The power of one?
Poverty and union formation among single mothers in Sweden, 1947-2015

Maria Stanfors & Gabriel Brea-Martinez
Centre for Economic Demography, Lund University, Sweden

Abstract

Single mothers have fewer resources than partnered mothers, affecting their own and their children's well-being. Using individual-level longitudinal data from the Scanian Economic and Demographic Database (SEDD), we investigate the links between poverty, single motherhood, and post-birth union formation among never married women in Sweden between 1947 and 2015. Low-income women were more likely to become single mothers in 1947-1967 but this negative association between individual income and single motherhood reversed after 1968. Before 1968, there was a negative association between individual income and the probability to marry within ten years after first birth, net of income-based selection. However, there was a stable and positive association between equivalized family income, which considers continued childbearing, and the probability of marriage throughout the period studied. Findings reveal that single mothers who remained unmarried were poorer, but selection regarding individual income and continued childbearing was at play during the transition from low to high labor force participation among married women. Marriage was correlated with higher equivalized family income and reduced poverty risks throughout the period. The income premia compared to the single mothers increased over time, which is surprising. There was consistently a weaker link between cohabitation and income, which is also surprising. Despite increasing female economic independence, comprehensive welfare policy and change in the role of marriage, married women became increasingly well off while single mothers remained economically disadvantaged. Results emphasize the need for targeted support to improve the well-being of single mothers and their children in present-day Sweden.

Paper prepared for the International Population Conference in Brisbane, July 13-18, 2025.

Introduction

It is well established that single mothers, across contexts, have fewer resources than partnered mothers with implications for their own well-being and their children's future (Bird & Rieker, 2008; Casper & Bianchi, 2002; Garfinkel & McLanahan 1986; Kalmijn & Monden 2020; Mattingly & Bianchi 2003; McKeever & Wolfinger 2012; McLanahan 2004; Nieuwenhuis & Maldonado 2018; Waite & Gallagher 2000). At the extreme, single motherhood is associated with poverty. Single mothers are disadvantaged through the lack of a spouse, in terms of income, social networks, and time (Craig 2005; Vernon 2010; Vickery 1977). This relationship is driven by many factors, including less education, less well-paying jobs, and childcare responsibilities that restrict full-time work. Hence, marriage has been seen as a potential pathway out of poverty for single mothers.

Theoretically, married individuals benefit from the pooling of resources and the sharing of work and family responsibilities with a spouse, even in dual-earner societies. The economic disadvantages of single mothers can also be explained by human capital differences (i.e., single mothers having lower qualifications in terms of education or occupation, and less job experience, than married mothers). A third explanation relates to selection and unobserved heterogeneity among women that generate differences in both work and family domains. If selection is at play, unmeasured factors produce differences by marital status and the same individuals would have been economically disadvantaged even if they had not become single mothers.

Despite that the 20th century brought about many changes in the lives of families in many Western countries, including increased female labor force participation, and marriage and childbearing becoming increasingly disconnected (Casper & Bianchi 2002; Cherlin 1992), some argue that the importance of two-parent homes grew (rather than decreased) with implications for the lives of adults and children, and for economic inequality at the national level (Esping Andersen 2016; Kearney 2023). While not all research agree, suggesting that the role of marriage in alleviating poverty is complex and influenced by factors such as education, race, labor market conditions, welfare policies, and orientation toward gender equality, the vulnerability and the ability of single mothers to independently provide for themselves and their children continue to be an issue of relevance to research as well as one of policy.

Because existing research is limited to shorter periods, primarily covering recent decades, it is an open question whether the links between economic disadvantage, single motherhood and post-birth marriage are deeply rooted or whether they have changed over time. Single motherhood has become more common, the stigma associated with it has weakened, and cohabitation and alternative partnerships have substituted for marriage. Moreover, the welfare state compensates for the lack of economic resources and social support—in some countries more than others—and thereby addresses the negative consequences of single motherhood for women and children. This justifies further study that applies a long-term perspective to understand the associations between income, single motherhood and marriage during a period when women gained economic independence and marriage supposedly became less important.

We investigate the liks between income, single motherhood and marriage after the birth of the first child in Sweden using individual-level longitudinal data for never married women between 1947 and 2015. More specifically, we are interested in knowing if there is an accumulation of economic disadvantage associated with single motherhood and if so, what explains it and whether it changed over time. While previous studies have shown that an accumulation of economic disadvantage exists in present-day contexts (e.g., Kalmijn & Monden 2010), we can build on the research literature more generally by studying important aspects of these links. One is the long-term dimension, which we address by asking whether they have changed over time and, if so, how and whether the economic disadvantage of single motherhood has decreased or disappeared. We focus on the never married, i.e., women who become single mothers at first birth. Though this is not the major group of single mothers in Sweden today, it was so in the past (though associated with stigma) and proves the clearest disconnection between marriage and fertility. Moreover, this group often face more financial disadvantages, compared to married as well as to other single mothers, especially in the United States and Britain. There is no research on whether this is the case – in past or present times – in a demographic forerunner and general welfare state like Sweden.

The present study is set against the backdrop of significant change across almost 70 years featuring demographic change, disconnecting marriage and childbearing as well as decreasing the stigma associated with single motherhood (Casper & Bianchi 2002; Cherlin 1992); and growth in terms of female independence and welfare state expenditure mediating socioeconomic disadvantage, particularly among women and children, not least in the Nordic

countries (Brea-Martinez, Dribe & Stanfors 2023). Since the 1970s, Sweden has been a frontrunner in terms of trends that underpin these shifts. From then on, the country has been a high-divorce context with a growing number of women raising children post-divorce. At the same time, widespread cohabitation has resulted in births outside of marriage. Since the 1990s, more than 50% of newborns had cohabiting parents (the share being higher for first births), while only a small share (circa 5%) were born to women not living with a partner. Though most children were born within marriage in the first half of the 20th century, it was not entirely uncommon for unmarried women to give birth, especially at young ages.[1] For women born in 1935 and onwards, having children without being married has become increasingly common at all ages. The implications of these shifts for the financial well-being of single mothers have, however, not been studied.

Theory and previous research

Single motherhood and poverty

In the United States, single mothers are disproportionately likely to experience poverty. According to the U.S. Census Bureau (2022), nearly 30% of households headed by single mothers live below the poverty line, compared to just 6% of married-couple families. This is partly because single mothers often face the dual challenge of providing for their children while being the primary caregiver, which leads to their concentration to low-wage jobs, limits their ability to work full-time or pursue higher education that could lead to better-paying jobs and improve their income (Duncan & Chase-Lansdale 2001; Broadway, Kalb & Maheswaran 2022). Structural issues worsen the economic challenges for single mothers such as the gender wage gap, expensive childcare, and limited access to (paid) family leave. This is particularly true in the United States and other residual welfare states such as Australia and the United Kingdom. Studies show that even when single mothers are employed, they often earn low wages and have few benefits (McLanahan & Percheski 2008; Kearney 2023). In Europe, single mothers also face higher poverty rates, but the social safety nets provide stronger protection against poverty. Moreover, free education, universal healthcare, subsidized childcare, and paid family leave policies reduce the financial burden on single mothers, and

[1] Among women born in 1905 who had children in by the age of 20, more than half were unmarried. The probability of having a child out of wedlock descreased with age. Extramarital births declined during the first half of the 20th century. Women born in 1935 were least likely to have given birth to children out of wedlock, at least in ages under 30.

mediate their economic disadvantage compared to elsewhere (DiPrete & McManus 2000; Uunk 2004; Brady & Burroway 2012).

Wolfinger and McKeever (2025) address the economics of single motherhood, notably the persistence of poverty in mother-headed families in the United States in the past 40 years. They find that single-mother families were five times more likely than two-parent families to be poor in 1980, and 40 years later, single-mother families are still five times more likely to be poor despite rising levels of education and female labor force participation. Using CPS and NLSY data, they find that this pattern of persistent poverty can be explained by changes in the composition of women who become single mothers. In 1980, most single mothers were divorced, while in 2020, the majority are never-married mothers, and these groups differ significantly on observables as well as unobservables. For example, never-married mothers in the Unites States, have less education, work less, receive lower economic returns to their qualifications when they do work, and are more likely to themselves have grown up in poverty (see also Lichter, Graefe & Brown 2003).

Marriage as a way out of poverty

Historically, marriage has been viewed as a potential route out of poverty for single mothers, primarily due to the pooling of economic resources and the potential for increased household income. This was true before the emergence of welfare states but also later because policies in some countries, including the United States, have encouraged marriage as a poverty reduction strategy, through economic incentives and marriage promotion programs such as the Temporary Assistance for Needy Families (TANF).

Though married couples, on average, enjoy better financial security and higher household income compared to single-parent households (Waite & Gallagher 2000), research casts doubt on whether marriage is a causal mechanism (or if selection is at play) and if it is an effective solution to poverty for single mothers. Studies indicate that marriage does not guarantee economic stability for poor single mothers, particularly when they marry men with similarly low incomes or limited job prospects (Edin & Kefalas 2005; McLanahan & Percheski 2008). In many cases, single mothers marry men who are also struggling financially, leading to little or no improvement in the household's economic situation. Also, the economic benefits of marriage are not equally distributed across groups. White, college-educated women tend to benefit more economically from marriage than women of color or women with lower levels of

education, though this is related to their higher chances of marrying. The economic benefits of marriage are especially strong among women from disadvantaged families, but they are less likely to marry (Lichter, Graefe & Brown 2003; Broadway, Kalb & Maheswaran 2022). This suggests that the effectiveness of marriage as a pathway out of poverty depends on the economic characteristics of the potential spouse (Lichter, Qian & Mellott 2006) and the broader socio-economic context.[2]

Research from Scandinavian contexts suggests that where social policies are gender-netural, a dual (rather than a male) breadwinner model is promoted, and there is substantial support for single parents, marriage is less tied to economic security than in the United States. Single mothers in these countries rely less on marriage to avoid poverty because of comprehensive welfare systems that include free healthcare, accessible and affordable childcare, and housing assistance (Esping-Andersen 2009). Hence, single mothers in Scandinavia have fewer incentives and experience less economic and social pressure to marry.[3] Instead, they are more likely to pursue an education or invest in a career as a means of improving their financial situation (Nieuwenhuis 2020).

Not all single women (including single mothers) are equally interested in marriage. Their income position may affect the likelihood of finding a partner. Income is typically assumed to be negatively associated with union formation because women with higher income are financially independent and less in need of a husband than women who earn less (all else equal) (Bracher & Santow 1998; Casper & Bianchi 2002). This argument rests on assumptions of a traditional gender division of labor, and specialization and trade within the household, which was more relevant in the past than today. Becker's theory of specialization (1965, 1981) was developed against the backdrop of the male breadwinner model, which dominated Western countries during the 1950s and 1960s. In this context, many household goods and services were still produced in the home, and productivity differences between men and women were real. In recent decades, women's earnings are commonly found to be

[2] Lichter, Qian & Mellott (2006) found that low-income women who married were less likely to experience long-term poverty, but the benefits were limited if the spouse had low earnings potential. Marriage alone does not offset the disadvantages associated with single motherhood and netiher can it eliminate existing disparities in poverty and welfare receipt among groups.

[3] This is in line with arguments made by McLanahan and Percheski (2008) who find that marriage improves economic security for some, but not all, women. They suggest that public policy should focus on improving the economic prospects of single mothers directly through access to education, job training, and affordable childcare instead of indirectly through marriage promotion.

positively rather than a negatively related to marriage formation. This can be understood against the backdrop of rising female qualifications and labor force partipation (i.e., earnings potential) and less specialization and trade within household. Growing consumer aspirations and the tendency to buy goods and services (childcare included) reduced the gains to specialization, and, together with many other changes, made female employment and dual breadwinning relatively more desirable and increased positive assortative mating on income (Oppenheimer 1988, 1997). This would suggest that poor women have lower, rather than higher, chances of marrying today than in the past and that they may partner with another low-income individual. Neverthelss, such a partnership may decrease the likelihood of being poor for single mothers not only by increasing family income, but also by increasing consumption through economies of scale and help with childcare (which may increase the woman's labor supply). However, we know less about the association between income and marriage among never-married single mothers than about the same association for women more generally (Kalmijn & Monden 2010).

The case of never-married mothers

Women who become mothers outside of a union may prefer to raise a child alone or face circumstances that prevent them from living with the father of the child. Never-married single mothers often differ significantly from both married women and other groups of single mothers. For example, never-married single mothers in the U.S. and the United Kingdom are more likely to be poor compared to both their married and divorced counterparts, partly because they are more likely to remain single (Casper & Bianchi 2002; Sigle-Rushton & McLanahan 2002; McKay 2003; Berrington 2014; Wolfinger & McKeever, 2025. See also Kalmijn & Monden (2010) on never-married mothers in the Netherlands, 1989-2005).[4] It matters to which extent these women marry shortly after the birth of their child because, then, a partner can contribute financially and share the burden of childcare and employment. If never-married mothers remain single for long, the financial risks persist. This is why we examine never-married single mothers over time, longitudinally and across a period which features change in the demography of single motherhood, the role of marriage, women's economic independence and expansion of the Swedish welfare state from residual to universal and generous with an orientation away from the male breadwinner model.

[4] Differences are documented based on observables but may also apply to unobservables which may affect the probability to marry (Ermisch & Wright 1991).

Hypotheses

We fill a gap in the literature by investigating the links between income, single motherhood, and marriage, exploring change over time, across 70 years. Based on theory and previous research we make the following conjectures. As for income and single motherhood among the never married, we expect negative associations both when it comes to becoming a single mother at first birth and the probability of marriage within ten years after birth. We expect such negative associations particularly in the past compared to present-day Sweden. This may be related to a shift in the socioeconomic gradient of single motherhood over time. It may also be that never married single mothers with higher income may be more likely to meet and attract potential partners in a dual-earner context than in the past. If cohabiting, never-married, single mothers are more likely to have high socioeconomic status (SES) and enter a union than never-married single mothers in the past, we should control for it and see whether it is income or SES that matters. We then address whether marriage was a way out of poverty or a low-income situation for never married single mothers, expecting that this was the case more so in the past than today but that low-income never married single mothers were less likely to make this transition. In sum, we expect an accumulation of economic disadvantage for never married single mothers in the early part of the period studied, i.e., 1947-1967, before the major increase in mothers' labor force participation and welfare state expansion, but not after.

Methods

Data

We used data from the Scanian Economic-Demographic Database (SEDD) comprising individual-level longitudinal information from five rural and semi-urban parishes and Landskrona, an industrial port town in the county of Scania in southern Sweden (for a detailed description of SEDD, see Bengtsson et al. 2021). Although the parishes were not a statistically representative sample of Sweden, the region mirrors conditions prevalent in many rural and semi-urban areas during the period studied, which suggested that we could generalize the findings from our study area.

Data were sourced from continuous population registers, vital events registers, poll-tax registers, and annual income registers. After 1968, the SEDD has been linked to Swedish administrative registers managed by Statistics Sweden (SCB) using unique personal identifiers introduced in 1947. The data include consistent information on demographic events, occupation, and income between 1947 and 2015. We start in 1947 because this is the

year when individual income for all (including married) women is available.[5] Hence, the SEDD data allow for comparison of individual income for all women – single as well as married – over an extended period.

Sample

First, we selected never married women aged 15-40 who resided in the SEDD area at some time between 1947 and 2015. We studied this group to examine the socioeconomic determinants of single motherhood. This sample accounts for more than 81,500 individual observations (i.e., an average of 11 observations per individual). Around 6,900 women were unmarried when they had their first birth. Then, we followed the never married women from the time of their first birth and ten years after to study the determinants of the transition into marriage and to examine the association between marital status and income attainment. This sample includes around 4,200 women, totaling circa 50,000 observations (i.e., an average of 14 observations per individual).

Variables

Main variables of interest are marital status (never married single, cohabiting or married) and income (individual or equivalized family income) at the time of first birth or within ten years after this event. Information on marital status, including cohabition, was sourced from parish records which include information on household composition, 1947-1967. Swedish population registers do not include information on cohabitation, though from 1990 onwards, the registers record non-marital cohabitation when there are common children (RTB-families). The gap between 1968 and 1990 is unfortunate because this is when cohabitation becomes important. However, we have data for the early years when cohabitation was uncommon and for the recent decades when cohabitation had become a common context for having children.

Income is both used as covariate and outcome variable. Between 1947 and 1967, data come from individual tax returns detailing total income from labor-related sources (including self-employment) and income from capital and real estate for both men and women. We used annual pre-tax labor-related income.[6] From 1968 and onwards, we used similar income data from national registers maintained by Statistics Sweden. We adjusted income using the

[5] Joint taxation existed until 1971, but the incomes of spouses had to be declared separately since 1947.
[6] Total labor-related income include earnings, but also pensions, sickness allowance, unemployment benefits, and maternal/parental leave benefits).

consumer price index to ensure constant prices and comparability across time. When analyzing women's income and marital status, it is important to distinguish between individual income, independent of husband's earnings, and family income, which is based on the combined income of the woman and her spouse (if any). Family income was equivalized, i.e., adjusted for family size by dividing the total income by the square root of the family size. Throughout the analysis, we either used individual income or equivalized family income as continuous variables (and took the log of income) or as a categorical variable (income quintiles) reflecting the woman's position in the female income distribution.

In the models, we included demographic characteristics such as age (15-20, 21-30, 31-40), birthplace (distinguishing between those born in the SEDD area, elsewhere in Sweden, or those born outside Sweden), and place of residence (i..e., urban (the city of Landskrona) or rural (rural or semi-urban parishes surrounding Landskrona). In some models, we also controlled for continued childbearing. We explored socioeconomic status (SES) proxied by occupation, but primarily as a control. We observe annually the highest occupational status obtained as measured by HISCLASS and categorized into: higher white-collar, lower white-collar, medium-skilled, lower-skilled, unskilled, and those without an occupation (NA).

Tables 1 and 2 present descriptive statistics for the variables used in the empirical analysis of never married women (aged 15-40) in the SEDD area, 1947-2015, distinguishing between those who remained childless and those who became mothers. Table 1 shows descriptive statistics for the year these women had their first birth. Table 2 covers the ten years following the first birth for women who were unmarried at the time of their first birth.

Table 1 shows that the majority of those who became single mothers were 21-30 years old, increasing over time with a general postponement of the transition to parenthood. The groups were similar regarding distributions over birthplace and place of residence. Those who became mothers were more likely to cohabit, particularly after 1990. Those who became single mothers had lower income than the childless in 1947-1973 though this shifted to single mothers having higher income than childless never married women after 1974. Similarly, SES, as measured by occupational status, of those who became single mothers was similar to the childless in 1947-1967 but this changed to a more positive occupational distribution (notably white-collar workers) of the mothers compared to the childless. Table 2 confirms the gradual aging of single mothers across the study period; the decreasing prevalence of

marriage, the increasing prevalence of cohabitation, and an increasing likelihood to have additional children within ten years. Table 2 also establishes that those who became mothers had increasingly higher occupational status and income over time.
[Table 1 and 2 about here]

Analytical strategy

First, we asked whether low-income women were more likely to become single mothers in the past and if this changed over time? We studied the probability of becoming a single mother for never-married, childless women aged 15-40 who resided in the SEDD area between 1947 and 2015, focusing on the association between labor-related income (as measured by log standardized individual income or income quintiles) and single motherhood at first birth, net of SES and demographic controls. For this analysis, we applied linear probability models (LPM). Second, we explored the likelihood to marry within ten years after first childbirth. We studied the socioeconomic determinants of this transition by means of LPM, focusing on individual and equivalized family income in their log form or by quintiles. Third, we examined how change in marital status among never married mothers affected their income in the ten years following first birth, exploring whether marriage increased financial well-being measured by individual income as well as by equivalized family income. Finally, we investigated a possible accumulation of financial disadvantage, regressing log income or bottom income quintiles (as a proxy for poverty) on marriage (and other characteristics), accounting for selection into marriage after childbirth by including individual fixed effects into LPM or ordinary least squares (OLS) models.

We estimated multivariate models and tested for significant differences over time through interactions. Analyses were consistently done for the entire period, 1947-2015, and for shorter periods (1947-1967, 1968-1989, and 1990-2015) that coincide with major sociodemographic change and expansion of the Swedish welfare state that affected the lives of single mothers and the importance of marriage.

Results

Single motherhood and poverty

To answer the question whether low-income women were more likely to become single mothers in the past and if this changed over time, we studied the probability of becoming a single mother for never-married, childless women aged 15-40 who resided in the SEDD area

between 1947 and 2015 and included the logarithm of individual income together with a number of controls. Table 3 shows a small positive association (coeff. 0.01) between income and the probability of single motherhood at first birth, which is robust to whether we include SES controls or not though the variables are correlated. The results from Model 2 indicate a pattern where the highest SES group was less likely than others to be single at first birth. Working class women were most likely to be single at first birth. As for change over time, results indicate that becoming a single mother was less common after 1968 than earlier. This coincides with the dynamic decades of family change in the 1970s and 1980s, when cohabitation rose and became a more a less normative pre-stage to marriage, which, at the end of the period, often included childbearing. It also coincides with increased female independence and improvements in women's earnings. To test whether the association between income and entry into single motherhood was the same or different across time, we added an interaction term between period and the logarithm of individual income (Model 3). When separating the impacts by period, we see significant differences across periods. Income was negatively associated with single motherhood in 1947-1967 (coeff. -0.06) but this association turned positive after 1968 (net effect 0.04 in 1968-1989 and 0.01 in 1990-2015). Low-income women were more likely to become single mothers in 1947-1967 but not after 1968. Results indicate that the shift towards cohabitation and nonmarital childbearing started among women who were established in the labor market.[7]
[Table 3 about here]

The coefficients for the logarithm of individual income may, however, obscure non-linearities in the association with single motherhood. To better assess this, and potential change over time, we estimated the models using individual income quintiles, computed annually for the women analyzed (see Table A1 for full estimates). Figure 1 plots marginal effects derived from models with interactions between period and income quintiles. Marginal effects of the probability of becoming a single mother at first birth, with the bottom quintile (Q1) as the reference category, are shown on the vertical axis, while the effects are displayed separately by period on the horizontal axis. In the earliest period (1947-1967), the only substantial difference was that between top-earners (Q5) and the poorest (Q1). The top quintile was, on average, 10 pp less likely to become single mothers at first birth compared to the poorest women (Q1). From 1968 onwards, this pattern changed, and the difference between the top

[7] If we do not control for cohabitation the results are similar but the period differences are somewhat reduced.

and bottom income quintiles disappeared in the 1990s. Instead, the association between income and single motherhood was most prominent among the middle-high income brackets (Q3 and Q4) compared to the lowest income quintile. The underlying trend of increasing single motherhood and increasing individual income is driven by childbearing among never married (sometimes, but not always, cohabiting) women with higher average income. In this respect, single motherhood changed distinctively after 1968.
[Figure 1 about here]

Marriage as a way out of poverty
Second, we investigated the probability of marriage (i.e., to transition out of singlehood or cohabitation) during the ten years following first birth, focusing on associations with individual and equivalized family income (in log form or by quintiles). Specifically, we wanted to know if low-income women were less likely to make this transition in the past and if the relationship between income and marriage changed over time? We studied never married women who became single mothers at first birth and followed them for ten years to analyze whether they got married or not. We did this against the backdrop of Figure 2, which describes the prevalence of marriage within ten years after first birth among never married single mothers between 1947 and 2015.

Figure 2 shows that in 1947-1967, most single mothers married within ten years after first birth (90% of the studied women) with the majority making this transition within the first years. Cohabitation was negligible and most mothers married within five years after first birth. The proportion marrying within ten years after first birth decreased to 60% in 1968-1989 reduced further to 50% in 1990-2015. The transition to marriage became slower over time. In 1947-1967, half of the single mothers married within two years after first birth, but this transition took on average six years in 1968-1989 and ten years in 1990-2015. This indicates that in 1947-1967, the transition to marriage among single mothers was either planned (birth occurring to engaged but not married individuals) or of a "shot-gun" character to avoid the economic hardship and stigma associated with an out-of-wedlock birth. This applied only for single mothers in the earliest period, but lost importance in the late 1960s and early 1970s. Because we lack information on cohabitation, we do not know the exact share, but clearly the increased group of singles in 1968-1989 include many cohabiting women, likely falling between the shares indicated in figures for 1947-1967 and 1990-2015. Of note, the pattern for 1990-2015 show surprising stability in the share single around 25 per cent ten

years after first birth. Alongside this stable share of singles, there is a distinct decline in the share cohabiting and an increase in the share married, which indicates that most single mothers who cohabited when having their first birth transitioned into marriage though some became single, though there is likely a group od women who became and stayed single mothers in the most recent period.
[Figure 2 about here]

Tables 4 and 5 provide estimates of the probability of marriage within ten years after first birth focusing on (log) individual income and (log) equivalized family income, respectively. Estimates come from a full model (M2) and a model with interactions between period and income (M3) from pooled LPMs as well as individual fixed effects models.[8] The fixed effects model is the strongest in terms of identification, where the estimated association is based on changes in income and marital status, and not just level differences across individuals. However, it is not an experimental design, and we cannot interpret the estimates as fully causal effects. If income-based selection into marriage is at play, then LPM estimates of income on the probability of getting married, should be reduced in fixed-effects specifications.

As for LPM (pooled) estimates, we observe a negative association (coeff. -0.01) between individual income and marriage, net of SES, throughout the period of study. Interactions between income and period show that this negative association was particularly strong in 1947-1967 (coeff. -0.08), after which it decreased in 1968-1989 (net effect -0.05) and turned positive in 1990-2015 (net effect 0.05). In 1947-1989, women who earned more were less likely to marry within ten years after first birth, while the opposite was the case after 1990. Single mothers with higher white-collar occupations were, however, most likely to get married within ten years with other occupational classes associated with lower probabilities of getting married. The LPM (pooled) estimates indicate that income was particularly important for the probability of marriage when the support for single mothers was limited but that it lost some of its importance, when both cohabitation and female labor force participation increased in prevalence and public support for mothers and children increased.

[8] See Appendix (Tables A2-A5) for full regression output. Results are graphically illustrated in Figures A1-A3.

When we included individual fixed effects, and the coefficient on income isolates changes in the marriage probability associated with a change in income, individual income estimates changed. The base effect in the first period was reduced (coeff. -0.03) and onwards the net effects of interactions were zero. This indicates that there was income-based selection into marriage across the period studied.[9]
[Table 4 about here]

Because differences in the role of individual income could be related to continued childbearing, constraining women's earnings potential as well as their marriage prospects, we explored the association between equivalized family income (which considers family size) and the probability of marriage within ten years after first birth. Table 5 shows estimates that support the assumption that family size mattered for marriage. Equivalized family income is, in contrast to individual income, on average, positively associated with the probability of marriage, and the coefficients are larger (coeff. 0.25). Women with low family income were less likely to marry within ten years after first birth. Interactions with period show that this was the case throughout the study period (base effect for 1947-1967 0.19 and net effects for 1968-1989 and 1990-2015 0.30 and 0.22, respectively). Estimates from individual fixed effect models indicate, like in the case of individual income, that higher (family) income is part of the selection into marriage for never married single mothers throughout the period studied.[10]
[Table 5 about here]

Figures 3 and 4 illustrate the model estimates with interaction terms discussed above, based on income quintiles instead of the log of individual or family income. As for individual income, higher income groups (Q4 and Q5) had a much lower probability of transitioning into marriage within ten years after first birth compared to the bottom income quintile (Q1) in 1947-1967. The lower-to-middle income groups (Q2 and Q3) were equally or more likely to transition into marriage, compared to poorest, indicating a non-linear association between individual income and the probability of marriage in the earliest period. These group differences disappeared from 1968 and onwards. The association between individual income

[9] In this case, controlling for cohabitation matters. If this control is left out, estimates indicate a positive association between individual income and the probability of marriage within ten years after first birth even in fixed effects specifications.
[10] Had we been able to control for cohabitation the net effects of interaction would probably have been stable across time, as indicated by the first and last period interactions, though now they seem to be larger in 1968-1989. As a sensitivity test, we estimated the probability of marriage (same models), yet restricted the time after first birth to five years, and got similar results. For estimates without any controls for cohabitation, see Table A6.

and marriage shifted across time, but there were no significant differences between groups in the probability of marriage. Fixed effects estimates show that there was income-based selection into marriage, limiting group differences and patterns of change over time, though the group differences in 1947-1967 hold up.
[Figure 3 about here]

Using income quintiles based on equivalized family income, instead of individual income, produce different patterns. Figure 4 shows a marked income gradient in the probability of marriage. A positive association between family income and marriage grew stronger over time. Women with low income, especially the poorest, were least likely to marry within ten years after first birth throughout the period, especially when support for single mothers and their children was limited. Fixed effects estimates confirmed that those who remained single after first birth were poorer, but also that selection regarding individual income and continued childbearing affecting family size was at play.
[Figure 4 about here]

Finally, we addressed whether there was an accumulation of financial disadvantage among single mothers. We shifted our focus to study whether a change in marital status within ten years after first birth was associated with higher income among never married mothers. For this we used fixed effects models similar to those estimated before but with income as the outcome variable and marital status as our main covariate. Like before, we explored both (log of) individual and equivalized family income. We also looked into the probability of being in the bottom quintile of individual or family income as a proxy for (extreme) poverty. We tested for change over time by interactions between period and marital status. Estimates presented in Table 6 (and illustrated in Figure 5) come from a full model (M1) and a similar model with interactions between period and marital status (M2).

As for individual income, there is no statistically significant association with marriage (coeff. 0.02 log points) compared to staying single.[11] However, we note a negative statistically

[11] In this case only the dependent variable is log-transformed. Hence, the coefficient is to be interpreted as log points. If we want to interpret such coefficients as percentages, we should exponentiate the coefficient, subtract one from this number, and multiply by 100. This gives the percent increase (or decrease) in the response for every one-unit increase in the independent variable. If numbers are small the percentage is close to the log points but with larger numbers the difference grows. If the coefficient is 0.02, then the percentage increase is approximately 2.02% (exp(0.02)-1)*100 = 2.02%), but if the coefficient is 0.198, then the increase is almost 22% (exp(0.198) – 1) * 100 = 21.9).

significant association with cohabitation (coeff. -0.06), which indicates that mothers who cohabited had lower income compared to those who remained single. When we test whether average effects were similar or different across time, we find that in the early period, 1947-1967, the coefficient for married is negative and large (-0.40 log points). That marriage is negatively associated with individual income in this period can be understood given how marriage generally restricted women's labor supply in this period (both in terms of labor force participation and hours worked). This negative association between marriage and income disappeared in 1968-1989 (net effect -0.01), reflecting the increased labor market orientation among married women, especially among mothers. However, the association turned positive in 1990-2015 (net effect 0.07 log points), which is surprising. It is also surprising that there is no significant change across time in the association between individual income and cohabitation compared to staying single.

Mirroring said results, marriage is positively associated with the probability of being in the bottom quintile in terms of individual income, though the coefficient is insignificant and small. This association is also changing across time with the interaction base effect being statistically significant in 1947-1967 (0.14 log points) but disappearing in 1968-1989 and reversing after 1990 (net effects 0.00 and -0.03, respectively). Marginal effects based on interactions between marital status and period are graphically illustrated for individual income in Figure 5 panels A and B.

Turning to equivalized family income, which considers family size as well as economies of scale, we see that marriage significantly improved the income of single mothers, generally (0.74 log points) and across periods. While the base effect in 1947-1967 was considerable (0.45 log points), the net effect was even higher in 1968-1989 (0.97 log points) though it abated in the last period (1990-2015, 0.60 log points). Also, getting married was negatively associated with the probability of being in the bottom quintile of family income across the study period. The large and significant coefficient of marriage reducing the probability of being very poor in 1947-1967 (base effect -0.25), increased in 1968-1989 (net effect -0.28), yet diminished (net effect -0.13) in 1990-2015 along with increasing labor market orientation among all women and stronger support for families with (young) children. Cohabitation was also positively associated with family income and reduced risk of extreme poverty compared to remaining and impacts diminished over time. Marginal effects based on interactions

between marital status and period are graphically illustrated for family income in Figure 5 panels C and D.
[Table 6 and Figure 5 about here]

It should be noted that estimates of individual income do not change much if we control for cohabitation or not but it does matter in the case of family income.[12] If we do not control for cohabitation, the marriage premium for mothers increases in the most recent period, 1990-2015, while the risk of extreme poverty is the same as for those who remained single. This reflects that cohabiting mothers earned less than mothers who remained single but that they faced similar poverty risks. However, the average effect for family income in 1947-1967 is considerably reduced though still large (0.45 log points). The base effect in 1947-1967 is also reduced (0.37 log points), and so is the net effect in 1968-1989 (0.91 log points) (but not by much because in the mid-period we lack information about cohabitation). Because the interaction effect for the last period (1990-2015) is negative, the net effect is much smaller (0.19 log points) though there is still a sizeable marriage premium. As for the probability of being very poor, the large and significant coefficient of marriage reducing this risk in 1947-1967 is similar (base effect -0.21) and so is the net effect in 1968-1989 (net effect -0.27), but a larger interaction effect in 1990-2015 reduces the net effect considerably (net effect -0.03). Irrespective of whether we control for cohabitation or not, marriage is positively associated with family income for the women who became single mothers at first birth and it significantly reduces the risk of being very poor across the period studied.

Our expectation was that there would be an accumulation of financial disadvantage, including poverty risk, for never married single mothers before the increase in female labor force participation and welfare state expansion in the late 1960s and early 1970s (i.e., in 1947-1967) but not after that. Individual income is much influenced by norms around female labor force participation and career orientation that mattered more for married and cohabiting women (who pooled income with partners) yet shifted over time. Using family income instead of individual income, we found that single motherhood was and still is associated with economic disadvantage. Marital status matters for income and poverty risks in both past and present times. The strength of the marriage premium among women who became single mothers at

[12] See Appendix Table A7 for estimates without controls for cohabition, only comparing the married and the unmarried, which then includes cohabiting mothers. Marginal effects based on interactions between marital status and period are graphically illustrated in Figure A4.

first birth between 1947 and 2015 is surprising. It is also surprising to find that cohabitation do not come with a similar premium as marriage in the case of individual income in recent decades, the association being small, insignificant and stable across the period studied. When it comes to family income, associations with cohabitation are real and significant compared to mothers who remained single, yet consistently more modest than the associations with marriage. When it come to the risk of being very poor, the results from interactions are similar to those of marriage, especially at the end of the period studied (1990-2015).

Conclusion

Single motherhood changed in character starting in the late 1960s and early 1970s in parallel with family demographic change, e.g., cohabitation, and increasing female independence. Though a growing proportion of single mothers are cohabiting with a partner, those who remain single are economically disadvantaged compared to married mothers even in contemporary Sweden. Because there is not much research of single mothers and their financial well-being over a longer period, we fill a gap in the literature by investigating the link between single motherhood, poverty and marriage across 70 years. We focused on the never-married to reduce the conflation with divorce, and consider cohabitation for the periods for wich we have data (1947-1967 and 1990-2015).

We found that low-income women were more likely to become single mothers in 1947-1967 but this negative association between individual income and single motherhood reversed after 1968. Before 1968, there was a negative association between individual income and the probability to marry within ten years after first birth, net of income-based selection. However, there was a stable and positive association between equivalized family income, which considers continued childbearing, and the probability of marriage throughout the period studied. Single mothers who remained unmarried were poorer, but selection regarding individual income and continued childbearing was at play during the transition from low to high labor force participation among married women. Marriage within ten years after first birth was correlated with higher equivalized family income and reduced poverty risks throughout the period. The income premia compared to the single mothers increased over time, which is surprising. There was consistently a weaker link between cohabitation and income, which is also surprising. Despite increasing female economic independence, comprehensive welfare policy and change in the role of marriage, married women became increasingly well off while single mothers remained economically disadvantaged. Results

emphasize the need for policy and targeted support to improve the well-being of single mothers and their children in present-day Sweden.

References

Becker, G. S. (1965). A theory of the allocation of time. *Economic Journal* ,75(299): 493-517.

Becker, G. S. (1981). *A Treatise on the Family*. Cambridge, MA: Harvard University Press.

Bengtsson, T., Dribe, M., Quaranta, L., & Svensson, P. (2021). The Scanian Economic Demographic Database: Version 7.3 ([Machine-readable datasetbase]). Lund: Lund University, Centre for Economic Demography.

Berrington, A. (2014). The changing demography of lone parenthood in the UK. ESRC Center for Population Change, Working paper 48.

Bird, C. E. & Rieker, P. P. (2008). *Gender and Health: The Effects of Constrained Choices and Social Policies*. Cambridge University Press.

Bracher, M. & Santow, G. (19989. Economic independence and union formation in Sweden. *Population Studies,* 52(3): 275-94.

Brady, D. & Burroway, R. (2012). Targeting, universalism, and single-mother poverty: A multilevel analysis across 18 affluent democracies. Demography, 49(2): 719-46.

Brea-Martinez, G., Dribe, M. & Stanfors, M. (2023). The price of poverty: The association between childhood poverty and adult income and education in Sweden, 1947–2015. *Economic History Review*, 76(4): 1281-1304.

Broadway, B., Kalb, G. & Maheswaran, D. (2022). From Partnered to Single: Financial security over a lifetime. Melbourne Institute research into understanding and overcoming disadvantage Report series no. 5.

Cherlin, A. J. (1992). *Marriage, divorce, remarriage*. Cambridge, MA: Harvard University Press.

Craig, L. (2005). The Money or the Care: A Comparison of Couple and Sole Parent Households' Time Allocation to Work and Children. *Australian Journal of Social Issues*, 40: 521-40.

Casper, L. M. & Bianchi, S. M (2002). *Continuity and Change in the American Family*. Sage.

DiPrete, T.A. & McManus, P.A. (2000). Family change, employment transitions, and the welfare state: Household income dynamics in the United States and Germany. *American Sociological Review*, 65(3): 343-70.

Edin, K. & Kefalas, M. (2005). *Promises I Can Keep: Why Poor Women Put Motherhood Before Marriage*. Berkeley, CA: University of California Press.

Ermisch, J. F. & Wright, R. E. (1991). The duration of lone parenthood in Great Britain, *European Journal of Population* 7(2): 129-58.

Esping-Andersen, G. (2009). *The Incomplete Revolution: Adapting to Women's New Roles*. Cambridge: Polity Press.

Esping-Andersen, G. (2016). *Families in the 21st Century*. Stockholm: SNS.

Garfinkel, I. & McLanahan, S. (1986). *Single mothers and their children: A new American dilemma*. The Urban Institute Press.

Kalmijn, M. & Monden, C. (2010). Poverty and union formation among never-married single mothers in the Netherlands, 1989-2005. *Population Studies*, 64: 263-74.

Kearney, M. (2023). *The Two-Parent Privilege*. Swift Press.

Lichter, D. T., Graefe, D. R. & Brown, J. B. (2003). Is Marriage a Panacea? Union Formation Among Economically Disadvantaged Unwed Mothers. *Social Problems*, 50(1): 60-86. Union transitions among poor cohabiting women.

Lichter, D. T., Qian, Z. & Mellott, L. M. (2006). Marriage or dissolution? Union transitions among poor cohabiting women. *Demography,* 43(2): 223-40.

Mattingly, M. J. & Bianchi, S. (2003). Gender Differences in the Quantity and Quality of Free Time: The U.S. Experience. *Social Forces*, 81: 999-1030.

McKeever, M. & Wolfinger, N. H. (2012). Over the Long Haul: The Persistent Economic Consequences of Single Motherhood. In S. L. Blair (ed.), *Economic Stress and the Family*. Emerald Group Publishing Ltd (pp. 1-39).

McLanahan, S. (2004). Diverging Destinies: How Children Are Faring under the Second Demographic Transition. *Demography*, 41: 607-27.

McLanahan, S. & Percheski, C. (2008). Family structure and the reproduction of inequalities. *Annual Review of Sociology*, 34: 257-76.

McKay, S. (2003). The dynamics of lone parents, employment and poverty in Great Britain, *Sociologia e politica sociale,* 2: 1-26.

Nieuwenhuis, R. (2020). Family Policy and Single Parent Poverty: Cross-National Evidence of the Interplay Between Policy, Poverty, and Employment in Single-Parent Families. *Social Policy & Administration*, 54(2): 189-207.

Nieuwenhuis, R. & Maldonado, L. C. (2018). *The triple bind of single-parent families Resources, employment and policies to improve well-being*. Bristol: Policy Press.

Oppenheimer, V. (1988). A theory of marriage timing. *American Journal of Sociology,* 94(3): 563-91.

Oppenheimer, V. (1997). Women's employment and the gain to marriage: The specialization and trading model. *Annual Review of Sociology,* 23(1): 431-53.

Sigle-Rushton, W. & McLanahan, S. (2002). The living arrangements of new unmarried mothers. *Demography,* 39(3): 415-33.
Uunk, W. (2004). The economic consequences of divorce for women in the European Union: The impact of welfare state arrangements. *European Journal of Population*, 20(3): 251-85.
Vernon, V. (2010). Marriage: for love, for money…and for time? *Review of Economics of the Household*, 8: 433-57.
Vickery, C. (1977). The Time-Poor: A New Look at Poverty. *Journal of Human Resources*, 12: 27-48.
Waite, L. J. & Gallagher, M. (2000). *The Case for Marriage: Why Married People Are Happier, Healthier, and Better Off Financially*. Broadway Books.
Wolfinger, N. H. & McKeever, M. (2025). *Thanks for Nothing. The Economics of Single Motherhood since 1980*. Oxford University Press.

Table 1. Summary statistics (means or shares) of never-married women (aged 15-40) in the SEDD area, 1947-2015, according to whether they remained childless or became mothers (first birth).

	All Childless	All Mother	1947-1967 Childless	1947-1967 Mother	1968-1989 Childless	1968-1989 Mother	1990-2015 Childless	1990-2015 Mother
Age-group								
15-20	0.43	0.26	0.34	0.55	0.38	0.32	0.48	0.10
21-30	0.38	0.63	0.38	0.42	0.42	0.63	0.36	0.70
31-40	0.19	0.11	0.28	0.03	0.19	0.04	0.15	0.20
Birthplace								
SEDD area	0.39	0.32	0.47	0.47	0.15	0.14	0.44	0.37
Sweden	0.46	0.57	0.41	0.44	0.74	0.77	0.39	0.50
Foreign-born	0.15	0.11	0.12	0.09	0.10	0.09	0.17	0.13
Place of residence								
Rural	0.20	0.20	0.18	0.17	0.16	0.18	0.21	0.23
Urban	0.80	0.80	0.82	0.83	0.84	0.81	0.79	0.77
Cohabitation								
Not cohabiting	0.97	0.58	0.99	0.93	1.00	1.00	0.95	0.19
Cohabiting	0.03	0.42	0.00	0.07	NA	NA	0.05	0.81
Individual income	26,898	38,953	19,632	10,703	31,247	37,083	27,363	49,069
Family income	37,130	48,791	24,846	15,266	38,828	29,102	39,902	68,845
SES (Occupation)								
Higher white-collar	0.03	0.03	0.06	0.01	0.03	0.01	0.02	0.05
Lower white-collar	0.21	0.30	0.35	0.38	0.25	0.26	0.15	0.29
Medium-skilled	0.03	0.05	0.04	0.05	0.05	0.08	0.02	0.03
Lower-skilled	0.17	0.30	0.28	0.36	0.17	0.31	0.14	0.28
Unskilled	0.05	0.07	0.05	0.10	0.05	0.09	0.05	0.05
NA	0.52	0.25	0.22	0.10	0.45	0.25	0.63	0.30
N of observations	74,817	6,836	12,725	1,319	14,804	2,101	47,288	3,417

Source: Scanian Economic Demographic Database.

Table 2. Summary statistics (means or shares) of women (aged 15-40) in the SEDD area, 1947-2015, during ten years after their first birth, conditional on being single (never married) at the time of their first birth.

	All	1947-1967	1968-1989	1990-2015
Age-group				
15-20	0.03	0.06	0.04	0.01
21-30	0.57	0.61	0.69	0.48
31-40	0.40	0.33	0.27	0.51
Birthplace				
SEDD area	0.22	0.28	0.04	0.31
Sweden	0.59	0.59	0.79	0.46
Foreign-born	0.19	0.13	0.17	0.23
Place of residence				
Rural	0.21	0.19	0.19	0.23
Urban	0.79	0.81	0.81	0.77
Marriage (or cohabitation) within 10 years after 1st birth				
Stayed single	0.36	0.24	0.59	0.27
Cohabitation	0.24	0.04	NA	0.41
Got married	0.40	0.72	0.41	0.32
N of children after 1st birth	0.66	0.63	0.60	0.71
Individual income	37,074	10,180	32,513	50,802
Family income	48,746	29,345	39,385	62,100
SES (Occupation)				
Higher white-collar	0.03	0.01	0.02	0.05
Lower white-collar	0.25	0.22	0.25	0.27
Medium-skilled	0.05	0.05	0.07	0.03
Lower-skilled	0.29	0.28	0.26	0.30
Unskilled	0.08	0.10	0.09	0.05
NA	0.30	0.34	0.30	0.30
N of observations	83,054	19,013	24,863	39,178

Source: See Table 1.

Table 3. Linear probability model (LPM) estimates of the probability of becoming a single mother among childless, never-married women aged 15-40 living in the SEDD area, 1947-2015.

	M1	M2	M3
Individual income (log)	0.01***	0.01***	-0.06***
SES (Higher white-collar ref.)			
Lower white-collar		0.02***	0.02***
Medium-skilled		0.05***	0.04***
Lower-skilled		0.05***	0.04***
Unskilled		0.04***	0.04***
NA		0.01**	0.01**
Period (1947-1967 ref.)			
1968-1989	0.00	0.00	-0.91***
1990-2015	-0.12***	-0.12***	-0.75***
Interaction Period X Income			
1947-1967 X Income			ref.
1968-1989 X Income			0.10***
1990-2015 X Income			0.07***
N of observations	59,176	59,027	59,027
adj. R-sq	0.471	0.474	0.478

Notes: All models control for birthplace, place of residence, age, and whether the woman was cohabiting or not.
p-values: *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$.
Source: See Table 1.

Table 4. Linear probability model (LPM) and individual fixed effects estimates of the probability of marriage within the first ten years after first birth for never married women aged 15-40 living in the SEDD area, 1947-2015.

	LPM		Fixed effects	
	M2	M3	M2	M3
Individual income (log)	-0.01**	-0.08***	-0.00	-0.03***
SES (Higher white-collar ref.)				
Lower white-collar	-0.04*	-0.02	-0.02	-0.02
Medium-skilled	-0.14***	-0.11***	-0.05**	-0.05**
Lower-skilled	-0.10***	-0.07***	-0.02	-0.02
Unskilled	-0.15***	-0.14***	-0.02	-0.02
NA	-0.16***	-0.12***	-0.04**	-0.04*
Period (1947-1967 ref.)				
1968-1989	-0.31***	-0.51***	0.12***	-0.13
1990-2015	-0.21***	-1.46***	0.30***	-0.03
Interaction Period X Income				
1947-1967 X Income		ref.		ref.
1968-1989 X Income		0.03*		0.03***
1990-2015 X Income		0.13***		0.03***
N of observations	47,441	47,441	46,328	46,328
adj. R-sq	0.344	0.353	0.795	0.795

Notes: All models control for birthplace, place of residence, age, and whether the woman was cohabiting or not.
p-values: *** p < 0.001; ** p < 0.01; * p < 0.05.
Source: See Table 1.

Table 5. Linear probability model (LPM) and individual fixed effects estimates of the probability of marriage within the first ten years after first birth for never married women aged 15-40 living in the SEDD area, 1947-2015.

	LPM		Fixed Effects	
	M2	M3	M2	M3
Equivalized family income (log)	0.25***	0.19***	0.14***	0.11***
SES (Higher white-collar ref.)	0.00	0.00	0.00	0.00
Lower white-collar	0.00	0.00	-0.02	-0.02
Medium-skilled	-0.06**	-0.07***	-0.05**	-0.05**
Lower-skilled	-0.02	-0.03	-0.02	-0.02
Unskilled	-0.02	-0.03	-0.02	-0.02
NA	0.09***	0.08***	0.01	0.00
Period (1947-1967 ref.)				
1968-1989	-0.44***	-1.57***	0.06	-0.83***
1990-2015	-0.44***	-0.71***	0.20***	0.24
Interaction Period X Income				
1947-1967 X Income		ref.		ref.
1968-1989 X Income		0.11***		0.09***
1990-2015 X Income		0.03		0.00
N of observations	50,000	50,000	48,931	48,931
adj. R-sq	0.494	0.499	0.822	0.824

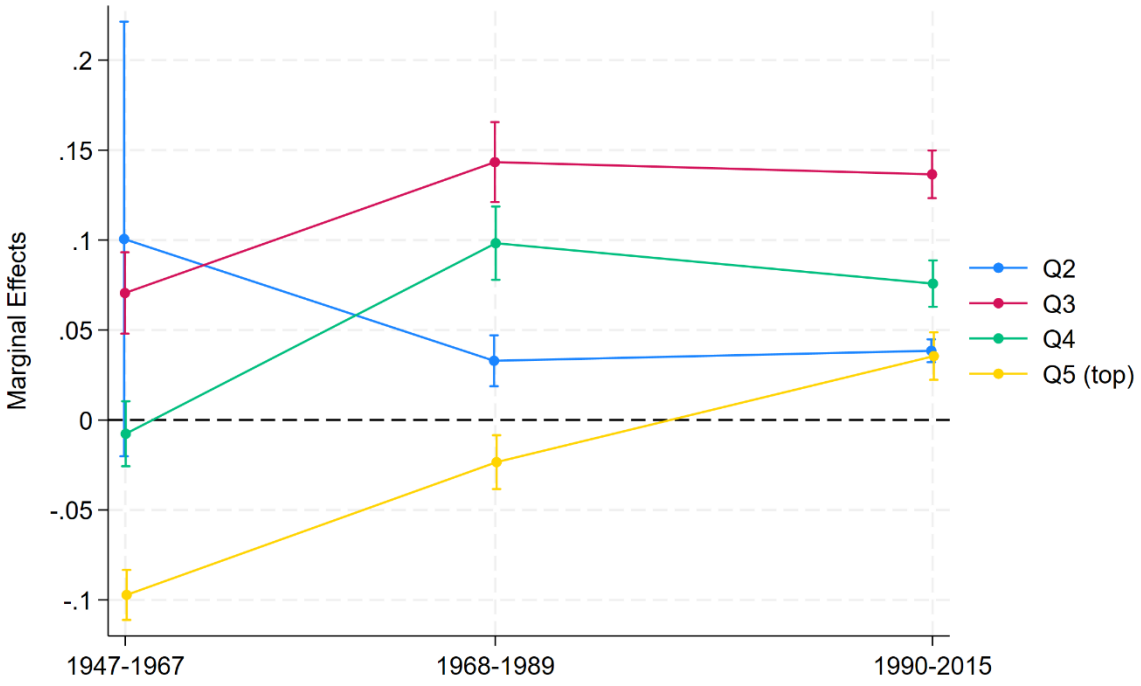
Notes: All models control for birthplace, place of residence, age, and whether the woman was cohabiting or not.
p-values: *** p < 0.001; ** p < 0.01; * p < 0.05.
Source: See Table 1.

Table 6. Fixed effects regression estimates of log (individual and family) income and probability of poverty within ten years after first birth among never married women aged 15-40 living in the SEDD area, 1947-2015.

	Individual income				Equivalized family income			
	Log income		Q1		Log income		Q1	
	M1	M2	M1	M2	M1	M2	M1	M2
Marital status (Single ref.)								
Cohabiting	-0.06***	-0.02	-0.02**	0.02	0.64***	0.33***	-0.18***	-0.19***
Married	-0.02	-0.40***	0.01	0.14***	0.74***	0.45***	-0.21***	-0.25***
SES (Higher white-collar ref.)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lower white-collar	-0.10***	-0.10***	0.01	0.00	-0.03	-0.03	0.00	0.00
Medium-skilled	-0.09*	-0.09	0.00	0.00	-0.04	-0.03	0.00	0.00
Lower-skilled	-0.10**	-0.10**	0.00	0.00	-0.03	-0.03	-0.01	-0.01
Unskilled	-0.14***	-0.14***	0.00	0.00	-0.06	-0.06	0.00	0.00
NA	-0.49***	-0.49***	0.13***	0.13***	-0.28***	-0.28***	0.07***	0.08***
Period (1947-1967 ref.)								
1968-1989	0.46***	0.25*	-0.21***	-0.12**	0.29***	-0.13*	-0.11**	-0.07
1990-2015	0.54***	0.28**	-0.24***	-0.13**	0.45***	0.19**	-0.13***	-0.16***
Interaction Marital status X Period								
Cohabitating X 1968-1989		ref.		ref.		ref.		ref.
Cohabitating X 1990-2015		0.00		-0.06		0.25**		0.06
Married X 1968-1989		0.39***		-0.14***		0.52***		-0.03
Married X 1990-2015		0.47***		-0.17***		0.15***		0.12***
N of observations	46,328	46,328	50,723	50,723	48,931	48,931	49,181	49,181
adj. R-sq	0.633	0.634	0.480	0.481	0.716	0.720	0.512	0.515

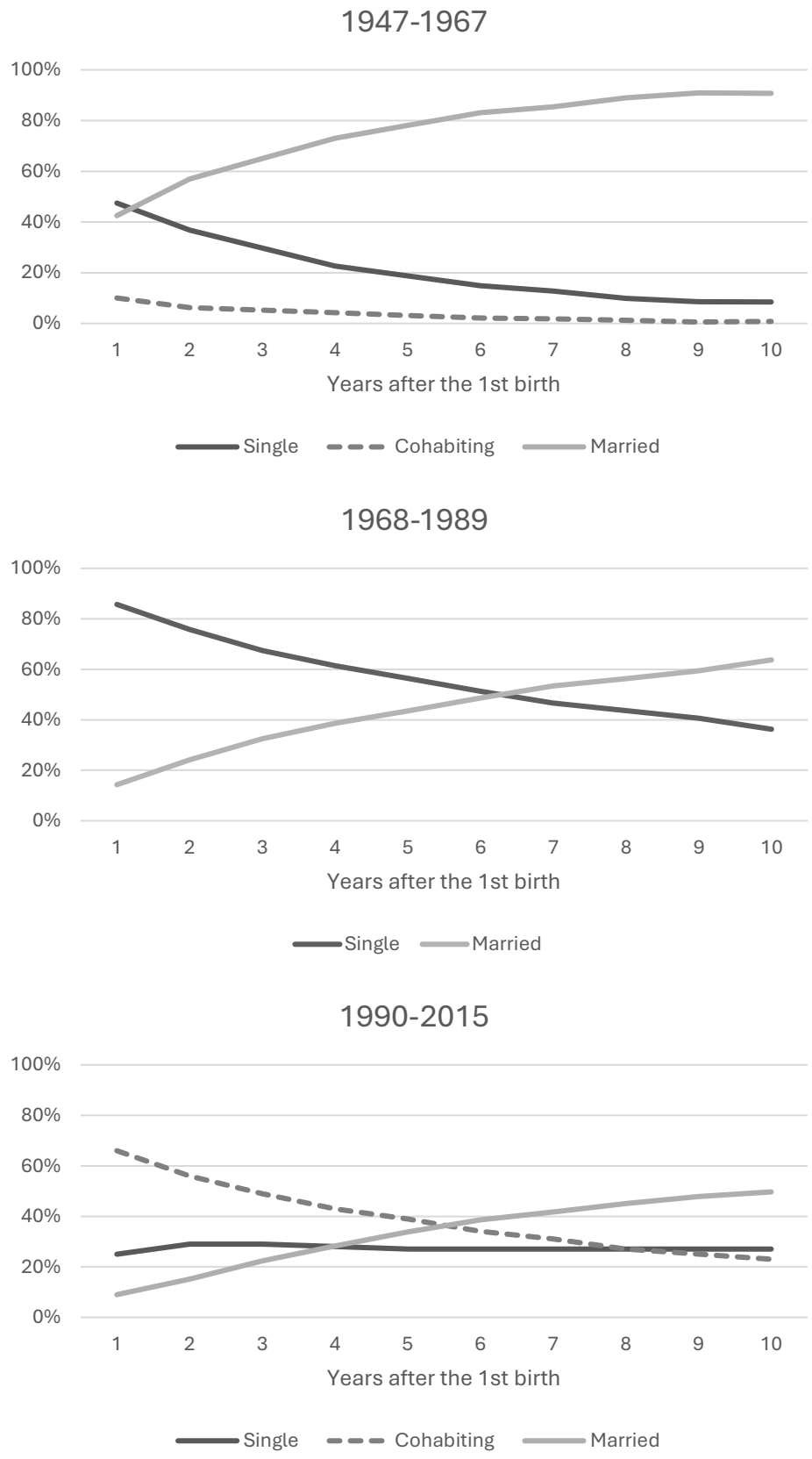
Notes: All models control for birthplace, place of residence, age, and whether the woman had had additional children after first birth or not.
p-values: *** p < 0.001; ** p < 0.01; * p < 0.05.
Source: See Table 1.

Figure 1. Marginal effects of the probability of becoming a mother among childless never married women aged 15-40 living in the SEDD area, 1947-2015, focusing on the interaction between period and individual income quintiles.



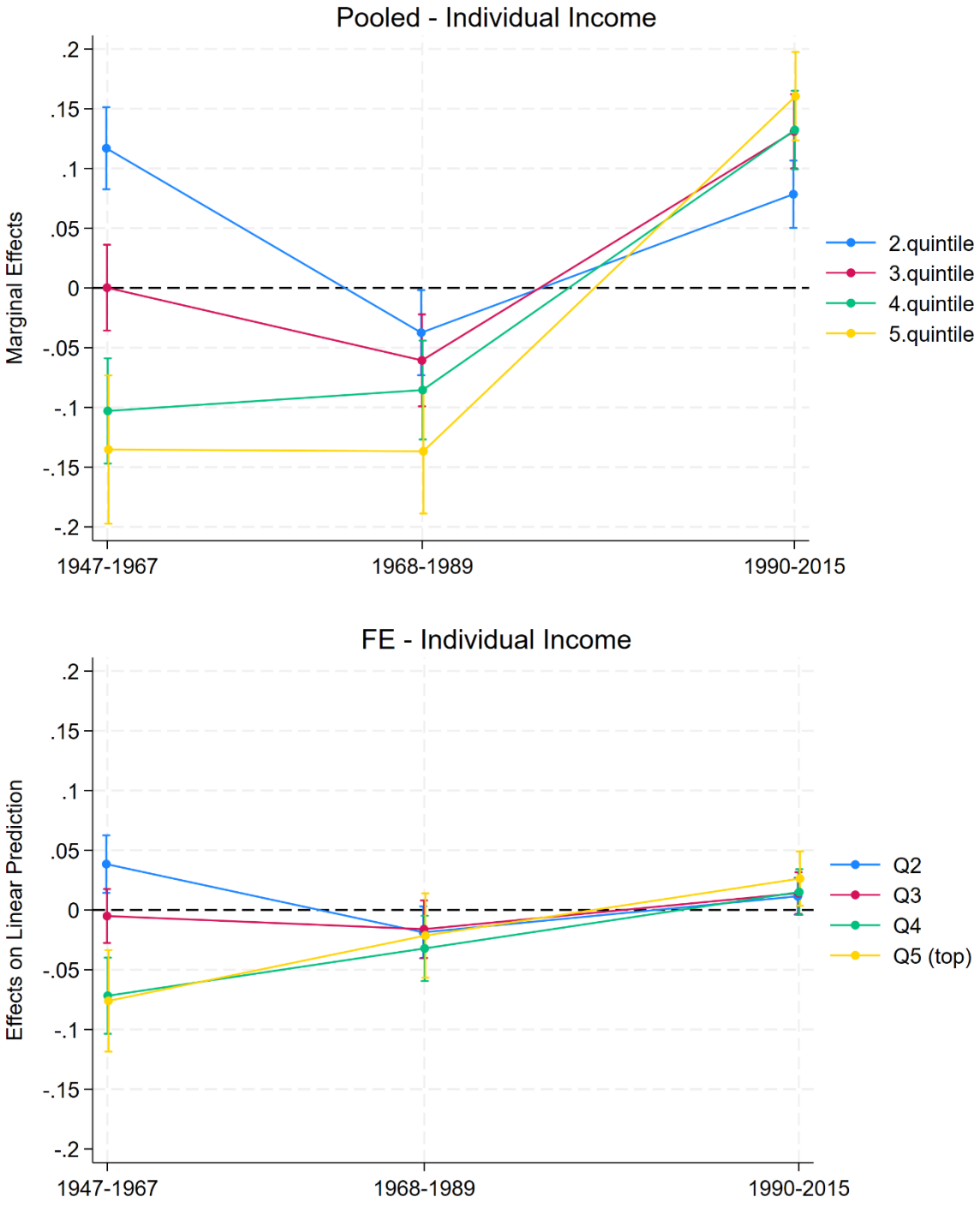
Note: Marginal effects computed and plotted as a post-estimation based on Model 3 in Table A1.
Source: See Table 1.

Figure 2. Share of women aged 15-40 and residing in the SEDD area, 1947-2015, who were single at their first birth, transitioning to marriage within ten years after first birth, by period.



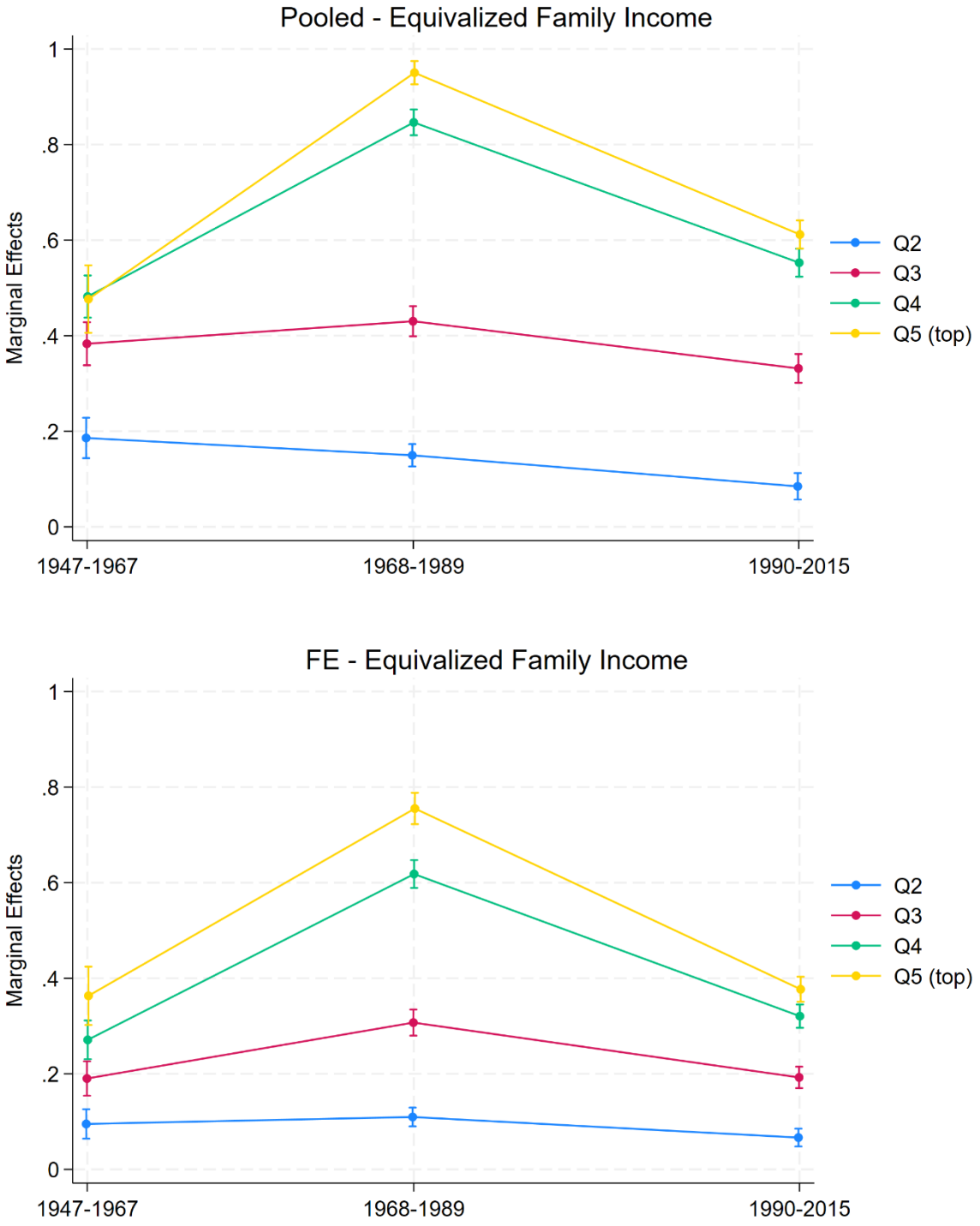
Source: See Table 1.

Figure 3. Marginal effects of the probability of transitioning into marriage within ten years after first birth among never married mothers aged 15-40 living in the SEDD area, 1947-2015, focusing on the interaction between period and individual income quintiles. Marginal effects obtained from pooled LPM and FE models.



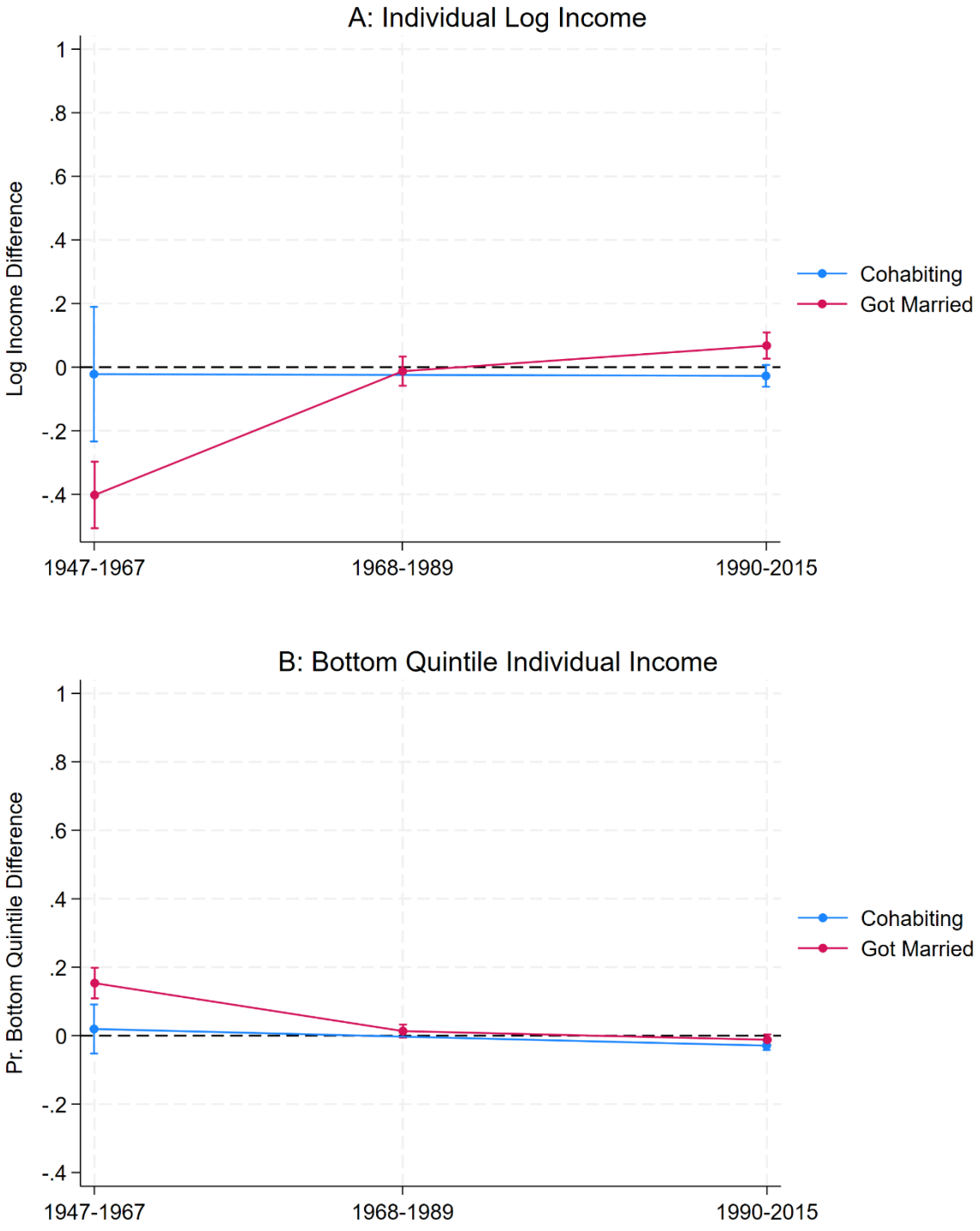
Note: Marginal effects computed and plotted as a post-estimation based on Model 3 in Table A2
Source: See Table 1.

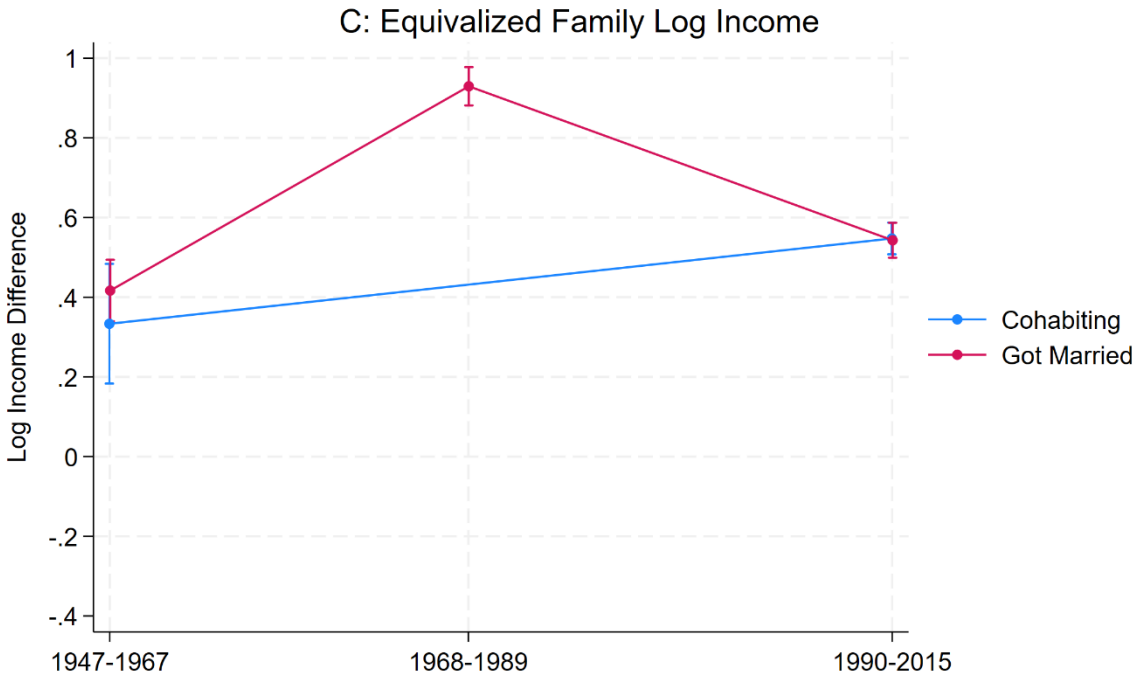
Figure 4. Marginal effects of the probability of transitioning into marriage within ten years after first birth among never married mothers aged 15-40 living in the SEDD area, 1947-2015, focusing on the interaction between period and equivalized family income quintiles. Marginal effects obtained from pooled LPM and FE models.

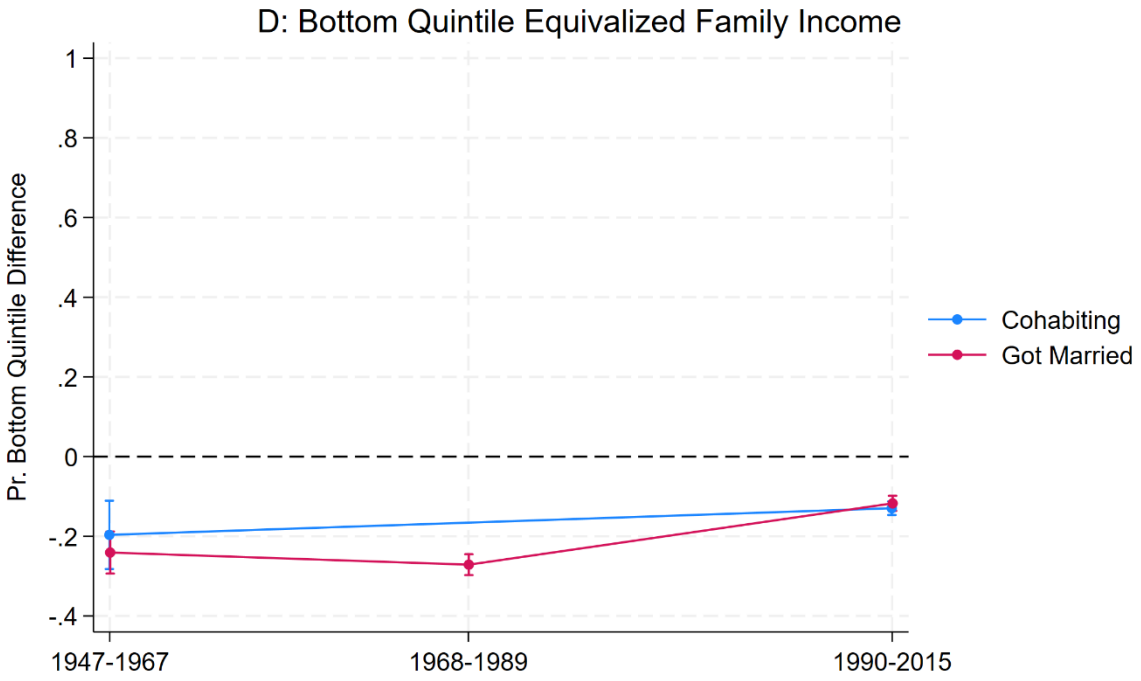


Note: Marginal effects computed and plotted as a post-estimation based on Model 3 in Table A3.
Source: See Table 1.

Figure 5. Marginal effects on individual (AB) and family (CD) income of the probability of marriage within ten years after first birth among never married mothers aged 15-40 living in the SEDD area, 1947-2015, focusing on the interaction between period and marital status.







Note: Marginal effects computed and plotted as a post-estimation based on Model 2 (for each different outcome) in Table 6.
Source: See Table 1.

Appendix

Table A1. Linear probability model (LPM) estimates of the probability of becoming a single mother among childless, never-married women aged 15-40 living in the SEDD area, 1947-2015.

	M1	M2	M3
Income Quintile (Q1 - bottom ref.)	0.00	0.00	0.00
Q2	0.02***	0.01***	0.07
Q3	0.07***	0.05***	0.07***
Q4	0.05***	0.04***	0.01
Q5	-0.01**	-0.03***	-0.07***
SES (Higher white-collar ref.)		0.00	0.00
Lower white-collar		0.02***	0.02***
Medium-skilled		0.04***	0.03***
Lower-skilled		0.03***	0.04***
Unskilled		0.03***	0.03***
NA		-0.01	0.00
Period (1947-1967 ref.)			
1968-1989	0.04***	0.04***	-0.02***
1990-2015	-0.07***	-0.06***	-0.07***
Interaction Period X Income quintile			0.00
1947-1967 X Income quintile (Q1)			ref.
1968-1989 X Q2			-0.03
1990-2015 X Q2			-0.07
1968-1989 X Q3			0.09***
1990-2015 X Q3			-0.07***
1968-1989 X Q4			0.12***
1990-2015 X Q4			-0.01
1968-1989 X Q5			0.08***
1990-2015 X Q5			0.08***
N of observations	78,444	78,263	78,263
adj. R-sq	0.450	0.453	0.462

Notes: All models control for birthplace, place of residence, age, and whether the woman was cohabiting or not.
p-values: *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$.
Source: See Table 1.

Table A2. Linear probability model (LPM) and individual fixed effects estimates of the probability of marriage within the first ten years after first birth for never married women aged 15-40 living in the SEDD area, 1947-2015.

	LPM		Fixed effects	
	M2	M3	M2	M3
Birth place (SEDD ref.)				
Swedish	0.02*	0.02*	0.04	0.03
Foreign-born	-0.01	0.01	-0.72***	-0.71***
Place of residence (Rural ref.)				
Urban	-0.01	-0.01	0.00	-0.01
Age-group (15-20 ref.)				
21-30	0.16***	0.16***	0.12***	0.12***
31-40	0.19***	0.19***	0.17***	0.17***
Additional children	0.20***	0.19***	0.17***	0.17***
Cohabitation (Not cohabiting ref.)				
Cohabiting	-0.54***	-0.55***	-0.48***	-0.48***
Income Quintile (Q1 - bottom ref.)				
Q2	0.00	0.12***	-0.01	0.04**
Q3	0.02	0.00	-0.01	-0.01
Q4	0.00	-0.10***	-0.02*	-0.07***
Q5	-0.01	-0.14***	-0.01	-0.08***
SES (Higher white-collar ref.)				
Lower white-collar	-0.04*	-0.02	-0.02	-0.02
Medium-skilled	-0.14***	-0.12***	-0.06**	-0.06**
Lower-skilled	-0.10***	-0.08***	-0.02	-0.02
Unskilled	-0.15***	-0.13***	-0.03	-0.02
NA	-0.14***	-0.11***	-0.04*	-0.03*
Period (1947-1967 ref.)				
1968-1989	-0.33***	-0.31***	0.09**	0.09**
1990-2015	-0.25***	-0.39***	0.27***	0.24***
Interaction Period X Income quintile				
1947-1967 X Income quintile (Q1)				
1968-1989 X Q2		-0.15***		-0.06***
1990-2015 X Q2		-0.04		-0.03
1968-1989 X Q3		-0.06*		-0.01
1990-2015 X Q3		0.13***		0.02
1968-1989 X Q4		0.02		0.04
1990-2015 X Q4		0.24***		0.09***
1968-1989 X Q5		0.00		0.05*
1990-2015 X Q5		0.30***		0.10***
N of observations	51,766	51,766	50,723	50,723
adj. R-sq	0.352	0.359	0.797	0.797

Notes: p-values: *** p < 0.001; ** p < 0.01; * p < 0.05.
Source: See Table 1.

Table A3. Linear probability model (LPM) and individual fixed effects estimates of the probability of marriage within the first ten years after first birth for never married women aged 15-40 living in the SEDD area, 1947-2015.

	LPM		Fixed effects	
	M2	M3	M2	M3
Birth place (SEDD ref.)				
Swedish	0.03***	0.03***	0.05	0.05
Foreign-born	0.06***	0.05***	-0.69***	-0.64***
Place of residence (Rural ref.)				
Urban	0.00	0.00	0.00	0.01
Age-group (15-20 ref.)				
21-30	0.01	0.01	0.05***	0.04***
31-40	-0.03*	-0.03*	0.07***	0.06***
Additional children	0.21***	0.20***	0.17***	0.16***
Cohabitation (Not cohabiting ref.)				
Cohabiting	-0.68***	-0.67***	-0.57***	-0.56***
Income quintile (Q1 - bottom ref.)	-0.01	-0.02	0.00	-0.01
Q2	0.01	0.01	0.00	-0.01
Q3	0.11***	0.10***	0.03	0.02
Q4				
Q5	0.13***	0.19***	0.09***	0.10***
SES (Higher white-collar ref.)				
Lower white-collar	-0.36***	-0.45***	0.05	-0.04
Medium-skilled	-0.39***	-0.35***	0.14***	0.20***
Lower-skilled				
Unskilled	0.00	0.00	-0.01	-0.01
NA	-0.04	-0.04*	-0.03	-0.03
Period (1947-1967 ref.)	0.39***	0.38***	0.25***	0.19***
1968-1989	0.64***	0.48***	0.43***	0.27***
1990-2015	0.70***	0.48***	0.50***	0.36***
Interaction Period X Income quintile				
1947-1967 X Income quintile (Q1)				
1968-1989 X Q2		-0.04		0.01
1990-2015 X Q2		-0.10***		-0.03
1968-1989 X Q3		0.05		0.12***
1990-2015 X Q3		-0.05		0.00
1968-1989 X Q4		0.36***		0.35***
1990-2015 X Q4		0.07**		0.05*
1968-1989 X Q5		0.47***		0.39***
1990-2015 X Q5		0.14***		0.01
N of observations	50,248	50,248	49,181	49,181
adj. R-sq	0.562	0.577	0.842	0.850

Notes: p-values: *** p < 0.001; ** p < 0.01; * p < 0.05.
Source: See Table 1.

Table A4. Linear probability model (LPM) estimates of the probability of becoming a single mother among childless, never-married women aged 15-40 living in the SEDD area, 1947-2015.

	M1	M2	M3
Birth place (SEDD ref.)			
Swedish	0.01***	0.01***	0.01***
Foreign-born	0.00	0.00	-0.01
Place of residence (Rural ref.)			
Urban	-0.01	-0.01	-0.01
Age-group (15-20 ref.)			
21-30	0.04***	0.03***	0.04***
31-40	-0.06***	-0.06***	-0.05***
Individual income (log)	0.02***	0.02***	-0.08***
SES (Higher white-collar ref.)			
Lower white-collar		0.01	0.00
Medium-skilled		0.02	0.01
Lower-skilled		0.03***	0.02*
Unskilled		0.01	0.00
NA		-0.02*	-0.03**
Period (1947-1967 ref.)			
1968-1989	-0.02**	-0.01	-0.93***
1990-2015	-0.02*	-0.01	-0.97***
Interaction Period X Income			
1947-1967 X Income			ref.
1968-1989 X Income			0.10***
1990-2015 X Income			0.10***
N of observations	59,176	59,027	59,027
adj. R-sq	0.035	0.039	0.042

Notes: The model specifications are the same as in Table 3, but without a control for cohabitation (available only for the periods 1947–1967 and 1990–2015).
p-values: *** p < 0.001; ** p < 0.01; * p < 0.05.
Source: See Table 1.

Table A5. Linear probability model (LPM) and individual fixed effects estimates of the probability of marriage within the first ten years after first birth for never married women aged 15-40 living in the SEDD area, 1947-2015.

	LPM		Fixed effects	
	M2	M3	M2	M3
Birth place (SEDD ref.)				
Swedish	0.03**	0.03**	-0.04	-0.05
Foreign-born	0.00	0.01	-0.42***	-0.40***
Place of residence (Rural ref.)				
Urban	0.00	0.00	0.02	0.02
Age-group (15-20 ref.)				
21-30	0.15***	0.16***	0.13***	0.14***
31-40	0.19***	0.18***	0.24***	0.24***
Additional children	0.22***	0.21***	0.18***	0.18***
Individual income (log)	-0.02***	-0.08***	0.00	-0.03***
SES (Higher white-collar ref.)				
Lower white-collar	-0.02	-0.01	-0.05*	-0.04*
Medium-skilled	-0.10***	-0.08**	-0.08***	-0.08**
Lower-skilled	-0.06**	-0.05*	-0.05**	-0.05*
Unskilled	-0.11***	-0.10***	-0.06**	-0.06**
NA	-0.10***	-0.08**	-0.07***	-0.07***
Period (1947-1967 ref.)				
1968-1989	-0.29***	-0.55***	0.18***	-0.04
1990-2015	-0.40***	-1.41***	0.30***	-0.13
Interaction Period X Income				
1947-1967 X Income		ref.		ref.
1968-1989 X Income		0.03*		0.02**
1990-2015 X Income		0.10***		0.04***
N of observations	47,441	47,441	46,328	46,328
adj. R-sq	0.155	0.160	0.736	0.737

Notes: The model specifications are the same as in Table 4, but without a control for cohabitation (available only for the periods 1947–1967 and 1990–2015).
p-values: *** p < 0.001; ** p < 0.01; * p < 0.05.
Source: See Table 1.

Table A6. Linear probability model (LPM) and individual fixed effects estimates of the probability of marriage within the first ten years after first birth for never married women aged 15-40 living in the SEDD area, 1947-2015.

	LPM		Fixed effects	
	M2	M3	M2	M3
Birth place (SEDD ref.)				
Swedish	0.04***	0.03**	-0.02	-0.02
Foreign-born	0.04*	0.02	-0.24*	-0.14
Place of residence (Rural ref.)				
Urban	0.00	0.00	0.02	0.02
Age-group (15-20 ref.)				
21-30	0.05***	0.03*	0.09***	0.07***
31-40	0.04**	0.03*	0.19***	0.17***
Additional children	0.22***	0.22***	0.17***	0.17***
SES (Higher white-collar ref.)				
Lower white-collar	0.01	-0.01	-0.04*	-0.05**
Medium-skilled	-0.04	-0.07*	-0.08***	-0.08***
Lower-skilled	0.00	-0.03	-0.05**	-0.06**
Unskilled	0.00	-0.03	-0.06**	-0.06**
NA	0.10***	0.06*	-0.04*	-0.05**
Equivalized family income (log)	0.17***	0.18***	0.11***	0.10***
Period (1947-1967 ref.)				
1968-1989	-0.39***	-1.58***	0.14***	-0.70***
1990-2015	-0.62***	0.25	0.23***	0.78***
Interaction Period X Income				
1947-1967 X Income		ref.		ref.
1968-1989 X Income		0.12***		0.08***
1990-2015 X Income		-0.08***		-0.05***
N of observations	50,000	50,000	48,931	48,931
adj. R-sq	0.250	0.271	0.758	0.763

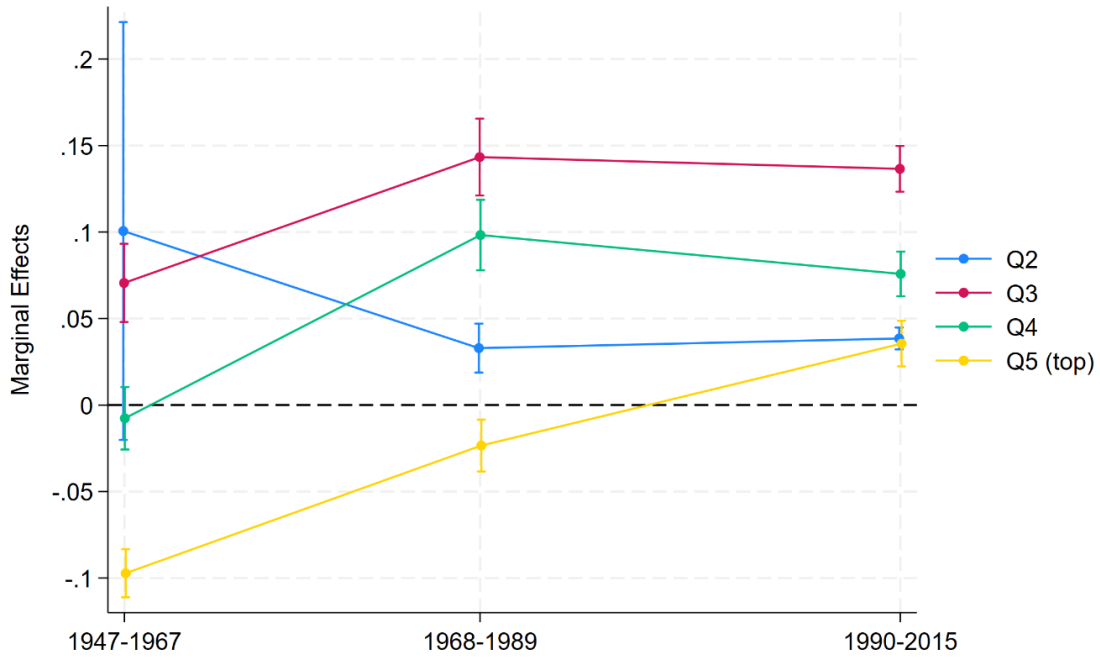
Notes: The model specifications are the same as in Table 5, but without any control for cohabitation (available only for the periods 1947–1967 and 1990–2015).
p-values: *** p < 0.001; ** p < 0.01; * p < 0.05.
Source: See Table 1.

Table A7. Fixed effects regression estimates of log (individual and family) income and poverty on marriage among within ten years after first birth among never married women aged 15-40 living in the SEDD area, 1947-2015.

	Individual Income				Equivalized Family Income			
	Log income		Bottom quintile		Log income		Bottom quintile	
	M1	M2	M1	M2	M1	M2	M1	M2
SES (Higher white-collar ref.)								
Lower white-collar	-0.10***	-0.10***	0.00	0.00	-0.01	-0.02	-0.01	0.00
Medium-skilled	-0.09*	-0.09	0.00	0.00	-0.03	-0.02	-0.00	-0.01
Lower-skilled	-0.10**	-0.10**	0.00	0.00	-0.01	-0.01	-0.01	-0.01
Unskilled	-0.15***	-0.14***	0.00	0.00	-0.03	-0.04	-0.01	0.00
NA	-0.49***	-0.49***	0.13***	0.13***	-0.25***	-0.26***	0.07***	0.07***
Period (1947-1967 ref.)								
1968-1989	0.46***	0.25*	-0.21***	-0.13**	0.25***	-0.19**	-0.10**	-0.02
1990-2015	0.53***	0.27*	-0.24***	-0.15***	0.53***	0.37***	-0.15***	-0.17***
Interaction Marital status X Period								
Married X 1968-1989		0.39***		-0.14***		0.54***		-0.06*
Married X 1990-2015		0.49***		-0.14***		-0.18***		0.18***
N of observations	46,328	46,328	50,723	50,723	48,931	48,931	49,181	49,181
adj. R-sq	0.633	0.634	0.480	0.481	0.693	0.706	0.499	0.508

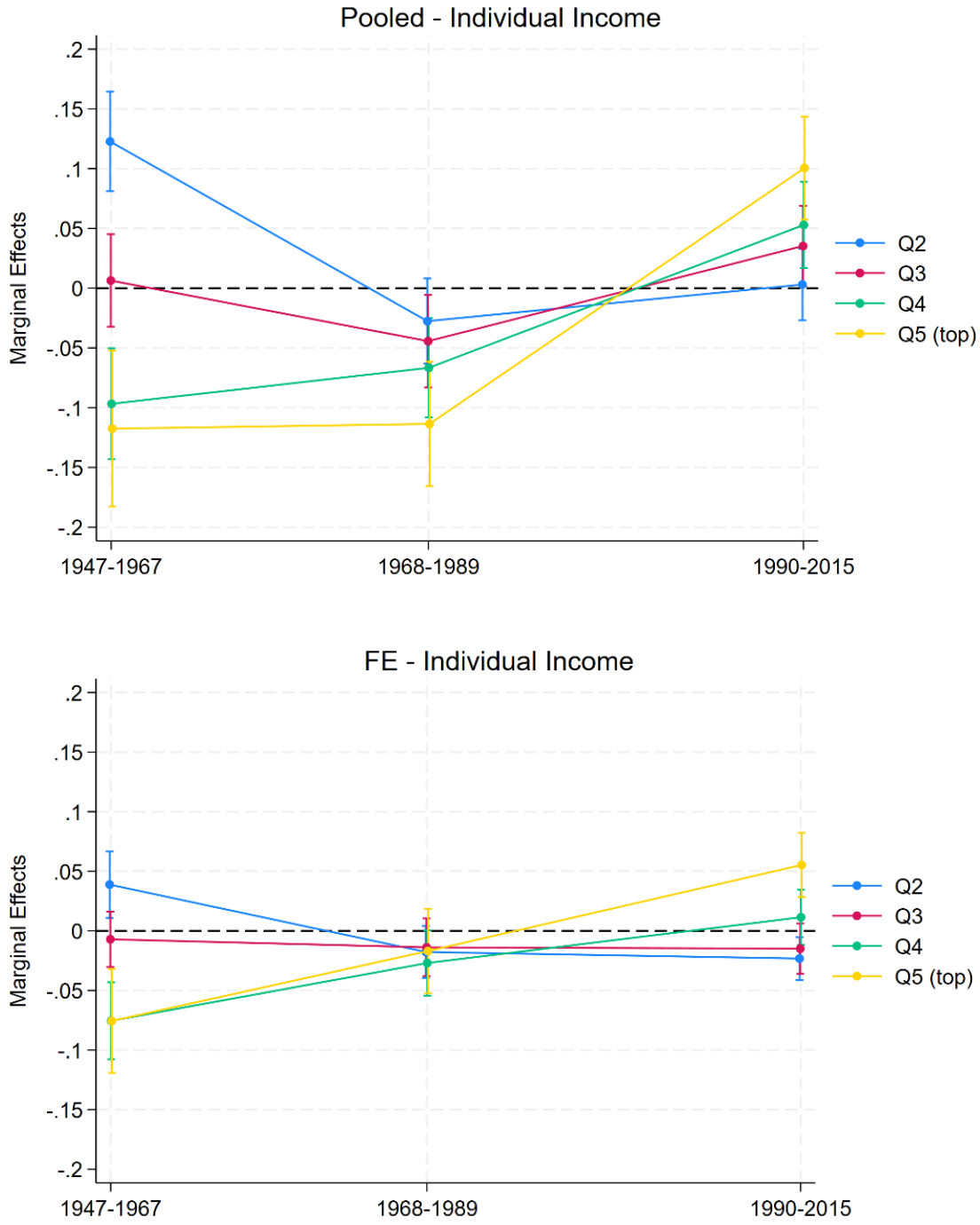
Notes: All models control for birthplace, place of residence and age. The model specifications are the same as in Table 6, but do not include a control for cohabitation (available only for the periods 1947–1967 and 1990–2015).
p-values: *** p < 0.001; ** p < 0.01; * p < 0.05.
Source: See Table 1.

Figure A1. Marginal effects of the probability of becoming a single mother among never married women aged 15-40 living in the SEDD area, 1947-2015, focusing on the interaction between period and individual income quintiles. Pooled LPM and FE models without cohabitation control.



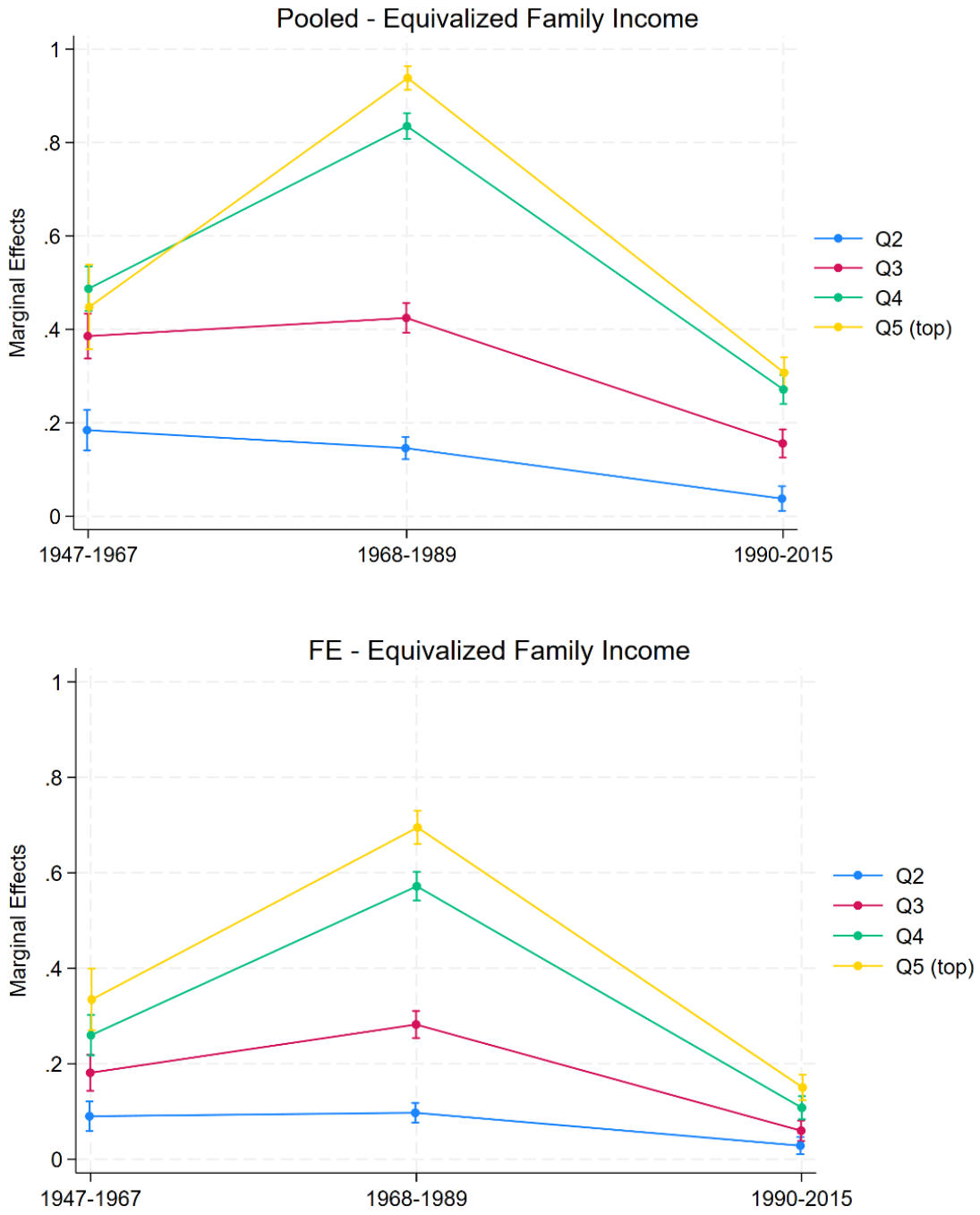
Note: Marginal effects computed and plotted as a post-estimation based on Model 3 in Table A4.
Source: See Table 1.

Figure A2. Marginal effects of the probability of marriage within ten years after first birth among never married mothers aged 15-40 living in the SEDD area, 1947-2015, focusing on the interaction between period and individual income quintiles. Pooled LPM and FE models without cohabitation control.



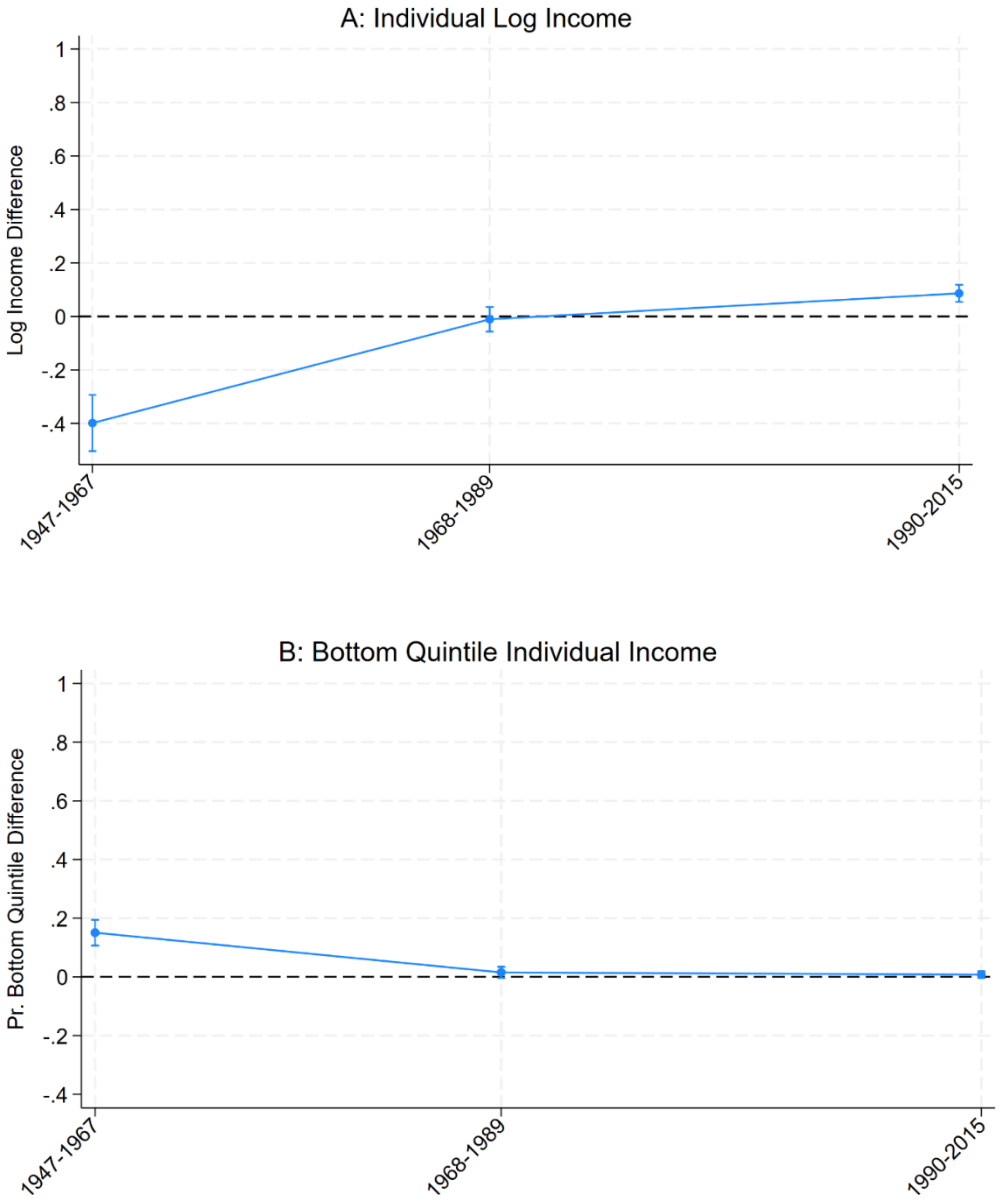
Note: Marginal effects computed and plotted as a post-estimation based on Models 3 (for each different outcome) in Table A5.
Source: See Table 1.

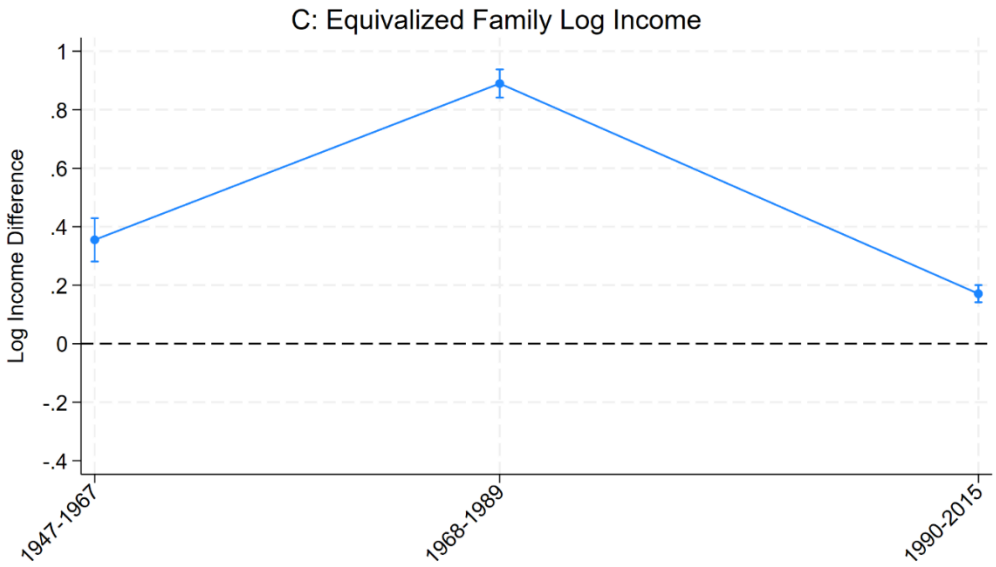
Figure A3. Marginal effects of the probability of marriage within ten years after first birth among never married mothers aged 15-40 living in the SEDD area, 1947-2015, focusing on the interaction between period and equivalized family income quintiles. Pooled LPM and FE models without cohabitation control.

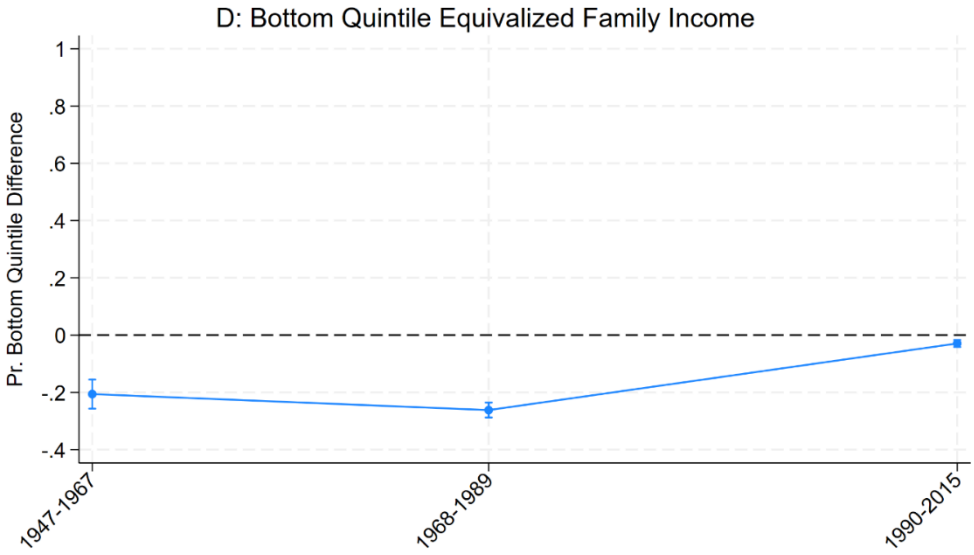


Note: Marginal effects computed and plotted as a post-estimation based on Models 3 (for each different outcome) in Table A6.
Source: See Table 1.

Figure A4. Marginal effects of marriage within ten years after first birth on income attainment among never married mothers aged 15-40 living in the SEDD area, 1947-2015, focusing on the interaction between marital status and period. Pooled LPM and FE models without cohabitation control.







Note: Marginal effects computed and plotted as a post-estimation based on Models 2 (for each different outcome) in Table A7.
Source: See Table 1.