The Intergenerational Effects of Welfare Transfers Among Single Mothers: Evidence from an Israeli Welfare Reform*

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This paper examines the intergenerational effects of a welfare reform that increased welfare benefits generosity and eased eligibility requirements for single mothers in Israel. Using large-scale restricted administrative data and a difference-in-differences design, I find that the rise in single mothers' welfare participation rates following the reform had a significant impact on their children's long-term economic outcomes. Girls exposed to the reform in childhood were likelier to be on welfare themselves as young adults, while boys experienced a long-lasting increase in labor earnings. The results suggest that generous welfare programs can have beneficial consequences for boys growing up in single-parent households.

Keywords: intergenerational transmission, welfare participation, welfare reform, single mothers

JEL Classification: I38, J62, H53

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1 Introduction

Transfer programs aimed at reducing poverty among low-income families are highly common in developed countries.[1] These means-tested programs provide cash and in-kind benefits to poor families and often serve as a safety net of last resort. Such support has its most direct effect at the time it is delivered, yet it may also have lasting intergenerational effects. While there is ample research on transfer programs and their impact on working-age individuals, and to a lesser extent, on their children in the short-run, much less is known about their long-term intergenerational effects. That is, how does parental welfare participation affect the long-term outcomes of the next generation?

Estimating the intergenerational effects of welfare participation is essential for understanding the reasons for persistent welfare dependence and the design of effective labor-market policies. The positive correlation in welfare participation across generations is well-documented in the literature (see Page (2004) for a review of estimates for the U.S.). It is unclear, however, how much of that correlation is causal and how much is simply driven by the intergenerational correlation in income and other genetic or environmental characteristics that are correlated between parents and their children (Black et al., 2011). If, for example, children of welfare recipients learn from their parents to become dependent on the welfare system, irrespective of any other correlated attributes, even a temporary increase in welfare participation rates may increase the number of future welfare recipients.

The literature mentions several mechanisms that may explain a causal intergenerational transmission of welfare participation: lessened distaste for welfare among children, such that stigma may no longer serve as a deterrent; children's acquisition of first-hand knowledge of how the system works and what needs to be done to obtain welfare benefits; and reduced informal access to job opportunities via parental social networks and limited development of proper work etiquette and other non-cognitive skills due to low parental labor-force attachment. It has also been contended by some that receiving welfare can negatively impact child development, undermining children's self-esteem, independence, and ambition, while perpetuating feelings of inadequacy and worthlessness (Hill and Duncan, 1987).

Other forces, however, act in the opposite direction. The provision of welfare assistance can mitigate the adverse effects of socioeconomic disadvantage on child development (see McLoyd, 1998). For one, the potential boost in discretionary income could translate into increased investment in children's education, health, and soft skills. Moreover, the reduction in parental work hours, often associated with welfare participation, allows for more time at home, potentially leading to enhanced parental involvement. Furthermore,

[1] Public spending on financial support meant exclusively for families and children is roughly 2% of GDP in OECD countries (OECD Social Expenditure Database).

the increase in family income, coupled with reduced working hours, may lessen parental stress and anxiety, thereby fostering improved parenting practices and, consequently, better outcomes for children.

The question of whether social assistance programs that include work disincentives have adverse or positive long-term effects on the next generation is, therefore, an empirical one. Historically, economic research on social assistance and insurance programs was primarily focused on their negative behavioral impacts, paying only limited attention to their potential benefits for children (Aizer et al., 2022; Moffitt, 1992). If children's long-term outcomes improve as a result of government transfers to low-income families, then the provision of welfare benefits should be viewed not only as a means to raise current consumption and prevent unwarranted suffering but also as a potentially worthwhile social investment.[2]

Two main difficulties arise in estimating the intergenerational effects of welfare participation: identifying a plausible counterfactual and obtaining data on the long-term outcomes of a large sample of children of both welfare recipients and non-recipients. In this study, I estimate the intergenerational effects of parental welfare participation on five to eighteen-year-old children's long-term outcomes by exploiting a nationwide policy change that generated quasi-experimental variation in welfare participation. Specifically, I take advantage of an Israeli welfare reform that expanded Income Support benefits[3] and eased program eligibility requirements for single mothers in 1992.[4] I utilize a comprehensive dataset sourced from various administrative records to examine the disparities in long-term outcomes between two groups: children of single mothers who were raised during the pre-reform era and children of single mothers who were under eighteen when the reform was implemented. This analysis is conducted within a difference-in-differences framework and is contrasted with the outcomes of children born to married mothers within the same cohorts.

Focusing on the native-born Israeli Jewish population, I show that providing single mothers with a more generous welfare program had spillover effects on their children's future economic outcomes. The next generation's welfare participation rates increased, but so did their labor supply and earnings. These seemingly contradicting average effects mask heterogeneity across gender and over the life cycle. The effect on future welfare participation is driven by an increase in girls' welfare participation rates; the effects on employment rates and labor earnings, in contrast, were driven by boys. Furthermore, I

[2]It is worth noting that policies that target children in low-income households, as well as polices that target adults but induce positive spillover effects on children, have been found to have a relatively high Marginal Value of Public Funds (Hendren and Sprung-Keyser, 2020). Such policies tend to raise children's later-life incomes, which helps to offset program costs through higher tax revenues and lower transfer payments.

[3]Throughout the paper, I refer to income support benefits simply as welfare.

[4]While the reform was also relevant for single fathers, I focus solely on mothers considering less than 10% of single-parent households in Israel are headed by men.

find that the increase in welfare dependency was temporary and occurred only in early adulthood (ages 21-27). When these girls were in their thirties, there was no longer a difference in welfare participation between those who were and were not exposed to the reform in childhood. The effect on labor earnings, on the other hand, did not fade over time, suggesting that the provision of more generous welfare benefits to single mothers led to long-lasting gains for the next generation.

These findings highlight the importance of considering spillover effects in social assistance programs as well as the need to weigh the long-term effects of parental welfare participation beyond those relating to future welfare participation rates. A possible explanation for the upturn in future welfare use among daughters of single mothers is that they adopted a less negative attitude toward welfare and its associated stigma as a result of the increase in welfare assistance provided to their mothers. The increase in boys' future earnings is consistent with an increase in parental investment following either an uptick in household discretionary income or in the quantity or quality of maternal time investments. The quality of parenting and the way parents interact with their children seem to be key factors in understanding how increased household income contributes to improved outcomes for children (Akee et al., 2010). A recent working paper by Kalil et al. (2022), found that the 1990s U.S welfare reform, which induced low-income single mothers to rely on their labor earnings instead of cash assistance, came at a cost to children in the form of lower quality parenting. Providing greater assistance to single mothers could lead to the exact opposite. The fact that boys experienced these large gains in employment and earnings while the did girls did not may have to do with the disproportionate effect of family disadvantage on boys relative to girls (Bertrand and Pan, 2013; Chetty et al., 2016; Figlio et al., 2019), and with boys having higher returns to maternal time investments (Gayle et al., 2012; Fan et al., 2015).

The paper is related to several strands of the literature. One is the growing corpus of research on government transfers and their effects on children, mostly in the short and medium run (Chetty et al., 2011; Dahl and Lochner, 2012, 2017; Milligan and Stabile, 2011). These studies find that additional parental resources in the form of the Earned Income Tax Credit (EITC) and other social assistance programs tend to lead to increased investment in children, which in turn result in improved outcomes such as test scores, educational attainment, and health outcomes. More recent work also suggests that childhood exposure to EITC leads to better labor market outcomes in early adulthood (Bastian and Michelmore, 2018). Beneficial impacts of government transfers on children's long term outcomes were also found in the context of both the Mothers' Pension (MP) program (1911-1935) and the Food Stamps program (FPS) (Hoynes et al., 2016; Bailey et al., 2020; Aizer et al., 2016).[5]

[5]MP benefits in childhood increases longevity through improvements in nutrition, educational attainment, and income in adulthood, while exposure to FPS in utero and early childhood leads to long-term

The paper is also related to the literature on the intergenerational transmission of welfare participation, based mainly on observational studies, which provide mixed evidence on the effect of welfare participation on children's future welfare participation rates (Antel, 1992; Beaulieu et al., 2005; Gottschalk, 1990, 1996; Levine and Zimmerman, 1996; Pepper, 2000). Current quasi-experimental evidence is largely limited to the context of disability insurance (Dahl et al., 2014; Dahl and Gielen, 2021).[6] A notable exception, and of particular relevance to this study, is recent work by Hartley et al. (2022), which exploit cross-state variation created by the 1990s reforms of the Aid to Families with Dependent Children (AFDC) program in the U.S. to estimate the effect of welfare reform on the intergenerational transmission of welfare participation. The authors find that girls exposed to maternal welfare between the ages 12 to 18 are at risk of worse outcomes in adulthood. Their findings imply that maternal welfare participation leads to a 25-percentage-point or more increase in the likelihood of welfare participation in adulthood and that the 1996 welfare reform designed to restrict program access has attenuated this effect by inducing substitution toward other welfare programs such as food stamps and DI.

This study differs from Hartley et al. (2022) in several ways. One important difference is that their analysis is limited on mother-daughter pairs, due to the predominance of single mothers among AFDC/TANF beneficiaries. Conversely, in Israel, single-parent households with dependent children constitute merely a third of the welfare recipient population, and approximately 40% of welfare beneficiaries are male.[7] Thus, the Israeli setting enables an investigation into the intergenerational impact of maternal welfare participation on sons as well. Another is that in Hartley et al. (2022), children's adult outcomes are observed between the ages 21 to 27. In this study, I am able to examine the effects at slightly older ages, as well as the dynamics of the effects over time. Last is that their analysis draws on survey data from the Panel Study of Income Dynamics (PSID), which may suffer from attrition bias as well as from misreporting of welfare participation.[8] The analysis in this study builds on administrative records for the entire population of interest, tracking the outcomes of children from childhood into their thirties.

The remainder of the paper proceeds as follows. Section 2 provides background, detailing the main characteristics of the Israeli welfare system and the 1992 Single Parent Law, along with its effects on welfare participation among single mothers. Section 3 describes the data and the identification strategy. Section 4 presents the effects of childhood

improvements in human capital, health, and some measures of economic self-sufficiency.

[6] Dahl et al. (2014) exploit random variation in judges' leniency among Norwegian disability insurance (DI) applicants whose cases were initially denied and find that when a parent is granted DI on appeal their adult child's probability of becoming a DI recipient increases. Dahl and Gielen (2021), using a regression discontinuity design based on a reform in the Netherlands that tightened DI criteria, find that children of parents whose DI applications are rejected are less likely to receive DI themselves.

[7] Most of the men are either married or childless; a small share of them are single parents.

[8] Under-reporting of welfare participation is common in major household surveys such as PSID and misreporting seems to have increased over time (Meyer et al., 2009).

exposure to the reform on adult labor market outcomes. Section 5 discusses potential mechanisms and compares the findings to the existing literature. Section 6 concludes.

2 Background

2.1 The income support program

The main social-assistance program for the poor in Israel is called Income Support (or "Income Assurance" in Hebrew), which provides aid to families with little or no income. It is a means-tested benefit program that most closely resembles the Aid to Families with Dependent Children (AFDC) and Temporary Assistance for Needy Families (TANF) programs in the U.S., or the Income Support program in the UK. Unlike the U.S., there are no other major assistance programs for low-income families in Israel, such as Supplemental Nutrition Assistance Program (SNAP), for example.[9] In addition, the Israeli Income Support program is not limited to parents with dependent children and has no time limits.

The program was launched in 1980 and has been subject to multiple changes over the years. During the 1980s, these were mostly minor modifications concerned with updating the level of benefits due to inflation and providing solutions for various cases which were not considered initially. The following decades were characterized by more substantial changes. The Single Parent Law of 1992 expanded program access for single mothers and raised their level of benefits. The Reduction of Poverty and Income Inequality Law of 1994/1995 further raised the level of benefits provided to single mothers. Welfare participation become more prevalent over time. In the 1980s, no more than 30,000 families were on welfare at any given time. By the end of the millennium, the program covered 120,000 families. During the 2000s, the welfare system in Israel underwent a series of reforms aimed at encouraging work and lowering the benefits of non-employment. In 2003, income support benefits, child allowances, unemployment insurance (UI), and other government transfers were cut dramatically.[10] At the same time, Israel has also started to implement mandatory welfare-to-work programs in an attempt to further reduce welfare

[9] Other benefits provided by the National Insurance Institute include unemployment insurance, general and work disability, maternity, old age, and universal child allowances, which are not means tested. In addition, the Ministry of Defense provides benefits for disabled veterans and bereaved families, and the Ministry of Finance provides assistance to victims of Nazi persecution and starting 2008, also work grants (negative income tax) for low income working families. The Ministry of Construction and Housing provides public housing and rent assistance for certain families, contingent on place of residence and additional factors like health, income, marital status, and family size.

[10] In an attempt to overcome a recession and a deficit, Ariel Sharon's government implemented major reforms in the Israeli economy as a whole and the labor market in particular. In addition to the broad reduction in government assistance, individual income taxes were lowered, and the retirement age increased from 65 to 67 for men, and from 60 to 62 for women.

dependence.[11] Welfare participation rates have since been falling, with roughly 70,000 families receiving welfare benefits at the onset of the Covid-19 pandemic.

Eligible households receive monthly cash assistance as well as a variety of in-kind benefits including rent and mortgage assistance, lower municipal property taxes, access to public housing, and subsidies for a range of household expenditures such as public transportation, telecommunication, and electricity. Program eligibility is based on an income test, assets test, and an employment test. One must also be an Israeli resident and at least 20 years of age. Those who are able to work are also expected to actively search for a job and to report weekly to the labor exchange.[12] Non-compliance results in loss of benefits. The monthly allowance is a function of income, age, marital status, and the number of dependent children. Those with no earnings receive the maximal allowance in accordance with their family composition and age group. Those who work but earn less than the minimum amount set by law receive a partial allowance ("income supplement"). The payment schedule is explained in detail in subsection 2.2. In 1991 (one year before the reform), the maximum allowance for a single mother under age 55 with one child was about NIS 2,250 (2010 prices), 37.5% of the average monthly wage, or 72.5% of the minimum wage at the time.

Most income-support recipients are individuals with dependent children, for whom the allowance is the largest that the program allows since the payment rises commensurate with family size. These children are more prone than others to be on welfare themselves later in life. In the U.S., daughters of welfare-recipient mothers were found to be 2.45 times more likely to be on welfare by age 27 than daughters of mothers who were not on welfare (Page, 2004). Calculating the equivalent relative risk statistic[13] for mothers and daughters who were born between 1974 and 1986, suggest it is slightly higher than in the U.S.[14] In Israel, daughters of welfare recipients are 3.15 times more likely to be on welfare by age 27 than daughters of non-recipients.

[11] See Schlosser and Shanan (2022) for an evaluation of the most recent of these interventions.

[12] Some populations are exempt from job-search: those who reached retirement age, mothers with children under a certain age, prisoners currently performing community service or under house arrest, ex-prisoners during the first couple of months after their release, alcohol and drug addicts, pregnant women, women in women's shelters, and those taking care of a sick household member or supervising a household member under house arrest.

[13] Defined as $\frac{P(welfare=1|parental\ welfare=1)}{P(welfare=1|parental\ welfare=0)}$.

[14] For the sake of comparability, I adopt the same definitions and observational time windows as Page (2004), who estimates the intergenerational correlation in welfare participation between mothers and daughters who were born between 1951 and 1966. Page uses a fairly broad definition of welfare participation, defining it as the receipt of Aid to Families with Dependent Children (AFDC), general assistance benefits, food stamps, or Supplemental Security Income. In the Israeli context, welfare participation is defined as the receipt of income support benefits.

2.2 The reform and its impact on single mothers

In April 1992, the Israeli parliament enacted the Single Parent Law, which provided additional assistance for single parents. The law increased the generosity of welfare benefits and raised the monthly income ceiling for single-parent households. The law was passed roughly three years after it was initially submitted as a private member's bill by Labor party member Ora Namir in 1989.[15] Until then, single mothers with one child who were eligible for welfare received a maximal monthly allowance equal to 30% of the average wage for the first couple of years. After two years of welfare recipiency, the allowance is raised to 37.5% of the average wage. Mothers with two or more children received an additional 5%. To be eligible for welfare, household income had to be under 47% of the average wage.

Following the reform, a single mother with one child's maximum allowance increased to 42.5% of the average wage starting from the very first year. Single mothers with two or more children received an additional 5%. Eligibility requirements were modified such that single mothers' earnings up to 80% were still eligible for welfare benefits. In addition, the new law provided single mothers with several supplementary in-kind benefits in the form of income tax credits and subsidization of daycare and school fees. In 1994 and 1995, the Reduction of Poverty and Income Inequality Law and amendments to the Single Parent Law eased the terms of eligibility by expanding the definition of a single parent to additional groups[16] and increased the allowance by another 2.5% of the average wage for each of the first two children in single-parent households. Meanwhile, the welfare benefits of married mothers remained unchanged. These payment schedules remained in place until 2003 when income-support eligibility rules were tightened, and benefits were cut for all types of households.

Figure 1 depicts the structure of the payment schedule for a single-parent household with one child before and after the reform. The X-axis reports household earnings as a share of the average wage; the Y-axis tracks total household income, composed of both earnings and welfare allowances, as a share of the average wage. Before 1992, eligible single mothers with no earnings received a cash benefit equal to 30% of the average wage; all earnings above that level but below 17% of the average wage were ignored and did not reduce the size of the transfer. Above this threshold, higher earnings resulted in a gradual reduction of benefits to zero at 47% of the average wage. In 1992, the entire curve shifted upward; the 47% cap was replaced by a continuous and gradual decrementation of benefits to a total offset when household earnings reached 80% of the average wage. In 1994, the curve shifted upward by an additional 2.5% of the average wage following

[15] Namir also headed the parliament Committee on the Status of Women which first discussed the need for providing government assistance to single-parent families back in 1975-1978.

[16] Including women who are separated and women whose husbands refuse to divorce them under Jewish religious law.

the enactment of the Reduction of Poverty and Income Inequality Law.

The change is expected to induce many single mothers to decrease their labor supply and increase their welfare participation rates compared to married mothers.[17] The effect of the legislation on the labor supply of single mothers during the 1990s was previously estimated by Flug and Kasir (2006) and by Frish and Zussman (2008), using a similar diff-in-diff framework. Both studies document a decline in single mothers' employment rates. Flug and Kasir estimate at six percentage points decrease by 1995 while Frish and Zussman estimate it at three in 1995. Flug and Kasir also find a decrease in working hours, using survey data, and Frish and Zussman document a reduction in wages. Due to data limitations, the two studies do not report the impact of the reform on welfare participation rates.

I provide additional evidence on the effects of the reform on single mothers using administrative records for the universe of Jewish mothers to children under 18 during the years 1988-1995.[18] Figure 2 reports the employment rates, average labor income and welfare participation rates of single mothers and married mothers over time.[19] The welfare participation rates of single mothers, who were sustainability higher than that of married ones in years leading to the reform (13.2% vs. 1.5%), were fairly constant until 1991. Following the enactment of the Single Parent Law in 1992, the share of single mothers receiving welfare benefits started to increase and reached 20% by 1995. At the same time, there was little change in welfare participation rates among married mothers. The increase in the average income from welfare benefits was even larger, reflecting the upturns in both welfare participation rates and the generosity of benefits for single mothers.

Employment rates were characterized by an upward trend among single and married mothers alike in the years preceding the reform, yet single mothers' employment rates were 7 percentage points lower on average than that of married mothers. Following the reform, employment rates continued to increase, but at a slightly lower pace among single mothers. By 1995, single mothers' employment rates were 8 percentage points lower than of married mothers, suggesting a 1 percentage point decrease in employment rates. We also see an upward trend in labor earnings throughout the period. Before

[17] The labor supply response is determined by household income. Eligible women who earned under the 47% threshold before the reform faced a negative income effect on labor supply and no substitution effect because their total income increased but the marginal value of an additional earned NIS remained unchanged. Those who earned above this but less than 80% of the average wage faced both a negative income effect and a negative substitution effect on labor supply because their total income increased and the marginal value of each additional earned NIS decreased. Women who earned just above the 80% cutoff might have also been incentivized to reduce their labor supply to be eligible for the in-kind benefits at the cost of slightly lower overall income. The only possible positive impact on labor supply would have been at the old earnings limit (i.e., the 47% threshold). Women at that level may have wanted to increase their work hours in an attempt to position themselves between the 47% and 80% levels, an option not previously available to them.

[18] The sample is restricted to native-born non-ultra-Orthodox Jews. See next section for more details.

[19] In a appendix figure A1, I also report the observable characteristics of single and married mothers over time. Namely, age and number of dependent children.

the reform, however, single mothers have earned slightly more than married mothers. This has changed after 1991, with married mothers' average labor income surpassing that of single mothers. Given these patterns, It is likely that some of the labor-supply response also took place at the intensive margin. While administrative records provide no information on hours worked, data from the Israel Central Bureau of Statistics annual income surveys provide evidence that single mothers decreased their work hours relative to married mothers following the 1992 reform.[20]

Overall, the empirical evidence suggests that the reform led Israeli single mothers to greatly increase their reliance on welfare benefits while reducing their labor supply. This result is in line with existing work on the labor market effects of the AFDC program in the U.S. which shows how the program decreases labor supply and how greater benefits lead to higher welfare participation rates (Moffitt, 1992).

The fact that the increase in welfare was much more sizable than the decrease in employment suggest that the uptake in welfare participation was associated with single mothers increasingly combining work and welfare recipiency, which would be consistent with the change in eligibility requirements, allowing single mothers to earn up to 80% of the average wage while still being eligible for welfare. The evidence also point to little change in single mothers' combined income from welfare and labor. This measure, however, does not capture neither the value of the in-kind benefits received by now welfare-eligible single mothers nor the value of the added leisure following the reduction in working hours. Both are likely to improve household welfare by relaxing the family's budget constraints.[21] Taken together with the fact that offering a more generous welfare program could not possibly have made single women worse off in the short run, discretionary income most likely went up.

3 Data and methods

3.1 Data

The data used in this study are comprised of administrative records provided by the National Insurance Institute of Israel (NII), the Israeli national social security agency, in charge of collecting social security and health contributions and the provider of gov-

[20] The average workweek of native-born Jewish single mothers fell from 37.1 hours (s.d=10.5) in 1990-1991 to 34.6 in 1992-1993 (s.d=11.7). At the same time, there was only a negligible change (32.5 to 33) in average working hours among married mothers.

[21] A conservative estimate of the value of in-kind benefits provided to welfare-eligible single mothers would be NIS 25,000 (in 2010 prices) per year. I estimate their monetary value using various secondary sources from different government agencies over the years. I assume that the average single mother rents an average-sized apartment and pays municipal property tax at the average rate. When calculating the value of childcare and school-fee subsidies, I assume that the age profile of the children in the household is that of the average single mother family in 1991. I ignore the value of public housing because most welfare recipients are not provided with public housing due to limited supply.

ernment benefits such as income support, child benefits, unemployment insurance, and disability insurance. The sample consists of all non-ultra-Orthodox Jewish native-born Israeli mothers between 1988 and 1995. Arab and Ultra-Orthodox Jewish women are excluded from the sample since there were very few who were single mothers at the time. Since single mothers were much more likely to be foreign-born and were so to an even greater extent following the massive wave of immigration from the former Soviet Union in the early 1990s, non-native mothers are also excluded in order to increase the similarity between single and married mothers. Together, these sample restrictions provide us with a highly homogeneous population of Israeli mothers, which serves the identifying assumptions of the empirical strategy. The data were collected by NII from various sources (including the Israeli Population Registry and Israel Tax Authority) and were then merged and analyzed at a secure research lab at NII headquarters in Jerusalem. The data include annual level data on welfare participation, welfare income, (salaried) employment and labor earnings for the years 1988-2016, year of birth, gender, as well as complete marital and birth histories, allowing me to link mothers to their children through personal identifiers.[22] Overall, they provide a comprehensive and reliable longitudinal picture of employment and welfare participation among mothers and their offspring. The data, however, do not include information on work hours, assets, and non-labor income other than government benefits. Consequently, while welfare participation can be observed, welfare eligibility cannot be determined, as it hinges on total income from all sources and the value of assets.

The sample used to estimate the impact of the reform on children's adult outcomes of is composed of children born to these mothers during the years 1969 to 1987. Those born between the years 1974-1987 were potentially affected by the reform as children, while the earlier cohorts were not. Each of these children's labor market outcomes is observed every year from age 20 to age 30.[23] This sample consists of 593,530 children overall, 45,546 of the them raised by single mothers. In table 1, I compare the characteristics of single mothers and their children to married mothers and their children in 1991. We see that single mothers relied much more on welfare than married ones prior to reform, yet had similar employment rates. As a result, individual-level labor earnings were also quite similar, while married mothers enjoyed much higher household level income due to the presence of an additional breadwinner. Single mothers were also slightly older, and had fewer children than married mothers. These differences in pre-reform characteristics are controlled for in the empirical analysis. More importantly, the difference-in-differences framework permits differences in average levels of characteristics and outcomes between the treatment group and the comparison group. What it does not permit is a violation of

[22] 1988 is the only year for which welfare participation is known yet there is no information on the level of benefits received. All nominal prices are deflated into real 2010 prices by the Consumer Price Index.

[23] Earlier cohorts are observed for longer periods. Limiting the sample to children born before 1983 allows me to track outcomes to age 35.

the common trend assumption, which posits that any important unmeasured variables are either time-invariant group attributes or time-varying factors that are group-invariant. While this assumption cannot be tested directly, the evidence suggests that there were no apparent pre-trends in mothers' labor market outcomes (figures 2), nor in children's adult labor market outcomes (see subsection 4.3).

3.2 Empirical strategy

To estimate the long-term effects of the the reform on children's adult outcomes, I employ a difference-in-differences strategy using children of married mothers not affected by the reform as a comparison group. I focus on children born in the years 1969 to 1987. The 1969 to 1973 cohorts of children to single mothers were not exposed to the reform during childhood as they were already over 18 in 1992. They were unlikely to be affected by the reform at that age. Many had no younger siblings, so their mothers would not have been eligible for the superior welfare benefits that were available only to single mothers to children under 18. In addition, military conscription is compulsory for all Israelis who turn 18.[24] Military service length for Israelis born in the 1970s was usually 21 months for women and 36 months for men. During their military service, most individuals no longer live at home with their parents on a permanent basis and are not as financially dependent on them.

Later cohorts (1974 to 1987) were between the age of five to eighteen in when the reform started and were exposed to it from that age onward. Since all cohorts were exposed to the reform from age 19 forward, the difference in exposure between "treatment" and "control" cohorts is found during these one to thirteen years of childhood. I start by estimating the average effect of this varying degree of exposure to the reform in childhood using the following equation:

$$Y_{ic} = \alpha + \beta * Treat_i * Post_c + \gamma * Treat_i + \delta_c + X_i\Phi + \varepsilon_{ic} \tag{1}$$

where Y_{ic} is the outcome of child i in birth cohort c; $Treat_{ic}$ is a binary indicator taking the value one if the child's mother is single when the reform started and zero otherwise; $Post_c$ takes the value zero if the child was born between 1969 to 1973 and the value one if the child was born between 1974 and 1987; δ_c are birth cohort fixed effects; X_i is a vector of individual and maternal characteristics including the child's gender, number of siblings under the age of eighteen, mother's employment and welfare participation status, annual labor earnings, and year-of-birth dummies; all measured one year before the reform and therefore predetermined and unaffected by it; ε_{ic} are random error terms. The standard

[24] In practice, the ultra-Orthodox and Israeli Arabs are largely exempt from military service, while many non-religious Jews do not enlist for various reasons. Nevertheless, over 80% (65%) of 18-year-old Jewish men (women) were conscripted in 1990 (Nevo and Shor, 2002). Since only non-Ultra-orthodox Jews make up our sample, their conscription rates are likely even higher.

errors are clustered at the mother level. Note that since not all single mothers were necessarily affected by the reform, the difference-in-differences coefficient β should be interpenetrated as an "intention-to-treat" (ITT) effect. The model assumes that if not for the reform the differences in adult outcomes between the two groups of children would have remained the same. To examine the validity of the parallel trends assumption, as well as to allow for the effect to vary by the age of the child at the time of reform, I also estimate an event study specification of the following form:

$$Y_{ic} = \sum_{a=5[a\neq 19]}^{a=23} \beta_a 1[1992 - cohort = a] * Treat_i + \gamma * Treat_i + \delta_c + X_i\Phi + \varepsilon_{ic} \quad (2)$$

where a denotes the age of the child when the reform started, and event-time coefficients range from age 5 to age 23, with age 19 as the omitted category. The event-study coefficients β_a capture the effect of exposure to the reform at age a (relative to the omitted age, 19) on outcome Y_{ic}. The coefficients of the unexposed cohorts serve as a pre-trend test. Note that the difference-in-differences design also requires that the characteristics of single and married mothers followed the same trends across cohorts. If not, the reform effects may be confounded with changes in these underlying characteristics. Another concern is that there could also be direct effects of the reform on selection into single motherhood, which may dilute the estimated effects of the reform on children. I address these and other concerns in subsection 4.5

4 Results

4.1 Main estimates

Table 2 reports the difference-in-differences estimates for children's adult labor market outcomes, as specified by Equation (1).[25] The outcomes are cumulative and track ages 20-30. The results indicate an increase in future welfare participation rates as well as an improvement in future labor supply and earnings. Exposure to the reform in childhood is associated with a 0.53 month increase in the number of cumulative months on welfare, and a NIS 1,140 upturn in cumulative welfare income throughout the period, on average. Note that measures of welfare utilization capture both the intensive and extensive margins of welfare participation. We expect a surge in the intensity of welfare use beyond the extensive margin, since extending the duration of welfare participation becomes much simpler once access to the program is obtained.

At the same time, children of single mothers who were exposed to the reform work 1.54 additional months between ages 20 and 30 compared to unexposed children, and their

[25] Appendix table A1 shows the results when control variables are excluded.

cumulative labor earnings are NIS 22,650 higher. In addition, we see a slight increase in the share of children ever employed or received welfare benefits by age 30, implying that some of the rise in welfare participation came at the expense of complete disengagement from both the formal labor force and the welfare system. This small shift alone, however, cannot account for the sizable increase observed in labor supply and earnings. What seems to explain it is that the intergenerational impact of welfare participation differs greatly between sons and daughters of single mothers.

4.2 Gender differences

Table 3 reports the effect on children's long-term outcomes stratified by gender. The results indicate that the increase in welfare participation is driven by girls while the effect on employment and labor earnings is driven by boys. Daughters of single mothers who grew up in the post-reform period spent on average 0.9 more months on welfare from age 20 to 30 and accumulate an additional NIS 2,074, on average, in welfare income. The equivalent effects on boys are small and insignificant. The impact on children's future labor supply and earnings, on the other hand, is small and insignificant for girls and positive and significant for boys. The lack of a negative impact on the girls' labor supply suggests that the increase in their welfare participation did not come at a large cost in terms of forgone labor earnings. This is further supported by the significant increase in the likelihood of ever being employed or receiving welfare benefits, which occurs only among girls.

This outcomes is also important on it's own. Earlier work on the effects the 1990's welfare reforms in the U.S used the term disconnected mothers to describe single mothers who failed to make a successful transition from welfare into work and reported that they are not working and not receive any public assistance benefits (Blank and Kovak, 2009). Disconnected mothers have very low household income, substantially less than other single mothers, and are more likely live in extreme poverty. Reform exposure, then, not only increased girl's welfare usage in adulthood, but also lowered the prevalence of disconnectedness-driven destitution.

Boys exposed to the reform in childhood experience a NIS 43,598 gain in cumulative labor earning during their twenties; a 9.4% increase over the control mean. This increase is partially driven by a rise in the number of months employed throughout the period, which increase by 4%. Increased stability in the job market likely accounts for the remaining increase. Overall, the improvement in cumulative earnings is substantial. Among cohorts who were not exposed to the reform in childhood, boys to married mothers earned roughly 25% more in their twenties than boys raised by single mothers. The increase in welfare generosity for single mothers in 1992 therefore closed about a third of the gap between these two groups of children. I argue that an increase in parental resources is the probable

cause of these gains. That is, the increase in discretionary income and time spent at home has likely translated into increased investment in the children. American Time Use Survey data suggests that single mothers tend to spend less time with their children than married mothers (Kendig and Bianchi, 2008). A parental time investment mechanism would also be consistent with existing evidence from a work-encouraging Norwegian welfare reform that was found to affect children adversely by inducing single mothers to increase their labor supply at the expense of parental time at home, leading to a significant decrease in children's high-school grades (Løken et al., 2018).[26]

4.3 Does the timing of treatment matter?

Another question of interest is whether the effects vary by children's age of exposure to the reform. There is a growing theoretical and empirical body of work on the importance of early-childhood conditions in determining success later in life by improving outcomes such as education, employment, and health (Cunha and Heckman, 2007; Elango et al., 2015; Heckman and Masterov, 2007). Moreover, the returns to investing are usually found especially very early in the life cycle and less effective later on (Kautz et al., 2014).

I employ an event-study design to allow for the difference-in-differences estimates to vary by the age of the child, as specified by Equation (2). The results are plotted separately for boys and girls in figures 3 and 4. Figure 3 provides the estimates for children's adult labor supply and earnings outcomes. The age-specific effects on number of months worked are rather noisy and are mostly insignificant from zero, except for boys ages six and eight, and for girls who were eight years-old when the reform launched. The impact on future cumulative labor earnings among boys, on the other hand, is positive and significant from age to five to twelve, and insignificant at older ages. The effects seem to also be declining with age, which is consistent with higher returns on parental investment at younger ages. However, this may also be due to the lengthier exposure to the reform. For girls, the impact on earnings are small and insignificant, irrespective of their age at the time of reform. Figure 4 provides the corresponding estimates for number of months on welfare and accumulated welfare income. We observe no impact on boys' welfare participation in adulthood, for all ages. For girls, the effects on future welfare participation and welfare income are positive and quite sizable, with larger estimates at ages 12 to 16. Unlike the impact on boys' future earnings, the intergenerational impact of the reform on girls' welfare participation in adulthood is not increasing with longer exposure or exposure at an earlier age. Importantly, for all outcomes, the coefficients for ages 20 to 23 are jointly insignificant, supporting the parallel trends assumption.

[26] Unfortunately, the data contains no information on children's academic achievements and their educational completion, preventing an estimation of the effect of reform exposure on educational outcomes.

4.4 Dynamic effects

To examine the dynamics of the effects over time, figures 5 and 6 report the difference-in-differences estimates for children's outcomes for each year from age 20 to age 30. The results suggest that the increase in welfare participation was transitory while the gains in terms of employment and earnings were persistent. The uptake in welfare participation among daughters of single mothers who grew up in the post-reform period occurs throughout their twenties. By age 28, however, the impact dissolves, so girls who were exposed to the reform during childhood ended up, on average, as self-sufficient in the long run as those who were not. Among the boys, for which there is no significant effect on the total number of months on welfare from age 20 to 30 (see table 3), there is in fact a small increase in welfare participation from age 20 to 23. Looking at girls' labor supply and earnings outcomes, we see no change in number of months employed or earnings, at any age. For boys, we observe a increase in labor supply and earnings throughout the entire period, suggesting that the effect on boys was not transitory, but permanent. Appendix figures A2 and A3 extend the outcomes to age 35 by limiting the sample to children born between 1969 and 1983. The longer-term estimates further support the premise that boys' gains were persistent over the life-cycle, while girls' utilization of welfare benefits were not.

4.5 Robustness checks

The similarity in outcomes between "unexposed" children of single and married mothers implied by the insignificance of the coefficients for ages 20 to 23 plotted in figures 3 and 4 provide supporting evidence for the validity of the parallel trends assumption. Figures 2 further suggest that single and married mothers have been on parallel paths in terms of labor-market behavior during the years leading up to the reform. Nonetheless, there are additional concerns.

For one, if the characteristics of single and married mothers of children of different cohorts followed different trends, the changing composition of mothers may dilute the effects of the reform. I start by examining the characteristics of single and married mothers across children's birth cohorts. The four plots in appendix figure A4 present mothers' average household-level pre-reform labor earnings, employment rates, age, and number of children under the age of eighteen, by child birth cohort. While there is no difference in trends in age, fertility, and labor earnings, we do observe some evidence of compositional changes in employment rates.

As another robustness check, I estimate the effects of the reform by limiting the identifying variation to within-household variation in exposure to the reform during childhood. This is done by restricting the sample to families with at least one "exposed" child and one "unexposed" child, and re-estimating Equation (1) with mother fixed effects. This exer-

cise allows me to control for any time-invariant unobserved heterogeneity across mothers, such as preferences for work and childcare. More importantly, since it does not rely on variation across mothers, compositional changes are immaterial. The results are reported in table 4. Reassuringly, they are virtually identical to the main results.

Another concern is whether marital status was endogenously affected. Pension programs that their eligibility hinged on being unmarried, for example, have been shown to have a detrimental impact on remarriage rates (Aizer et al., 2020; Salisbury, 2017). Although the groups of children to single and married mothers are defined pre-reform, if the reform induced some mothers to divorce or stay single that would lead to underestimation of the true effects of the reform. I find no evidence for this. While the share of single mothers increased continuously during our sample period, there seems to be no change in the slope after 1991 (see appendix figure A5). The same holds true when restricting the sample to households with labor earnings below the median each year. To test this more formally, I also estimate the probability of mothers being single during the post-reform years, conditional on a time trend, employing various specifications. The results, reported in appendix table A2, further suggest that the reform did not induce mothers to remain or become single. The estimated change in the probability to be single in the post-reform years is in fact negative and negligible in magnitude. Likewise, I investigate whether there is a shift in the number of children among single mothers after the implementation of the reform. The results, reported in table A3, suggest no change in fertility rates. These findings are in line with existing evidence from the U.S, suggesting weak effects, if any, on marital status and family composition following welfare reforms (Moffitt, 2008).

Last, I conduct a falsification test, estimating the effect of reform exposure on the long-term outcomes of children who grew up in high-income households. While welfare eligibility cannot be observed directly, we should expect the reform to have little bearing on the adult outcomes of children to parents with historically high earnings, as it is improbable that their parents would qualify for welfare benefits in the post-reform years. Specifically, I re-estimate the main specification for households in the upper half of the labor income distribution in 1991. The results are reported in table 5 and suggest no positive or adverse effect of the reform on these children's long term outcomes.

5 Discussion

5.1 Potential mechanisms

This reform differently affecting boys and girls comport with earlier work finding larger effects of family income on boys test scores and educational attainment (Dahl and Lochner, 2012; Milligan and Stabile, 2011), and that family disadvantage disproportionately affects

the behavioral, academic, and labor market outcomes of boys relative to those of girls (Chetty et al., 2016; Figlio et al., 2019). Boys in single-parent families, in particular, were found to receive less and lower-quality parental inputs and are more sensitive to these inputs compared to that of girls (Bertrand and Pan, 2013). Welfare assistance improving mainly boys adult labor market outcomes could be explained by larger investments in boys following an increase in parental resources or simply by boys gaining more from the same increase in resources. Boys do tend to have larger returns to maternal time investments (Gayle et al., 2012, Fan et al., 2015). If boys of low-income single mothers are especially vulnerable, one would expect them to have much higher returns to parental investments than girls.

What might explain the intergenerational transmission of welfare participation among girls? The reform only moderately reduced maternal employment at the extensive margin, making it improbable that the increase in daughters' future welfare participation rates was driven by lower maternal labor-force attachment. It would also be challenging to justify an information transmission mechanism in which welfare-related information successfully passes from mothers to daughters but encounters difficulty in reaching sons. A possible explanation may be that mothers serve as more important role models for their daughters than for their sons, which would imply a gender-specific change in norms. While I cannot test this directly, I use population registry records to examine whether there is an increase in the likelihood of the children to become single-parents themselves as a result of reform exposure at childhood, following Equation (2). Separate event-study estimates for boys and girls are reported in figure 7. Notably, and conforming with the premise that the gender differences in the intergenerational impact of welfare participation stem from mothers serving as role models primarily for their daughters rather than their sons, we observe a rise in the likelihood of being a single parent exclusively among girls.

5.2 Effect size and welfare implications

How large are estimated effects? A direct comparison to the findings of earlier work is challenging, given the considerable differences in methodology, institutional setting, age of exposure, and outcomes considered across studies. Both Dahl et al. (2014) and Dahl and Gielen (2021), for example, provide estimates for the intergenerational effects of DI, which greatly differs from general welfare assistance (i.e. traditional cash welfare). Hartley et al. (2022) offers a more apt basis for comparison in this context, as it examines the intergenerational effects of AFDC/TANF participation. Its primary emphasis lies on estimating the transmission parameter (i.e. the association between a mother's participation and her daughter's odds of adult participation). They estimate that before the 1996 welfare reform, which restricted program access, the transmission of welfare participation from mothers to daughters among single mothers varied between 27 and 43 percentage

points.

Three years following the 1992 reform, the welfare participation rates among single mothers in Israel saw a significant rise, going from 13.2% to 20%, marking a 50% increase in take-up. Children of single mothers' future utilization of welfare experienced a proportional increase, where the average time spent on welfare from ages 20 to 30 rose from one month to a month and a half, implying a larger welfare transmission across generations than in Hartley et al. (2022). It is crucial to highlight, though, that the reform not only led to an increase in the number of single mothers on welfare but also raised the monthly benefits provided to both new and existing recipients. Additionally, it increased recipients' ability to earn additional income in the labor market without sacrificing their welfare benefits, further motivating them to prolong their period on welfare assistance. Consequently, the observed increase in children's future dependency on welfare is partly attributable to those born to single mothers who were beneficiaries of welfare prior to the reform.

The effects of EITC exposure in childhood can be used to better understand the magnitude of the impact of the reform on employment and earnings. Reform exposure increased children's future months of employment and labor earnings from age 20 to 30 by 2% and 5%, respectively. According to the estimates of Bastian and Michelmore (2018), these effects are roughly equivalent to an additional $2,000 in EITC exposure when a child is 13–18 years old.

To assess whether the benefits of the reform surpass its costs and to understand its welfare implications more comprehensively, I follow the framework of Hendren and Sprung-Keyser (2020) for calculating the Marginal Value of Public Funds (MVPF) associated with the reform. The MVPF is the ratio of the benefit of the policy to its recipients to the net cost to the government. A policy exhibiting an MVPF of x implies that for every dollar of net government expenditure, the policy yields benefits valued at x dollars. The net cost of the 1992 reform encompasses several components: the expense of additional welfare benefits allocated to single mothers, the reduction in tax revenue attributable to decreased labor earnings among these mothers, the increase in welfare benefits awarded to their children in adulthood, and the larger tax revenue resulting from an increase in children's future labor earnings. The benefits of the policy to its recipients include the value of increased welfare benefits granted to single mothers, the value of additional welfare benefits extended to their children in adulthood, and the value of the rise in children's lifetime after-tax labor earnings. Given the assumptions of a 20% tax rate, in-kind benefits valued at 80%, a 3% discount rate, an effect on mothers' labor market outcomes lasting for 10 years (until the 2003 reforms), and a lasting impact on children's labor earnings, the computed MVPF is 3.53.[27] The calculated MVPF posi-

[27] Diff-in-diff estimates suggest an average annual decrease of NIS 1,890 in labor earnings for single mothers during 1993-1995, leading to an annual loss in revenue of NIS 378 (0.2 * NIS 1,890). Assuming

tions the reform above the cash transfers policies analyzed in Hendren and Sprung-Keyser (2020).

6 Summary

This paper examines the long-term impacts of maternal welfare recipiency by estimating the effects of an Israeli welfare reform designed to improve the situation of single-parent households. The reform resulted in single mothers reducing their labor participation and increasing their dependence on welfare benefits, in contrast to their married counterparts. As a result, children of single mothers exposed to the reform during their childhood exhibited an increased dependency on welfare benefits in their young adulthood. The surge in welfare participation was temporary, was predominantly driven by girls, and does not appear to have adversely affected their long-term economic self-sufficiency. At the same time, the reform raised children's future labor supply and earnings. These gains were not limited to the period of young adulthood and were driven by a positive impact on boys. I propose that this disparity could be linked to boys being more susceptible to the adverse impacts of father absence and economic disadvantage. Additionally, mothers may serve as more significant role models for their daughters than for their sons.

The rise in future employment rates and earnings for boys, coupled with the transient nature of the potentially adverse effects on girls, suggest that the increase in welfare participation rates among single mothers did not instill a detrimental "welfare culture" in recipient families. Overall, expanding program access and and the provision of more generous benefits for single mothers seem to have had a predominantly positive effect on low-income single-parent households, leading to an improvement in the long-term economic outcomes among boys. Further research is required to ascertain whether these

this decrease persisted for the subsequent 10 years, the total forgone tax revenue amounts to NIS 3,780. Diff-in-diff estimation further suggests an average annual increase of NIS 1,750 in transfers to single mothers, totaling NIS 17,500 over 10 years. Considering the value of in-kind benefits estimated at NIS 25,000 per year, the increase in participation rates of 0.048 results in an annual increase of NIS 1,200 worth of in-kind benefits, totaling NIS 12,000 over 10 years. Exposure to the reform during childhood is associated with an average increase in cumulative earnings from age 20 to 30 of NIS 22,650. To turn this into a stream of lifetime earnings, I assume this effect, in percentage terms (a 5% increase), would hold until age 55. Assuming a 0.5% wage growth, future earnings are projected to increase by NIS 76,700. At a 20% tax rate, this translates to an increased tax contribution of NIS 15,340. Additionally, exposure to the reform increases cumulative welfare transfers by NIS 1,140 from age 20 to 30, with no impact on welfare usage past this age. The increase in average participation rates from age 20 to 28 by 0.007 yields an estimated value of in-kind benefits of NIS 1,575. The net cost, therefore, is NIS 3,780 + 17,500 + 12,000 - 15,340 + 1,140 + 1,575 = NIS 20,655. The value of welfare benefits for mothers comprises NIS 1,750 in transfers and NIS 960 (0.8 * NIS 1,200) in in-kind benefits per year. Assuming the impact lasts for ten years, and discounting to present value terms using a discount rate of 3%, the benefits are valued at NIS 23,810. For children, for whom I assume the impact lasted until age 55, the discounted value of the increase in welfare transfers and in-kind benefits is NIS 2,108, and the discounted value of the increase in their lifetime after-tax income is NIS 47,168. Hence, the total willingness to pay is NIS 23,810 + 2,108 + 47,168 = NIS 73,086. Dividing this willingness to pay (NIS 73,086) by the net cost (NIS 20,655) yields an MVPF of 3.53.

gains trace to an improvement in the quality and quantity of parental time investments or an increase in the material and financial resources invested in the children.

Compliance with ethical standards

Conflict of interest The author declares that he has no conflict of interest.

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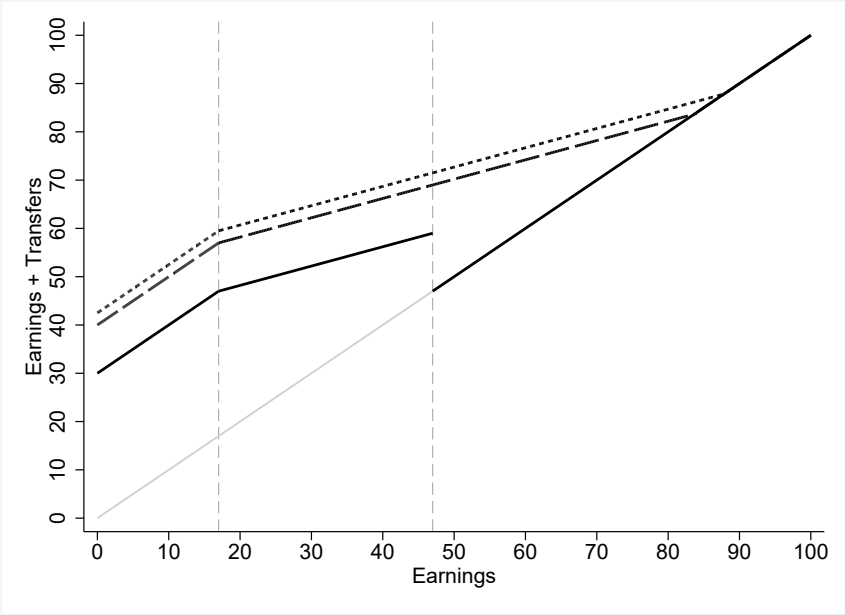
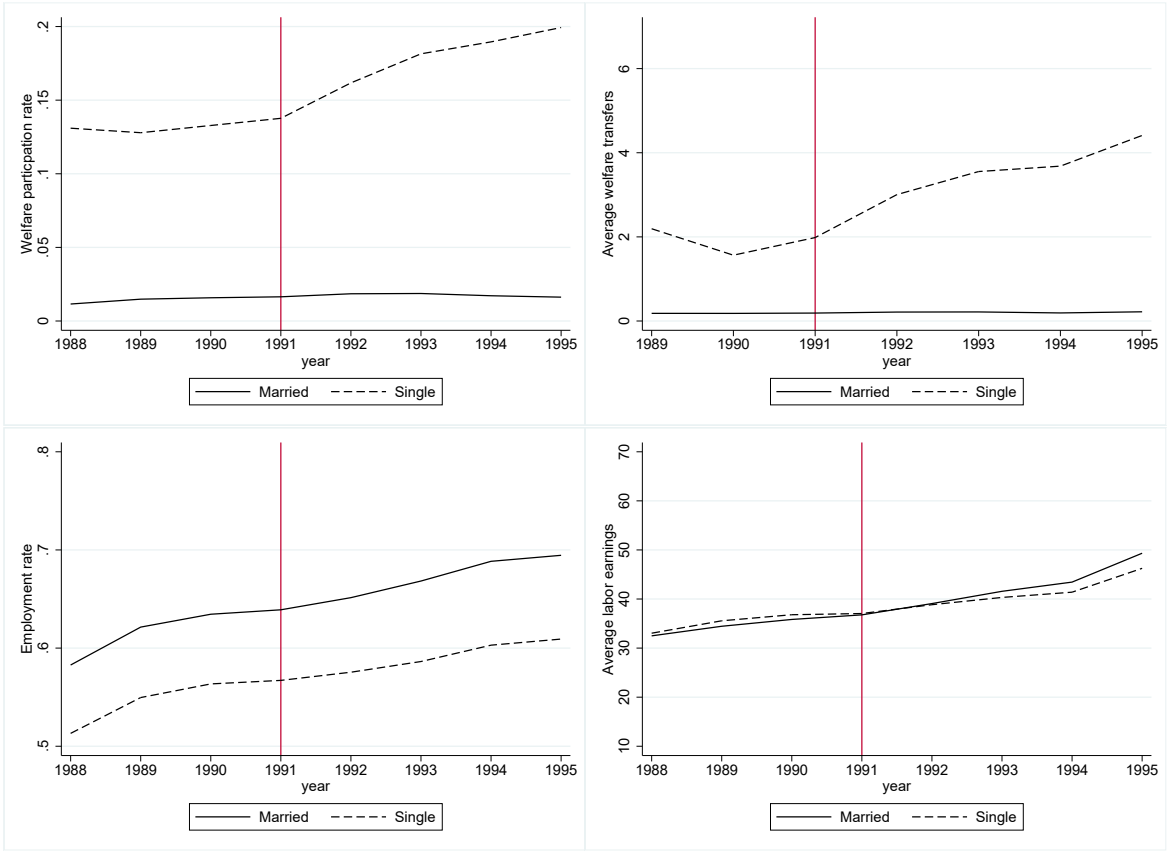
Figure 1: The welfare payments schedule



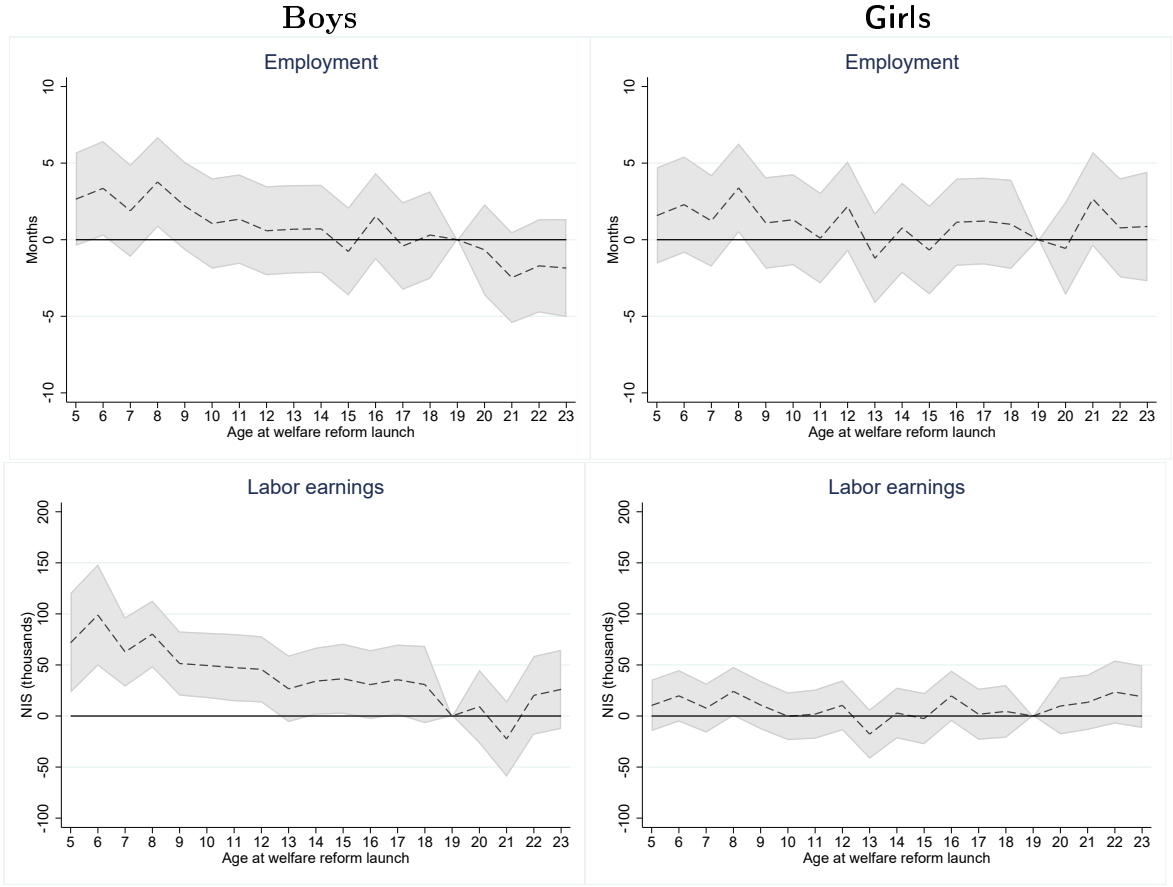
Notes: The welfare benefit schedule for a single-parent family with one dependent child as a percentage of the average wage. The solid line shows the pre-reform schedule. The dashed line shows the schedule for the years 1992-1994. The dotted line shows the schedule post 1994.

Figure 2: Trends in labor market outcomes



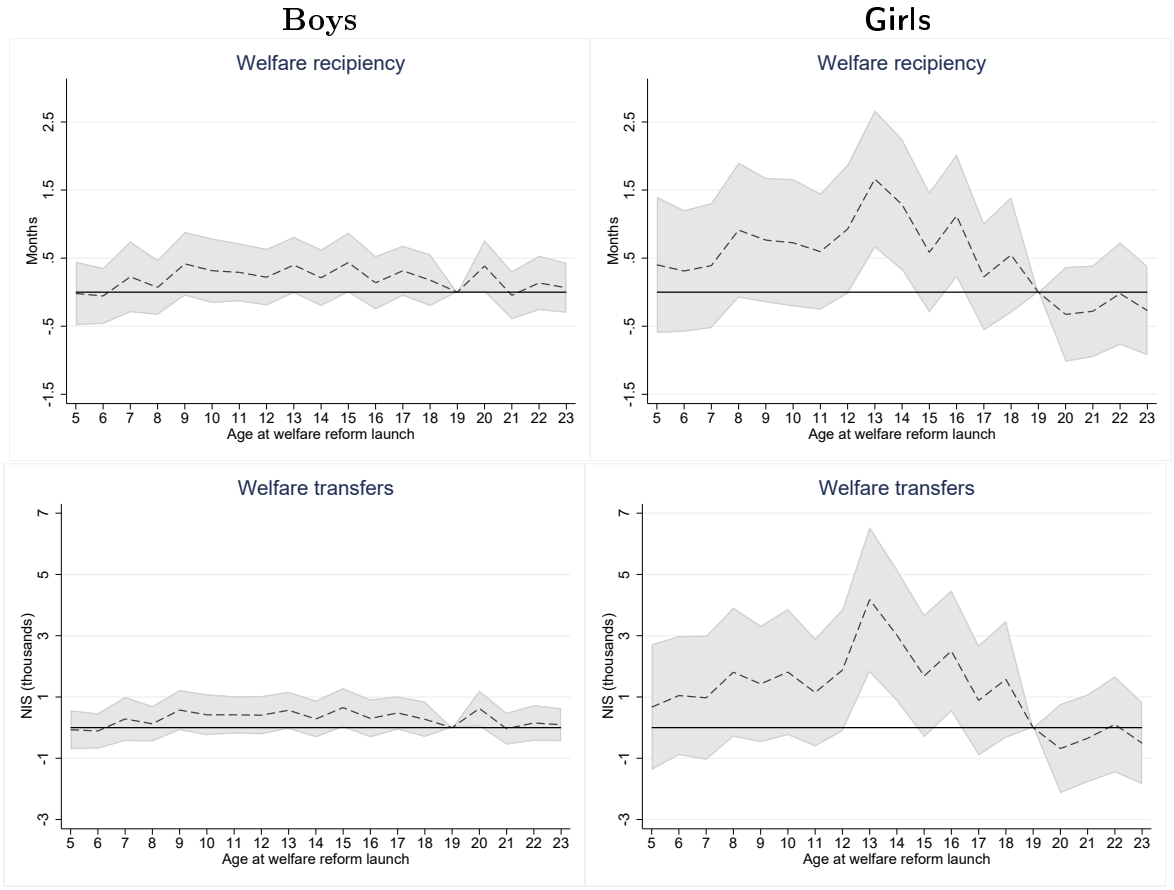
Notes: The figures compare the following welfare and employment metrics for married versus single mothers: welfare participation rates, employment rates, and average annual incomes from welfare and labor, expressed in thousands of NIS (2010 values).

Figure 3: Event study estimates for children's long-term labor supply and earnings



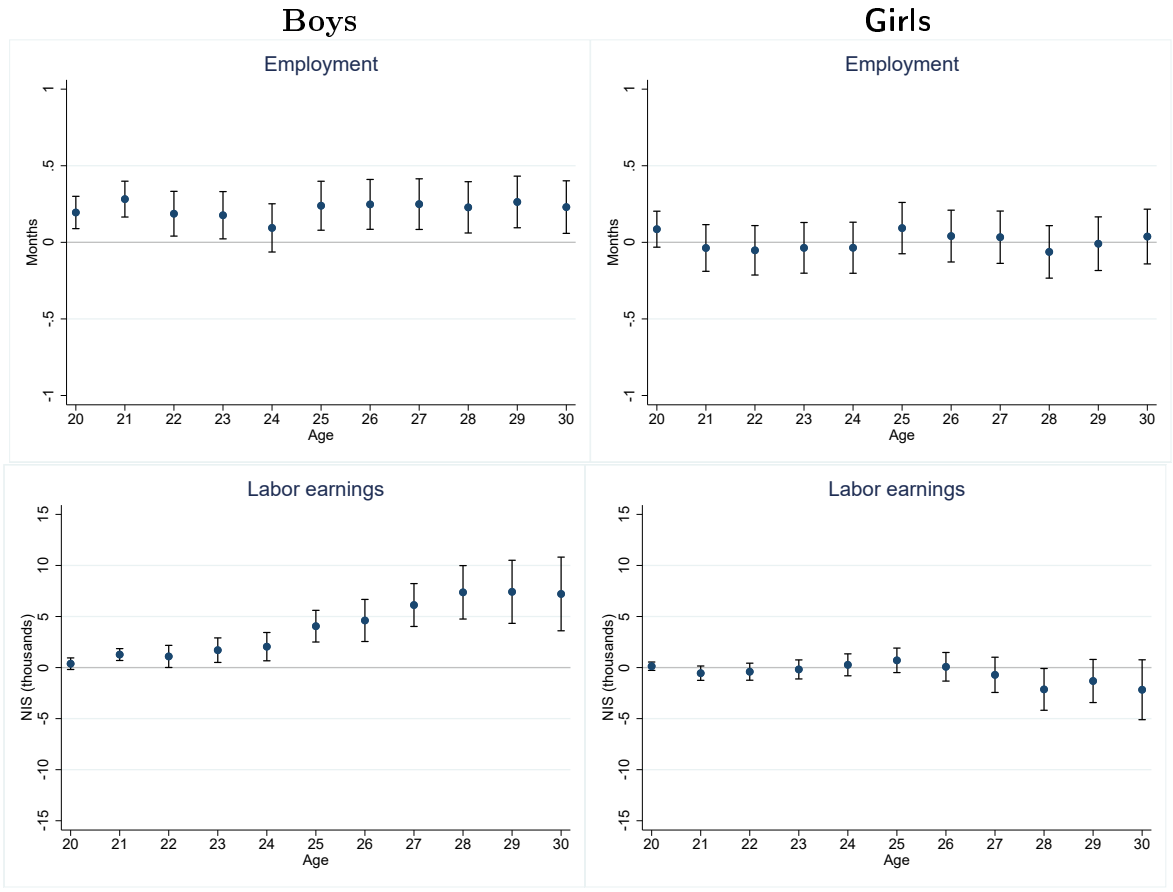
Notes: The upper figures report the effect of exposure to the reform in childhood on cumulative employment duration from ages 20 to 30, measured in months, by initial exposure age, separately for boys and girls. Below, corresponding estimates for cumulative labor earnings in thousands of NIS (2010 values) are plotted. Gray areas represent 95 percent confidence intervals.

Figure 4: Event study estimates for children's long-term welfare participation



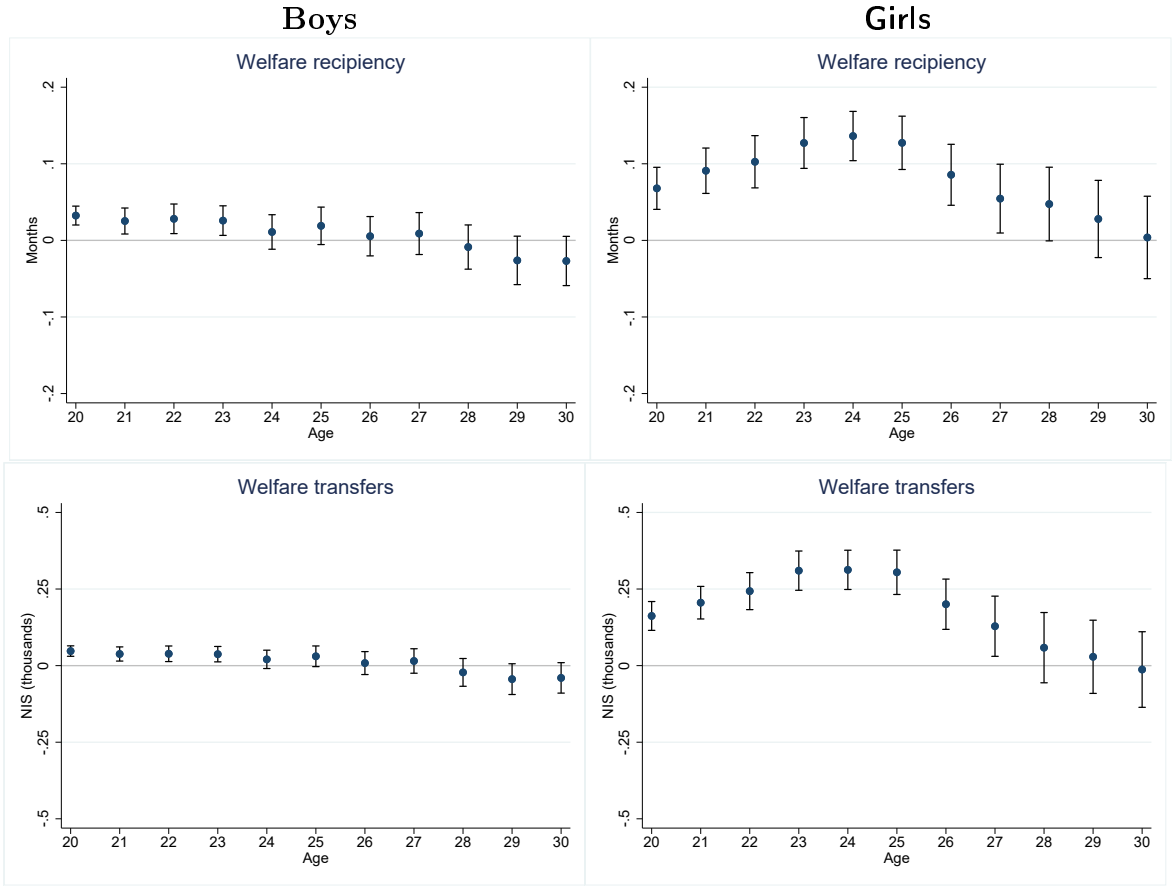
Notes: The upper figures report the effect of exposure to the reform in childhood on cumulative welfare recipiency duration, measured in months, from ages 20 to 30, by initial exposure age, separately for boys and girls. The lower figures provide the corresponding estimates for cumulative welfare income in thousands of NIS (2010 values). Gray areas represent 95 percent confidence intervals.

Figure 5: Difference-in-differences estimates for children's labor supply and earnings over the life-cycle



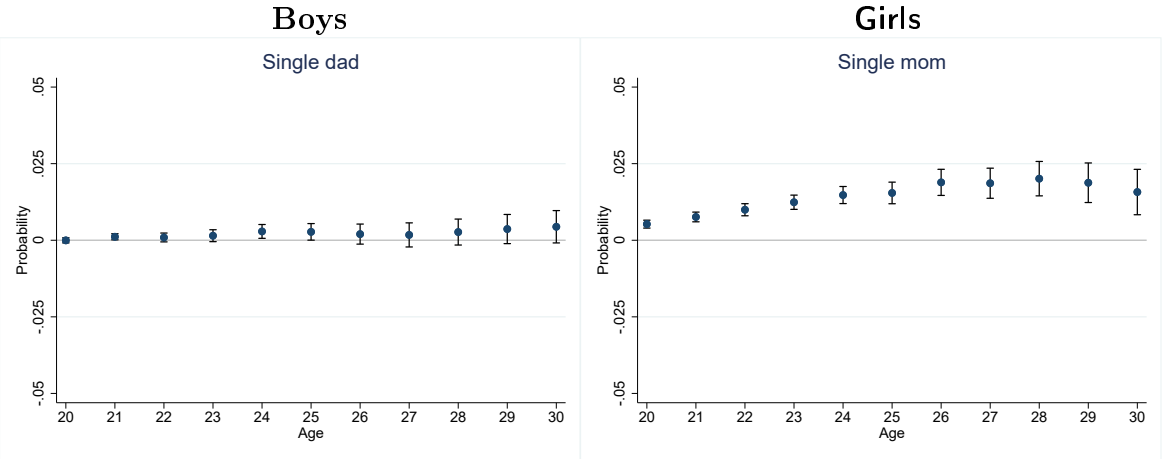
Notes: The upper figures report the average effect of exposure to the reform in childhood on employment duration, measured in months, at every age from age 20 to 30, separately for boys and girls. The lower figures provide the corresponding estimates for annual labor earnings in thousands of NIS (2010 values).

Figure 6: Difference-in-differences estimates for children's welfare participation over the life-cycle



Notes: The upper figures report the average effect of exposure to the reform in childhood on welfare recipiency duration, measured in months, at every age from age 20 to 30, separately for boys and girls. The lower figures provide the corresponding estimates for annual welfare income in thousands of NIS (2010 values).

Figure 7: Difference-in-differences estimates for children's likelihood to be single parents over the life-cycle



Notes: The figures report the average effect of exposure to the reform in childhood on the likelihood of being a single-parent, at every age from age 20 to 30, separately for boys and girls.

Table 1: Pre-reform characteristics of mothers and their children

	Children of married mothers	Children of single mothers
Child characteristics		
Age	12.199	13.816
	(5.063)	(5.152)
Female	0.479	0.477
	(0.500)	(0.499)
Number of siblings (age $\leq$ 18)	1.566	0.927
	(0.913)	(0.893)
Mother characteristics		
Age	37.758	39.031
	(6.173)	(6.659)
Employed	0.645	0.632
	(0.479)	(0.482)
Annual earnings	38.490	39.562
	(46.036)	(49.375)
Annual earnings of spouse	107.496	-
	(112.835)	-
Welfare recipient	0.015	0.130
	(0.122)	(0.337)
Observations	548,074	45,456

Notes: The table reports the average characteristics of single and married mothers in 1991, one year before the reform. Earnings are in thousand NIS (2010 prices). 1000 NIS equals approx. 200 Euro or 270 USD.

Table 2: Difference-in-differences estimates for Children's adult outcomes

	Control mean	Effect
Welfare participation (in months)	1.017	0.535***
		(0.086)
Employment (in months)	67.966	1.537***
		(0.435)
Ever employed and\or received welfare benefits	0.931	0.003
		(0.003)
Total welfare transfers	1.692	1.140***
		(0.169)
Total labor earnings	440.453	22.650***
		(4.697)
Observations		593,530

Notes: The table reports difference-in-differences estimates of the effect of exposure to the reform in childhood on adult outcomes. All regressions control for the child's gender, number of siblings, birth cohort fixed effects, the mother's pre-reform employment and welfare status, pre-reform household labor income, and mother's year-of-birth fixed effects. The control mean is the mean of the dependent variable for children of single mothers who were not exposed to the reform during childhood. Earnings and benefits are expressed in thousand NIS (2010 prices). Standard errors clustered at the mother level in parentheses. * $p<0.10$, ** $p<0.05$, *** $p<0.01$

Table 3: Children's difference-in-differences estimates stratified by gender

	Boys		Girls	
	Control mean	Effect	Control mean	Effect
Welfare participation (in months)	0.740	0.119	1.359	0.922***
		(0.084)		(0.153)
Employment (in months)	64.983	2.648***	71.642	0.507
		(0.590)		(0.629)
Ever employed and\or received welfare benefits	0.930	-0.0001	0.933	0.009**
		(0.004)		(0.004)
Total welfare transfers	1.041	0.164	2.493	2.054***
		(0.124)		(0.327)
Total labor earnings	480.623	44.832***	390.957	-4.004
		(7.249)		(5.493)
Observations		309,928		284,232

Notes: The table reports seperate difference-in-differences estimates of the effect of exposure to the reform in childhood on adult outcomes for boys and girls. All regressions control for the same characteristics as in table two. The control mean is the mean of the dependent variable for children of single mothers who were not exposed to the reform during childhood. Standard errors clustered at the mother level in parentheses. * $p<0.10$, ** $p<0.05$, *** $p<0.01$

Table 4: Children's difference-in-differences estimates with mother fixed effects

	Control mean	Effect
Welfare participation (in months)	1.166	0.401***
		(0.147)
Employment (in months)	69.977	1.479**
		(0.592)
Ever employed and\or received welfare benefits	0.945	0.005
		(0.003)
Total welfare transfers	2.011	0.904***
		(0.308)
Total labor earnings	453.686	24.451***
		(6.934)
Observations		139,714

Notes: The table reports difference-in-differences with mother fixed effects estimates of the effect of exposure to the reform in childhood on adult outcomes. All regressions control for the child's gender, birth cohort fixed effects, and mother fixed effects. The control mean is the mean of the dependent variable for children of single mothers who were not exposed to the reform during childhood. Earnings and benefits are expressed in thousands New Israeli Shekels (2010 prices). Standard errors clustered at the mother level in parentheses. * $p<0.10$, ** $p<0.05$, *** $p<0.01$

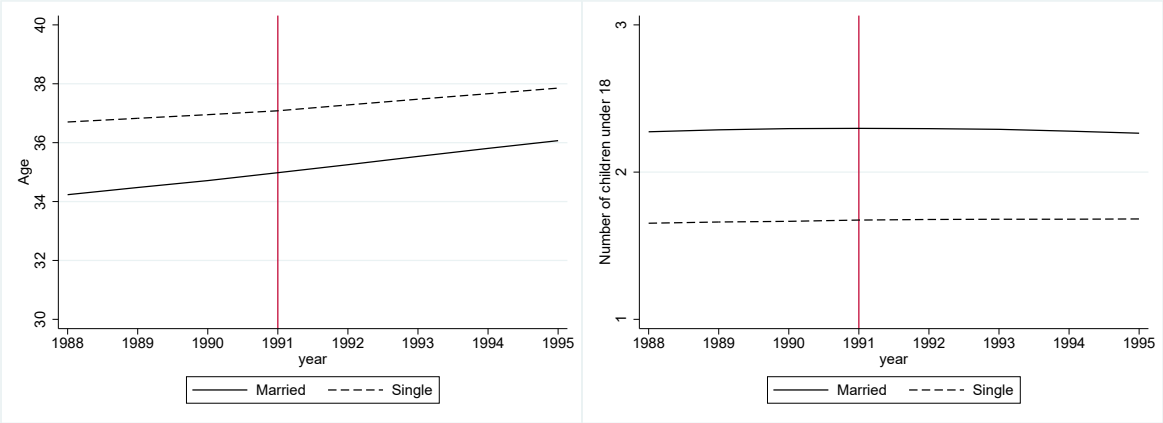
Table 5: Difference-in-differences estimates for children in (pre-reform) high-income households

	Control mean	Effect
Welfare participation (in months)	0.300	-0.052
		(0.123)
Employment (in months)	77.597	-1.091
		(1.275)
Ever employed and\or received welfare benefits	0.994	-0.007*
		(0.004)
Total welfare transfers	0.491	-0.117
		(0.229)
Total labor earnings	543.231	15.121
		(16.935)
Observations		230,556

Notes: The table reports difference-in-differences estimates of the effect of exposure to the reform in childhood on adult outcomes, for children growing up in high-income households that are unlikely to be affected by the reform. High-income households are defined as those with above-median labor income in 1991, one year before the reform. All regressions control for the same characteristics as in table two. Standard errors clustered at the mother level in parentheses. * $p<0.10$, ** $p<0.05$, *** $p<0.01$

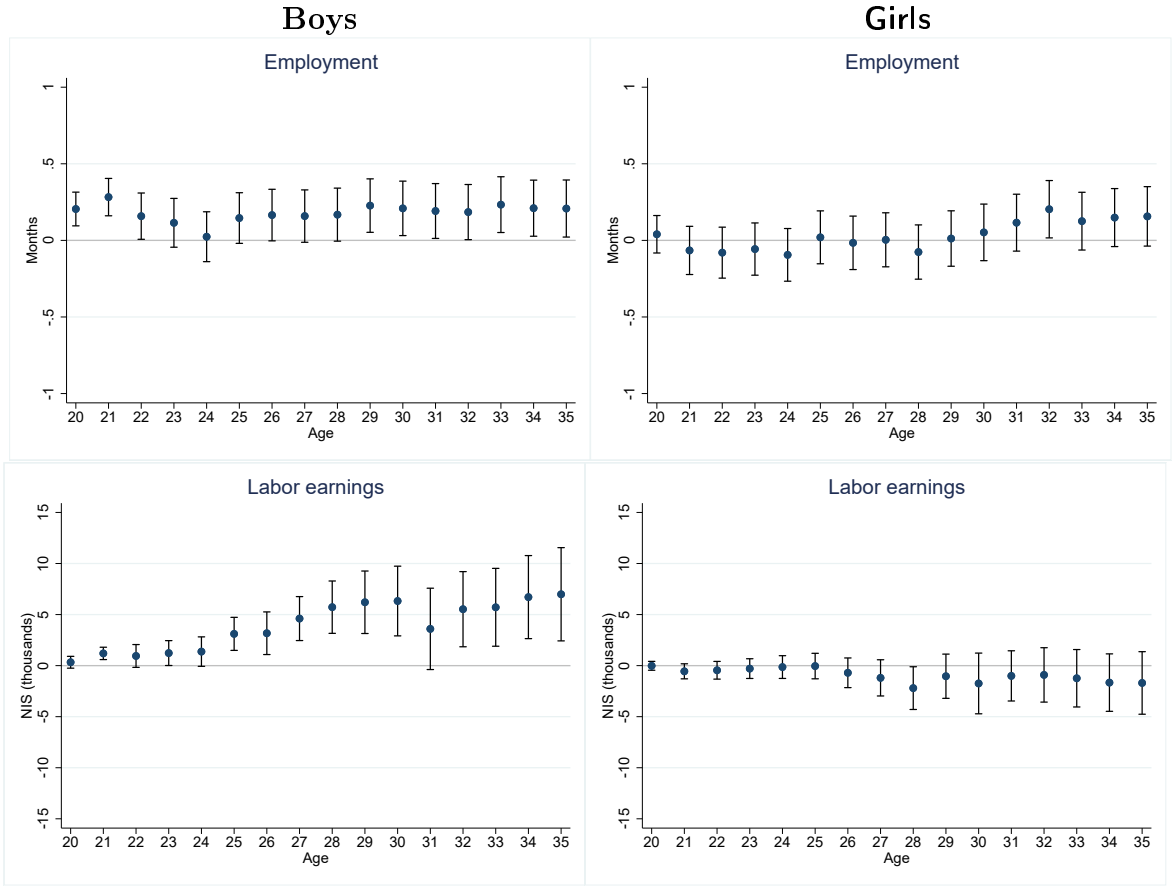
7 Appendix

Figure A1: Trends in mothers‘ characteristics



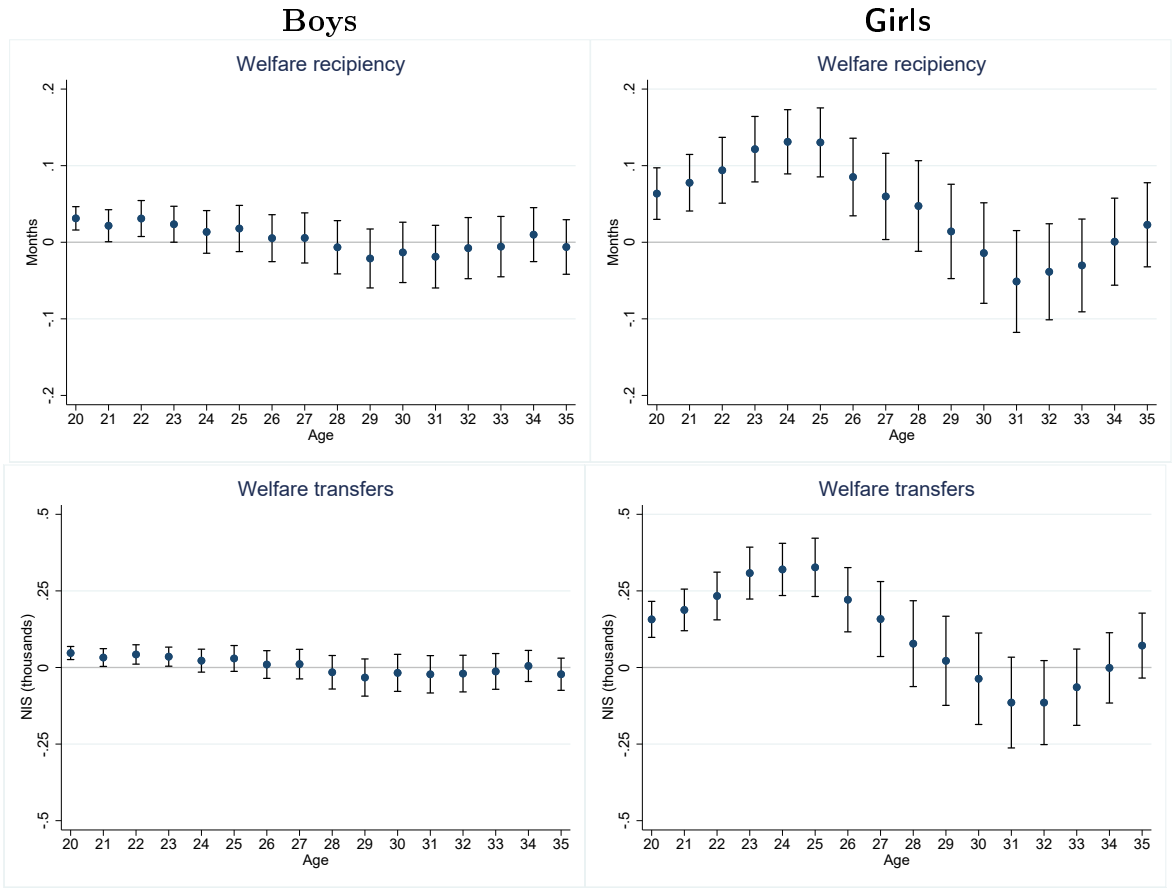
Notes: The figures compare the age and number of dependent children of married versus single mothers.

Figure A2: Difference-in-differences estimates for labor supply and earnings over the life-cycle (1969-1983 birth cohorts)



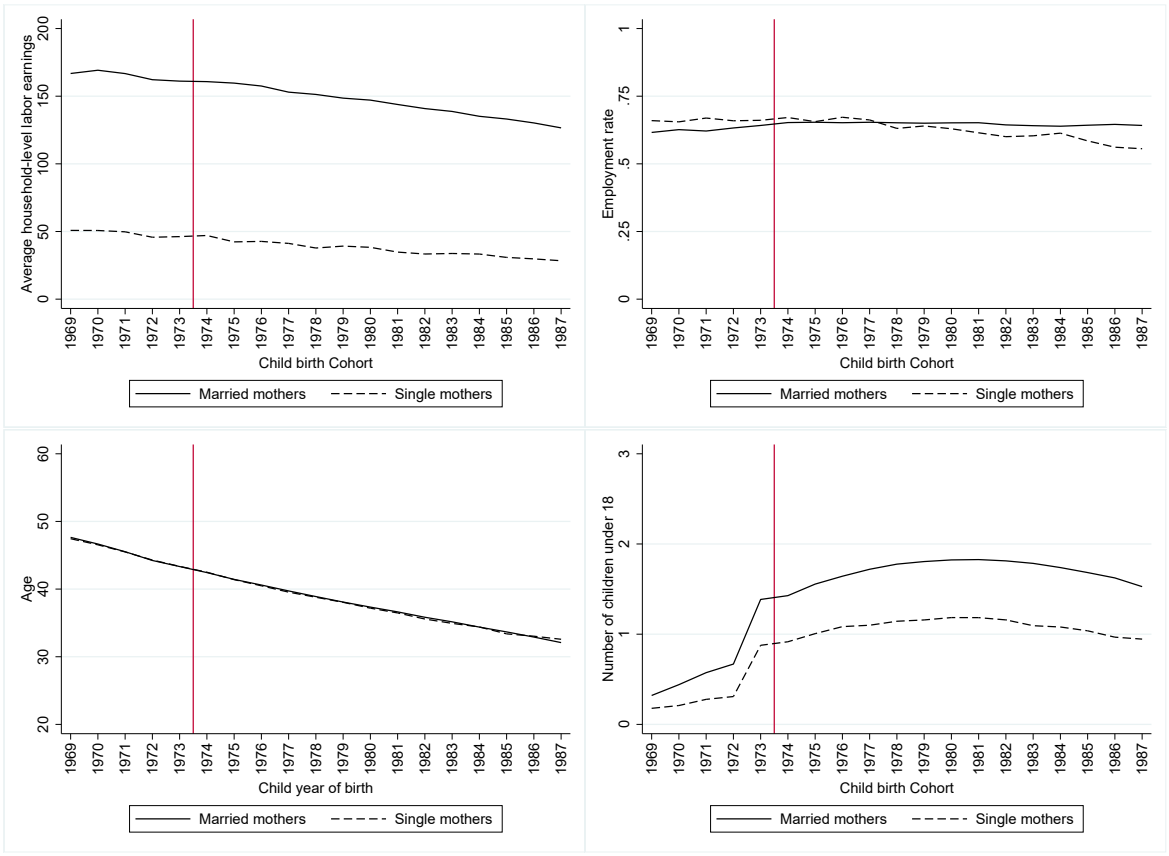
Notes: The upper figures report the average effect of exposure to the reform in childhood for children over nine in 1992, on employment duration, measured in months, at every age from age 20 to 35, separately for boys and girls. The lower figures provide the corresponding estimates for annual labor earnings in thousands of NIS (2010 values).

Figure A3: Difference-in-differences estimates for welfare participation over the life-cycle (1969-1983 birth cohorts)



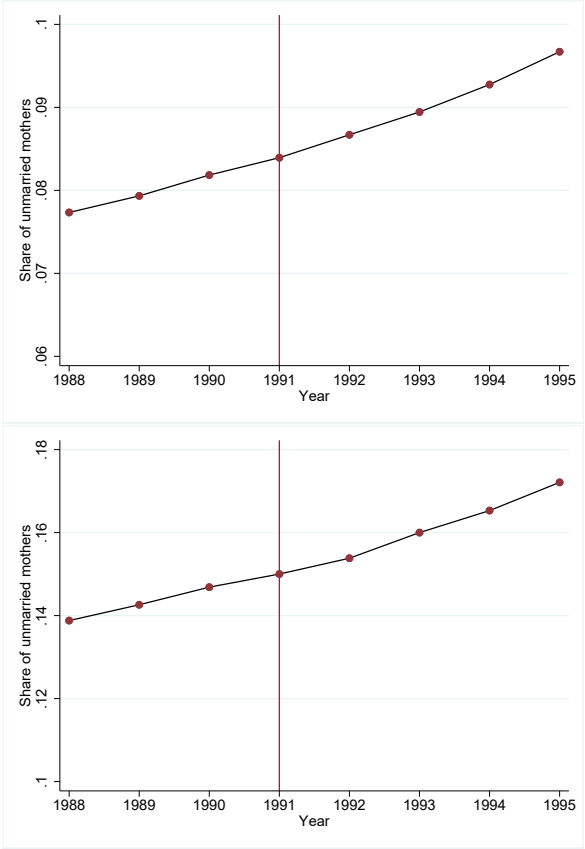
Notes: The upper figures report the average effect of exposure to the reform in childhood for children over nine in 1992, on welfare recipiency duration, measured in months, at every age from age 20 to 35, separately for boys and girls. The lower figures provide the corresponding estimates for annual welfare income in thousands of NIS (2010 values).

Figure A4: Trends in maternal characteristics across children's birth cohorts



Notes: The figures compare the following characteristics of married versus single mothers, measured one year before the reform, by the child's birth cohort: household-level labor earnings (in thousand 2010 NIS), employment rates, age, and number of dependent children.

Figure A5: Share of single mothers over time



Notes: The Upper figure reports the share of single mothers among Non-Ultra-Orthodox native-born Israeli mothers aged 24-51 with children under age 18 from 1988 to 1995. The lower figure provides the corresponding shares among those who were at the lower half of the earnings distribution each year.

Table A1: Difference-in-differences estimates for children's adult outcomes, w\o controls

	Control mean	Effect
Welfare participation (in months)	1.017	0.834***
		(0.088)
Employment (in months)	67.966	0.460
		(0.447)
Ever employed and\or received welfare benefits	0.931	-0.001
		(0.003)
Total welfare transfers	1.692	1.670***
		(0.174)
Total labor earnings	440.453	19.336***
		(4.776)
Observations		593,530

Notes: The table reports difference-in-differences estimates of the effect of exposure to the reform in childhood on adult outcomes, without controlling for any observable characteristics. The control mean is the mean of the dependent variable for children of single mothers who were not exposed to the reform during childhood. Earnings and benefits are expressed in thousands New Israeli Shekels (2010 prices). Standard errors clustered at the mother level in parentheses. * $p<0.10$, ** $p<0.05$, *** $p<0.01$

Table A2: Selection into single motherhood

	(1)	(2)	(3)	(4)
Post	-0.0004*	-0.0003	-0.0006**	-0.0005**
	(0.0003)	(0.0003)	(0.0002)	(0.0002)
Linear time-trend	✓		✓	
Quadratic time-trend		✓		✓
Individual F.E			✓	✓
Observations	2,706,993	2,706,993	2,682,954	2,682,954

Notes: The table reports the change in the probability of being a single mother post-reform. Standard errors are clustered at the individual level in parentheses. * p<0.10, ** p<0.05, *** p<0.01

Table A3: Reform impact on single mothers‘ fertility

	(1)	(2)	(3)	(4)
Post	-0.0018	0.0005	0.0007	0.0010
	(0.003)	(0.003)	(0.002)	(0.002)
Linear time-trend	✓		✓	
Quadratic time-trend		✓		✓
Individual F.E			✓	✓
Observations	234,134	234,134	226,491	226,491

Notes: The table reports the post-reform change in number of children among single mothers following the reform. Standard errors are clustered at the individual level in parentheses. * p<0.10, ** p<0.05, *** p<0.01