infants having low birth weight. Compared to a number of other indicators used here, variation in the proportion of low birth weight babies is relatively small across the OECD (Figure 2.10).

Figure 2.9. **There is large variation in infant mortality between Turkey and Mexico and the rest of the OECD**

Infant mortality rates per 1 000 live births, 2005



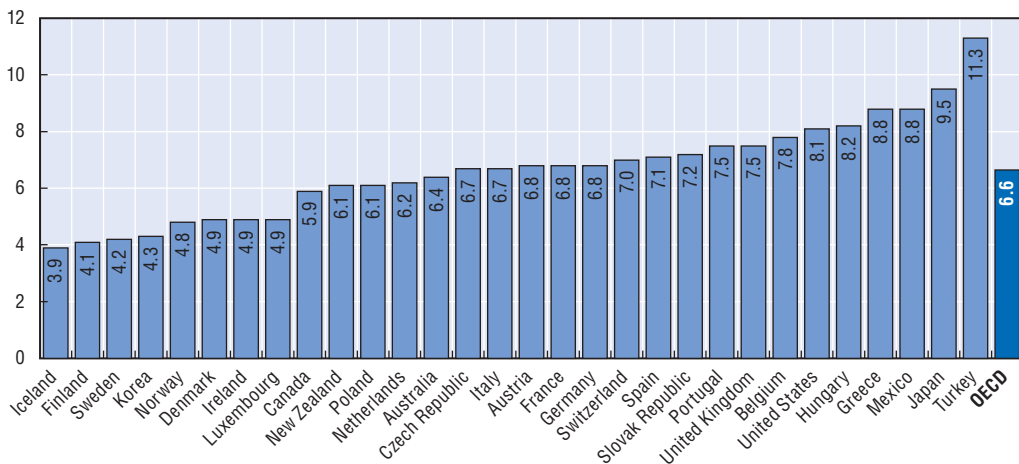
Note: Infant mortality data are for the year 2005. Figures represent the numbers of deaths per 1 000 of the infant population before their first birthday. Data are sourced from administration records.

Source: OECD (2007), *Health at a Glance*.

StatLink <http://dx.doi.org/10.1787/711156824704>

Figure 2.10. **Children born in Nordic countries are least likely to be underweight**

Percentage of low birth weight children (< 2.5 kg), 2003-05



Note: The data for low birth weights is for the years 2003 to 2005. The low birth weight indicator is the number of newborns per 100 births who weigh less than 2.5 kilograms. The indicator includes low weight births that are due to multiple births. Additionally, in some countries, because of genetic factors children may be smaller with no associated developmental risk. Exceptions to the use of registered birth data are the Netherlands, where data is taken from a national health interview survey (OECD, 2007, p. 36), and Turkey.

Source: OECD (2007), *Health at a Glance*.

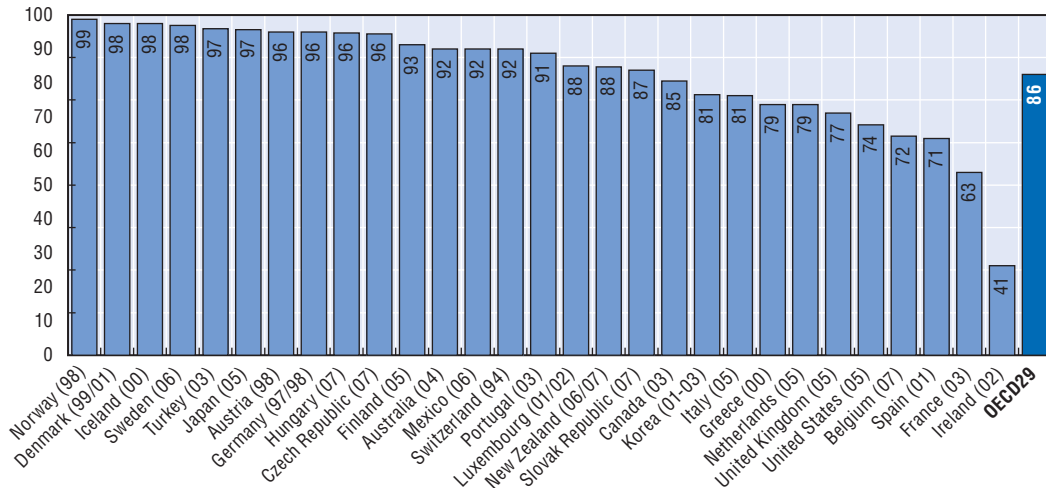
StatLink <http://dx.doi.org/10.1787/711157250485>

Breastfeeding initiation rates

Breastfeeding initiation rates exceed 50% for all countries except Ireland, and exceed more than 90% for over half of the OECD. The Nordic countries are top performers and Mexico and Turkey do relatively well. Low performers are found in a swathe of western Europe running through Belgium, France and Spain and extending across the sea to Ireland (Figure 2.11).


Figure 2.11. **The majority of OECD children are breastfed at some point during infancy**

Breastfeeding rates: having ever breastfed, various years



Note: Breastfeeding data are for a variety of years. Data is collected using a wide variety of methods, which may affect comparability. Data for Poland is missing. Breastfeeding initiation rates refer to the proportion of mothers who have ever breastfed their newborn.

Source: OECD Family database 2008.

StatLink  <http://dx.doi.org/10.1787/711167778234>

Immunisation rates

In terms of immunisation, eastern European countries like Hungary and the Slovak Republic are amongst those with the best coverage of pertussis and measles vaccinations. Coverage is effectively total. Mexico and Turkey do relatively well. Coverage in Austria is below 85% for both pertussis and measles. Again, the range of country variation in vaccinations is comparatively low (Figure 2.12).

Figure 2.12. **Eastern European OECD members have the best immunisation rates**

Vaccination rates for pertussis, children aged 2 (circa 2005)

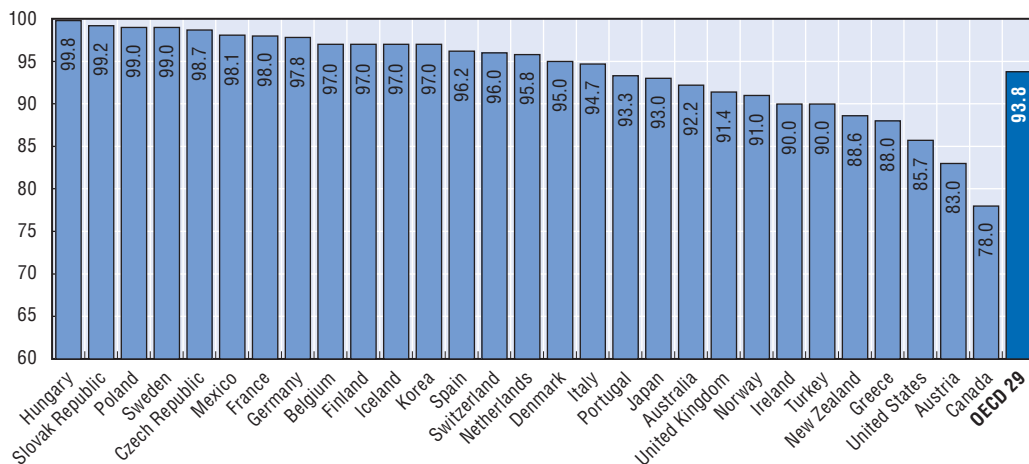
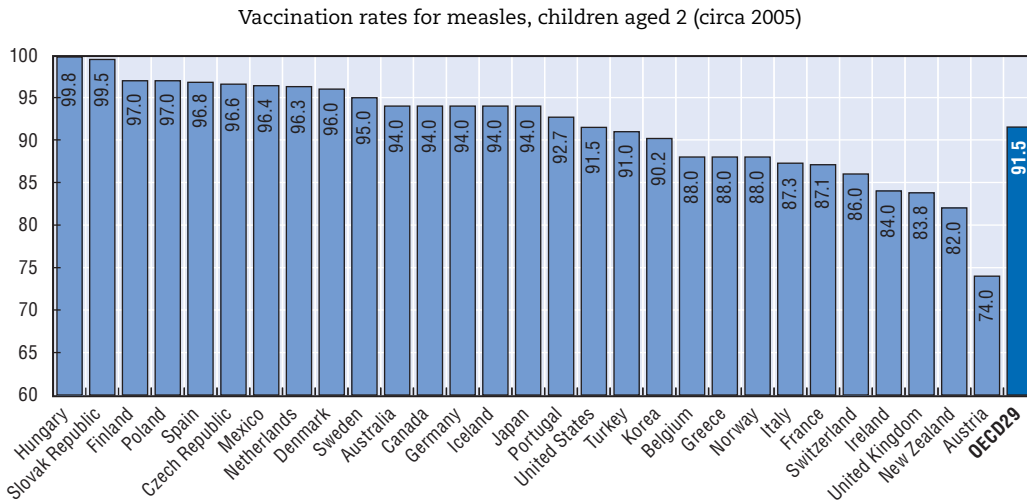



Figure 2.12. **Eastern European OECD members have the best immunisation rates (cont.)**



Note: Vaccination data are for the years 2003 to 2005. Data are for children at age 2. Data is collected using a variety of methods, which may affect comparability. There is a slight variation in vaccination policies and schedules between countries that may affect comparability (OECD, 2007, p. 120). Data for Luxembourg is missing.

Source: OECD (2007), *Health at a Glance*.

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Physical activity

Physical activity is measured by asking children how much activity they have undertaken during a reference week. In around half of the OECD countries fewer than one in five children undertakes moderate exercise regularly. The country rankings vary according to the child's age. The Slovak Republic stands out across the three age groups as a strong performer. France stands out at the lower end, especially for girls, at all ages. Children in Switzerland and France are least likely to exercise regularly. Boys consistently get more physical activity than girls, across all countries and all age groups. Physical activity falls between ages 11 to 15 for most countries considered, with the United States an important exception for boys (Figure 2.13).

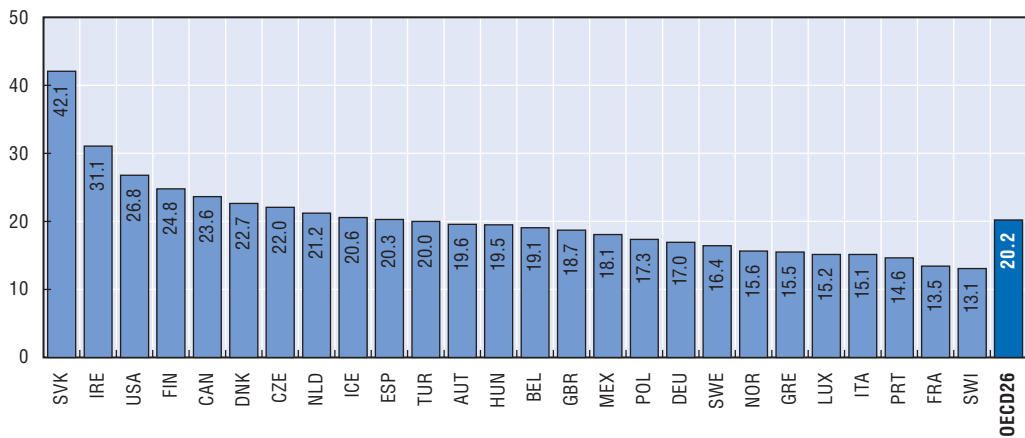
Child mortality rates

Figure 2.14 shows the mortality rates per 100 000 children for all causes. Child mortality rates follow a U shape with age, being relatively high for early childhood, low during middle childhood and peaking in late childhood. There is moderate variation in child mortality across the OECD. Of note is the spread across Europe, with the adjacent comparatively rich countries of Luxembourg and Belgium respectively having the lowest rate of child mortality and the second highest rate. Considering gender patterns, girls have persistently lower mortality rates than boys across all countries and age groups.

Youth suicide rates are of potential value as an indicator of mental health, albeit an extreme one. They are highest in New Zealand and lowest in Greece, with a striking amount of variation between the two. Both Anglophone and Nordic countries are spread throughout the distribution. In all countries male youth are more likely to kill themselves than females (Figure 2.15).

Figure 2.13. **Only one in five older children does the recommended amount of physical activity across the OECD**

Children doing moderate-to-vigorous physical activity daily in the past week by age and sex, 2005/06



Breakdown by age and sex

	11-years-old		13-years-old		15-years-old	
	Males	Females	Males	Females	Males	Females
Austria	29	23	27	14	13	10
Belgium	24	18	23	14	20	15
Canada	29	23	27	14	13	10
Czech Republic	25	19	28	17	27	16
Denmark	31	26	23	18	20	16
Finland	48	37	24	15	15	9
France	24	12	20	5	14	5
Germany	25	20	19	13	16	10
Greece	25	16	21	12	16	7
Hungary	28	19	29	13	19	11
Iceland	29	23	24	14	16	9
Ireland	51	38	39	23	27	13
Italy	23	13	23	9	16	7
Luxembourg	18	13	19	11	19	11
Mexico	...	...	...	...	...	...
Netherlands	30	20	24	20	18	15
Norway	27	17	15	14	13	7
Poland	24	19	21	12	21	10
Portugal	30	12	21	8	15	5
Slovak Republic	51	43	51	35	46	29
Spain	32	24	21	14	19	12
Sweden	23	20	21	14	11	10
Switzerland	19	11	16	10	13	10
Turkey	29	21	22	17	16	12
United Kingdom	28	19	24	14	18	9
United States	33	26	35	21	34	14
OECD25	30	21	25	15	20	11

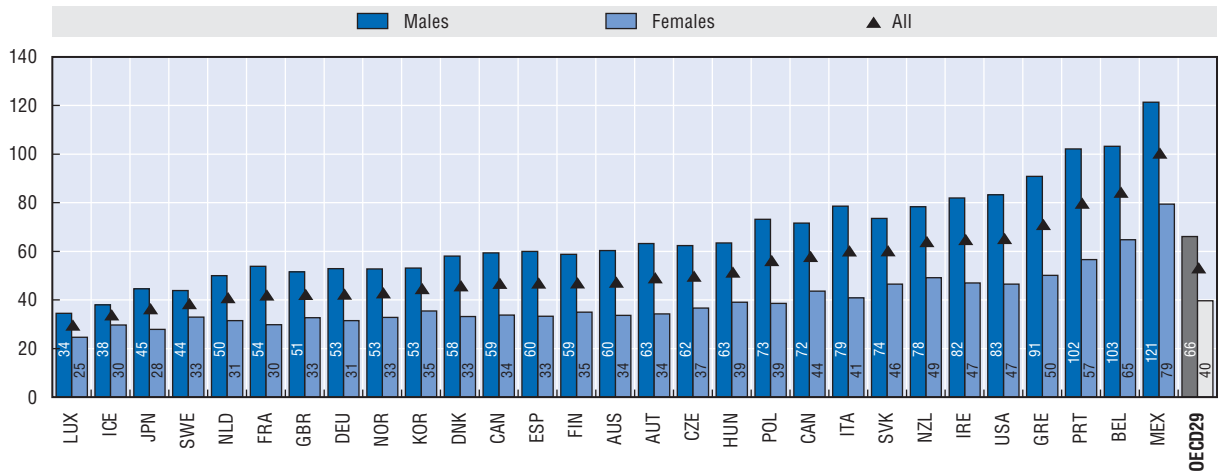
Note: Data for physical activity is calculated based on the regularity of moderate-to-vigorous physical activity as reported by 11, 13 and 15-year-olds for the years 2005/06. Moderate-to-vigorous physical activity as defined by the *Health Behaviour in School-aged Children (HBSC)* report refers to exercise undertaken for at least an hour that increases both heart rate and respiration (and sometimes leaves the child out of breath). Each country estimate uses reported physical activity rates and sample numbers for 11, 13 and 15-year-old boys and girls to calculate country percentages. Data are drawn from school-based samples. Aggregate data for Mexico was provided by the Mexican Delegation to the OECD. Data is for 26 OECD countries, Australia, Japan, Korea and New Zealand are missing.

Source: Adapted from Currie et al. (2008), *Inequalities in young people's health: HBSC international report from the 2005/2006 Survey*, Copenhagen, WHO Regional Office for Europe.

StatLink  <http://dx.doi.org/10.1787/711243651130>

Figure 2.14. **There is moderate variation in child mortality across the OECD**

Child mortality rates by age and sex per 100 000 children aged 0-19, most recent data



Breakdown by sex and age

		All				Males				Females			
		1-4 years	5-9 years	10-14 years	15-19 years	1-4 years	5-9 years	10-14 years	15-19 years	1-4 years	5-9 years	10-14 years	15-19 years
Australia	2003	51	23	25	90	58	27	29	127	44	19	21	52
Austria	2006	39	24	24	104	43	26	27	146	35	21	21	59
Belgium	1997	87	45	55	150	97	52	61	199	76	36	49	99
Canada	2004	44	21	28	91	47	26	33	124	41	17	23	55
Czech Republic	2005	43	27	32	87	44	31	36	119	41	22	28	52
Denmark	2001	44	26	33	87	46	31	40	123	41	20	25	50
Finland	2006	41	29	26	90	47	29	30	124	34	28	22	55
France	2005	43	20	25	78	48	23	30	111	38	18	19	45
Germany	2004	44	21	23	78	46	24	28	107	42	19	19	47
Greece	2006	59	44	43	128	57	52	53	182	62	36	33	70
Hungary	2005	61	33	32	79	70	35	39	105	53	30	26	51
Iceland	2005	24	18	26	66	16	18	23	91	32	19	29	39
Ireland	2005	65	35	40	115	66	44	45	163	64	26	34	64
Italy	2003	57	33	39	108	61	39	46	158	52	26	31	56
Japan	2006	50	21	20	56	55	25	24	74	45	17	15	38
Korea	2006	59	35	29	62	65	40	34	80	54	29	24	42
Luxembourg	2005	21	16	14	69	29	9	14	91	12	24	15	47
Mexico	2005	145	57	69	140	156	64	81	192	134	50	56	88
Netherlands	2004	50	24	28	65	55	28	33	86	44	20	22	43
New Zealand	2004	60	27	36	133	61	30	46	175	59	24	26	90
Norway	2005	44	22	27	83	50	24	29	112	38	20	24	52
Poland	2005	53	32	36	92	59	37	43	131	46	28	28	51
Portugal	2003	82	49	56	125	92	54	64	181	71	43	47	67
Slovak Republic	2005	85	38	34	86	86	45	40	117	83	31	29	55
Spain	2005	48	24	30	81	52	27	35	115	43	20	23	46
Sweden	2004	39	21	26	69	45	21	28	83	33	22	23	55
Switzerland	2005	57	29	36	108	63	32	40	147	51	26	31	67
United Kingdom	2005	47	21	27	75	50	23	30	100	43	19	23	48
United States	2005	61	29	37	132	67	32	44	183	53	26	30	77
OECD29		55	29	33	94	60	33	38	129	51	25	28	57

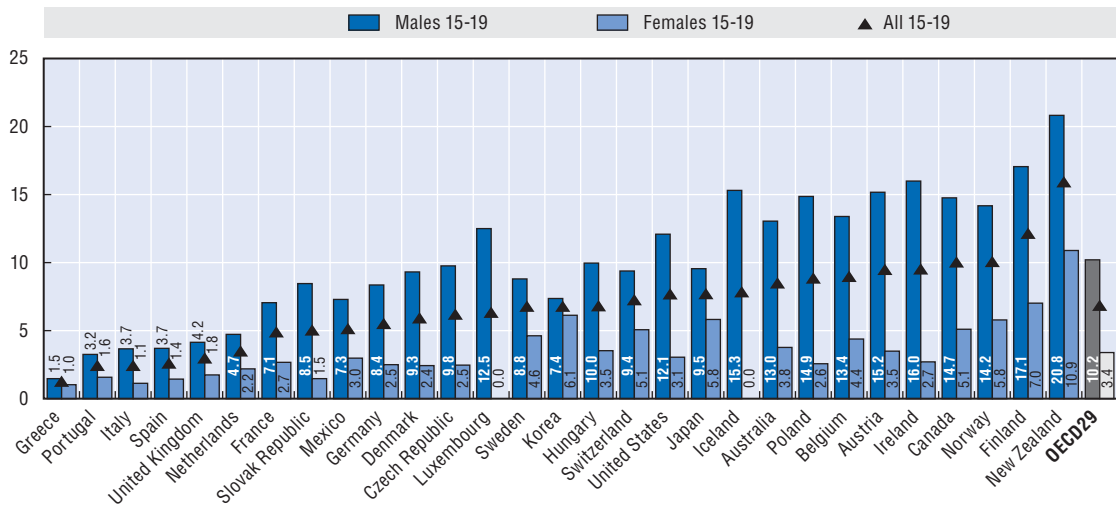
Data source: Data record the number of deaths of children aged 1-19 by each cause per 100 000 of the 0-19 population. Data are averages for the three most recent years (latest years are presented in a separate column in the chart). No data is available for Turkey.

Source: World Health Organisation Mortality database 2008.

StatLink  <http://dx.doi.org/10.1787/711338672403>


Figure 2.15. **Rates of suicide are higher among male youth in all OECD countries**

Youth suicides by sex per 100 000 youth aged 15-19, most recent data



Data source: Data record the number of suicides of people aged 15-19 per 100 000 of the 15-19 population. Data are averages for the three most recent years as in Figure 2.14. Comparability of suicide statistics is dependent on reporting mechanisms in each country, as varying degrees of social stigma associated with suicide may lead to variations in under-reporting. No data is available for Turkey. There are no reported female youth suicides in Luxembourg and Iceland during the period.

Source: World Health Organisation Mortality database 2008.

StatLink  <http://dx.doi.org/10.1787/711357235473>

Risk behaviours

The UNCRC does not explicitly mention risks from which children should be protected. But protection is implicit in rights that cover preventive health, education regarding healthy behaviours, and the provision of recreational activities appropriate to the age of the child. Protecting children from illicit drugs is however explicit (art. 33). The UNCRC stipulates that governments should provide family planning education and services to parents (art. 24.2f). In some cases parents can themselves be children under the age of 18.

Risk taking as a dimension is in part related to health, as it can often have adverse physical health consequences. However, risk taking is also a proxy for externalising or anti-social behaviour, as many risk-taking behaviours have strong negative spillovers and are correlated at an individual level with anti-social behaviours such as alcohol and drug dependence and violence. Such behaviours are also associated with poor educational performance. At the same time, it should be acknowledged that taking some risks may not necessarily be bad, and in some respects are a relatively normal part of growing up.

Indicators of risk taking include 15-year-olds who smoke regularly, 13- and 15-year-olds who report having been drunk on more than two occasions, and rates of birth to females aged 15 to 19.

The three indicators are child-centred, being drawn directly from the children themselves. They are also up-to-date, using data collected during 2005-06, and come from international surveys and series, achieving a high degree of standardisation. The indicators cover an age range of 13-19.

There are a wide range of government policy instruments, including: the legal system, and the age of legal maturity, public information campaigns, laws on advertising, and

taxation to discourage smoking and drinking. Public policy response mechanisms to teenage pregnancy include providing family planning services and public health information to children. Sex education classes are also regular fixtures in schools across the OECD.

Country coverage is limited to the 25 countries covered in the *Health Behaviour in School-aged Children* (HBSC) survey. Although Turkey is part of the survey, they do not collect data on risk behaviours.

The complementarity of indicators within the risk dimension is limited by the age-defined nature of the concept. The indicators do however complement each other in that they cover a range of different risk behaviours. They also deal with child well-being currently as well as in the future, given the longer-term consequences of some risk-taking behaviours. The measures are limited in terms of child coverage because surveys for smoking and drinking are undertaken in schools. It is likely that those at extreme risk do not attend school regularly and are hence not surveyed. Teen births, on the other hand, will capture any girls whose births are registered, which is normally the case in OECD countries.

Smoking and drinking

The variation in smoking and drinking among children in the OECD is moderate by the standards of many of the other indicators. In terms of smoking, rates range from a bit less than 10% to a shade under 30%. Smoking rates are somewhat higher on average for girls than for boys, although the opposite occurs in several countries like Slovak Republic, Poland, and Finland, and equality can be found in Denmark, Switzerland and Italy.

Rates of children reporting being drunk on more than two occasions also vary moderately across countries. Drunkenness rates rise strongly between ages 13 and 15 in all countries. While boys are more likely to have been drunk than girls overall across the OECD, there are exceptions where drunkenness is more common amongst girls, including Canada for both age groups, and for 15-year-olds in Iceland, Norway, Spain and the United Kingdom (Figure 2.16). There are few strong relationships between the risk indicators at a country level (see Annex 2.A1).

Teenage birth rates

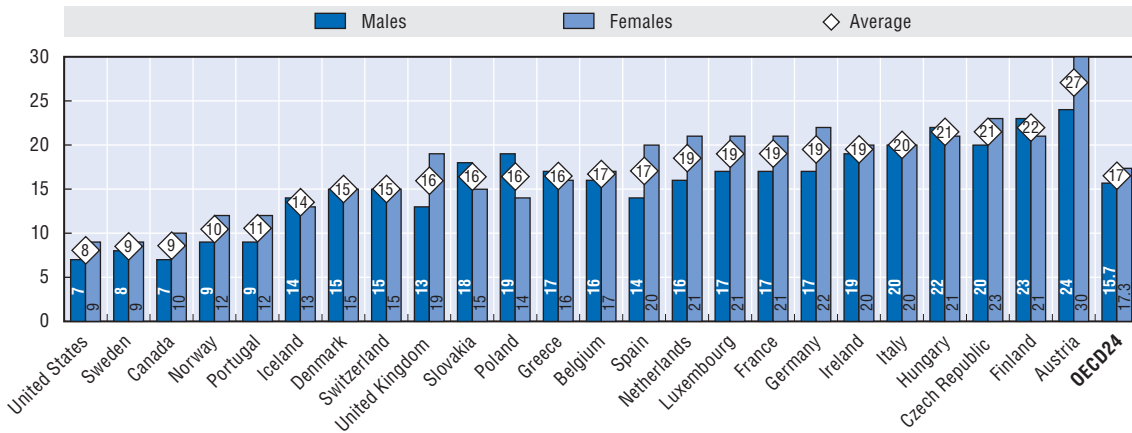
Rates of teen births are particularly high in Mexico, the United States and Turkey, at three to four times the OECD average. Japan, Korea, Switzerland and the Netherlands have the lowest rates of teenage birth rates. The variation in rates of teen births is very high across the OECD. Mexico has rates of teen birth nearly 20 times greater than that of Japan (Figure 2.17).

Quality of school life

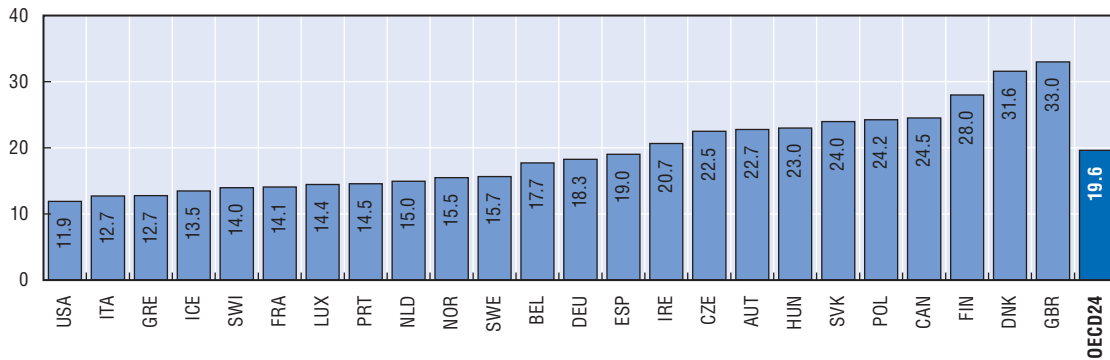
The UNCRC requires governments to provide for children's health and safety in institutions, services and facilities that provide for the care and protection of children (art. 3.3). Schools are also the place where children's freedom of expression and freedom to peacefully assemble (art. 13 and 15) can likewise be promoted or inhibited. Furthermore, the Convention states that the education of the child shall be directed towards preparation for responsible adult life, and towards an understanding of peace, tolerance and equality among genders and peoples (art. 29d).

Figure 2.16. **No country ranks consistently high or low on risk-taking measures**

a. Percentage of 15-year-old children who smoke at least once a week, 2005/06



b. Percentage of 13- and 15-years-old children who have been drunk at least twice, 2005/06



c. Percentage of 13- and 15-years-old children who have been drunk at least twice, 2005/06, breakdown by age and sex

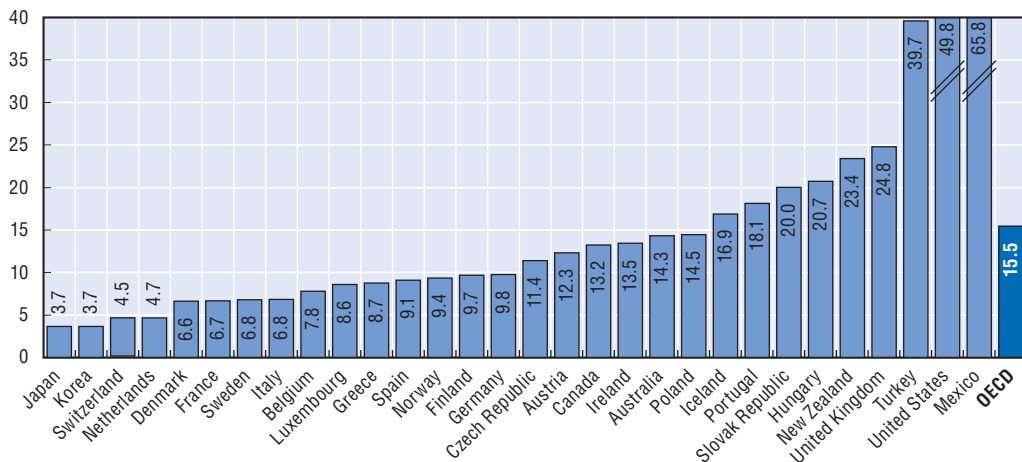
	13-years-old		15-years-old			13-years-old		15-years-old	
	Males	Females	Males	Females		Males	Females	Males	Females
Austria	10	6	41	36	Luxembourg	6	5	27	20
Belgium	9	6	32	22	Netherlands	6	5	30	21
Canada	11	13	35	36	Norway	3	3	25	32
Czech Republic	13	10	36	30	Poland	13	8	42	27
Denmark	15	9	59	56	Portugal	8	7	25	18
Finland	11	11	47	44	Slovak Republic	16	12	39	31
France	5	6	29	18	Spain	5	7	29	33
Germany	7	6	31	28	Sweden	4	4	26	26
Greece	7	4	21	17	Switzerland	6	4	29	18
Hungary	12	9	40	32	United Kingdom	21	20	44	50
Iceland	5	4	31	32	United States	5	5	20	20
Ireland	10	7	36	31					
					OECD24	9	7	33	29

Note: Data for risk behaviour estimates use reported risk-taking rates and sample numbers for 13 and 15-year-old boys and girls to calculate country percentages. Data are for the years 2005/06 from the *Health Behaviour in School-aged Children* report. The variation in 11-year-old risk taking is small and has not been included in the analysis. For 13-year-olds, only drinking statistics are used. Data are drawn from school-based samples. Data is for 24 OECD countries. Australia, Japan, Korea, Mexico, New Zealand and Turkey are missing.

Source: Adapted from Currie et al. (2008), *Inequalities in Young People's Health: HBSC International Report from the 2005/2006 Survey*, WHO Regional Office for Europe, Copenhagen.


StatLink <http://dx.doi.org/10.1787/711380324185>

Figure 2.17. **Across the OECD there is enormous variation in rates of teen births**
Adolescent fertility rate: Births per 1 000 women aged 15-19, 2005



Note: Teenage birth rates are measured as births per 1 000 15 to 19-year-old females for the year 2005. It should be noted that teenage fertility is not the same as teenage pregnancy. Countries where abortions are more common will have lower teenage fertility rates. Furthermore, in some OECD countries, such as Turkey, women marry earlier, which probably leads to an over-estimation of the social risks and negative outcomes experienced by girls becoming mothers. Physical risks are still age specific. All OECD countries are covered.

Source: World Development Indicators 2008.

StatLink  <http://dx.doi.org/10.1787/711401746455>

Two indicators are included in the quality of school life dimension. The first reports conflicts experienced in school, namely experiences of bullying. The second reports overall satisfaction with school life.

Both indicators are highly child-centred and are drawn directly from the children themselves, and as such meet the criteria for a child-centred approach. They are also up-to-date, using data collected during 2005-06, and come from the *Health Behaviour in School-aged Children* survey's international questionnaire, achieving a high degree of standardisation. However, the indicators only cover a narrow age spectrum of children aged 11-15.

Especially during middle and late childhood, children spend much of their waking time interacting with other children in, going to or coming home from school. The quality of the school experience and the associated interactions with others are critical for children's social skills as well as for their ability to learn. Given that school environments are to a large degree publicly controlled, the scope for policy intervention is considerable. However, whilst governments may have considerable influence on the objective dimensions of the school experience, much bullying is not directly under school control, so children's subjective perceptions of their school experience may be directly connected with aspects outside of the school's control.

Country coverage is comparatively poor, with 25 countries being represented in the survey. Australia, New Zealand, Japan, Korea, and Mexico are missing. Additionally, the Slovak Republic did not respond to questions about bullying.

The indicators chosen complement each another. The first indicator asks about actual experiences at school, whilst the second asks children their overall subjective perceptions. Bullying is defined from the perspective of the victim. It is a negative outcome that is

almost certainly experienced more by disadvantaged children, and thus captures an equity component of school experiences. On the other hand, liking school is a more positive measure that provides more balanced information about the child's overall experience in school.

Bullying

Bullying can take a variety of forms, including physical and mental bullying, as well as more passive exclusion of the child bullied. In terms of comparisons, the broad definition of bullying does not allow for an understanding of which forms are most prevalent in which country or the duration and intensity of bullying. There is a wide variation in bullying rates by country. Figure 2.18 shows that children are most likely to have experienced bullying in Turkey and Greece. Bullying is experienced least by children in the Nordic countries, Spain, Italy, the Czech Republic and Hungary. Bullying typically declines between age 11 and 15. There is a general but not universal tendency for boys to be bullied more often than girls.

Children who like school

The indicator of children who report "liking school" is used as an institutionally-bound indicator of life satisfaction. Whilst the satisfaction response is subjective, by using the school-life satisfaction measure public policy relevance is maintained as governments can influence the environment, curricula, teaching quality and regulations in order to improve both quality of life. The results in Figure 2.19 show that on average Turkish children like school the most, even though they report the most bullying and fighting. Turkey is the only country where the majority of the children surveyed enjoy school. In the Czech Republic, Italy, the Slovak Republic and Finland fewer than one in five children report liking school.

The overwhelming pattern, with very few country exceptions, is for girls to like school more than boys at every age examined. In addition, the proportion of both boys and girls liking school systematically declines between the ages of 11 and 15 (Figure 2.19).

Summary

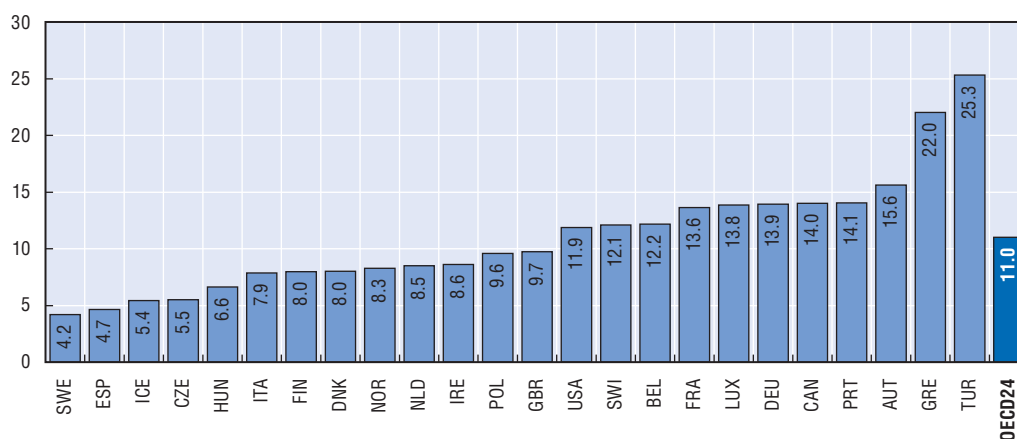
Chapter 2 has presented a new framework for comparing child well-being across OECD countries. A policy-amenable approach has been taken and indicator data has been reported for children by country and by sex, age and migrant status where possible. Indicators presented in the framework are all already in the public sphere. There has been no attempt to collect new data.

There are many competing factors in providing a good childhood. Unsurprisingly, no OECD country performs well on all fronts. Every OECD country can do more to improve children's lives.

Having considered outcomes for children, the question of how to intervene to improve these outcomes naturally arises. To gain a better understanding of the role of governments in forming and changing the sorts of outcomes measured in Chapter 2, the report now turns to explore inputs, and how social spending is distributed amongst children of different ages living in different conditions across OECD countries.

Figure 2.18. High numbers of children experience bullying in some countries

Percentage of 11-, 13- and 15-year-old children bullied at school at least twice in the last two months, 2005/06



Breakdown by age and sex

	11-years-old		13-years-old		15-years-old	
	Males	Females	Males	Females	Males	Females
Austria	20	11	20	16	18	9
Belgium	17	12	13	10	14	8
Canada	21	19	18	13	9	9
Czech Republic	6	5	7	5	6	4
Denmark	11	9	8	8	6	5
Finland	11	7	10	9	6	5
France	17	16	15	14	9	10
Germany	16	15	16	13	13	11
Greece	16	23	29	27	21	17
Hungary	9	10	7	8	3	3
Iceland	8	6	6	4	4	2
Ireland	11	8	10	7	9	7
Italy	15	7	10	8	5	5
Luxembourg	15	16	16	13	11	12
Netherlands	12	9	10	8	6	4
Norway	13	9	9	6	7	6
Poland	14	9	13	8	8	5
Portugal	17	15	19	13	13	10
Spain	6	5	6	4	3	4
Sweden	4	4	5	4	5	3
Switzerland	15	12	16	11	10	9
Turkey	37	30	29	26	18	12
United Kingdom	11	9	12	9	9	8
United States	18	15	11	10	8	7
OECD24	14	12	13	11	9	7

Note: Bullying estimates use reported bullying rates and sample numbers for 11-, 13- and 15-year-old boys and girls to calculate country percentages. Data are for the years 2005/06 from the *Health Behaviour in School-aged Children* report. A broad definition of bullying does not make clear which forms of bullying are most prevalent in which country, or how long they last. Data are drawn from school-based samples. Data is for 24 OECD countries. Australia, Japan, Korea, Mexico, New Zealand and the Slovak Republic are missing.

Source: Adapted from Currie et al. (2008), *Inequalities in Young People's Health: HBSC International Report from the 2005/2006 Survey*, WHO Regional Office for Europe, Copenhagen.


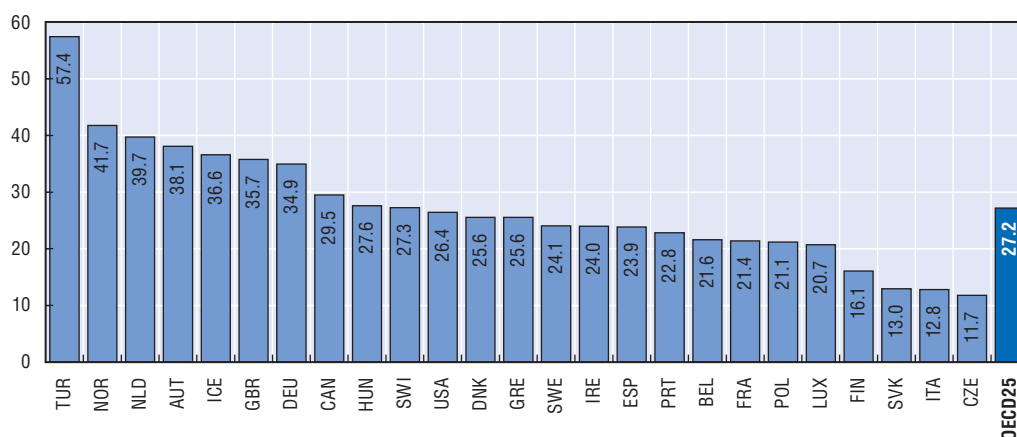
StatLink  <http://dx.doi.org/10.1787/711432365387>

Figure 2.19. **Most OECD children do not like school**

Percentage of 11-, 13- and 15-year-old children who report liking school, 2005/06



Breakdown by age and sex

	11-years-old		13-years-old		15-years-old	
	Males	Females	Males	Females	Males	Females
Austria	53	59	23	28	30	32
Belgium	25	39	20	24	10	14
Canada	28	46	20	33	22	31
Czech Republic	14	16	9	12	9	11
Denmark	33	38	21	21	18	18
Finland	14	25	14	22	9	11
France	29	41	13	19	11	13
Germany	55	62	28	32	18	20
Greece	37	49	17	26	13	17
Hungary	23	36	16	20	27	43
Iceland	33	49	29	39	29	37
Ireland	22	33	23	34	13	20
Italy	17	26	7	11	9	8
Luxembourg	25	34	20	25	9	14
Netherlands	41	49	40	51	24	32
Norway	46	51	44	49	29	31
Poland	25	34	17	30	13	14
Portugal	25	39	14	25	17	18
Slovak Republic	16	21	8	9	9	14
Spain	31	44	17	25	9	17
Sweden	30	48	22	22	11	11
Switzerland	31	39	26	31	16	20
Turkey	68	77	50	66	32	45
United Kingdom	49	54	30	32	24	23
United States	27	39	24	27	21	22
OECD25	32	42	22	29	17	21

Note: Liking school estimates use reported rates for “liking school a lot” and sample numbers for 11-, 13- and 15-year-old boys and girls to calculate country percentages. Data are for the years 2005/06 from the *Health Behaviour in School-aged Children* report. Data are drawn from school-based samples. Data is for 25 OECD countries. Australia, Japan, Korea, Mexico and New Zealand are missing.

Source: Adapted from Currie et al. (2008), *Inequalities in Young People’s Health: HBSC International Report from the 2005/2006 Survey*, WHO Regional Office for Europe, Copenhagen.

StatLink  <http://dx.doi.org/10.1787/711432783816>

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ANNEX 2.A1

Relationships between the OECD Child Well-being Indicators

Table 2.A1.1 below presents cross-country correlations across the child well-being indicators. The results are presented in dimensional blocks for easier understanding and comparison.

The largest number of significant inter-relationships is found for average literacy and low birth weight, which are both significantly correlated with 13 out of 20 other indicators. Additionally, the three material well-being measures – a child’s family income, child poverty, and educational deprivation – are each significantly correlated with 10 or 11 of the 20 other indicators. At the other end of the scale, breastfeeding, physical activity and smoking are not correlated with any of the other 20 indicators.

Table 2.A1.2 below presents the correlation matrix excluding Turkey. The Turkish figures have been removed from the associations because of several unanticipated correlations. Positive significant correlations between liking school, on one hand, with NEET, low birth weight and bullying together on the other hand are found largely because of the very high rate of children in Turkey who report liking school. Unexpected significant associations remain, however, between average literacy and both drunkenness and suicide.

Table 2.A1.1. Correlations between child well-being indicators

	Material well-being			Housing and environment		Education			Health							Risk behaviours			Quality of school life		
	Average disposable income	Children in poor homes	Educational deprivation	Overcrowding	Poor environmental conditions	Average mean literacy score	Literacy inequality	Youth NEET rates	Low birth weight	Infant mortality	Breastfeeding rates	Vaccination rates for pertussis	Vaccination rates for measles	Physical activity	Youth mortality rates	Youth suicide rates	Smoking	Drunkenness	Teenage births	Bullying	Liking school
Material well-being																					
Average disposable income	1	-0.42	-0.52	-0.81	-0.16	0.50	-0.23	-0.49	-0.49	-0.59	-0.15	-0.41	-0.36	-0.14	-0.50	0.21	-0.25	-0.22	-0.40	-0.14	0.08
Children in poor homes		1	0.62	0.34	0.45	-0.52	0.30	0.55	0.57	0.61	-0.25	-0.18	0.09	0.04	0.50	-0.16	-0.15	-0.25	0.59	0.43	0.16
Educational deprivation			1	0.47	0.00	-0.70	0.29	0.78	0.68	0.89	0.08	-0.12	0.11	0.09	0.60	-0.12	-0.26	-0.13	0.75	0.69	0.44
Housing and environment																					
Overcrowding				1	0.03	-0.48	0.31	0.29	0.42	0.54	0.23	0.26	0.27	0.14	0.43	-0.16	0.20	0.13	0.39	0.09	-0.40
Poor environmental conditions					1	-0.12	0.32	0.26	0.52	0.11	-0.18	0.18	0.12	-0.06	0.19	-0.58	0.23	-0.10	-0.09	0.21	-0.18
Education																					
Average mean literacy score						1	-0.66	-0.64	-0.58	-0.66	-0.06	-0.05	-0.08	0.15	-0.53	0.55	0.15	0.46	-0.64	-0.47	-0.25
Literacy inequality							1	0.28	0.53	0.23	0.00	0.00	-0.29	-0.23	0.38	-0.35	0.06	-0.45	0.36	0.35	0.01
Youth NEET rates								1	0.70	0.87	0.11	-0.14	-0.08	-0.07	0.55	-0.31	-0.07	-0.07	0.53	0.59	0.55
Health																					
Low birth weight									1	0.61	0.02	-0.14	-0.01	-0.07	0.50	-0.38	0.11	-0.12	0.47	0.67	0.29
Infant mortality										1	0.13	-0.05	0.12	0.09	0.63	-0.10	-0.04	0.29	0.75	0.59	0.55
Breastfeeding rates											1	0.13	0.29	-0.23	-0.24	0.13	-0.07	0.12	0.04	0.00	0.24
Vaccination rates for pertussis												1	0.54	-0.07	-0.03	-0.27	0.22	-0.01	-0.14	-0.50	-0.37
Vaccination rates for measles													1	0.27	-0.09	-0.22	-0.23	0.14	0.09	-0.39	-0.27
Physical activity														1	0.07	0.22	0.02	0.38	0.19	-0.21	-0.20
Youth mortality rates															1	-0.07	-0.10	-0.16	0.58	0.37	-0.35
Youth suicide rates																1	0.01	0.24	0.03	-0.16	0.11
Risk behaviours																					
Smoking																	1	0.24	-0.33	0.05	-0.16
Drunkenness																		1	0.04	-0.22	-0.05
Teenage births																			1	0.32	0.33
Quality of school life																					
Bullying																				1	0.44
Liking school																					1

Statistically significant associations at the 95% level

Statistically insignificant associations

Source: OECD calculations.

Table 2.A1.2. Correlations between child well-being indicators (without Turkey)

	Material well-being			Housing and environment		Education			Health							Risk behaviours			Quality of school life			
	Average disposable income	Children in poor homes	Educational deprivation	Overcrowding	Poor environmental conditions	Average mean literacy score	Literacy inequality	Youth NEET rates	Low birth weight	Infant mortality	Breastfeeding rates	Vaccination rates for pertussis	Vaccination rates for measles	Physical activity	Youth mortality rates	Youth suicide rates	Smoking	Drunkenness	Teenage births	Bullying	Liking school	
Material well-being																						
Average disposable income	1	-0.31	-0.40	-0.81	-0.16	0.41	-0.21	-0.38	-0.38	-0.51	-0.10	-0.51	-0.40	-0.15	-0.50	0.21	-0.25	-0.22	-0.32	0.19	0.46	
Children in poor homes		1	0.51	0.34	0.45	-0.42	0.29	0.45	0.46	0.51	-0.36	-0.14	0.11	0.04	0.50	-0.16	-0.15	-0.25	0.53	0.23	-0.17	
Educational deprivation			1	0.47	0.00	-0.61	0.29	0.64	0.53	0.82	-0.03	-0.04	0.16	0.12	0.60	-0.12	-0.26	-0.13	0.74	0.45	-0.21	
Housing and environment																						
Overcrowding				1	0.03	-0.48	0.31	0.29	0.42	0.54	0.23	0.26	0.27	0.14	0.43	-0.16	0.20	0.13	0.39	0.09	-0.40	
Poor environmental conditions					1	-0.12	0.32	0.26	0.52	0.11	-0.18	0.18	0.12	-0.06	0.19	-0.58	0.23	-0.10	-0.09	0.21	-0.18	
Education																						
Average mean literacy score						1	-0.69	-0.62	-0.47	-0.58	0.01	-0.12	-0.09	0.17	-0.53	0.55	0.15	0.46		-0.59	-0.20	0.13
Literacy inequality							1	0.43	0.56	0.24	-0.02	0.01	-0.29	-0.23	0.38	-0.35	0.06	-0.45		0.35	0.35	-0.07
Youth NEET rates								1	0.59	0.65	-0.08	-0.06	-0.14	-0.14	0.55	-0.31	-0.07	-0.07		0.56	0.10	-0.15
Health																						
Low birth weight									1	0.39	-0.07	-0.08	-0.01	-0.08	0.50	-0.38	0.11	-0.12	0.37	0.49	-0.09	
Infant mortality										1	0.01	0.09	0.20	0.14	0.63	-0.10	-0.04	0.29	0.82	0.08	-0.10	
Breastfeeding rates											1	0.16	0.30	-0.23	-0.24	0.13	-0.07	0.12	-0.01	-0.13	0.17	
Vaccination rates for pertussis												1	0.54	-0.07	-0.03	-0.27	0.22	-0.01	-0.11	-0.53	-0.37	
Vaccination rates for measles													1	0.27	-0.09	-0.22	-0.23	0.14	0.10	-0.48	-0.33	
Physical activity														1	0.07	0.22	0.02	0.38	0.20	-0.28	-0.25	
Youth mortality rates															1	-0.07	-0.10	-0.16	0.58	0.37	-0.35	
Youth suicide rates																1	0.01	0.24	0.03	-0.16	0.11	
Risk behaviours																						
Smoking																	1	0.24	-0.33	0.05	-0.16	
Drunkenness																		1	0.04	-0.22	-0.05	
Teenage births																			1	0.03	0.05	
Quality of school life																						
Bullying																				1	0.11	
Liking school																					1	

Statistically significant associations at the 95% level

Statistically insignificant associations

Source: OECD calculations.

Chapter 3

Social Spending across the Child's Life Cycle

This chapter looks at how governments distribute social spending amongst children of different ages, the first time such comparison has been undertaken across the OECD. The first section of this chapter examines the distribution of spending through cash transfers and services across the child life cycle in 28 OECD countries. The second section explores variations in the cash transfers made to families with children, modelling and comparing tax-benefit systems as children age in eight OECD countries in 2003: Denmark, France, Germany, Hungary, Italy, Japan, the United Kingdom, and the United States. The results are presented in terms of relative levels of support across the child life cycle for different family types.

Introduction

Social spending through family benefits and child and family services aims to influence child well-being. This chapter explores how different OECD countries distribute government social spending and transfers for children across the child's life cycle. The composition of government spending and transfers through the child's life cycle is also examined.

Little is currently known about the comparative composition and amount of government spending and transfers through the child's life cycle. For policy makers, it is important to observe the big policy picture of current spending and not focus exclusively on the smaller issues of marginal spending increments in annual national budget rounds, or even specific programme additions. The main action in terms of enhancing child outcomes may be improving the quality of current spending.

The first section of this chapter examines the distribution of spending through cash transfers and services across the child's life cycle in 28 out of 30 OECD member countries. This is the first time such an exercise has been undertaken in a comparative fashion across the OECD. The second section goes into greater detail to explore variations in the cash transfers made to families with children and uses OECD tax-benefit models for eight member countries. The results are presented in terms of relative levels of support across the child life cycle for different family types.¹

The distribution of public spending on children varies across OECD countries. Overall on average across the OECD in 2003, about USD 126 000 is cumulatively spent on children up to age 18. Twenty-four per cent of child spending occurs during the first third of childhood, rising to 36% during the middle third and rising again to nearly 41% during the last third. Hungary is the only country to spend the highest share in early childhood, while Iceland, Japan, Mexico, Poland and Spain are those who spend most in middle childhood. All 22 other countries spend most in late childhood.

Notably, most of the variation in spending is during early childhood. This variation reflects different country values on the role of the state during early childhood and the complex tradeoffs faced by early childhood policies between parental labour supply and children's outcomes.

Why consider social spending on children by age?

Childhood is a time of heavy investment for the future. The principal decision-making institutions in this process are families and governments. In terms of provision of time and resources, there are good, rational reasons for heavy investment at this stage of the life cycle. The future payoff is maximised, since childhood is the point in the life cycle where life expectancy is longest.

There is a need to go beyond simple analyses that treat children as a single, undifferentiated group – a “lump of childhood” approach – to consider social spending on children within a developmental and life cycle perspective. Much child poverty research

considers children as a single group – numbers of children are aggregated to see whether equivalised family incomes fall under some poverty threshold, for example. Other data analysis on spending on children also takes the “lump of childhood” approach (Gabel and Kamerman, 2006; OECD, 2007a). So too does the child well-being study of UNICEF (2007) and indeed some of the indicators presented in Chapter 2, primarily because of data constraints (see Box 2.1).

Recent theoretical and empirical research consequently stresses that social spending on children early in the life cycle can be more effective in enhancing children’s long-term outcomes (see Box 3.1 for an influential line of argument in this area). There is good theory and empirical evidence that the social profitability of investment is likely to differ significantly across the child’s life course (Brim and Phillips, 1988; Duncan and Magnuson, 2004). Specifically in terms of timing and differential rates of return on investments across the life cycle, there is evidence on higher rates of return from micro-studies of early intervention and from schooling (Heckman, 1999). Additionally, there is compelling evidence of sensitive periods for child development, which may differ according to the child outcome (Cunha and Heckman, 2007). For example, cognitive ability (IQ) stabilises between 8 and 10 years of age, while behaviour on the other hand remains modifiable into late childhood.

There have been strong arguments developed suggesting that the earliest part of the child’s life cycle should be treated as a distinct period in terms of policy development (Duncan and Magnuson, 2003, 2004). This literature concludes that, “it appears that we are spending too little on children, and in particular on younger children relative to older children” (Duncan and Magnuson, 2003, p. 2). In addition, there is empirical evidence that differences in experiences during early childhood are much more predictive of outcomes in late childhood than those of middle childhood. Magnuson *et al.* (2003) find that middle childhood contexts add little to early childhood contexts in term of explaining outcomes at ages 13-14. They conclude that “the most powerful associations with teen outcomes were found for the experiences, abilities, and behaviours that children bring to middle childhood. So while middle childhood context may constitute independent sources of risk and resilience for children, and be amenable to cost effective interventions, the key to understanding their eventual achievements and behaviours involves the nature and nurture taking place prior to middle childhood” (Magnuson *et al.*, 2003, p. 13).² Further evidence for the importance of the point in the child’s life cycle for policy are several studies which show that the impact of family income and income transfers on a child’s development depends on the stage in the child’s life cycle at which that income accrues (Duncan and Brooks-Gunn, 1997; Morris *et al.*, 2004; see also citations in Dahl and Lochner, 2005, p. 5).

An infant has different needs from an 18-year-old. Children’s verbal and cognitive skills build cumulatively through the child life cycle, as does their awareness of the needs of others (Fabes and Eisenberg, 1996). Evidence of accruing socialisation and the development of altruism from kindergarten age to the teen years can be found in experimental data which shows that children in early childhood are more likely to act as selfish maximisers than children during middle and late childhood or adults (see Murnighan and Saxon, 1998; Harbaugh *et al.*, 2001; and Benenson *et al.*, 2007). Experiences also accrue as a child ages, improving judgment and allowing more responsibility to be delegated from parents. Relatedly, the ability to make independent decisions about the future develops, based on a growing ability to defer gratification. Finally, the ability to communicate wants and needs also develops as the child ages.

Box 3.1. Age-spending profiles and Heckman's model of child investment

James Heckman proposes a developmental model of investment during childhood. A main conclusion is that investment in children should be most intensive during early childhood and should taper off as children age (e.g. Heckman 1999, 2007; Heckman and Masterov, 2007; Cunha and Heckman, 2007; Knudsen *et al.*, 2006). Rather than treating childhood as an undifferentiated "lump", Heckman's model of adult skill formation recognises the importance of different childhood stages. It also acknowledges three credit market imperfections: 1) the inability of a child to choose its parents, 2) the inability of a parent to borrow against their child's future income, and 3) the inability of a parent to borrow against their own future income.

The formal model of skills formation is consistent with six stylised facts:

1. Skills gaps between individuals and social groups emerge early in the child's life cycle.
2. Critical and sensitive periods exist during the child's life cycle where skills must be acquired or are more easily acquired.
3. Returns to investing are high for young disadvantaged children and low for disadvantaged adolescents.
4. Investment at different ages is complementary. If early investment is not followed up by later investment, its effect is lessened.
5. The effect of credit constraints on a child's adult outcomes depends on the age at which they bind.
6. Socio-emotional skills foster cognitive skills and are an important outcome to promote.

The formal model for the ratio of early to late investment has three critical parameters: the skill multiplier (incorporating the notions of self-productivity and dynamic complementarity of investment), the interest rate, and the ease of compensating a failure in early investment later in the life cycle. The higher the skill multiplier and lower the ease of compensation of early investment failure, the higher the ratio of early to late investment. On the other hand, the higher the interest rate, the more advantageous is later investment.

The formal model does not predict that early investment should exceed later investment. Rather, this policy conclusion is a function of deduction and evidence that the skill multiplier is high and that the ability to remediate a failure of early investment later in the child's life cycle is low.

The model ignores the well-being of the child as a child. Consideration of child well-being for children as children may amend the policy recommendations regarding age-spending profiles.

Possibly the most contentious stylised fact is the low return to investing in disadvantaged adolescents. However, highly targeted interventions for troubled teens can show very high rates of return (Aos *et al.*, 2004). For policy it is important to remember that there may be programmes at any point in the child life cycle that have high social rates of return.

Patterns of spending by child age are also important if the costs of children differ by age. If children of different ages impose different costs on families, social resources might be allocated across the child life cycle to reflect that differential cost. There is a longstanding view in many OECD countries that older children cost more in terms of family monetary expenditures on food, clothing and leisure. The modified OECD equivalence

scale gives a higher weight to children over 13 years of age. Empirical research shows that family expenditures on children do increase with age (see for example Henman *et al.*, 2007). In a number of OECD countries, child benefits also increase with age, reflecting these and similar results. However, this research neglects non-monetary costs, including the costs of foregone parental leisure time. Observation suggests that young children demand considerably more parental care time, which in turn reduces leisure. Typically these opportunity costs of leisure are not included in monetary-focused estimates of the costs of children.³ Recent research has tried to account for the full opportunity costs of children, including valuing reductions in parental leisure. Despite finding that the monetary expenditures on children increase with age, Bradbury (2008) concludes that in Australia the full cost of children actually declines with age. He finds that foregone parental leisure for a family with a youngest child under age 3 amounts to 26 hours per week, falling to 19 hours for a 3-4 year-old, and 14 hours for a 5-11 year-old. A similar pattern of greater time-intensity of young children for the United States is found by Folbre *et al.* (2005, Table 2). They report children under age 3 taking up 42 hours of parental active care time per week, compared to 34 hours for 3-5 year-olds, 24 hours for 6-8 year-olds and 20 hours for 9-12 year-olds.

Child rights also have an age dimension. Particular articles of the UNCRC state that all children should have a right to benefit from health services, including pre- and post-natal health care, preventive health care as well as responsive health care (art. 24), and a basic education (art. 28).

Child well-being means different things at different ages. Some empirical work also shows remarkable divergences in child well-being trends through time by child age groups. Land *et al.* (2007, Figure 3a, p. 119) considers child well-being in the United States for three groups – early, middle and late childhood – between 1975 and 2001. Well-being rises strongly for children in early childhood over time, is stable for late childhood and strongly decreases in middle childhood. If child well-being for different child age groups can trend in such different directions, there is value in looking at social interventions by different age groups.

The profiling method and data sources

Age-spending profiles record public spending on children by age. Spending figures are national 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. The second part of this chapter, which builds tax-benefit analysis for eight OECD countries, brings in an individual distributional dimension to the analysis, rather than simply focusing on population averages.

The age-spending profiles, including both welfare spending and education spending, cover 28 out of 30 OECD countries. Canada and Turkey are missing due to data problems. The profiles extend well beyond the age of majority in most countries, and certainly beyond age 18, the cut-off for the United Nations definition of a child. The reason for this age extension is that many countries continue to pay what are described as “child benefits” when people are still in full-time post-compulsory education and may still be dependent on their parents for resources. Additionally, a significant amount of education investment takes place over age 18.

The main data source for the age-spending profiles is the *OECD Social Expenditure database* (SOCX), which lists family programmes and information on active labour market policies for youth.⁴ 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 (age-related eligibility, 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. So if parental leave payments stop when the child reaches 18 months the SOCX figure is split between two-thirds in the first year and one-third in the second year. Or if the policy allows mothers to take three of these 18 months before the birth of their child, then one-sixth of the money is allotted to before birth and the remainder to the time following birth.

The second source used for profiling expenditure is the *OECD Education database*. 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 age-related eligibility rules, conditions and amounts of the family benefits, including country chapters for OECD tax-benefit models in 2003 (available via the benefits and wages website in OECD, 2007b), country notes for SOCX, MISSOC (2003), international reviews of social security and family policies (*Social Policies throughout the World 2008*), Bradshaw and Finch (2002), as well as other national government and academic sources. Enrolment rates in child care were derived from government-reported statistics in the *OECD Family database* (2008).

Limitations

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 population, spending and programme rules, and so could produce better individual country profiles. The advantage of the approach taken here is cross-OECD comparability. The major components of spending are, comparatively speaking, accurately allocated. Nevertheless, there is likely to be some scope for improvement in the accuracy of the year-by-year profiles. It is hoped that this first analysis stimulates further consideration and refinement at a country level.

There are some important issues regarding the aggregation of cash transfers with in-kind benefits that impose limitations. Cash transfers are provided to the family. 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).

Additionally, there are issues of aggregation between different sorts of cash transfers. Some child-related transfers simply provide money – for example, child benefits – but impose no other requirements. On the other hand, parental leave benefits require a reduction in market time worked which is then available as a further input to child well-being. 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 particularly 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 child care 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.

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.

In assessing the impact of transfer income on children, family income is typically equivalised to adjust for the fact that children are in families, and the families differ in size. There can be no equivalisation of transfer income undertaken here, because of the aggregative nature of the study. The lack of equivalisation on the income side over-emphasises the role of transfer income for children compared to in-kind services in the profiles.

In this approach, 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.

Finally, public social expenditure is not the only input to child well-being. 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 (see Box 3.2), are obviously important omissions from consideration of investment in children (but see Box 6.1 below).

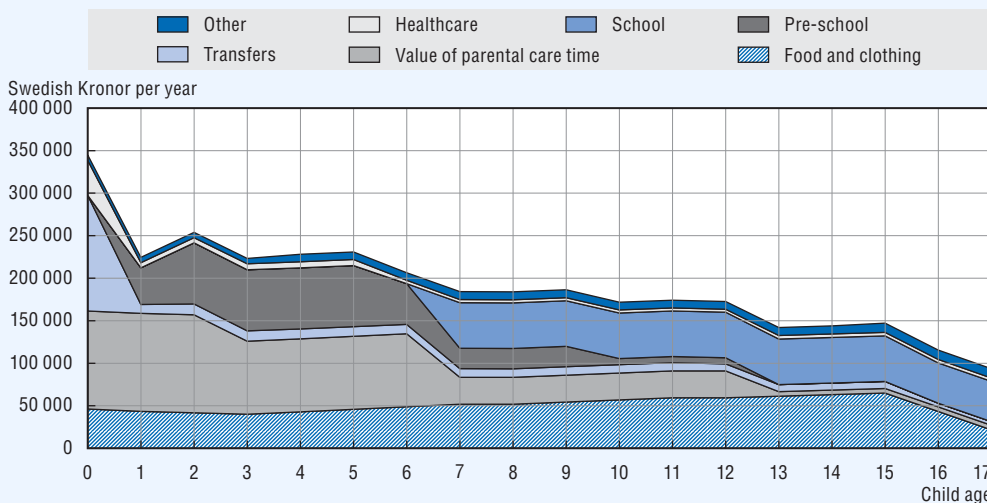
Among the social programmes excluded from the age-spending profiles are mandatory and voluntary private social spending. Quality of coverage in the database for voluntary private expenditures varies across countries. Including such measures might give a misleading impression of comprehensiveness without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

In four country cases, payments made to single parents as part of "family benefits" in public social expenditure are excluded. The Parenting Payment in Australia, Income Support in the United Kingdom, the Lone Parents' allowance in Ireland and Domestic Purposes Benefit in New Zealand are single parent payments that would otherwise be aggregated into broader income support payments in other countries. In other countries these support payments are categorised outside of family payments. To include these for

Box 3.2. A Swedish child age-expenditure profile

Part of the motivation for the comparative work on child age spending profiles was a Swedish report with a broader remit than this chapter (Dalman and Bremberg, 1999).¹ Dalman and Bremberg's study is a comprehensive assessment of all resources available to children by year of age from birth to age 18, as provided by both family and government. The figures for government inputs are based on figures from local as well as from central government. The estimates are for Stockholm county, which has a population of around 1.8 million out of a total Swedish population of about 9 million. The detail of the profile is shown below, for the year 1995.

Formal and informal expenditures for children aged 0-17 years, Sweden, 1995, by age



Source: Based on original data used by Dalman and Bremberg (1999) kindly provided to the OECD by Professor Sven Bremberg.

StatLink  <http://dx.doi.org/10.1787/711433604283>

Expenditures include family spending on children. Family expenditure is divided into monetary spending on food, clothing and so on, plus an estimation of the value of parental care time for children, based on time use studies and average salaries. Particularly striking is the decline in parental time inputs as children age, a finding consistent with Bradbury (2008) and Folbre (2008). Monetary expenditures rise moderately as children age, reflecting what is known about the monetary costs of children. Overall, the total family contribution declines with age.

The pattern of transfers in the early years is dominated by paid parental leave. Transfers thereafter decline to insignificance, as pre-school and school spending comes to the fore. Health spending and sports/leisure spending appears comparatively unimportant overall. Health spending is notably higher in the first year of life, presumably because of the comparatively high costs of childbirth, involving medical specialists and hospital beds.

A conceptual issue with Dalman and Bremberg's approach is double counting. Government monetary transfers are counted as such, but also function as finance for family spending on "food, clothes, etc.". Equally, government parental leave transfers are counted, which could be considered to cover the cost of parental time in early child care, yet this parental time is also additionally valued and counted in the family parental care component.

1. Thanks to Sven Bremberg, Associate Professor, Department of Public Health Sciences, Karolinska Institute and National Institute of Public Health, for his help in accessing this research.

Australia, Ireland, New Zealand and the United Kingdom would compromise international comparability.

An omission from the consideration of spending by child age is public health spending. Health spending cannot be readily broken down by child age. Health spending includes pre-natal services, hospital service costs at birth, and post-natal services. It is an important consideration for child well-being, as health is integral for good schooling, play and relationship-building. The major component of health spending for children in most countries is likely to be during the few weeks surrounding birth. Most of these costs are typically delivery costs. By international convention, delivery costs are equally shared between the mother and child. Birth costs are likely to be primarily hospitalisation costs and delivery costs for normal births. There is likely to be a significant difference between median health costs at birth and average health costs, with averages pushed up by very expensive but comparatively rare cases of prematurity or post-birth complications, which often require long periods of hospitalisation and expert care. After the peri-natal period, health costs for children are typically low, since they are usually one of the healthiest age groups in the population. In fact, the Swedish profile, including health care, demonstrates exactly this pattern (see Box 3.2).

In presenting the profiles, 2003 social expenditure data is used (2005 data became available too late to be used here. The broad overall shape of profiles is likely to be fairly similar to 2005, with some changes at the margin for some countries). The 2003 data is sliced into different age groups, giving the expenditure by age in that year. Thus, if there were no policy changes since 2003, this approach would show the average spending that a child born in 2003 would be exposed to over every single year of their life cycle from birth until when the final child benefit is paid (sometimes well into their 20s). An alternative approach would be to look at a single cohort of children, rather than a cross-section of data. For example, average spending data for 18-year-olds in 2003 could be presented alongside similar data for 17-year-olds in 2002, 16-year-olds in 2001, etc., showing the age-related expenditure over the child life cycle for a single cohort of children. Such an approach would allow for policy change over the life cycles of different cohorts of children, but the data demands for replicating this approach internationally would be very high indeed.

There are a number of caveats to consider in interpreting the results. But notwithstanding the range of limitations discussed above, certain strengths of the analysis remain. Firstly, the profiles are easily understood, and they clearly identify social spending and education effort in OECD countries by age. The profiles also identify where and how investment in children is made by public bodies, and simply summarise a range of complicated material. This work provides a first start in the analysis of life cycle investment that may be matched up to child well-being outcomes.

Discussion of the child age-spending profiles

This section summarises the results of the age-spending profiles in several different formats. To begin with, spending on children is divided by three stages of equal temporal duration. These three stages are early childhood (from birth until age 5 inclusive), middle childhood (age 6-11 inclusive), and late childhood (age 12-17 inclusive). Spending by stage of childhood is considered both as the share of total spending on children and as the ratio of spending during one period to spending during another period. Following that, a breakdown of spending by type in different stages and detailed year-by-year profiles are

considered for each of the countries. In the latter analysis spending is normalised by the median net working-age household income of each country, enabling a relative comparison between countries. That is to say, it indicates how much each country spends on children, conditional on their average income. Spending is also compared in United States dollars, using purchasing power parity exchange rates.

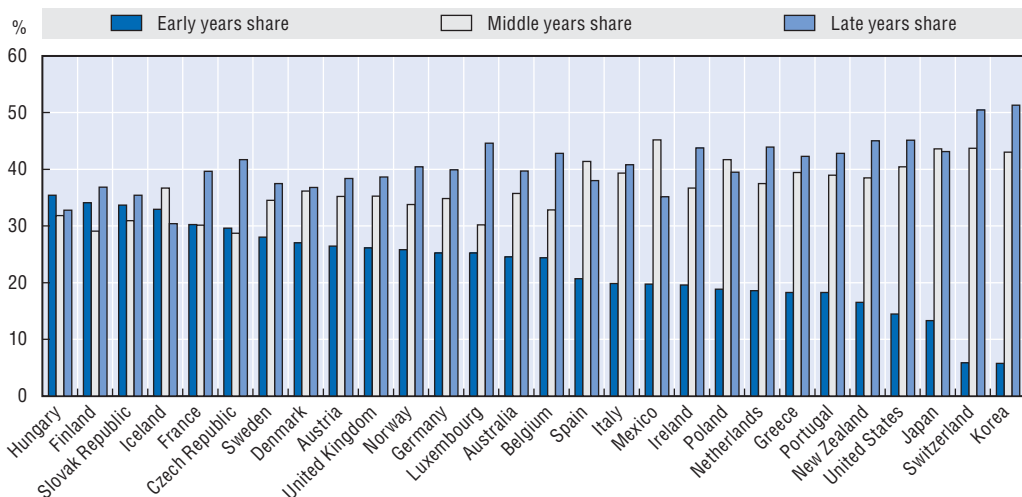
The cut-off point at age 18 conforms to the United Nations definition of children. However, since in many OECD countries child benefits continue to accrue to people after age 18, year-by-year spending profiles were extended to age 27, the age at which the last OECD country – Germany – ceased to pay a child benefit in 2003.

Social expenditure by three major stages of childhood


Figure 3.1 and Table 3.1 provide a broad brush overview of total public social expenditure per child in each of three major stages of childhood in all 28 countries. Out of 28 OECD countries, 23 spend more on middle childhood than on early childhood. Only the Czech Republic, Finland, Hungary, and the Slovak Republic spend more on early than middle childhood. Even more countries – 26 in total out of 28 – spend greater amounts on late childhood than early childhood. The exceptions, those who spend more or the same on early childhood, are Hungary and Iceland. Only five countries spend more on middle than on late childhood (Iceland, Japan, Mexico, Poland and Spain). Only Hungary spends most overall on early childhood. No OECD country incrementally decreases public social expenditure by stage of childhood.

Figure 3.1. Public social expenditure per capita by stage of childhood, 2003

Proportion of total spending on children and families



Source: OECD Social Expenditure database and OECD Education database.


StatLink  <http://dx.doi.org/10.1787/711482381556>

On average, across all 28 countries shown in Table 3.1, spending during middle childhood is twice that during early childhood, while spending on late childhood averages 2.3 times that during early childhood. It is worth noting that spending during middle childhood, while lower, is more similar to spending during late childhood. There is considerable similarity in relative spending strategies between countries in terms of the

Table 3.1. **Spending inequalities by age, 2003**

	Ratios of spending by life cycle stage		
	Middle/early childhood	Late/middle childhood	Late/early childhood
Australia	1.46	1.11	1.62
Austria	1.33	1.09	1.45
Belgium	1.35	1.30	1.76
Czech Republic	0.97	1.45	1.41
Denmark	1.34	1.02	1.36
Finland	0.85	1.27	1.08
France	1.00	1.31	1.31
Germany	1.38	1.15	1.58
Greece	2.16	1.07	2.31
Hungary	0.90	1.03	0.92
Iceland	1.11	0.83	0.92
Ireland	1.87	1.19	2.24
Italy	1.98	1.04	2.06
Japan	3.28	0.99	3.24
Korea	7.50	1.19	8.94
Luxembourg	1.19	1.48	1.77
Mexico	2.29	0.78	1.78
Netherlands	2.02	1.17	2.36
New Zealand	2.33	1.17	2.72
Norway	1.31	1.20	1.57
Poland	2.22	0.95	2.10
Portugal	2.13	1.10	2.35
Slovak Republic	0.92	1.14	1.05
Spain	2.00	0.92	1.84
Sweden	1.23	1.09	1.34
Switzerland	7.46	1.15	8.62
United Kingdom	1.35	1.09	1.48
United States	2.80	1.12	3.13
OECD average	2.06	1.12	2.30
Standard deviation	1.65	0.16	1.93

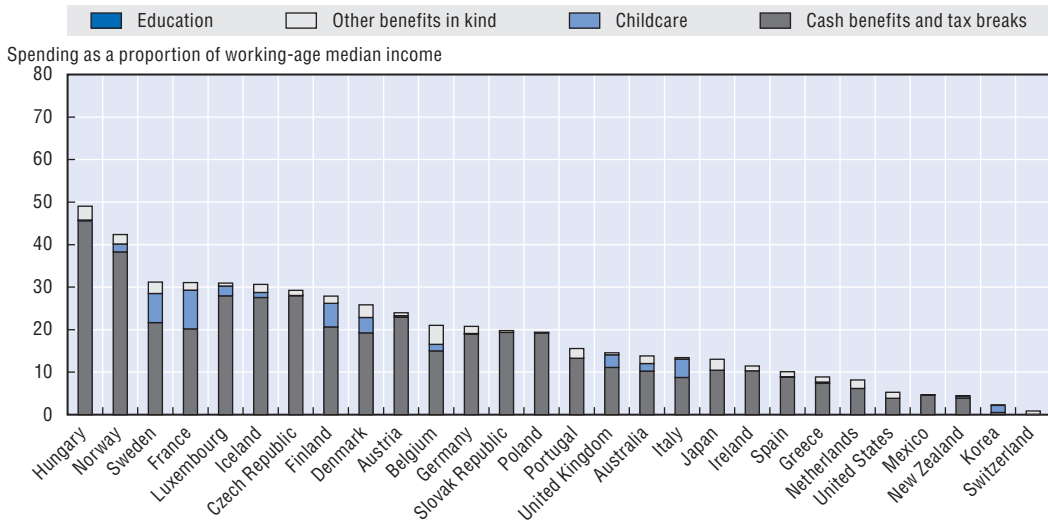
Source: OECD Social Expenditure database and OECD Education database.

StatLink  <http://dx.doi.org/10.1787/711507816442>

middle and late childhood balance but more differences in approaches to early childhood (evidenced by the standard deviations in Table 3.1).

Consideration now turns to the composition of spending across stages of the child life cycle in terms of education, other benefits in kind, child care, and cash benefits and tax breaks invested in each country. Figure 3.2 below shows the per capita spending on children during infancy (less than two years of age) relative to median net working-age household income. For the majority of countries, cash benefits make up most of the non-health expenditure in infancy. With the exception of Australia and the United States, each country pays a maternity benefit, involving both pre- and post-natal leave, which replaces mothers' earnings at varying rates. Parental leave cash benefits, baby bonuses and child benefits paid in cash are also included. Benefits in-kind are rarely focused specifically on infancy. In the majority of countries, a range of programmes from home help, accommodation, food supplementation, and family support services contribute equally across the families with children aged 0-17. For this reason all countries have some in-kind spending registered. Reflecting the early stage in the life cycle, child care is relatively unimportant, as most children are in some sort of family care.

Figure 3.2. **Cash dominates social expenditure on children during infancy (< 2-years old), 2003**



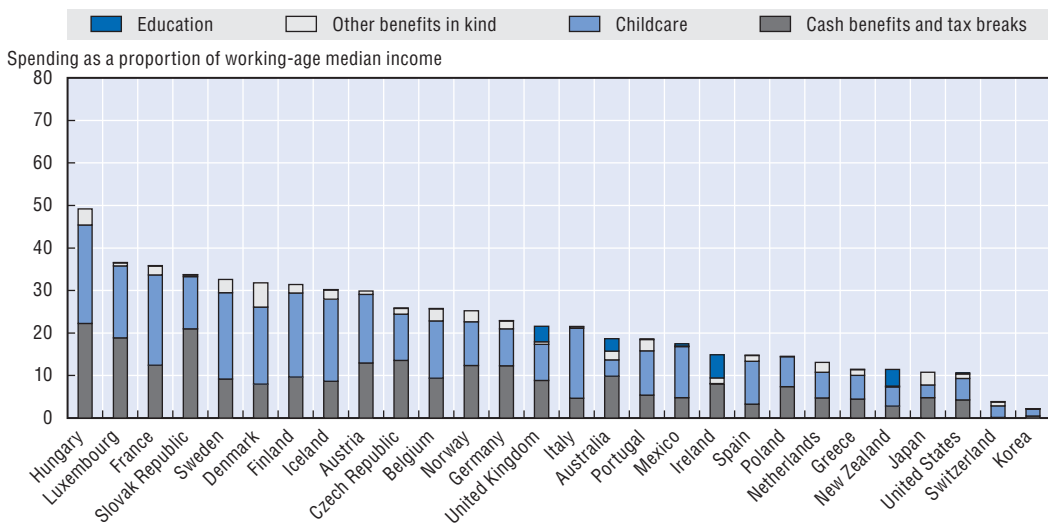
Source: OECD Social Expenditure database and OECD Education database.

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Figure 3.3 considers the totality of early childhood spending (< age 6) as a proportion of median income (data is per child/year, so data are directly comparable with Figure 3.2). While cash dominates strategies in infancy, benefits in-kind, in particular child care and early childhood education become considerably more important in the early childhood expenditure strategies. Compulsory education spending is also beginning to appear in the Anglophone countries.

In terms of relative investment, the amount of variation across countries is large. However, Hungary stands out as a low (by OECD standards) income country with high

Figure 3.3. **Child care is important in per capita social expenditure on children in early childhood, 2003**



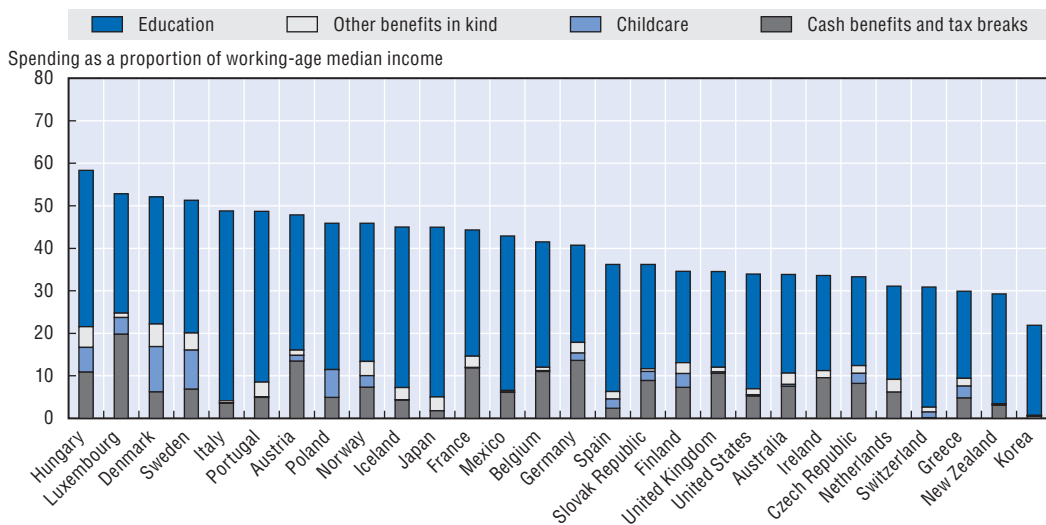
Source: OECD Social Expenditure database and OECD Education database.

StatLink <http://dx.doi.org/10.1787/711551376181>

relative spending. The United States and Japan stand out as high-income countries that spend relatively little on public services in early childhood. Switzerland's poor performance, given its high level of per capita GDP, reflects the significant amount of child spending undertaken at the cantonal level, which is not included in the OECD Social Expenditure data base. One other general point can be made by comparing Figure 3.2 with Figure 3.3: per child spending slightly increases from the amount spent during infancy.

Public social expenditure in middle childhood (age 6-11) relative to median household income is shown in Figure 3.4. Compulsory education spending strongly dominates the expenditure picture in these years, and cash transfers diminish in importance. Relative spending levels continue to increase.

Figure 3.4. **Education spending dominates during middle childhood, 2003**



Source: OECD Social Expenditure database and OECD Education database.


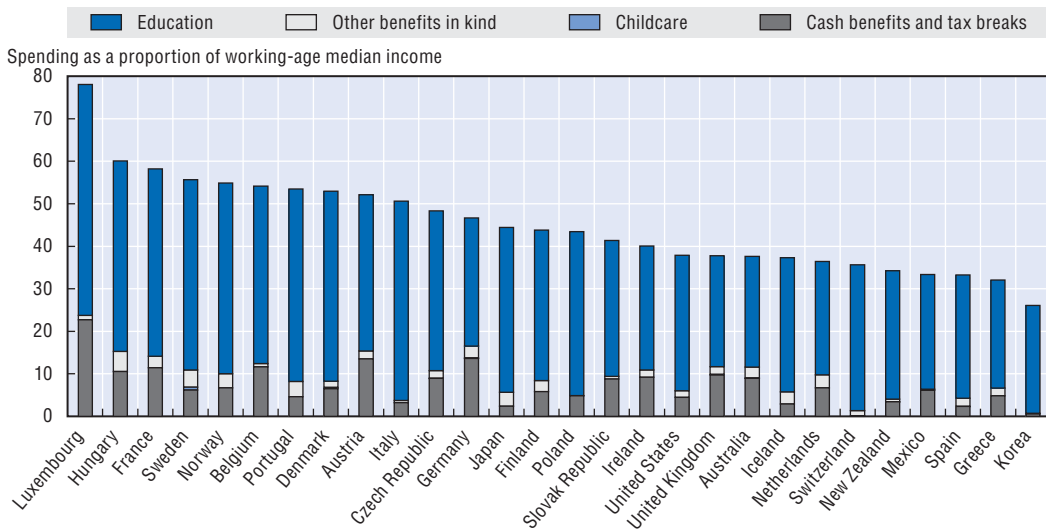
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Figure 3.5 summarises spending in the final stage of childhood from ages 12 to 17 inclusive. Children in this bracket are generally in secondary education, and consequently education strongly dominates total spending composition.


The 28 detailed country profiles by individual year of age are shown below in Figure 3.6. Countries that place a stronger emphasis on spending early in the child life cycle “front-load” their spending, giving them 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 Finnish and Hungarian 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 Czech, Icelandic and Norwegian profiles have elements of front-loading as well.

A more common stylised profile is what may be described as the “inverted-U”, with social spending peaking during the mid-teens. The Italian and United States profiles are good examples of the “inverted U” profile. In addition, the vast majority of other countries have absolute spending peaking during the teen years (in addition to those already mentioned, this includes Belgium, Denmark, France, Germany, Ireland, Japan, Korea,

Figure 3.5. Education spending dominates during late childhood, 2003



Source: OECD Social Expenditure database and OECD Education database.

StatLink  <http://dx.doi.org/10.1787/711600032080>

Luxembourg, Netherlands, New Zealand, Poland, Portugal, Spain, Sweden, Switzerland, and the United Kingdom). 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, spending at this stage of the life cycle is likely to reinforce inequality, at least in qualitative terms.

There are several countries where spending peaks neither in the first year nor during the teens. The Slovak Republic peaks at age 3, Austria at age 5, and Greece at age 6. Despite these pre-teen peaks, overall there is a heavy preponderance of late childhood spending.

In terms of spending composition, profiles typically show a “kick” in cash benefits early on, which reflects various forms of maternal and parental leave. The period where child-care spending occurs and fades out is shown, including the out-of-school component. The strong Nordic investment in child care, for example, is clearly shown.

The large number of countries with long-duration child benefits, lasting beyond age 18 – Australia, Austria, Belgium, Czech Republic, France, Germany, Greece, Hungary, Japan, Luxembourg, Portugal, Slovak Republic – are evident. Much like universal education spending during the teen years, such spending accrues primarily to those children who have already successfully reaped the benefits of past social spending (spending before age 18) and who are already well set up to succeed in life. Consequently, though there are incentives for further investment on education for children on the margins, such policy approaches are likely to reinforce inter-generational inequality.

Korea stands out as having the least spending at most points in the child life cycle, with 30% of median household income or less spent at all points. On the other hand, Denmark, Hungary, Iceland, Luxembourg and Sweden spend around half or more of median household income.

Figure 3.6. **Average social expenditure by child age by intervention as a proportion of median working-age household income, 2003**

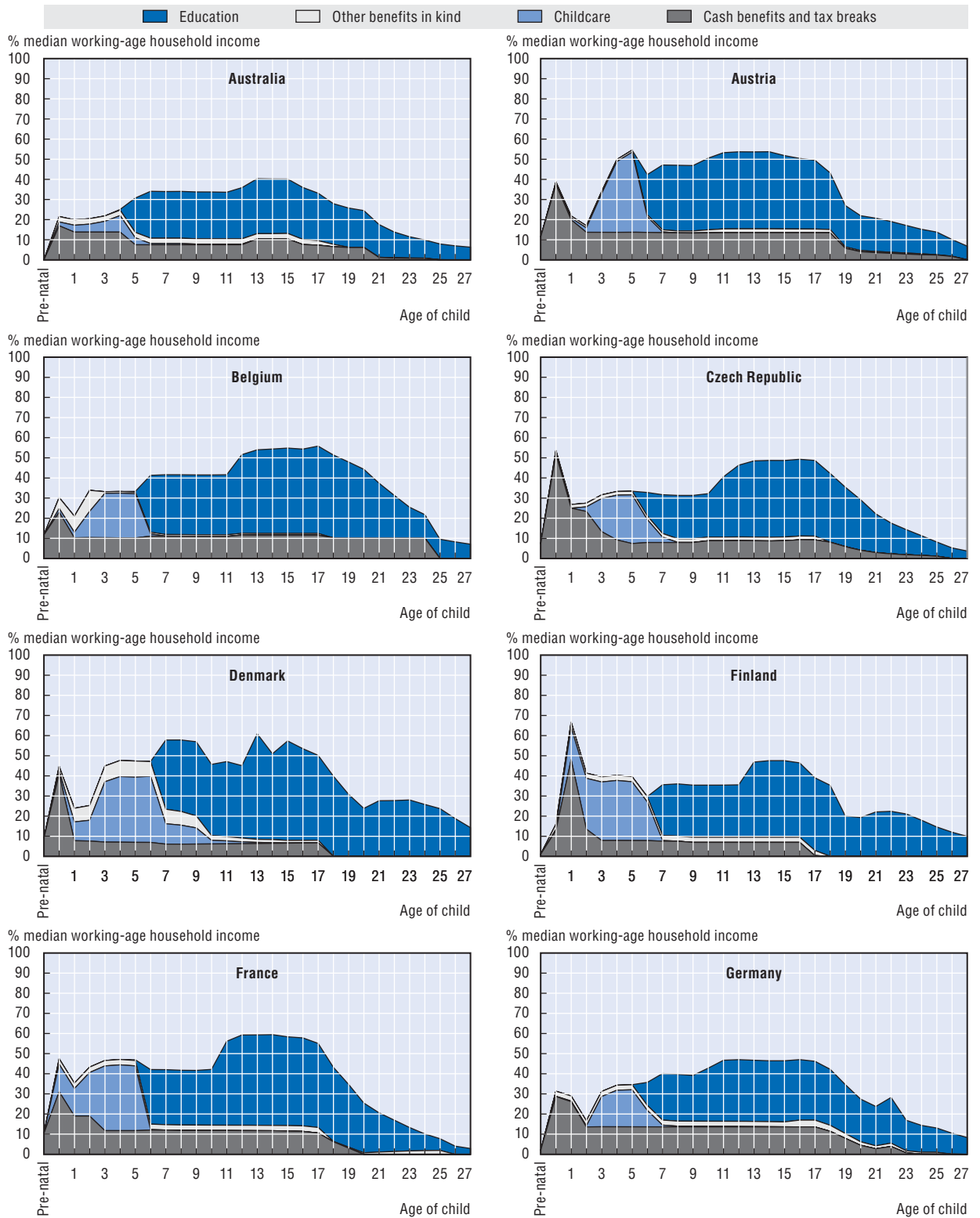


Figure 3.6. **Average social expenditure by child age by intervention as a proportion of median working-age household income, 2003 (cont.)**

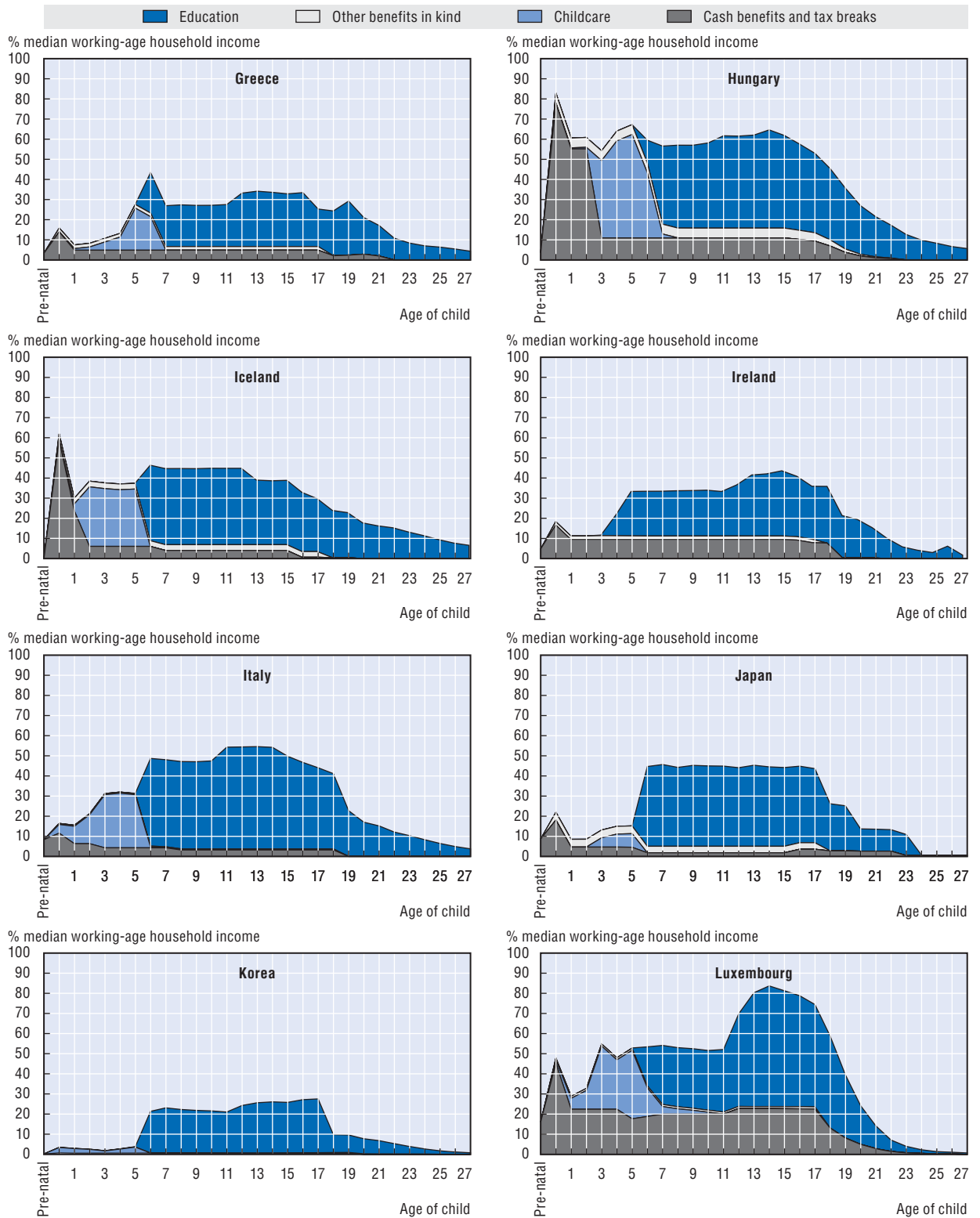


Figure 3.6. Average social expenditure by child age by intervention as a proportion of median working-age household income, 2003 (cont.)

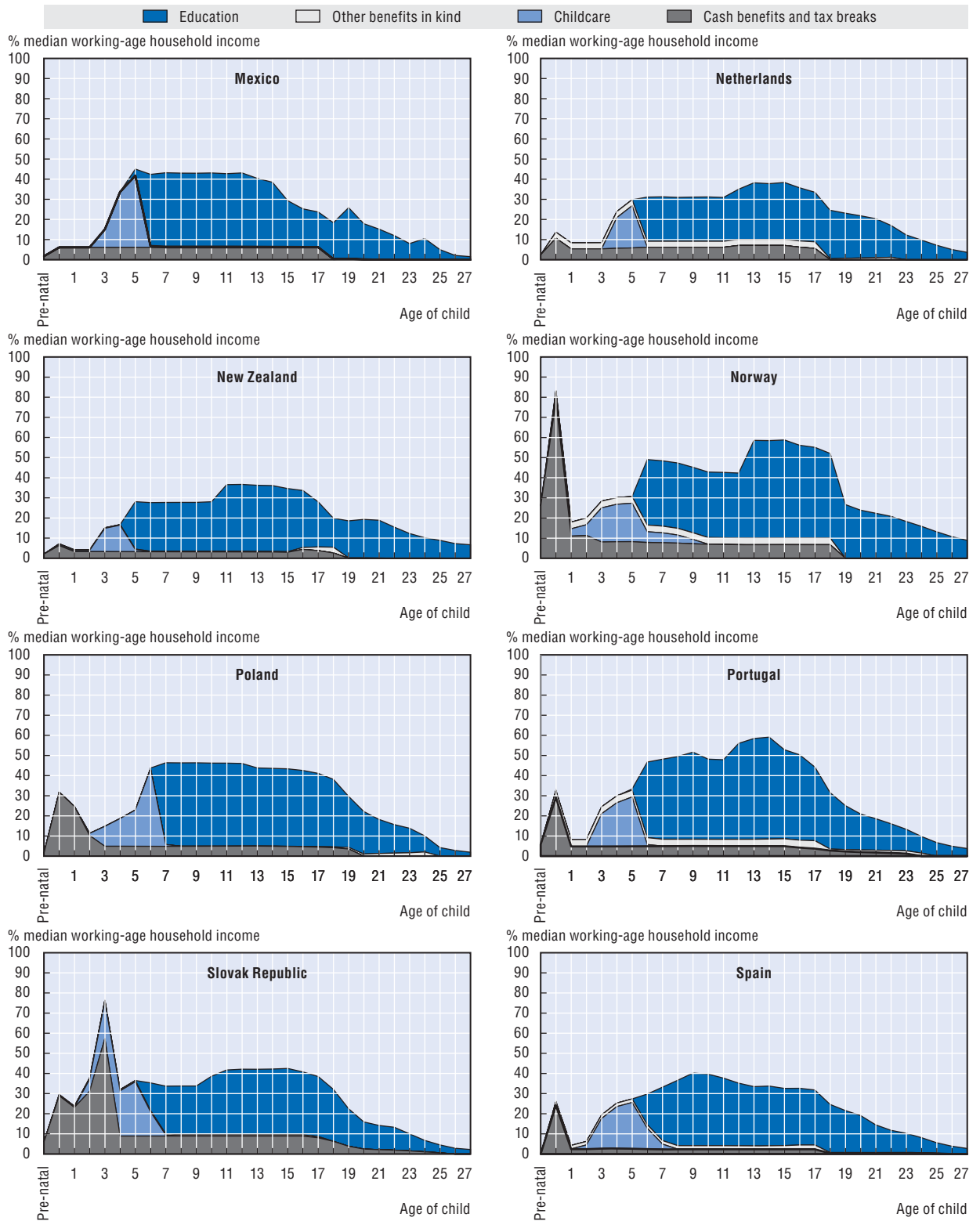
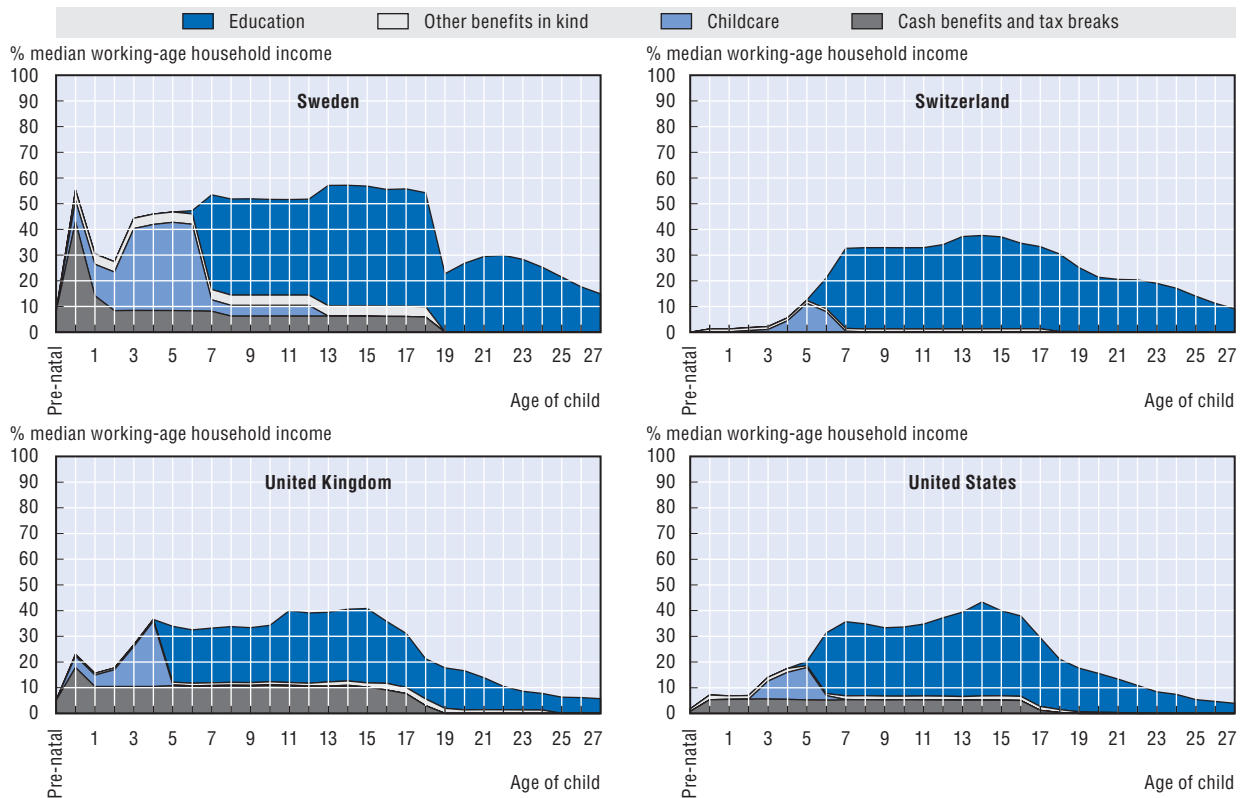



Figure 3.6. **Average social expenditure by child age by intervention as a proportion of median working-age household income, 2003 (cont.)**



Source: OECD Social Expenditure database and OECD Education database.

StatLink  <http://dx.doi.org/10.1787/711621350521>

Distributional aspects of tax-benefit policy across the child's life cycle

The previous section considered average spending, in cash and in kind, by child age. As already observed, considering average spending by year of the child misses the distributional dimension across different child risk profiles. The question that this section addresses is the relationship between three important cross-sectional dimensions of risk and child age. These three risk dimensions are i) family structure (single-parent family compared with a two-parent family), ii) family income (low family income *versus* middle and high family income), and iii) family size (numbers of children). The impact of the tax-benefit system in relation to child age for families with different risks is examined by dynamically ageing children. How the tax-benefit system changes the relative disposable incomes of children at high and low-risk can then be observed. These spending patterns can then also be compared across member countries. This work is undertaken by adapting the OECD tax-benefit models to allow for child ageing.

In terms of net family transfers, how do tax-benefit systems respond to the birth and ageing of a child in terms of both the temporal profile and changing the distribution of income across this temporal profile? How do tax-benefit systems respond to a child being born into a single-parent family, as opposed to a two-parent family? And how do tax-benefit systems respond over time to children being born into a larger family compared to a smaller family?

The analysis undertaken here differs from the age spending profiles in several ways. First, this section focuses solely on the tax-benefit system and its operation over the child's life cycle across a number of selected OECD countries, while the profiles include in-kind benefits as well as cash transfers. Second, the average child experience analysed in the age-spending profiles is unpacked in the following analysis, as the experiences of children in different income brackets, and different family types are compared. A large number of cash benefits and taxes in many countries are dependent on both the age and number of children. Some benefits are also income-dependent, including baby bonuses, maternal and parental leave, and child benefits. Finally, in the following models, evidence of the impact on family income of age-related events such as childbirth, parental re-entry into the labour market and school exit, can 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.

While narrower in the sense of not examining the incidence of receipt of benefits in-kind, this section moves beyond the simple averaging approach of the previous section to incorporate a distributional or risk dimension to the picture. In addition, this section deals with transfers to the family, not average transfers per child.

Method

The approach taken to examine net transfers to families of different types as their children age is to dynamically adapt the OECD Social Policy Division's 2003 static tax-benefit models to allow the birth and ageing of children, and to examine the consequent evolution of net family income.

The dynamic model can be run for several dimensions, allowing a consideration of how tax-benefit systems respond to risk at different stages of the child life cycle. The modelling approach allows risk to be defined by different levels of gross earned income, family size, or family structure. These distributional elements could not be examined by the approach taken in the previous section.

The first risk dimension is a comparison of high earned family income (150% of the average workers' wage, or AW) with a middle level (100% of AW) and a low level (50% of AW). The second risk dimension is a comparison of single-parent family income profiles with those of two-parent families, assuming in the latter case that both parents work. The third risk dimension is variation in the numbers of children in the family (comparing families with two and four children). All these risk dimensions can be interacted. So, for example, the profile of a single-parent family earning 150% of the average wage with four children can be compared to that of a two-parent family where each parent earns 100% of the average wage.

Various assumptions need to be made to generate the net transfer profiles. At birth of the focal child, the second child in a two-child family is assumed to be a 2-year old. In a four-child family, at birth of the focal child the second child is a 2-year old, the third child is 7-years old and the fourth child is aged 12. The same assumptions are made about the allocation of maternal leave to the pre-natal and post-natal periods as are made for the spending profiles above. Regarding post-compulsory school participation, for those countries that continue to pay a child benefit conditional on educational participation it is assumed that children remain in school. Furthermore, in each case it is assumed that all

parents are working, that the maximum legal entitlement to leave is taken up, and, where minimum work requirements are involved, that parents are eligible to take leave.

Additionally, net income for a family can differ according to whether parental leave is taken within the fiscal year, or is spread across several fiscal years. In other words, the calendar timing of the baby's birth can influence family disposable income, and hence the profiles. The reason for this is the potential progressivity of the tax-benefit system over the range of income variation represented by gross income when parents are on leave, compared with when parents are not on leave. With a progressive tax system over this range, the month of timing of the child's birth could affect the initial level of net family income in the profile. The assumption here is that calculations are made as if all children were born on the first day of the fiscal year. In all likelihood the net income difference as a consequence of this assumption is small.

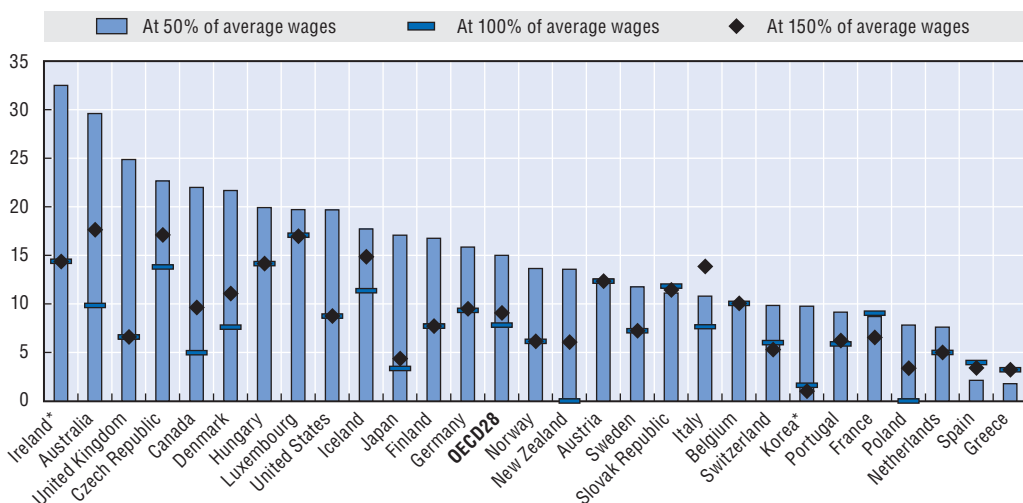
Countries considered

The approach was to model and compare tax-benefit systems as children age in eight OECD countries in 2003. The countries chosen for comparison are Denmark, France, Germany, Hungary, Italy, Japan, the United Kingdom, and the United States. The countries were chosen based on the need to cover a broad geographic and systemic range, and to illustrate a variety of tax-benefits approaches for children. Denmark was chosen as a representative of a high-spending Nordic-style welfare state, of additional interest because it is one of a minority of OECD countries to pay a higher rate of child benefit for younger children. France was chosen because it is one of the larger OECD countries by population, and as an example of a continental European-style welfare system. In addition, the French welfare system for children has a number of interesting aspects related to its historic commitment to promoting high fertility rates. Germany was also chosen as a sizeable continental European welfare state, and also because it has a number of interesting features, including paying a child benefit in some cases to age 27.⁵ Hungary was chosen as a representative of eastern European welfare states and also because of its interesting "triangular" average social spending profile that concentrates on early spending, whilst Italy was chosen as the largest southern European country. Italy is also an archetypal "inverted U" overall spending profile, by way of contrast to the Hungarian profile and, to a lesser degree, to the French profile. As the larger of the OECD's two Asian member states, Japan was an obvious choice. Population size was also a strong reason to select the United Kingdom and the United States to represent the Anglophone member states. Again, all these latter three countries have the more common "U-shaped" spending profile. The most obvious missing member country from this group is Mexico, with its substantial population. However, as their profile suggests, tax-benefit programmes for Mexican children are comparatively small, and spending is not likely to vary greatly with child age.

Several issues arise regarding how best to present the results. There are two family types, three income levels, and three different numbers of children for eight countries, making 144 potential profiles in total. Here the most interesting comparisons are presented. Family income is presented monthly to allow consideration of patterns occasioned by entitlements to parental leave (pre- and post-natal), which are measured in months rather than years. A further issue is that the monetary amounts in each case emerge from the models in the national currency. For reasons of readier comparison, all amounts are converted into United States dollars using purchasing power parity exchange rates.

While only eight countries are covered in the detailed analysis of the response of the tax-benefit system across the child life cycle, it is worthwhile considering the static degree of redistribution towards families with two children aged 4 and 6 across 28 OECD countries in 2005. Figure 3.7 below shows considerable variation in the degree of income-targeting towards families with children, depending on their position in the income distribution by country. Most countries have a mild tilt in their distribution towards low-earning families over those in the middle. There is less of an income difference between families with average earnings and families well in excess of the average. Some countries, such as Austria, Belgium, France, Greece, the Slovak Republic and Spain, have little or no taper as family income increases, while the Anglophone countries have a strong taper, reflecting greater income-targeting.


Figure 3.7. **Financial support for families with children varies with income level**
Financial assistance to families with children as a percentage of earnings of an average worker



Note: Assistance for children is calculated as the difference between the net income of a single-income couple without children and a single-income couple with two children (4 and 6-years-old), at different levels of earnings, expressed as a percentage of the average wage (AW).

“*” indicates a measure as a percentage of the average production worker's wage, the OECD's previous measure of average workers' earnings. Mexico and Turkey are missing.

Source: OECD 2005 tax-benefit models; see www.oecd.org/els/social/workincentives.

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Eight-country comparison of net income and net transfers by family earned income level

The profiles of net family income are compared below for two-parent families and for the three income levels, as the focal child is born and ages through childhood. If there were no child-age-related payments or parental leave taken (resulting in labour market withdrawal), the profiles would be flat lines, with simple upward steps following the birth of a child, and downward steps as a child moved beyond the age of final payment of child benefits. The profiles follow the birth of the second child and family income as the child progresses through its life cycle. The profiles are presented in terms of 2003 United States dollars at purchasing power parity. The horizontal axis is compressed post-age 8 of the focal child, to better illustrate variation across the life cycle below this age. The figures illustrate a considerable variation in tax-benefit policy over the child life cycle.

Denmark, France and Italy have very similar monthly net family incomes for the family at the bottom of the distribution of roughly USD 2 000 per month. Interestingly, the distribution across the three gross earnings family types is more compressed for Italy than for both Denmark and France. Hungary shows up as the least well-off country on a purchasing power parity basis (unsurprising on the basis of its relative per capita GDP), but the most relatively equal, with the net family income of those earning 150% of AW only twice that of the family with gross earnings of 50% of AW. For all other countries, this ratio is often well in excess of two.

An obvious feature of all country profiles is that government net transfers are frontloaded to the early part of the child life cycle. That is to say, the net transfers are highest early in the child's life cycle. To a significant degree, this apparent concentration of net transfers is a straight-forward consequence of labour market withdrawal early in the child life cycle to access maternal and parental leave time entitlements, also reducing taxes paid due to the concomitant decline in market income.

The durations of this frontloading vary according to the duration of maternal and parental leave systems (the assumption is that the full leave entitlement is taken). This leave has a considerable duration (2-3 years) in France, Germany and Hungary by virtue of their child-raising allowances, a moderate duration in Denmark and Italy, and shorter durations in the United Kingdom and the United States (the latter being unpaid).

Despite this apparent frontloading in net transfers by all eight governments, in many cases net family income dips during the period of maternal and parental leave, in most cases considerably. Thus benefits paid for maternal and parental leave are not sufficient to fully compensate for the loss of earnings during the period of withdrawal from the labour force, let alone to create a "front-loaded" overall family income profile during this earliest period of the child life cycle.

The exception to this income dip are those countries who, during the relatively short period of a few months of maternal leave, replicate their earnings inequalities in their maternal leave payments (France, Germany, Hungary) and/or who pay birth or birth-style payments at or around the time of birth (France, Hungary and Japan). While such payments do give a degree of frontloading to family income profiles, the payment amount is fairly small in both the French and Hungarian cases. Whilst the Japanese birth payment is somewhat more substantial, it is misleading in its treatment of family income over the child life cycle. Unlike most countries, the government in Japan does not pay hospital birth costs, and the birth payment is intended to at least partially compensate for the fact that parents must pay such costs. Japanese women typically stay in hospital for over seven days following birth, and this very rapidly exhausts a birth grant. Including the Japanese birth grant makes the health and social welfare system look more supportive than the actuality.

Two countries – France and Hungary – provide transfers to families conditional on a parent exiting the workforce for a period of up to three years. Shorter periods of parental leave are available in Denmark, Germany and Japan. Child-raising allowances have been criticised for their negative effects on gender equity and female labour-force participation. The supposed positive impact of long duration conditional payments on child development provides one rationale for such policies.

After the expiry of parental leave entitlements, there is little in the way of net transfer frontloading. Denmark does pay a higher child benefit for younger children. But the difference is fairly small, and insufficient to make a great difference to the family income profile over the child's life cycle. On the other hand, France actually pays slightly more for older children, whilst Italy, the United Kingdom and the United States are age-neutral in their child benefit or child tax rebate regimes.⁶ Social assistance rules in Japan mean that social assistance payments to the very poorest single-parent family (50% of the average wage) rise with child age.

It is worth remarking on a second sharp peak in Japanese net income following the end of maternal leave. This peak is the parental leave lump sum paid to parents six months following their return to work. A similar return-to-work incentive is not evident in the profiles of other countries.

The eight countries phase out their child payments or tax breaks at different ages. Hungary and the United Kingdom cut out their benefits at age 16. Denmark and Italy stop their benefits at age 18. France ends child benefits at age 21 and Japan at age 23. Germany pays a child benefit until age 27 if the child is participating in education. To allow for the likelihood that children from well-to-do families are more likely to be participating in higher education, in the German case the situation is modeled where *only* families with gross earnings of 150% of the average wage are assumed to have their child in higher education. The consequent reinforcement of pre-existing social advantage is evident, as a drop in net income is seen almost seven years earlier for middle- and low-income families (Figure 3.8).

How do countries respond for single-parent families compared to two-parent families?

The next risk dimension of interest is how the tax-benefit system treats single-parent families compared to two-parent families, and the extent to which the treatment of the two family types alters across the child life cycle. This section treats single parenthood as a risk factor, without drawing conclusions on whether single parenthood itself influences child well-being. The causal issue is addressed in Chapter 5.

The two family types are compared by measuring the ratio of net family income of a two-parent family to net family income of a single-parent family at the three different levels of average earnings. In this analysis, the magic number is two. Two is the ratio of gross earnings of the two-parent family to the single-parent family in each case, excepting the period of parental leave where a single-parent family has zero earnings. Ratios in excess of two indicate that the tax-benefit system exacerbates market inequality and makes things more unequal for the higher-risk group of single-parent families. Ratios below two indicate that the tax-benefit system redistributes disproportionately more to single-parent families, thus compressing the distribution.

The relative proportion of children exposed to this risk factor varies across the eight countries. Obtaining consistent data on rates of single parenthood across all the countries concerned in this section is difficult. However the 2005/06 *Health Behaviour in School-aged Children Survey* (HBSC) suggests some significant country-variation in children living in single-parent families across seven of the eight countries under consideration here. Italy had the lowest rate of children in single-parent families at ages 11, 13 and 15 (with 9% of children). France (14%), Germany (15%), Hungary (16%) and the United Kingdom (16%) had very similar single-parent rates. United States rates of children in single-parent families, at

Figure 3.8. Net family income over the child life cycle for different levels of family income, families with two parents and two children, 2003

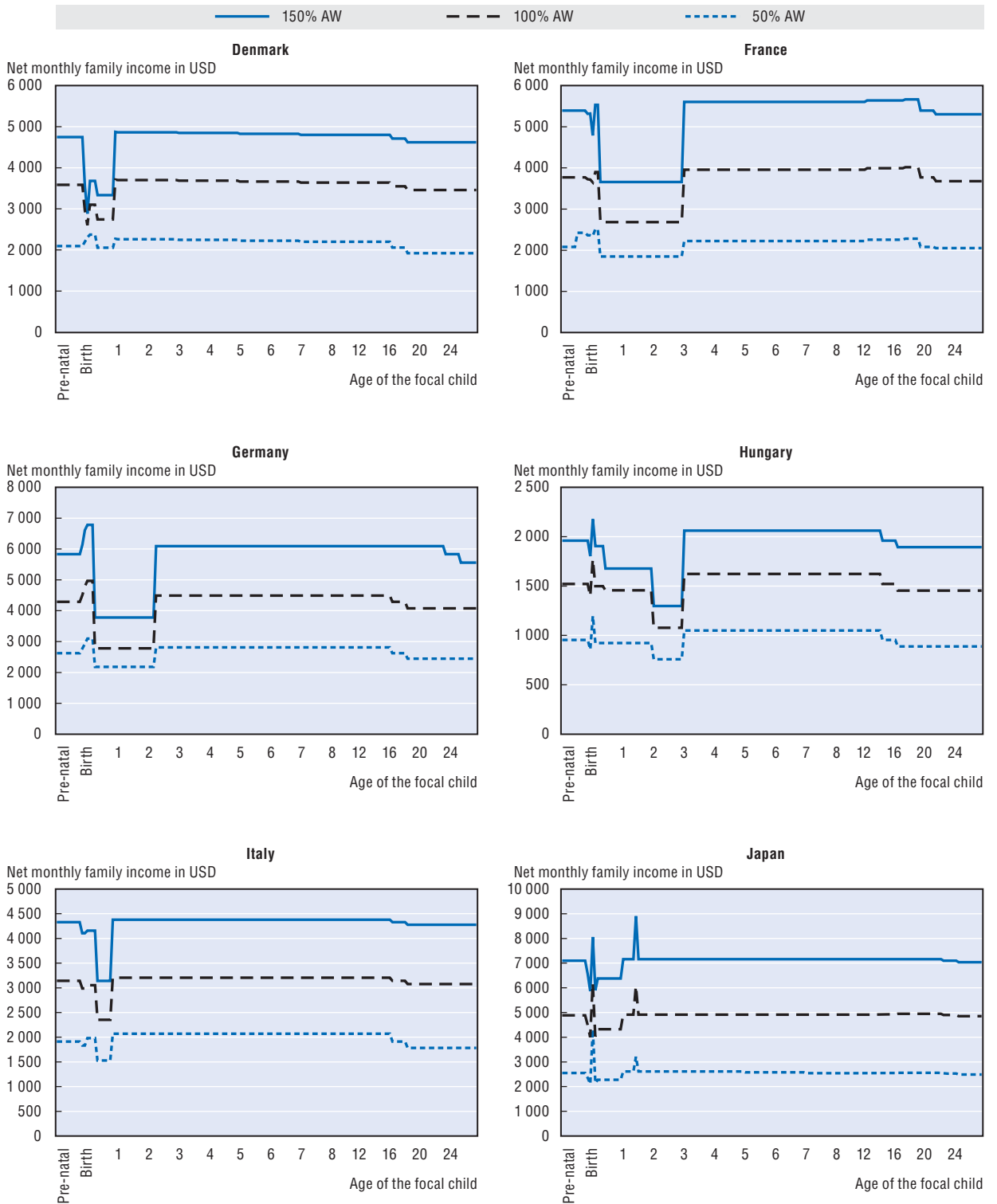
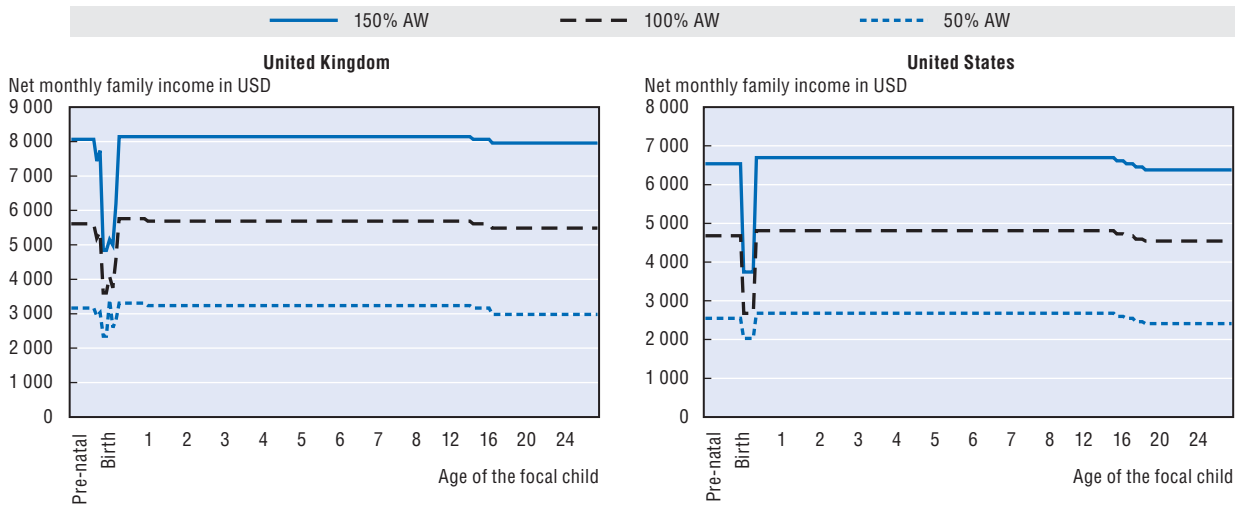



Figure 3.8. **Net family income over the child life cycle for different levels of family income, families with two parents and two children, 2003 (cont.)**



Source: OECD 2005 tax-benefit models; see www.oecd.org/els/social/workincentives.

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24%, were easily the highest (Currie *et al.*, 2008). Japan is not in the HBSC but single-parent rates are likely to be relatively low.

Overall, compression of net income between single- and two-parent families is the most common result over the child life cycle. The major exception is around the period of parental leave. Inequalities for single-parent families are typically, but not always, exacerbated at this period. The explanation for the early rise in family income inequality at this point in the child's life cycle is because single-parent families have a 100% reduction in their labour supply at this point, whereas two-parent families only have a 50% reduction.

With the exception of the case of high-earning single parents around birth, the Germans, Danes and British compress income inequality between single- and two-parent families across the child's life cycle. This compression is most marked for the poorest groups in the United Kingdom and Denmark, where low income two-parent families receive only about 1.3 times single-parent net income. In Germany, a similar compression is evident only during the parental leave period for the first 24 months of the child's life when parental leave is means-tested.

France compresses income differentials for all single-parent families until children reach adulthood. For low-income French single-parent families, income is almost equal to income in two-parent families between birth and age 3.

Hungary, Italy and the United States all have peaks in inequality between single-parent and two-parent families at the time of leave. Following leave periods in early childhood, these countries do help single parents, as each of the lines runs below the ratio of 2. For Hungary, however, the inequality is highest between 24 and 36 months, when the child-care payments make way for the universal parental leave payments; inequality is greatest for the high-income group. For Italy, inequality in income lasts less time and is earlier in the child life cycle, mainly due to the shorter period of parental leave (six months as opposed to three years in Hungary). Moreover, Italy's inequality is more severe for low-income groups, as payments replace earnings at 30% for insured

parents. Universal parental leave in Hungary protects low-income groups from income inequalities based on family type, while in Italy the insurance and earnings replacement scheme favours high-income single parents. In the United States the unpaid employment-protected 12 weeks of leave penalises single parents whose income is based on earnings.

Low-income single parents in Japan benefit from social assistance payments in the form of livelihood aid. Livelihood aid is tested against gross income, and paid to those who cannot meet minimum living standards. This form of social assistance increases every three-year period (except for a two-year period aged 1-2), compressing the income differences in stages over the child's life cycle, before dropping again following age 17. Other income groups in Japan receive very little additional help to compress income differentials (Figure 3.9).

How do countries respond for large families compared to small ones?

Being raised in a large family is also associated with poorer well-being outcomes for children. How do tax-benefit systems treat large families (taken here to mean a family with four children) compared to smaller ones (taken here to mean a family with two children) as the focal child ages?

It is worth bearing in mind that a major reason for supporting larger families compared to smaller ones in many countries across the OECD may be for reasons of fertility. Policy makers may judge that families who have children are more readily persuaded to have an additional child than other families. Therefore, efforts to sustain the fertility rate are considered to be more effectively directed at enlarging existing families. At the same time, such policies deliver a windfall income gain to those who have already decided to have large families, and thus a potential boost to child well-being in large families.

Figure 3.10 presents the ratios of large to small family income at the same gross earnings levels. In both cases, two-parent families are considered. Thus the crucial ratio is unity. For ratios in excess of one, four-child families have higher net income than two-child families and for ratios below one they have less net income. The vertical axis presents the ratio in each case, so relative country approaches to large families are directly comparable.

There is little direct information on the proportion of four-child families in each country considered. Qualitatively, the relative importance of four-child families in each country is likely to correlate positively with their total fertility rate. This would produce a qualitative ranking in 2003 of the United States (2.1 total fertility rate) with the highest number of large families, followed by France (1.9), Denmark (1.7), the United Kingdom (1.6), and Japan (1.4). Hungary, Italy and Germany (all 1.3) would be likely to be at the lower end.

There is a considerable variation in approaches to this risk factor across the countries considered. The United States and Japan provide the least additional support for large families. The lack of support in Japan is somewhat surprising. Given their low below-replacement fertility rate, it might have been anticipated that they would offer more support for larger families for fertility reasons. The United Kingdom and Denmark also provide little additional support. In all the country-cases additional support is provided early in the life cycle.

The continental European examples – France, Germany, Hungary, and Italy – provide much stronger amounts of support, especially early in the life cycle of the fourth child.

Figure 3.9. Ratio of two-parent to single-parent net income over the child life cycle, 2003

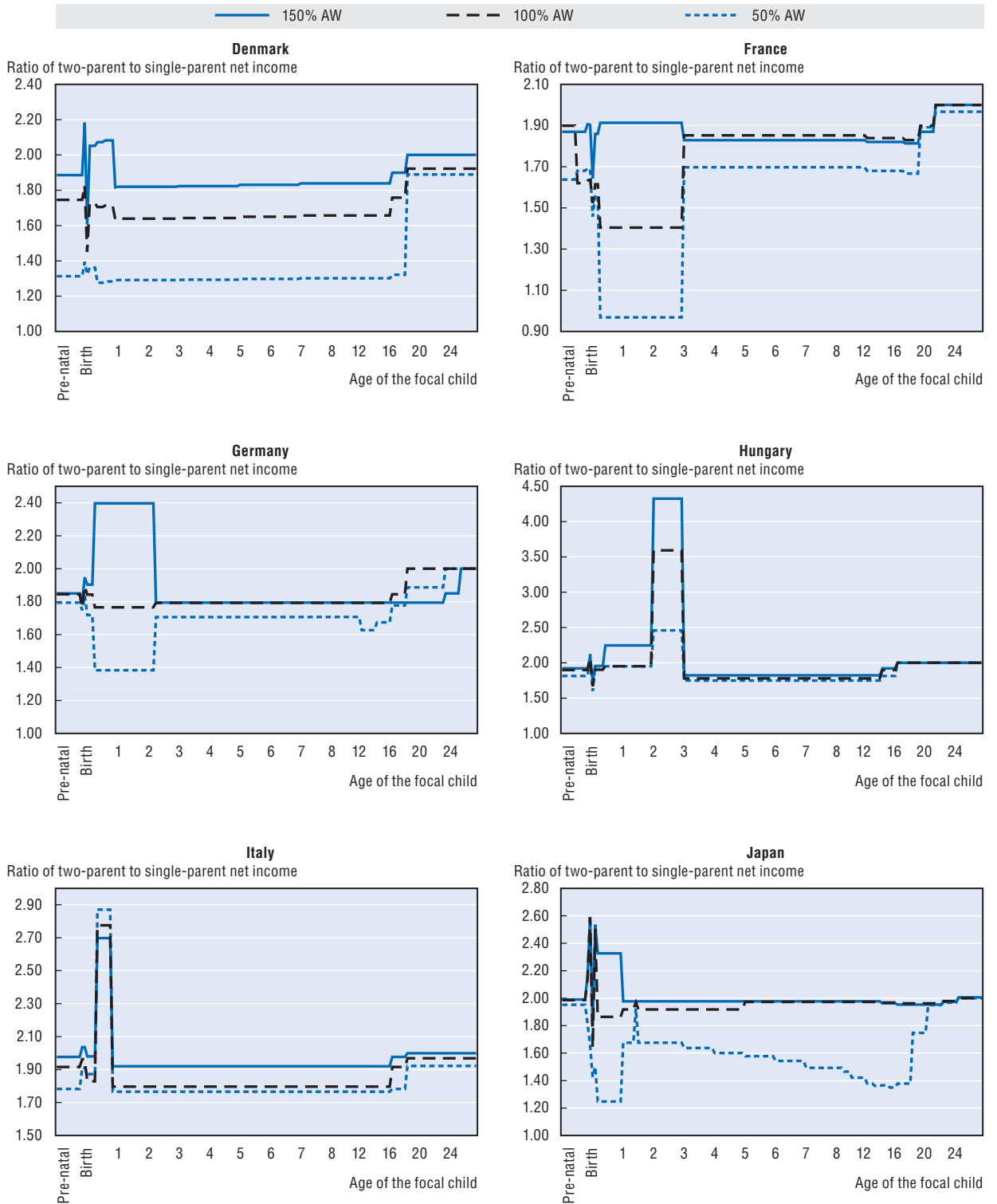
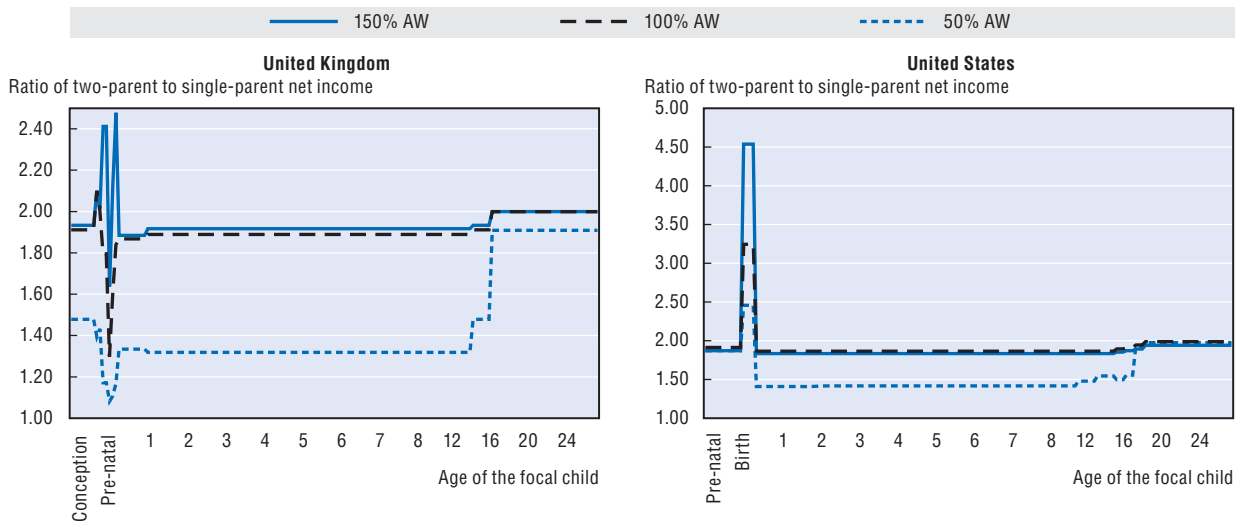


Figure 3.9. Ratio of two-parent to single-parent net income over the child life cycle, 2003 (cont.)



Source: OECD 2005 tax-benefit models; see www.oecd.org/els/social/workincentives.

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Certainly in the case of France, support for large families exists for pro-natalist purposes. The very strong spike early in the life cycle as the relative income of larger families is boosted considerably due to longer duration maternal leave is a noteworthy feature. Equally, poorer large families are boosted in a more sustained fashion over the life cycle.

The Hungarian profile is particularly interesting and indeed unique, as the four-child family ends up with less income than the two-child family over a proportion of the life cycle. Hungary has both a child home care allowance and a child-raising allowance. The child home care allowance is paid until the child is aged 3. A further child-raising allowance is paid when the youngest child is aged between 3 and 8, but only for families with three or more children. This child-raising allowance is assumed to be taken up. In the two-child family, the parent taking leave goes back to work when the child is age 3. In the four-child family the leave-taking parent goes back to work when the youngest child is 8-years-old. Thus the consequent differences in work and thus earned income drive the unusual result (Figure 3.10).

Summary

Chapter 3 has explored the distribution of childhood spending within countries and compared this between countries. For eight OECD members, the exploration was expanded to assess how different families (on the grounds of income, number of parents and family size) were treated by different tax and benefit systems.

OECD governments all spend money on children, at varying levels, but no country does so evenly throughout the child life cycle. The majority of OECD countries spend the most public money in the later stages of childhood. Indeed, in all but six countries (Poland, Spain, Mexico, Denmark, Hungary and Iceland) late childhood captures the highest levels of investment. On average, OECD countries spend 2.3 dollars in the late childhood period on benefits and services with child-related eligibility for every dollar spent in the early childhood period. This disparity is most readily explained by widespread heavy spending on universal compulsory education. The country spending profiles examined are not

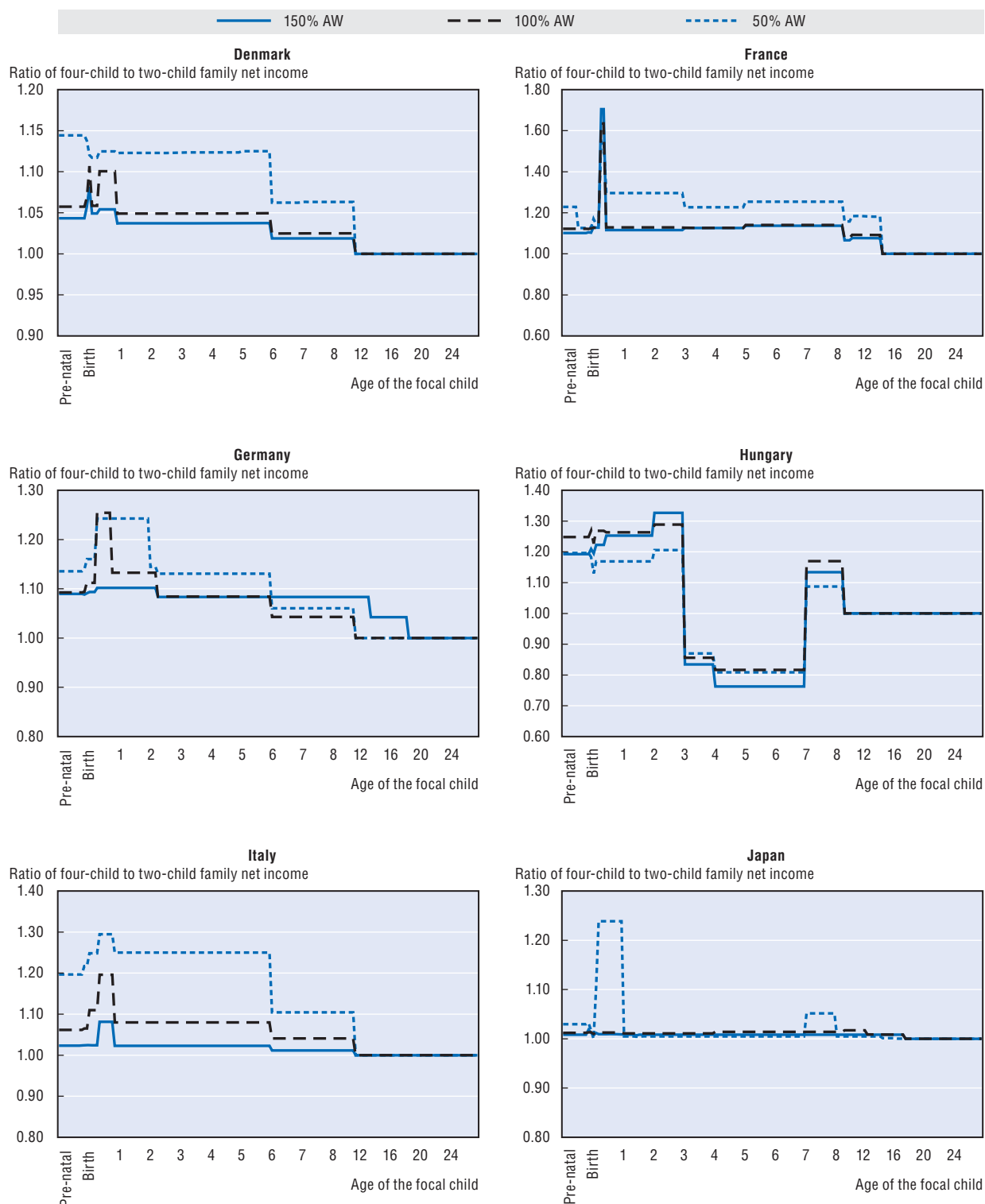
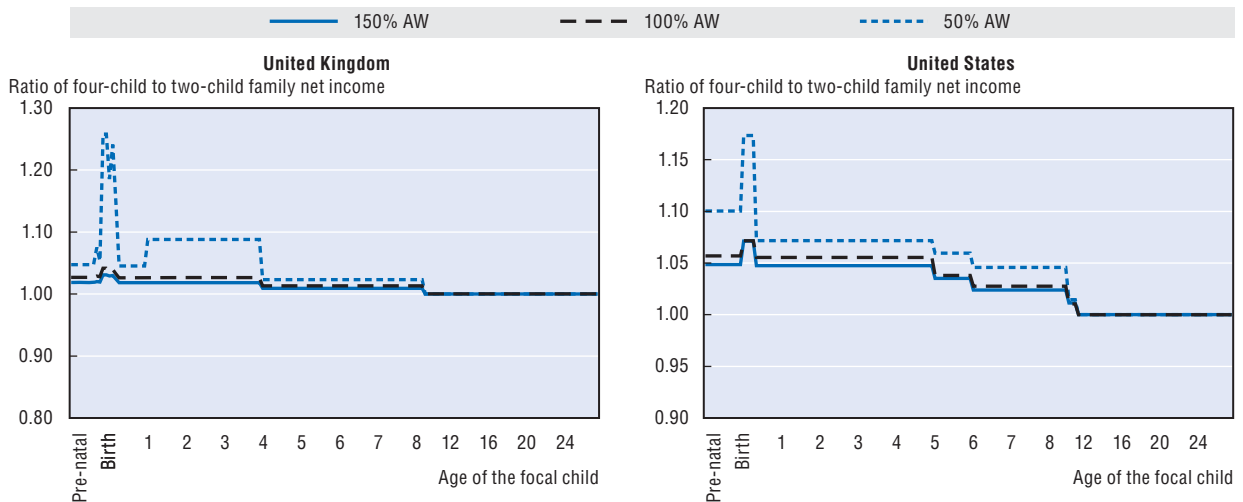

Figure 3.10. **Ratio of four-child family to two-child family net income, 2003**

Figure 3.10. **Ratio of four-child family to two-child family net income, 2003** (cont.)

Source: OECD 2005 tax-benefit models; see www.oecd.org/els/social/workincentives.

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consistent with the theory and evidence on child well-being and development. In contrast, there is little or no obvious rationale for why so many governments place the weight of their spending during the period of late childhood. In the absence of any knowledge about the comparative benefits of spending on children by age, a comparatively even spend by child age would be expected.

In terms of the composition of spending across the child life cycle, the typical pattern is for interventions to consist disproportionately of cash transfers during early childhood, with the added element of a conditional parental withdrawal from the labour market. The main factors driving overall differences by year of age are incremental increases in education expenditure and a gradual erosion of entitlement to social security benefits in terms of both cash and kind as children grow.

Chapter 3 gives an idea of what policy choices are being made for children at different times in their lives, but does not attempt to provide answers as to why such choices are made and what good choices might be. Chapter 4, however, will introduce policies for families and children from conception to kindergarten, and discuss research on related policy evaluations. Moreover, a notable omission from Chapter 3 has been health interventions. These interventions are mostly for the youngest children, but because spending cannot be disaggregated cross-nationally by age, these have not been included in Chapter 3 (except for Sweden in Box 3.2). To remedy this omission, health interventions in the early years are explored as part of the policy comparisons in Chapter 4.

Notes

1. Notes for each age-spending profile are available in an online annex. Tax-benefit models have been adjusted using information on policies around childbirth outlined in special tax benefit chapters also available online. Please see www.oecd.org/els/social/childwellbeing.
2. This study shows middle childhood environments add only modestly to explained variances of a range of adolescent outcomes, on top of early childhood contexts. When including middle childhood contexts on top of early childhood contexts, the explained variation for externalising

behaviour (outwardly directed behavioural problems) rises from 0.24 to 0.27. Comparable rises include 0.15 to 0.17 for internalising behaviour (inwardly directed behavioural problems), 0.32 to 0.34 for mathematics achievement and 0.34 to 0.35 for reading achievement. The most important middle childhood environmental context is cognitive stimulation in the home, with some evidence that the emotional context was also important. Neither family structure nor family income played any significant role. In terms of out-of-home-environments, school safety and teacher knowledge of their subject matter were the significant factors (Magnuson et al., 2003).

3. In addition, younger children cannot contribute unpaid work to the family, while older children can – for example picking up toys, making their beds, mowing the grass, putting the rubbish out, or cooking dinner.
4. Administrative costs are included in the active labour market policy spending but not in other forms of social expenditure.
5. Since 2003 Germany has begun to reduce the upper-age threshold for child benefit eligibility.
6. A baby element is paid for the child's first year in the United Kingdom Working Tax Credit, but there are no other age-related payments following this one-off increase.

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Chapter 4

From Conception to Kindergarten

This chapter explores in more detail the varying policy approaches taken by OECD countries to enhance child well-being during the very earliest part of the child's life cycle. It covers children from the pre-natal period up until about age 3, outlining interventions with a child well-being focus that take place for mothers and children in the pre-natal, birth and post-natal periods. Public health and nutrition, child-care and education, and various tax and benefit policies are considered.

Introduction

What are the different policy-approaches taken by OECD countries to enhance child well-being during the very earliest part of the life cycle? There are few comprehensive reviews of the state of interventions for children from conception to kindergarten across OECD countries. Building on the findings from Chapter 3, the purpose of this chapter is to explore in more detail the earliest interventions for children, and outline in particular many of the health-related interventions with a child well-being focus that take place for mothers and children in the pre-natal, birth and post-natal periods of a child's life. The focus on these interventions is particularly important given the exclusion of health spending from the profiles in Chapter 3.

This chapter reviews the policies in place starting with the pre-natal period up until about age 3. While pre-natal and early childhood experiences are clearly not the be-all-and-end-all of child development, the early environmental experiences of a child exert a considerable influence on longer-term developmental trajectories.

Discussion of early interventions to enhance child well-being in many OECD countries have focused on early childhood education for children over age 3 (for example, the OECD's *Starting Strong* publications), on highly targeted intensive programmes for high-risk young children, or on children with special needs. There has been less consideration of existing systems of often universal public support for children from conception to age 3 (but see Kahn and Kahneman, 1993 for a comparison of six OECD countries). As well as family, child-care and educational interventions, these systems involve a mixture of public health provision and welfare benefits.

There is a lack of compelling research evidence to comprehensively recommend patterns of child investment from conception to kindergarten. More rigorous assessments of the effectiveness of early interventions are required to make evidence-based choices in the future. Nonetheless, the review suggests that many OECD countries provide excessive amounts of universal pre-natal care, and there is an argument for a greater evidence-based focus on services for those at-risk during pre-natal care. Furthermore, there is little evidence to support the expensive post-natal hospital stays in many OECD countries (on average, four days or more in a third of OECD countries). Over-investment in universal post-natal care and under-attention to risk are also the case in some countries. For example, not all children are receiving important vaccinations at all, or in a timely manner. The evidence for vaccinations and other early interventions suggests that conditional cash transfers may have an important role to play by increasing take-up of universal services by those at-risk.

Chapter 4 develops a descriptive structure for classifying early interventions using two important dimensions. The first is an "early" life-cycle dimension, providing age-specific interventions, where later interventions build on gains established in earlier stages. The second dimension is the spectrum of social and medical risk facing children along this early life cycle. Where available, analysis and research of what works in terms of

the early years policies will be introduced alongside various intervention strategies. Table 4.1 illustrates the broad scope of interventions used by OECD countries in the first few years of life. The rows show the life-cycle dimension, while the columns show the risk dimension and response. Important policy questions involve the relative commitment of resources to each of the three life-cycle stages during the early part of early childhood as well as to each of the forms of intervention within each stage, the content of each intervention and the design of the institutional structures and incentives to deliver the interventions. The columns proceed downwards from the most universal – not targeted according to risk – towards those that are more targeted on risks.

Table 4.1. Scope of early policy interventions to enhance child well-being from conception to kindergarten across the OECD

	Pre-natal	Birth	Post-natal
More universal interventions to...	Pre-natal care schedule Maternal health books Pre-natal maternal leave Pre-natal public health policies (e.g. anti-smoking during pregnancy campaigns) Non-targeted nutrition programmes (e.g. the policy to add folic acid to flour in the United States) Pre-natal health and nutrition programmes	Hospital care for birth Birth grants (cash)	Vaccination schedule Post-natal care schedule Child health books (Young) child benefits (cash) Post-natal parental leave
↓			
...more targeted interventions			Post-natal public health policies (e.g. breast feeding promotion) Targeted post-natal home visiting programmes Post-natal parenting programmes Child care Service coordination and referral Child protection services

Source: OECD's summary.

Pre-natal period

Policy aimed at child well-being during the pre-natal period most often aims to change the inter-uterine environment to alter the conditions in which the foetus is physically developing. Alternatively and less commonly, the purpose of policy may be to intervene with the mother or the family during the pre-natal period in an attempt to influence the future post-natal environment. The latter approach is based on a belief that the post-natal environment may be more malleable during the pre-natal period.

Pre-natal care

Pre-natal care is care provided before birth primarily to the expectant mother. Some forms of pre-natal intervention may also apply to fathers, including relationship advice, birth and parenting classes, and public health information on smoking (in terms of both the pregnant mother and a newborn child's inhalation of second-hand smoke from a smoking father). However, there is little systematic offered in any OECD country in terms of integrated pre-natal care for mothers and fathers as a dyad, or for fathers alone.

Pre-natal maternal care is made up of assessments and treatments that differ along multiple dimensions. Variations in pre-natal care include variations in the time care starts, prescribed and actual care, the type and training of the provider, the location of care, and

the more specialised or intensive referral services available. Most OECD countries provide some form of free, universal pre-natal care. The content of pre-natal care includes information provision, education, counselling, screening and treatment to promote the well-being of the mother and the foetus (Di Mario *et al.*, 2005, p. 4).

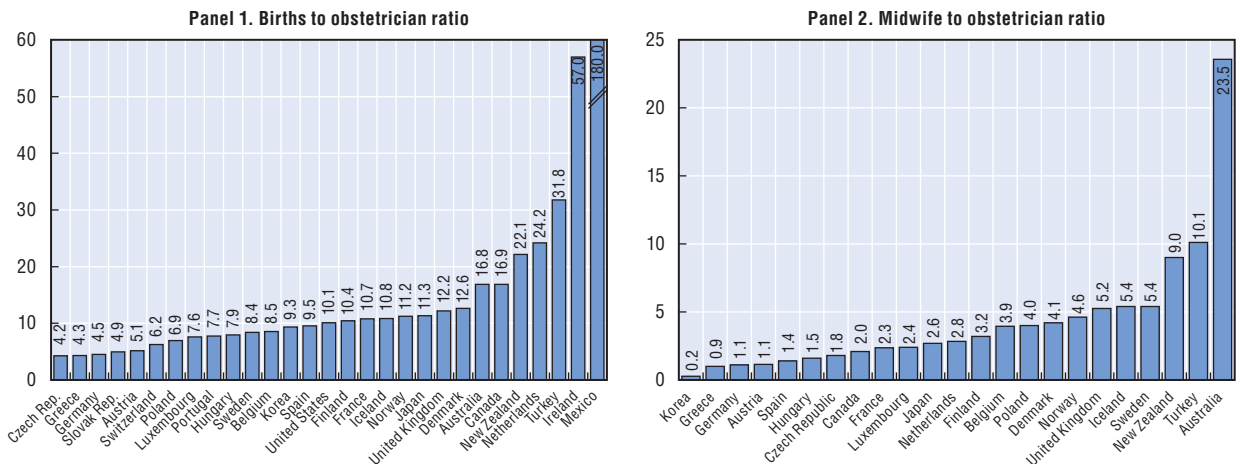
Pre-natal care aims to reduce the proportion of low birth weight babies and the proportion of pre-term births, both of which are immediate and easily measurable post-birth outcomes (Alexander and Kotelchuck, 2001, p. 308). Research shows that birth weight matters for longer-term child well-being outcomes, including cognitive ability, height, education and earnings. There is recent evidence from twin samples that the relationship is causal: low birth weight causes poor longer-run outcomes (Black *et al.*, 2005; Newcombe *et al.*, 2007). There is also evidence that birth weight is influenced by the environment experienced in the womb.

The primary professional responsibility for providing pre-natal care varies across OECD countries. In countries with a medicalised approach to pregnancy, obstetricians provide the majority of care. Where a more social approach exists, midwives are the lead professional, often as part of a combined care regime together with other health professionals like general practitioners. There are considerable variations between countries where some detailed empirical data is available, revealing major differences in choices regarding organising pre-natal inputs (see Figure 4.1).

The relative mix of providers has direct and indirect implications for costs of pre-natal services. Pre-natal services involving midwives are likely to be cheaper per unit of time. This reflects in part the lower training time and hence a lower variation in required compensating pay for midwives in comparison to GPs and obstetricians. Additionally, it is likely that in turn obstetricians will have a bias towards providing more capital intensive and medicalised services.

There is little evidence that more midwife-driven systems are less efficient. Indeed, some recent United States evidence suggests a better performance in term of neonatal mortality for midwife attended births (Miller, 2006). World Health Organisation evidence supports midwives as equally effective for normal pregnancies (Di Mario *et al.*, 2005).

Figure 4.1. Medicalisation of the pre-natal system (about 2005)



Source: OECD Health Data 2008, June.

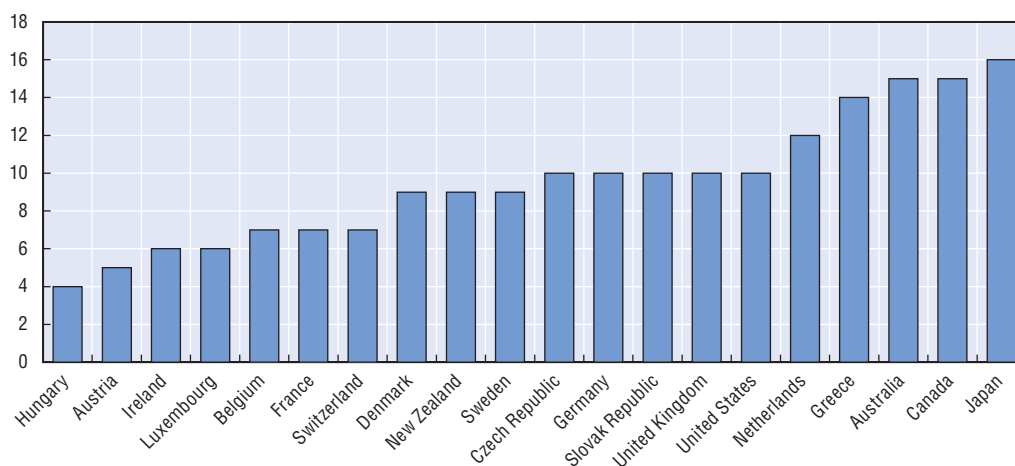
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Most countries have a recommended post-natal care schedule, which is typically publicly funded (see Figure 4.2 for a very broad picture of variation in recommended visits across the OECD). As with much information in the area, there are problems finding data relating to a common time period for OECD countries. Comparable information on actual visits, visit content, duration, timing, providers' professional qualifications, and place of delivery of the pre-natal care is not available.

The place of care also varies across OECD countries. A number of OECD countries – for example Denmark, Ireland, Iceland, New Zealand, and the United Kingdom – offer the possibility of home visiting for some pre-natal care. The more common location for pre-natal care is a clinic.

What is the relationship between scheduled visits in each country and the actual average number of visits? In many countries, actual visits exceed what is a generous schedule (Hildingsson *et al.*, 2005). It is not clear who the decision makers – health professionals or parents-to-be – are in the process that leads to more visits than scheduled. Nor is it clear what the motivations are behind the higher supply of actual visits. Those who obtain more pre-natal care include mothers with higher family income, better education, membership of the majority ethnic group, non-migrants, older maternal age, better maternal health status at pregnancy, or better knowledge of the pre-natal care

Figure 4.2. **Recommended pre-natal care schedule (number of child visits)**



Source: OECD calculations based on Hunt and Lumley (2002) for Australia; www.help.gv.at/Content.Node/143/Seite.1430100.html#child for Austria; Gheysen and Labourer (2001) for Belgium; www.babycenter.com/refcap/pregnancy/pre-natalhealth/9252.html for Canada, downloaded 9 October 2006; Brandrup-Lukanow and Jepsen (2000) for the Czech Republic; Kristinsen (1992) for Denmark; Hemminki and Gissler (1993) for Finland, Gissler (no date), "The Use of Antenatal Care amongst Ethnic Minorities in Finland 1999-2001", http://eurpub.oxfordjournals.org/cgi/reprint/15/suppl_1/49.pdf; Blondel *et al.* (2005) for France; Simoes *et al.* (2006) for Germany; Delvaux and Beukens (1999), Pilali (no date) for Greece; Brandrup-Lukanow and Jepsen (2000) for Hungary; Asten *et al.* (2004), Delvaux and Beukens (1999) for Ireland; Miyaji (1994) for Japan; WHO – Regional Office for Europe (1997) for Luxembourg; Elizondo *et al.* (2003) and Frank *et al.* (2003) for Mexico; Kaminski *et al.* (1987), *Perinatal Care Delivery Systems*, Oxford University Press, London, Jannink and Stevens (no date) for the Netherlands; Ministry of Health New Zealand (1999) for New Zealand; Backe (2001) for Norway; Barros and Tavares (1998) for Portugal; Brandrup-Lukanow and Jepsen (2000) for the Slovak Republic; Pérez *et al.* (2004) for Spain, Catalonia only; Delvaux and Beukens (1999) for Sweden; Asten *et al.* (2004) for Switzerland; Institute of Population Studies (2004) for Turkey; *Routine pre-natal care for healthy pregnant women. Understanding NICE Guidance – information for pregnant women, their families and the public* (2003) for the United Kingdom; Baldo (2001) and Martin *et al.* (2005) for the United States. Given the multiple data sources, definitions and time periods, great caution should be exercised in drawing more than a general impression of broad country variation and rough ranking from this figure.

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system, or those who don't smoke, are married, are not experiencing family violence, or have small children at home (Goldenberg et al., 1992; Delgado-Rodriguez et al., 1997). Evidence suggests a degree of middle-class capture.

Several OECD countries give parents financial incentives to attend pre-natal care. For example, in Austria, Finland, France, Germany, Hungary and the United Kingdom access to some benefits is conditional on accessing a minimum amount of pre-natal care.

Most of what is known about pre-natal care relates to the way in which it is delivered and the recommended schedule rather than its prescribed or actual content. Actual content may differ considerably from prescribed content due to principal-agent problems. There is considerable variation between countries' guidelines revealed in Haertsch et al. (1999), who undertake a comparison with a small sub-set of OECD countries. They find that even for a risk factor such as maternal smoking during pregnancy, where evidence on health risks is good, there was not a strong commonality across guidelines (see Box 4.1 on whether pre-natal care works).

Nutrition voucher programmes

In an effort to target social risks before birth, the United Kingdom and the United States run pre-natal nutrition voucher programmes. The United States' Special Supplemental Nutrition Program for Women, Infants and Children (WIC) has a significant pre-natal component. Pregnant participants access the programme via Medicaid or by having an income of 185% or less of the poverty line. Women are eligible during pregnancy and six weeks post-partum before re-assessment. WIC offers coupons that have a monthly value of about USD 37 (2006) for specific foods. In 1998, about 60% of the low-income population of infants and children participated in WIC. WIC is well evaluated, with a range of designs. Out of 28 evaluations, 24 find positive effects on birth weight and other early infant health outcomes (Currie, 2003). A more recent WIC evaluation has challenged some of these findings, concluding that, "WIC may work to improve birth outcomes, but on fewer margins and with less impact than has been claimed by policy analysts and advocates" (Joyce et al., 2007, p. 27).

The United Kingdom has recently introduced a similar voucher-based nutrition programme called Healthy Start. Healthy Start is an income tested or benefit tested programme available to women over ten weeks pregnant and with a child less than 4 years of age who are on certain benefits. It is available to all pregnant women under age 18. It provides weekly vouchers, each worth GBP 2.80 (by way of comparison, about half the value of WIC in the United States), for cow's milk, fresh fruit and vegetables, or infant formula, and provides free vitamin supplements. Qualifying pregnant women and children between 1 and 4 years of age get one voucher every week. Children under age 1 get two vouchers a week (for the details of Healthy Start, see the official United Kingdom site: www.healthystart.nhs.uk/).

Maternal leave before birth

Maternity leave is paid leave for mothers immediately prior to and after birth. Most countries have maternity leave specified as a combination of pre- and post-childbirth leave. In about half of OECD countries, a minimum amount of pre-natal leave of varying amounts is also mandatory. In others, only a maximum amount of pre-natal leave is specified, so women can choose to take no leave prior to birth. Ireland and Canada are at the upper end for maximum provision. There is quite a cluster of countries around the six to eight week mark. Provision of maximum pre-natal leave is the lowest in Poland, at two weeks. Switzerland seems to have no pre-natal entitlement at a national level.

Box 4.1. Does pre-natal care enhance child well-being?

There is little empirical evidence from randomised control trials on the effectiveness of the content of pre-natal care programmes in terms of enhancing child well-being. Much of the existing empirical evidence is subject to criticisms of selection bias due to non-random evaluation designs of various sorts. Despite the widespread use of pre-natal care, Alexander and Kotelchuck (2001, p. 306) observe, “the evidence on its effectiveness remains equivocal and its primary purpose and effects continue to be a subject of debate”.

The World Health Organisation has recently published a best-evidence summary of the literature on the efficacy of pre-natal care (Di Mario *et al.*, 2005). They find twenty evidence-based effective interventions for pre-natal care, including breastfeeding education, and smoking and alcohol consumption cessation programmes. Additionally, they state that pre-natal care from midwives and GPs for low-risk pregnancies is cost-effective. Di Mario *et al.* find evidence that a system where women keep their own obstetric notes improves both clinical safety and the mother’s feelings of control and satisfaction, a conclusion that may support the provision of maternal health booklets by some OECD countries. Finally, the WHO suggests that a model for pre-natal care based on four visits and one early pregnancy ultrasound scan is as effective in terms of outcomes of maternal and neonatal morbidity and mortality as a model based on a higher number of visits and/or scans. This finding suggests a substantial over-investment by many OECD countries in this area of pre-natal intervention.

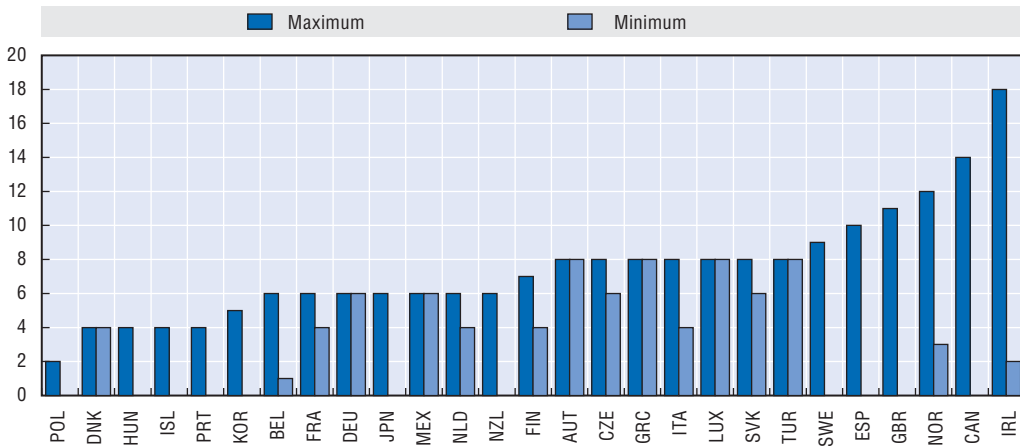
Because the outcome that has been the focus for effectiveness has been foetal and perinatal morbidity and mortality, there has been little consideration of the effectiveness of pre-natal care on maternal outcomes, or on more long-term post-birth outcomes, or on education and adult income (Fiscella, 1995; Alexander and Kotelchuck, 2001). These are dimensions of considerable interest for issues of child well-being and inter-generational disadvantage. Equally, the focus has been on medical pre-natal interventions. For example, the effectiveness work on pre-natal care has not considered the impact of the timing and amount of pre-natal maternal leave on child well-being.

The effectiveness of pre-natal care may vary across population sub-groups as defined by ethnicity, education and poverty. This possible within-population variation of effectiveness by group is of considerable relevance. However, there is little quality evidence on the different combinations of pre-natal care that may work better for different groups (Alexander and Kotelchuck, 2001, p. 312). In terms of enhanced pre-natal care for specifically high-risk mothers, which involves delivery dimensions like home visiting and case management, the evidence from eleven randomised control trials (dating from 1985-93) suggested that they were ineffective in promoting birth weight-type outcome measures (Fiscella, 1995, Table 2, p. 474). In a randomised control trial not considered by Fiscella, Hobel *et al.* (1994) found a treatment effect of enhanced services on reducing pre-term births. While pre-natal care offers an opportunity to screen women at high social risk and provide them with information, education, and a connection with social and welfare services, there has been little apparent evaluation of their effectiveness in this regard (Fiscella, 1995, p. 476).


In conclusion, Di Mario *et al.* (2005, p. 15) point out considerable variation in pre-natal care regimes across countries, but very little evidence-based variation. In fact, some content is known not to be effective. Much of the variation is a consequence of tradition and local expert judgement. They call for more research on interventions of unknown effectiveness. Similar conclusions are drawn elsewhere and much earlier (Fiscella, 1995, p. 476, Alexander and Kotelchuck, 2001, p. 314), indicating that the evidence base is not improving rapidly in quality over time.

The wide country-variation observed in minimum and maximum pre-natal leave in Figure 4.3 is not evidence-based. There is little evaluation of whether the split in paid parental leave (prior to and after birth) influences child outcomes. However, recent research suggests that finishing work during the last two months of pregnancy raises birth weight and fetal growth (Del Bono *et al.*, 2008). There is little information on the actual pre-natal leave taken by pregnant women (Moss and Wall, 2007).

Figure 4.3. **Maximum and minimum pre-natal paid leave (for countries with paid maternal leave)**



Source: See MISSOC at http://ec.europa.eu/employment_social/spsi/missoc_tables_en.htm, MISSCEO at www.coe.int/t/dg3/socialpolicies/socialsecurity/MISSCEO/tables_en.asp and Moss and Wall (2007); private communications from Korean and Mexican experts, and OECD *Starting Strong II: Early Childhood Education and Care*.

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Pre-natal maternal health booklets

Upon confirmation of pregnancy, a number of countries provide mothers-to-be with a booklet that contains the records of their pregnancy and pre-natal visits. This booklet is retained for the duration of the pregnancy and for a time thereafter (sometimes this is combined with a child booklet as well). Countries with booklets include Australia (some states), Austria, Belgium, Germany, France, Japan, Korea, Portugal and Turkey. These booklets are consistent with the WHO findings that a system where women keep their own obstetric notes improves both clinical safety and the mother's feelings of control and satisfaction (see Box 4.1). Belgium has also issued a parenting booklet for fathers.

These booklets provide a number of functions, with the emphasis varying between countries. The booklet functions as an important co-ordinating device where there are multiple providers of pre-natal services. It provides mother with the pre-natal schedule and thus reminds them of the free care available at each stage of pregnancy. The booklets often provide public health information and information on pregnancy and foetal development. In addition, some booklets also provide information allowing expectant mothers to co-ordinate with other services, especially benefit and welfare services. Information on their effectiveness, and which exact form and content works best, is scarce. They are a low-cost universal intervention.

Birth

Hospitalisation

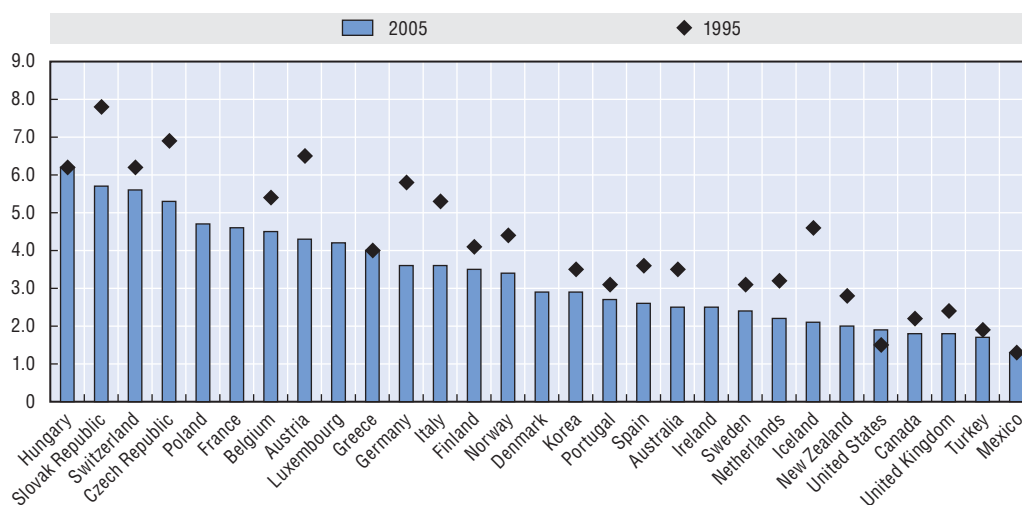
In most OECD countries, the vast majority of children are born in hospitals. There are two prominent exceptions where home birth is more than a few per cent of the population: the Netherlands and Turkey. In 2003, 21% of Turkish babies were born at home (Institute of Population Studies, Ankara, 2004). In 1992 – the last year data was available – the home birth rate in the Netherlands was 31% (Weigers *et al.*, 1998).

There is an enormous variation in the average length of hospital stay for normal delivery across OECD countries (Figure 4.4). Durations are under two days in the United Kingdom and the United States, and towards the higher end in much of western Europe and especially in eastern Europe, where they may be five days or more. In Japan, the average duration of hospital stay in 2005 was 7.6 days (from the *Patients Survey 2005*, Ministry of Health, Labour and Welfare, Japan).¹

Countries with a more medicalised approach to birth have longer hospitalisations. Hospitalisation can be an expensive intervention. For example, Almond and Doyle (2008, p. 47) estimate the costs of an additional night in hospital in the Californian maternity system at USD 1 500, although in other countries costs will be considerably less.² There is little evidence that hospitalisation for a normal birth exceeding a few days has positive impacts on child well-being (Di Mario *et al.*, 2005, p. 8; Almond and Doyle, 2008). Consequently, the reallocation of resources away from hospitalisation may be one way of funding more effective interventions for children.

For some of those countries with comparatively short hospitalisations for birth, services that would otherwise be provided, or provided more intensively, in hospital – for example, help with breastfeeding – are in some cases delivered free of charge by other professionals who visit mothers at home following their discharge from hospital (e.g. Netherlands, New Zealand and the United Kingdom).

Figure 4.4. Days in hospital following a normal hospital birth



Note: 2005 data for Greece and New Zealand are from 2004, for Turkey data is from 2003. 1995 data for Italy and Iceland are from 1994, for Korea data is from 1996. Data is missing for Japan for both years, and missing for Poland, France, Luxembourg, Denmark and Ireland for 1995.

Source: OECD Health Data 2008, December.

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Birth grants

Birth grants or “baby bonuses” are one-off lump-sum payments on or about the time of childbirth. About half of the OECD has such schemes (Belgium, the Czech Republic, Finland, France, Hungary, Italy, Japan, Luxembourg, Norway, Poland, the Slovak Republic, Spain, Switzerland (some cantons), Turkey and the United Kingdom).³ In many cases, such as Poland and Finland, the payments are universal. In other countries, such as the United Kingdom, Norway and France, they are targeted. The payments vary greatly in value from the near symbolic (Turkey and Finland) to the substantial (Spain and Italy). Birth payments have a wide variety of purposes, including promoting fertility.

As marginal returns from paid and unpaid work are unchanged by a lump-sum payment, the lump-sum nature of the payments meets efficiency criteria in terms of neutrality with respect to time allocation in terms of not changing relative prices. It also meets certain equity criteria by compressing the income distribution of families with children. Lastly, the payment of cash allows parents to use their knowledge of their and their child’s circumstances to best allocate the resources to child development. Nevertheless, there is opposition to lump-sum universal child payments because of the negative income effect on (especially) second-earner labour supply. Those who place a large weight on paid work and gender equity favour the resource being centrally spent in ways that more actively encourage female labour supply.

Baby friendly hospitals

Being a baby-friendly hospital is a designation given to maternity facilities by the WHO and UNICEF in hospitals practicing certain evidence-based strategies for initiating and continuing breastfeeding from birth. A maternity facility can be designated baby-friendly when it does not accept free or low-cost breast-milk substitutes, feeding bottles or teats. In addition, it must implement a ten-step programme supporting breastfeeding. There is good evidence that the initiative works to increase breastfeeding rates (see Merten *et al.*, 2005 for Switzerland; Duyan Camurdan *et al.*, 2007 for Turkey; and Kramer *et al.*, 2001 for Belarus).

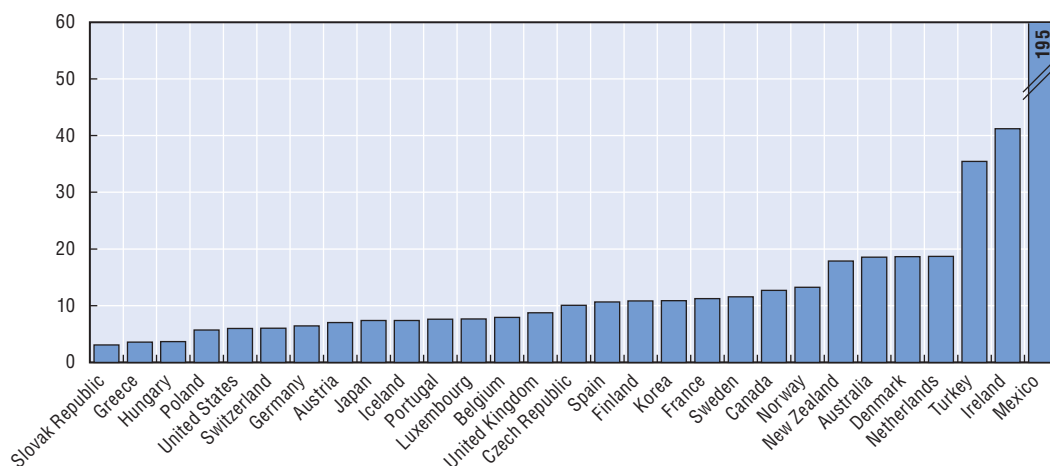
Post-natal period

Universal preventive post-natal care

Most OECD countries have a system of universal free preventive post-natal checks for child health and development. In Anglophone countries these are often known as “well-child” systems. The post-natal schedule often involves the measurement and recording of the child’s height, weight, and head circumference, a physical examination and checks with the parents that children are developing their social, motor and linguistic skills within the broad range of age-specific norms. Frequently the service also includes both parental advice and service referral components. A prescribed vaccination schedule is typically integrated into the service. As with the pre-natal period, there is a varying degree of specialist medicalisation of the system, indicated in Figure 4.5 below by the ratio of annual births to numbers of pediatricians.

Post-natal checks provide an opportunity for preventive intervention according to observed risks, or intervention early in the genesis of health and development problems if these are diagnosed. Universal systems ensure that all children can be screened for risks, that there is no screening stigma, and that information about the existence of checks is

Figure 4.5. **Medicalisation of the post-natal system
(births per paediatrician)**



Source: OECD Health database.

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widespread amongst members of the community. However, there is little quality evidence on the efficacy of universal post-natal care systems.

In some OECD countries there is a tradition of home visits by nurses or midwives for at least some post-natal checks or services (*e.g.* Denmark, Finland, Hungary, Iceland, the Netherlands, New Zealand, and the United Kingdom). In other countries, these checks are predominantly centre- or clinic-based, with nurses, general practitioners or paediatricians performing the check-ups, depending on the jurisdiction (*e.g.* Austria, Belgium, Sweden and France). Where home visiting occurs, it is sometimes only early in the post-natal schedule. A rationale for home visits is that immediately following birth women are less able to visit a clinic. Home visiting means opportunity costs in travel and waiting time are lower for parents and thus service take-up may be higher. Visiting also offers the professional the opportunity of seeing the mother and child in the home environment so as to better assess the family for observable physical and social risks. Lastly, families may feel more comfortable in their own environment. All home visiting schemes are voluntary and at the family's discretion. Typically, home visitors are qualified public health nurses or, less often, a qualified social worker. In some cases there is continuity of carer between the pre-natal and post-natal periods.

In some countries, post-natal home visiting services that are initially universal also have an explicit risk assessment and targeting aspect. Services are intensified, or “cascade”, if various social risks are present. Denmark has a system of universal post-natal home visiting. However, there are more home visits for firstborns and for young mothers, immigrant mothers, single mothers, socially isolated mothers, and poor families (Kamerman and Kahn, 1993). In the New Zealand well child post-natal system, additional contacts are offered to both first-time parents and to families who are identified as needing more support. In addition to the eight universal contacts for all children from just after birth to age 5, all high-risk families are funded to receive between five and ten additional contacts, which are also of a longer average duration, and which are all home visits. Well Child has a simple needs assessment tool that is applied to determine the intensity of the cascading service. Risk factors taken into consideration include low income, poor housing, single parent, low

education, relationship problems, young mother, minimal pre-natal contact, mental health, substance abuse, maternal smoking during pregnancy, difficulties in or no breastfeeding, low birth weight, and pre-maturity. These function as a checklist and allow the provider considerable discretion to determine the allocation of additional resources.

The recently introduced South Australia *Every Chance for Every Child* also builds in a cascading system of home visiting intensity from a universal home visiting entry point (Government of South Australia, 2005). The intensity of the universal service is low, with only one visit offered. More intense services are offered for teenage parents, socially isolated mothers, mentally ill mothers or mothers with poor connections with the child, children who are Aboriginal, situations where domestic violence or child abuse may be an issue, or where there are alcohol and drug problems, and so on. For those eligible, there are 34 visits over a two-year period – 6 weekly visits, 12 fortnightly visits, and 16 monthly visits. The intensity of home visiting for the at-risk families is thus higher than in New Zealand. The content of South Australian visits includes providing safety, health and child development information and helping parents manage issues of finance, housing, social connections and relationships.

Child health booklets in the OECD

A child health booklet is a standardised booklet that fulfils a variety of purposes, including a place for recording the child's health, growth and development, recommended schedules of post-natal visits and immunisation schedules and a place to record these, and information for parents on child development and services. The aims of the child health record also include providing a medical record that follows the child, a physical growth record in relations to country-specific growth norms (height, weight and head circumference), a record of the child's social development, an easy means for parents to ensure that their child is up to date with the vaccination schedule, and a "one-stop shop" for child development and child referral information. Finally, the record ensures information provision and co-ordination longitudinally across various caregivers in the early part of the post-natal life cycle (Kuo *et al.*, 2006).

A number of OECD countries – for example, Belgium, Denmark, France, Luxembourg, the Netherlands, New Zealand, Portugal, Poland, Switzerland, the United Kingdom, and some Australian states and Canadian provinces – have universally provided child health booklets. These booklets are additional to the combined mother-child booklets found in Austria and Japan that fulfil a combined purpose for both mothers and children. Germany has a maternal record but no record for children. Those countries lacking a child health booklet or a combined mother-child health booklet – such as the Netherlands and Italy – often have child vaccination cards for recalling and recording the meeting of vaccination schedules.

Booklet evaluations are limited. There have been several evaluations of the United Kingdom Personal Child Health Record. Hampshire *et al.* (2004) report on a Nottingham study that found that teenage and first-time mothers in particular found the booklet useful. Using a large sample of United Kingdom mothers with a 9-month-old child, Walton *et al.* (2006) found that 93% of mothers could produce the booklet and 85% showed effective use of the booklet. Young mothers, single parents, those residing in disadvantaged communities and those with large families were less likely to be using it effectively. Wright and Reynolds (2006) examined the impact of the re-design of the British booklet and found that it made little difference to usefulness. Norway recently examined the effectiveness of

a proposed child health booklet using a randomised control trial. While it was well accepted by parents and 73% of parents used it regularly, it did not influence health care utilisation, parents' knowledge of their child's health, or collaboration with professionals (Bjerkeli Grøvdal et al., 2006).

Post-natal maternal, paternal and parental leave

Most countries also have some form of paid or unpaid post-natal maternity leave. Many also have parental leave and some have paternal leave (see OECD, 2007; Moss and Wall, 2007; MISSOC and MISSCEO for detail). The international policy discussion of paid maternal and parental leave has concentrated on its impact on labour-market attachment and employment, particularly of mothers. There is also a policy interest in some countries in providing paid leave as a means of supporting overall fertility rates. The impact of leave on child well-being is a lesser focus in many countries.

From a child well-being perspective, leave gives the young child extra maternal or parental time early in the life cycle, while the parent (in practice usually the mother) retains a labour-market attachment. If the leave is paid, additional money is provided to the family, which may also support child well-being and development. The leave systems also offer parents (again usually mothers) a ready pathway back into the workforce via the job-protected components of leave, as long as the duration of leave is not too long. Such stronger longer-term labour-market attachment may also promote more long-term child well-being. Time provided by leave systems can be used by parents to improve child well-being directly. In addition, the lowering of time pressures because of leave provision reduces family strains, which can have indirect positive effects on children. Equally, in a world where it is difficult to fund a child's education by borrowing against their future earnings, the systems of maternal, paternal and parental leave transfer income to parents when their time investment in children may pay off. The evidence on the impact of paid parental leave on child well-being is mixed (see Box 4.2).

The degree of previous labour-market attachment required to qualify for leave varies across the OECD. Parents with lesser labour-market attachment are more likely to have infants at higher risk of compromised well-being. In some countries, there is a requirement that the person has undertaken some minimum amount of employment over a defined window of time – about 15 weeks of full-time work in the previous year in the case of Canada and 200 days over the previous two years for Greece. In other countries, the employment test is more stringent. In New Zealand, a person has to be in employment for six months with the *same* employer to get the paid leave, and for one year to get the paid and unpaid leave combined, with an additional hours test. Other countries, like France, Spain, Portugal and Ireland, require a certain number of months of social insurance contributions. The Nordic countries have the most liberal work tests. For example, all that is required in Denmark of employees is 120 hours of work in the 13 weeks preceding leave-taking. The more liberal the employment conditions, the more likely it is that at-risk children's parents will be included in the scheme.

Paid or unpaid leave durations of around a year or more exist in many countries (e.g. the Nordics, Australia, and New Zealand), reflecting the belief that a parent (in practice typically the mother) is best suited to bring up the infant during this period. Other countries have shorter periods of maternal leave coupled with a child-raising allowance and further job-protected leave, sometimes until a child is two more years old or more (e.g. France, Austria, and the Czech Republic).

Box 4.2. Does parental leave enhance child well-being?

There is a small literature on the effects of paid parental leave on child well-being outcomes. This literature uses policy changes to identify a causal effect in a variety of interesting ways. A primary limitation is the limited measures of child well-being examined.

Using a panel of European OECD member states, Ruhm (2000) finds that positive changes to paid parental leave policies improved birth weight and infant or child mortality. The most likely cause, according to Ruhm, is that leave provides parents with additional time to invest in taking care of their young children. The effects are primarily found in the post-neo-natal period where medicalised care does not play such a strong role. In a similar panel study of 18 OECD advanced industrialised countries, Tanaka assesses the impact of parental leave policies on child health outcomes. Covering more than three decades (1969-2000), her study confirms, extends and updates Ruhm's earlier work. The outcomes studied are infant mortality, low birth weight, and immunisations. Her major finding is that longer periods of paid leave reduce infant mortality while unpaid and/or non-job-protected leave have no significant effect. Tanaka's panel still omits 12 OECD countries (Japan and the United States are added to Ruhm's European OECD countries). Her panel also omits recent important policy variation within the OECD (for example, parental leave policy expansions in Canada in 2001, Denmark in 2002, New Zealand in 2002, 2004 and 2005, Sweden in 2002, and the United Kingdom in 2003 and in 2007 are outside the scope of consideration).

A similar panel approach, but considering parental leave across Canadian Provinces between 1961 and 2001, is undertaken by Baker and Milligan (2005). This panel has 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 infant well-being outcomes.

There are three country studies of policy changes – for Germany, Canada, and Denmark. Using a large administrative unit data set to consider the impacts of three major expansions in German leave coverage (1979, 1986, and 1992) on long-run educational and labour-market outcomes of children as young adults, Dustman and Schönberg (2007) identify the causal effects by comparison of outcomes for children born just before and just after reforms. The policy variation observed allows them to examine whether the impact of unpaid leave differs from paid leave, and whether expansion of leave from two to six months is more beneficial than raising it from six to ten months. They find no evidence of improved adult outcomes of children exposed to higher amounts of paid parental leave. Canadian policy changes are examined by Baker and Milligan (2005) for an effect on child health and development. While higher leave increased mothers' time away from work and considerably raised breastfeeding rates and duration, they had no impact on maternally-assessed indicators of child health, child behaviour and family functioning up to age 2. The impact of a Danish parental leave policy change in 1984 on more long-run child educational outcomes, including PISA scores, is examined by Wurtz (2007). Again, no effect is found on long-run child outcomes.

Positive results thus come from country panels, using aggregate outcomes rather than unit outcomes. In addition, the country panel approach omits several major reforms, provides few sensitivity tests, and covers little more than half of OECD countries. It would be of considerable interest to include all OECD countries and an updated panel in a future study.

Given that there is good evidence that breastfeeding may increase child cognitive ability (see main text), it is unfortunate that this outcome has not been examined.

There is a much larger body of evidence on the subject of early maternal re-employment and child development (research on the so-called “inverse” effect), which uses traditional multi-variate or fixed methods and does not rely on policy change to isolate causal effects. The literature suffers the omitted variable problems of all observational studies. The findings of this literature are mixed as well (see Wurtz, 2007). As indicated, selection bias remains a serious issue. Again, strong policy conclusions regarding the relationship between parental leave and child well-being outcomes do not appear to be supported (see also Galtry and Callister, 2005).

What should be the relationship between maternal leave entitlements and breastfeeding policy? The WHO recommends six months exclusive breastfeeding for both maternal health and child well-being. In many OECD countries, post-birth maternal leave is significantly less than six months. Should public health recommendations on breastfeeding be co-ordinated with paid maternal leave? Kramer and Kakuma's (2002) WHO review aims to assess the effects of exclusive breastfeeding for six months *versus* exclusive breastfeeding for 3-4 months (with mixed breastfeeding and solid food thereafter) in terms of short-term, typically anthropometric infant outcomes. The available evidence base is not large. They conclude that there is no evidence that exclusive breastfeeding for six months does any harm. Longer-term child well-being impacts of breastfeeding are considered by Horta *et al.* (2007). While positive long-term effects are found in terms of physical health and intelligence, the second WHO study does not address the question of whether six months is optimal over 3-4 months for child development. The most recent systematic review of the impact of breastfeeding on infant and maternal health in developed countries is Ip *et al.* (2007). They find effects on a variety of infant health outcomes, but no clear results on cognitive performance and infant mortality. They advise caution on causal inference because of the observational nature of most of the evidence. Finally, they recommend cluster randomised trials to further advance knowledge of causality, along the lines of the Belarus study.

The large Belarus cluster-randomised design – a random allocation of the WHO Baby Friendly Hospital breastfeeding promotion initiative to 31 hospitals in Belarus – has allowed direct examination of the causal impact of breastfeeding on children. The study is promoted as “the largest randomised trial ever undertaken in the area of human lactation” (Kramer *et al.*, 2008a, p. e436).

Some significant early effects of prolonged breastfeeding are found. Intervention sites had lower chances of gastrointestinal infections and atopic eczema, but no reduction in respiratory tract infections over the first year of life (Kramer *et al.*, 2001). Breastfeeding also accelerates infant growth in the first few months following birth. But breastfeeding makes no difference for these measures by the end of the first year of life (Kramer *et al.*, 2002). In terms of child outcomes at age six and a half, prolonged and exclusive breastfeeding has no impact on height, weight, adiposity and blood pressure (Kramer *et al.*, 2007a), asthma or allergy (Kramer *et al.*, 2007b), or dental caries (Kramer *et al.*, 2007c). Breastfeeding also has no effect on a wide range of child internalising and externalising behaviour measures measured at that same point (Kramer *et al.*, 2008a).

However, there are significant positive effects from breastfeeding on cognitive ability measured at age six and a half. The effect sizes for IQ are about 0.4 (Kramer *et al.*, 2008b).⁴ Similar effects are found on adolescent IQ from a study identifying the causal effect from differences between siblings in the amount of breastfeeding (Evenhouse and Reilly, 2005). The positive IQ result is consistent with the most recent work on gene-environment interactions. Breastfed children with the gene allowing absorption of the component in breast milk fostering brain development had an IQ again about 0.4 of an effect size higher than both bottle-fed children and the 10% of children without the gene, regardless of their breastfeeding status (Caspi *et al.*, 2007). Overall, the evidence provides support for considering the alignment of paid parental leave duration with breastfeeding needs for cognitive development.

Child benefits and younger children

A number of OECD countries pay a child benefit or offer a child tax rebate. Some countries have a universal payment. In other cases, payments vary according to family income or numbers of children. This brief section does not attempt to paint a comprehensive picture of child benefits or tax rebates across OECD countries. Rather the aim is to focus on the child age dimension, and in particular the young child age dimension, in relation to the payment of child benefits. Some OECD countries condition child benefits on the age of the child. A few countries pay more for younger children. Other countries pay less for younger and more for older children, reflecting a focus on the higher current costs of supporting older children. The modal pattern of child benefit payments within the OECD is age-neutral (see Table 4.2).

Table 4.2. Child age and the child benefit (or tax rebate) payment rate

Higher payments for younger children	Higher payments for older children	No variation in payment by child age
Canada, Denmark, Iceland, Japan, Portugal, Switzerland (some cantons)	Australia, Austria, Belgium, Czech Republic, France, Netherlands, Luxembourg, New Zealand, Poland	Finland, Germany, Greece, Hungary, Ireland, Italy, Norway, Slovak Republic, Spain, Sweden, United Kingdom, United States

Note: There are some simplifications in this table. Korea, Mexico and Turkey do not pay child benefits.

Source: OECD (2002, 2003, 2004, 2005), MISSOC, MISSCEO, and for Japan www.ipss.go.jp/webj-ad/WebJournal.files/SocialSecurity/2002/02AUG/abe.pdf.

In considering patterns of benefits or tax rebates to families based on the age of the child, it is worth observing that the generosity and timing of paid maternal leave can also affect the profile, boosting incomes when children are young. Additionally, a number of countries pay child-raising allowances, which are available to parents who are raising their children at home (e.g. Finland, France, Hungary, Norway and Spain. Canada has also recently moved in this direction. Germany has recently moved away from such a model). These child-care benefits typically cut out when the child is between ages 2 and 3.

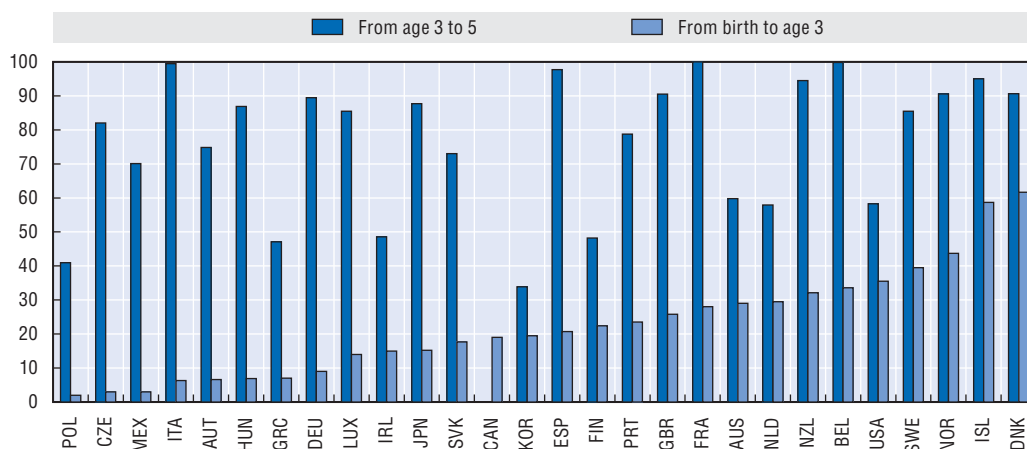
Child care and early childhood education

At some period, many young children will experience child care with a carer who is neither their mother nor father. Care may be provided by relatives (often grandparents), friends and neighbours, by nannies and au pairs, by family day care (subsidised professional child-care workers who receive the child, typically along with others, in their home), or in different forms of centre-based care (day care centres, crèches, playgroups, nurseries and so on).

At what point child care becomes education is difficult to specify. Care involves activities like over-seeing health and safety, controlling inter-child conflict, ensuring sufficient rest is obtained, and changing and feeding. Education involves more active learning. Invariably care shades into education. Children under age 3 require a great deal of care. Consequently, adult-child ratios are typically low, reflecting the high care demand of children of this age. Education is much more subject than care to economies of scale. Appropriate adult-child ratios decline as the child gets older and care needs diminish.


Different attitudes to the care of young children are reflected in varying views across the OECD about who is best suited to provide child care and the appropriate role of the state vis-à-vis family choices regarding care. These attitudes are reflected in policies on the length of job-protected leave and paid parental leave provided, as well as payment of a child-raising allowance (see above), direct state supply of child care (and the eligibility rules surrounding accessing it), and financial support to families to allow them to access child care (Figure 4.6).

Figure 4.6. **Enrolment rates in child care/early childhood education around 2005**
Percentage



Note: The data includes formal and informal care.

Source: OECD Family database.

StatLink  <http://dx.doi.org/10.1787/711807460366>

The stage of the life cycle that children, on average, attend out-of-home child care or early childhood education differed considerably across countries in or about 2005 (see Figure 4.5). There is a substantial step-up in participation from age 3 in most countries, partly reflecting very low participation of most children in the first year of life, dragging the participation of under-3s down, and partly reflecting the rise in public provision after age 3 (Box 4.3 addresses whether early childhood care and education makes things better for children).

Targeted early childhood interventions

Targeted early childhood intervention refers to the selective provision of services to children who are either showing early manifestations of a problem or are at-risk of developing a problem early in the child's life cycle. A number of OECD countries run early childhood interventions targeted towards these disadvantaged children.⁵ These come in a bewilderingly wide range of shapes, sizes, and types (see Table 4.2 for a summary).

These programmes are most popular in Anglophone OECD countries, with the intellectual lead coming from the United States. The influence of the small, randomly assigned Abecedarian and Perry early intervention projects involving intensive early childhood education and other services to disadvantaged children has been strong, as has been the nurse home visiting Elmira-style programmes (Olds *et al.*, 1999). Many of the programmes on offer outside the United States are lineal descendants of these programmes. While many of the targeted programmes have only been delivered in the

Box 4.3. Does child care and early childhood education enhance child well-being?

The debate about the appropriate time to introduce a child to out-of-home care or education generates controversy in many countries. A number of OECD countries pay a stay-at-home child-raising allowance for parents up until age 2 or 3 or even older, reflecting a belief that this is the better (or cheaper) developmental choice for at least some children. As with the answer to many questions, the correct answer to whether child care is good or bad for children is that, “it depends”.

There are a wide range of possible impacts of child care on child well-being. A policy change which moves children from parental care into subsidised child care substitutes one sort of care for another. Whether this substitution results in an increase or decrease in child well-being depends on the relative quality of parental and non-parental child care. Out-of-home care could have a positive effect, given an average quality of child-care, for children whose parents are mentally ill or overly stressed, or have poor parenting skills, and may have a negative effect for children from more advantaged backgrounds. If child care allows higher family employment, more income may have positive effects on children (the issue of the impact of family income on child well-being is addressed further in Chapter 7). Child care can allow positive social interactions with other children, which become important from about age 2 onwards for many children, in addition to the benefits of learning how to socialise and co-operate with others. On the other hand, child care at very young ages may limit breastfeeding or it may reduce parent-child attachment. Child care can reduce direct children-adult interaction due to higher adult-child ratios in child care than in families. Child care can expose children to stressful interactions with other children at a time that they are not well-equipped to deal with this. Centre-based child care in particular may expose a child to a higher amount of infection, from both viruses and bacteria, than does the average home environment.

From birth to age 3

The general consensus from the empirical literature is that significant amounts of non-parental care in the first year may raise risks of insecure attachment to parents, and cause less harmonious interactions with parents. Child care in the first three years, regardless of quality, can raise risks of externalising behavioural problems. Long hours in care are problematic for young children. More positively, higher-quality child care improves early cognitive functioning, measured at up to 5 years of age. Overall, in line with general findings on environmental causes, effect sizes are modest (Belsky, 2003). In terms of physical health, there is evidence that greater time spent by children in center-based care is associated with increased rates of respiratory problems for children aged 12 to 36 months and increased rates of ear infections for children aged 12 to 24 months (Gordon *et al.*, 2007).

From age 3 to 5

The general consensus from the empirical literature is that high-quality care can modestly improve cognitive functioning (Peisner-Feinberg, 2004). Child care can also lead to positive social relationships. As with younger children, there is some evidence that high hours in child care can increase behaviour problems, which are not cushioned by higher-quality care (McCartney, 2004).

Recent studies

There have been two recent studies from outside the United States of the universal child-care systems of Canada (Quebec Province) and Denmark, both of which are worth examining.

Box 4.3. Does child care and early childhood education enhance child well-being? (cont.)

The establishment of CAD 5 per day, universally available child care in Quebec in the late 1990s has allowed researchers to compare parent-assessed outcomes for children in Canada to other provinces to evaluate the developmental effects of the expansion (Baker *et al.*, 2005). The Quebec Family Policy began in 1997 with the extension of full-time kindergarten to all 5-year-olds and the provision of child care at CAD 5 per day to all 4-year-olds. This CAD 5 per day policy was extended to all 3-year-olds in 1998, all 2-year-olds in 1999, and finally all children aged less than 2 in 2000. This dramatic policy change allowed a large quasi-experimental evaluation of the effect of publicly-financed child care, at least in the short term. Considering a variety of socio-emotional outcomes for pre-school children, including hyperactivity, anxiety and aggressiveness, things worsened in Quebec. Objective and subjective physical health measures deteriorated post-expansion. No improvements were found in cognitive performance. Parental interactions with children deteriorated. However, single parents were excluded from the study because of numerous other non-child-care policy changes specifically associated with them (Gormley, 2007). Children of single parents may benefit from high-quality child care (it is not clear that the Quebec child-care quality was, however, high).

Denmark is acknowledged to have one of the highest quality universal child-care systems in the OECD. A recent Danish study considers the overall implications for child behaviour measured at age 7 of being out of parental care at age 3 (Gupta and Simonsen, 2007). Two different types of out-of-home care are considered – preschool and family-based care. Pre-school is found to be not statistically different from home care, but outside-the-home family-based care results in worse behavioural outcomes (the effect size is about 0.35). In terms of sub-groups, the group most harmed is boys with mothers with low levels of education. An increase in preschool hours from 20-30 hours to 30-40 hours or more causes a small deterioration in child behaviour at age 7.

Bernal (2008) criticises the work on the effects of child care for not dealing adequately with endogeneity. She addresses the problem by estimating a structural model of women's employment and child-care choices jointly with a child's cognitive ability production function. In a family where the mother works full-time and the child is in child care for a year (during the first five years of the life cycle), the consequence is a reduction in cognitive test scores. The effect size is small (0.13). Of considerable interest is her modeling of three policy changes directed at child-care use on child cognitive achievement. The policy changes are a 35% child-care subsidy, unpaid maternity leave, and introduction of a USD 1 000 per annum child benefit over the first five years of life. The results of the policy simulations suggest that both child-care subsidies and unpaid maternity leave increase mothers' well-being. However, the child-care subsidy and unpaid maternity leave also both reduce child cognitive ability. The child benefit raises maternal utility and child cognitive ability, but reduces maternal labour-market attachment.

A recent survey by Bradley and Vandell (2007) concludes that children who began care early in life and were in care for 30 or more hours a week had elevated risks of behavioural problems, related to social stress in the child-care environment. There seemed to be an interactive effect: children with elevated risk tended to be shy or had insensitive parents. On the other hand, child care raised language scores and early school achievement, particular for disadvantaged children in high-quality care. Physical health suffered, with an increased risk of communicable illnesses and ear infections. These health problems did not appear to have long-term consequences.

United States, there are several which have been picked up by other OECD countries. The Home Instruction Programme for Preschool Youngsters (HIPPY) or programmes based on it run in Australia, Canada, Germany, Mexico (now closed), New Zealand, Netherlands and Turkey (OECD), as well as Chile (now closed), El Salvador, and South Africa. Portugal and China, amongst other countries, have been considering developing HIPPY programmes. Equally, Parents as Teacher (PAT) has been exported (see Wise *et al.*, 2006, p. 112), including to New Zealand as Parents as First Teachers (PAFT). Lastly, the Australian Triple P parenting programme, for families with children from birth to age 12, is used in several other OECD countries (see Wise *et al.*, 2005, p. 110).⁶

Targeted early intervention programmes for under-3s come in an impressive range of variations. Some of the principal dimensional variations are illustrated in Table 4.3 below. Most of the programmes after age 3 have a strong weighting towards early childhood

Table 4.3. **Dimensions of targeted early childhood interventions**

Dimension	Examples
Outcomes	<ul style="list-style-type: none"> Pregnancy outcomes (maternal smoking, diet, pre-natal checks) Birth outcomes (birth weight, prematurity) Child cognitive and socio-emotional development Child behaviour Child physical and mental health (including abuse and neglect) Economic (poverty, parental employment, independence from benefits) Parent education (<i>e.g.</i> literacy) Parenting skills
Target person or relationship	<ul style="list-style-type: none"> Child Parent Child-parent dyad Family
Targeting criteria	<ul style="list-style-type: none"> <i>Individual child</i> Ethnic minority or migrant status Single parent, first time parent, or young parent Family income poverty or material deprivation Parental problems (social isolation, substance abuse, poor mental health) Child health, cognitive or behavioural problems <i>Disadvantaged community (geographic)</i>
Age of focal child	Ranging from pre-natal to age of compulsory school entry
Location of services	<ul style="list-style-type: none"> Home Centre, school, or medical centre
Services offered	<ul style="list-style-type: none"> Education of children or parents Links to other social services Health or nutrition related Job related
Intensity of intervention	<ul style="list-style-type: none"> Starting age to ending age Hours per week Weeks per year Individuals or large and small groups
Programme reach	<ul style="list-style-type: none"> Nationwide State or province wide Area wide Single setting

Source: Adapted from Karoly *et al.* (2005), "Early Childhood Interventions. Proven Results, Future Promise", Rand Corporation, Labor and Population, Santa Monica, Table 2.1.

education, whilst those before age 3 often have home visiting and/or parental education components, either exclusively or additional to an early childhood education component.

There have been an enormous number of early intervention programmes for young children (both before and after age 3), many as one-off, small-scale demonstration projects. Relatively few of these have had well-designed evaluations, especially of long-term outcomes into late childhood and beyond. Outside the United States environment, well-designed long-term (young adult and older) evaluations of early intervention programme are non-existent. Thus policy makers are over-reliant on a very small number of studies involving a small number of children in environments that may differ from where countries are today. They may not have a broad policy application to the OECD in the early 21st century. There is evidence from quality evaluations that well-designed and implemented targeted programmes can work to improve outcomes for young children (Fergusson *et al.*, 2005; Olds *et al.*, 2007). The effect sizes also tend to be smaller for larger programmes. However, the fact that a number of well-designed evaluations of programmes have shown little or no evidence of a change in child well-being means that the positive effect of such programmes cannot be taken for granted. Like just about every government policy intervention examined here, early targeted interventions for children under age 3 are no panacea to well-being and developmental problems of very young, disadvantaged children (Olds *et al.*, 1999; Olds *et al.*, 2007; Sweet and Appelbaum, 2004; Wise *et al.*, 2005).

A recent meta-analysis of 60 home visiting programmes, with about 75% of programmes being for under-3s and with about one-quarter beginning before birth, found often significant but small or very small effect sizes overall on child and family functioning outcomes. There are ten summary effect sizes presented by Sweet and Appelbaum (2004, Table 2, p. 1439), averaging 0.08, with a standard deviation of 0.08, and ranging from 0.02 to 0.28. Of these ten effects sizes, six are statistically significant. No single programme dimension examined was found to consistently influence outcomes, but targeted programmes yielded significantly better outcomes on a bi-variate basis, as did single-site interventions, the latter being an indication of the problems of replication (Sweet and Appelbaum, 2004).

A second recent meta-analysis was of 34 pre-school prevention programmes, with a focus on consideration of the short-, medium, and long-term cognitive, socio-emotional, and family functioning outcomes (Nelson *et al.*, 2003). Of the two meta-analytic studies, Sweet and Appelbaum (2004) is more systematic, with more programmes, more references and a greater degree of statistical testing. There was a considerable degree of overlap in the material examined by the two studies. The principal findings are a decline in cognitive effects, from an effect size of over half a standard deviation in pre-school to around less than a third at the beginning of late childhood. Socio-emotional impacts at the beginning of late childhood and beyond were similar, at about one-third of a standard deviation, as were family functioning measures. Larger cognitive effects at the start of late childhood were found for longer and more intensive interventions. The larger effect sizes found by Nelson *et al.* (2003), in comparison to Sweet and Appelbaum (2004), may relate to the inclusion of programmes with a centre-base educational component.

A recent narrative review of home visiting programmes in the United States concludes that those that send nurses into homes of high-risk families, focusing on prenatal health, child health and development and parental economic self-sufficiency have the strongest evidence base (Olds *et al.*, 2007). However, the review also calls for a stronger theoretical

and epidemiological basis for programmes, better piloting and more extensive and nuanced use of multiple randomised control trials when programme expansion takes place, as well as a greater focus on family engagement and retention.

Summary

Chapter 4 shows considerable evidence of substantial variation in policies during the earliest part of the life cycle across different countries, which reflect the multiple goals of early childhood policies and varied priorities between countries.

The multiple goals of early interventions mean that reviews such as this are integral to understanding the role of early childhood policies in enhancing child well-being. What is the impact on the child if the mother moves back into the workforce after 12 weeks as opposed to 20 weeks? How does this effect recommendations for breastfeeding? Are sufficient high-quality child-care placements available? Are policies directed at children concerned with simply survival, or is an element of development involved?

Broad policy conclusions can be drawn from this review. First, most OECD countries may deliver more pre-natal health checks than justified by the evidence. The savings can be better allocated in a cascading fashion to higher risk pregnant mothers to encourage lower smoking rates and better nutrition. Second, many OECD countries may allocate too many resources to the hospitalisation of women following normal birth. Resources could be reallocated away from paying for hospital beds and, for example, towards higher post-birth maternal leave payments to better co-ordinate with breastfeeding requirements and to promote breastfeeding. As with pre-natal care, universal post-natal care in many countries could benefit from a stronger resource “cascade” to children in higher-risk families. Ideally, such a service could be merged with a service option to refer those children to more intensive home visiting and/or high-quality early childhood education.

Lastly, there is an urgent need for more studies of the effectiveness of early interventions, given the strong likelihood that governments comparatively under-invest at this stage of the life cycle. These studies can therefore be used to provide more information about what and where at this life cycle stage further investments may be made.

Chapter 3 and 4 have dealt with policy interventions in terms of spending and policy structures. Chapters 5 and 6 now move on to review the analysis of the impacts of family environments on child well-being. Chapter 5 addresses single parenthood, and makes a necessary excursion into the analysis of the environments surrounding general childhood and early childhood interventions. For a number of reasons, including parental agency, it is often the family environment that provides the strongest mediating effects on public efforts to enhance child well-being.

Notes

1. Thanks to Megumi Nozawa from the Japanese Ministry of Health, Labour and Welfare for providing this figure.
2. See WHO Choice project (www.who.int/choice), where unit costs per hospital inpatient day, being the “hotel” component of hospital costs (not differentiated by specialty), are estimated in all WHO member states.
3. Australia had a sizeable universal baby bonus paid at birth. It has recently converted this bonus into a family income capped payment, paid in 13 fortnightly instalments.

4. The strength of the relationship between IQ and adult outcomes is disputed. However, there is a clear relationship with adult earnings (Zax and Rees, 2002).
5. For more comprehensive discussions of the literature on a wide range of early childhood intervention programmes see Russell (2002), Karoly et al. (2005), Bull et al. (2004), and Wise et al. (2005) for perspectives from Canada, United States, the United Kingdom and Australia, respectively. Aos et al. (2004) contains a further consideration of cost-benefit analysis of these programmes in relation to interventions at other points of the child life cycle.
6. See www.hippy.org.il/html/about_international.html, accessed 17 March 2008. For detail on HIPPY and its largely positive evaluations see Wise et al. (2005, p. 79).

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Chapter 5

Child Well-being and Single Parenthood

This chapter assesses whether and how the rise in single parenthood influences child well-being. It first describes the types of family structure experienced by children in different OECD countries, and moves on to explain why single-parent family structure may influence child well-being. A meta-analysis follows, drawing on a large number of studies and comparing the effects of single parenthood across countries and by well-being dimensions. The penultimate section of the chapter discusses new techniques to identify causality in the literature, while the final section examines policy implications.

Introduction

The family is a critical environment for influencing child well-being. And as family structures change, so too should child policies. Single-parent families in particular have increased in number in all OECD countries over the last generation, although to varying degrees. Concern has been expressed in a number of OECD countries about the impact on child well-being of the growing numbers of children living in a single-parent family at some stage during their childhood. The purpose of this chapter is to assess whether and how the rise in single parenthood is affecting child well-being (this chapter is based on Chapple, 2009).

Good policy requires knowledge about the precise nature of the relationship between single parenthood and child well-being. For instance, if policy makers believe that there is a causal relationship between family structure and child outcomes, measures to promote two-adult families may be desirable, as would policies to compensate for negative effects for children who grow up in single-parent families. If policy makers do not believe that there is a causal effect on child well-being, they will be less concerned about policies both to promote two-parent families and to support children of single parents. A number of OECD countries have social policies to at least partially offset the disadvantages that single parents face, for example by providing family services, including child care, and income support. Chapter 3 showed that single parents can also receive additional support through standard family benefits.

To identify the potential size of the impact of growing up in a single-parent family, evidence is compared from a large number of studies that look at different dimensions of child well-being in different countries. As there is a large amount of information involved, a meta-analysis is undertaken (see Box 5.1).

The chapter begins by describing the types of family structure experienced by children in different OECD countries, and moves on to explain why single-parent family structure may influence child well-being. The meta-analysis follows, comparing the effects of single parenthood across countries and by well-being dimensions. The penultimate section of the chapter discusses new techniques to identify causality in the literature, while the final section examines policy implications.

Consistent with the discussions in Chapter 2, child well-being is viewed here as multi-dimensional across a variety of outcome domains. The approach draws on whatever measures of well-being are employed by researchers. Child well-being is also considered to have a strong inter-temporal or life cycle dimension. In exploring the possible impact of family structure, this chapter looks at the present well-being of children, their future well-being as children, and their future well-being as independent adults.

Results of the cross-OECD meta-analysis suggest that the maximum size of the effect on child outcomes of growing up in a single-parent family is small. This qualitative result is consistent with Amato's United States-based study (Amato, 2000). In the Nordic countries, the maximum effects are similar to the United States, which is surprising given

Box 5.1. What is meta-analysis?

Meta-analysis is a research technique for surveying and summarising existing primary quantitative research.

Quantitative results from primary research are selected, transformed into a comparable standardised format, and entered into a database for analysis. The most typically used standardised method, and that employed here, uses mean effect sizes. Standardised mean effect sizes are the difference between the outcome in the presence of the cause and in the absence of the cause, divided by the outcome's overall standard deviation. A commonly used interpretation of effect size defines a standardised mean effect size of 0.2 as a "small" effect, 0.5 as a "moderate" effect, and 0.8 as a "large" effect.

The resulting comparable effect size database is then systematically meta-analysed to derive information on the overall size and effect of the independent variable on the dependent variable. Various statistical adjustments can be made to allow for various dimensions of quality of the primary studies.

By way of contrast, the traditional narrative literature review has a stronger focus on the conventional statistical significance of individual studies rather than average sizes of the effect when considering all studies.

Meta-analyses have long been part of medical science and have been finding their way into the social sciences slowly over the last generation.

Meta-analysis has a number of strengths. It summarises a lot of research information on one topic, in effect as one large study with many participants, according to more objective and formal rules of evidence than the more traditional narrative literature review, and with concrete quantitative results.

However, there are considerable challenges in rendering the studies comparable with one another. A weakness is that while some quality dimensions are quantifiable, others are more difficult to code and thus take into account. There is an issue of publication bias. Non-spectacular or null results are less likely to be published. Consequently, a meta-analysis will provide upwardly biased results. Lastly, as with any empirical enquiry, a meta-analysis, no matter how well executed, is only as strong as its base data.

that Nordic welfare states are more likely to cushion the adverse impacts of single parenthood, but it is a finding supported by other recent research. However, in most other OECD countries, the single-parent effect is slightly smaller on average than in the United States. A review of sophisticated techniques for identifying whether observed small effects are in fact causal delivers a mixed picture. The more sophisticated methodologies typically give a lower or null effect on the child outcomes of being brought up by a single parent. Yet these methods too have their limitations. Unfortunately for policy makers, whether a causal effect of single parenthood on child well-being exists remains unproven.

Family structure across the OECD

This section provides a comparative context for the prevalence of single parenthood across OECD countries (Table 5.1). Comparable cross-sectional/time-series information on rates of single parenthood by country across the OECD is not easy to obtain. The best cross-sectional information available on non-intact family structure across all OECD countries is from HBS 2005/06 for children aged 11, 13 and 15 years combined. This data set has several advantages. It is from the child's perspective, since children responded to the

Table 5.1. **Family structure across 25 OECD countries for 11-, 13- and 15-year-olds (%)**

	Both parents	Single parent	Step-family	Other
Italy	87	9	3	1
Greece	86	11	2	1
Turkey	85	11	1	3
Slovak Republic	84	11	5	0
Spain	84	11	4	1
Poland	83	12	3	1
Portugal	82	10	6	2
Ireland	81	13	5	2
Netherlands	80	12	7	1
Switzerland	79	12	8	1
Austria	76	14	8	1
Luxembourg	76	14	8	2
Belgium – Flanders	74	14	10	1
Germany	74	15	9	1
Hungary	74	16	9	2
France	73	14	11	1
Norway	73	16	10	2
Sweden	73	14	12	1
Finland	71	16	13	1
Czech Republic	70	16	12	2
Iceland	70	15	12	2
United Kingdom – England	70	16	12	1
Canada	69	18	11	3
United Kingdom – Scotland	68	19	12	1
Belgium – Walloon	67	17	14	2
Denmark	66	19	12	3
United Kingdom – Wales	66	19	13	3
United States	57	24	14	4
OECD average	75	15	9	2

Note: These are the proportions living “primarily” with each family arrangement. “Other” includes foster homes and non-parental family members. Regional data for Belgium and the United Kingdom is presented as in the original source document. Without further information about relative family numbers, it was not possible to weight these constituent regional surveys to obtain estimates of family structure at a national level.

Source: Adapted from Currie et al. (2008), *Inequalities in Young People’s Health: HBSC International Report from the 2005/2006 Survey*, WHO Regional Office for Europe, Copenhagen.

StatLink  <http://dx.doi.org/10.1787/711813025562>

survey. It is comparatively recent. It provides data on step-families, as well as single-parent families. However five OECD countries were unfortunately not included in the survey – Australia, Korea, Japan, Mexico and New Zealand.

The United States stands out in Table 5.1 as the country with the highest rate of parental absence and single parenthood by a considerable margin. One in four United States children aged 11-15 live with a single parent. Italy is at the opposite end of the scale, with one in ten children living with a single parent. Rates of single parenthood are also at the higher end for Canada, the Nordic countries and the United Kingdom, and lower for the southern parts of Europe.

Why might single-parent family structure matter for enhancing child well-being?

Children living in single-parent families are less likely to have as much income as children living in intact families. Often separation means the direct loss of a family earner, but it may also make it harder for the custodial parent to work as well. There is also the loss

of parental assets like houses if these are shared equally between parents. Causal linkages in terms of material resources available for parental investment in children, or in terms of higher levels of parental stress, may then connect poorer material outcomes with other adverse child well-being outcomes. The lower leisure available to single parents, because of increases in paid and unpaid work, may also contribute to stress that then harms children.

Parental separation or geographic absence also often means a loss of or reduction in contact with the non-custodial parent. With this loss children lose the time, networks and skills of that parent. There may also be loss of extended family networks and resources on the side of the non-custodial parent's family as well.

Parental separation can result in a wide variety of changes in children's living situations. Schools, child care, and residence may all change. Relationships with friends and extended family members may also suddenly alter. Change, especially sudden change across numerous dimensions of life, can be stressful for children. Additionally, separation may leave the custodial parent with mental health problems, including depression. The resulting depression can harm the child's well-being and development.

Post-separation, children may be exposed to considerable open parental conflict, for example through custody disputes, both informal and legal, which may have negative impacts on their well-being and development.

Children of single-parent families may be exposed to a variety of social stigmas in environments as varied as the wider family, peer groups, schools, the media, and welfare officers. This stigma may be internalised by the child and lead to poorer current and long-term outcomes for these children.

There may also be positives in growing up in a single-parent family compared to the counter-factual of two biological parents. If the absent parent would have contributed to creating an environment that involved high amount of parental conflict in the home, had problems of mental health or alcohol or drug abuse, was likely to abuse or demean the child or the other parent, lacked an income and stable employment, or was prone to criminal behaviour, it is quite plausible that the child would be better off growing up without being in the custody of that parent.

What is the effect on children of growing up in a single-parent family? A cross-OECD meta-analysis

A meta-analysis averages effect sizes from a large number of studies to obtain an overall picture of the literature. The standard method of estimating an effect size is to subtract the mean outcome variable for children living in a single-parent family from the mean for children in an intact family and divide it by the pooled group standard deviation. A large meta-analysis of American studies was undertaken by Amato (2000). The approach here has been to supplement this work by considering non-United States OECD studies, synthesising them into a meta-analysis, and comparing them to Amato's results.

Child outcomes were classified into the following eight categories:

- academic achievement
- conduct/behaviour/delinquency/ADHD
- depression/anxiety/happiness
- self-concept/esteem

- social relations
- physical health
- employment/income
- other (a catch-all category).

The collection method distinguishes three different types of effect sizes: 1) effect sizes for mean differences, after controlling for observed pre-divorce family and child characteristics, 2) effect sizes based on raw mean differences, and 3) effect sizes for mean differences, controlling for post-divorce characteristics. The preferred method was analysing child outcomes controlling for child and family observables prior to divorce. Failing such an approach, raw differences were used. If, in turn, simple mean differences were not provided, coefficient estimates including adjustments for post-divorce factors were used. Average effect sizes considered here are likely to be higher than their true causal value because the majority of effects included in the analysis (over 70%) are raw differences, which do not account for selection into single-parent families.

Effect sizes across countries

There were 367 effect sizes from 122 studies. While the aggregate number of effect sizes is impressive, the number of effect sizes by OECD country varies widely (Table 5.2). The large numbers of United Kingdom, Canadian and Finnish studies stick out, in part probably because those countries have good longitudinal surveys. A number of countries had very few or no studies.

The average unweighted effect size of single parenthood from the 367 effect sizes is -0.230 . By way of comparison, using 177 effect sizes from 67 largely United States studies published in the 1990s, Amato reports a slightly larger figure of -0.288 . But both these estimates fit into the generally accepted small definition of effect size. The minimum effect size found was 0.23 and the maximum effect size found was -1.20 , both similar to Amato's study (minimum: 0.37 , maximum: -1.25). In 345 cases (94%, compared to 88% for Amato), the effect of being brought up by a single parent was negative and in 22 cases the effect was positive.

Effect sizes also differ substantially on average between non-United States OECD countries. Effect sizes for the Anglophone and continental western European countries are very similar, with those in Nordic countries being, surprisingly, somewhat higher.

Turning now to the estimation method, the vast bulk of studies – nearly three in every four – were raw mean differences between outcomes for children of single parents and children from two-parent families. Only a minority of studies involved controls for pre-divorce variables and a similar number presented effects sizes only after controlling for post-divorce variables (recall that the latter were employed only when no raw mean difference effect sizes could be calculated, and they are likely to over-control for selection). As expected, post-divorce controls gave the lowest average effect size (-0.14), followed by pre-divorce controls (-0.17). Mean raw differences that provide no controls for selection show the highest effect size (-0.26).

Effect sizes by type of outcome

The most common outcome studied was academic attainment, with over a quarter of studies addressing some form of educational outcome (Table 5.3). Externalising and internalising mental health problems and physical health problems all had a similar

Table 5.2. **Effect sizes of the impact of single parenthood on child well-being by country**

	Number of effect sizes	% of total effect sizes	Average effect size	Standard deviation
Australia	7	2%	-0.297	0.338
Austria	4	1%	-0.098	0.162
Belgium	7	2%	-0.200	0.160
Canada	26	7%	-0.186	0.122
Czech Republic	1	0%	-0.101	n.a.
Denmark	21	6%	-0.248	0.277
Finland	54	15%	-0.314	0.170
France	12	3%	-0.205	0.190
Germany	18	5%	-0.173	0.208
Greece	4	1%	-0.328	0.257
Hungary	10	3%	-0.250	0.111
Iceland	9	2%	-0.254	0.163
Ireland	3	1%	-0.251	0.087
Italy	7	2%	-0.231	0.086
Japan	0	0%	n.a.	n.a.
Korea	1	0%	-0.128	n.a.
Luxembourg	1	0%	-0.225	n.a.
Mexico	1	0%	-0.083	n.a.
Netherlands	23	6%	-0.173	0.134
New Zealand	5	1%	-0.181	0.134
Norway	24	7%	-0.236	0.218
Poland	1	0%	-0.135	n.a.
Portugal	3	1%	-0.060	0.060
Slovak Republic	6	2%	-0.132	0.078
Spain	7	2%	-0.161	0.191
Sweden	29	8%	-0.268	0.154
Switzerland	2	1%	-0.130	0.054
Turkey	5	1%	-0.649	0.469
United Kingdom	76	21%	-0.187	0.159
Anglophone	116	32%	-0.195	0.164
Nordic	135	37%	-0.281	0.281
Western European	107	29%	-0.185	0.185
OECD29	367	100%	-0.230	0.198

n.a.: Not available.

Source: OECD calculations based on Chapple (2009), "Child Well-being and Family Structure across the OECD: An Analysis", Draft Working Paper, OECD, forthcoming.

StatLink  <http://dx.doi.org/10.1787/711822171513>

degree of prominence. This meta-analysis was more heavily weighted than Amato's towards educational outcomes (41% of the first five outcome domains compared to 22% for Amato), and much the same on Conduct and Depression (24% in both cases here compared to 23% in both cases for Amato). Self-concept and social relations were markedly under-represented (3 and 7%, respectively, compared to 16% in both cases for Amato).


What about effect sizes by domain? There are five domains where this study and Amato's overlap. Where the five domains are shared in common, this study generates an average effect size of -0.216 (see Table 5.3). Overall, this study finds a slightly lower average effect size for all comparable outcome domains than does Amato.

Single-parenthood effect sizes found for the non-United States OECD were larger for Conduct/behaviour/delinquency/ADHD (externalising behaviour) than for Depression/anxiety/happiness (internalising behaviour), a not uncommon finding in the literature, but

Table 5.3. **Effect sizes of single parenthood by child well-being domain: a comparison with Amato (2000)**

	Mean unweighted effect size – Amato (mostly United States)	Mean unweighted effect size – This study (other OECD)	Difference
Academic achievement	-0.26	-0.19	0.07
Conduct/behaviour/delinquency/ADHD	-0.33	-0.29	0.04
Depression/anxiety/happiness	-0.31	-0.20	0.11
Self-concept/esteem	-0.24	-0.13	0.11
Social relations	-0.28	-0.20	0.08
Total – five domains above	-0.29	-0.22	0.07

Source: Amato (2000), “Children of Divorce in the 1990s: An Update of the Amato and Keith (1991) Meta-Analysis”, *Journal of Family Psychology*, Vol. 15, pp. 355-370; OECD calculations based on Chapple (2009), “Child Well-being and Family Structure across the OECD: An Analysis”, Draft Working Paper, OECD, forthcoming.

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not a result emerging out of Amato’s meta-analysis. This larger effect size for externalising compared to internalising behaviour found in the non-United States OECD may reflect any or all of a) a true effect, b) the poor performance of instruments for internalising behaviour, something inherently harder to measure than externalising behaviour, or c) the greater likelihood of selection effects for externalising behaviour.

Searching for causality

The traditional approach to identifying causality

In order to supplement the above large-sample meta-analysis, this section concentrates on a variety of best-practice methodologies for uncovering the causal effect of single-parent family structure on child well-being. The gold standard to establish causality of family structure on child well-being would be a randomised allocation of children to different family structures – which is obviously not going to happen. Consequently, researchers have had to turn to a wide variety of different methods to try and unpick the causal impacts on children of growing up in a single-parent family.

The most common research design uses longitudinal data sets and multi-variate regression techniques. A particular outcome is chosen at a point in the subject’s child or adult life cycle. Information on family structure, ideally measured prior to that point at which the individual’s outcome is measured, is used as the primary explanatory variable (the “treatment”). To allow for possible selection into single-parent families, a wide variety of other parent and child-specific controls, again measured prior to separation (e.g. at birth), are used. The impact of growing up in a single-parent family is then estimated, conditioning on controls. The coefficient on single-parent family structure, under certain quite strong assumptions of no selection on unobservable variables and no reverse causality, can then be interpreted as the causal impact on well-being of growing up in a single-parent family.

In all likelihood, however, there will remain problems of bias due to the failure to control for unobserved variables that mean non-random selection into various family structures. Non-random selection may occur for a wide range of unobserved genetic or environmental reasons. To take one example, parents may have personalities or mental health difficulties that lead them to be more likely to separate. These difficulties may have a wholly or partly genetic basis. The child also inherits or learns these traits, which may lead to poor well-being outcomes in the child’s future. Typically, longitudinal studies

cannot control for all possible unobserved components that lead to selection into a single-parent family, and may consequently over-estimate the impact of family structure on child well-being.

Second, poor child well-being outcomes – observed or unobserved – may be the cause – rather than the consequence – of changes in family structure. It is a commonplace observation that a handicapped, chronically sick or behaviourally disturbed child can place significant pressures on parental relationships, leading in some cases to separation. Reverse causality has, however, been less of a concern in the literature than identification of a causal effect.

Because of selection and reverse causality issues, in recent years some social scientists and economists are becoming increasingly sceptical about accepting the results from such multi-variate methods as strong evidence of a causal linkage. Hence there has been a considerable explosion in interest in the use of other methods to identify causal effects in many branches of applied economics. This broadening in methodological approach is evident in the literature on family structure and child well-being. Chapter 5 now turns to surveying the results produced by these different methods.

New techniques to identify causality

This section considers the impact of single parenthood on child well-being outcomes using a variety of non-standard methods, including models using repeated observations of the same outcome, models using sibling comparisons, models using differential spatial or temporal exposure to divorce laws, models using parental death as a comparator, and models using behavioural genetic approaches.

Box 5.2. Does timing of exposure to family structure matter for child well-being?

A child may experience the various dimensions of family structure for differing temporal durations and at different points during the period of childhood. Several interesting questions thus arise. Do different exposures have different effects on child well-being in classic “dose-response” fashion? An alternative hypothesis, however, might be that there are critical periods in the child life cycle during which a particular family structure has greater effects on child well-being than in others.

Both the high proportion of time spent by young children in the family environment and their lesser ability to comprehend change predict that changes in family structure occurring early in the child’s life may be most harmful (Wojtkiewicz, 1993). On the other hand, the lack of parental supervision and networks may be more important during the turbulent teenage years, especially as teenagers may be better attuned to what is going on and more likely to perceive change as unusual or disruptive (Harper and McLanahan, 1999).

United States results on timing of parental separation, regardless of outcome, are typically considered to be mixed by US researchers (Antecol and Bedard, 2007). There is some United States research supporting the “early is worse” proposition from the 1980s (Krein, 1986; Krein and Beller, 1988). McLanahan and Sandefur (1994) find a higher but not statistically significant risk of becoming a high school dropout if separation occurred in early childhood. However, Wojtkiewicz (1993) found the opposite result of greater effects from separation in late childhood on high school graduation, while Haveman and Wolfe (1994)

Box 5.2. Does timing of exposure to family structure matter for child well-being? (cont.)

find no difference in terms of schooling for parental separation in middle compared to late childhood. Hill *et al.* (2001) find some evidence of higher effects of earlier separation for years of schooling for boys, but none of the effects are statistically significant. The results for years of education for girls are positive and marginally statistically significant in early childhood and negative and marginally significant in late childhood.

In other United States studies considering non-educational outcomes, McLanahan and Bumpass (1988) find no impact of timing of family structure changes on subsequent family formation decisions, and Harper and McLanahan (1999) find no impact of timing on youth incarceration. Hill *et al.* (2001) find timing results for non-marital births of daughters are not statistically significant and are in fact negative in early childhood and positive in mid- and late-childhood. A recent US study of Antecol and Bedard (2007) finds a “dose-response” relationship for forms of youth externalising behaviour (teenage promiscuity, substance use, and crime). In terms of timing, controlling for a broad spectrum of parent and child covariates, they find that youth smoking, sexual activity and marijuana are most influenced by parental separation during early childhood.

A United Kingdom study by Chase-Lansdale *et al.* (1995) considers mental health in terms of parental separation in middle or late childhood. There is a tendency for effects of parental separation during late childhood to be stronger, but the difference is not statistically significant. Also using the same United Kingdom data, Fronstin *et al.* (2001) finds some tendencies for parental separation during early childhood to have larger and more significant effects on adult outcomes like education and labour-market performance than separation during middle or late childhood. The evidence again is not overwhelming. Similar United Kingdom results are reported for educational attainment by Ermisch *et al.* (2004). An explicit test for the equality of coefficients of effect during early, mid, and late childhood cannot reject the equality hypothesis for educational attainment. Inactivity and adult psychological distress is more likely to be increased by early parental separation, and the hypothesis of temporal equality can be rejected at conventional levels of significance. However, there is also no strong evidence of timing effects on parental separation for smoking and early childbearing.

A study using German data on educational qualifications delivers clearer results, and shows no strong evidence of timing of divorce in the child’s life cycle (Francesconi *et al.*, 2005a). Nor is any strong evidence found of a dose-response relationship for years lived with a divorced or unmarried mother. In a result differing from both the German and United Kingdom studies considered above, a Spanish study considering secondary school attainment, and using four possible child life cycle phases when the parental relationship may dissolve, finds the largest and most significant effects of parental separation occurring from 0 to 3 years of age, and the lowest and typically non-significant effects for separation between 4-15 years (Casquel, 2003). Again considering education, Piketty’s (2003) examination of French data shows somewhat higher effects of parental separation that occurs during middle or late childhood rather than during the early childhood phase.

Overall, the literature allows no strong conclusions to be drawn regarding the timing of separation in relation to the age of the child.

Prospective studies and studies using repeated observations of the same child outcome

Models using data on pre-divorce child outcomes to see if up-coming divorce predicts worse outcomes for children are known as “prospective studies” or “pre-disruption” studies. These pre-disruption studies suggest that failing to control for pre-divorce outcomes for those children when considering the same post-divorce outcome, even if there are controls for other pre-divorce covariates, may result in an over-estimation of the impact of divorce via selection. Alternatively, they raise the further possibility that poor pre-divorce outcomes for children, especially if these are behavioural problems, may cause parents to divorce.

There is a further related type of study, using varying empirical methods, which require repeated longitudinal measures of the outcome of interest at the child level. The outcome observed both before and after any parental separation can be used to identify the causal effects of divorce without the same degree of concerns about omitted variables, since fixed child characteristics can be taken into account in a variety of ways.

These methods have limitations. They do not allow estimation of the impact of being born to a single parent. There are a considerable number of children born to a single parent in many countries, so this is an important group to omit from consideration. Additionally, they cannot deal with time-variant unobserved characteristics that may differ between children from separated families and children from intact families. They only identify from within-individual variance. Lastly, as measurement errors are exacerbated by the focus on within-person variation, the precision of estimation is sacrificed and standard errors are larger.

For all countries where these methods have been used, there is often a considerable or total attenuation of the effects of divorce compared to traditional regression methods without the “before” control or the person-specific fixed effects control (see for example Morrison and Cherlin, 1995; Piketty, 2003; Cherlin *et al.*, 1991; Sun, 2001; Hao and Xie, 2002; Sanz-de-Galdeano and Vuri, 2006; Cherlin *et al.*, 1998; Vandervalk *et al.*, 2005; Stroschein, 2005; and Kerr and Michalski, 2007).

Sibling studies

A number of studies have used sibling comparisons to test the causal impacts of single-parent family structures. The impacts of family structure are identified via differential exposure by siblings to a given family structure. So in a family where parents separate having two children aged 8 and 5, the first child experiences ten years as a child in a single-parent family and the second experiences 13 years in a single-parent family. The variation in sibling “treatment” can then be compared to the “response”, or the difference in well-being outcome of interest between the two siblings. Sibling models can lead to consistent estimates of the impact of family structure on child outcomes if family structure does not respond to children’s idiosyncratic endowments. While this is still a strong assumption, it is arguably a much weaker assumption than that under-pinning the traditional multi-variate regression approach. Use of sibling data to remove unobserved shared family effects is a comparatively new methodology. Most articles in the area date from the later part of the 1990s.

While requiring what are arguably considerably less strong assumptions to identify causality, sibling studies are not without some potentially serious problems. The data

requirements are substantial, so there are comparatively few studies. Since numbers of siblings can be small, the method can result in imprecise estimates.

Sibling studies are difficult to generalise to a population level, since they omit two important sub-groups of children in single-parent families. They miss only children in single-parent families. Additionally, since they rely on variations in family structure between children in the *same* family, they cannot consider the impact of family structure where both siblings are born into a single-parent family, and where consequently neither sibling has any exposure to a two biological parent family.

The earliest studies were from the United States, but more recently quality studies have been added that apply sibling models to German, United Kingdom, and Swedish data (see for example Francesconi *et al.*, 2005a; Björklund *et al.*, 2007a and b; Björklund and Sundström, 2006; Ermisch and Francesconi, 2001a and b; Ermisch *et al.*, 2004; Grogger and Ronan, 1995; Gennetian, 2005; and Hao and Matsueda, 2006). In several cases the studies have compared two countries. The Swedish studies are especially interesting, since they use large national register data sets, and hence do not have the sample size issues that are more apparent in United States, German and United Kingdom studies. Overall, the recent results using sibling methods suggest little or no causal effects of single parenthood for Sweden, the United States, and Germany. The exception is some United Kingdom work which suggests that some (but not all) child outcomes are worse amongst children of single parents.

Differential exposure to divorce laws

There is a body of research from a variety of OECD countries identifying the causal impact of family structure from temporal and spatial variation in divorce laws. These studies rely on several assumptions. The first is that a shift to unilateral divorce laws causes a rise in divorce. The second is that changes to divorce law affect children only via their direct impact on parental divorce. However, changes in divorce regimes may influence intra-family bargaining, with consequent implications for children's outcomes irrespective of divorce. Identification of a causal effect also relies on the assumption that divorce law changes were exogenous and uncorrelated with social changes that might themselves impact on child outcomes. The legal exogeneity assumption, like other identifying assumptions, remains a strong one. However, this body of research is especially interesting from a policy makers' perspective, since it identifies the effects on children of a change in a policy instrument, in this case a legal one.

There is controversy in the United States about whether unilateral divorce laws have caused a permanent increase in divorce, with the most recent work suggesting they did not. However, European research, which considers the impact of divorce law changes on divorce using a panel of 18 European countries over the period 1950 to 2003, finds that changes in divorce laws have had a significant and large impact on divorce (see González and Viitanen, 2007). From the perspective of their paper, the long panel and the considerable variation in the timing of changes in divorce by country offer an attractive estimation strategy in terms of the impact of changes in family structure on European child outcomes.

Overall, this literature suggests that moving to unilateral divorce may have harmed child outcomes in the United States, but the evidence is less strong or non-existent in this regard for Europe, France, Germany and Canada (see Corak, 2001; Piketty, 2003; Francesconi

et al., 2005a; González and Viitanen, 2007; Johnson and Mazingo, 2000; Antecol et al., 2001; and Gruber, 2004).

Parental death

Another approach to addressing selection issues is to examine well-being outcomes for children where a parent has died. Parental death is more likely to be random than parental separation. It is thus a form of quasi-experimental evidence. If parental death is random, the difference between the children of widows and widowers and the children of intact families is the “true” effect of single-parent family structure. The difference between children whose parents have died and the children of single parents then measures the strength of selection into single-parent families.

There are several problems with the parental death approach. The first is that parental death is not random, and this non-randomness cannot always be controlled for. The second issue with the approach is the difficulty of finding a data set with sufficient parental deaths during childhood to make such a method worthwhile. As life expectancy rises, this problem becomes more acute. It may also be that as parental death has become a more uncommon event, it has also become less random. A third issue is that the financial implications of the death of a parent and a parent leaving the family home because of divorce or separation may be very different. A dead parent may have had a life insurance policy, or the bereaved family may receive some form of financial compensation for death. Lastly, the social stigma experienced by children in a single-parent family because of parental separation may be very different from that experienced by a child in a single-parent family because of parental death.

There are a number of studies of the effect of parental death, coming from at least eight OECD countries (see for example Corak, 2001; Biblarz and Gottainer, 2000; Lang and Zagorsky, 2001; McLanahan and Sandefur, 1994; Fronstin et al., 2001; Ely et al., 2000; Jonsson and Gahler, 1997; Borgers et al., 1996; Albertini and Dronkers, 2003; and Bukodi and Dronkers, 2003). Most of these studies are from the United States and the United Kingdom, but there is also evidence for Italy, Hungary, Denmark and Sweden. Again most of these studies are comparatively recent. A number of studies surveyed do not explicitly set out to estimate the impact of divorce and selection using this method. Rather they present their results by cause of single parenthood. The overall results do not present a clear picture regarding patterns of difference between intact families, single-parent families due to parental death, and single-parent families due to divorce or separation.

Behavioural genetic approaches

There have been several recent studies that use behavioural genetic approaches to estimate the causal impact of parental separation on child behaviour and development, typically by using comparisons of groups with different degrees of genetic and environmental similarity to at least partially control for selection bias (O'Connor et al., 2000; D'Onofrio et al., 2006, 2007a and b). These approaches have much in common with sibling studies.

The results suggest a substantial degree of selection of children with poor outcomes into single-parent families. However, they allow some remaining scope for causal effects. Given that 1) not all genetic and environmental effects are accounted for – controls are only for one parent, and 2) of the one parent considered, their environment and genetic

material are found to be important, any remaining impact of divorce is likely to continue to contain some remaining influence of selection.

Policy implications

Overall, the general thrust of these more focused methodologies is that the causal effects of being raised in a single-parent family are smaller than hitherto believed, or even zero. This conclusion does not, of course, mean that there is no casual effect, as each of the alternative methods, whilst arguably stronger than the traditional method, has serious limitations. Caution is in order in drawing conclusions, because of the immature nature of the literature in the area. A good short epitaph for the literature is that of Francesconi *et al.* (2005a, p. 48):

“Our findings are that there is currently no unambiguous proof that growing up in a lone-parent family has adverse effects for later-life outcomes (with the exception of the effect on smoking). To reiterate, this does not mean that there is no effect. It means that the size and direction of the effect is not known for sure (for important statistical reasons). Indeed, our results are consistent with the effects being adverse.”

In comparison say to some policy-related literatures, the empirical literature on the impact of family structure on child outcomes is at an immature stage. The immaturity of the literature is signalled by the lack of consensus regarding the existence of a causal effect of single-parent family structure. To draw stronger conclusions requires the application of extra-scientific priors to the existing body of evidence.

What policy conclusions are possible? Putting aside the causal question, something more definitive can be said about the size of any effect. The meta-analysis undertaken here, in conjunction with Amato’s similar study of (mostly) United States research, suggests that at a maximum the likely effect on children of being brought up in a single-parent family is small. In addition, due to the dominance of raw mean effect sizes, the meta-analysis delivers estimates that are still on the high side. Furthermore, the average effect for non-United States OECD countries is somewhat smaller than for the United States.

The largest effect sizes found in the meta-analysis were for externalising behaviour (disruptive behaviour by children). Externalising behaviour has clear social costs to third parties, as well as to the disruptive child. The temptation to regard this finding as causal is strong. But there are obvious selection mechanisms whereby people who are unable to successfully sustain a relationship are more likely to have disruptive children without there being a causal link. In addition, there are further questions about the direction of causality – disruptive children may place such stress on parental relationships that they separate.

While there are some differences between OECD countries in terms of the impact of single parenthood, the extent to which these can be put down to policy choices is unclear. There are other differences between countries, barring variations in their welfare regimes, which may plausibly account for inter-country differences in outcomes between children of single parents and children in intact families. For example, selection into single parenthood may differ across countries, due to cross-country differences in divorce laws or in the social stigma of divorce. Socio-cultural differences across the OECD are obvious in relation to family issues, and these differences – which are not easily affected by policy – may also be responsible for observed cross-country differences.

Furthermore, even if it were known conclusively that country differences in causal effects of single parenthood on child outcomes were due to the differences in welfare states, it would still be necessary to find out which policy differences matter. There are a wide range of policies, singularly or interactively, which could be responsible. Few analysts have felt confident enough to attribute differences in these cross-country differences to policy choices.

A surprising conclusion of the meta-analysis was the higher-than-average effect sizes found in the Nordic countries, with an overall average for these countries that was similar to the mean United States effect size found by Amato. A reasonable expectation would have been that the large amount of redistribution towards single parents in Nordic countries, together with the extensive provision of family services, would reduce or eliminate causal or selection factors that could lead to worse results for these children. The results presented here suggest that there are other factors at play, and that the Nordic welfare state is not cushioning outcomes for children in single-parent families compared to the United States.

The meta-analysis reveals that the average size effects are somewhat smaller than those found by Amato. Methodologically more sophisticated studies also tend to yield smaller effect sizes. This small finding does not, however, mean policy irrelevance. Most effect sizes in most studies of social phenomena are small. Effects can also be found across a wide range of outcomes, across much of the child and young adult life cycle, and, in addition, may affect a considerable group of children in many OECD countries. Of course, given the considerable variation in exposure to single parenthood across different OECD countries, single parenthood will be a greater policy concern in countries with higher rates.

Average effects conceal variation. Many children brought up by single parents do well on all counts. Many children brought up in stable two-parent families do poorly. They do poorly because many other factors influence child well-being. This variation also means that crudely targeting resources towards single parents, in addition to possibly reinforcing social stigma that may undermine the well-being of children from single-parent families, is likely to lead to high false positives (providing a service to children of single-parent families who have no need of it) and high false negatives (not providing a service to children of two-parent families who have need of it).

The literature review part of this chapter has focused on non-traditional and higher-quality research designs for addressing causal questions. The results from these designs are mixed. However the most robust conclusion is that higher-quality research designs typically show a smaller and less statistically significant effect of single-parent family structure on child well-being than more traditional bi-variate or multi-variate methods. However, the results depend on the method, the sample, and the country. Given the comparatively few studies that use higher-quality designs, it is not possible to say definitively which one of these three possible dimensions is driving the results. As a consequence, researchers are still some way away from a conclusion about whether different welfare states (or rules under which marriage and divorce in the presence of children are conducted) influence outcomes for children from single-parent families. It should also be recalled that these designs are better at answering causal questions. But they still rely on some important maintained hypotheses for the identification of causal effects. Furthermore, they achieve their better methodology at a cost. This cost is a loss of

generalisability of the causal conclusions to the population of children in single-parent families and a loss of statistical precision.

If there is a casual effect of single parenthood on children's outcomes, a further issue becomes the relative efficacy and cost of policies to a) encourage people who will not form a stable family unit to avoid having children, b) encourage parents who may be at-risk of separating to consider staying together and c) compensate children who find themselves in a single-parent family structure for the adverse causal consequences of their family structure. The costs of the various policies will then have to be compared with their social benefits. Information on relative policy efficacy in this area is, at best, patchy and – for most member states of the OECD – non-existent.

Thinking about these policy issues is most advanced in the United States. Amato and Maynard (2007) discuss possible United States policy directed at the two sources of inflow into single parenthood (through birth to single parents and via divorce or separation). They recommend that US schools offer health and sex education on methods to prevent unwanted pregnancy (abstinence and contraceptive advice), as well as teaching teens the consequences of unintended pregnancies.¹ They recommend making pre-marital counselling available to large numbers of couples intending marriage and providing similar programmes for married couples. The policy aim would be to reduce the numbers of children growing up poor. Amato and Maynard claim that these policies would be a cost-effective form of child poverty reduction.

The effectiveness of policies to reduce teen pregnancy, where United States rates are high by OECD standards, is mixed (see references in footnotes 41-45 in Amato and Maynard, 2007, p. 124). On the other hand, the evidence that marriage education and relationship programmes work is better. A meta-analysis of seven premarital programmes – four United States programmes and one each from Australia, Germany and South Africa – show an average mean effect size of 0.80 on outcomes like couple functioning.² The cost of such policies is low, about USD 200 per treatment per couple.³ The social costs of a divorce, on the other hand, are estimated at USD 30 000 (Amato and Maynard, 2007, p. 131).⁴

This is a large effect. But there are important caveats. The few studies considered are not about the prevention of divorce in the presence of children. Rather they focus on short-term couple functioning for those choosing to enter a programme randomisation process. Outcomes are largely self-assessed. Both the number of studies and the average size of the treatment group (average 26 couples) and control group (average 23 couples) are extremely small. The immediate post-intervention effect size is 0.99, dropping to 0.77 for follow-up six to 18 months afterwards. Follow-up three years or more afterwards suggests further fade-out to a still respectable but not statistically significant effect size of 0.47 (one study).

There are further significant limitations. The couples involved were middle-class whites. Much of the policy interest is the impact of single-parent family structure on socially disadvantaged children who are more likely to be members of ethnic minorities and to come from poorer backgrounds. Most importantly, there is no examination of the impact of such pre-marital programmes on child well-being outcomes, as opposed to couple outcomes.⁵ Where there is information on child outcomes, the evidence from the North American work-conditioned cash transfer experiments suggests that the positive impact of such programmes on the formation and maintenance of two-parent families has no additional benefits for child well-being (Grogger and Karoly, 2007, p. 37).

There are several large-scale United States demonstration programmes involving randomised trials that are funded by the Administration for Children and Families, including Supporting Healthy Marriage (marriage education and relationship skills), the Community Healthy Marriage Initiative (community-wide interventions) and Building Strong Families (focusing on building relationship skills for unmarried couples around the birth of a child). Child-well-being outcomes will be examined as part of the evaluations of the first two of these demonstration projects up until five years following the intervention (Dion, 2005, Table 1). These trials will provide significant information about what works in this area for child well-being, which is extremely useful information for other OECD member countries.

Summary

This chapter's review and analyses of the literature on the effects of single-parent family status on children's well-being is not fully conclusive. Policy makers and researchers alike should be aware that the immature state of the literature does not allow strong conclusions to be drawn regarding the impact of single parenthood on child well-being in the absence of additional strong priors. There is, however, enough evidence to suggest that policy makers should be concerned about the implications of family structure for child well-being. Policy makers should keep a close eye on trends in the changes in family structure, as well as on the burgeoning social scientific literature on the impact of family structure on child well-being. It may well be that in another five or ten years research will cast a more precise light on the questions considered above.

Analysis of the family environment will now be expanded to explore children's future life chances of well-becoming. Chapter 6 explores country differences in the inter-generational transmission of inequality.

Notes

1. Given the degree of political controversy about the topic in the United States, it is unsurprising that no discussion is made of abortion as a viable policy option to prevent single parenthood.
2. Amato and Maynard (2007, p. 125) suggest that 13 studies are included in Carroll and Doherty's (2003) meta-analysis. However, only seven of these are reported by Carroll and Doherty (2003, p. 113) to contain sufficient information to be included in the meta-analysis.
3. The possibility of conditioning participation in marriage programmes on a cash transfer is also mentioned as a means of encouraging the attendance of low-income males (Amato and Maynard, 2007, p. 132).
4. The cost estimate reflects the assumption that there are negative causal effects on children, and are thus open to challenge on these grounds. They also reflect high court costs of divorce. Streamlining divorce law may be a more direct alternative way of lowering some of these social costs.
5. Carroll and Doherty (2003, p. 115) recommend that future studies consider both couple and child well-being outcomes.

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Chapter 6

Childhood and Inter-generational Mobility¹

This chapter looks at how parents' outcomes and those of their children are related, with a focus on earnings and education. Almost all measures of adult well-being – health status, earnings and income, education, intelligence, behaviour, personality, and occupation – share a degree of persistence between family generations. Childhood is the time when family and government investments most influence the extent to which the future adult trajectories of children mirror those of their parents and the extent to which inequalities persist between generations. The chapter begins by setting the context, and then considers the extent of inter-generational earnings and education inequality in different countries and whether they have been changing over time. The causes of inter-generational inequality are then considered before addressing the policy issue of the illusive optimal level of inter-generational inequality.

Introduction

Childhood is the time when family and government investments most influence the extent to which the future adult earnings and income trajectories of children will track those of their parents. Outcomes as adults are an important component of future well-being for children and an important reason that both families and governments invest heavily in children.

A primary child well-being concern for many countries is inter-generational inequality. Inter-generational inequality can be defined as the degree of transmission of well-being outcomes from parents to children, when the children themselves become adults. Almost all measures of adult well-being – health status, income, education, intelligence, behaviour (including criminal activity), personality, and occupation – share a degree of persistence between parents and their children as adults. In many OECD countries, burgeoning research on the issue is leading to a growing awareness of the potential policy relevance of inter-generational inequality.

This chapter begins by setting the context for analysis, in particular why inter-generational immobility might be undesirable. It then considers the extent of inter-generational inequality in different countries, and whether this form of inequality has been changing over time. Given widespread interest in the future well-being of children, and given that income, earnings and education are an important component of well-being, this chapter concentrates on inter-generational inequality in these outcomes. The causes of inter-generational inequality are then addressed before considering the optimal level of inter-generational inequality in relation to policy.

The chapter finds that different OECD countries have different degrees of inter-generational inequality in income and earnings, as well as in education. Moreover, within countries immobility is more common at the top and bottom income levels than in the middle. A possible concern for policy makers is that there is little evidence that the level of inter-generational mobility has changed over recent years.

What's wrong with inter-generational inequality?

Inter-generational inequality may be inefficient or viewed as inequitable. These possibilities can be illustrated by means of a simple example. Imagine a society where there were only two sorts of jobs, one which is well paid, and the other which is poorly paid. Furthermore, imagine that the society is a pure caste society. Sons and daughters of the poorly paid must become poorly paid and *vice versa* for sons and daughters of the well-paid. The well-paid and the poorly paid must marry their own kind. In such a society, no mobility exists between generations. Of course, no such pure caste society has ever existed. But the thought experiment is useful in crystallising what it is about immobility that is undesirable.

What are the consequences of this rigid caste society? The first consequence is that it is inefficient. There will be children of the poorly-paid who would be more productive if

they were in well-paid jobs, and *vice versa*. Allowing mobility between generations would lead to higher overall productivity and thus greater efficiency. Second, the choice of job is restricted, and there will be children in well-paid work who would be more satisfied with poorly paid work, and equally, some children of the low paid would be more fulfilled in well-paid jobs. A further consequence is that this is a highly certain society. There is no risk of improvement or, indeed, of decline. There is no chance of winning or losing the lottery of life. This distribution of life chances, by fate of birth, is considered unfair by many.

Now imagine a society where each succeeding generation's chances were allocated by an absolutely random lottery draw. The next generation's earnings are thus completely unrelated to their parents' outcomes. Again, such a society is likely to be inefficient in terms of both productivity and the satisfaction of the work-force with their jobs. In addition, the results of the lottery may create social distance between generations for several reasons, which may be undesirable to both the parent and the child.

Obviously neither a pure caste nor a pure lottery society is socially desirable. But what then is the efficient degree of inter-generational immobility? Does it change over time? What is the socially just degree of inter-generational mobility? The answers to these questions depend very much on the causes of the immobility, since some causes give rise to inefficiency, as much as they depend on society's distributional value judgements about desirable and acceptable inter-generational linkages.

How much inter-generational inequality is there and how has it been changing over time?

Data limitations make estimating the extent of inter-generational inequality particularly difficult. High-quality data for two generations, often measured over many periods to reduce transitory variations and measurement errors in well-being outcomes, is required in order to get close to the true relationship. International comparisons are equally challenging because available country data on parent and child outcomes, such as income, are often measured for different time periods between countries and may measure the broad outcome in different ways. Finally, the greatest data challenge is describing trends in inter-generational inequality within a country over time. Despite these challenges, there have been considerable advances in the ability to accurately describe and compare inter-generational inequality within rich countries, between rich countries, and within a country over time. This research work has pushed issues of inter-generational inequality onto the social policy agenda across the OECD.

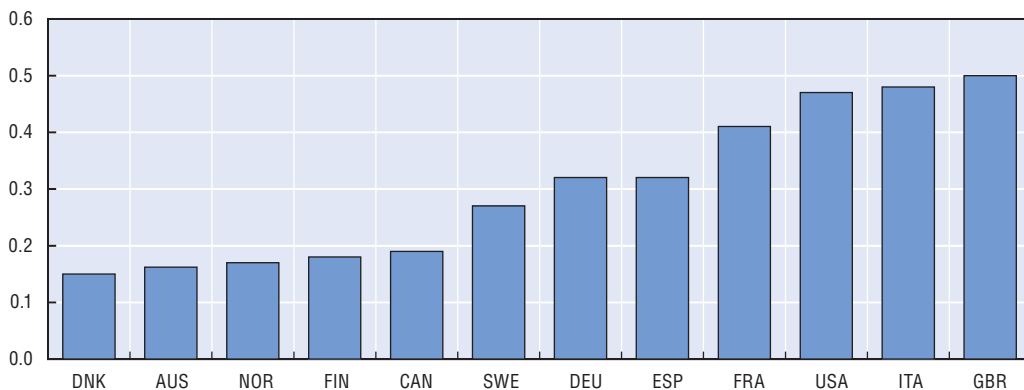
To anticipate the summary below, there have been a number of surprising conclusions. First, the current consensus on the extent of inter-generational inequality in outcomes like income is that it is considerably larger than hitherto believed a generation ago. Earlier studies, largely from the 1980s, used shorter-term income data with significant measurement errors and transitory income fluctuations. These studies showed less inter-generational inequality than actually existed.² Second, the commonly held belief that the United States was characterised by comparatively high income mobility in comparison to sclerotic, class-ridden European societies has also come under serious challenge. Third, despite widespread popular rhetoric about rising inter-generational inequality, few clear trends seem to exist regarding inter-generational inequality through time across the OECD.

Patterns of inter-generational income inequality across the OECD

Inter-generational income mobility is commonly measured by the inter-generational income elasticity. The higher the elasticity, the lower is inter-generational inequality.³ Most studies have focused on the earnings of fathers and sons. In addition, because of shifts in the proportion of women in paid employment since the Second World War, fewer studies have considered maternal earnings transmission to daughters, (however, father-daughter inequality has, to a lesser extent, been explored).


Where reasonable comparisons can be made, the inter-generational earnings elasticity varies considerably across OECD countries. It is low in the Nordic countries, Australia and Canada. On the other hand, it is high in Italy, the United States and the United Kingdom (Figure 6.1). For example, a high elasticity value of 0.50 – as in Italy or Great Britain – implies that on average half the relative difference in parental earnings is transmitted to their children. An elasticity of 0.15, as in Denmark, implies that only 15% of the difference in parental earnings is transmitted to children. The absolute effect of a given elasticity will be greater in more unequal societies. For example, the United States has a more unequal earnings distribution than Norway. Even if they had the same inter-generational earnings elasticity, in absolute terms the size of the income effect would be greater in the United States than in Norway.

Figure 6.1. **Estimates of the inter-generational earnings elasticity for selected OECD countries**



Note: The height of each bar represents the best point estimate of the inter-generational earnings elasticity resulting from the extensive meta-analysis carried out by Corak (2006) plus several national sources. The higher the parameter, the higher is the persistence of earnings across generations, and thus the lower is inter-generational mobility.

Source: D'Addio (2007), based on Corak (2006) for all countries except Italy, Spain and Australia. For these latter countries, estimates are as in Leigh (2006) for Australia, Hugalde Sanch ez (2004) for Spain and Piraino (2006) for Italy.


StatLink  <http://dx.doi.org/10.1787/711871160686>

In a comparison of Denmark, Finland, Norway, Sweden, the United Kingdom and the United States, J ntti *et al.* (2006) consider between-generation mobility across income quintiles. They find the lowest mobility in the top and bottom of the distribution, compared to the middle.⁴ In a conclusion of considerable policy interest, they suggest that, as mobility at the top of the distribution is actually very similar between countries, it might be more the case that lower mobility at the bottom drives the pattern of male inter-generational inequality across countries. Table 6.1 shows that the probability that a son is in the same earnings quintile as his father is always greater in the lowest and in the

Table 6.1. Inter-generational mobility across the earnings distribution
Probability of the son being in the same quintile as his father

	Denmark	Finland	Norway	Sweden	United Kingdom	United States
1st Quintile	0.247	0.278	0.282	0.262	0.297	0.422
2nd Quintile	0.249	0.216	0.238	0.225	0.228	0.283
3rd Quintile	0.224	0.219	0.215	0.223	0.188	0.256
4th Quintile	0.223	0.229	0.221	0.217	0.247	0.252
5th Quintile	0.363	0.347	0.354	0.374	0.346	0.360

Source: D'Addio (2007), "Inter-generational Transmission of Disadvantage: Mobility or Immobility across Generations?", OECD Social, Employment and Migration Working Paper No. 52, OECD, Paris.

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highest quintiles, with that probability in the United States being particularly high in the poorest earnings quintile.

Low mobility at the bottom of the distribution increases the inheritance of poverty across generations. Many studies report evidence of high poverty inheritance (D'Addio, 2007). When mobility at the poor end of the income distribution is low, the structure of the welfare system may increase the risk of the transmission of cumulated disadvantage. However, while the evidence on inter-generational earnings mobility allows for some cross-country comparisons, a similar comparison is not possible for the transmission of benefit dependency across generations. Nevertheless, the evidence suggests that in many OECD countries welfare dependency is transmitted across generations (D'Addio, 2007). The structure of eligibility rules and the emphasis on active *versus* passive payments may lead to different inter-generational patterns in the transmission of welfare-dependent status across generations. Passive programmes – such as long duration, non-work-tested single-parent benefits – are likely to lead to higher transmission across generations than active programmes (see Corak *et al.*, 2004). Thus, for example, the strong inter-generational correlation of welfare observed in the United States might be related to the design of the welfare system (prior, at least, to 1996).

A few studies have focused on different cohorts in order to analyse the patterns of inter-generational mobility over time within a country. Inter-generational mobility of income may vary over time because of changes in: 1) the relative investment in advantaged and disadvantaged children made by parents, governments and other social institutions; 2) the payoff to these investments; and 3) returns to genetically transmitted characteristics.

On the basis of the limited evidence available across the OECD on time trends in inter-generational inequality, no clear overall pattern emerges. The bulk of studies on inter-temporal change in inter-generational inequality come from the United States. They provide divergent conclusions. For example, Hauser (1998) finds no trend over the period from the 1960s to the 1990s, while Fertig (2003) suggests that inter-generational mobility increases over time for those born in the 1950s and 1960s. Fertig's result is similar to that of Mayer and Lopoo (2004) for sons born between 1954 and 1963 and for daughters born after 1961 and to that of Corcoran (2001) for sons born between 1953 and 1968. Conversely, Levine (1999) argues that inter-generational mobility has weakened between the 1970s and 1990s, mainly reflecting higher returns to education. Chadwick (2002) also reports that mobility has lowered over time, but these trends seem to depend strongly on the samples used. The divergent results are recognised to be dependent on the data set used.

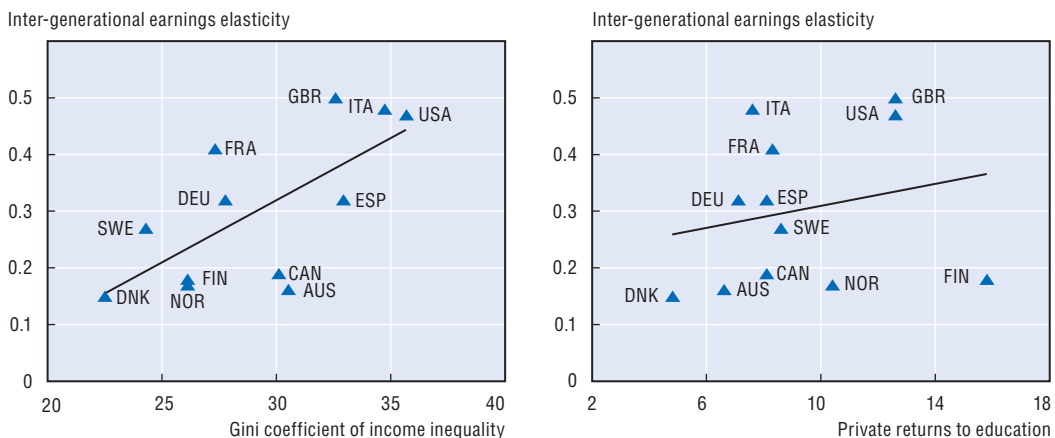
LeFranc and Trannoy (2005) explore changes in inter-generational inequality across various cohorts in France. They report stable French inter-generational elasticity over time. Fortin and Lefebvre (1998) find a similar result for Canada for the period between the mid-1980s and the mid-1990s. Comparing British individuals born in 1958 and 1970, Blanden *et al.* (2004) report rising inter-generational inequality over time. They explain this by suggesting educational changes have primarily benefited the children of richer parents. Moreover, Blanden *et al.* (2006) argue that a high share is related to a stronger association between parental income on the one hand, and both the labour-market attachment and non-cognitive traits of their children on the other. Again for the United Kingdom but by way of contrast, Ermisch and Nicoletti (2005) find no trend in inter-generational earnings inequality for two cohorts of sons born between 1950 and 1972. For Norway, Bratberg *et al.* (2005) report stable inter-generational inequality. They also argue that the educational reforms implemented in Norway, with the aim of increasing equality of opportunity, have contributed to achieve stable or even lower inequality across generations. Similar results for Finland are also reported (Österbacka, 2004; Pekkarinen *et al.*, 2006; and Pekkala and Lucas, 2007).

Links between inter-generational and cross-sectional income inequality


There is a strong positive relation in a cross-section of twelve OECD countries between inter-generational earnings inequality and cross-sectional income inequality as measured by a Gini coefficient (Figure 6.2, left-hand panel, $r = 0.68$). In general, the countries with the most equal distributions of income at a given point in time exhibit the lowest earnings inequality across generations. The major outliers include Australia and Canada, which combine low inter-generational earnings inequality with moderately high cross-sectional income inequality, and France which has higher inter-generational earnings inequality than could be expected from its moderate level of cross-sectional income inequality.

There are a number of possible explanations for this relationship between cross-sectional and inter-generational inequality. For example, the distribution of income is

Figure 6.2. **Inter-generational income elasticity, cross-country income inequality and returns to education**



Source: Data on inter-generational earnings elasticity are based on the same sources as those reported in Figure 6.1. Data on private returns to education are from OECD, *Education at a Glance*, various years; those on the Gini coefficient on income inequality are from previous issues of OECD, *Society at a Glance*. See D'Addio (2007).

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strongly influenced by the distribution of earnings, which in turn reflects returns to education. This means that countries with a wide distribution of income are also likely to be those where the returns to education are highest. However, if income affects access to education – because of capital market constraints, as described previously, or because rich parents can choose to live in neighbourhoods with good schools – then ability to take advantage of the high returns to education will be limited to children of richer households. As shown in the right-hand panel of Figure 6.2, there is indeed some evidence of a positive but weak relationship between the inter-generational earnings elasticity and the returns to education ($r = 0.22$).

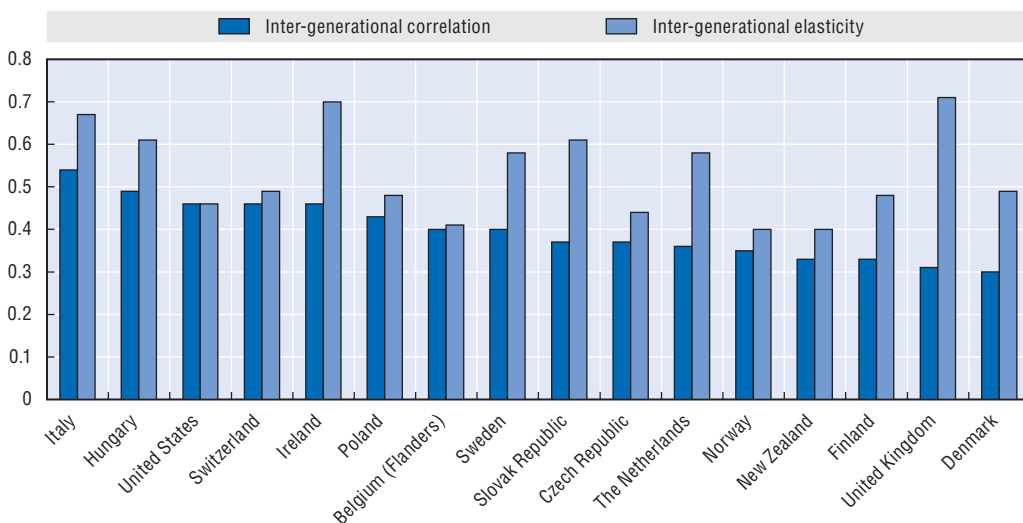
There are other possible explanations of the correlation between mobility and low cross-sectional income inequality. Returns to education and income inequality also reflect institutional characteristics. Higher minimum wages and broader trade union bargaining coverage all contribute to lower returns to education (and plausibly to lower cross-sectional income inequality). A better understanding of these phenomena may provide useful insights for the study of patterns of mobility across generations (Solon, 2004; Corak, 2006).

Inter-generational inequality in education


As suggested above, a major proximate explanatory factor for inter-generational inequality in income and earnings is inter-generational inequality in education. The inter-generational inequality in years of education can be examined for a greater sample of OECD countries than for income (16 countries compared with 12), and for countries where there are no direct measures of inter-generational income inequality (Hertz *et al.*, 2007).⁵

The data, drawn from the 1930s to the 1970s, are shown in Figure 6.3 below. Again, there is considerable variation in the measures of inequality across the 16 countries concerned. Of interest is the strong tendency for the inter-generational education elasticity to exceed the correlation, meaning the standard deviation of parental years of education is smaller than the standard deviation of child years of education. One explanation of this

Figure 6.3. The inter-generational inequality of years of education



Source: OECD calculations based on Hertz *et al.* (2007), “The Inheritance of Education Inequality: International Comparisons and Fifty-year Trends”, *The B.E. Journal of Economic Analysis and Policy*, Vol. 7, No. 2, pp. 1-46.

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pattern is the rise of post-compulsory education, including tertiary education, over the post-war period. As with inter-generational income inequality, Sweden is not as egalitarian as expected. Anglophone countries are distributed across the range of results. Furthermore, on the basis of the evidence on long-range time trends in inter-generational inequality of education from the 1930s to the 1970s, no clear overall temporal pattern emerges (Hertz *et al.*, 2007).

Causes of inter-generational inequality

A first step towards moving to a policy view is to consider the causes of inter-generational inequality. This information may provide some guidance on whether the existing degree of inter-generational inequality is socially efficient or not. Equally, it may provide some guidance about how just the existing degree of inequality might be.

There are a variety of reasons why the well-being of parents and that of their children as adults are linked. These reasons encompass both genetic and environmental linkages between generations. Environmental linkages include cultural dimensions and bequests (Bowles and Gintis, 2002). Via the cultural channel, parents actively or passively create and select environments for their children in manners that reproduce parents' well-being outcomes. The consensus is that cultural transmission is important. Box 6.1 examines how the quality and quantity of parental investment time in children might be one important vehicle of cultural transmission of inter-generational inequality.⁶ Parents also directly bequeath income-generating assets to their children. The research consensus is that pre-natal factors, including shared genes, in addition to post-natal environment, also make significant contributions to intergenerational earnings inequality (Bowles and Gintis, 2002; Bjorklund *et al.*, 2007). There are a variety of ways genetic linkages may matter, but what does seem certain is inherited intelligence is not the only or even the dominant vehicle for the genetic linkage: inherited aspects of personality, personal appearance, height and attitudes to risk may be as or more important (Bowles and Gintis, 2002).

There are a variety of more detailed environmental theories for the existence of inter-generational inequality.⁷ The main theories include inequality as a consequence of capital market imperfections, segregation into unequal communities and self-fulfilling beliefs and discrimination (Piketty, 2000). All of these causes generate societal inefficiency, and thus raise the tantalising prospect of simultaneously increasing efficiency and equity via appropriate policy changes.

Education is both a major contributor to earnings persistence across generations, and also is perhaps the most direct policy instrument available for those who wish to reduce inter-generational inequality. Most importantly in an inter-generational perspective, parental wealth reduces the importance of capital market barriers to the acquisition of an education. In an ideal world, people would be able to borrow on capital markets to finance investments in human capital, so parental resources should have no impact on whether people engage in such investments – all that should matter is whether they can benefit from them sufficiently to service the debt. In practice, such borrowing against future earnings is difficult, and so liquidity constraints affect investment in human capital (Becker and Tomes, 1986). Low-income parents might not invest optimally in their children's human capital: poverty risks, joblessness and lack of education are therefore likely to accumulate and result in a larger share of individuals at higher risk of social exclusion.

Box 6.1. Parental time investment in children: a factor contributing to inter-generational inequality

Parental time spent with children is an important form of family investment that contributes to inter-generational inequality. A vital policy question is whether parental investment is a complement to, or a substitute for, government investment. In the latter case, an expansion of government investment intended to change inter-generational inequality may crowd out what the family is already providing in terms of time, with little or no impact on child well-being.

What are the known facts about parental time with children? First, as noted elsewhere, parents invest more time directly in younger children than in older children (Folbre *et al.*, 2005; Folbre, 2008; Bradbury, 2005, 2008). Thus parents concentrate investment into their children early in their life cycles, even if most governments across the OECD do not.

Second, there is evidence of considerable variation in the amount of parental time and the gender-composition of parental time spent with children across the OECD. A recent study has compared parental time investments in children across 15 countries, nine of which were from the OECD (Austria, Canada, Italy, France, Germany, Netherlands, Norway, the United Kingdom and the United States). The OECD country data are presented in the table below. There may be issues of data comparability between countries. The data show considerable variation in average amounts of parental time investment in children between countries, with Norway and the United States being at the high end and France at the low end. In addition, there are differences in investment composition between fathers and mothers across countries. Canada, Norway, the Netherlands and the United States are the most equal and Austria and France the least equal. In terms of the distribution of these hours, the common cross-country pattern is that parental time investments increase with parental education (Guryan *et al.*, 2008; see also Sayer *et al.*, 2004 for a study including a sub-set of these countries – Canada, Norway, Italy and Germany). If the level of parents' education can be taken as an indicator of the quality of investment in children, children from more advantaged backgrounds get both more *and* higher-quality parental time investment.

Of interest in the table is that Norway, which has extensive state investment in children in terms of early childhood education and out-of-school care, has similar levels of parental investment time as the United States, where the state does not invest so much in children (see Chapter 3). In this case, at least, the welfare state does not obviously crowd out parental time investment in children.

Between 1965 and 1998 in the United States, time spent on children by fathers rose from 0.4 to 1.0 hours per day, and time spent by mothers rose from 1.7 to 1.8 hours per day (Gauthier *et al.*, 2004). At the same time, the United States evidence also indicates that there has been a compositional shift in parental time toward more investment-orientated activities. The proportion of fathers' child-care time spent on educationally-related activity rose from 8% of their total child-care time in 1965 to 13% in 2003. The corresponding figures for mothers were 10% and 13% (calculated from Table II in Aguiar and Hurst, 2007, p. 976). The finding of growing educational investment by parents is supported by Hofferth and Sandberg's (2001) analysis of how United States children between age 3 and age 12 spend time. Reading as an activity rose from 29 minutes per week on average for 3-5 year-olds in 1981 to 1 hour 24 minutes in 1997. Data for the United Kingdom show that between 1961 and 1991, fathers' time with children rose from 0.2 to 0.8 hours per day and mothers' time increased from 0.7 to 1.7 hours per day. Canadian data found an increase in parental time spent on children between 1981 and 1998, and Swedish data suggests similar conclusions between 1984 and 1993 (summarised in Gauthier *et al.*, 2004, pp. 647-648). Australian data for the period 1974 to 1992 also show an increase in mothers' and fathers' time (Bittman, 1999). This time growth has been especially pronounced amongst fathers and well-educated mothers (Ramey and Ramey, 2007; Aguiar and Hurst, 2007).

Box 6.1. Parental time investment in children: a factor contributing to inter-generational inequality (cont.)

Average hours per week spent by parents in child care across selected OECD countries

	Men with children	Women with children	Women to men child-time ratio
Austria	3.6	12.3	3.4
Canada	5.6	11.2	2.0
France	1.8	6.8	3.8
Germany	3.9	10.5	2.7
Italy	4.0	10.4	2.6
Netherlands	4.4	8.9	2.0
Norway	5.7	11.7	2.1
United Kingdom	4.2	9.8	2.4
United States	5.6	11.6	2.1

Source: Adapted from Guryan et al. (2008), "Parental Education and Parental Time with Children", NBER Working Paper, No. 13993, May.

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The implication of these trends is that 1) children without fathers may be increasingly missing out on parental investment (there is little evidence that single parents compensate for the absent parent's time) and 2) there is likely to be growing inequality in parental investment between the children of well-educated and poorly educated parents. It is too early to say whether the result of such trends will be higher inter-generational inequality.

Wealth bequeathed from parents to children affects the incomes of children both directly and indirectly (Gale and Scholz, 1994; Bowles and Gintis, 2002). Direct effects come from the return on capital arising from gifts and bequests. However, there are also indirect effects. For example, "permanent" earnings might be expected to increase if the income flowing from assets provides the resources for better nutrition, health and education, as well as access to good housing (and neighbourhood) conditions and to critical start-up capital for many activities (e.g. Blanchflower and Oswald, 1998).

Part of the inter-generational transmission of income may work through the impact of parental income on children's health. Finally, wealth transfers may also indirectly affect inter-generational income mobility when they influence those traits that are important for economic success, such as saving and schooling propensities, the work ethic and risk-related behaviours.⁸

While there is a great deal of ambiguity concerning the long-run causal effects of neighbourhoods, some studies suggest that social conditions are important in explaining the inter-generational transmission of income. However, recent high-quality randomised trials covering the Moving to Opportunities housing voucher programmes in the United States, a country where there is considerable spatial variation in the quality of neighbourhoods, have shown little support for the impact of neighbourhoods on a child's well-being (Kling et al., 2007; Ludwig and Mayer, 2006).

Other factors that explain inter-generational income transmission are related to family structure. For example, the resemblance to parental earnings is higher for first-born children than for later-born siblings. If there is more assortative mating, that is to say that

people marry or have children with people who are similar to themselves, children are more likely to have incomes similar to their parents.

Is the degree of inter-generational inequality too high, too low, or just right?

Social policy makers need to understand how advantage and disadvantage are passed from one generation to the next. If the degree of inter-generational transmission of disadvantage can be reduced, the aptitudes and abilities of everyone in society may be used more efficiently, thereby promoting both growth and equity. However, while reducing the negative effects of parental background on child outcomes is something that policy makers may wish to promote, it is relevant to note that a society in which the circumstances and behaviours of parents had no effect on outcomes for their children would not be desirable. The vast majority of parents want to do the best that they can for their children, investing time, emotional commitment and money in them. Some ways in which parents influence the development of their children are both socially desirable and socially acceptable.

The issue of the optimal degree of inter-generational inequality, from either an efficiency or an equity perspective, and the relationship of this to the actually observed degrees of inter-generational inequality is not a simple one to resolve. Unfortunately for policy makers, the work describing the extent of inter-generational inequality and its variation between countries and across time does not permit conclusions about whether the actually observed measure is higher or lower than optimal on efficiency grounds, nor whether it makes policy sense to address the issue. As Bowles and Gintis (2002, p. 23) observe in their overview, “[a]ddressing the policy challenge will require... a better accounting of what causal mechanisms are at work in producing the substantial levels of inter-generational persistence of economic differences”.

The limited international comparisons available across a small subset of the OECD suggest that some countries (in particular Italy, the United Kingdom and the United States) may need to pay more policy attention to inter-generational mobility than do others (Australia, Canada, Denmark, Finland, and Norway). The fact that there is little strong evidence of rising rates of inter-generational inequality indicates that there is no major reason to see inter-generational inequality as a rapidly growing problem in any country.

“Policy proposals to reduce the inter-generational transfer of poverty focus on three broad areas: schools, neighbourhoods and families” (Ludwig and Mayer, 2006, p. 177). The proximate major causal channels of IQ, schooling, wealth inheritance, personality and race accounted for in rough decompositions (Bowles and Gintis, 2002), in conjunction with the available empirical work, suggest the follow tentative policy conclusions.

Some policies that might affect the inter-generational transmission of income inequality or educational inequality, such as the elimination of racial discrimination, are uncontroversial. Yet, as Bowles and Gintis (2002) point out, there are few obvious evidence-based public policy tools that can readily eliminate discrimination. What is more, it is not the inter-generational nature of racism that is morally offensive or economically inefficient. Rather, it is the fact racism exists.

Rather more is known about improving educational attainment and, to a somewhat lesser degree, enhancing cognitive ability, especially via appropriate early childhood home visiting and education programmes. There is currently a considerable amount of policy interest in reducing the inter-generational inequality of income and education via such channels (see Chapter 4 for discussion).

The tax policy instruments to influence the inter-generational transmission of wealth are comparatively direct. Wealth taxes may be an avenue worth pursuing. If bequests are the passive consequence of precautionary saving, the distortionary costs of death duties are negligible. However, if bequests arise out of active inter-generational altruism, the distortionary effect may become more important. There is little consensus on the relative balance between active and passive motives for bequests in the literature (Piketty, 2000). However, the fact that, at least in the United States, significant amounts of inter-generational transfers of wealth are between the living suggests an important role for dynastic altruism, and hence a possible tax distortion (Gale and Scholz, 1994). Equally, still on the tax front, one of the aims of a sharply progressive income tax may be to reduce inter-generational inequality (in extremis, one might view all variation in market income being offset by a tax, thus ensuring zero transmission of after-tax income and perfect intra-generational equality).

The inequalities that arise from the transmission of low-income status have important policy implications. Educational policy, early childhood investment, access to health care and immigration policy all affect the extent to which the social and economic position of individuals is determined by their skills and ambitions rather than by inherited characteristics. International comparisons of inter-generational mobility are particularly useful in helping to identify the different institutions, social settings and labour market structures that potentially connect one generation's socio-economic status to the next.

If countries were to want to promote equality of opportunity, there are a number of steps they could take. The most important is the reduction of different forms of inequality, including current income inequality. Although there is no consensus in the literature, some evidence suggests that those countries with low inter-generational (earnings) mobility also have the highest level of income inequality measured at a particular moment in time. This makes intuitive sense: if the extent of mobility varies according to parental background, it is also likely that the inequality linked to family characteristics and resources perpetuates over time. Unfortunately, that means that inequality in one generation is passed on to subsequent generations. However, there are some interesting anomalies. Australia and Canada are more cross-sectionally unequal societies than a number of European countries on current incomes of households, but they are among the most inter-generationally mobile. This may be due to immigration – there is evidence that immigration increases both current inequality and income mobility. But the United States is notably immobile, and it has a long history of immigration. The Canadian and Australian examples may also be due to interventions made in early education and care and on disadvantaged individuals as well. More evidence as to what is happening in these three countries might be particularly revealing.

Summary

Chapter 6 has explored inter-generational inequality in particular in terms of income, earnings and education outcomes. The results have shown that inter-generational inequality is higher than believed a generation ago. Inter-generational inequality is higher in the United States, the United Kingdom and Italy and lower in the Nordics. There is little evidence to support changing trends in inter-generational inequality. The inter-generational transmission of inequality is not due simply to lower parental income or education, but is likely to be affected by a wide range of mediating influences, such as

health, geographical location, information capital, and social networks as well as genetic transmission.

A country where a child learns that life chances are restricted by the familial environment is a country that will fail to produce inspired and innovative children. Children's aspirations affect how they engage with education systems and the broader community around them. Inequality also affects how some parents invest in their children, restricting opportunities that would otherwise break the cycle of inequality. In that sense inequality can be self-perpetuating. Countries with high levels of inter-generational inequality, such as the United States and Italy, and those that can identify inequality within certain education or income groups, such as low-income groups in Denmark and Sweden, may consider addressing inter-generational inequality to avoid future social and welfare problems, or to promote growth, competition and social development.

The final chapter of the report, Chapter 7, addresses recommendations for enhancing child well-being in OECD countries and provides a synthesis of the results of the previous chapters.

Notes

1. This chapter draws in part on the comprehensive survey of D'Addio (2007).
2. The canonical study is Becker and Tomes (1986). See D'Addio (2007, Box 7, pp. 30-31) for more detail.
3. Another commonly used measure of inter-generational inequality is the correlation in outcomes between generations. The inter-generational income elasticity and the inter-generational correlation are related. The inter-generational correlation is equal to the product of inter-generational income elasticity and the ratio of the standard deviation of the outcome of the parent to the standard deviation of the outcome of the child. Thus, if standard deviations are equal between generations, the two measures coincide. If parent outcomes have a broader spread than child outcomes, the correlation exceeds the elasticity. If parent outcomes have a narrower spread than child outcomes, the correlation is less than the elasticity.
4. Similar findings at a country level have been made. For example, for the United Kingdom see Hertz (2005), Atkinson *et al.* (1983), Dearden *et al.* (2005), Blanden (2005); for Italy, see Piraino (2006); and for Norway, see Bratberg *et al.* (2005, 2007).
5. The common countries are seven: Denmark, Finland, United Kingdom (Great Britain), Italy, Norway, Sweden, and the United States. The correlation between the income and education elasticities for these seven countries is 0.70.
6. While empirical work on the issue remains in its infancy, there are likely to be gene-environment interactions leading to inter-generational transmission of outcomes. Evidence of gene-environment interactions that might lead to inter-generational persistence is provided in Caspi *et al.* (2002).
7. The main focus of the economic literature is on income and earnings inequality between generations, but most of the arguments carry over to education and other domains with little alteration.
8. The literature suggests that personality traits, attitudes and beliefs also significantly persist across generations. The extent to which parents transmit these characteristics is important for a number of reasons. First, while evidence about how preferences or beliefs are formed is still sparse, they can shape parenting styles, health and family outcomes; for example, the literature suggests that divorce is transmitted across generations. Second, these preferences may drive divergence within societies in the long-term. Finally, the transmission of beliefs and attitudes may matter for social policy to the extent that they lead to a culture of dependence, which increases the likelihood of poverty for future generations (see Mulligan, 1997; Bowles and Gintis, 2002).

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Chapter 7

Doing Better for Children: The Way Forward

This chapter offers a range of policy recommendations for improving child well-being: invest early in children's lives; concentrate on improving the lot of vulnerable children; design interventions for children that reinforce positive development across their life cycle and across a range of well-being outcomes; create clear, achievable targets for child well-being outcomes and regularly collect high-quality information on children's well-being that is nationally and internationally comparable. Finally, governments should continuously experiment with policies and programmes for children, rigorously evaluate them to see whether they enhance child well-being, and reallocate money from programmes that don't work to those that do. This approach ensures resources allocated to children progressively enhance child well-being.

Introduction

Child well-being is on the policy agenda. This focus is partly due to a revival of interest in social indicators measuring well-being. While much of this work has concentrated on the adult population, attention naturally has also turned to measuring the well-being of children. The 1989 United Nations Convention on the Rights of the Child (UNCRC) has also given a particular impetus to child well-being as a policy issue.

A further important factor in the increasingly evidence-based policy profile of children is better quantitative research and evaluation. Evidence has come from maturing small-scale child interventions, especially those involving randomised trials and long-term follow-up. Longitudinal data sets, which allow detailed exploration of causal pathways behind social outcomes for children, and international cross-sectional data sets such as PISA (educational achievement at age 15) and the Luxembourg Income Study (child poverty), have also played an important role in informing policy debates.

The aim of this final chapter is to contribute to the policy debate on child well-being, synthesising the previous chapters and drawing on the existing research and policy literature. It examines the wide range of policy choices confronting governments as they seek to improve child well-being and offers a policy synthesis of broad recommendations to enhance child well-being across the OECD.

The results of the policy synthesis support a redistribution of spending to early childhood and towards children with, or at high risk of, poor outcomes. Furthermore, it is essential that countries review their child policies as a package and that they seek to understand the complementarity of policies in a life cycle perspective. The child well-being effects of other policies designed to meet labour market, fertility or gender equity goals also need to be well understood.

The range of policy choices influencing child well-being

There is a wide range of policy choices available to governments that may influence child well-being. Many of these do not directly involve expenditure. This section reviews this range of choices.

The structure of public policy advice and service delivery for children

Public policy advice and delivery for children can be organised along outcome dimensions (*e.g.* Ministries of Health, Education, and Welfare) or along population lines (Ministries of Child and Young People). Some countries have combinations of both.¹ Some countries also have a Commissioner for Children or Ombudsman for Children intended to improve child well-being by offering independent advocacy on behalf of children.² It is unclear which systems, in which environments, yield the best results.

In most OECD countries, outside the role of the family, the period from conception to around age 3 is primarily the responsibility of health agencies and a variety of health-related professionals. At some time between age 3 and 6, education agencies and

educational professionals take over the process of handling public investment in children. Health agencies and professionals come out of a traditional physical health focus, rather than a focus on physical, intellectual and social development. Of course, the extent to which this is true differs across countries, and indeed across individual health professionals. Nevertheless, it is striking that many OECD countries rely on medical professionals to undertake what may often be social interventions early in the child life cycle.

Child strategies

Another high-level policy approach some countries have adopted to enhance child well-being has been to develop a child strategy that outlines over-arching policy goals and the broad means of achieving them. For example, Ireland has *The National Children's Strategy. Our Children – Their Lives* (Ireland, 2000), New Zealand has *New Zealand's Agenda for Children* (New Zealand Ministry of Social Development, 2002), and, most recently, the United Kingdom has developed the *Children's Plan. Building Brighter Futures* (Department for Children, Schools and Families, 2007). Whether such strategic approaches are effective in co-ordinating and motivating change to enhance child well-being is unclear. On the plus side, they are cheap interventions. However, setting national-level strategies is easier for OECD countries that are more centralised. For some highly federalised countries, such centralised approaches may not feature on the potential menu of choice.

Target-setting

Child well-being target-setting is a policy option adopted by a number of OECD countries. Targets may be the product of strategies or may simply be announced. Targets are often set out in terms of the types of indicators examined in Chapter 2. Some OECD country examples include targets for breastfeeding rates, vaccination rates and teen birth rates. A number of countries have set social targets in the child well-being area, related to child poverty, for example, Greece and the United Kingdom (Atkinson *et al.*, 2005, Chapter 6, pp. 152ff). Targets can serve to embed child well-being into the policy process, since politicians and public servants can be held to account for their success or failure in meeting them. To be useful, child well-being targets must be systematically linked to well-being indicators of a good quality. Indicators of the required quality are in short supply in many OECD countries. The framing of targets also needs to be carefully thought through. To work, targets need to be clearly stated and well-being outcomes regularly and transparently measured. Ill-thought out targets may arguably create less than appropriate policy responses. For example, in meeting a child poverty target, the cheapest and easiest policy is to shift the children who are marginally below to just above the poverty line.

Devolution to regional and local government

Policy choices also exist regarding the degree of devolution of child policy making and child service delivery from a national to regional or local level. For the numerous federal countries of the OECD, there can be considerable devolution of policies that potentially contribute to child well-being (for example, different unpaid parental leave schemes in different Canadian provinces or different baby bonuses in Swiss cantons). But even in the most centralised countries, there is a considerable amount of service delivery for children taking place at a regional or local government level. At a local level, public recreational facilities such as libraries, parks, playgrounds, museums, swimming pools and so on are

provided for children. Local governments can also have significant impacts on child safety. In some jurisdictions, child protection services are provided on a regional or even at a city level.

Legislation

There is a lot of age-related legislation pertinent to child well-being. Much of this legislation relates to the upper end of the child life cycle. It gives children or young adults the right to vote, have sex, marry, leave school, smoke and drink, access welfare benefits in their own right, drive a car, sign a contract, work, be criminally liable, be home alone without adult supervision and so on.³ Less age-related legislation relates to the earlier part of the child life cycle. The most important is the age when compulsory schooling commences, or when universal, free pre-school can be accessed. Many of these decisions regarding rights are self-evidently important for well-being. There is also research supporting the developmental importance of such legal binaries. Legal policies towards drugs and alcohol matter. For example, Watson and Fertig (2008) show that moves to less restrictive minimum drinking ages in certain states of the United States are associated with higher rates of low birth weight and prematurity for newborns of young mothers. A recent study by Nilsson (2008) takes advantage of a policy experiment during the 1960s where an experimental law change allowed grocery stores in two Swedish regions to sell strong beer. There was a ten-fold increase in consumption in those regions. The experiment had the consequences of reducing education, lowering earnings, and increasing welfare dependency of the cohort *in utero* exposed to the policy change. Even motor vehicle regulations may affect infant mortality via changes in the amounts of exhaust emissions (Currie and Neidell, 2005).

There are also legal choices to delineate the relative rights of the parent and the child, in particular the right of parents to physically punish their child. There have been recent policy changes in a number of OECD countries removing the right of parents to physically punish.⁴ Relatedly, there is also domestic violence legislation, which may influence the amount of family violence to which children are exposed.

Other legal dimensions potentially influencing child well-being are laws on divorce and separation, and the legal process surrounding child access and custody following separation.⁵ These laws may be important not only for child poverty but also for parental functioning in any post-separation family environment. By influencing bargaining power within a relationship, family law may also be important for family functioning and hence child well-being in existing two-parent families as well. Many OECD countries also have a legal framework that gives rights of income support to the custodial parent and child from the non-custodial parent following parental separation (Skinner *et al.*, 2007). These frameworks may be important for mitigating child poverty in single-parent families.

There is other legislation relevant to child well-being. For example, there can be nutrition-related regulation designed to improve child well-being, or legal controls on the extent and form of television advertising aimed at children.^{6, 7} There are often legal compulsions on various professional groups who deal with children, for example doctors and teachers, to report observed or suspected child abuse.

There are further policy choices about what resources to devote to enforcement for legal violations that impinge on children. Resourcing for enforcement is particularly

important in terms of both child protection systems and the payment of child support by non-custodial parents.

Cash transfers to improve child well-being

In many countries policy has historically focused on child poverty as a means of improving child well-being. Partly the child poverty focus has been a default focus, as child poverty is one of the few outcomes that can be easily measured and compared across OECD countries for all children. Cash transfers are important for the alleviation of poverty, and come in a wide variety of different forms, including birth grants, child benefits and tax credits, and so on. Cash transfers can be means-tested against income, or universal. Issues arise regarding take-up, and whether benefits are paid at the end of the tax year or paid at regular periods during the year.

A further issue is the impact of cash transfers via family income on other child well-being outcomes. From a policy perspective, there are several interesting questions. First, what percentage of a marginal cash transfer to families is spent on children (and which children within the family) and on enhancing which outcomes? Second, what proportion of the marginal cash transfers spent on children is effective in achieving its intended goals? Equally important is whether the answer to either of these questions varies according to the socio-economic position of the family. A paternalist argument often encountered in policy discussions is that marginal cash transfers to poor, dysfunctional families end up being spent on consumption goods that may not benefit children. Another dimension worthy of consideration is which adult in the family receives cash transfers on behalf of children. There is evidence that payment into a mother's bank account means a greater amount will be invested in the children (Lundberg *et al.*, 1997).

Are there causal links between a child's family income and other child well-being outcomes? The impact of net family income on child well-being is a crucial policy issue. Governments can fairly readily and very directly change net family income via the broad existing framework of benefit and tax policy. For tax and transfer policy to be effective in raising child well-being, the relationship between after-tax, after-transfer family income and child well-being outcomes must be a causal one, and the direction of causality must run from family income to child well-being.

Furthermore, the stronger the relationship between family income and child well-being outcomes, the more effective is tax/transfer policy in promoting child well-being. A third issue for policy is whether the relationship is non-linear. If the response of child well-being to family income is stronger for poorer families, average child well-being may even be raised by transferring money from rich to poor families with children. Higher efficiency could be combined with greater equality. However, if the relationship is linear, income transfers from rich to poor families have a stronger impact on reducing inequality between children, with a constant average level of child well-being. Lastly, also of policy relevance is whether family income has a greater influence in some parts of the child's life cycle than in others.

The standard family investment model of Becker and Tomes (1986) indicates that, where parents face borrowing constraints against the future earnings of their children, there will be a relationship between their income and their child's adult income and other long-term well-being outcomes. Poor parents have more limited means than rich parents to finance the human capital accumulation of their children. The other theoretical story

linking family income and child well-being is the so-called parental stress model, where low family income raises parental stress, which then in turn reduces child well-being (Mayer, 1997, 2002; Duncan, 2006).

There is a relationship between family income and just about all current and future child well-being outcomes. But is the relationship causal? And, if so, how strong is the causal effect? The mainly United States literature suggests the following broad consensus conclusions (Haveman and Wolfe, 1995; Duncan and Brooks-Gunn, 1997; Mayer, 1997, 2002; Jenkins and Schluter, 2002; Blow *et al.*, 2005; Duncan, 2006):

- Family income measured over several years bears a stronger raw relationship to child well-being outcomes than income measured over one year. This finding may be a consequence of reductions in measurement error in true yearly income by averaging, or because income measured over several years more closely approximates permanent income, and permanent income matters more for child outcomes.
- Controlling for essentially pre-determined covariates like parental age and education reduces the size of raw income effects on child well-being.
- After controlling for covariates, the effect of income on child well-being is small compared to other child-outcome-related factors like parents' education.
- Effects in early childhood are typically larger than in late childhood.
- Effects of income on child well-being are stronger for some outcomes than for others – for example they appear larger for cognitive ability and education outcomes than for behaviour and for health outcomes (both physical and mental).
- Income effects on child well-being are stronger for children in poorer families.

The consensus is also that some of the remaining relationship of income to child well-being is causal. But in terms of effect sizes, the causal effects are modest. What is clear from the research is that income transfer programmes to children in poor families, while certainly of value, are not a magic bullet for solving issues of poor current or future child well-being.

More recent United States work than that summarised in Mayer (1997, 2002) has used a variety of sophisticated methods to control for selection on unobserved characteristics, including sibling models, fixed effects, instrumental variables (IV), and data from welfare and anti-poverty randomised experiments (see Levy and Duncan, 2000; Morris *et al.*, 2004; Dahl and Lochner, 2005, pp. 4-5; Duncan, 2006). Overall, this work has found effects which, while typically still modest in size, are sometimes larger than those found using the older methodologies (Dahl and Lochner, 2005).

Of particular interest are a series of studies that use adoptive children, thus reducing any unobservable genetic confound. In a series of regressions that omit to control for most parental socio-economic characteristics, Sacerdote (2000) finds a significant but small effect of family income on the educational outcomes of adoptive children in a United States sample. In a larger United States sample, Plug and Vijverberg (2005) show a significant effect of family income on genetically unrelated adopted children, even after controlling for parental education and parental cognitive ability. Again, effect sizes are small. Another recent United States study has used a large exogenous rise (of about 1/4) in family income to 9-year-old Native American children to examine income effects on children (Akee *et al.*, 2008). The consequence is a decline in criminal activity in the late

teens and an improvement in educational attainment at age 21. The positive impacts are larger for poorer children, with their years of schooling improving by one year.

What about research findings for other OECD countries? Do they reinforce or contradict results for the United States?

In common with the United States work of Blau (1999) and Mayer (1997), Canadian research provides little support for the notion of a strong effect of family income on child outcomes (Lefebvre and Merrigan, 1998; Phipps and Lethbridge, 2006; Dooley and Stewart, 2007). In Poland during the 1990s transition period and using standard multi-variate methods, Bebelo and Lauer (2004) find a statistically significant but again small impact of family income on children's educational attainment. While some United Kingdom econometric work finds a causal role for income in child educational and health outcomes, the impact is small (Blanden and Gregg, 2004; Burgess *et al.*, 2004). However, more recent United Kingdom work on the relation between parental income and child well-being outcomes using instrumental variables to allow for the endogeneity of parental education and income has found a stronger impact of income on both child education outcomes at age 16 (Chevalier *et al.*, 2005), and child health (both subjective and chronic conditions) (Doyle *et al.*, 2007). There is also some evidence of non-linearity – larger effects for poorer families. French research on educational attainment using semi-parametric methods also concludes that family income may have sizeable, non-linear effects on children's educational attainment (Maurin, 2002). On the other hand a study using the Norwegian oil boom as an instrument for income in order to determine the causal impact of income changes finds no evidence for any impact of parental income on child educational attainment (Løken, 2007). A large Swedish study finds a highly significant effect of father's income (controlling for other covariates, including parental education) on educational outcomes for biological children and a much smaller and not significant coefficient for foreign adoptees' educations, suggesting the possibility of a genetic confound, although no formal test is made for differences between income coefficients (Bjorklund and Richardson, 2001).

A further question of considerable interest, already touched on above, is whether income has a different effect on child outcomes depending on the stage of the child's life cycle. There are two hypotheses, predicting different patterns. One is that, as early childhood is a critical development period where vital foundations are more easily established, income is more critical here (see Heckman 1999, 2007). The other is that the teen years are a period where what is needed to succeed is more likely to cost money and where economic standing is more important (Mayer, 2002, p. 50). Thus family income may be more important for teens.

Evidence on the importance of the point in the child's life cycle for tax/transfer policy can be found in United States studies that use traditional longitudinal data, fixed effects methods and experimental data. A majority of studies using such methods show that income early in the life cycle is what matters, especially for higher-risk children (Duncan and Brooks-Gunn, 1997; Levy and Duncan, 2000; Morris *et al.*, 2004; see also citations in Dahl and Lochner, 2005, p. 5). An interesting recent study using fixed effects methods found that family income during early childhood had a significant impact on early educational outcomes, but also behavioral effects during middle childhood as well (Votruba-Drzal, 2006). Other studies show that poverty between 4-9 years is more important than poverty in the first three years (NICHD, 2005), or argue that the evidence on

income timing during the child's life cycle is not strong, and depend on the specification (Mayer, 2002, pp. 49-52). The evidence for the importance of early family income is most compelling for a child's education and cognitive development.

While most of the results come from the United States, there is evidence from New Zealand to support the "early income is better" hypothesis for educational outcomes (Maloney, 2004). However, there is also German evidence on educational outcomes that contradicts this, suggesting that "later is better" (Jenkins and Schluter, 2002). Using IV estimation on United Kingdom data, Doyle *et al.* (2007) find that there is some evidence of larger effects of family income on chronic health conditions during early childhood, but the relationship does not exist for self- or parent-assessed health. Canadian research provides little in the way of support for this "early income is best" hypothesis, although the authors point out that their data allows them limited ability to answer this question (Phipps and Lethbridge, 2006). However, Phipps and Lethbridge also find that non-linearities are more often found for outcomes for younger compared to older children.

In terms of the pathways to child well-being outcomes, the evidence provides some support for the home environment investment pathway, rather than income impacting on child outcomes via reductions in parental stress (see for example Taylor *et al.*, 2004; Berger *et al.*, 2005).

There are fewer discussions of the policy issues arising out of the literature. Mayer (1997, 2002) uses the small effects on child well-being relative to the impact of maternal education to downplay increasing the income of poor families as a policy instrument. However, money and maternal education are not measured in the same units, rendering such a comparison problematic (Berger *et al.*, 2005). Additionally, the policy instruments for changing family income (taxes and benefits) are much more directly amenable to government control than are the policy instruments to change maternal educational levels. Moreover, family income can be changed much more rapidly than maternal education, and hence the benefits to children arrive more rapidly. The existence of a positive discount rate also makes immediate family tax-benefit policies more attractive than long-term policies to improve maternal education.

In an interesting comparison, both Taylor *et al.* (2004) and Berger *et al.* (2005) consider the policy impact of 1) raising family income, or 2) increasing provision of Early Head Start (a United States early childhood home visiting and education programme) on child education outcomes. In both cases, income transfers to disadvantaged families of the size of Head Start programmes compare favourably as policies – approximately equally – to providing families with Head Start. However, neither study considers any second-round effects of parental withdrawal from employment consequent on income transfers. These second-round effects may be negative, due to less family income from market activities as parental employment falls, or positive for children due to more parental time at home with the children. Nor do they consider a possible impact of further positive family income effects from Head Start, via promotion of parental employment while the children are in a Head Start programme, on child well-being. Furthermore, they do not point out that it is far faster to increase family income directly than it is to expand an Early Head Start-style programme on a similarly nation-wide basis, where there are important infrastructure and staffing issues that need to be addressed.

Similarly, Duncan (2006, p. 13) argues that United States evidence suggests that a USD 3 000 net income increment for several years during pre-school for a child of a poor family raises cognitive performance by about 1.5 percentage points (where the mean score

is typically 100 and 15 is a standard deviation). This compares to a gain of 11-15 percentage points for an Abecedarian-style programme (home visiting plus intensive early childhood education) at a total cost of USD 40 000, and 9 percentage points for a Perry-style intervention (intensive early childhood education) at a cost of USD 15 000. A randomised experiment of class size reduction costing USD 7 500 in Tennessee raised outcomes by 3 percentage points. Using Duncan's analysis, assuming "several years" means two years, and assuming linear responses, what impact would handing out USD 40 000 (Abecedarian), USD 15 000 (Perry) and USD 7 500 (Tennessee) in cash to families have on cognitive performance? Directly providing USD 40 000 cash to the family raises cognitive performance by 10 points. The Abecedarian comparison gives 11-15 points. USD 15 000 cash raises cognitive performance by about 4 points. The Perry comparison gives 9 points. USD 7 500 cash would raise cognitive performance by roughly 2 points. The Tennessee class size comparison gives 3 points.

Such an analysis shows that direct income enhancement should not be rejected outright as a tool for enhancing the well-being of disadvantaged children. However it is crude, based on very strong assumptions and is limited in applicability. It ignores valuing other possible outcomes arising from all the differing interventions and the second-round parental labour supply changes on family income and parental time (see above).

An important issue for informing policy, yet to be addressed in the academic literature, is whether the larger coefficients for child well-being on family income averaged over several years are due to the lower measurement error on current income or whether they occur because permanent income is more important than current income for child well-being. It is certainly easier for policy to change current income rather than permanent income.

It would be naïve to promote increasing the family income of children through the tax-transfer system as a cure-all to problems of child well-being. Nevertheless, the balance of evidence suggests that there is a causal relationship especially for educational and cognitive outcomes and that the causal relationship is likely to be stronger early in the life cycle. The limited comparisons that have been made suggest cash transfers roughly hold their own in comparison to providing early childhood education services. Consequently, raising the income of families of young disadvantaged children in particular is likely to be part of a portfolio of policy solutions.

Parental pro-employment policies

There is evidence that gainful parental employment is an important route out of poverty for families, and thus for children. There are a range of policies which governments can use to promote parental employment, many of which can positively influence family income. These include tax-benefit policies to encourage labour supply, active employment policies involving education and training, labour-market matching programmes or job subsidies, and the provision or subsidisation of child-care or out-of-school care for working parents.

Child poverty is high on the policy agenda in many OECD countries. One major issue is the appropriate balance between a "benefits strategy", involving an increase in income via tax cuts or benefit increases for families, *versus* a "work strategy", which involves policies to increase employment amongst poor families with children (Whiteford and Adema, 2006).

If a work-based anti-poverty strategy is part of the package for reducing child poverty, a further question arises: what are the implications of getting parents into work for other, broader dimensions of child well-being? There have been a number of North American welfare-to-work randomised experiments that have considered the implications for child well-being. These programmes include Florida's Family Transition Program, the Minnesota Family Investment Program, the National Evaluation of Welfare-to-Work Strategies, New Hope and the Canadian Self-Sufficiency Project. These programmes primarily involved single-parent families.

The programmes typically offer in-work payments for job-seekers working full-time plus assistance with child-care and out-of-school care, with the aim of moving families out of poverty by promoting full-time employment. In addition, a number of programmes offer mandatory employment services like education and training or job search, on which benefits are conditioned.

The evidence on the impact of these programmes on child well-being is limited, but is summarised below (drawing principally on the summaries of Morris *et al.*, 2004; and Grogger and Karoly, 2007). It is worth emphasising that the main policy aim was not promoting child well-being but shifting people out of poverty by moving them from welfare into work.

The impact on children's schooling, behaviour and health was examined, typically two to four years following parental programme entry. It is thus short-term outcomes for children that were measured. The results of a comparative analysis of the programmes showed that all of the three earnings supplement programmes, provided without mandatory employment services, had positive, generally significant but small effects on children's educational attainment. The impacts on child problem behaviours were less encouraging. One programme showed a modest, statistically significant reduction in negative behaviour. The picture for positive child behaviours was better. Two out of three programmes showed small, modest and statistically significant gains. One of the two earnings supplement programmes which measured parent-assessed child health showed a statistically significant improvement. There was also some evidence that programmes with earnings supplements had bigger effects on children in families who had been on long-term welfare. The one study in the review that combined an earnings supplement with a mandatory employment service had small but desired and statistically significant effects on school achievement and behaviour (though not on health). While programmes providing mandatory employment services but no earnings supplement increased employment, they also left family income roughly unchanged. They had little impact on school attainment, mixed effects on behaviour, and neutral or negative impacts on child health. One programme examined time limits on welfare receipt. These policies had the expected impacts on parental employment, with little income gain. Effects on children were few and mixed.

There has also been work that has considered the educational impact of welfare-to-work programmes, which included an earnings supplement, on children at four ages (2-3 years, 4-5 years, 6-7 years and 8-9 years). The small positive effect sizes are generally higher and more likely to be statistically significant for those under age 5. There is also evidence of longer-term fade-out in effects when the programmes finish (Morris *et al.*, 2004). However, the same policies may have had mild detrimental schooling impacts on adolescents, with small, sometimes statistically significant effect sizes, especially

adolescents with younger siblings. There were fewer sustained long-term effects (Gennetian *et al.*, 2002).

Overall, employment promotion pilots linked to making work pay have positive but modest short-term effects on some important dimensions of child well-being, in addition to reducing child poverty. Whether these effects can be sustained into better longer-term outcomes for children from permanent policies remains unclear.

A number of OECD countries pay single-parent benefits with a work test. This work test is typically enacted when the youngest child reaches a certain age trigger. The child age trigger varies considerably across the OECD, with the age extremely low in the United States (typically a year or less) and highest amongst other Anglophone countries – the United Kingdom (16 years), Ireland and New Zealand (both 18 years). A major rationale for single-parent benefits – which discourage the parent from seeking employment – is to promote child well-being. The indirect evidence from United States welfare-to-work experiments suggests that eligibility for such benefits until late in the child life cycle does not have strong positive effects on child well-being. Certainly evidence from New Zealand, the United States and the United Kingdom shows that work-testing has positive effects on single-parent employment rates (Moffitt, 2008; Pronzato and Mogstad, 2008; Wilson, 2000). A 1998 Norwegian reform, enacted in an environment with extensive public provision of child care, imposed a work or education test on single parents when the youngest child was aged 3. At the same time benefits were raised by over a fifth. The reform was found to increase employment and earnings and reduce child poverty – an important child outcome (Pronzato and Mogstad, 2008).

In-kind services

There are a range of in-kind services provided by government to families with children. In terms of money spent, health-related interventions are the primary government service provided to very young children (under age 3) in most OECD countries. In many countries, these health-related interventions include universal pre- and post-natal care. Considering patterns of government health expenditure by age, there is high average spending around the time of birth, reflecting in part the normal hospitalisation of the majority of mothers giving birth, which has a comparatively high cost. Additionally, average public health spending around birth will be raised by high-cost medical interventions at birth for a comparatively small number of babies with birth complications, often arising from prematurity. Most OECD countries also provide free or highly subsidised primary health care for children.

In later years, the predominant in-kind service provided to children is free pre-compulsory, compulsory and post-compulsory education. These universal services absorb an enormous amount of public funding in most OECD countries. Governments make choices along multiple dimensions in education, including in the curriculum (in terms of both educational and physical activity components) and the provision of school food, to take two examples. In addition, in some countries governments invest in a range of targeted programmatic interventions to improve child well-being, especially the well-being of young children at high social risk of inter-generational disadvantage, via parenting programmes, home visiting, and early childhood education and care.

In-kind services are often promoted because policy makers suspect that parents, especially disadvantaged parents, lack the appropriate incentives, expertise or information

to make socially beneficial decisions – a paternalist rationale.⁸ However, simply because a service is offered, be it targeted or universal, does not mean that eligible families whose children would obtain benefits from it will take it up. The onus is on the parent to take up a service for their child.

There is an important “cash-versus-kind” policy choice here. The relative efficacy of cash-versus-kind may vary with the age of the child, with cash transfers superior for younger children and in-kind provision (e.g. via universal education) for older children. Certainly this is the revealed preference of many OECD countries. The relative efficacy of cash-versus-kind can also vary across the risk or outcome distribution of children of a certain age. Children at greater risk may benefit more from in-kind services, because their parents may not be capable of functioning as agents acting in the best interests of their children with income transfers.⁹

Public health campaigns and information provision

Public health (advertising) campaigns that may influence child well-being include anti-smoking campaigns targeted at parents (in terms of both pre-natal and post-natal smoking), promotion of breastfeeding and child safety, campaigns against domestic violence, and so forth.

Targeting

There has been considerable policy debate within and between OECD countries, including over philosophical differences, about targeted *versus* universal provision of both in-kind services and cash benefits for children. Targeting may be based on the individual or family characteristics of the child (child-based targeting) or on the average characteristics of the area where the child lives (place-based targeting).

Targeting allows scarce resources to be used more intensively to remedy a problem. This can be more equitable than universalism. Targeting may reduce the false positives of universalism (a service provided when not required). At the same time, targeting inevitably misses children who might have benefited, but do not meet the imperfect targeting criteria (false negatives). Targeting also creates work disincentives if entitlement is abated against parental income. Targeting can stigmatise parents or children. Stigma is arguably less important in early childhood, as these children are much less amenable to peer or societal pressures outside the home, compared to during later childhood. Stigma is much more likely when a service is targeted than if money is provided, since the provision of money is anonymous compared with a more visible service.

Targeting may also mean that the middle-class voice for improving the general quality of the service is lost. A further problem with targeted regimes is that they may generate high transaction costs, which often fall on the families in need that the policy is aimed at helping, which can seriously reduce take-up rates (Currie, 2006).

A universal delivery of child services can avoid many targeting problems mentioned above. Take-up of a universal service may be higher because information about the existence of a universal service or benefit and entitlement to it is widespread across the population. However, universality is costly. Additionally, universality wastes resources by providing something to children who don't need it. It may simply provide a service that the middle classes may otherwise have paid for privately, thus delivering them a windfall cash gain. Universal services are also prone to middle-class capture. The middle classes have

the skills to capture universal resources and direct them towards their children. A universal system may have a smaller effect on inequality, since scarce resources to combat inequality are spread more thinly. A universal service such as education is often designed in ways which mean that teacher pay cannot be readily used to reward higher-quality teachers. Under such circumstances, high-performing teachers are rewarded by getting the better job of teaching the school-ready, well-adjusted children. In this way ostensibly egalitarian universal services can reinforce inequality for children.

Conditional cash transfers (CCT)

A conditional cash transfer is a cash transfer, to a family or person, paid under a behavioural condition (De Janvry and Sadoulet, 2004, p. 9; De Janvry, 2006, p. 49). The aim of a conditional cash transfer is often to increase demand for a free service that is not fully taken up by all. A conditional cash transfer programme pays recipients in exchange for an action that brings private behaviour closer to the social optimum. If the payment is sufficiently high, conditional cash transfers accessed by poor families may also contribute significantly to poverty alleviation and other child well-being outcomes, as family income rises.

The most well-known CCT within the OECD is *Oportunidades* in Mexico.¹⁰ *Oportunidades* began in 1997 as a rural-based programme called *Progresa* designed to alleviate extreme poverty and break inter-generational poverty transmission. In 2001, the programme was extended to all but the largest urban areas. Currently, about one in five Mexican families participate. *Oportunidades* offers cash transfers to poor families conditional on their participation in pre-natal care, well-baby care, immunisation, nutrition monitoring and supplementation, preventive checkups, parent education, and school participation. It directly reduces income poverty while at the same time increasing services take-up, possibly generating positive long-term benefits for children. Programme eligibility is determined by a two-step process. First, geographical communities with high proportions of poor families are identified. Then low-income families are identified using a series of easily observed family proxies that correlate highly with poverty. Cash benefits are paid to mothers, reflecting evidence that this is more likely to be spent on children.

Conditions for cash receipt depend on child age. To get the cash, pregnant women must visit public health clinics to obtain pre-natal care, nutritional supplements, and health education. Five pre-natal visits, starting in the first trimester, are required. Children from birth to 2 years must be immunised, attend nutrition clinics every two months, obtain nutritional supplements, and be measured. Their parents must receive health education. Lactating women must attend clinics to obtain post-natal care, nutritional supplements, and health education. Children from 2 to 5 years must attend clinics to be measured every four months and obtain nutritional supplements if their growth is assessed as poor. Certification by medical professionals is required to obtain the cash entitlements.

Evaluations have been largely positive in terms of *Oportunidades*'s impact on poverty alleviation, morbidity, infant height, anemia, child motor skills, and school attendance. Children in the programme under age 5 experienced a 12% reduction in the incidence of illness, higher visits to public clinics, and an increase in the number of pre-natal visits in the first trimester (Behrman and Skoufias, 2006, pp. 261-263). In addition, there was a 16% increase in mean height growth between the ages of 1 and 3 (Behrman and Skoufias, 2006, p. 263). There was also a significant improvement in motor skills and socio-emotional

development. However, there was little evidence of cognitive improvements. No advantages were found to commencing benefits in the pre-natal period, as opposed to the first two years of life (Gertler and Fernald, 2004). Simulations suggest that the head-count poverty rate was reduced by 10% by the programme. The depth of poverty was reduced by 20% and the severity by 45%, much larger amounts that reflect the focus on extreme poverty (Behrman and Skoufias, 2006, p. 253).

The Turkish Social Solidarity Fund CCT was introduced in 2001. The aim was to break the inter-generational chain of poverty by keeping poor children in school and in good health. The CCT was piloted initially in six of Turkey's 850 districts. It was then rolled out nationally. It is targeted to the poorest 6% of children. Families are identified through a proxy means test. The programme has about 2.6 million beneficiaries.¹¹ In 2005, the programme was extended to poor pregnant women, who must undertake regular pre-natal check-ups. A birth grant of about USD 40 is made conditional on the baby being delivered in a health facility. For young children 0 to 6-years-old, regular attendance is required at a health clinic according to age-based medical protocols as is full immunisation coverage. For children aged 6 to 18, school enrolment and at least 80% attendance during the school year in age-appropriate schools is the required condition. The programme also requires women to have their marriages registered, which confers legal benefits. Children must have their births officially registered, which confers citizenship rights. Benefits are paid every two months to the mothers. USD 8 per month is paid for pregnant women and children under age 6. Amounts rise with age. For primary school boys, USD 9 per month is paid. Girls are paid more, USD 12 per month, to offset gender bias in school participation. At secondary school boys get USD 18 per month and girls USD 26 per month. Initial evaluations were favourable regarding poverty reduction and consumption by poor families. There were small but measurable impacts on child immunisation, primary school enrolment/attendance, and secondary school enrolment/attendance – with a slightly more pronounced effect for girls (Ahmed *et al.*, 2006).

The evaluation consensus is that CCTs have been successful in ensuring services are used. There is much less evidence of whether longer-term outcomes have improved as a consequence. This, it is argued, means that additional attention should also be placed on the quality of the service. In addition, it is unclear what the relative impact of the cash transfer or the conditioning is on service take-up (World Bank, 2006).

Conditional cash transfers with implications for children are also common in other OECD countries. New York is currently trialling a conditional cash transfer programme, Opportunity NYC, with the condition being participation in compulsory education. Unlike the Turkish and Mexican schemes, it does not have an early childhood or health component. As Grogger and Karoly (2007, p. 1) point out, a number of OECD countries condition welfare payments on work via family working tax credits (for example, Canada, the United Kingdom, and the United States). Work-conditioned cash transfers have become increasingly important in many OECD countries since the mid-1990s (see the discussion above).

Additionally, baby bonuses designed as fertility payments to adults who have children qualify as CCTs. The overall effectiveness of such policies on fertility is unclear in the OECD, but there is a good evaluation from Israel showing positive effects (Cohen *et al.*, 2007).

Other OECD countries also have programmes that have a conditional cash transfer element for pregnant women or children early in the life cycle. Australia, Austria, Finland, France, Hungary, Luxembourg and the United Kingdom have welfare programmes where some monetary payments are conditional on accessing certain universal, freely provided pre- or post-natal services. For Austria, payment of the universal child benefit requires meeting ten pre-natal and post-natal health and development schedule checks, whilst in Hungary the payment of the universal birth grant, valued at EUR 230 in 2006, requires completion of four pre-natal maternal examinations. The small Finnish universal birth (EUR 140) or larger in-kind grant is also conditional on a pre-natal medical examination. In Luxembourg, a grant of EUR 1 740, divided into three equal pre-natal, birth and post-natal tranches, is conditional on the mother and child having the required medical examinations (five pre-natal examinations, the first before three months of pregnancy, one examination around birth, and a further six up to age 2). The United Kingdom Sure Start Maternity Grant, a means-tested birth payment of about EUR 728, is conditional on submitting a certificate signed by an approved health professional confirming that advice has been given on pre-natal health and the health and welfare needs of the new baby.¹² In France, three post-natal child examinations – the first week following birth and again at 9 months and 2 years – contribute to a “certificate of good health” for the base allocation of the *Allocation pour jeune enfant (PAJE)*, a means-tested child benefit paid up until age 3.¹³ Australia pays a universal Maternity Immunisation Allowance as two equal payments of AUD 122 for children aged 18 months and about 4 years who meet immunisation requirements (as of 1 January 2009). In addition, receiving the Child Care Benefit requires compliance with the schedule.¹⁴ A methodologically unsophisticated but favourable evaluation of the Australian measures is available (see Lawrence *et al.*, 2004).

A further conditional cash transfer programme is the continuation of payment of child benefits conditional on the “child” (who sometimes is well over age 18) pursuing higher education. Countries following such a conditional child benefit policy include Austria, Australia and Germany. Finally, the biggest conditional cash transfer programme across the OECD is arguably paid parental leave schemes. Parents are paid significant amounts of money conditional on taking time out of the paid workforce to care for their children.

The “cascading service” model

One policy model, which is a sort of hybrid of a universal and a targeted system, is the “cascading service” model. The cascade model offers a universal entry point and a universal treatment. However, it also adjusts the intensity of the treatment in response to the social risks observed during the universal treatment. Overall, if resources are to be targeted towards those at high risk, on several counts it makes sense to develop systems across the child life cycle that offer a universal service that encompasses the entire population, and which then collects relevant information to allow more intensive treatment where this is warranted. By encompassing the entire population, the service itself is less likely to stigmatise. The entire population is also screened for risks. Resources are not inefficiently targeted at those who have much less need of the cascading service. However, issues of false positives and false negatives still arise regarding choices of intensification. A further issue with cascading systems is the degree of delegated provider discretion regarding who receives which treatments. There is little hard empirical evidence about the efficacy of cascading systems for child well-being outcomes.

A good example of a cascading system for children is the South Australian *Every Chance for Every Child* home visiting system for young children (Government of South Australia, 2005). It has a universal contact point just after birth – each child gets one home visit – and then a much more intensive service follow-up for children deemed to be at-risk, using information largely gathered during the universal visit.

OECD child well-being measures and child policy

Consideration now shifts to examining the relationship between child well-being indicators and child policy choices. The aim is to draw a first connection between child well-being outcomes and child policy choices and to consider the broad associations that may be found. It needs to be clear from the outset that this is not a causal analysis of the relationship of child policy and child well-being. Simple bi-variate associations applied to one cross-section of a maximum of 30 countries are far too weak a reed on which to balance a serious causal analysis of policy. However, they illustrate some interesting stylised facts about the relationship of spending to child well-being outcomes.

Table 7.1 brings together social expenditure data on children, discussed in Chapter 3, and child well-being outcomes at the six-dimension level, discussed in Chapter 2, in a simple correlation table. The table correlates well-being outcomes by country against spending on children as a whole, and by spending on children during the three stages of early, middle and late childhood. Considering first all spending on all children in the first row, there is a significant positive correlation found with the Health and safety dimension, but not with other measures. When spending by child age is considered, the Health and safety correlation retains its significance for early childhood. Indeed, the correlation between total spending during early childhood and Health and Safety becomes somewhat larger. No well-being dimension has a significant relationship with spending during middle childhood. Only the Material well-being dimension is significant for late childhood spending. Other correlations are small in size.

Table 7.1. **Patterns of spending by age and type have varied associations with different measures of child well-being**

Correlations of child well-being dimensions and social expenditure by childhood stage and type as a proportion of median income, 2003

Spending by childhood stage	Child well-being dimensions					
	Material well-being	Housing environment	Educational well-being	Health and safety	Risk behaviours	Quality of school life
On all children (0-17) years	0.29	0.13	-0.13	0.32	-0.04	0.02
On early childhood (0-5 years)	0.28	0.13	-0.06	0.41	-0.16	0.02
On middle childhood (6-11 years)	0.09	0.02	-0.26	0.22	-0.07	0.16
On late childhood (12-17) years	0.38	0.17	-0.07	0.22	0.13	-0.10

Association significant at the $p < 0.05$ level

Association significant at the $p < 0.10$ level

Source: OECD calculations.

StatLink  <http://dx.doi.org/10.1787/712057615701>

Policy recommendations to improve child well-being

Some broad policy recommendations for enhancing child well-being in OECD countries can be drawn from the analysis in the previous chapters. It is worth considering developing a comprehensive child well-being and development system, based on the

child's life cycle. This system needs to support the present and future well-being of children across a range of dimensions of well-being. Since children have the longest life expectancy of any group in society, child policy needs a stronger future focus than for any other population group. The system requires a clear, simple, and comprehensive strategy (which might include targets for child well-being outcomes), a robust structure of policy advice and service delivery to implement the strategy, a strong understanding of the existing situation of interventions in the context of pertinent research and evaluation, and good knowledge of existing child well-being outcomes. The approach could start by mapping the existing national system in a child life cycle and risk context. It could then consider, in an evidence-based manner, discrete and specific policy changes, which aim to develop the system as a coherent set of complementary and mutually reinforcing policies. These policies would be multi-level in their approach to risk across the life cycle, involving a mix of universal, targeted, and clinical interventions. They would aim to reduce risk and promote protective factors. The system would measure and monitor expenditures, as well as the intermediate and final well-being outcomes of children.

What should be done across the child's life cycle

Governments should concentrate spending early in the child's life cycle (Center on the Developing Child at Harvard University, 2007). Most OECD countries spend more late than early in the child's life cycle. Countries should invest more resources during the period from conception until entry into compulsory schooling when outcomes are more malleable and foundations for future success are laid. If interventions are well designed, concentrating them into early childhood can enhance both social efficiency and social equity.

Concentrating more investment early also addresses widely-held concerns in many countries about inter-generational inequality. In addition, governments concerned about mitigating inter-generational inequality should also risk-load spending disproportionately on at-risk young children. Governments should spend relatively more on children at high-risk of poor well-being at all parts of the child life cycle. In addition, they need to ensure that later investments in high-risk children complement investments in the same children earlier in their life cycle. Early successes for such children should not be allowed to wither on the vine. There are, of course, complex questions about how to identify such children and how to define at-risk (some simple practical risk-profiling approaches are discussed in Chapter 4).

The conclusion that more early intervention and more intervention for higher-risk children are desirable is not novel. Much recent research supports early intervention in at-risk children. The argument is that spending during early childhood may be better because of 1) a longer pay-off period, 2) the greater early malleability of cognitive outcomes, and 3) the complementarity of earlier spending with spending already committed later in the child life cycle, especially in compulsory schooling (Heckman, 1999; Heckman and Masterov, 2007). Additionally there are considerable policy advantages in investing in the well-being of disadvantaged children during early childhood. Rates of return to skill formation for disadvantaged young children are higher because of the high long-term social costs, including crime, which can result from the negative developmental trajectories to which they are more vulnerable. As Heckman and Masterov (2007, p. 2) point out, “[i]nvesting in disadvantaged children is a rare public policy with no equity-efficiency tradeoff. It reduces the inequality associated with the accident of birth and at the same

time raises the productivity of society at large.” A good indication of this focus towards early investment can be found in Waldfogel’s recent consideration of desirable child policies in the United States, where 62% of the substantive content is devoted to consideration of policy change in early childhood, whereas middle childhood and late childhood receive only 24% and 14% of the discussion (Waldfogel, 2006b). Additionally, the analysis of country spending profiles by age in Chapter 3 supports the view that policy weaknesses may be situated during the early years, rather than later in the life cycle.

At the same time, early is not all (Rutter, 2007). Rates of return can be high on targeted interventions during adolescence (Aos *et al.*, 2004). A logical starting point might be for governments to begin by investing as much in under-5s as in school-age children (Waldfogel, 2006b, p. 184).

If governments across the OECD are serious about reducing inter-generational transmission of disadvantage and high social costs, greater resources committed during early childhood will need to be heavily weighted towards the high-risk spectrum of early childhood. High-risk can be defined in terms of permutations of family circumstances such as parental education levels, low income, parental absence, young mother, large family, parental mental illness and drug and alcohol dependence, social isolation, older siblings with problems, or parental benefit dependence. High-risk can also be defined in terms of early outcomes of the child. It may be considered in terms of early onset problems, especially early onset externalising behavioural problems or cognitive and learning difficulties. However, inevitably the weighting will be much more strongly on the family risk factors, since the possibility of diagnosing cognitive or behavioural problems really only exists from age 3 onwards.

Interventions in early childhood need to be both in cash and in kind. Policies targeting a broader spectrum of risk are best delivered in cash, allowing parents to use the decentralised information available to themselves about their children to build their current and future well-being most effectively. In terms of payments of income supplements, from the point of view of child development these are probably best directed at the mother (or otherwise the principal caregiver). Such payments, best delivered early in the child’s life cycle, can mitigate the inability of families to raise money to invest in their children (credit market imperfections) (Dahl and Lochner, 2005; Duncan and Brooks-Gunn, 1997; Morris *et al.*, 2004). However, for some families, money may not be used wisely on young children, or money may not be enough. The higher the risk in the family situation, the more effective delivery of services in kind will be.

Even if a free service is provided for the young children of very high-risk families, some parents may not take advantage of it. In such cases, some experimentation with conditional cash transfers may be appropriate. High-risk parents could be paid additional benefits for accessing the free, universal service for their child.

Programmes to support the in-utero environment

The in-utero environment matters for child well-being following birth. Policy to improve the quality of this environment, especially reduce parental smoking and improve maternal diet, should be considered (*e.g.* Melvin *et al.*, 2000). The number of universal pre-natal care visits could be reduced in many countries and efforts made to develop a system where intensification of pre-natal care is provided according to need. Additionally, the

pre-natal period may be a good time to intervene with high-risk families to provide them with the parenting skills that will come in handy for the first years of their child's life (see Chapter 4).

A particular issue may be take-up of free pre-natal services by high-risk pregnant women. Rather than simply making benefit access conditional on take-up, as some countries do, policy could consider the incentive of an additional conditional cash transfer or a conditional transfer (e.g. a food voucher) for mothers who meet certain criteria in terms of risk (single parent, young, poor and so on). The positive of a conditional cash transfer may appeal more than not paying benefits if free services are not utilised. In addition, children are not penalised by parental loss of benefits if parents fail to take up free services.

Policy change to support breastfeeding choices

Given the good evidence of significant cognitive benefits to children, policy changes to support the choice to breastfeed may be appropriate. Policies to allow this choice in accordance with World Health Organisation recommendations for six months exclusive breastfeeding may include legislation to support breastfeeding in the workplace, changes in the way maternity services in hospitals are provided, and adjustments to parental leave durations (see Chapter 4).

Programmes to improve post-natal care

Like pre-natal care, post-natal care requires greater targeting within the overall framework of a universal system. The number of post-natal care visits could be reduced in many countries and the resources freed up could be used for greater service intensification when poor early outcomes or adverse risk factors are present (see Chapter 4).

Targeted early childhood education and home visiting

For those children who are in need of stronger early environmental enhancements, targeted, quality and intensive early childhood education and home visiting programmes should be considered. The educational programmes may need to place a strong focus on cognitive outcomes, partly because these outcomes are likely to be more malleable early in the life cycle, partly because successfully evaluated programmes have been cognitively focused.

A further recommendation for countries with home visiting is to create and strengthen a service cascade based on observed risk. It may be useful for the cascade, be it pre- or post-natal, to have a strong home visiting component in countries where this fits the culture. Home visiting can play an important role in take-up of the service, since it reduces the cost to the family of an out-of-home contact, and allows a trained visitor to assess firsthand the family environment for need of more intensive services.

For highly disadvantaged children from birth to below the age of compulsory schooling, countries might consider even more intensive interventions than those provided by cascading post-natal child health and development systems, which could then function as a key point of referral. These sorts of interventions could offer disadvantaged children a mixture of parenting programmes, early childhood education, and home visiting. The aim would be to provide disadvantaged children with an enriched out-of-family environment, while at the same time working on raising the quality of the family environment.

Raising the quality of early childhood education

For some countries where the bulk of children attend early childhood education, there is a need to improve the quality of the services provided (OECD, 2006 and 2007a).

Reallocating resources in compulsory schooling to disadvantaged children

School provides an important primary environment for both middle and late childhood. All OECD countries already spend heavily on compulsory schooling. Advantaged children with strong early foundations are in the best position to take advantage of this spending. Given recommendations to increase the relative weight of the investment portfolio in early childhood, policy during middle and late childhood needs to focus on improving the quality of baseline spending in the child investment portfolio.

Once children enter compulsory schooling, policies need to complement early interventions for at-risk children. To a large extent, this means re-directing existing school resources away from advantaged children and towards disadvantaged children.

One way the promotion of complementary investments may be achieved is through the reallocation of existing teacher resources in the education system, again through a universal but cascading service in compulsory education. There is a considerable amount of evidence that teacher quality is important for educational outcomes during middle and late childhood (Haskins and Loeb, 2007). The cascade could be considered in terms of a universal school service with intensification delivered by allocating the best teachers to the schools where students are at highest risk, and within the school allocating the best teachers to the least advantaged pupils (Haskins and Loeb, 2007). Pay premiums, for example, for teachers working in disadvantaged schools are offered in some parts of the United States, and this is an option worthy of further consideration (Murnane, 2007; Murnane and Steele, 2007).

Policies to raise the school leaving age are sometimes mooted for those OECD countries with compulsory schooling ending before age 18, as a means of increasing equality. Alternative policies, such as increasing and cheapening access to high-quality out-of-school programmes, as well as extending the school day and school year and mentoring programmes may be alternative options for better achieving the same goal (Waldfoegel, 2006b). Equally, better early investment may be both more efficient and more equitable as a means of encouraging disadvantaged children to effectively take up the complementary investment currently available to them in the post-compulsory schooling system of most OECD countries.

Things to avoid doing

Governments should also do less of some things. Some governments could spend relatively less on highly medicalised, universal policies surrounding childbirth. A good example would be long maternal stays in hospital for a normal birth. Hospital is costly. Evidence suggests that extra days in hospital add nothing to child well-being (see Chapter 4). The money could be better spent elsewhere.

Current universal pre-natal schedules in many OECD countries have too strong a focus on medical risk. They lack a strong social risk orientation. They often involve too many scheduled contacts for low-risk pregnant women. In addition, actual post-natal contacts are often in excess of the schedule in many OECD countries (see Chapter 4). Reducing the number of universal pre-natal contacts would allow funding of more targeted intensive

services for high-risk mothers. De-medicalisation and an increase in use of nurses and midwives rather than obstetricians and pediatricians may also lower costs in many countries without a commensurate decline in the quality of pre-natal care, thus freeing resources up for pre-natal care where more intensive treatment may be warranted.

Additionally, governments need to consider ways to avoid committing resources to programmes captured by advantaged children, especially programmes directed at those past the age of compulsory education. These are likely to reinforce inter-generational inequality. By the time children are in post-compulsory education, they have benefited from years of heavy public investment. Post-compulsory public education spending is highly inequitable, since it goes disproportionately to children from advantaged families. The equity argument for paying child benefits, as many OECD countries do, to families with children in post-compulsory education is very weak. There is also little evidence that money at this point in the life cycle encourages participation in higher education for children from disadvantaged backgrounds. The public subsidy to post-compulsory education is already large in most OECD countries, and social and economic externalities from post-compulsory education are likely to be less than from pre-compulsory or early compulsory education. Arguably, it would be more efficient and more equitable to consider ceasing child benefits from the end of compulsory education, and using the resources freed up to raise the mean payment rate or even make higher payments just during early childhood.

Higher child benefits for older children are paid by a number of OECD countries. Benefits that rise with age are typically justified on the basis that costs are higher for older children. These costs are measured as the costs of marketed goods and services, not full opportunity costs including foregone leisure. If benefits for children are based on the costs of the children, these should reflect the opportunity costs. Higher opportunity costs for parents for young children are a further argument for a tilt in government spending on children toward younger, and away from older children.

Some countries spend considerable amounts on long-duration single-parent benefits. There is little or no evidence that these benefits positively influence child well-being. Durations could be reduced and resources concentrated on improving family income during the early part of the life cycle for those children.

Things to keep an eye on

There is considerable interest in the impact on child well-being of single-parent family structure, partly because these have been growing in importance across the OECD. The evidence that single-parent family structure causes reductions in child well-being compared to when the parents stay together is not overwhelming, but nor can it be neglected. If there is a causal effect on child well-being of being brought up in a single-parent family, it is likely to be small. Attention needs to be given to the evaluation of policies to keep families together, especially in terms of the outcomes for children, which are currently being trialed in the United States.

How to invest in children

Governments in most OECD countries spend considerable amounts on children. It is common to liken spending on children to an investment, reflecting the strong future focus in child policy (see for example Gabel and Kamerman, 2006). The investment metaphor is a useful one, reflecting the fact that much of the child's well-being is experienced in the

future. This metaphor can be usefully extended into thinking about investment in children in terms of a portfolio of investments of different types (Aos *et al.*, 2004). As child well-being has a variety of causes, there are multiple developmental pathways to the same well-being outcome. Consequently, there is certainly no single magic bullet intervention, or investment, which addresses all child well-being problems (Waldfogel, 2004). A range of environmental interventions – a child well-being investment portfolio – is consequently desirable.

A systemic approach would subject the child investment portfolio to a continuous iterative process of evaluation, reallocation and further evaluation to ensure that it actually generates returns and improves child well-being. Strong, cross-OECD monitoring, research, and especially policy evaluation of child well-being outcomes is necessary to ensure that country's child investment portfolios iterate to become more effective over time and that child well-being is progressively enhanced. Quality evaluations of childhood interventions are important to improve the quality of the initial child investment portfolio through an iterative process over time (Berlin, 2007). Duds should be culled and successes reinforced based on information yielded by good evaluation. Information derived from marginal additional spending on children can be used in this phase to allow the better allocation of baseline spending into the future, as well as to make better-quality evidence-based claims on future incremental spending.

There are two major dimensions when considering the reallocation of the child investment portfolio. First, there is existing baseline spending on children. Second, there are marginal increments to the government budget on children that occur around a yearly budget cycle. Additions to spending involve fewer vested interests and are easier to influence. On the other hand, the reallocation of existing spending is a larger fulcrum off which to lever change. Systematic, regular and well-informed baseline reviews of child spending may have great potential to improve child well-being. The aim of such reviews, however, would need to be improving outcomes for children (rather than the usual motivation for such reviews, which is to seek informed spending reductions).

Child well-being targets are of considerable value in focusing attention on a problem. Targets create strong incentives for politicians and policy makers to meet their stated goals. Targets need to be clear and achievable through policy change. To ensure a strong focus on outcomes and achievements, countries should set child well-being targets, unless these can be shown to create strong perverse incentives, such as moving children from just under to just over a poverty threshold.

Cost-benefit analyses of the evaluated programmes provide further information to select the best programmes. Cost-benefit analyses monetise, as far as possible, costs and benefits, determine their temporal pattern, and apply an appropriate discount rate to allow overall costs and benefits to be compared. Cost-benefit analysis is thus a tool for helping select desirable child investments. It is not the only tool. Investments that do not yield positive benefits may still be desirable if they change the trajectories of children whose poor outcomes are considered inequitable. Cost-benefit analyses for child investments have their strengths and limitations (Karoly *et al.*, 2005, Chapter 5). In practice, there are only a small number of cost-benefit analyses of child interventions, which of themselves have a limited degree of comparability due to the different methods employed (Karoly *et al.*, 2005; Aos *et al.*, 2004).

Improve data on child well-being outcomes

There has been much discussion of the statistical invisibility of children (Casas, 1997). The state of comparative information on child well-being across the OECD is very poor in comparison to the copious available survey information on adults. Of crucial importance in making better policy to support child well-being is the co-ordination and collection of internationally comparable data on child well-being. This data needs to be collected at all stages of the child's life cycle and across all dimensions of well-being. Currently available internationally comparable data has a strong focus on education outcomes at the older end of childhood. Regularly available and internationally comparable well-being data for early childhood and the early parts of middle childhood is either thin or non-existent. Yet the evidence suggests that this is when the longer-term well-being outcome trajectories for many children as both children and future adults are being formed.

Regular independent monitoring and reporting on child well-being

To know what is happening to the well-being of children, and to make better policy, regular reporting on child well-being is essential. The collection of high-quality, internationally comparable information on child well-being must be buttressed by regular reporting on child outcomes.

Understanding the dynamic causal process of child well-being and development

In order to understand the causal processes of child well-being and development, it is imperative that OECD countries develop longitudinal surveys of children's well-being outcomes and detailed information on their micro, meso, and macro environmental experiences, as well as supporting research on such data sets. Such surveys are expensive, and there are a variety of designs that are utilised in different OECD countries, including sample surveys and linked administrative data sets. A number of countries have implemented such surveys.¹⁵ Longitudinal data sets that include siblings are especially valuable, since they permit consideration of in-family as well as between-family well-being variation, thus allowing analysis of the importance of shared family environments for children's outcomes.

Quality evaluation

As discussed, a portfolio approach to investing in children requires quality evaluations of policy change. Randomised control trials should be used to test many policy changes, but other methods may yield considerable information of value to policy makers. For example, policy changes have been used in conjunction with longitudinal surveys of children to examine the impact of policy change on outcomes. Good recent examples are several studies by Baker and Milligan (2007, 2008), who have used the Canadian National Longitudinal Survey of Children and Youth to examine various impacts on child well-being of large and fiscally expensive maternal leave expansions. The fact that such surveys, if well-designed, can be used for policy evaluations adds a further argument for their value, in addition to their usefulness in considering the broader causal processes of child well-being and development. Finally, there is a role for the OECD in documenting, and where possible coding, the detail of policy changes that may impact on child-well-being outcomes. This would encourage the use of country panel data to examine the influence of policy changes on child outcomes.

Notes

1. The only comparative information readily available on the governmental structures of policy advice, funding, and delivery of family and child issues comes from the various country profiles in the Columbia Clearinghouse on International Developments in Child, Youth, and Family Policies (www.childpolicyintl.org/), where 22 OECD countries are profiled. These country profiles often do not clearly separate out responsibilities for policy advice (both primary and secondary responsibilities), and, as is almost unavoidable, some profiles contain a certain amount of error. The descriptions indicate that in most cases a complex multiplicity of agencies are responsible for child and family policy, and funding and service provision, at a variety of different levels of government.
2. For example, Austria, Belgium, Denmark, Finland, France, Greece, Hungary, Iceland, Ireland, Luxembourg, Poland, Portugal, Spain, Sweden, and the United Kingdom have an Ombudsman for Children or a similar institution. Such offices also exist or are being proposed in more than half of the states of the United States. Many Australian states, several Canadian provinces, as well as Mexico and New Zealand have similar institutions (see www.ombudsnet.org/enoc/network/index.asp).
3. See Council of Europe (1998) for European countries. This publication is incomplete in terms of the breadth of age limits considered. For example, the age for legality of consensual sex is omitted (the age where a person has the right to marry is included), as is the age when a person has the right to acquire a driving license.
4. The following OECD countries have removed the right allowing parental physical disciplining of children (dates): Austria (1989), Denmark (1997), Finland (1983), Germany (2000), Greece (2006), Hungary (2004), Iceland (2003), Netherlands (2007), New Zealand (2007), Norway (1987, but in 2005 the Supreme Court interpreted this as allowing “lighter smacks”), Portugal (2007), Spain (2007), and Sweden (1979). Italy (1996) has prohibition by a Supreme Court ruling. The Czech Republic, Ireland, Luxembourg and Slovak Republic have stated commitments to prohibition, but have yet to be recorded as reforming. See www.endcorporalpunishment.org/pages/pdfs/charts/Chart-Global.pdf for a compilation of world-wide information drawn on above (accessed 17 March 2008).
5. For a discussion of a range of potential effects of divorce law changes on child well-being, see Cáceres-Delpiano and Giolito (2008, pp. 7-10).
6. For an example regarding nutrition, the United Kingdom Royal College of Obstetricians and Gynecologists has recently recommended adding folic acid to flour with the aim of reducing the rate of premature births (www.guardian.co.uk/society/2008/jan/31/health.medicalresearch). The United States has had such a compulsory policy since 1998.
7. On advertising aimed at children in Europe, see European Audiovisual Observatory (2000). While many OECD countries rely to a considerable extent on voluntary industry self-regulation, Sweden has a total ban on advertising to children under age 12.
8. Internalising an externality is sometimes argued to justify in-kind provision. However, if there is a positive externality, theoretically the best policy is usually a subsidy on the good.
9. Currie and Gahvari (2007) provide a discussion of the rationales for in-kind benefits, some of which (pp. 48-51) explicitly deals with programmes for children, and the evidence for the rationales. The rationales explored include paternalism, offsetting tax distortions by providing services complementary to labour supply (especially with provision of child care), in-kind provision being an effective form of self-targeting, social externalities from the in-kind benefit known to social planners, inappropriate parental discount rates, the lack of parental information, political economy considerations, and agency problems with parents requiring redistribution within the family. Of course, government purchase of services also suffers from many information and agency problems.
10. See the World Bank (<http://info.worldbank.org/etools/icct06/welcome.asp>) on this and other CCT programmes outside the OECD, including Bolsa Familia in Brazil.
11. To put this number (it is unclear whether it refers to numbers of families or children) into broad context, the OECD in *Figures 2007* records roughly 20 million Turks under age 15 in 2005.
12. For Austria, Finland, Hungary, Luxembourg, see relevant tables in MISSOC http://ec.europa.eu/employment_social/missoc/2006 respectively on p. 91, p. 96, p. 40; p. 92 and for more detail on conditionality, www.cnpf.lu/Pages/APO.HTM; for the United Kingdom, see MISSOC, p. 96. Additional information for Luxembourg came from www.cnpf.lu/Pages/APO.HTM, accessed March 2008.
13. See www.caf.fr/cataloguepage/BasePaje.htm#visites (downloaded February 2008).

14. See www.familyassist.gov.au/Internet/FAO/fao1.nsf/content/payments-mia on the immunisation payment and www.centrelink.gov.au/internet/internet.nsf/payments/qual_how_ccb.htm on the Child Care Benefit.
15. See Kogevinas et al. (2004) and Centre for Longitudinal Studies (2006) for lists of such studies.

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Doing Better for Children

The well-being of children is high on the policy agenda across the OECD. But what is the actual state of child well-being today? How much are governments spending on children and are they spending it at the right times? What social and family policies have the most impact during children's earliest years? Is growing up in a single-parent household detrimental to children? Is inequality that persists across generations a threat to child well-being?

This publication addresses these questions and more. Drawing on a wide range of data sources, it constructs and analyses different indicators of child well-being across the OECD. These indicators cover six key areas: material well-being; housing and environment; education; health and safety; risk behaviours; and quality of school life. They show that no one OECD country performs well in all areas and that every OECD country can do more to improve children's lives.

How much countries are spending on children and when is also closely considered, the first time such a comparative exercise has been undertaken across the OECD. Additional chapters offer detailed examinations of countries' policies for children under age three, the impact of single parenthood on children and the effect of inequalities across generations. The publication concludes with broad policy recommendations for improving child well-being.

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