

Poverty and union formation among never-married single mothers in the Netherlands, 1989–2005

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Using panel data from Dutch tax records linked to the municipality registry, we investigate how the partner status of never-married single mothers changes in the years after the birth of their first child. To explore a possible accumulation of financial problems, we study the effects of income on the chances of entering a marital or cohabiting union. We also examine the effects of finding a partner on income for never-married single mothers. Finding a partner substantially improves income. We find that about half of the never-married single mothers marry or start cohabiting within 10 years of the first birth, but that these are usually mothers with average and higher incomes. Not only are never-married single mothers more likely to be poor at the time of first birth, the poor are also more likely to remain single. There seems to be an accumulation of disadvantage in this special group in Dutch society.

Keywords: single motherhood; fertility; union formation; income; poverty; event-history models; panel data; the Netherlands

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Introduction

In many Western societies, marriage and childrearing have gradually become disconnected (Cherlin 1992; Casper and Bianchi 2002). As is well known, three processes underlie this trend. First, the rate of divorce has increased dramatically, which implies that more and more women are living with their children after being divorced. Second, cohabitation has increased, which means that an increasing number of men and women have children while they are not (yet) married. Third, there are increasing numbers of never-married women who have a child without living together with the father of the child (Casper and Bianchi 2002). In the Netherlands—which is the country we study—28 per cent of the children born in 2005 were born in a cohabiting union and 5 per cent were born to women who did not live with a partner (Van der Meulen and De Graaf 2006).

While many studies in the past have focused on single mothers as a group and on single mothers after divorce or separation (McLanahan and Sandefur 1994), relatively few have focused specifically on the position of never-married single mothers. Although this category is numerically the least important, it is the one that demonstrates the clearest

disconnection between marriage and fertility, and is therefore an especially interesting group. Moreover, the fate of women in this category is not affected by a divorce or separation, experiences that always add to the problems faced by other single-mother families.

Women who have a child outside of a (married or unmarried) union may prefer to raise a child alone, or may have a partner who is unwilling or unable to live with them, or there be other reasons (such as not having suitable accommodation) why they cannot marry or live together. Never-married single mothers differ in a number of important respects from married women and also from other groups of single mothers. American and British studies show that never-married single mothers more often live below the poverty line than do married parents (Casper and Bianchi 2002; McKay 2003; Marsh and Vegeris 2004). Poverty rates are high among single mothers who are divorced or separated, but even higher among never-married women. Given the obvious importance of parents' financial resources for children's and adults' well-being, the poverty of women who have a child outside of a union has given much cause for concern (Sigle-Rushton and McLanahan 2002).

An assumption behind this concern is that unmarried women who have a child outside of a

union remain alone and, partly as a result, remain in the lower-income groups of society. If most of these women marry or start living with a partner quickly after the birth of their (first) child, there is less reason for concern. As well as providing income, a partner can share the burden of combining childcare and paid work and can thus improve the woman's labour-market opportunities. If, on the other hand, these mothers remain single for a prolonged period of time, the concern is indeed justified. To discover what actually occurs, it is clearly important to study never-married single mothers in a dynamic fashion. More specifically, it is important to know how often never-married single mothers enter a cohabiting or married union in the years after their first child is born, and to examine to what extent such a transition alleviates the financial problems they face. This was the aim of our study.

Our first research question was: How does the partner status of never-married single mothers change in the years after the birth of their first child: is never-married single motherhood a permanent or a temporary state? Our second question was: What are the effects of income on the chances of a never-married single mother entering a marital or cohabiting union after she becomes a mother: is there evidence of an accumulation of problems because poor single mothers are also more likely to remain single than other single women? Finally, our third question was: To what extent does entering a marital or cohabiting union improve the income of never-married single mothers: is union formation a way out of poverty for these women?

Note that, while we did make a distinction between the types of union that never-married single mothers form, we did not analyse the transitions to marriage among cohabiting mothers, as analysed by others in the past (Brown 2000; Aassve 2003). We considered only the transition from being single to cohabitation or marriage. Analyses for the Netherlands have shown that in terms of their income, cohabiting women who become mothers are more like married mothers than like single mothers (Kalmijn et al. 2007). Moreover, the issue of whether cohabiting mothers marry is substantively different from the issue of whether single mothers form a union. It is union formation—not marriage—which is believed to help poor never-married single mothers solve their financial problems.

To answer our research questions, we used tax and registry data from the Netherlands, which are a unique source of information on never-married single mothers. To analyse the dynamics of single motherhood among never-married mothers, one

needs prospective longitudinal data that include good annual measures of income. Moreover, given the small size of this group in the population, such a panel data-set needs to be extremely large, in fact larger than the panel data-sets that exist in most countries. In the tax and registry data we used, about 76,000 households were followed over a 16-year period. This enabled us to examine a representative sample of this special group of women in a longitudinal fashion. Unfortunately, the tax data have the disadvantage that although income is measured very well, many other potentially relevant characteristics such as education, occupation, and family background are not measured at all.

The Dutch setting represents a typical Western society with high rates of divorce, delayed marriage and childbearing, and high levels of cohabitation (Statistics Netherlands 1999). As in other Western countries, the share of births to unmarried mothers has increased considerably since the 1970s, although most of this increase is in births to cohabiting mothers (Van der Meulen and De Graaf 2006). Levels of economic independence for women are high because a large percentage of women are employed in the labour market, although the proportion of married women who work in part-time jobs is higher than in most other Western countries (Blossfeld and Hakim 1997).

Social security in the Netherlands can be regarded as relatively generous—the Netherlands is typically regarded as a social democratic welfare state (Arts and Gelissen 2002). Those unable to earn income in the Netherlands are entitled to various forms of welfare. Those eligible are people without any employment history and those who have been on unemployment benefits for a period of 5 years, provided they are not entitled to a disability pension. Changes in the welfare system in 1996 made the eligibility criteria more strict. From 1996 onward, single mothers on welfare were required to look for paid work, though the municipalities, which were responsible for applying the new rules, varied greatly in how strictly they interpreted them. In the Netherlands, rent subsidies for low-income households were an important source of income for the poor.

Background and hypotheses

Our first question was about the extent to which the household situation of never-married single mothers who had a child changed over time. Was being single at the time of birth usually a temporary state or did

these mothers stay single for many years? It is possible that some never-married single mothers wanted to live together with a partner but that restrictions at the time of birth prevented them from actually entering a union at that time. For example, the father of the child might not have been willing to commit himself at that stage, or there might have been financial or housing restrictions.

Our study is not the first to study the household dynamics of unmarried mothers. Using prospective longitudinal data from the *British Lone Parent Cohort*, Marsh and Vegeris (2004) show that of never-married women who had a child (while living alone) in 1991, 46 per cent were living with a partner 10 years later. They also show that in the 10 years after the birth of the child, one in every six never-married women lived with a partner temporarily. Other evidence from Great Britain shows higher levels of partnering. Using retrospective life-history data, McKay shows that about half of the never-married women in Great Britain were living with a partner within 5 years of the birth (2003). A similar median duration of 5 years was found in an analysis of the British Household Panel Survey (Skew et al. 2008). There have also been American studies on the topic. Using the *Fragile Families and Child Well-being Study*, Carlson et al. (2004) find that 24 per cent of never-married single mothers were married or cohabiting 1 year after the birth, while 76 per cent were still alone. Using data from a large-scale prospective longitudinal survey in the USA, Moffitt and Rendall (1995) show that the average length of time a child was being raised by a single mother was about 5 years.

Our second question was about whether the income position of mothers affected their chances of finding a (new) partner. One argument is that income has a negative effect on union formation. This argument is based on the traditional notion that women with a higher income would be less in need of a husband and would therefore be more likely to refrain from marrying or from entering a union, *ceteris paribus* (Bracher and Santow 1998; Casper and Bianchi 2002; Carlson et al. 2004). Or to put it the other way around, low-income women—and probably especially low-income mothers—would be more in need of a husband for financial reasons than would high-income mothers.

The evidence for the effect of financial independence on marriage formation (among never-married women without a child) is mixed, however (Blossfeld 1995). Moreover, there is evidence that in recent cohorts, women's earnings have a positive rather than a negative effect on marriage formation (Sweeney

2002). Owing to the decline in sex-role specialization in marriage, women's earnings may have become an attractive resource in the marriage market rather than a sign of independence. In other words, because many couples in contemporary society are dual-earner couples, men increasingly value the financial resources that women bring to the marriage. This would suggest that poor never-married single mothers have lower rather than higher chances of entering a union.

Less is known about income effects on union formation of never-married single mothers. Analyses from the *British Lone Parent Cohort* show that economically disadvantaged single mothers were somewhat less likely to enter a union in 10 years time than economically advantaged mothers (Marsh and Vegeris 2004). Another British study finds a similar result: non-employed single mothers were less likely to enter a union than employed mothers (McKay 2003). The British findings apply to all types of single mothers and since most single mothers are separated women, they do not tell us anything directly about never-married single mothers. Studies in the USA reveal less consistent effects. Carlson et al. (2004) do find positive effects of women's income on cohabitation and marriage, but most of the effects are not strong enough to be statistically significant. In the Carlson et al. study, the effects for marriage apply to both single *and* cohabiting women so that they do not tell us about the effect of union formation itself. However, the effect of income on the transition to cohabitation applies to single women only and this effect is in the positive direction (though again, the effect is not significant). While the income effects are weak or insignificant, Carlson et al. find clear positive effects of women's education on union formation. Single mothers who were high-school dropouts were less likely to enter a cohabiting union than were single mothers who were high-school graduates.

After completing our consideration of the existing evidence, we formulated a set of hypotheses, the first of which was: *Higher-income, never-married single mothers are more likely to enter a union after the birth of their first child than lower-income, never-married single mothers (hypothesis 1)*. Of course, it needs to be recognized that income differences may also be associated with other, unobserved characteristics which may affect union formation (Ermisch and Wright 1991). One important additional consideration is that (never-married) single mothers with higher income may be more likely to meet potential partners. Higher-income mothers will more often be employed and the work place is an

important marriage and remarriage market (De Graaf and Kalmijn 2003). This suggested an additional hypothesis: *Employed, never-married single mothers are more likely to enter a union than non-employed, never-married single mothers (hypothesis 2)*. To test this hypothesis, it is necessary to control for income level to ensure that it is specifically employment and not income that matters.

Lower-income mothers are more likely to receive welfare payments, and in the Netherlands these are reduced when women marry or start cohabiting. The social security system recognizes the economies of scale achieved by living together, so that if two persons receiving welfare payments begin living together, the payments to both of them are reduced. Previous research in the Netherlands has shown that divorced women receiving welfare payments are less likely to remarry but not less likely to re-cohabit (De Graaf and Kalmijn 2003). In the Netherlands, cohabitation and marriage are now treated as fully equivalent by the state, and municipalities check whether persons who receive welfare payments are living with a partner (the so-called 'toothbrush count'). In practice, however, it has been more difficult for the government to detect unmarried cohabitation than marriage, a fact that may be an incentive for mothers who receive welfare payments and who find a new partner to cohabit rather than to marry. Mothers who receive welfare payments may also want to postpone the marriage decision in case the relationship fails and they need have the full payment restored. In other words, some women may want to retain the full welfare payments while trying out a new union, and decide to marry only if and when they become more confident of the viability of the union. Following this reasoning, we formulated the following hypothesis: *Never-married single mothers who receive welfare are less likely to enter a union and this effect is stronger for marriage than for cohabitation (hypothesis 3)*.

Our third question concerned the effect of union formation on income. Many never-married single mothers live in poverty, which there are several possible ways of escaping. One option is to increase income from employment, but this is difficult for single mothers because they have to combine work and childcare. Another option is union formation. Living together with a partner who provides an adequate income can mean an end to poverty, not only by increasing actual household income directly, but also by yielding economies of scale that increase (standardized measures of) disposable income (Waite and Gallagher 2000). Much depends, however, on the type of partner the woman decides to

live with. Especially in times of low sex-role specialization, there will be positive assortative mating on income (Henz and Sundstrom 2001). In this case, entering a union with a partner who also receives welfare payments may not bring much extra income but only economies of scale. However, this may still lift some of the women who are at the bottom of the income hierarchy out of poverty. Our final hypothesis was the following: *Union formation decreases the likelihood of being poor for never-married single mothers (hypothesis 4)*.

Data, measurement, and method

The Income Panel Survey (IPO) that is used in our study was conducted by Statistics Netherlands (Van der Brug et al. 2004). The IPO contains longitudinal information about the households of key persons randomly drawn from the Dutch population in 1989. From the first wave, information is available for individuals in 76,229 unique households. Attrition occurs only as a result of emigration or death of the key person. Annually, key persons drawn from the newborn and legal immigrants are added to the sample to keep the panel nationally representative in each year. Information on basic demographic characteristics and income for all individuals in the key person's household are taken from tax records and the population register, data from which are matched to the fiscal data. Waves for the 16 years from 1989 to 2005 were available. The advantages of the IPO panel are that income is measured with less error than is typical in surveys, that the sample is very large, and that there is no (non-natural) attrition from the sample.

From the data, we selected women who had a first child during the period 1989–2005. (Because the registry does not have information on birth order, we may have incorrectly labelled the second birth as a first birth in the rare cases where a previously born child had died or moved out of the women's household before the start of the panel and before the birth of the second child). About half of the women who gave birth during the survey period already had one or more children, which left a sample of 16,290 women who had become a mother for the first time. For the women who were initially sampled as panel members and became mothers during the study period, we had income data for the calendar year before the year in which the child was born and income data for all subsequent years. In cases where the household had been added to the IPO panel because the key person was drawn from the registry

of newborns, we had income data for the year of birth and onwards.

The living arrangement of the mother was assessed by identifying the household members at the end of the calendar year in which her first baby was born and her partner status at that time. There were some single mothers in the data who were living in a household with other adults. When one of the other adults was a man, it was likely that these women were actually cohabiting with a partner. However, some of these cases may have been multiple-generation households. Because the data do not allow us to determine with certainty the family relationships of all members in the household, we restricted our definition of never-married single mothers to women who were truly the only adult in the household. A very few cases have missing or invalid income information. After removing these cases as well, our final analytic sample consisted of 16,045 mothers (Table 1). On average,

we observed these women for about 8 years after the first birth (with a range of 1–15 years).

As the main income variable in our analyses, we used standardized income, which is equal to household income divided by an equivalence factor. The equivalence factor is the number of household members adjusted for differential costs of adults and children and for economies of scale. We applied the modified OECD equivalence factor (De Vos and Zaidi 1997), which assigns a weight of 1 to the household head, a weight of 0.5 to each additional adult, and a weight of 0.3 to each child under age 14. Standardized income is the most frequently used measure of an individual's economic position because it takes the costs of children and economies of scale into account.

The design of our analysis was as follows. For descriptive purposes, we first compared the income of never-married single women who had a child with the income of married and cohabiting women who

Table 1 Sample statistics of the demographic and economic characteristics of mothers in the year of first birth by household composition, the Netherlands 1989–2005

	Married		Cohabiting		Single	
	<i>N</i>	Per cent	<i>N</i>	Per cent	<i>N</i>	Per cent
<i>Age</i>						
Younger than 20	102	1	52	2	41	7
20–24	1,511	12	454	14	130	21
25–29	5,023	41	1,086	33	164	26
30–34	4,304	35	1,222	37	166	26
35 and older	1,187	10	474	14	129	20
<i>Ethnicity</i>						
Surinamese/Antillean origin	209	2	117	4	96	15
<i>Residence</i>						
Large city	1,750	14	772	23	294	47
<i>Source of income</i>						
Employment	10,126	83	2,813	86	347	55
Social welfare	143	1	93	3	185	29
Other government transfers	755	6	238	7	84	13
No own income	1,103	9	144	4	14	2
<i>Income quintiles</i>						
Lowest quintile	1,127	9	402	12	345	55
2nd quintile	1,245	10	330	10	140	22
3rd quintile	2,121	17	519	16	75	12
4th quintile	3,598	30	831	25	46	7
Highest quintile	4,036	33	1,206	37	24	4
<i>Below EU poverty level</i>						
Pair/single without child	452	4	168	5	182	29
Pair/single with child	851	7	315	10	356	57
<i>Mean income (euros)</i>						
(SD income)	18,675 (8,255)		19,052 (9,385)		10,308 (5,617)	
Total (row %)	12,127	76	3,288	20	630	4

Source: Income Panel Survey 1989–2005, Statistics Netherlands.

had a child. To cover all the possibilities, we compared single mothers not only to married mothers but also to cohabiting mothers. As we will see, the results for cohabiting women in the Netherlands differ quite substantially from their counterparts in American society.

For our longitudinal analyses, we focused only on never-married single mothers. We present simple percentages to describe how quickly these mothers entered a union after the first birth. In Figure 1 we plot the current living arrangements in each year after the first birth separately for the three groups of mothers, based on their living arrangements in the year of birth. If women who had partnered lived alone again in a certain year, this was counted as single in that year. Note that we could not tell from the data if the new partner was the father of the child. It is possible that in some cases, the father of the child entered the household after a couple of years. It would be an interesting project for future research to investigate whether such cases of 'delayed fatherhood' were different from the cases where the mothers found a new partner.

To examine the effects of income on union formation, we employed discrete time event-history models. To estimate the event-history models, data were transformed into a person-year file with multiple years for each woman who had a birth outside of a union. The risk period started in the year after the year of birth and ended when a woman entered a union or when the period covered by the panel ended. Income measures were time-varying. Duration dependency was taken into account by including a non-linear specification of time since birth (duration and duration squared). The dependent variable was the odds of entering a union and this variable was analysed by running a logistic regression model on the person period file. In addition, we made a distinction between two events (marriage or cohabitation) using a multinomial logistic regression model where remaining single was the reference group. This was equivalent to a competing risk model (Yamaguchi 1991).

For the effects of union formation on income we used fixed-effects panel regression models. All never-married single mothers were included for all

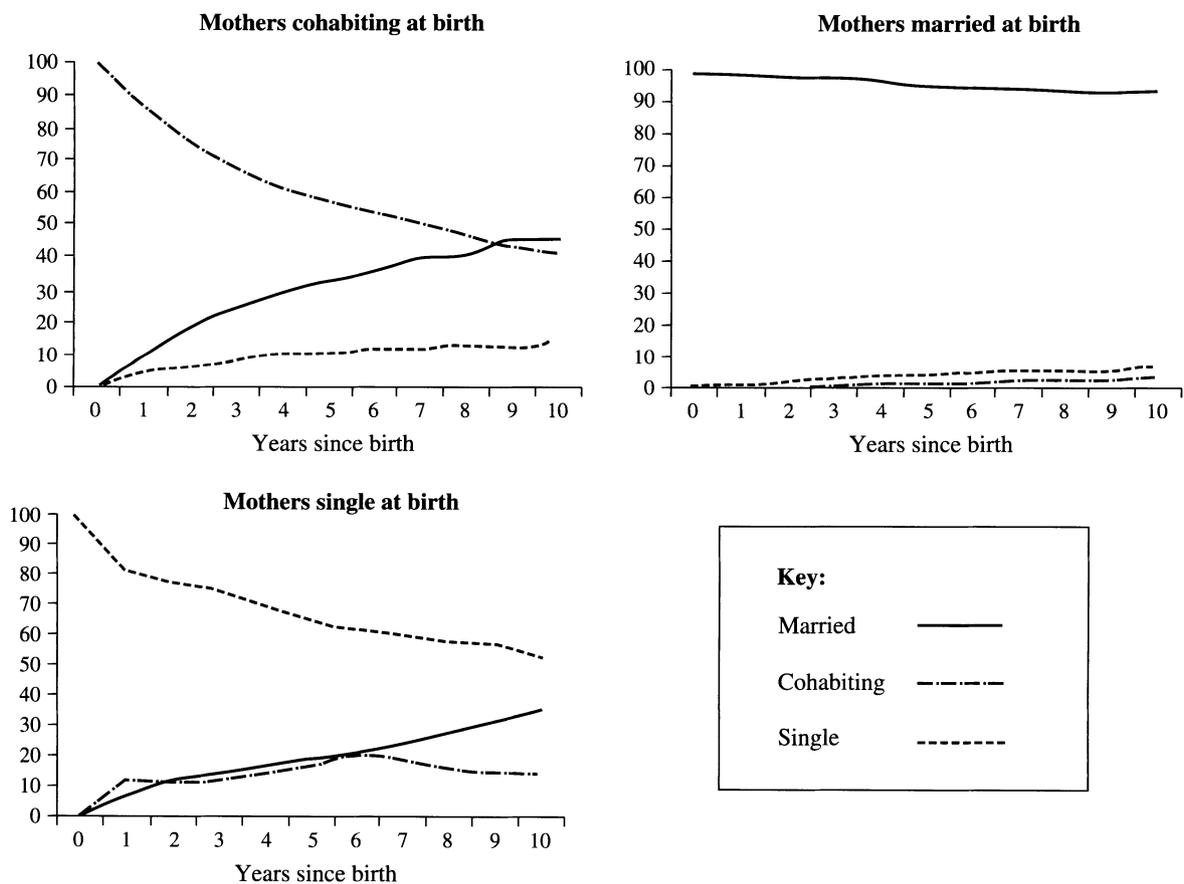


Figure 1 Percentages of married, cohabiting, and single women for each year after the first birth by living arrangements in the birth year, the Netherlands 1989–2005

Source: As for Table 1

post-birth years in which we observed them during the survey period. Multiple transitions from singlehood to a partnered state (and back) could occur during the period. In other words, a mother who became single again entered the risk group again for partnering.

In the event-history models and panel regression models, we controlled for variables related to both income and union formation: age of the mother, city residence, and ethnicity. We assumed that these variables had a causal effect on having a birth outside of a union. Since these variables would also affect subsequent union formation, they needed to be controlled for. We also controlled for having additional children. Ethnicity was measured as having Surinamese or Antillean origins. We used information on the mother's and her parents' country of birth so that first-generation and second-generation Surinamese and Antilleans were combined in one category. Research has shown that about a third of Surinamese and Antillean mothers are living without a partner (Harmsen and Garssen 2005). Obviously, ethnicity cannot be estimated as a separate term in the fixed-effects panel regression. In the event-history models, we also included employment and receiving social security benefits to test our additional hypotheses (see also below). Finally, we included a time-varying variable indicating whether the mother had an additional child. Having an additional child can increase both the need to form a new union and the opportunity to do so (by marrying or cohabiting with the father of the child). There is some concern about the causal direction between having an additional child and union formation, but we found similar income effects with and without this variable.

Results

The results in Table 1 show that of all first births, 76 per cent were to married mothers, 20 per cent were to cohabiting mothers, and 4 per cent were to never-married single mothers. We should note that some of these never-married single mothers may have cohabited with a partner before (before the panel survey began). Before we address our first question about income differences, we compare the characteristics of single mothers, cohabiting mothers, and married mothers in Table 1. We first see that the age distribution of single mothers is very different from that of cohabiting and married mothers. Among single mothers, 7 per cent are teenagers at the time of birth, but only 1 per cent among married

mothers and 2 per cent among cohabiting mothers. It is interesting that there are also more older mothers among single mothers. Of single mothers, 20 per cent are older than 35, compared to 10 and 14 per cent among married and cohabiting mothers. These results may point to the heterogeneity in the motives of and restrictions on single mothers. Some of these women would have become pregnant unintentionally and may be disproportionately young. Others may have decided to raise a child without a partner, and may be disproportionately older women who could not wait longer to find a partner. The second block in Table 1 shows that a disproportionate number of single mothers are of Surinamese or Antillean origin. This is consistent with findings for blacks in British and American research. We also see that single mothers more often live in large cities than do married and cohabiting mothers.

To answer our first descriptive question, we compared the economic situation of the three groups of mothers. We see that the standardized income of single mothers is about 55 per cent of that of married mothers and 54 per cent of that of cohabiting mothers. To what extent is this gap due to economies of scale that couple households obtain? To calculate standardized income, household income was divided by an equivalence factor which takes into account the number of people living in the household corrected for economies of scale. A single mother with one child has an equivalence factor of 1.3, a cohabiting or married mother with one child has an equivalence factor of 1.8. If personal incomes were the same for everyone, say P , the income level of a single mother with one child would be $P/1.3$ and the income for a couple with one child would be $2P/1.8$. Hence, as a result of economies of scale, single mothers would have 69 per cent of the income of married or cohabiting mothers (i.e., $[P/1.3]/[2P/1.8]$). The actual gap is larger—55 per cent—showing that economies of scale are not fully responsible for the gap, although these are clearly an important element of it.

We also see that 57 per cent of never-married single mothers are living below the (European) poverty line, compared to 7 and 10 per cent of married and cohabiting mothers. These results are strikingly similar to those found by American and British researchers. Of never-married single mothers in the USA, 58 per cent live below the poverty line (Casper and Bianchi 2002, p. 116). Of all single-parent mothers in the UK, 57 live below the poverty line (Eurostat). The income differences are matched by large differences in the income sources. A little more than half of the single mothers have income

from work and 29 per cent of these women receive welfare payments. Hence, it is clear that never-married single mothers are largely dependent on the government for their income, and are therefore very similar in this respect to divorced single mothers in the Netherlands (Poortman 2002). We also conclude that cohabiting mothers are not more often poor than married mothers, in contrast to the situation in the USA, where cohabiting mothers are clearly poorer than married mothers (Casper and Bianchi 2002).

Because the groups differ in a number of other important respects, we examined whether income was associated with the type of living arrangement after controlling for age, ethnicity, and city residence (using a multinomial regression model; coefficients not presented). This analysis confirmed the pattern in Table 1. The odds of being single rather than married are 7.4 times higher for mothers in the lowest income group (lowest quintile) than for mothers in the middle income group. The income differences are more or less continuous: each higher-income group of mothers has a lower chance of being single at the first birth. Part of the income association is due to the economies of scale that couples enjoy. When we exclude these economies of scale from the OECD equivalence scale (i.e., simply dividing by 2 rather than by 1.5 for two adults in the household), the odds of being single for mothers in the lowest income group are 2.2 times higher than for mothers in the middle income group. While this association is not as strong as that found in the first model, it is still a strong association. The association also remains continuous. We note that these are simply descriptive analyses of income differences after taking into account compositional differences with respect to ethnicity, age, and city residence. The income applies to the same time period (i.e., calendar year) in which women have their first child. Hence, we do not argue that poverty has a causal effect on having a birth outside of a union.

How do the living arrangements of the three groups of mothers change over time? Figure 1 shows the percentages married, cohabiting, and single for each year after the first birth. The figure is presented separately for the three living arrangements in the birth year. These figures are essentially outflow tables. Focusing first on the single mothers at birth, we see that as time goes by, an increasing number of single women start living with a partner. The increase is especially strong in the first year but continues after that. The plateau seems to be reached in the seventh year, at which time about half of the single mothers are no longer single. We

also see that outflow into marriage is somewhat more common than outflow into cohabitation (34 vs. 14 per cent). These results confirm our expectation that being single as a new mother is not a stable state. Our outflow percentage from being single into marriage or cohabitation is very similar to that found in the *British Lone Parent Survey* (Marsh and Vegeris 2004, p. 34).

Which mothers remain single and which mothers enter a union? To examine this, we conducted an event-history analysis. The dependent variable was the annual odds of entering a (married or cohabiting) union if one is single in the year before. Using a multinomial logit model, we also made a distinction between entering marriage or cohabitation. The results are shown in Table 2, which presents odds ratios.

Is there an income effect on the odds of union formation? Table 2 shows that there is a significant positive income effect. The higher the income level of single mothers, the more likely it is that they will start living together with a partner in the following calendar year. Mothers in the highest income quintile have 6 times higher odds of entering a union than those in the middle income quintile. Mothers in the lowest income quintile have 74 per cent lower odds of entering a union than those in the middle income quintile. These effects are strong and more or less linear. When comparing the lowest and the middle income groups—the most common groups in the population we study—it appears that income effects are somewhat stronger for cohabitation than for marriage.

The model includes other economic variables. We see that mothers who receive welfare payments are not less likely to enter a union than mothers who receive income from employment. However, when we look at the competing risk model, we see that receiving welfare payments does reduce the chances of marrying but does not affect the chance of cohabiting. The odds of marrying are 59 per cent lower for mothers receiving welfare payments than for employed mothers. This pattern confirms our hypothesis. Welfare payments are reduced when women begin to live together and other social security payments are not reduced. Because it is more difficult to detect unmarried cohabitation, it would be easier to retain full welfare payments while living together. Note that mothers receiving welfare payments are also in the lowest income category. However, the fact that there are also working mothers in the lowest income category shows that these two variables are not confounded. We note however, that the effects are still cumulative. When

Table 2 Event history analysis of the transition out of singlehood after birth of first child: odds ratios from logit and multinomial logit models, the Netherlands 1989–2005

	Logit model		Multinomial logit model
	Partner vs. Single	Married vs. Single	Cohabiting vs. Single
Time	1.47**	1.29#	1.57**
Time squared	0.95**	0.96*	0.95**
<i>Age</i>			
Younger than 20	1.37	0.91	1.78
20–24	1.27	1.13	1.37
25–29 (ref)	1.00	1.00	1.00
30–34	0.60**	0.61#	0.60*
35 and older	0.27**	0.21**	0.31**
<i>Income</i>			
Lowest quintile	0.26**	0.56	0.17**
2nd quintile	0.39**	0.67**	0.29**
3rd quintile (ref)	1.00	1.00	1.00
4th quintile	2.89**	3.10*	2.82**
Highest quintile	6.04**	7.71**	5.47**
<i>Source of income</i>			
Employed (ref)	1.00	1.00	1.00
Social welfare	0.79	0.41**	1.12
Other government transfers	1.07	0.90	1.17
No own income	4.71**	4.01*	4.96*
<i>Other factors</i>			
Additional birth	2.78**	4.23**	2.26**
Large city	0.76#	0.95	0.68*
Surinamese/ Antillean origin	0.71	0.29**	1.00
Log likelihood	–740.1		–891.0
χ^2	315.0		341.7
(df)	(16)		(32)

$p < 0.10$; * $p < 0.05$; ** $p < 0.01$ (two-sided test).

N women = 630; N person-year records = 3,208;

N events = 242.

Source: As for Table 1.

we compare mothers receiving welfare payments to the average mother, we should combine the effect of low income *and* the effect of welfare benefits.

We also expected that employed women would be in a better marriage market position and hence would be more likely to enter a union. To test this, we compared employed mothers to mothers who receive other social security income. This avoids confounding the comparison with the assumed negative welfare effect. In this comparison, we see no difference: the effect of other governmental transfers (with employed women as a reference) is not significant for union entry. The effect is also not significant in the multinomial logit model. We also see a large effect of other income, but since the number of cases is small here ($n = 14$, see Table 1),

we cannot regard this as a meaningful effect. It thus appears that being in the labour market itself has no positive effect on finding a partner, in contrast to our hypothesis.

It is also interesting to discuss some of the other effects. First, we see an effect of age. Older never-married single mothers are less likely to enter a union than younger mothers. There is no difference between teenage mothers and mothers aged 25–29. One interpretation of these differences is that the combination of older age and a previous birth with another father puts older mothers at a comparative disadvantage in the marriage market. Both factors could reduce the (perceived) likelihood of these women having additional children with a new partner and this could make them less attractive partners to some men. An alternative interpretation is that older never-married single mothers more often consciously choose to raise a child on their own. Compared to younger single women, older single women are less likely to become pregnant unintentionally (Frisco 2005). We also see that mothers of Surinamese and Antillean origins are more likely to remain single and in particular to remain unmarried. Additional births after the first birth increase the chances of union formation, which seems understandable. If there is a new birth, there is also a new potential partner and a greater need to live with a partner.

Finally, we examined whether a transition from never-married single motherhood to marriage or cohabitation improves women's income. We used a fixed-effects panel model with the natural logarithm of standardized income. The model was estimated using *xtreg* in STATA and the results are presented in Table 3. We find a statistically significant positive effect of union formation on standardized income ($b = 0.36$; $SE = 0.02$). After marriage or the start of cohabitation, the income position of the single mothers improves by 43 per cent (i.e., $1 - e^{-0.36}$). This result also holds true if we use an equivalence factor that does not take into account economies of scale (i.e., dividing household income by $2 + 0.3$ rather than by $1.5 + 0.3$). Is the financial improvement after union formation different for cohabitation and marriage? The coefficients are $b = 0.327$ and 0.380 , respectively, and the difference between these coefficients is not significant ($F = 1.87$, $p = 0.172$). Hence, it is only living with a partner that improves income. The second model in Table 3 is a fixed-effects logit model with poverty as a dependent variable. We see a significant effect here as well. Entering a union makes a mother 3 times ($e^{1.09} = 2.98$) more likely to be above the poverty level; quite a substantial effect.

Table 3 Fixed-effects regression of income and poverty on union formation and demographic variables, the Netherlands 1989–2005

	Fixed-effects regression Natural log of standardized income (unstandardized coefficient)	Fixed-effects logit model Above poverty level (odds ratios)
Age	0.11**	2.24**
Age squared	0.00**	0.99**
Additional birth	−0.21**	1.27
Large city	−0.03	1.19
Union formation	0.36**	2.98**
Log likelihood	−749.65	−727.18
χ^2	295.9	718.1
(df)	(13)	(5)

$p < 0.10$; * $p < 0.05$; ** $p < 0.01$ (two-sided test).

N women = 630; N observations = 3,823.

Source: As for Table 1.

Conclusion and discussion

We find that women who have their first birth outside of a union are more likely to be poor. There are probably several reasons for this. The most important reason is the lack of a male breadwinner, but there may also be selective entry into single parenthood among lower social strata. For example, poor women may be less attractive marriage candidates and they may be faced with poor marriage candidates (poor men), which makes them more likely to remain single. Whether preferences also play a role is less clear. Most studies show that the higher-educated (and hence the higher-income) groups are less committed to marriage and family values than the lower-educated (Kalmijn and Kraaykamp 2007). The higher-educated also have more permissive values on sexual behaviour than the lower-educated (Kraaykamp 2002). Hence, we believe that differences in preferences would increase rather than decrease the chances of higher-status women becoming single mothers. What may play a role, however, are differences in the use of contraception. There is evidence to show that higher-educated women use modern contraceptives more often (Frisco 2005). Less effective use of contraception increases the chances of an unwanted pregnancy among lower-status women, and unwanted pregnancies are one of the causes of single motherhood. In our study, our prime concern was not the explanation of the economic position of single mothers, but rather a dynamic analysis of their situation after the first birth.

To what extent are single mothers able to escape from their poverty? To the extent that the lack of a

male breadwinner is one of the main reasons for poverty, it is clear that union formation can be a way out of poverty, just as it is for divorced single women (DeWilde and Uunk 2008). Hence, it is important to examine changes in the living arrangements of single mothers. We see that about half of the single mothers marry or start living together with a partner within 10 years of the first birth. This could be good news, but the question is which mothers are able to escape from singlehood? If primarily poor women are entering a union, this would indeed be a positive development, but if poor women are less likely to enter a union, financial problems will accumulate. Our event-history analyses show that it is mothers who are not poor who are especially likely to escape from singlehood. Poor mothers appear to be less likely to enter a marital or cohabiting union than mothers with an average income. Hence, single mothers are not only more likely to be poor at the time of the first birth, the poor are also more likely to *remain* single in the years after that birth. Because our analysis also shows that those who remain single are more likely to remain below the poverty line, there seems to be an accumulation of economic disadvantage for this small group in Dutch society. Our analyses of income changes after union formation further confirm this effect.

The disadvantaged position of single mothers affects not only the mothers themselves, but also their children. Further study is needed to investigate how long-term singlehood in this group of mothers affects the well-being and educational chances of the children in their households. Closely related to this are questions about the effects of single mothers' employment. Contrary to our expectations,

never-married mothers are not more likely to find a partner when they are employed. We expected that being in the labour market would facilitate the search process in the marriage market and would therefore increase the rate of union formation. Although such an effect has been found for women after divorce (De Graaf and Kalmijn 2003), employment appears to work differently for never-married mothers. Why does being employed not make these mothers more attractive as partners? Is it because potential partners for these women have more traditional views on family and work? Or are these women primarily employed in jobs that are highly sex-segregated, and that scarcely function as a meeting place for potential partners? These are important questions for further research into the process of union formation for marginal groups on the marriage market.

Notes

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