The Economics of Children’s Early Years
Early Care and Education in Ireland: Costs and Benefits
# Table of contents

Foreword 3
Children’s early years – an economic priority? 4
Benefits 1: Raising educational outcomes 6
Benefits 2: Enhancing employability and competitiveness 7
Benefits 3: Reducing child poverty 8
Benefits 4: Improving health 9
Benefits 5: Preventing social problems 10
The higher the quality, the greater the benefits 12
Ensuring benefits for all 13
Cost–benefit analysis 14
Economic analysis of policy issues is always important. At a time of recession, it is even more important, as the Government is rightly concerned to ensure that its policy decisions will boost the country's economic prospects, and that the benefits of any investments it makes will outweigh the costs.

Of course, children's early care and education is about much more than economics. It's about children's well-being and happiness, supports for families, children's rights, reducing child poverty, social justice, and giving all children a good start in life. It's all these things and more, but a rapidly growing body of research has shown conclusively that it's also good for the economy.

This report gives an overview of recent research on the economics of children's early care and education.

• The first part of this report (pp.4-10) presents evidence on some of the benefits of early care and education that are of greatest economic importance – for educational outcomes, employability, health, child poverty and the reduction of social problems such as crime.

• The second part of the report (pp.11-12) then points to research on the type of services and supports we need to put in place if we are to achieve the large and widespread economic benefits that are possible – services and supports must be of high quality, and they must be available to all.

• The final part of this report (pp.13-14) summarises cost-benefit analyses of early care and education. The evidence presented in this report shows the economic sense of the Government increasing its level of investment in children's early years.

The economic case is compelling when policy makers take a long-term view. While there are immediate costs in delivering high quality care and education services and supports for all young children, the benefits last many years, transforming children's life-chances as they grow older.

In the short-term, the Government should maintain current levels of public expenditure on services and supports for young children. In looking for ways to reduce current spending, the Government must avoid cuts that would in turn lead to a long-term increase in public spending, as would surely happen if the Government were to cut investment in young children.

And there are steps the government can take right now to improve quality, increase transparency and integrate existing supports and services – at little or no cost – as detailed in Start Strong's Children 2020 report.

We are very grateful to Goodbody Economic Consultants for all their work on the cost-benefit analysis. And we would like to express our sincere thanks to the Research Advisory Group, and in particular to Professor Brian Nolan, who generously gave his time and expertise to advise Start Strong on the project. Finally, we'd like to thank the staff team, particularly Toby Wolfe, for their work on the cost benefit analysis and preparing this report.

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Reviewing the findings of international research on human capital, Professor James Heckman – the Nobel prize-winning economist – concludes that the economic return to investment in children’s early years is higher than the return to investment in later childhood.

The reason for this, according to Professor Heckman, is that the development of a child’s skills builds on skills they developed previously. In children’s very earliest years, children develop essential skills or dispositions, such as self-control, curiosity and perseverance – skills that are both important in themselves and that help children make the most of their later education.

The above chart summarises Professor Heckman’s research, showing the rate of return to investment in educational and developmental resources to be much higher for children aged 0-5 than at a later stage. This downward-sloping curve closely resembles curves that show the rate of brain development in the growing child – much faster in the early years than in later childhood or in adulthood.

The irony is that graphs showing the rate of brain development and the return on investment in education are generally the inverse of graphs showing the actual level of investment in education at different ages of childhood (graph page 4).

In his submission to a 2010 inquiry into preventative spending, carried out by the Scottish Parliament’s Finance Committee, Edward Melhuish (Professor of Human Development at the University of London) presented the following graph, showing typical patterns of social expenditure by age in comparison with the intensity of brain development at different ages. The inverse relationship between the two lines on the chart shows vividly the mismatch between the age at which Governments spend most money on children and the age at which children’s brains develop.

Of course, public expenditure at all stages of the education system is important. What the research on early childhood development indicates is simply that services and supports for children’s early years should be one of the Government’s foremost priorities – and that they merit a much higher level of investment than is currently made.

Based on the evidence of high returns to investment in children’s early years, the OECD’s 2010 report *Doing Better for Children* argued that public spending on services for children should be front-loaded on children’s early years. According to the OECD, ‘Early investment in children is vital. Investment needs to rise in the “Dora the Explorer” years of early childhood relative to the “Facebook” years of later childhood.’

**Early childhood services and supports – a low priority in Ireland?**

Of all Ireland’s public spending on children and families, only 20% goes towards early childhood (ages 0–5) while 37% goes to the middle years (6–11) and 44% to the later years (12–17). And Ireland’s spending on services for young children is particularly weak by international standards, especially for the very youngest children (aged 0–2), as a large proportion of social expenditure for young children in Ireland takes the form of cash benefits rather than services.


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Benefits 1: Raising educational outcomes

Children learn rapidly from their very first days, and their experiences in their early years lay the foundations for their subsequent educational attainment. Both experiences in the home and early care and education outside the home are critical in shaping children’s learning. Children’s early years are in effect the first stage of the education system, though in Ireland it is by far the least resourced stage. Quality services and supports in children’s early years enhance children’s readiness for school, helping children get on the right track from the start and preventing later problems. The educational benefits of quality early care and education are seen both in the short-term – in greater school readiness – and in the long-term, right through the education system and beyond:

- The EPPE study in England, which has been following the progress of 3,000 children from age 3 (now through to age 16), has found that educational outcomes are promoted where parents can offer a supportive “home learning environment” (such as reading to the child, teaching songs, painting, taking children on visits), and where children go to high quality pre-school settings from the age of 2, at least on a part-time basis. (See chart)
- The latest PISA study of educational attainment among 15 year olds in OECD countries found that: “In practically all OECD countries 15-year-old students who had attended some pre-primary school outperformed students who had not. In fact, the difference between students who had attended for more than one year and those who had not attended at all averaged 54 score points in the PISA reading assessment – or more than one year of formal schooling (39 score points).”

PISA and pre-primary attendance

“PISA 2009 finds that the relationship between attending pre-primary school and better student performance at age 15 is strongest in school systems that offer pre-primary education to a larger proportion of the student population, that do so over a longer period of time, that have smaller pupil-to-teacher ratios in pre-primary school and that invest more per child at the pre-primary level of education.”

OECD (2011) PISA in Focus 1: Does Participation in Pre-Primary Education Translate into Better Learning Outcomes at School?

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4 OECD (2011) PISA in Focus 1: Does Participation in Pre-Primary Education Translate into Better Learning Outcomes at School? Paris: OECD
Benefits 2: Enhancing employability and competitiveness

‘Investments in tomorrow’s labour force should begin as early in life as possible.’

National Competitiveness Council, 2009

The educational benefits of quality early care and education lead to further long-term benefits in the employment and earnings prospects of the children who take part:

• The Abecedarian project in the US, which examined the impact of quality early education by tracking participants and a control group into adulthood, found that 47 per cent of participants were in high-skill jobs at the age of 21, compared to 27 per cent of control group members.

• The Perry Pre-School project, which has tracked participants and a control group through to the age of 40, found the median monthly income of project participants at age 40 to be $1,856 for preschool attendees, 42 per cent more than the $1,308 recorded for the control group.

What is at work here is not just the effect of quality early care and education on children’s cognitive skills, which characterise traditional measures of academic success. The beneficial effects on children’s non-cognitive skills are also critically important – skills such as self-control, perseverance, creativity, and the ability to cooperate with others. ‘Self-regulation’ for example (see box) – one of the most important capacities developed in early childhood – is crucial both in its own right and in enabling children to make the most of educational opportunities. And many non-cognitive skills are precisely the sort of skills employers are looking for in knowledge-based and service economies.

A foundation of both cognitive and non-cognitive skills provides a firm basis for employability and productivity in adulthood, which in turn drive the competitiveness of the economy. The benefits of quality early care and education for economic competitiveness have convinced many economic commentators, including Ireland’s National Competitiveness Council (see box) and the OECD.

A recent report from the National Economic and Social Council argues that early care and education should be a policy priority in the recession as it is ‘a good long-term investment for the state and a sound basis for the move towards a knowledge-based economy’.

The transition to competence – supporting young children’s self-regulation

“The capacity for self-regulation, ranging from sleeping and settling in the earliest weeks of life to the preschooler’s emerging capacity to manage emotions, inhibit behavior, and focus attention on important tasks, reflects young children’s transition from helplessness to competence. Stated simply, early development entails the gradual transition from extreme dependence on others to manage the world for us to acquiring the competencies needed to manage the world for oneself... Providing the experiences, supports, and encouragement that enable children to take over and self-regulate in one area of functioning after another is one of the most critical elements of good caregiving.”


Employers look for both cognitive and non-cognitive skills

“The greater prominence of high-tech manufacturing, internationally traded services and R&D activities in Ireland’s economy means that Irish people need high standards of generic skills to complement their academic or vocational ones. These skills include critical thinking as well as self-management and self-directed learning, communication and influencing skills and team working.”

Growing up in poverty can have a damaging and lasting effect on children, and the effects often persist from one generation to the next. Universally available, high quality early care and education helps to reduce child poverty in two ways:

- Where it is of sufficient quality, it has a beneficial effect on children’s development.
- Where it is affordable and accessible, it enables parents to access employment, education and training.

The chart illustrates clearly how dependent children’s life-chances are on their early experiences. Using data from the British Cohort Study, the chart shows children’s cognitive development from the age of 2 to 10, according to their socio-economic status. Children with a high cognitive score at 22 months but with parents of low socioeconomic status do less well than children with low initial scores but parents of high socioeconomic status. The chart also shows how much of this social differential in achievement is already in place by the time children start school.

With the effects of disadvantage so apparent by the time children start school, policies are needed that address child poverty before children begin school. Given the impact on children’s educational achievement, health and employability, we know that quality early care and education can transform children’s life chances, helping them to break out of the cycle of low achievement and poor prospects.

While some of the greatest benefits are long-term, making quality services and supports accessible and affordable can help families break out of poverty in the short term too. The cost of childcare, for example, is a large barrier to employment for many parents, particularly lone parents. The cost of childcare for families in Ireland remains among the highest in EU and OECD countries – amounting to more than 50% of the net income of some families – and is one of the central reasons for Ireland’s high child poverty rate. 8.7% of children in Ireland lived in ‘consistent poverty’ in 2009, compared to 4.9% of adults of working age.

Of course early care and education will not eliminate child poverty by itself. That requires a comprehensive strategy, in which early care and education is linked to policies in other areas such as employment, education, housing and health care.

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The long-term effects of social, emotional and cognitive development in early childhood touch on many aspects of our lives. In the UK, a major Government-commissioned review was published in 2010 on evidence-based strategies for reducing health inequalities. Chaired by Professor Michael Marmot, the Marmot Review points to a striking “social gradient” in health – “people in different social circumstances experience avoidable differences in health, well-being and length of life” – and identifies six evidence-based strategies for reducing health inequalities, the first of which is to “give every child the best start in life”. Observing the close links between early childhood experiences and later health outcomes, the Marmot Review argues for early childhood policies to be prioritised.

**Benefits 4: Improving health**

Improving health outcomes through investing in children’s early years requires high quality early care and education services for all, and it also requires effective health and parenting supports for young children and their families – including Public Health Nurses and parenting programmes – as well as mechanisms to ensure effective connections between care, education and health services.

**The Marmot Review – The Strategic Review of Health Inequalities in England Post-2010**

“To have an impact on health inequalities we need to address the social gradient in children’s access to positive early experiences. Later interventions, although important, are considerably less effective if they have not had good early foundations.”

The Marmot Review’s first set of recommendations aims “to give every child the best start in life” and encompasses three priorities:

- “Reduce inequalities in the early development of physical and emotional health, and cognitive, linguistic, and social skills.”
- “Ensure high quality maternity services, parenting programmes, childcare and early years education to meet need across the social gradient.”
- “Build the resilience and well-being of young children across the social gradient.”


**Positive health outcomes**

Evidence from three long-term studies of quality early care and education in the US (discussed further on p.13 below) shows that:

- Participants in the Perry Pre-School Project had lower proportions of smokers and soft-drug users than did the control group at age 40.
- Also in the Perry project, lower proportions of the programme group reported having a health problem (20 per cent compared to 29 per cent) or having to stop work for health reasons (43 per cent compared to 55 per cent).
- Both the Perry Pre-School project and the Abecedarian project recorded reduced incidences of teenage pregnancy.
- The Chicago Child-Parent Centres project saw a reduction in the number of cases of child neglect and maltreatment.
We know from research that it is more effective and more cost-effective to try to prevent social problems and to intervene early, rather than wait until problems are full-blown. This is particularly true of interventions in very early childhood, given what we now know about brain development in children’s earliest years:  

- **Prevention approaches** – such as home visits by Public Health Nurses and high quality early care and education – may involve reaching out to large numbers of children and families, reducing the likelihood of problem behaviours arising in the first place.
- **Early intervention** – which encompasses many types of intervention and support for children and their families – focuses on intervening as soon as possible to tackle emerging problems for children, young people and families with identified needs.

Some of the largest benefits of quality early care and education have been seen in the long-term impact on crime levels. While there are many factors that influence criminal behaviour, we know from research that there is a significant link between emotional and behavioural difficulties in early childhood and crime in adulthood.  

High quality early care and education can reduce problem behaviour through its positive influence on children’s social and emotional development. The Perry study of high quality early care and education in the US found a significant reduction in crime rates among participants, in comparison with a control group (see p.13 below). Through estimating the economic impact on the potential victims of crime, in addition to the lower costs for the criminal justice system, the study found that the crime reduction effect accounted for 70% of the total economic benefit of the early years intervention. 

Of course caution is needed in transferring US findings to Ireland. The potential benefits are so large, however, that even if the benefit were only a fraction of that found in the Perry study, it would readily outweigh the cost of quality early care and education.

**Benefits 5: Preventing social problems**

| Free pre-school year, per child (€ p.a.) | €2,850 |
| Cost of holding somebody in prison (€ p.a.) | €70,513 |

Comparing costs in Ireland - free preschool year/imprisonment.

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**Public finances and the benefits of prevention and early intervention**

In January 2011, the Scottish Parliament’s Finance Committee issued a report at the end of a major inquiry into preventative spending. The committee concluded that: “Early intervention ... can significantly help to prevent or reduce the likelihood of children developing future social problems that may otherwise have necessitated an intervention by the state. The approach has the potential to save relevant public bodies significant sums of money as the number of interventions that they have to provide is thereby significantly reduced.”


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12. The child development review From Neurons to Neighborhoods noted the 'growing evidence that recidivist offending in adolescence and adulthood, as well as persistent patterns of aggression and peer rejection during early and middle school years, have their roots in disruptive behaviour that can be detected as early as 3' (National Research Council and Institute of Medicine (2000) op. cit., pp.121-2).
Conclusions

- The higher the quality, the greater the benefits

- Ensuring benefits for all young children, progressive universalism

- Cost benefit analysis: the economics of children’s early years, a strong and unambiguous argument for investment in children’s early care and education in Ireland
Research shows that early care and education only has strong developmental benefits – and therefore high economic returns – where it is of sufficient quality. From an economic perspective, high quality services and supports are more costly than low quality ones, but the higher returns more than compensate for the additional expenditure.

The two charts, from the EPPE study in the UK, which has been following 3,000 children from the age of 3, show that the higher the quality of pre-school, the greater the benefits for children. The first chart shows the effect on achievement at age 11 in English and maths, the second chart shows the effect on children’s self-regulation, using two measures of quality. On all counts, the benefits of low quality pre-school are minimal, whereas the benefits of high quality are substantial.

### Features of quality services for young children

The most important aspect of quality in services and supports for young children lies in the interactions between practitioners and children. According to a recent review of international research, the following aspects of quality are most important for enhancing children’s development:

- Adult–child interaction that is responsive, affectionate and readily available.
- Well–trained staff who are committed to their work with children.
- Facilities that are safe and sanitary and accessible to parents.
- Ratios and group sizes that allow staff to interact appropriately with children.
- Supervision that maintains consistency.
- Staff development that ensures continuity, stability and improving quality.
- A developmentally appropriate curriculum with educational content.

Ensuring benefits for all

The research evidence on educational outcomes makes a strong case for universal provision of early care and education services and supports, as all children benefit provided the quality is sufficiently high. The chart, taken from the EPPE study, shows the positive effect that pre-school has on the reading ability of children from all social backgrounds.

It is sometimes assumed that targeted services are more economically efficient than universal services, with lower costs and greater returns. But there are a number of reasons why this may not be the case (see box). Firstly, it is difficult to deliver targeted services that are effective in reaching all those who need them. For example, a large proportion of children from disadvantaged backgrounds do not live in disadvantaged communities that receive targeted supports. Secondly, targeted interventions sometimes exacerbate disadvantage through segregating or stigmatising children and families, thus reducing take-up or worsening outcomes. Thirdly, all children benefit from universal provision, and disadvantaged children benefit the most, with larger benefits in settings that include children from a mix of social backgrounds.

Of course there is a need for additional, targeted supports for children with additional needs, but these can be built on a base of universal services, helping to ensure effective access routes to the targeted services for those who need them. Universal services then act in a preventative capacity, with additional targeted services acting as a form of early intervention. This approach is described in the *Agenda for Children’s Services* as “progressive universalism” (“help to all and extra help for those who need it most”).

### The universal vs. targeted debate

- Targeted programmes have lower costs and in principle should have higher returns, but do not realise other presumed advantages in practice.
- Universal programmes are likely to be more effective at identifying and reaching all targeted children.
- School readiness is not just a problem of the poor. Young middle-income children lag behind their wealthy peers in social and cognitive skills.
- High-quality preschool has been found to benefit middle-income children, and added benefits could far exceed costs.
- Universal programmes may have larger effects than targeted programmes for the most disadvantaged, reducing stigma and increasing benefits because of social mixing.
- Universal programmes are likely to receive greater public support, raising the demand for quality.


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**Source:** K. et al. (2008) EPPE 3-11: Final Report from the Primary Phase, p.29.
Cost-benefit analyses of early childhood interventions have estimated returns of up to $16 for every dollar invested.\(^8\) Cost-benefit analyses are normally based on three major US studies, each of which compared groups of children who received quality early care and education with groups of children from the same social and family backgrounds who did not, and each of which monitored the differences over a long period of time.

**The Perry Pre-School Project**, located in Michigan in the 1960s, targeted disadvantaged African-American children. It involved attendance at high quality pre-school five mornings a week for two years, and a weekly afternoon home visit to each mother and child. Data was collected over 40 years on 58 participants and a control group. The economic rate of return is estimated to be 16:1.\(^9\)

**The Abecedarian Early Intervention Project**, located in North Carolina in the 1970s, was a five-year programme for disadvantaged children, with an average starting-age of 4 months. It involved high-quality childcare for between six and eight hours a day, five days a week. 57 participants were tracked into their 20s, along with a control group. The economic rate of return is estimated to be 2.5:1.\(^10\)

**The Chicago Child-Parent Centre Programme** involved the collection of data on 989 participants and a control group, all born in 1980. The programme involved educational and family support services for low-income children aged between three and nine years. Children in the study have been followed through to the age of 26. The economic rate of return is estimated to be 11:1.\(^11\)

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\(^8\) L. Karoly et al. (2005) *Early Childhood Interventions: Proven Results, Future Promise*, Santa Monica: RAND Corporation.


Use of the three US studies in claims about the rate of return to early care and education in other contexts has been critiqued. The EPPI-Centre review of evidence on the long-term economic impact of early childhood interventions pointed out that all three studies were carried out in very disadvantaged communities in the US several decades ago, with a social context and social policy framework very different from that which applies in most European countries today.

For this reason, caution is needed in transferring the US findings to Ireland. The benefits of quality early care and education are so large, however, that cautious approaches predict the benefits to outweigh the costs. For example, when Goodbody Economic Consultants examined the recommendations made in Start Strong’s Children 2020 report, they used high-cost scenarios and made benefit estimates at the low end of what is likely, not even attempting to estimate some potentially large benefits. Given their cautious approach, they did not attempt to estimate a single figure for the ratio of benefits to costs. They nevertheless concluded that:

“Even with conservative assumptions about the transferability of research from the USA to Ireland, it is reasonable to conclude that the Children 2020 proposals for professionalising the workforce and extending pre-school provision would result in benefits that readily exceed the rate of return required by the Department of Finance in project or programme evaluations. Less cautious assumptions would result in estimates of benefits that far outweigh the costs, as has been noted in other cost-benefits analyses of ECCE.”

The only previous cost-benefit analysis of early care and education in Ireland was carried out by the Geary Institute for the National Economic and Social Forum, and based its methodology on the Chicago Study. The Geary Institute estimated the benefits to be €7 for every €1 invested.

The common theme across all the cost benefit analyses, regardless of assumptions, methodologies or settings is that investing in the children’s early years makes sound economic sense. The economic argument alone is such that there is a strong and unambiguous case for government investment in children’s early care and education in Ireland.

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Start Strong

Start Strong is a coalition of organisations and individuals seeking to advance early care and education in Ireland.

By early care and education we mean care and education in children’s early years, for children aged 0–6. Early care and education is not limited to any one place or time of the day. Young children develop, learn and are nurtured in many places: in their own homes – with their parents and families – in the homes of their grandparents, other relatives and childminders, and in centre-based services such as crèches, playgroups and naíonraí.

For young children, care and education should be inseparable. From the very start, children’s care should be attentive to their capacity for learning and development, while their early education should be based on play and should include a strong focus on social skills and emotional development. Children’s need for nurture, caring relationships and learning-through-play extends well beyond their early years.

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