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Reducing child poverty through cash or care

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Abstract

Reducing poverty is a central policy priority in many countries, also in wealthy countries with comprehensive universal support systems, such as the Nordic welfare states. This study examines policy options designed to support families with preschool-aged children and their implications for poverty reduction: increasing cash transfers, such as child benefits, and eliminating parental fees for early childhood education and care (ECEC). We assess the effectiveness of these measures in a Norwegian context, both in the short and long term. The key parameter for resolving the cash-versus-care question is parents' responsiveness to changes in childcare fees. By estimating and applying a structural model, we show that lower fees increase ECEC participation and reduce child poverty in the short run through higher parental labor supply. Moreover, higher enrollment in non-parental care yields lasting benefits for children and likely helps reduce poverty in the long run. Although cash and care may be seen as affecting child development at different points in the causal chain from family income to child outcomes, and be considered complementary rather than competing, free ECEC has the added advantage of increasing the participation rate for children for whom the benefits are the greatest. Our analyses show that in countries with extensive existing support, fine-tuning of existing policy schemes can still have meaningful effects for children in families at the margin.

Keywords: child poverty, early childhood education and care, child benefit, behavioral microsimulation, child outcomes, marginal groups

JEL Classification: H31, I25, I32, J13, J22

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Sammendrag

De siste tiårenes økning i barnefattigdom har fått betydelig oppmerksomhet. I denne analysen retter vi søkelyset mot hvilke tiltak som er mest effektive i fattigdomsbekjempelsen for familier med barn i alderen 1–5 år – økte kontantytelser, som høyere barnetrygd, eller tiltak som gratis barnehage.

Vi analyserer hvordan kontantytelser og rimeligere tjenester påvirker barnefattigdom både på kort og lang sikt. Den viktigste forskjellen mellom kontantytelser og gratis barnehage er at sistnevnte støtteordning ikke kommer familier til gode dersom barna ikke går i barnehage. Effekten av et gratis barnehagetilbud avhenger derfor av i hvor stor grad familier som hittil ikke har benyttet barnehage, tar i bruk tilbudet når det blir gratis og hvordan dette igjen påvirker barnas sosiale og kognitive utvikling på kort og lang sikt.

I analysene på kort sikt anvender vi en mikrosimuleringsmodell for å beregne hvor mange flere barn som vil begynne i barnehage når tilbudet gjøres gratis og hvordan dette påvirker foreldrenes arbeidstilbud. For de langsiktige effektene vurderer vi i hvilken grad eksisterende forskning finner positive effekter på barns utvikling av både økte kontantoverføringer til foreldre og økt bruk av barnehager. Litteraturen peker på gunstige effekter både av høyere kontantoverføringer, som økt barnetrygd, og av barnehagedeltakelse. Vi konkluderer med at gratis barnehage kan gi særlig store fordeler for barn fra sosialt utsatte familier, og at dette dermed styrker begrunnelsen for å gjøre tilbudet gratis.

1 Introduction

In 2021, an average of 12.4% of children in OECD countries lived in relative income poverty (OECD 2025c), raising widespread concern.[1] Even the richest countries have not escaped this concern. Norway is a wealthy country known for its strong commitment to equality, comprehensive social safety nets, as well as universal and free health care and education. Yet, child poverty has become an increasingly pressing issue as the share of children aged 0–17 living in households with incomes below 60% of the median rose from under 5% in the early 2000s to nearly 12% by 2020. Childhood poverty harms both family and child well-being in the short and long term, undermining non-cognitive development, educational attainment, and future life opportunities (Attanasio, Cattan, and Meghir 2022; Duncan, Ziol-Guest, and Kalil 2010), which is also true in Norway (Sandsør, Zachrisson, Karoly, and Dearing 2023; Zachrisson and Dearing 2015).

This study begins with the premise that governments aim to reduce poverty among families with preschool-aged children. Against this backdrop, we focus on policy options designed to alleviate poverty. More precisely, we examine whether poverty alleviation is more effectively achieved through direct cash transfers or through subsidies for in-kind provisions, such as early childhood education and care (ECEC). We situate this discussion within recent developments in Norwegian family policies and comparable international experiences, focusing on two key support instruments – the childcare fee and the universal child benefit – both of which have undergone substantial changes in recent decades. Moreover, we address this discussion in the context of one of the world's most comprehensive systems of policies to promote equal opportunities regardless of family background.

In essence, we ask what should come next: should policymakers prioritize new initiatives that provide support through cash transfers or through childcare services? More specifically, we compare two policy options: one that sets the maximum price for ECEC for preschool-aged children to zero, and another that allocates an equivalent amount of public funding to increasing the child benefit for families with children in the same age group. The present study offers a framework for examining this question and illustrates its application in the Norwegian context where – as we detail below – policies aimed at mitigating the effects of child poverty are already extensive. Hence, we explore the margins of policy adjustments for this purpose. However, given that 85% of children aged 3 to 5 across the OECD attend early childhood education programs, we expect this issue to attract broad interest (OECD 2025a).

The answer to the "what should come next"-question depends on the interrelationships between support schemes, their distribution, parents' behavior, and effects in the short and long run. While cash support has little impact on parental labor supply, the crucial factor in our assessment is how parents respond to changes in childcare fees. Specifically, as childcare becomes free, more children may enroll in ECEC, and through the link between care choices and parental labor supply, this may also increase parental labor supply.

Nonetheless, some parents will never enroll their children in ECEC, meaning these families cannot benefit from free care and may instead prefer cash support. In other words, the key question for poverty effects is how many families enter ECEC as a result of free care, and how many among those initially not participating remain outside ECEC. For most families with children already enrolled in ECEC, the primary effect is mechanical, reflecting an increase in disposable income through either reduced childcare fees or higher child benefits.

We employ a behavioral microsimulation model to quantify the extent to which families respond to changes in family policy. Specifically, we estimate a joint labor supply and childcare choice model

[1] Poverty threshold set at 50% of median equivalized disposable income.

to simulate the behavioral responses to changes in family policy for both couples and single mothers. The model builds on the structural discrete choice framework of Thoresen and Vattø (2019), which also serves as the foundation for Vattø and Østbakken (2024). Notably, these models allow fathers to play a more central role as alternative caregivers, aligning with a more gender-equal society.[2] In this study, we apply this modeling framework to new data from the 2023 Childcare Survey (Evensen, Foss, Haraldsrud, and Østhus 2023; Krawczynska 2023). We then use the estimated model to analyze the short term effects of the two alternative support schemes on childcare utilization and parental labor supply.

We also report simulations of the policy changes without accounting for behavioral effects. For the mechanical (non-behavioral) effects, we use Statistics Norway's tax-benefit model LOTTE-Skatt (Jia, Larsen, Lian, Nesbakken, Nygård, Thoresen, and Vattø 2024), a detailed microsimulation tool used to compute the direct effects of tax and benefit changes on tax revenues and distributional outcomes.

Children may benefit from participation in ECEC programs in both the short and long run. Research shows that ECEC programs can produce positive long-term outcomes for children, making enrollment potentially beneficial. Evidence from some contexts suggests that universal ECEC programs can have lasting positive effects. In the second part of the analysis, we discuss long-term implications of cash-or-care policy dyad to infer the enduring effects on child outcomes. We review the literature on how cash and childcare influence outcomes – short, medium, and long term – including non-cognitive and cognitive skills (such as achievement), and long-term outcomes (such as earnings and educational attainment), drawing on both international evidence and studies based on Norwegian data.

As expected, the empirical evidence indicates that cash transfers are more effective than reduced childcare fees at alleviating child poverty in the short run according to the mechanical (non-behavioral) effects. As we will show, households that do not use childcare do not benefit from the removal of childcare fees and generally have lower incomes. This reflects both the close relationship between childcare use and parental employment, and the fact that the marginal group of non-users includes a larger share of households with low levels of education and immigrant backgrounds. Although labor supply responses driven by more use of ECEC mitigate the mechanical impact by affecting parental labor supply, cash transfers remain more effective than free care in reducing child poverty overall.

Regarding effects in the longer term, although the evidence is not entirely consistent, cash transfers to families are often found to improve outcomes for children – particularly those from low-income households – and are most effective when the transfers are regular and predictable over time. Evidence from Norway broadly aligns with this pattern. As for effects of ECEC programs, the evidence suggests that universal ECEC programs in some contexts can yield positive long-term outcomes for children, while they can be ineffective in the long run, or even harmful in others. Studies using Norwegian data are largely consistent with the former.

New family policy initiatives to combat child poverty have received a lot of attention elsewhere too. It is widely recognized that family policies play a crucial role in reducing and alleviating poverty – without fiscal support, poverty rates in most countries would be significantly higher (Bradshaw 2020; Akbulut and Yüce 2025). In recent years, several Western countries have seen changes in how family support is delivered. Since the turn of the 21st century, policies have shifted away from unconditional cash transfers, such as traditional welfare programs, and toward benefits designed to

[2]To our knowledge, Thoresen and Vattø (2019) is the first model to endogenize fathers' labor supply within a joint labor supply and childcare choice framework.

promote or require employment (Michelmore 2025).

In the European Union, there are stark disparities in the extent, composition, and distribution of child-contingent cash support across EU Member States. The average support per child ranges from 3.2% to 12% of GDP per capita (Bornukova, Hernandez, and Picos 2024). Several European governments have expanded their support for childcare, see Bettendorf, Jongen, and Muller (2015) and Givord and Marbot (2015) for evidence from the Netherlands and France, respectively. Moreover, several federal states in Germany introduced free universal daycare for preschool children in selected groups (Huebener, Pape, and Spiess 2020; Busse and Gathmann 2020). Some of these reforms were particularly far-reaching; for example, since 2016, Berlin has offered free childcare for all children aged two to six (Busse and Gathmann 2020). Also, in Austria, childcare at the age of five is provided free of charge for at least 4 hours per day (Clarke and Thévenon 2023).

In the U.K. and North America, poverty reduction has also received substantial attention, with a main focus on means-tested rather than universal schemes. In the United States, for instance, research has examined the role of the Earned Income Tax Credit in alleviating poverty (Hoynes and Patel 2018). Also, non-parental care has become the norm for preschool-age children, coinciding with a sustained rise in employment among mothers of preschoolers (Herbst 2023). The expansion of the Child Tax Credit (CTC) as part of the American Rescue Plan Act (ARPA) in 2021 marked a historic moment for the U.S. social policy. For a brief period, the CTC essentially served as a universal child benefit, providing economic support to nearly all families raising children (Pilkauskas, Michelmore, Kovski, and Shaefer 2024; Yera, Collyer, Curran, and Harris 2023). However, in 2022, the expanded benefits from 2021 were largely rolled back, and the CTC reverted to its earlier structure.

Similarly, in the U.K., the challenges faced by low-income families and the issue of child poverty have received considerable attention (Gregg, Harkness, and Smith 2009). The recently elected Labour government has committed to reduce child poverty and set as one of its five missions to break the barriers to opportunities for children (Carneiro, Cattan, and Neves 2025). Some argue that a move away from the income-tested scheme for the child benefit is preferable in this context (Atkinson 2015). More specifically, in England, the offer of free childcare for three and four year-olds was expanded from 15 to 30 hours per week for working families in 2017. Simulations by Brewer, Cattan, Crawford, and Rabe (2022) suggest that free part-time childcare only marginally affects the labor force participation of mothers whose youngest child is eligible, but expanding from part-time to full-time free care has larger effects.

Furthermore, Canada has implemented several policies in recent years to reduce child poverty. In 2016, several income-tested and taxable support programs were replaced by a new scheme – the Canada Child Benefit (CCB). Compared to previous schemes, the CCB's income testing excluded far fewer families from receiving benefits. According to Baker, Messacar, and Stabile (2023), these changes led to substantial increases in financial support for families with children and a corresponding reduction in poverty. While provinces and territories are primarily responsible for designing and delivering ECEC programs, in the 2001-budget the federal government in Canada made a major investment over five years to build a Canada-wide early learning and childcare system with provinces and territories. Canada-Wide Early Learning and Child Care set the target of reducing average fees for regulated childcare spaces for children under six to approximately 10 Canadian dollars per day by March 2026 (Dhuey 2024).

While caution is warranted when generalizing findings across different contexts, as noted by Baker (2011) and Blau (2021), we contend that the Norwegian case provides valuable insights for enhancing outcomes for disadvantaged children in other countries. In many economies, childcare

receives substantial attention as a tool to improve conditions for children, see for example OECD (2025c). Similarly, there is also focus on the positive effects of cash support, see, for example, Shaefer, Hanna, Harris, Richardson, and Laker (2024) and Michelmore (2025). Here, we examine these two policy options together, analyzing their underlying mechanisms and evaluating evidence on how cash transfers and childcare provision can reduce poverty.

The remainder of the paper is structured as follows. Section 2 provides background on the institutional context, with a focus on trends in poverty rates and the design of the Norwegian family policy support system. This section also examines the characteristics of families who continue to opt out of enrolling their children in ECEC. Section 3 reviews the modeling of the decision-making of parents with preschool children within a joint labor supply and childcare choice framework and presents evidence on behavioral responses. Section 4 introduces the non-behavioral and behavioral microsimulation models used to assess short run poverty effects, describes the data and estimation results for the behavioral model, and presents simulation outcomes for the two policy alternatives: increased child benefit and free care. Section 5 discusses effects of support by cash or care for child developmental outcomes in both the short and long term. Finally, Section 6 concludes the paper.

2 Background

2.1 Child poverty

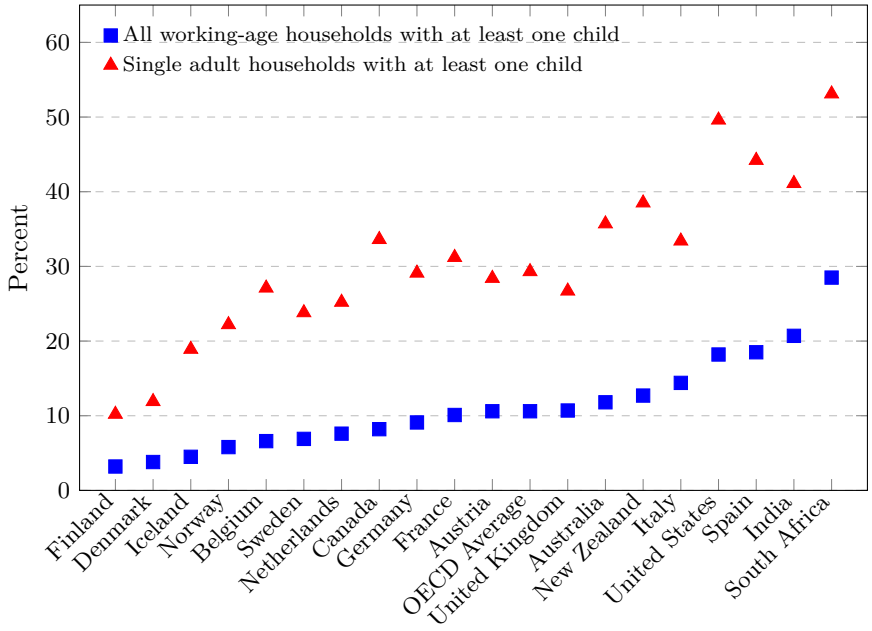
Despite well-developed social safety nets, relative child poverty remains a persistent challenge in many advanced economies. For example, in 2015, the U.S. Congress asked the National Academies of Sciences, Engineering, and Medicine to provide an evidence-based assessment of the most effective means to reduce child poverty by half within the next 10 years (Le Menestrel and Duncan 2019).

A standard approach to measuring child poverty is to calculate the share of children living in households with incomes below a specified poverty threshold. In Figure 2.1, we report child poverty rates for a selection of countries using a poverty threshold set at 50% of median disposable income for the period 2019–2022.[3] The figure highlights two key findings: first, there are large cross-country differences in child poverty rates; and second, rates are considerably higher among single-adult households than among all households. On average, child poverty among households with at least one child in OECD countries is just above 10%. The Nordic countries are clustered near the lower end of the distribution, with Norway reporting an overall rate of 5.8%. However, the variation among single-adult households is markedly greater than the variation in overall child poverty rates, even among Nordic countries. While poverty rates among lone-parent households are relatively low in Finland and Denmark, slightly above 10%, they exceed 20% in Norway and Sweden – approximately 22% in Norway and nearly 24% in Sweden.

As previously emphasized, a central concern in the Norwegian context is the trajectory of poverty rates over time, particularly the recent increase in child poverty. Detailed evidence for Norway is presented in Figure 2.3, while Figure 2.2 depicts poverty growth rates for a selected set of countries,[4] comparing rates over a period of approximately seven years, from the 2012–2014 average to the 2019–2021 average. Norway is among the countries that have experienced rising poverty over this period. Although several countries show higher growth rates – nearly 20% in the United Kingdom, for example[5] – poverty in Norway has also increased substantially, by roughly 10%.

[3] The OECD commonly applies the 50% median income benchmark.
[4] The set of countries does not fully coincide with those in Figure 2.1, owing to data constraints.
[5] See Dorling (2024) for a more detailed discussion of the U.K. case.

Figure 2.1: Poverty rates in working-age households with children by household type. Selected OECD countries, 2019–2022



Notes: Data are based on equivalized household disposable income. The poverty threshold is set at 50% of median income, working age is defined as 18–64 year-olds, and children as 0–17 year olds. Source: OECD Income Distribution Database (Chart CO2.2.C)

Figure 2.3 presents trends in child poverty for households with small children (aged 0–5) in Norway, alongside results for all children aged 0–17. The figure illustrates developments for the 0–5 age group, corresponding to the group directly affected by the cash and care policies under consideration. The figure indicates that the trajectory of poverty rates for this cohort closely parallels that observed for households with children aged 0–17, suggesting that broader household-level trends largely capture developments in early childhood poverty as well.[6]

The figure indicates that the rise in poverty began earlier than 2012–2014, for both groups of households, showing an almost continuous upward trend from 2006 to 2018–2020. Eika and Langørgen (2025) show that changes over time in the population shares of different sociodemographic groups explain about half of the increase in child poverty from 2010 to 2022. Immigration contributes substantially to the increase. However, it is also noteworthy that poverty rates have declined in recent years, although they increased again in 2024. In 2024, the most recent year for which data are available, the poverty rate for households with small children stands at approximately 10%, down from more than 12% in 2019–2020. Possible explanations for these changes will be discussed shortly.

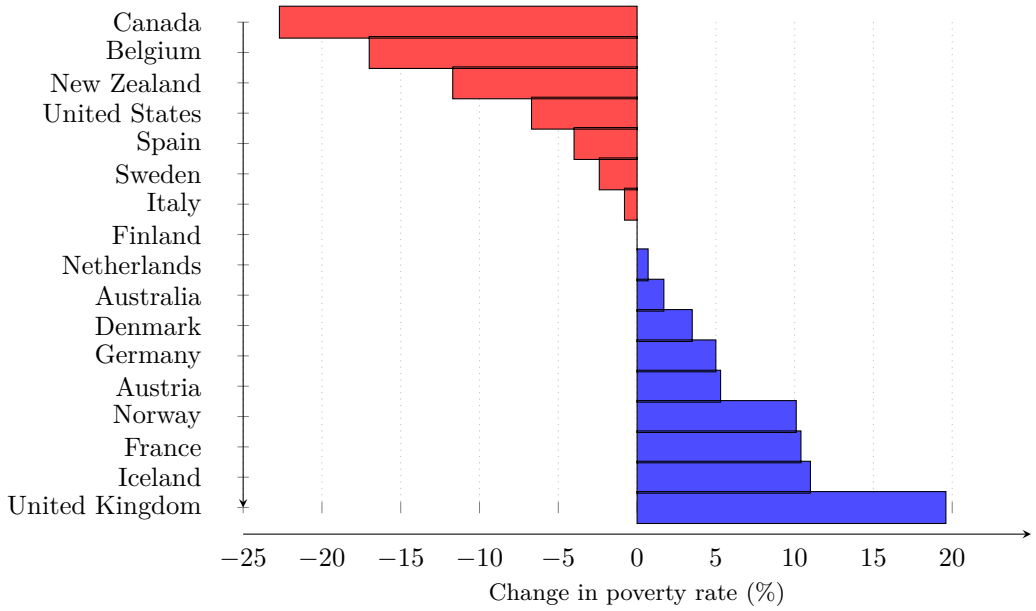
2.2 Norwegian family policies

Norway's public spending on family benefits is above the OECD average (OECD 2025b), amounting to approximately 2.8% of GDP in 2021, compared to an OECD average of around 2.4%. In terms of support provided per inhabitant, Norway ranks second among EU and EFTA countries (Eurostat 2025), spending approximately EUR 2,300 per person annually on family benefits.[7] These figures reflect a dual policy approach in Norway, combining both cash transfers and publicly

[6] To mitigate the influence of temporarily low income in any single year, Norwegian poverty rates are frequently measured using three-year averages of equivalized income, as is done in Figure 2.3.

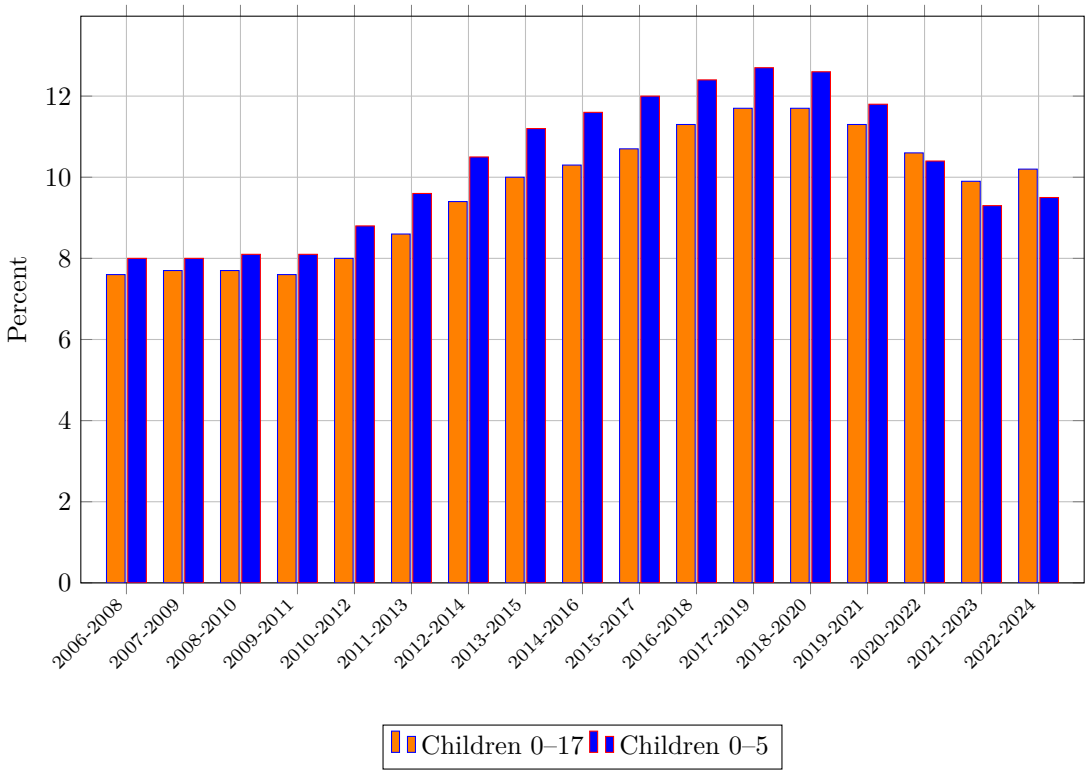
[7] This includes expenditures on parental leave, cash support, and childcare.

Figure 2.2: Change in poverty rate by country, between average 2012–2014 and average 2019–2021



Notes: Data are based on equivalized household disposable income. The poverty threshold is set at 60% and children as 0–17 year olds. Data for 2012–2014 compared to data for 2019–2021. Source: UNICEF (2023)

Figure 2.3: Percentage of children aged 0–17 and 0–5 living in low-income households, 2006–2008 to 2022–2024



Notes: Low income defined as average equivalized household disposable income (before childcare fees) over a three-year period below 60% of the median average income in the same three-year period. Student households are not included. Source: Income and Wealth Statistics for Households (Statistics Norway 2017)

funded care, offered at different stages of children's early years and childhood.

The Norwegian family policy system has undergone several transformations over the last decades, with shifts along the cash-care dimension over time, where periods emphasizing cash support have been followed by phases of greater attention to childcare policy, and vice versa.

Furthermore, it is fair to say that family policy has been an arena of substantial political controversy. Over a long time period, many families were denied access to center-based care because of queues. Therefore, side by side, two markets for childcare existed in Norway – a market for care at day care centers and a market for other types of paid care, dominated by childminders. As a result, the cash-for-care reform was introduced in 1998, generating a heated debate about the rationale and directions of family policies. The reform introduced monetary compensation for not using subsidized care at childcare centers, for parents of children aged 1 or 2. The three main aims of the reform were to give parents more time to care for their children, to give families greater freedom of choice of care provider, and to equalize public support across care options (Ellingsæter 2003).[8] Given that cash-for-care essentially means a substantial price increase in ECEC relative to parental care, it was expected to reduce maternal labor supply. The reform did facilitate more time spent with parents, and resulted (as expected) in clear reductions in labor supply of mothers (Kornstad and Thoresen 2007; Rønsen 2009).

The cash-for-care support scheme of 2026 is restricted to one-year-olds and amounts to NOK 7,500 (USD 720; EUR 640)[9] per month, for a maximum of seven months. The benefit can be seen as smoothing the transition between parental leave (which lasts approximately one year) and formal childcare by giving families the opportunity to stay home after the parental leave expires.[10] Although the cash-for-care support is a cash transfer, it is essentially a negative subsidy to ECEC, in the sense that eligibility requires *not* using subsidized care at childcare centers. Because this support does not fit neatly into the cash-care dichotomy, we do not discuss the effects of changes to the cash-for-care scheme in the following.

In Norway, as in many European countries, governments are directly involved in the provision of childcare services.[11] In the Norwegian context, both private and public providers of childcare receive broadly equal public funding. Center-based care has steadily expanded, initially targeting children aged 3 to 6.[12] In the early 1970s, fewer than 5% of children in this age group were enrolled in such programs. By 2000, participation had risen to about 60%, and by 2024 it exceeded 97% (Statistics Norway 2025c), see Figure 2.4.

Throughout the late 1990s, early education programs for 1- and 2-year-olds became a key policy focus. In 2003, Norwegian municipalities were mandated to provide access to Early Childhood Education and Care (ECEC) centers and/or family daycare units, establishing a legal "right to childcare" for all children. This policy led to a substantial increase in ECEC slots for 1- and 2-year-olds. In 1999, approximately 30% of children in this age group attended ECEC, rising to about 80% in 2009, and currently approaching 90%. Figure 2.4 illustrates this trend for the period 2000–2024.

The 2003 "Kindergarten Agreement" (Barnehageforliket) legally anchored the incremental progression toward universal access, and also introduced a cap on parental fees. In 2004, a

[8] Essentially, the cash-for-care reform substantiates that there are different views on the role of parental care for preschool children.

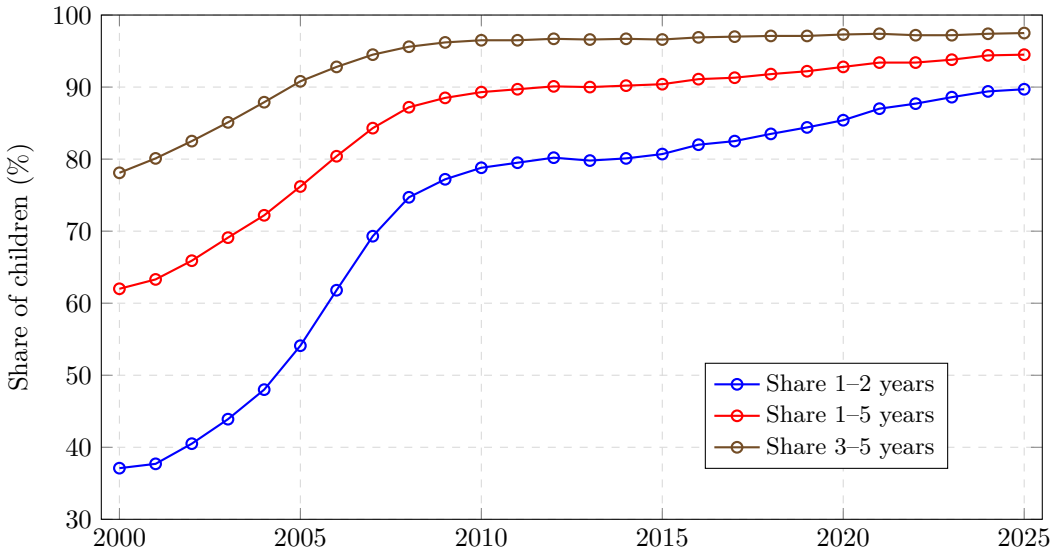
[9] Exchange rates for 2025 are used: 1 USD = NOK 10.40 and 1 EUR = NOK 11.72.

[10] Hardoy and Schøne (2013) report that effects are larger for non-Western immigrant mothers' labor market participation than for native mothers.

[11] In the U.S., childcare generally takes place in the child's home, the home of another individual, or in a center-based setting (Herbst 2023).

[12] Now covering ages 3–5, since from 1997 onward children start school in the year they turn 6.

Figure 2.4: Share of children in childcare centers, 2000–2025



Notes: Children in childcare centers, for all opening hours. Source: Statistics on kindergartens (Statistics Norway 2025c)

maximum fee for full-time care was introduced (BFD 2017), set at NOK 2,750 (USD 264; EUR 235) per month per slot. Since then, prices have decreased (in real terms) and from 1 August 2025, the maximum price was further reduced to NOK 1,200 (USD 115; EUR 102) per month per slot. This rate applies to the first child, while the fee for the second child is reduced by a minimum of 30%. Since 2024, fees are even lower in rural areas, corresponding to centrality categories 5 and 6, where the rate in 2025 is NOK 700 (USD 67; EUR 60) per month. In the northernmost part of the country (the county Finnmark and parts of the county Troms) the service is currently provided free of charge.

Parents benefit not only from low fees; in addition, a parental allowance in the income tax system allows parents to claim deduction for documented expenses related to childcare for preschoolers and after-school programs. Effectively, the government covers 22% of these costs, subject to a ceiling. In 2026, the maximum deduction is NOK 15,000 (USD 1,440; EUR 1,280) for the first child and NOK 10,000 (USD 960; EUR 850) for each additional child.

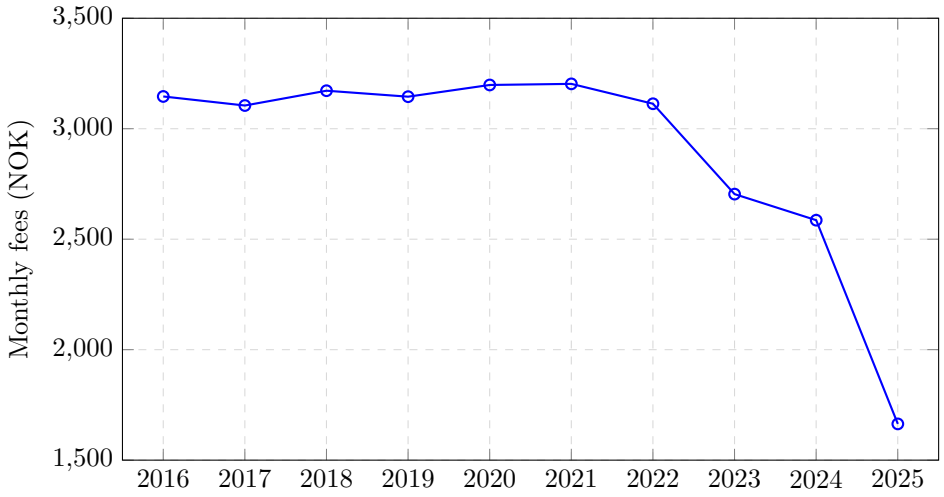
Furthermore, from 2015 onward there have been special regulations for low-income families. First, parental payment for one child is limited to six percent of household income. Second, 20 hours of care ("free core hours") are provided free of charge for four- and five-years-olds in low-income households. Both schemes rely on parents' gross income, including both labor income and capital income. From 1 August 2025, families with pre-tax income below NOK 220,000 (USD 21,000; EUR 18,800) are eligible for reduced fees, whereas the income threshold for "free core hours" is set at NOK 669,050 (USD 64,300; EUR 57,100).

Figure 2.5 presents the development in fee levels, expressed in 2025 NOK. In real terms, prices remained stable at slightly above NOK 3,000 (USD 290; EUR 260) until 2022, when they began to decline noticeably, reaching approximately NOK 1,650 in 2025. Parental fees cover only a small share of the operating costs of childcare centers. In 2023, fees covered approximately 11% of operating costs in municipally owned childcare centers and around 14% in privately owned centers (Lunder and Bjøru 2025). These shares are even lower in 2025, as parental fees were further reduced between 2023 and 2025 (see Figure 2.5).

With a median disposable income of more than NOK 1 million (USD 96,200; EUR 85,000) for

couples whose youngest child is aged 0–5, annual childcare costs of roughly NOK 20,000 amount to about 2% of their income. This places Norway among the countries with relatively low childcare fees, measured as the net cost of two children in childcare as a percentage of the couple's median earnings when both spouses work full-time (OECD 2020). Countries with lower costs according to this measure include Spain, Sweden, Germany and Italy, while countries such as the U.K., Japan, and the U.S. are found at the opposite end. Childcare subsidies have been expanded in recent years in several countries, operating through lower parental fees or increased availability of publicly provided care, including Canada (Quebec) (Baker, Gruber, and Milligan 2008), France (Givord and Marbot 2015), the Netherlands (Bettendorf, Jongen, and Muller 2015), and Spain (Nollenberger and Rodríguez-Planas 2015).

Figure 2.5: Average childcare fees per month, 2016–2025



Notes: Average monthly payments across all childcare slots, irrespective of geography, sibling discounts, free admission, or other adjustments. Nominal fees are adjusted by the Consumer Price Index (2025 NOK). Source: Household payments for kindergarten (Statistics Norway 2025b)

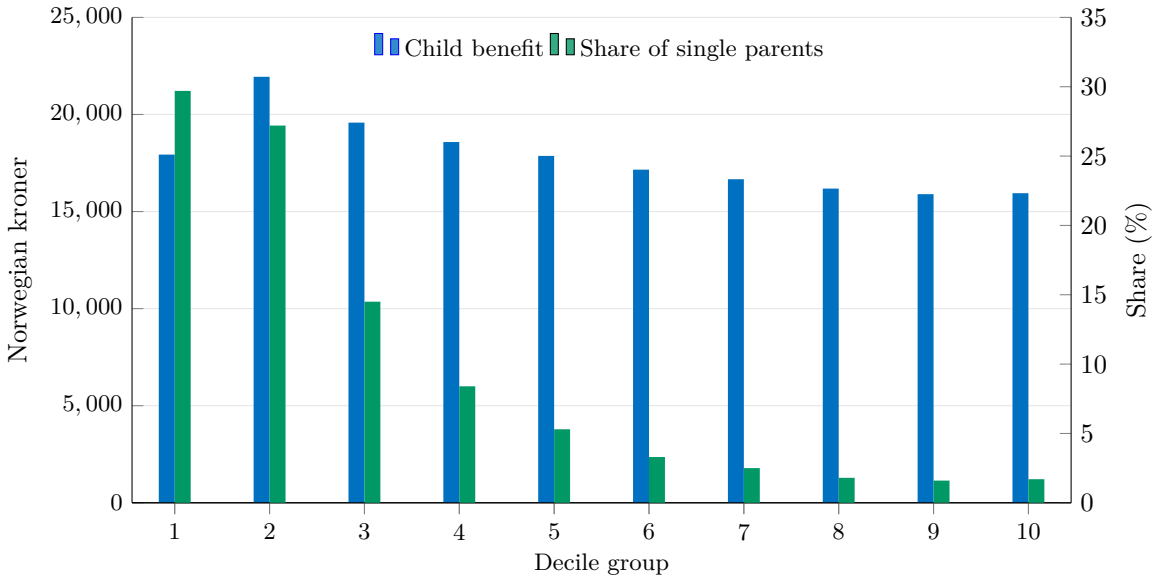
For many years, Norway maintained a relatively modest child benefit scheme, as policymakers kept the monthly rate nominally frozen at NOK 970 (USD 93; EUR 83) from 1996 to 2018. This decision was intended to help finance the expansion of subsidized childcare services. In 1996, the benefit for one child represented nearly 4 percent of the median household income for families with children, but by 2023 it had declined to just 1.5 percent. The reduced significance of the benefit over time has led to discussions about introducing means testing as a way to allocate limited resources more effectively (BFD 2017; BFD 2024; Rees, Thoresen, and Vattø 2023).

From 1 February 2026, the general child benefit rate is NOK 2,012 (USD 193; EUR 172) per month.[13] Lone parents are also entitled to extended child benefit and an infant supplement. The extended benefit provides an additional payment of NOK 2,572 (USD 247; EUR 219) per month, while the infant supplement is paid for children aged 0–3 at a monthly rate of NOK 712 (USD 68; EUR 61).

Focusing on results for 2023, Figure 2.6 presents the distribution of the child benefit, with households ranked by equivalence-adjusted disposable income. The figure shows that the benefit declines as income rises. This pattern is strongly influenced by the concentration of single parents, who receive additional support, at the lower end of the income distribution, as clearly illustrated in Figure 2.6.

[13] Families living in North Troms and Finnmark receive an additional NOK 512 (USD 49; EUR 44) per month.

Figure 2.6: Child benefit and single-parent share by household equivalent disposable income in decile groups. Households with children aged 1–5, 2023



Notes: The data source is the database of the tax-benefit model LOTTE (Jia, Larsen, Lian, Nesbakken, Nygård, Thoresen, and Vattø 2024) with both data and tax-benefit laws for 2023. Households are ranked based on household income adjusted by an equivalence scale, with individuals serving as the unit of analysis. The child benefit is equivalized using the same scale. We apply the EU equivalence scale, which assigns a weight of 1.0 to the first adult, 0.5 to each additional adult, and 0.3 to each child (under 14).

Finally, Figure 2.7 illustrates the development of labor force participation among parents between 2008 and 2024. The figure shows that fathers have consistently high and relatively stable participation rates over the entire period, regardless of the age of the child(ren). By contrast, more notable patterns emerge for mothers: among those with older children (6–17 years), participation declines slightly, from 86.5% to 83.9%, whereas participation among mothers with younger children (0–5 years) increases over the period, from 81.5% to 83.6%. This latter development is likely influenced by changes in family policies, such as increased availability and lower prices in childcare.

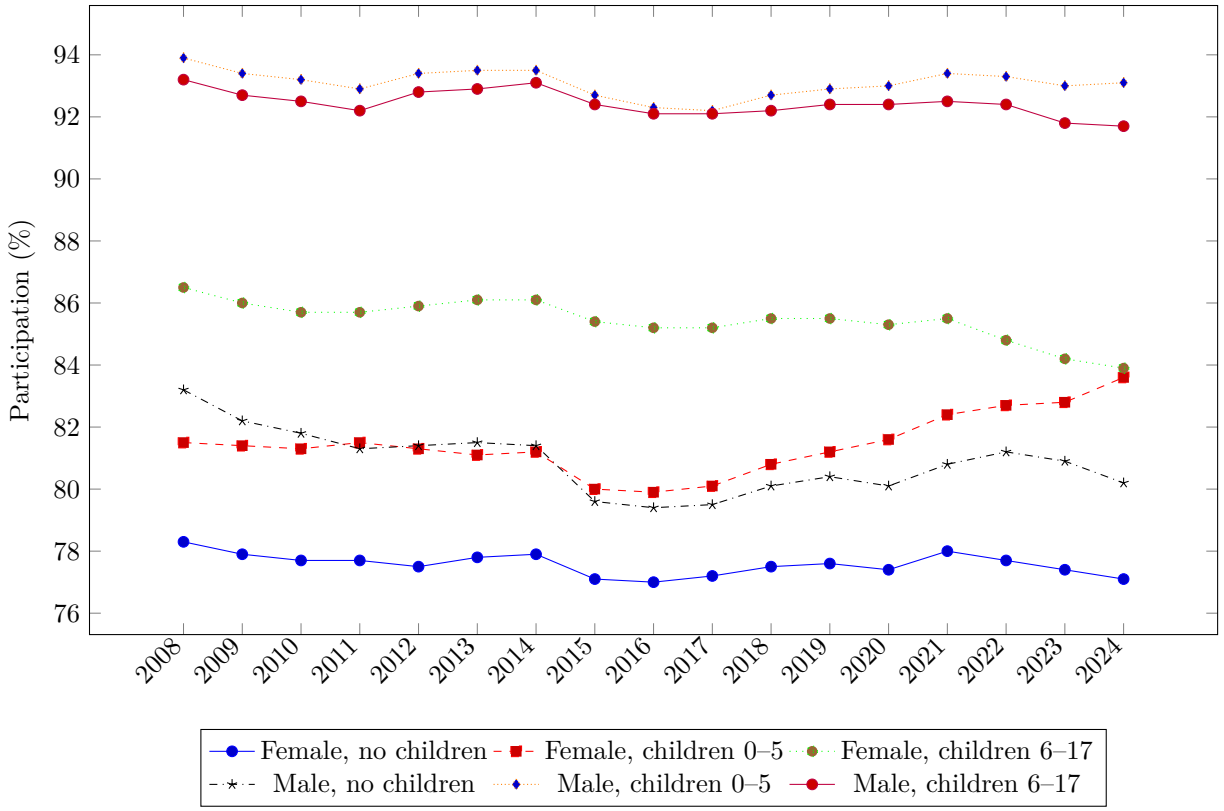
2.3 Who are still outside the ECEC?

Despite efforts to ensure that ECEC is accessible and affordable for all families, some still choose not to use these services. As shown in Figure 2.4, around 5.5% of children were not enrolled in childcare centers in 2025. As emphasized in this study, this group is pivotal to the policy discussion: how many families would enroll in ECEC if care were free, how much additional labor supply would parents provide, and what long-term improvements in child outcomes might result from expanded access? Before turning to the empirical evidence in the following sections, we first contrast non-user households with those already participating in ECEC. The comparison is based on information from the tax-benefit model used in this study covering the full population for 2023, (Jia, Larsen, Lian, Nesbakken, Nygård, Thoresen, and Vattø 2024), described in further detail in Section 4.1.[14]

First, Table 2.1 compares the two groups across key characteristics, including income, education, immigrant background, and the share of single parents. Overall, it highlights that non-users are disproportionately households with immigrant backgrounds, lower education, and lower income, and they are also more likely to be single-parent households. To assess whether the differences primarily reflect life-cycle differences, the table also reports the number of children and the age of

[14]The notes to Figure 2.8 provide further details on how childcare use is assigned to households.

Figure 2.7: Labor force participation of women and men by parental status and age of children, 2008–2024



Notes: Register-based statistics for families with and without children, based on the shared-dwelling definition of family. Adults are defined as individuals aged 25–61. Families with children are families in which at least one child is registered with a parent or parents. Families without children are either actually childless or families where the children have moved out. Source: Employment, education and welfare benefits (Statistics Norway 2025a)

the youngest child. These variables show only little difference between the two groups.

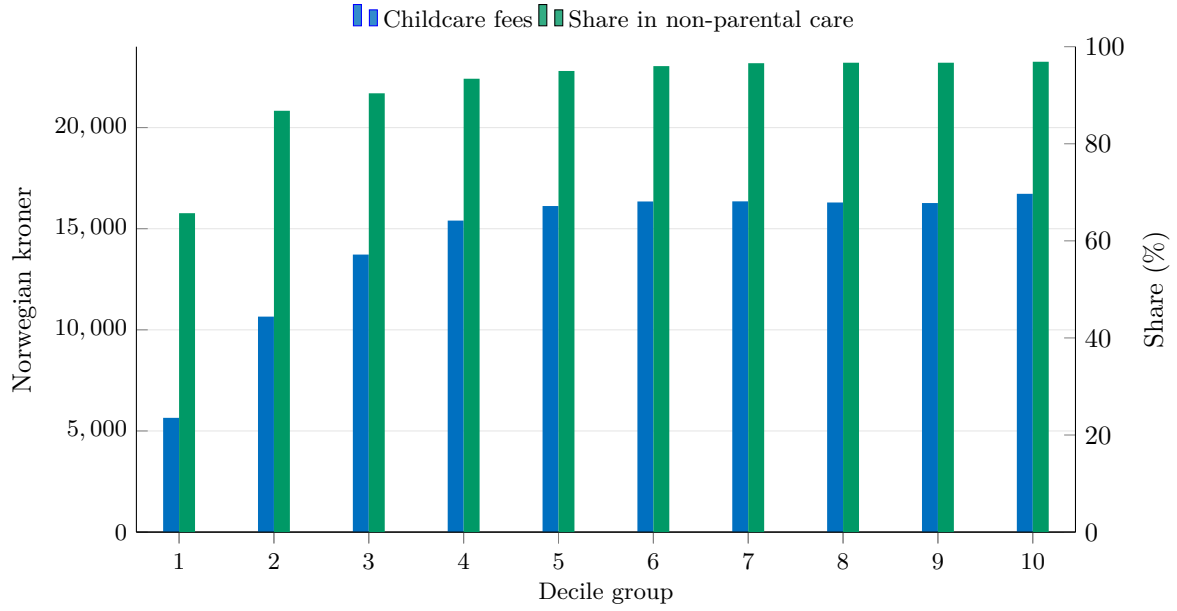
Table 2.1: Comparison of households using and not using ECEC

	Users	Non-users
Household disposable income (kr)	1 046 680	620 944
High education of mothers (%)	60.6	30.6
Single parents (%)	26.8	9.1
Number of children	1.25	1.15
Age youngest child	2.81	2.37
Immigrant (%)	25.8	59.6
Number of households	211 391	15 139

Notes: The sample consists of households with at least one child aged 1–5. The data source is the database of the tax-benefit model LOTTE (Jia, Larsen, Lian, Nesbakken, Nygård, Thoresen, and Vattø 2024), with both data and tax-benefit laws for 2023. As we do not have administrative register information on actual ECEC use, assignments of "users" and "non-users" are based on whether the household reports a positive parental allowance deduction in the tax return, which reflects childcare expenses.

Furthermore, Figure 2.8 presents the distribution of payments for non-parental childcare across the income distribution, and reports the shares of non-parental childcare use by income. The figure shows that payments increase with income, reflecting the relationship between childcare use and income-generating parental employment, as already seen in Table 2.1. The observed relationship between childcare payments and income is further shaped by income-dependent pricing and the provision of "free core hours" (see descriptions of the payment schemes in Section 2.2).

Figure 2.8: Childcare payments and share in childcare by income in decile groups. Households with children aged 1–5, 2023



Notes: The data source is the database of the tax-benefit model LOTTE (Jia, Larsen, Lian, Nesbakken, Nygård, Thoresen, and Vattø 2024) with both data and tax-benefit laws for 2023. As we do not have administrative register information on actual ECEC use, the share in non-parental care and the computed childcare fees are based on whether the household reports a positive parental allowance deduction in the tax return, which reflects childcare expenses. Households are ranked based on household income adjusted by an equivalence scale. The childcare fee is equivalized using the same scale. We apply the EU equivalence scale, which assigns a weight of 1.0 to the first adult, 0.5 to each additional adult, and 0.3 to each child (under 14).

3 Policy changes and labor supply responses of parents of preschool children

3.1 Decision-making in the family

In this section, we present key factors that underpin decision-making within the family, before turning to the empirical evidence on parents' responsiveness to policy changes. It can be useful to start with a rather general framework, as in the model of Blau and Currie (2006). The mother is the agent of the model, who requires childcare for every hour that she works. Some families have access to care by a relative, including the father or another family member, at no monetary cost. As long as the mother pools income with the relative, who is not employed, the utility function becomes $u(c, l, l_r)$, where c is consumption other than childcare, l is leisure of the mother, and l_r is leisure of the relative. It follows that the mother may mix unpaid, U, and paid care, H, during work: $h = U + H$, and childcare cost per hour of paid care, p, is not a simple deduction in the wage, w, but enters the budget constraint as given by $c = y + wh - pH$, where y is non-labor income. In the case of a strict fixed link between hours worked and hours of paid care ($h = H$), the budget constraint simplifies to $c = y + w(h - p)$.[15]

As we will return to shortly with respect to the behavioral model for Norway, there are several methodological challenges. One problematic matter is the lack of representation of "care quality", as it is not easily represented through observable characteristics. Care quality can be incorporated in the simple model through a hedonic price function: $p = \alpha + \beta q$, where q is quality and α and β are parameters (Blau and Currie 2006). However, representation of the quality of care component is often more complex. For example, there are usually several modes of care, as care in centers, care by a sitter (in the sitter's or child's home) and parents' own care, and quality is not homogeneous across modes.

Correspondingly, for example, Blau and Hagy (1998) apply a quality production function $Q = Q(T, F, A, I, X, h)$, where T is maternal childcare time, F is non-parental childcare time, A is a vector of attributes representing the quality of ECEC, I is a categorical variable representing different combinations of employment and childcare, X is a vector of observed exogenous variables and h represents unobserved household characteristics. In particular, when parents are allowed to choose unpaid non-maternal care, such as care by a grandmother, one has to explain why the free care alternative (grandmother) is not necessarily chosen. Different strategies to explain choices are followed in the literature. For example, Ribar (1995) introduces a dichotomous variable in the utility function, implicitly capturing the (dis)utility of unpaid care utilization.

Since care quality is positively affected by the amount of time parents spend with their children (Todd and Wolpin 2003; Bernal 2008), a key observability issue arises: in most datasets, it is difficult to distinguish between parents' "true leisure" and the time spent with their children. To address this, Thoresen and Vattø (2019) include a utility component that links the choice of "leisure" to preferences for ECEC. The identification of parents' valuation of non-parental care is further facilitated by the observation that some non-working parents nonetheless enroll their children in ECEC. This indicates that such care is perceived as early childhood education, rather than solely a custodial arrangement necessitated by dual parents' labor-market participation.

The relationship between time spent in work and in care concerns the extent to which there is a "fixed link" between working hours and the need for paid care. Much of the literature focuses on mothers' time in employment. As we will return to in the Norwegian context, Norwegian parents'

[15] The seminal paper by Heckman (1974) refers to this as a starting point in the case where quality in not an object of choice.

choice set typically excludes unpaid care options such as grandparental care. Instead, both parents are assumed to care for the child when not working – an assumption also used in Thoresen and Vattø (2019). In principle, parents may avoid using paid care altogether if their working hours do not overlap and both are available to provide care. In contrast, analyses that focus solely on mothers' decisions generally assume a fixed relationship between mothers' employment and the use of non-parental care, as in Kornstad and Thoresen (2007).

Particularly in countries with childcare provided through publicly subsidized systems, which is the case in many Western European countries, the availability of subsidized care could be more important for employment than the price. Kornstad and Thoresen (2007), Del Boca and Vuri (2007), and Narazani, Christl, and Figari (2024) are examples of studies that explicitly account for rationing in the modeling of parents' behavior. In Kornstad and Thoresen (2007), for example, there are differences in households' opportunity sets because of queues for access to subsidized childcare in Norway in the 1990s.

3.2 Evidence on labor supply responses

3.2.1 Responses to cash-based support

In general, there are differences between labor supply effects of family support in terms of cash and care. Increased cash-support, such as a raise in the child benefit, corresponds to increased non-labor income and therefore generates a standard income effect (Becker 1965). Depending on the magnitude of the income effect, labor supply is more or less reduced, as leisure is assumed to be a normal good (consumed more as income rises).[16]

The magnitude of the income effect remains unclear (Kimball and Shapiro 2008; Hines 2013). One strand of the research estimates income responses using data on lottery winners, see Imbens, Rubin, and Sacerdote (2001), whereas others investigate income effects related to the so-called Carnegie effect (Holtz-Eakin, Joulfaian, and Rosen 1993; Bø, Halvorsen, and Thoresen 2019). However, when accounting for adjustment costs (Chetty 2012) and the magnitude of income changes associated with conventional reforms, it remains uncertain whether evidence from lottery winnings or bequests is representative of the income effects of changes in the child benefit. Nonetheless, the empirical literature has largely found income effects along the intensive margin to be small (Saez 2002).

3.2.2 Responsiveness to childcare fees

In contrast to cash support, childcare subsidies can be seen as a policy instrument aimed at influencing parental choices. This could be explained by a form of paternalism (Currie and Gahvari 2008). Parents may not fully take into account the positive effects of childcare outside home, for example that such activities promote children's educational achievement (Currie and Gahvari 2008).

This argument admits other versions as well: since cash support necessarily flows through parents, who may provide suboptimal financial support to their children,[17] one might argue that it is safer to target children directly through care. However, results from a U.S. experiment suggest that households receiving high-cash gifts spent more money on child-specific goods and devoted more time to child-specific early learning activities than a low-cash gift group, with few changes evident in other core household expenditures (Gennetian, Duncan, Fox, Halpern-Meekin, Magnuson, Noble, and Yoshikawa 2024).

[16] However, as Leite Mariante (2025) demonstrates, income effects can raise employment if transfers alleviate liquidity constraints on paying for care.

[17] In this perspective it is worth noting that empirical evidence suggests that children may benefit from the child benefit being transferred to mothers (and not to fathers) (Lundberg, Pollak, and Wales 1997).

Another rationale comes from viewing in-kind programs as a way to improve the efficiency of the tax system. The basic idea in this literature is that taxes distort labor supply, whereas the provision of in-kind goods that are complements to labor can mitigate this distortion (Boadway and Marchand 1995; Blomquist and Christiansen 1995).

It follows that childcare subsidies (i.e., lower fees) are generally expected to increase labor supply. For parents who initially do not use childcare and are out of the labor market, lower fees raise the incentive to enter employment by increasing the net return to work. For parents already using childcare, the mechanism depends on the fee structure: if out-of-pocket fees vary with usage (e.g., by hours or days), a fee cut raises the net return to additional work (substitution effect), whereas the income effect works in the opposite direction and reduces hours. With flat (lump-sum) fees, a fee cut operates primarily through the income effect and therefore does not predict higher hours. Next, we briefly review the literature on the relationship between parental labor supply and the cost of childcare.

When paid care acts as a work-contingent cost, childcare fees p either operate as a fixed cost of working or reduce the effective hourly wage from w to $w - p$ when fees vary with usage; in both cases p raises the reservation wage. Consequently, a fee cut lowers the reservation wage, w_{res}, and increases participation in the same direction as a wage increase. In a reservation-wage framing, Akgunduz and Plantenga (2018) refer to $w_{\text{res}} = \frac{U_l + U_q Q_l}{U_c + U_q Q_c}$, which implies that a higher marginal utility of leisure, U_l, and higher maternal care quality, Q_l, raise the reservation wage, whereas a higher marginal utility of consumption goods, U_c, and a larger (marginal) contribution to child quality from consumption, Q_c, lower the reservation wage. Literature surveys differ in terms of the behavioral margins they focus on. Both Morrissey (2017) and Akgunduz and Plantenga (2018) survey the evidence primarily with respect to the labor force participation elasticity, $e_{\text{ext}} = \frac{\partial P}{\partial w} \cdot \frac{w}{P}$, where P is the labor force participation rate and w is the gross wage.

Importantly, the empirical evidence on labor supply effects of childcare subsidies should be interpreted within the context of the institutional setting from which the response estimates are derived. In contexts in which childcare is largely private and families' out of pocket costs vary widely, as in the United States, changes in the cost of care may strongly influence parents' employment, whereas when care is mostly publicly provided and potentially rationed, such as in several Western European countries, the availability of care may be a more significant determinant of parental employment (Brilli, Del Boca, and Pronzato 2016; Morrissey 2017). With respect to Norway, as described in Section 2, the sector has undergone substantial changes over recent decades, which have also influenced Norwegian parents' responses to childcare fees.

The work by Havnes and Mogstad (2011a) illustrates the role of availability. They exploit the large-scale expansion of subsidized publicly provided center-based childcare in Norway during the 1970s – a period characterized by severe rationing in which informal care arrangements (friends, relatives, and unlicensed caregivers) met excess demand. As coverage of subsidized care increased from 10 to 28 percent, Havnes and Mogstad (2011a) report no employment effect for married mothers, and conclude that the expansion in these early years primarily shifted children out of informal care arrangement into the publicly provided care alternatives, without affecting maternal working hours.

Next, we turn to a study of price responsiveness in Norway in the early 1990s. Black, Devereux, Løken, and Salvanes (2014) exploit birth-cohort variation and income-based discontinuities in childcare prices to identify the effects of childcare subsidies on parental behavior and children's academic achievement. They find very small and statistically insignificant effects on childcare utilization and on parental labor force participation. A possible explanation for this limited

response is that access to care was still rationed in this period, such that price discontinuities had smaller effect when availability was the binding constraint.

The relationship between rationing and price sensitivity is further elaborated in the Norwegian context in Kornstad and Thoresen (2007).[18] They estimate a structural discrete choice model using 1998 data and use the estimated model to simulate labor supply behavior elasticities. Information on access to ECEC in the data determines each household's choice set, which is then used to simulate labor supply effects in a hypothetical non-rationing scenario. Results with and without the rationing device are not so different, but they indicate that mothers' labor supply would be slightly less elastic if queues at daycare centers were eliminated.

The largest effects of changes in childcare fees (for Norway) are reported by Hardoy and Schøne (2013), who use the changes implied by the 2003 "Kindergarten Agreement" (see Section 2.2) to generate identifying variation and report an employment elasticity (with respect to price) of -0.25. The authors note that, because capacity increased at the same time, the positive labor supply effect may reflect both lower prices and higher availability. Recent Norwegian evidence, such as Thoresen and Vattø (2019) and Vattø and Østbakken (2024), points to relatively small effects of childcare fees. Thoresen and Vattø (2019) discuss labor supply effects using 2010 data, a year when queues had essentially been eliminated, and find low responsiveness to further price reductions. Consistent with this, Lundin, Mörk, and Öckert (2008), using data for Sweden, argue that in settings with well-developed and highly subsidized childcare systems, further reductions in childcare prices have limited effects on mothers' labor supply. Similarly, Vattø and Østbakken (2024) find low responses of introducing a means-tested scheme that offers lower childcare prices for low-income families in Norway. The authors argue that because means-testing raises the effective marginal tax rate in the phase-out range, this labor supply effect can offset the expected positive effect on labor supply of reduced prices for low-income families.

Internationally, estimates of maternal labor supply effects vary widely across countries and over time; see surveys of maternal labor supply effects in Cascio, Haider, and Nielsen (2015), Blau and Currie (2006), Del Boca (2015), Morrissey (2017), Akgunduz and Plantenga (2018), Hotz and Wiswall (2019), and Herbst (2023). However, elasticity estimates appear to have diminished over time (Blau and Currie 2006; Akgunduz and Plantenga 2018), a pattern corroborated by findings from several studies examining recent reductions in childcare fees in European countries, see Bettendorf, Jongen, and Muller (2015), Geyer, Haan, and Wrohlich (2015), Givord and Marbot (2015), Brewer, Cattan, Crawford, and Rabe (2022), Huebener, Pape, and Spiess (2020), and Busse and Gathmann (2020). All these studies indicate that reductions in childcare costs will result in fairly modest increases in maternal employment.[19] As Blau and Currie (2006) summarize (p. 365): "On the whole then, there is little evidence that in-kind programs have positive short run effects on labor supply that would tend to offset the deadweight losses associated with the tax system."

[18] Considerable attention has also been devoted to the effect of rationing in Italy and Germany, see for example Del Boca and Vuri (2007), Del Boca, Pronzato, and Sorrenti (2016), and Figari and Narazani (2020) for Italy and Müller and Wrohlich (2020) for Germany. For example, Figari and Narazani (2020) report that childcare coverage is estimated to be more effective in enhancing labor incentives than decreasing existing childcare costs, for the same budgetary cost.

[19] According to Akgunduz and Plantenga (2018), the European (and Canadian) literature shows a mean employment elasticity with regard to child care prices of about -0.15, whereas the mean elasticity of the United States is −0.35.

4 Effects of policy changes on poverty

4.1 Non-behavioral microsimulation model

Next, we employ Norwegian microsimulation models to analyze the effects of policy changes on poverty. We employ tools belonging to the LOTTE-family of models (Jia, Larsen, Lian, Nesbakken, Nygård, Thoresen, and Vattø 2024). We examine how different families respond by using structural labor supply models estimated for two groups: single mothers and couples.[20] These behavioral responses are then combined with the mechanical, non-behavioral effects.

For the mechanical effects, we use Statistics Norway's tax-benefit model LOTTE-Skatt. This is a detailed tax-benefit calculator used to simulate the direct effects of tax and benefit changes on tax revenues and distributional outcomes. It consists of three core components: individual-level annual income data, a comprehensive set of tax and child benefit rules, and a simulation program that applies these rules to each individual record. In practice, the model draws on many of the same data sources as those used in the Income and Wealth Statistics for Households, which provide complete coverage of the Norwegian population (Statistics Norway 2019). For tax simulation purposes, the most important data source is the Register of Income Tax Returns.

Information from several administrative registers is linked together using a unique personal identification number. For example, information on pensions and social transfers is obtained from the Norwegian Labour and Welfare Administration, while data on educational attainment are obtained from the Register of the Population's Level of Education. To construct household units within the model, we use a household register based on the national address register, which includes all residential dwellings in Norway. This means that we have information about all household members and their age, which is important for the simulations of family support schemes.

This study uses a version of the model that relies on 2023 data and tax-benefit rules. The baseline scenario, which is used to compare the free childcare and increased child benefit options for young children aged 1 to 5, reflects childcare prices and the tax-benefit system of 2023. This implies that the maximum fee for full-time care is NOK 3,000 (USD 290; EUR 260) per month in the present study.[21]

A limitation of the non-behavioral empirical investigation is that we do not have administrative register data on actual ECEC attendance. As a result, the tax-benefit model used in this study does not contain direct information on families' childcare use. However, since parents' childcare expenses are pre-filled in the income tax returns as households can claim tax deductions for documented childcare expenses, we can infer ECEC use indirectly. We have established that, when combined with information on age of the children, these deductions serve as a strong predictor of the use of non-parental childcare arrangements.

For the child benefit, we use information on the number and ages of children. Since the amount of support depends on lone parent status, see Section 2.2, we distinguish between couples and parents eligible for additional support as single-parent households. This classification is legally complex – for example, a cohabiting mother is not considered a lone parent. We use indicators from the original data – provided by the Norwegian Labour and Welfare Administration – to determine parental status, specifically whether an individual receives child benefits under the lone-parent scheme.

[20] The number of observations for the third group, single fathers, is too small.

[21] Recall that as of 1 August 2025, the maximum fee is NOK 1,200 (USD 115; EUR 102), see Section 2.2.

4.2 Behavioral simulation models for parents of preschool children

4.2.1 Joint decision on employment and childcare in discrete choice

We estimate joint labor supply and childcare choice models to simulate behavioral effects of family policy reforms, building on the methodological approaches of Kornstad and Thoresen (2007), Apps, Kabátek, Rees, and Soest (2016), Gong and Breunig (2017), and Thoresen and Vattø (2019). We estimate two models, for couples with preschool children and single mothers. In the estimation of the behavioral models we use the Child Care Survey for 2023. In the following we outline the behavioral model for couples.

The couple is assumed to derive utility from consumption (C), leisure (L), and childcare quality (Q), represented as $U = u(C, L, Q)$. As discussed in Section 3.1, quality of care remains a central challenge in the literature. Parents may face multiple care alternatives, each with different quality characteristics. In particular, we draw on Thoresen and Vattø (2019), who endogenize both parents' roles as alternative caregivers to non-parental care (ECEC). Furthermore, when both parents' working hours are modeled endogenously and work schedules are flexible, their working times may not overlap.[22] Consequently, there is no longer a fixed relationship between parental working time and the child's time in non-parental care; see discussion in Section 3.1.

However, for the purposes of this study, we do not use the most detailed version of the model presented in Thoresen and Vattø (2019). Following Vattø and Østbakken (2024), we instead employ a simplified version, here estimated using updated data from the 2023 Child Care Survey. In practice, we obtain behavioral simulation results by extrapolating the parameters estimated from the survey data to the full population of the non-behavioral tax-benefit model.

In the following, we present a decision model based on a discrete choice framework grounded in random utility theory (McFadden 1984). Within this framework, the modeling approach draws on prior contributions that frame labor market decisions as a "choice of job" (Dagsvik 1994; Dagsvik and Jia 2016). This approach is extended to capture the choices faced by parents of preschool children, incorporating childcare options as part of their decision-making.

The couple makes decision by selecting job and care alternatives from a set of combinations of jobs and childcare slots, where $z = 1, 2...$ indexes the (triple) combinations of childcare alternative and job pairs (for mother and father). Let $B(h_m, h_f, q)$ denote the couple's set of available triplets of job and care alternatives, with working hours h_m and h_f and hours of childcare q, allowing for differences in labor market opportunities between mothers (m) and fathers (f).

In this framework, each job opportunity is characterized by a whole range of latent non-pecuniary attributes, reflecting factors related to job satisfaction and social network, in addition to observed variables, such as wages and working hours. Correspondingly, the opportunities in the market for childcare are characterized by fees, hours of care, and observed and unobserved attributes associated with quality of care.

Consumption, C, for a given job and childcare combination is defined by disposable income, $C = \phi(w_m h_m, w_f h_f, p(q), I)$ where $\phi(\cdot)$ is a function which transforms income from work, $w_m h_m$ and $w_f h_f$, non-labor income, I, and childcare costs, $p(q)$, into disposable income, given that w_m and w_f are the offered wage rates for the mother and father, respectively. Note that childcare costs depend on hours of care. We return to how this dependence is operationalized below.

Then, it follows from standard results in discrete choice theory that the couple will choose

[22] Recall from Section 3.1 that some contributions in the literature classify fathers' care simply as care by a relative, treating it in the same way as care provided by grandparents.

combination z, consisting of the job and care alternatives, z_f, z_m, and z_q, if the utility of this combination, $\nu(\phi(w_m h_m, w_f h_f, p(q), I), h_m, h_f, q) + \epsilon(z_m, z_f, z_q)$ is higher than or equal to other alternatives. In other words, the utility of a couple choosing jobs with working hours h_m and h_f and care hours q can be written as:

$$V(h_m, h_f, q) = \max_{z_f \in B(h_f), z_m \in B(h_m), z_q \in B(q)} \nu(\phi(w_m h_m, w_f h_f, p(q), I), h_m, h_f, q) + \epsilon(z_m, z_f, z_q), \quad (4.1)$$

where ν is the deterministic part of the utility function, and $\epsilon(z_m, z_f, z_q)$ are i.i.d. random terms with cdf $\exp(-\exp(-x))$.

Importantly, this modeling approach takes into account that the household faces latent choice restrictions both in the market for childcare and in the labor market. For example, in the labor market, there are more job offers characterized by full-time working hours, and similarly, there are more available full-time slots in childcare centers. Essentially, identification relies on the fact that observed labor supply behavior reflects both parental preferences and latent choice constraints – opportunity sets – in the labor market and with respect to childcare availability. As Kornstad and Thoresen (2007) demonstrate, this feature of the model is particularly important for earlier periods in Norway, when access to ECEC was limited and queues were common. As we do not have information on each household's individual choice set of job opportunities and childcare alternatives, these must be estimated jointly with the preference parameters.

If we assume that job and care availability can be represented by an opportunity function $b(h_m, h_f, q)$, the probability that the couple chooses the combination (h_m, h_f, q) is

$$\psi(h_m, h_f, q) = \frac{\exp(\nu(\phi(w_m h_m, w_f h_f, p(q), I), h_m, h_f, q) + \log b(h_m, h_f, q))}{\sum_{d \in D} \sum_{j \in J} \sum_{k \in K} \exp(\nu(\phi(w_m d, w_f j, p(k), I), d, j, k) + \log b(d, j, k))}, \quad (4.2)$$

where D, J, and K denote the sets of feasible hours alternatives for the mother (h_m), the father (h_f) and childcare (q), respectively. The function $b(h_m, h_f, q)$ parameterizes latent availability for each triple, allowing full-time options to be more prevalent than part-time options in the labor market.

4.2.2 Econometric specification, data, and estimation results

To estimate the model parameters, we draw on data from the Child Care Survey 2023, which covers childcare preferences for approximately 9,000 households with children aged 1–9 (Evensen, Foss, Haraldsrud, and Østhus 2023; Krawczynska 2023). The survey includes detailed information on family composition, the main activity and labor market status of parents, socioeconomic background, and the mode and use of childcare. Data on reported income and tax payments are obtained from the Income and Wealth Statistics for Households (Statistics Norway 2017) and are linked to the Child Care Survey data using personal identification numbers. Given our focus on policies for families with preschool children, we restrict the dataset to households with at least one child in the age group 1–5 years.

As the decision model applies to a standard wage earner framework, the analysis is limited to parents who are either wage earners or "potential wage earners". The latter category refers to stay-at-home parents who are not currently registered in paid employment in our data but may choose to enter the labor market, for example, as a result of policy changes. These individuals are

not registered as students, unemployed, self-employed, or recipients of parental leave or disability benefits. To model the behavior of individuals in these other groups, alternative model specifications would be required, since their decision-making context differs from that of a typical wage earner.

We specify the deterministic component of the utility function, following the approach of Vattø and Østbakken (2024), which in turn is inspired by Thoresen and Vattø (2019). The utility function is decomposed into three components: $\nu(C, h, q) = \nu_1(C) + \nu_2(h) + \nu_3(h, q)$, corresponding to consumption, leisure, and a "childcare interaction term", respectively. As discussed in Section 3.1, capturing "quality in care" in this type of modeling is particularly challenging. In the present model, the term $\nu_3(h, q)$ introduces an interaction capturing how preferences for time in childcare centers vary with parents' leisure (non-working) time. Vattø and Østbakken (2024) report a negative parameter estimate for a specification of $\nu_3(h, q)$ quite similar to the present one, which we interpret to mean that households derive less utility from non-parental childcare as parental leisure increases.

Then we use the following specifications for the three components of the utility function,

$$\nu_1(C) = \alpha_0 \left(\phi(w_m h_m, w_f h_f, p, I)\right) + \alpha_1 \left(\phi(w_m h_m, w_f h_f, p, I)\right)^2, \tag{4.3}$$

$$\nu_2(h) = \beta_1 X_m \log(\overline{T} - h_m) + \beta_2 X_f \log(\overline{T} - h_f) + \beta_3 (\log(\overline{T} - h_m) \log(\overline{T} - h_f)), \tag{4.4}$$

$$\nu_3(h, q) = (\gamma_0 X_q + \gamma_1 \log(\overline{T} - h_m) + \gamma_2 \log(\overline{T} - h_f))q, \tag{4.5}$$

where X_m, X_f, and X_q denote sets of observable taste-modifiers of preferences for mothers' leisure, fathers' leisure, and childcare. We let both X_m and X_f include a constant and dummies for low and high education, whereas X_q includes a constant and the age of the child. $\overline{T}$ denotes a constant for total hours available (assumed to be 80 hours per week), which can be split into working hours and leisure.

Furthermore, given that our framework builds on families making choices from a set of combinations of jobs and childcare slots, we also specify the representation of opportunities: $\log b(h_m, h_f, q) = g_m h_{m,full} + g_f h_{f,full}$, where $h_{m,full}$ and $h_{f,full}$ are equal to 1 in the full-time working alternative and 0 otherwise. When operationalizing the choice set, we let couples choose their preferred combination from a set of discrete options defined by various working hours and types of non-parental care.

The discrete approximations of the set of feasible working hours and care hours options for the couple, as represented by d, j and k, see Equation (4.2), are obtained from 27 discrete combinations of work and care options, representing three options for each parent's working hours (non-participation, part-time, and full-time) and three options for childcare (home care, part-time care, and full-time care).[23] Table A4 in the Appendix reports the model estimates for couples. The estimated parameters align with theoretical expectations, showing positive marginal preferences for both consumption and leisure.

So far, we have focused on the choice model for couples. However, the same modeling framework is applied to derive responses for single mothers. It follows that single mothers face nine combinations

[23] 0, 20 [1–34], and 37.5 [35+] for working hours and 0, 30 [1–34], and 41 [35+] for hours of care.

of care and work – three discrete categories for working hours combined with three alternatives for childcare use. Estimates for the single mother model are reported in Table A5 in the Appendix.

Following standard convention, individual wages are assigned to agents based on estimates from separate wage regressions for mothers and fathers. The estimation results are shown in Table A2 and Table A3 in the Appendix, for couples and single mothers, respectively. We estimate wage elasticities of 0.32 for mothers in couples, 0.18 for fathers in couples, and 0.43 for single mothers. The ECEC participation elasticities with respect to child care price are -0.01 for couples (both mothers and fathers) and -0.02 for single mothers.

4.3 New policies and effects on child poverty in the short run

4.3.1 Free childcare or increased cash transfers

We now turn to the simulation results of the policy changes. Since the main focus is on assessing the effectiveness of support – both in cash and in kind – in reducing poverty, we compare two policy alternatives that are calibrated to have approximately the same ex-ante fiscal cost, before accounting for behavioral responses. Recall that the baseline for evaluating the two policy alternatives is the tax-benefit scheme for 2023.[24] The first alternative eliminates parental fees in ECEC ("free care"), while the second raises the child benefit for families with children aged 1–5 by an amount chosen to match the same ex-ante fiscal cost. The two alternatives are:

A. The care alternative – free care: Introduce free childcare for all by increasing subsidies to ECEC. Among users of non-parental care, this corresponds to an average annual cost reduction of approximately NOK 33,000 (USD 3,200; EUR 2,800) per child and about NOK 41,000 (USD 3,900; EUR 3,500) per household. Total costs: NOK 8.7 billion (USD 840 mill; EUR 740 mill).

B. The cash alternative – increase in the child benefit: Increase unconditional cash transfers (child benefits) to families with children aged 1–5. The transfer is raised by approximately NOK 31,000 (USD 3,000; EUR 2,600) per child per year, or about NOK 38,000 (USD 3,700; EUR 3,300) per household per year. Total costs: NOK 8.7 billion (USD 840 mill; EUR 740 mill).

4.3.2 Results on child poverty

First, we simulate the non-behavioral effects of the two policy alternatives, A and B, on child poverty. This means that in this step we hold parental wage income and childcare usage fixed. Under alternative A, child poverty is recalculated by eliminating childcare fees and computing the resulting mechanical increase in disposable income (net of childcare expenses). Under alternative B, disposable income increases through a higher child benefit.

The effects on poverty from the non-behavioral simulations are presented in Table 4.1. Both policy alternatives lead to clear reductions in child poverty, but the increased child benefit alternative yields a larger effect than free childcare. This reflects that families who do not utilize ECEC – and therefore do not benefit from free care – are disproportionately concentrated at the lower end of the income distribution, as discussed in Section 2.3. This result is also influenced by the fact that childcare fees for low-income households using ECEC are already reduced (or covered through free core hours); consequently, abolishing fees yields only a small increase in disposable income for these families.

Next, we account for behavioral responses when estimating the impact on poverty. Table 4.2 reports how the two policy alternatives influence parental labor supply – separately for couples and

[24] The maximum price for childcare in 2023 was NOK 3,000 (USD 290; EUR 260) per month per child.

Table 4.1: Mechanical effect on child poverty of alternative A and B. Households with children aged 1–5, 2023

	Reference scheme	A. Free childcare	B. Increased child benefit
Child poverty rate	14.4	12.2	11.5

Notes: The poverty rate is calculated using equivalized household disposable income for households with at least one child aged 1–5. The poverty threshold is defined as 60% of the median income within this group. The annual poverty rate in the reference scheme is higher than in Figure 2.3, because the figure reports poverty rates based on three-year income averages.

for single mothers. We see that, as expected, the free childcare alternative implies an increase in labor supply for both mothers and fathers in couples and for single mothers. The use of non-parental childcare becomes more attractive and increases by around one percentage point. This makes it more attractive to enter labor market participation and to increase working hours among those already employed. By eliminating the income dependent fee schedule – and with it the high effective marginal tax rates – the freecare option increases the net return to additional hours, which raises intensive margin labor supply among those already employed. Although the fee reduction simultaneously induces an income effect among current ECEC users that works toward fewer hours, this effect is smaller, so the net impact on labor supply is positive.

By contrast, the higher child benefit option is driven solely by the income effect and leads to a small decrease in labor supply among couples. As discussed above, in Section 3.2, when leisure is a normal good, increased income implies higher "consumption of leisure" and a decrease in labor supply.[25] However, we see that the effect of increased child benefit on labor supply is modest.

Table 4.2: Behavioral effects on parental earnings and childcare participation of alternative A and B. Couples and single mothers

	Weekly working hours, mothers	Weekly working hours, fathers	Childcare use (share)
Couples			
Reference scheme	23.6	31.4	0.92
A. Free childcare	23.8	31.6	0.93
B. Increased cash transf.	23.5	31.3	0.92
Single mothers			
Reference scheme	15.1		0.93
A. Free childcare	15.4		0.94
B. Increased cash transf.	15.1		0.93

Notes: Estimation results obtained from behavioral model (estimates based on data from the Child Care Survey 2023), and simulated for the same sample as used in the non-behavioral tax-benefit model. Child care use is measured as share of children in ECEC.

In Table 4.3 we present the effects on poverty when behavioral responses in parental labor supply and childcare participation are accounted for. As noted, these behavioral effects are small, so the resulting poverty effects closely resemble the direct effects shown in Table 4.1. Accounting for behavioral responses in addition to direct (mechanical) effects yields different child poverty implications for the two policy alternatives. The effect of increased child benefit has very little effect on behavior, as seen in Table 4.2. Correspondingly, adding behavioral effects to the direct effects results in only a very small change in child poverty: the child poverty rate reported in Table 4.3 is similar to that reported in Table 4.1 (11.5 versus 11.6).

In contrast, the behavioral effects of free childcare have a more pronounced effect on child poverty.

[25] Of course, as discussed in Section 3.1, a complicating factor is that "leisure" involves care of children.

First, Table 4.2 shows that more families let their children enter ECEC – for couples the childcare use increases by close to one percentage point.[26] As free childcare in particular increases working hours at low initial levels of income, the poverty rate goes down from 12.2 to 11.9 when behavioral effects are included, as seen by comparing results of Table 4.1 and Table 4.3.[27] This implies that, once behavioral effects are taken into account, the free childcare alternative reduces the poverty rate and brings it closer to the increased cash-transfer alternative. Overall, however, the main finding is that the cash transfer performs slightly better in reducing poverty than lowering childcare prices. This advantage stems from the social nature of childcare services: non-users do not benefit from free or subsidized care and therefore remain worse off than families who do.

Table 4.3: Total effects on child poverty of alternative A and B, mechanical and behavioral effects. All households with children aged 1–5, 2023

	Reference scheme	A. Free childcare	B. Increased child benefit
Child poverty rate	14.4	11.9	11.6

Notes: The poverty rate is calculated using equivalized household disposable income for households with at least one child aged 1–5. The poverty threshold is defined as 60% of the median income within this group. The poverty rate in the reference scheme is higher than that shown in Figure 2.3, as the figure reports results based on three-year income averages.

Finally, Table 4.4 compares the distributional impacts of the two policy alternatives across income deciles. The results highlight a clear trade-off between the two measures. Increasing child benefits provides relatively greater support to households at lower income levels, whereas the free childcare alternative is, on average, less advantageous for low-income households since families that do not use childcare services receive no direct benefit. At the same time, free childcare leads to increased parental labor supply, and this effect is to some extent more pronounced among lower-income households.

Table 4.4: Mechanical, behavioral and total effects by income decile groups under the two policy alternatives. Households with children aged 1–5, 2023

	A. Free childcare			**B. Increased child benefit**		
Decile group	**Mechanical**	**Behavioral**	**Total**	**Mechanical**	**Behavioral**	**Total**
1	9,600	2,400	12,000	19,400	-300	19,100
2	16,400	2,500	18,800	19,200	-400	18,900
3	18,700	2,400	21,100	18,800	-400	18,400
4	19,700	2,300	22,000	18,700	-400	18,200
5	19,900	2,200	22,100	18,600	-500	18,100
6	19,900	2,000	21,900	18,400	-500	18,000
7	19,900	1,800	21,700	18,200	-400	17,800
8	19,900	1,700	21,600	18,100	-400	17,600
9	19,900	1,500	21,400	18,100	-400	17,600
10	20,000	1,100	21,100	18,100	-500	17,600

Notes: The sample includes households with at least one child aged 1–5. Income is measured as equivalized disposable household income after childcare expenses. Households are ranked into decile groups, from lowest (decile group 1) to highest (decile group 10), with approximately 22,680 households in each decile. All values refer to annual changes in equivalized disposable income (NOK).

[26] Gunnes, Thoresen, Solbakken, Vattø, and Yndesdal (2026) find results that support similar estimates when exploiting quasi-experimental evidence, for municipalities in the northernmost part of the country where free care was introduced in 2024.

[27] It should also be noted that because poverty effects operate through changes in the income distribution and the median income, fully understanding the mechanisms underlying the results is challenging.

5 Cash and care: effects on child outcomes

In this section, we draw on existing evidence on effects of cash (income transfers) and care (ECEC) on child development outcomes in the short and longer term. Recall that both policy alternatives imply higher income for many families: universally under the child benefit option, and for fee-paying families under the free-care option. We emphasize studies with the strongest relevance for the policies we evaluate, and in particular (where available) those from Norway – while highlighting their broader relevance.

5.1 Evidence on how income affects child development

There are a number of relatively recent, excellent, reviews on addressing the causal effects of income in general and cash transfers specifically, on short and long term child outcomes (Duncan, Magnuson, and Votruba-Drzal 2015; Page 2024; National Academies of Sciences, Engineering and Medicine 2019; Jaffee, Lin, Fowle, and Reina 2025; Ananat and Garfinkel 2024; Cooper and Stewart 2020). In the following, we will highlight relevant conclusions from these, and review some more recent studies not covered in them.

Page (2024) provides a comprehensive review of 25 studies from the economics literature, most of which are also covered by the report of the National Academies of Sciences, Engineering and Medicine (2019). In her reading, 17 of the studies show evidence suggesting that income transfers have the potential to improve child outcomes in low-income families with "magnitudes [that] are economically important" (p. 923) – while also noting a potential publication bias in the field. Her review draws on studies with plausible exogenous sources of changes in family income. For example, there are studies of lottery winners (e.g., Cesarini, Lindqvist, Östling, and Wallace (2016)) and studies exploiting a quasi-exogenous increase in household income generated by unconditional per-capita transfers from casino profits (e.g., Akee, Copeland, Keeler, Angold, and Costello (2010)). Other studies identify effects through exogenous variation in government programs like the Earned Income Tax Credit (e.g., Dahl and Lochner (2012)) and other cash transfer programs (e.g., Aizer, Eli, Ferrie, and Lleras-Muney (2016)). Of relevance to cash transfers, Page (2024) concludes that nearly all studies finding positive gains in child outcomes come from income transfers that can be expected to last over many years (i.e., income gains from lotteries do not tend to have effects).

To summarize the implications of her review, Page (2024) provides "back-of-the-envelope" estimates of expected effect sizes for various short- and long-term outcomes. She bases these estimates on a one-time USD 1,000 transfer and notes that, under an assumption of linearity, effects would scale with the size and duration of exposure. Her estimates suggest effect sizes that she characterizes as being in the same order of magnitude as those of other child-oriented policies: for example, effects ranging from 0 to 4 percent of a standard deviation in higher test scores, and about 0.01 to 0.04 additional years of education. Moreover, she points to additional longer-term effects on adult health and earnings. As a cautionary note, Page (2024) emphasizes that not all studies find positive impacts of income gains, and that the literature remains inconclusive about the conditions under which such effects can be expected.

Cooper and Stewart (2020) provide a systematic review of studies of plausibly causal income effects on child outcomes published in the OECD between 1988 and 2017. Their review of 54 studies (including most of those reviewed by Page) leads to conclusions very similar to those of Page (2024), while also including studies using panel and sibling fixed-effects designs in addition to randomized control trials (RCTs) and quasi-experiments. Cooper and Stewart (2020) report the most consistent income effects for cognitive and achievement outcomes, and for social, emotional,

and behavioral outcomes, and more often zero and (in two cases) negative effects on parental health behaviors and expenditure patterns. They calculate standardized effect sizes for annual income changes of USD 1,000 (2000-prices). These vary considerably across studies, with positive effects in RCTs and quasi-experiments ranging from 5 to 37 percent of a standard deviation for cognitive outcomes, 3 to 22 percent for behavioral outcomes, and 1 to 24 percent for child health. Effect sizes are considerably smaller in studies using fixed-effects models (mostly in the 1 to 3 percent range).

An additional recent review, Jaffee, Lin, Fowle, and Reina (2025), specifically focuses on child mental-health outcomes (behavioral and emotional problems) of cash transfers in the U.S., drawing mainly on studies covered by Page (2024). Among 10 studies, they find positive effects in six of them, mixed findings in one, and null effects in three. Effect sizes are generally small in magnitude: a USD 1,000 increase in income is typically associated with a 2–5 percent of a standard deviation reduction in behavioral and emotional problems, with effects most evident among children in the lowest-income families. Notably, studies exploiting the income shock related to the Cherokee casino opening (e.g., Costello, Compton, Keeler, and Angold (2003)) report substantial reductions (around 40 percent) in behavioral problems among adolescents, but with limited impact on emotional problems.

A number of important and relevant studies have been published since these reviews. Most prominently is a RCT in the U.S., the Baby's First Year (BFY; e.g., Magnuson, Duncan, Yoshikawa, Yoo, Han, Gennetian, Halpern-Meekin, Fox, and Noble (2025)). In this RCT, 1,000 mothers of newborns with incomes below the U.S. poverty threshold were randomized to receive a monthly unconditional cash transfer of USD 333 or USD 20. A very comprehensive set of child and family outcomes has been measured at multiple time points (current publications include assessments at child ages 12, 24, and 36 months). A large number of publications have appeared.[28] Most relevant to our review are the results concerning mother-reported child outcomes up to age three, in the domains of language and socioemotional development, and concerns about developmental delays (Hart, Gennetian, Sperber, Penalva, Magnuson, Duncan, Halpern-Meekin, Yoshikawa, Fox, and Noble 2024). Across all outcomes and model specifications, there is no evidence of treatment effects on any child outcomes. The authors note that limited statistical power may make it difficult to detect very small effects. It is also notable that BFY children were between 1 and 2 years old during the COVID-19 lockdowns, which may have attenuated potential short-term treatment effects.

Consistent with BFY, Hawkins, Hollrah, Miller, Wherry, Aldana, and Wong (2025) also report null findings from cash transfers, exploiting a birth-weight cutoff that determines eligibility for a U.S. support program. Across the outcomes examined, they find no effects on child health and human-capital measures (including high-school achievement outcomes such as grade point average (GPA)), nor on mortality or health-care use. Notably, the study also includes outcomes for higher-birth-weight siblings who were not eligible for the transfer but experienced the same household income increase; for this group as well, the authors report null effects across all outcomes.

Finally, there is a small set of studies from Norway, all of which are included in the reviews discussed above. We briefly summarize these here, although the relevance for interpreting the findings of our current study is limited by the fact that the studies include cohorts born decades ago. Løken, Mogstad, and Wiswall (2012) find effects of family income on IQ (for men) in early adulthood, as well as on educational attainment for low-income families, when using income shocks following the economic boom from oil extraction. In another study, using a sharp discontinuity in the price of ECEC in the mid 2000s as identification, increases in family income had effects on

[28] See https://www.babysfirstyears.com, for an updated overview.

academic achievement in junior high school, but little or no effect on use of ECEC or maternal labor force participation (Black, Devereux, Løken, and Salvanes 2014). Moreover, between-sibling differences in income across ages 6 to 15 were associated with between-sibling differences in GPA for adolescents from the lowest-income families, with higher incomes associated with higher GPA (Elstad and Bakken 2015). Zachrisson and Dearing (2015) also find that within-family changes in income are associated with within-child changes in behavior problems during early childhood, and most strongly so at the lowest end of the income distribution, and vice versa for income decreases.

Theoretical models for understanding the mechanisms through which poverty has effect on child development draw on both economics and psychology (for overviews, see e.g., Duncan, Magnuson, and Votruba-Drzal (2015) and Carneiro, Cattan, and Neves (2025). From a human-capital perspective (Becker 1981), poverty reduces parents' capacity to invest in their children – through the provision of educational materials and opportunities (inside and outside the home) as well as the opportunity and ability to provide high-quality time with their children. This is often referred to as the family investment model. From a psychological perspective, poverty is expected to increase the likelihood of parental mental-health problems, elevated stress, and relational conflict, which in turn affects parenting practices and consequently child outcomes, often referred to as the family stress model (e.g., Conger, Ge, Elder, Lorenz, and Simons (1994)).

A complementary perspective on the psychological mechanisms linking poverty to child outcomes is based on the work of Mullainathan and Shafir (2013). In their work, they argue that scarcity – e.g., poverty – has a direct effect on intelligence, working memory, and executive function, what they call "bandwith". This limits individuals' capacity to plan strategically in the long-term, forcing instead the prioritizing of alleviating immediate needs. This theory has been extended to parenting in the context of poverty (e.g., Gennetian, Darling, and Aber (2016) and Kalil and Ryan (2020)).

All three models provide intuitive and plausible explanations for why family income (and cash transfers) affects child outcomes. Yet, there is relatively limited causal evidence in support of these mechanisms, as most empirical studies are correlational. Moreover, causal mediation models, in which the causal chain from income, via family mechanisms, to child outcomes is identified, are rare and often provide piecemeal evidence (Mayo-Wilson 2011), in the sense of providing causal evidence for part of the causal model. For example, Dearing, Taylor, and McCartney (2004) use a within-person panel model to show that increases in income lead to decreases in depressive symptoms among mothers living in poverty. Carneiro, Cattan, and Neves (2025) provide a recent, extensive, review of experimental and quasi-experimental evidence on how income transfers affect family mechanisms. They document several examples of such effects: for instance, the casino-opening discussed above had positive effects on parent-child interactions (Akee, Copeland, Keeler, Angold, and Costello 2010), and the Earned Income Tax Credit had positive effects on maternal well-being and reduced depressive symptoms (Boyd-Swan, Herbst, Ifcher, and Zarghamee 2016). Notably, reports from the experimental BFY study (described above) found positive treatment effects on parental time and material investments in children (Gennetian, Duncan, Fox, Halpern-Meekin, Magnuson, Noble, and Yoshikawa 2024), although economic material hardship and maternal well-being did not improve, and there was a slight increase in psychological distress (Gennetian, Duncan, Fox, Halpern-Meekin, Magnuson, Noble, and Yoshikawa 2024; Magnuson, Duncan, Yoshikawa, Yoo, Han, Gennetian, Halpern-Meekin, Fox, and Noble 2025).

To sum up, comprehensive reviews provide consistent evidence that cash transfers to families most often tend to have positive outcomes, mainly for children in low income families, and most often so when cash transfers are given over time and are predictable. The evidence from Norway is – over all – consistent with this. Recent evidence of null effects, including from the Baby's First Year

study, does, in an important way, open for timely questions about how and for whom income transfers matter.

5.2 ECEC participation and effects on child development

There are mainly two different approaches to subsidized ECEC programs in high-income countries. In the Anglophone countries, such programs have traditionally been targeted towards children from poor families. In contrast, several European countries, and the Nordic countries in particular, have for decades had universal programs. Moreover, national programs of the Nordic countries have over the last decades expanded to include infants and toddlers (ages 1 and 2 years) in addition to preschool aged children (3–6 years). Both targeted and universal programs are built on the theory that attending ECEC programs is beneficial for children through compensation: ECEC programs benefit children when they offer environments that are more stimulating for development and less stressful than the alternative settings children would otherwise experience, such as at home or in other types of care (Duncan and Magnuson 2013). Moreover, in the Nordic countries, a supplementary driver for the expansion of universal ECEC is to facilitate womens's labor force participation, as already emphasized in the present study (see Section 2.2).

There is an extensive literature on causal effects of targeted preschool programs in the US documenting rather consistent positive short term effects for both cognitive and non-cognitive outcomes (e.g., Duncan and Magnuson (2013)). A meta-analysis supplemented these findings by reporting long-term effects of targeted preschool programs on lower special education placement, resulting in higher grade retention, and higher high-school graduation rates (McCoy, Yoshikawa, Ziol-Guest, Duncan, Schindler, Magnuson, Yang, Koepp, and Shonkoff 2017). Moreover, long-term follow up of a large-scale preschool program in Boston showed some effects on educational (e.g., college attendance) and behavioral (e.g., incarceration) outcomes (Gray-Lobe, Pathak, and Walters 2022). Yet, the long-term effects of preschool programs in the U.S. is currently debated with some arguing that effects fade out over time (Burchinal, Whitaker, Jenkins, Bailey, Watts, Duncan, and Hart 2024) while others question whether such fade-out is real (García 2024).

Universal programs are as mentioned common in Europe, and have also been advocated for in the U.S., for some time (e.g., Barnett (2010)). Key arguments have been that universal programs have greater reach, also among poor families, and provide benefits for poor children from being in more diverse peer groups, stronger public support for ECEC programs, and stronger focus on program quality when more families attend. This has been accentuated in a U.S. context by a narrative literature review of evaluations of universal ECEC interventions in Europe (Blau 2021). He concludes that there are substantial long-term benefits of universal programs, and that these are strongest for children from poor and low-income families. This conclusion is mostly in line with a more extensive meta-analysis of 27 quasi-experimental evaluations of universal programs (Huizen and Plantenga 2018). Specifically, these authors conclude that while age of enrollment does not seem to have effect on outcomes, intensity of the program does to some extent, and structural quality does so most crucially. For example, two studies using staggered between-municipality expansions of universal ECEC in Germany as identification strategies (Cornelissen, Dustmann, Raute, and Schönberg 2018; Felfe and Lalive 2018) find positive effects on children's motor and socio-emotional development, and school readiness. The strongest effects on socio-emotional and school readiness were found among children least likely to attend ECEC, pointing to the potential importance of increasing accessibility to such programs.

Yet, there are examples of negative effects of both preschool programs and universal ECEC. For example, a randomized study of a pre-school program in Tennessee found negative effects on both

behavior and achievement in sixth grade (Durkin, Lipsey, Farran, and Wiesen 2022). In the Canadian province of Quebec, expansion of subsidized care had negative short and long term effects on children's socio-emotional development (Baker, Gruber, and Milligan 2008; Baker, Gruber, and Milligan 2019). The quality of the program may in this case be a crucial explanation, as this was deemed by developmental psychologists to be disturbingly low in the Quebec-expansion (Japel, Tremblay, and Cote 2005). The discrepancy in results across studies show that effects of ECEC on child outcomes are not universal, and is likely to vary as a function of program content and context.

While the international literature on effects of ECEC is useful background for evaluating the consequences of increasing accessibility in Norway through price reductions, the idiosyncratic policy- and pedagogical context in Norway makes direct transfers of these results challenging. As described above, the combination of universal parental leave and universal subsidized ECEC from age one is a distinctive feature of the Nordic context. Moreover, the content of ECEC in Norway is characterized by a holistic and child-centered approach which emphasizes play and exploration over instruction (see Zachrisson, Dearing, Borgen, Sandsør, and Karoly (2024) and OECD (2015) for details). This differs considerably from a more instructional and curriculum-based approach common in many other countries (e.g., the U.S.; see Duncan and Magnuson (2013)). Effects of ECEC on child developmental outcomes may therefore differ from those seen in the international literature for several reasons.

There is currently a fairly extensive literature on effects of early ECEC in Norway, with results consistently pointing in the same direction. Several of these studies use the expansion of ECEC for one and two-year olds in quasi-experimental designs. They have found the expansion to reduce inequalities in early language skills at age 3 between children from high- and low-income households (Dearing, Zachrisson, Mykletun, and Toppelberg 2018), and positive effects on 5th grade test scores for children from families with low parental education (Zachrisson, Dearing, Borgen, Sandsør, and Karoly 2024). Universal ECEC in Norway has also been found to buffer the negative effects on some socio-emotional outcomes of reductions in disposable income in the lower end of the income distribution (Zachrisson and Dearing 2015). Moreover, a study using a lottery of ECEC slots for one-year olds, found that early entry into ECEC reduced the probability of poor math and reading achievement in first grade, most strongly so for children from disadvantaged families (Drange and Havnes 2019).

Evidence on longer-run impacts is more mixed: evaluations of Oslo's free core-hours program report sustained gains in reading at grades 3, 5, and 8, especially for low-income children and those with non-employed mothers, but no detectable effects on 10th-grade grades (Drange 2023). Finally, the expansion of preschool care for 3–5 year olds in Norway dating back to the 70s had small, but positive, effects on educational attainment, labor market participation, and earnings in the lower end of the income distribution (Havnes and Mogstad 2015; Havnes and Mogstad 2011b). A number of studies have also addressed the long-standing concerns for negative consequences of ECEC for behavioral outcomes, especially during the first years of life, although some scholars argue that the evidence may be biased due to weak methodology (Dearing and Zachrisson 2017). Fairly strong evidence from Norway suggests that, at least in that context, neither early entry into ECEC (prior to two years), nor full day ECEC has such negative effects (Dearing, Zachrisson, and Nærde 2015; Zachrisson, Dearing, Lekhal, and Toppelberg 2013), and that parenting skills are also unaffected by age of entry into ECEC (Zachrisson, Owen, Nordahl, Ribeiro, and Dearing 2021).

In sum, the international evidence base on effects of universal ECEC programs on short and long term child developmental outcomes is mixed and seems to be highly context dependent. Some programs, most notably the scale up in Quebec, have overall detrimental effects, while others, e.g.,

large-scale programs in the US, show short term effects which subsequently fade out. In contrast, the quite extensive evidence-base for ECEC in Norway consistently shows positive short term effects for socioeconomically disadvantaged children that persist over time, and with no evidence of harmful effects. This may be explained by the holistic and child-centered focus of the pedagogical content of ECEC in Norway and the favorable staff-child ratios and other structural features.

5.3 Cash or care for promoting child development?

Our review shows evidence allowing us to suspect that both benefits and in-kind transfers in the form of universal ECEC programs can have positive long-term effects for children, as such effects are evident in Norway. Yet, it is notable that from a child development perspective, child allowances directly target the aspects of a less optimal home environment caused by poverty, while ECEC programs seem to compensate for a lack of investments and high levels of stress caused by poverty. These two types of programs may therefore be seen as affecting child development at different points in the causal chain from family income to child outcomes, and may thus, from an intervention standpoint, be considered complementary rather than competing.

When interpreted in light of our empirical results, our review provides some guidance for policy-decisions. It should be noted that the predicted changes in both child poverty rate and childcare use are very small, as we discuss further below. This most likely reflects on an already comprehensive system of child and family support policies, where the remaining leverage for family allowance (bounded by the limits imposed in our model) or in-kind transfers are relatively small.

With regard to child allowance, the estimates provided in the reviews by Page (2024) and Cooper and Stewart (2020) scale effects by an increased annual income of USD 1000. This amount is approximately half of what the cash-alternative in our models would provide. Hence, drawing on these estimates, we can assume some added benefits to both cognitive and non-cognitive outcomes. This does, however, come with the caveat that the evidence for effects of cash transfers in sum is more ambiguous than that of ECEC. Notably, our results presented in Table 4.1 and Table 4.3 indicate that both scenarios will have fairly comparable effects on the child poverty rate. We can therefore expect that the potential effects of increases in family allowance could also be an indirect result of free ECEC – as this also increases disposable income.

In Table 4.2, we do see a predicted increase in ECEC use for about a percentage point for children of couples, and half a percent for children of single mothers. This is an increase from an already high base-level. We have consistent evidence that the children who have the potentially largest gains from attending ECEC also are the once who are least likely to attend. Our expectation is therefore that the children who would enter ECEC because of the price reduction would be among those having the greatest benefits of attending.

In sum, our results and subsequent interpretation suggest that in choosing between cash and care, the choice may side towards care. Free ECEC will potentially provide the same benefits as increased family allowance in terms of effects on reductions in child poverty, but also have the added effect of increasing the participation rate for children who would potentially greatly benefit.

6 Conclusion

Child poverty is causing substantial concern in Norway and elsewhere. In Norway, the share of children aged 0–5 living in households with incomes below 60% of the median rose from 8% in 2006 to over 12% by 2020. This has occurred during a period in which support to families with children

has increased substantially. In particular, childcare has become much more accessible and affordable. In contrast, the child benefit was nominally frozen for over two decades but has recently been increased – a change that has contributed to reducing poverty.[29]

The Norwegian case shows that even ambitious welfare states with extensive existing support schemes still face a need to fine-tune policy. In this paper, we therefore ask what should come next: should policymakers prioritize new initiatives that provide support through cash transfers or through childcare services? To address this, we compare a policy offering free ECEC with a scheme in which the same revenue is used to increase the child benefit.

The crucial factors in this study are families' responsiveness to free care and the extent to which universal ECEC programs can produce positive long-term effects for children. As childcare becomes free, more children enroll in ECEC, with an observed increase of approximately one percentage point.

A main challenge is that there is a social gradient in the use of ECEC (Jessen, Schmitz, and Waights 2020); children who could potentially gain the most from attending ECEC are also those most likely to remain outside the system. At the other end, for the majority of parents, after three decades of high intensity of policy reform, we find that a large share of families with preschool children follow a broadly similar arrangement characterized by market work of parents in combination with children attending heavily subsidized childcare centers. The "Kindergarten Agreement" (of 2003), which has eliminated queues at early childhood education and care (ECEC) programs and fixed the fee at a very low level, has created a new equilibrium where behavioral policy responses have largely evaporated. The present study illustrates this by employing a structural model which has been used to simulate parents' decisions regarding labor supply and childcare.

Nevertheless, long-term effects may counteract the direct advantageous of cash support and could even shift the balance in favor of free childcare. While we do not find strong short-term impacts on take-up, there may be positive long-term effects for children from socially disadvantaged backgrounds who enter into non-parental care.

While caution is warranted when transferring findings across contexts, as emphasized by Baker (2011) and Blau (2021), we believe the Norwegian case offers useful insights for other countries navigating the cash-versus-care trade-off – particularly those approaching a situation similar to Norway's, where very few families and children remain outside ECEC.

[29] At the time of writing, there are reports that child poverty is increasing again, mainly explained by immigration of Ukrainian families (Normann 2026).

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Appendix

A Estimated parameters of the structural joint childcare and labor supply model

Data

In the following, we describe the estimation of the behavioral simulation model used to assess the effects of support for households with preschool children; see Section 4.

For the estimation of the choice model, we rely on data from the 2023 Childcare Survey (Evensen, Foss, Haraldsrud, and Østhus 2023; Krawczynska 2023). The survey sample includes households with children aged 1–9 years; for the purposes of this study, we focus on households with children aged 1–5 years. Within this group, the survey achieved a response rate of 42.8%. After excluding households in which either the mother or father is self-employed, as well as those with missing information on key variables, the final dataset comprises approximately 1,150 couple households and around 250 single mother households.

To integrate the results from the non-behavioral and behavioral models, we transfer the estimated parameters to the individuals in the larger sample of the non-behavioral model, the tax-benefit model (LOTTE-Skatt), to conduct simulations. Further descriptions of the models can be found in Section 4.1 and in Jia, Larsen, Lian, Nesbakken, Nygård, Thoresen, and Vattø (2024),

Individual wage rates

We assign each parent in the sample an estimated wage. We do this by first regressing the logarithm of observed wages on individual characteristics and then use the estimated coefficients to generate a predicted wage for every individual in the sample, based on their observed characteristics. Descriptive statistics for the variables of the wage regressions are reported in Table A1.

Table A1: Descriptive statistics, wage regression. Mothers and fathers in couples and single mothers

	Couples		
	Mothers	Fathers	Single mothers
Wage (NOK)	392 (510)	450 (471)	373 (369)
Age	36.2 (4.3)	38.9 (5.7)	34.9 (6.1)
Experience (years)	14.6 (4.6)	18.2 (6.3)	15.1 (5.3)
Low education (%)	8.3	13.5	27.7
High education (%)	69.7	50.5	42.0
Immigrant (%)	43.9	46.5	46.2
Number of observations	877	1,048	119

Notes: Data from the Childcare Survey 2023 for couples and single mothers with at least one child aged 1–5 years. Standard deviations in parentheses. Experience is measured as age minus years in education.

For couples, we estimate the linear effects of education and experience on wage rates using a generalized additive model (GAM), treating education and immigrant status as linear terms within the GAM framework, and experience as a smooth term. The estimated parameters from these wage regressions are reported in Table A2. For single mothers, due to a relatively small sample size, we instead estimate a semi-log model with OLS, with the resulting parameter estimates presented in Table A3.

Table A2: GAM wage regressions (gaulss family) with log hourly wage as the dependent variable. Couples

	Mothers	Fathers
Location equation (mean)		
Intercept	5.693*** (0.050)	5.893*** (0.026)
Low education	-0.224* (0.094)	-0.271*** (0.052)
High education	0.200*** (0.052)	0.235*** (0.032)
Immigrant	-0.133** (0.043)	-0.093** (0.031)
s(experience) [edf]	1.01	2.76***
Scale equation ($\log \sigma$)		
Intercept	-0.696*** (0.063)	-0.963*** (0.047)
Low education	0.085 (0.101)	0.131 (0.074)
High education	-0.092 (0.064)	0.179*** (0.053)
Immigrant	0.342*** (0.052)	0.235*** (0.047)
s(experience) [edf]	3.41	6.42***
Number of observations	877	1,048
Deviance explained	6.7%	11.6%

Notes: *$p < 0.05$, **$p < 0.01$, ***$p < 0.001$. Standard errors are reported in parentheses for parametric terms. Effective degrees of freedom (edf) reported for smooth terms. The parameters are estimated using data from the Childcare Survey 2023 for couples with at least one child aged 1–5 years.

Table A3: OLS wage regressions with log wage as the dependent variable. Single mothers

	Estimate	Standard error
Intercept	5.305***	0.459
Experience	0.081	0.056
Experience-squared	-0.003*	0.002
Low education	-0.322	0.196
High education	0.090	0.178
Immigrant	-0.003	0.149
Number of observations	119	

Notes: *$p < 0.05$, **$p < 0.01$, ***$p < 0.001$. The parameters are estimated using data from the Childcare Survey 2023 for single mothers with at least one child aged 1–5 years.

Estimated model parameters

Next, we show estimation results for the decision models, in Table A4 for the couple-model and in Table A5 for the single-mother model. The parameters are obtained through maximum likelihood estimation; see Section 4.2 for further details. When the parameter estimates are not statistically significant, we rely on the point estimates.

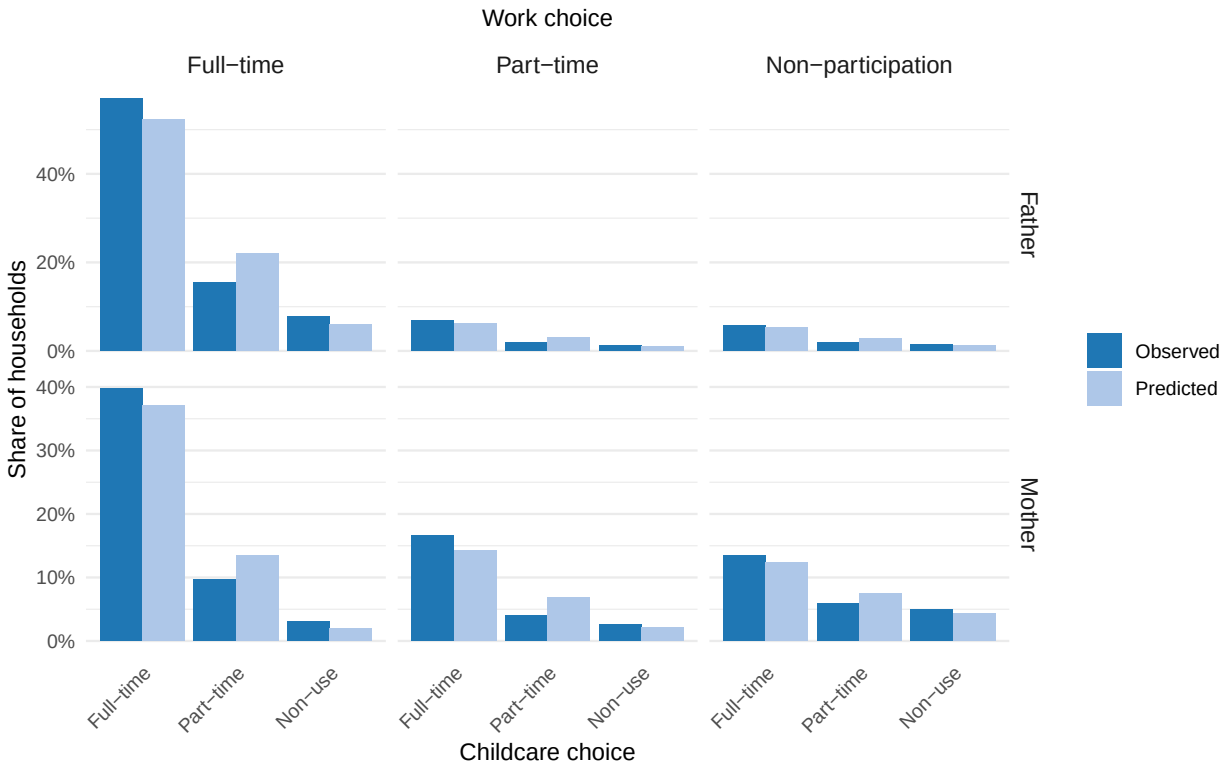
Furthermore, to assess model fit, we compare the model's predictions with the observed frequencies of different combinations of working hours and childcare arrangements for mothers and fathers. These comparisons can thus be considered within-sample tests. Both Figure A1 and Figure A2 show a close correspondence between the observed choices and the predictions of the models.

Table A4: Estimated model parameters, couples

Variables	Parameter	Estimate	Standard error
Consumption, $v_1(C)$			
	α_0	0.456***	0.072
	α_1	-0.003*	0.001
Leisure, $v_2(h_m, h_f)$			
Mother's leisure	β_{10}	8.759***	0.694
	β_{11}	0.616	0.388
	β_{12}	-2.298***	0.283
Father's leisure	β_{20}	4.876***	0.917
	β_{21}	1.613***	0.399
	β_{22}	-0.249	0.367
Interaction, leisure	β_3	2.981***	0.600
Childcare interaction, $v_3(h, q)$			
	γ_{00}	-1.092**	0.359
	γ_{01}	1.020***	0.107
	γ_1	-3.053***	0.429
	γ_2	-0.572	0.552
Opportunity, $b(h_m, h_f)$			
	g_m	1.047***	0.170
	g_f	2.356***	0.243
Number of observations		1,150	

Notes: $^*p < 0.05$, $^{**}p < 0.01$, $^{***}p < 0.001$. The parameters are estimated using data from the Childcare Survey 2023 for couples with at least one child aged 1–5 years.

Figure A1: Observed and predicted choices for couples



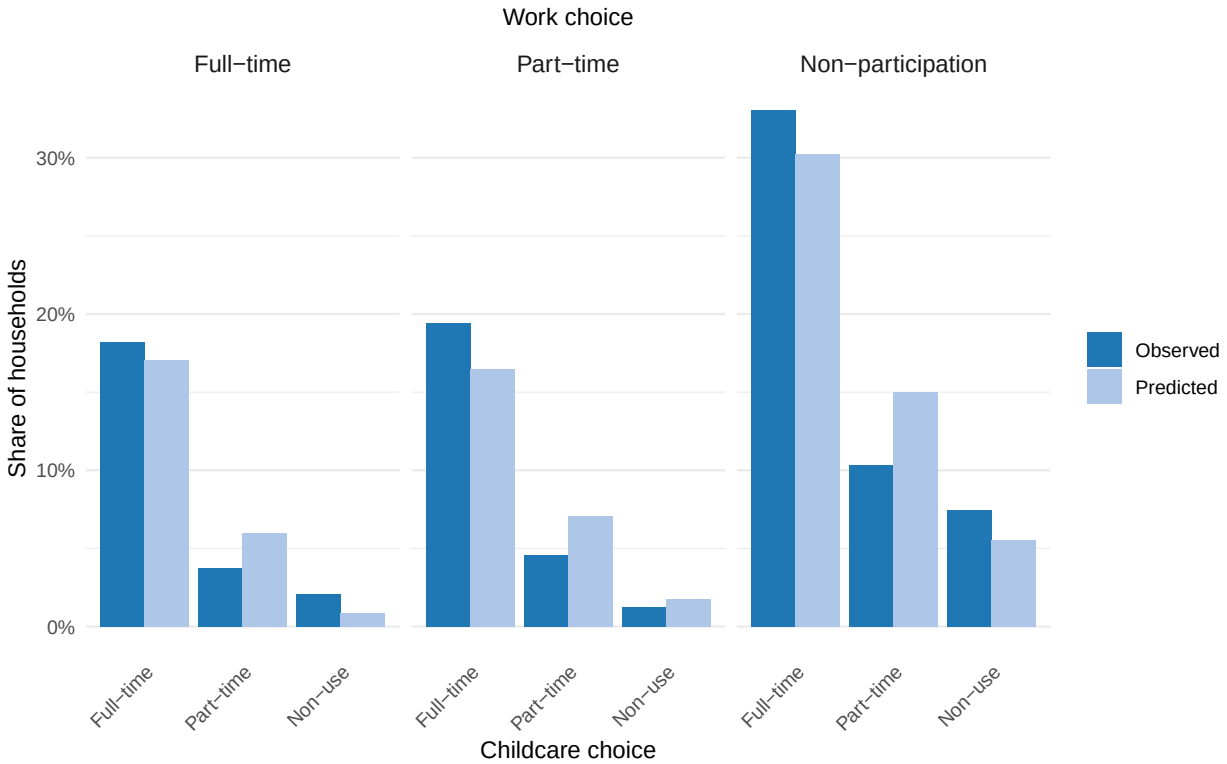
Notes: The figure shows how well the model predicts observed choices among couples using data from the Childcare Survey 2023.

Table A5: Estimated model parameters, single mothers

Variables	Parameter	Estimate	Standard error
Consumption, $v_1(C)$			
	α_0	0.442	0.262
Leisure, $v_2(h_m)$			
	β_{10}	7.545*	3.031
	β_{11}	1.972*	0.952
	β_{12}	-2.335**	0.717
Childcare interaction, $v_3(h, q)$			
	γ_{00}	-0.552	0.604
	γ_{01}	1.096***	0.236
	γ_1	-2.192*	1.072
Opportunity, $b(h_m)$			
	g_m	0.825	0.486
Number of observations		242	

Notes: $^*p < 0.05$, $^{**}p < 0.01$, $^{***}p < 0.001$. The parameters are estimated using data from the Childcare Survey 2023 for single mothers with at least one child aged 1–5 years.

Figure A2: Observed and predicted choices for single mothers



Notes: The figure shows how well the model predicts observed choices among single mothers using data from the Childcare Survey 2023.