Biographical Consequences
of Teenage Motherhood in Germany

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Abstract

It is commonly held that teenage motherhood negatively impacts the mother's further life course. This paper deals with the question of the consequences teenage motherhood has on the long run for the young mother's educational and employment career as well as for partnership stability. To explore the research questions linear and logistic regressions based on the SOEP (1984–2009) are conducted. In these analyses, mothers who gave birth before age 18 are compared to mothers who were 18 years or older at the time of their first delivery.

1. Introduction

In cross-national comparison, Germany holds a low to medium incidence of teenage childbirth. The situation is not as alarming as in Mexico, Turkey, the United States or the United Kingdom[1], but it still affects a sizeable number of around 7,000 young German girls every year (cf. Destatis, 2010). Teenage motherhood might have far reaching negative consequences for the life courses of young women as far as it is linked to instabilities in educational, employment and partnership biographies. Low labor market attachment and living without a partner who might provide for an earning is likely to increase the risk of welfare dependency in later life (cf. Coley / Chase-Lansdale, 1997; Ermisch, 2003). However, although there has been some research on life course consequences of teenage motherhood for mainly the Anglo-Saxon world, there is surprisingly little knowledge on these questions for Germany. Most German

[1] Rates of 2008 (per thousand women aged 15 to 19): Mexico: 94; Turkey: 51; USA: 41.6; UK: 25.9; Germany: 10.6 (OECD, 2010)

studies examine the causes of teenage pregnancy – especially the social background of the young mothers (Franz/Busch, 2004; Friedrich/Remberg, 2005; Häußler-Sczepan/Wienholz/Michel, 2005), but ignore potential consequences of teenage motherhood for other domains of life. This contribution tries to fill this research gap and poses the question how teenage motherhood affects educational attainment, employment and partnership stability of young women in Germany.

The paper is organized as follows: At first, past empirical findings will be summed up, followed by a brief introduction into the theoretical background and the hypotheses. Then, data and methods as well as the empirical results will be presented. The paper ends with a summarizing conclusion.

2. Previous Research

Several studies already investigated educational achievement, employment and partnership histories of teenage mothers – mainly for Anglo-Saxon countries. The results gained in the USA, the UK and New Zealand show that educational attainment is comparatively low for women who became mothers while they are teenagers (e.g. Card/Wise, 1978; Chevalier/Viitanen, 2003; Fergusson/Woodward, 2000). However, there is no consensus on the direction of causality. Some authors hold, that problems with reconciling education and child care are responsible for teenage mothers' lower educational attainment (e.g. Moore/Waite, 1977) or, alternatively, that it is a cause of adolescent childbearing (e.g. Upchurch/McCarthy, 1990). In contrast, other researchers argue that there is "some unknown individual heterogeneity that induces both early childbearing and a lower likelihood of school completion" (Ahn, 1994, 17; Fergusson/Woodward, 2000), so that the statistical effects of education are in fact correlates rather than results of early childbearing (Coley/Chase-Lansdale, 1997). Consequently, one would expect low educational attainment even without the occurrence of teenage motherhood (cf. Ermisch, 2003).

With respect to employment, previous studies agree that early childbearing affects labor market participation negatively (e. g. Ahn, 1994; Chevalier/Viitanen, 2003). Several studies found low education to be the real cause of low labor market attachment of adolescent mothers in the United States (e.g. Card/Wise, 1978; Waite/Moore, 1978). Nevertheless, in the UK it is mainly attributed to the higher number of children teenage mothers have (cf. Chevalier/Viitanen, 2003, Ermisch, 2003).

Finally, several studies confirm that the risk of partnership instability for teenage mothers is relatively high (cf. Coley/Chase-Lansdale, 1997; Ribar, 1993). In addition, McLaughlin, et al. (1986) investigated the order of childbirth and

marriage and detected a positive effect of prenatal marrying (cf. Hall, 1997; Rapp, 2008).

This paper aims to examine whether reasoning and results might be transferred to German teenage mothers as well.

3. Theoretical Background and Hypotheses

Past empirical findings provided evidence that teenage motherhood has long-lasting consequences on educational achievement, labor market participation and partnership stability. In the following, the most important theoretical approaches that help to understand the effects of teenage motherhood will be presented divided by the three areas of life.

Even though there is no consensus on the exact causal relationships between educational attainment and teenage motherhood, there is no doubt that teenage motherhood typically goes along with low educational attainment (e.g. Ahn, 1994; Card/Wise, 1978). There are three approaches:

(1) Assuming time conflicts between child rearing tasks and education is the most common argument. According to family economics (Becker, 1991), time is a scarce resource. If a young woman has to split her time between education on the one hand, and child rearing tasks on the other, she is less likely to have enough time for completing her education (cf. Ribar, 1993). The more children she has, the higher the time constraints become and the less likely she is to finish her qualification successfully. The conflict might be eased by the support of partner and parents (Furstenberg/Brooks-Gunn/Morgan, 1987, 57). However, McLaughlin, et al. (1986, 18) state that teenage mothers who live in a marriage, seem to be less likely to complete an educational degree. Since most married teenage mothers left their parental home, they cannot expect much parental support, which could be more conducive to them than the support of an inexperienced and overstrained young man. Therefore it can be expected that the marital status, as well as the number of children at the time of leaving the educational system, influence the likelihood of completing education. Since teenage mothers have more children and marry earlier than other mothers (cf. Coley/Chase-Lansdale, 1997; Ermisch, 2003) the inclusion of these variables into the multiple regression analysis should decrease the impact of teenage motherhood on educational achievement.

(2) Another approach is held for example by Fergusson/Woodward (2000). The authors are convinced that characteristics of the family of origin which affect the likelihood of teenage motherhood are quite similar to the ones that influence educational attainment. Especially low parental education as well as living in a single-parent or step-parent family increase the risk of adolescent motherhood and low educational achievement (e.g. Chevalier/Viitanen, 2003;

Waite/Moore, 1978). Thus, young girls growing up in families with these adverse characteristics are likely to have low educational achievements whether or not they become teenage mothers. For the empirical analyses this would imply again that the effect of teenage motherhood on educational attainment should decline as soon as parental education and/or family structure are taken into account.

(3) The third approach assumes that the direction of causality is the other way around and sees teenage motherhood as a result of low educational achievement. Experiencing insecurity related to the educational or employment career is supposed to make women likely to escape into motherhood which promises a clear script for their future life (cf. (Friedman/Hechter/Kanazawa, 1994; Burton, 1990). Since low educational attainment entails insecurity, it is expected to raise the likelihood of adolescent motherhood (cf. Upchurch/McCarthy, 1990). Insecurity related to educational attainment can be measured by previous attainments such as general degrees or grades. Hence, the inclusion of these variables in a multiple regression should lead to a decline of the teenage motherhood effect on the likelihood of achieving a vocational qualification.

Similar to educational outcomes there is consensus on the negative impact of teenage motherhood on labor market participation. Again, there are three approaches that claim to explain the failure of teenage mothers:

(1) The first argument is based on the well-known result that education strongly influences labor market chances (e.g. Hofferth/Reid/Mott, 2001). Therefore, it is predicted that teenage mothers have a low labor force attachment, given their typically low educational achievement. Following this argument including educational attainment into the empirical analysis should decrease the impact of early childbearing on the time spent in employment.

(2) The second approach starts from the argument forwarded by family economics that household members pool their incomes and that the necessity of an own contribution is determined by the availability of other incomes (cf. Becker, 1991). Therefore, the likelihood of being employed should be higher for single mothers due to the lack of a second income. Even if teenage mothers are more likely to be separated or divorced, they are also more likely to remarry (cf. Card/Wise, 1978). Since they spent in total more time in marriage they are expected to have a lower labor force attachment than other mothers. Thus, taking into account partnership status in the analyses should decrease the net influence of teenage motherhood on the time spend at the labor market.

(3) The third argument refers to the time constraints imposed by child rearing tasks. Nearly every mother faces the problem of reconciliation of family and employment. The more children she has the less likely she is to be employed (cp. Ermisch, 2003, 12). Since teenage mothers have on average more children than other mothers (cp. Hotz/McElroy/Sanders, 1999, 22), it is expected that teenage mothers have a lower labor force attachment than other

mothers. For the empirical analyses this implies that taking into account the number of children should decrease the impact of teenage motherhood on the time spent in employment.

As already mentioned, having a partner affects the income situation of mothers. Given that dissolution entails financial losses (cf. Andreß, et al., 2003) the last part of the analyses will focus on partnership instability. Amongst others, Card / Wise found adolescent mothers to be more likely to be divorced than their counterparts (1978, 202). Different factors are commonly held to influence the likelihood of divorces. In the following, they will be divided into the categories: characteristics of the family of origin, structural and time-specific marital characteristics.

(1) First of all, characteristics of the family of origin are known to affect the likelihood of dissolutions. Such diverse factors as religious attitudes that are closely linked to moral beliefs (Hall, 1997, 280) as well as parental divorce which serves as a role model to solve problems (cf. Diekmann / Engelhardt, 1995) are held to influence the risk of dissolution. Since teenage mothers are less religious and grow up more often in shattered families (cf. Bundeszentrale für gesundheitliche Aufklärung, 2004), the inclusion of both parameters should decrease the impact of teenage motherhood on the likelihood of being divorced.

(2) Moreover, structural marital characteristics might be important. Since employed women are more likely to be financially independent of a second income, they are also more likely to be divorced (cf. Böttcher, 2006).[2] Another structural characteristic is the number of children. To have at least one child decreases the risk of divorce by about 25 percent (cf. Wagner / Weiß, 2006). Since teenage mothers have more children then other mothers the impact of teenage motherhood on the likelihood of being divorced should decline.

(3) Lastly, time-specific marital characteristics are known to affect the risk of being divorced. First of all, the duration of marriage is held to be influential. During their first years marriages are more likely to end in dissolution than in later stages (cf. Emmerling, 2007). Two more timing factors are often mentioned: Primarily, the age at first marriage determines the likelihood of divorce. The high risk of divorce for young couples is typically attributed to the fact that partners do not know each other well. Moreover, young people's personalities are still developing and changing, which influences the "match" of the couple (Becker, 1991). Besides, it is likely that the demands of early parenthood cause problems between the spouses, too (Huinink / Konietzka, 2007). Thus the younger the women are at first marriage the more likely they are to end the marriage in dissolution. Since teenage mothers are more likely to marry

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[2] Even though teenage mothers are assumed to be less employed the consideration of the employment status should at least explain the transition into dissolution partially.

earlier (e.g. Coley/Chase-Lansdale, 1997) the consideration of the age at first marriage should decrease the impact of teenage motherhood on the transition into dissolution. Secondly, the order of wedding and childbirth seems to play an important role. Marrying after having children makes couples more likely to be divorced, due to fact that the marriage is more often a belated legitimization of child bearing or a decision of rationality because of having a child together (cf. Hall, 1997; McLaughlin, et al., 1986) rather than a the symbol of a good match of the spouse. Due to the early parenthood teenage mothers are more likely to marry after childbearing. Therefore, the consideration of the order should decrease the influence of teenage motherhood on the likelihood of being divorced.

4. Data and Methods

The analyses are based on all samples of the German Socio-Economic Panel Study (SOEP)[3] with the waves of 1984 to 2009. Teenage mothers are defined by having their first child while being a teenager – in the age range of thir*teen* to nine*teen*. Based on this operationalization, the sample includes 611 teenage mothers and 5,510 other mothers.

The empirical analyses concentrate on the consequences of teenage mother-hood in three domains of the life course: educational attainment, employment and partnership biography. Since vocational attainment is more decisive for labor market opportunities than general education, the analysis focuses mainly on vocational qualifications, including college degrees as well. The degree reported in the last interview was used for the analysis in order to find out whe-ther teenage mothers catch up in their educational achievement in later life. Concerning labor market participation, the analyses are based on longitudinal information. The dependent variable is the proportion of (full- or part-time) em-ployment over all years from the age of 15 until the last interview. The basis of the percentage is the time in which the respondent reported to be (full- or part-time) employed, unemployed or housekeeping. To determine the development of the respondent's partnership status, two sources were used: (1) partnership status information collected in each panel wave and (2) retrospective informa-tion on the partnership biography. The latter information does not cover con-sensual unions, but only marriages. Therefore, the analyses on partnership in-stability are restricted on the likelihood of divorce.

For the multivariate analyses, different statistical methods have been em-ployed. The likelihood of achieving a vocational degree is estimated by logistic regressions which include stepwise the different explanatory variables. "Coeffi-

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[3] For further information on the SOEP see Haisken-De New/Frick, 2005 or Wagner, et al., 2008.

cients can be made comparable across models by dividing them with the estimated standard deviation of the latent variable (sdY*) for each model (y-standardization)." (Mood, 2010, 73) The proportional employment time is analyzed by linear regressions. Lastly, the transition into divorce is investigated by using discrete time event history models that allow including time variant variables as well. The event history analyses are based on single episode data, which end with the last interview or divorce. As a matter of course only married women are included. In case of widowhood the marriage is treated as a right censored event. Again y-standardized coefficients are reported.

   In the SOEP East German households as well as participants with migration background[4] have been oversampled. Therefore all multivariate analyses control for these characteristics. Furthermore, the respondents' birth years and their ages at the last interview, which differ notably, are included in all regression models in order to capture age and birth year effects. Additionally, the following explanatory variables are taken into account. With respect to educational attainment, marital status and the number of children at the end of education as well as the parental qualification[5] and the disruption of the parental family[6] are included. The analysis also takes into account the previous general qualification[7] and the grade point average of mathematics, German and the first foreign language. For the analysis on labor market participation having any occupational qualification (vocational training or college/university degree), the proportional marriage time[8] as well as the total number of children are included into the regression models. The analyses on the risk of divorce consider religiosity[9], the experience of parental divorce, the current employment status (employed, unemployed or housekeeping, in education, others) and the current number of children. Furthermore, the duration of marriage, the age at first marriage and the information whether the partners married before or after the birth of the first child are taken into account.

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   [4] The respondents and/or their parents are not born in Germany.

   [5] "Parental qualification" measures whether at least one of the parents achieved a vocational qualification.

   [6] "Disruption of the parental family" is based on the question: "How many years of your childhood (up to age 15) did you live with the following persons?". The variable measures the sum of years not living with both parents, that is, living either with mother or father (without a new partner), with other relatives, with foster parents or in an orphanage.

   [7] "General qualification": no qualification, basic-track secondary school (9th grade), intermediate-track secondary school (10th grade) and university entrance qualification (12th resp. 13th grade).

   [8] "Proportional marriage time" is the proportion of marriage years divided by sum of years from birth till the last interview.

   [9] "Religiosity of the family of origin" is based on the information whether the parents are members of a church or religious group.

5. Empirical Analyses

Educational Attainment

It is commonly held that education determines opportunities in later life. In Germany the most important dividing line is between having a vocational certificate or not. Since occupational education requires the existence of a general degree, Figure 1 shows the distribution of teenage and other mothers across the different general (left) as well as vocational (right) certificates.

□ Left school without graduating
■ Basic-track secondary school (9th grade)
■ Intermediate-track secondary school (10th grade)
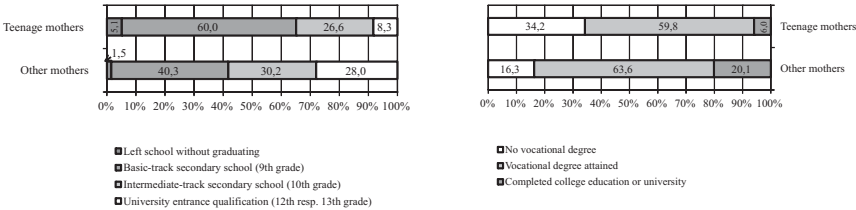■ University entrance qualification (12th resp. 13th grade)

□ No vocational degree
□ Vocational degree attained
■ Completed college education or university

Source: SOEP 1984–2009, own calculations.

Figure 1: Educational attainment (general and vocational qualifications)[10]

By the time of the last interview, adolescent mothers achieved on average significantly lower general qualifications than other mothers. More than 5 % remain without any qualification, which makes them 3.4 times more likely to go away empty-handed. In addition, only slightly more than 8 % of the teenage mothers attain a university entrance degree whilst more than one quarter (28 %) of the other mothers reach the same level. A similarly alarming picture is apparent with regard to vocational qualifications. While more than one third (34.2 %) of the teenage mothers have no vocational degree, this is true for only 16 % of the comparison group. Moreover, only 6 % of the teenage mothers and slightly more than 20 % of the other mothers finish college or university.

The following multiple logistic regression models (Table 1) predict having a vocational / college / university degree or not, since such a degree is of prime importance for success on the labor market.

The first model shows that teenage motherhood has a clear negative impact on achieving a vocational degree. Model 2 includes, in addition, regional origin, migration background, age at the last interview and the respondent's birth year as control variables. The negative effect of West German origin is due to the strongly governmental regulated educational system of the former GDR (cf. Borowsky, 1998). The well-known negative effect of a migration background on educational achievement arises as well (cf. Konsortium Bildungsbericht-

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[10] $N_{Teenage\ mothers}$: 605, $N_{Other\ mothers}$: 5478

Table 1

Existence of a Vocational Degree (Logistic Regression)

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Teenage motherhood *(Ref.: n/a)*	-0.550***	-0.598***	-0.600***	-0.540***	-0.211***	-0.155***
West German origin *(Ref.: East)*		-0.300***	-0.296***	-0.248***	-0.110***	-0.112***
Migration background *(Ref.: no)*		-0.495***	-0.494***	-0.382***	-0.244***	-0.235***
Age at last interview *(centered)*		0.005	0.005	-0.002	-0.005	-0.006
Respondent's birth year *(centered)*		0.024***	0.024***	0.015*	0.004	0.003
Married at the end of education *(Ref.: unmarried)*			0.323*	0.280∼	-0.054	0.049***
Number of children at the end of education			0.014	-0.021	-0.114∼	-0.320***
Parental vocational degree *(Ref.: n/a)*				0.625***	0.284***	0.288***
Years in an incomplete parental family				-0.010*	-0.005	-0.004
General qualification *(Ref.: no qualification)*						
9th grade					5.801***	5.912***
10th grade					6.093***	6.198***
12th/13th grade					6.343***	6.463***
Grade point average					-0.111***	-0.107***
Interaction *(teenage motherhood, number of children)*						0.557***
Interaction *(teenage motherhood, parental qualification)*						-0.291*
Interaction *(teenage motherhood, grade point average)*						-0.051
N	5626	5626	5626	5626	5626	5626
R²	0.019	0.089	0.091	0.140	0.232	0.238

Significance level: ∼ p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001.

Source: SOEP 1984–2009, own calculations.

erstattung, 2006). The age at the last interview seems to have no impact on the achievement of a vocational degree. Since the average age at SOEP withdrawal is almost 55 years and practically 100 % already left the educational system at this age, no serious effect is to be expected. The positive and significant birth year effect means that women of more recent birth cohorts are more likely to possess an occupational qualification. This can be attributed to the expansion of the educational system (cf. Geißler, 2008).

Model 3 includes the explanatory variables marital status and the number of children. Being married enhances slightly significant the likelihood of achieving an occupational qualification. This objects the findings of McLaughlin et al. (1986), who predicts impairment in terms of being married. Furthermore, the small insignificant effect of the number of children is surprising. There is no support for the thesis that problems of reconcilability between family and

vocational training are responsible for teenage mothers' lower achievement.[11] At the same time, the coefficient for teenage motherhood does not change substantially.

Next, Model 4 includes the characteristics of the family of origin, which are known to increase the risk of teenage motherhood as well as the one of lower educational achievements. Parental qualification shows the expected positive effect. Furthermore, more years in an incomplete family decrease the likelihood of achieving a vocational degree, even though the effect is not large and only slightly significant. Nevertheless, the effect of teenage motherhood only barely declines when parental education and family structure are taken into account. This means that characteristics of the family of origin can only marginally explain teenage mothers' lower likelihood of attaining a vocational degree.

In the next step, Model 5 includes in addition previous educational achievements. The higher the general educational degree and the higher the average grade, the more likely mothers are to achieve an occupational degree. Both coefficients are highly significant. Moreover, the influence of early childbearing lowers considerably, but remains significant.

Since the impact of early childbearing remains highly significant, Model 6 estimates interaction effects of each domaine. Even if only two of them are significant, they give a hint on the applying of the approaches of Section 3. The first effect shows that teenage mothers perform significantly better with a inclining number of children. This finding also objects the assumption that problems of reconcilability entail the worse achievement. The second interaction effect (taken together with the main effect of parents' vocational degree) reveals that it does not make a difference whether an adolescent mother has parents with or without a vocational qualification.[12] The third interaction shows no significant effect.

Labor Market Participation

Since employment is of great importance for being able to earn one's livelihood, it is highly interesting to see how teenage mothers fare in this respect. Teenage mothers spent on average 58.8% of the time from age 15 in employment whilst the proportion is about seven percentage points higher for other

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[11] However, important factors of reconcilability, like support by parents, friends or institutions could not be taken into account. Thus, the result has to be viewed as preliminary.

[12] Although the interaction effect is negative, it does not mean that having parents with vocational qualification somehow leads to a lower likelihood for teenage mothers to achieve a vocational degree. The interaction effect has to be added to the positive main effect of parents' vocational qualification, which in sum leads to a zero-effect.

mothers (65.7%). The difference is quite considerable and highly significant. Teenage mothers' lower labor force attachment may be responsible for the higher rate of welfare dependency in this group that was found in other studies (e.g. Burt, 1986).[13] In order to examine whether any of the three approaches outlined in Section 3 is suitable to explain why teenage mothers are less employed than other mothers, the following linear regressions (Table 2) include in a stepwise modeling procedure all three factors.

Table 2

Proportion of Time in Employment Since Age 15 (Linear Regression)

	Model 1	Model 2	Model 3	Model 4	Model 5
Teenage motherhood (*Ref.: n/a*)	-0.070***	-0.091***	-0.059***	-0.049***	-0.014
West German origin (*Ref.: East*)		-0.208***	-0.195***	-0.190***	-0.184***
Migration background (*Ref.: no*)		-0.030**	-0.001	0.001	0.007
Age at last interview (*centered*)		0.007***	0.006***	0.007***	0.007***
Respondent's birth year (*centered*)		0.009***	0.007***	0.007***	0.007***
Vocational qualification (*Ref.: n/a*)			0.172***	0.181***	0.163***
Proportional marriage time				-0.185***	-0.126***
Number of children					-0.059***
Constant	0.657***	0.821***	0.664***	0.732***	0.834***
N	6115	6115	6115	6115	6115
R²	0.005	0.113	0.157	0.169	0.206

Significance level: ~ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Source: SOEP 1984–2009, own calculations.

The first model shows a negative effect of teenage motherhood on the percentage of time spent in employment from age 15 until the last interview. Similar to the previous analysis, the second model includes control variables. The well-known differences in employment patterns between East and West German mothers and between mothers with and without migration background[14] can be found (cf. Kreyenfeld/Geisler, 2006; Statistisches Bundesamt (Destatis,

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[13] Unfortunately household incomes and the receipt of social benefits are only recorded prospectively. Since on average the survey time covers scarcely seven years, too little information is available for a thorough analysis.

[14] The German Federal Statistical Office (2000) indicates that the lower employment rate of female migrants is mainly caused by the higher number of children. In the following models, the coefficient is in fact no longer significant when family parameters (and educational level) are taken into account.

2000). Moreover, the age at the last interview as well as the birth year show the expected effects: Mothers who had more time to participate in the labor market and those from more recent birth cohorts (whose members generally have a higher labor force attachment) spend more time in employment.

Again Model 3 starts to consider explanatory variables. First, vocational qualification is added. As expected having achieved an occupational degree increases the time spent in employment. The inclusion of vocational qualification reduces the impact of teenage motherhood by about a third. Thus, the low share of teenage mothers who have a vocational degree does partially explain the lower labor force attachment of teenage mothers. Model 4 takes additionally the proportion of time spent in a marriage into account. The coefficient indicates that marriage time decreases employment time. At the same time, the effect of early childbearing does only change slightly. This indicates that teenage mothers' lower labor force attachment cannot be explained by differences in the time spent in marital relationships by teenage mothers and other mothers. Lastly the number of children is considered (Model 5). The results show that the more children a mother has, the less time she spends in employment. Adding the number of children to the regression model leads to a crucial decline of the effect of teenage motherhood and turns the coefficient insignificant. It follows that teenage mothers' having a higher number of children (and therefore more problems of reconciling family and employment) explains an important part of their lower active labor market participation.

Partnership Stability

When examining the incidence as well as the frequency of divorce, a greater instability for teenage mothers than for other mothers can be found. Whilst almost one third of the adolescent mothers (32.1 %) experienced a divorce at least once, this is true for only less than one fifth of the other mothers (17.3 %). Also the frequencies of divorce differ significantly and in the expected direction.[15]

As figure 2 illustrates teenage mothers marry on average earlier than other mothers. By the age of 20 more than 75 % of the teenage mothers are already married, while more than 80 % of the comparison group is still unmarried. At the age of 32 both curves cross and 9 % of the adolescent and 6 % of the other mothers remain unmarried.[16] The early age at marriage might be one explanation for the higher likelihood of divorce that can be found for teenage mothers. To examine in more detail why teenage mothers have a higher divorce risk, logistic regression models are estimated (Table 3).

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[15] Mean of divorces: teenage mothers: 0.4 times, other mothers: 0.2 times.

[16] Given that more than 90 % of both groups marry, it is defensible to forgo analyzing consensual unions.
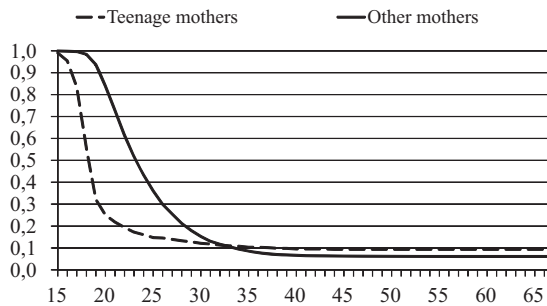
Source: SOEP 1984–2009, own calculations.

Figure 2: Transition into first marriage (survivor function)

Table 3

Logistic Regression on Getting Divorced

	Model 1	Model 2	Model 3	Model 4	Model 5
Teenage motherhood (*Ref.: n/a*)	0.351***	0.389***	0.369***	0.438***	0.001
West German origin (*Ref.: East*)		-0.190***	-0.090~	-0.072	0.007
Migration background (*Ref.: no*)		-0.117~	-0.127*	-0.062	-0.025
Age (*centered*)		0.023***	0.023***	0.033***	0.174***
Respondent's birth year (*centered*)		0.014***	0.013***	0.010***	0.000
Religiosity of the family of origin (*Ref.: n/a*)			-0.261***	-0.251***	-0.091***
Experienced parental divorce (*Ref.: n/a*)			0.128**	0.128**	0.035*
Employment status (*Ref. employed*)					
At home				-0.670***	-0.214***
Education				-0.675***	-0.255***
Others				-1.325***	-0.497***
Number of children				-0.027	-0.030***
Duration of marriage					-0.165***
Age at first marriage (*centered*)					-0.194***
Order of wedding and childbirth (*Ref.: postnatal wedding*)					-0.117***
N	21627	21627	21627	21627	21627
R²	0.006	0.041	0.045	0.100	0.308

Significance level: ~ p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001.

Source: SOEP 1984–2009, own calculations.

Similar to the previous regressions, the first model shows the highly significant impact of teenage motherhood. Again the second model introduces the control variables. West Germans and women with migration background are

less likely to experience a divorce.[17] The current age is positively related to the divorce risk, presumably because older women were exposed to the risk of a divorce for a longer time. The positive effect of the respondent's birth year reflects that the divorce risk has generally increased over the last decades (cp. Bundesinsitut für Bevölkerungsforschung, 2009).

Model 3 takes characteristics of the family of origin into consideration. Religiosity decreases the likelihood of divorce whilst having experienced a parental divorce increases it. The impact of teenage motherhood only slightly declines when these two factors are included into the regression. That is, differences between teenage mothers and other mothers with respect to the distribution of these variables are not important for explaining the higher divorce rate of teenage mothers. Next, Model 4 adds structural marital characteristics to the regression. Being employed and therefore less financially dependent on the spouse raises the likelihood of being divorced. Since teenage mothers are less likely to be employed, the net effect of early childbearing increases somewhat. Surprisingly the effect of the number of children is rather small and insignificant. Lastly, Model 5 takes time-varying explanatory variables into account. With increasing duration of marriage, the risk of dissolution declines. Also, the older the women are at first marriage the less likely the marriage is to end in dissolution. Finally, having married after the birth of the first child increases the risk of divorce, too. All three of these effects are in line with both the theoretical arguments outlined in Section 3 and the results from previous studies. With the inclusion of time-varying characteristics, the effect of teenage motherhood disappears almost completely.

6. Conclusion

Does early childbearing have long-lasting biographical consequences on educational attainment, the employment career and partnership stability of teenage mothers in Germany? The answer is yes and no. On the one hand, the analyses of the SOEP revealed that teenage mothers on average attain lower educational levels, have lower labor market participation during the life course and a higher risk of divorce.

On the other hand, multivariate analyses tried to find out, whether these effects might be caused by intervening variables. Concerning the first dependent variable "achieving a vocational qualification", there remains a negative, although reduced, effect of teenage motherhood even when other explanatory variables are taken into account. However, the empirical results suggest that the "alternative-life-strategy" (Burton, 1990) might apply. Since teenage mothers

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[17] For further information on the difference in the divorce risk in East and West Germany see e.g. Böttcher, 2006.

attain on average lower educational degrees and worse grades, it is plausible that these lead to insecurity concerning future employment perspectives, which in turn might constitute an incentive to escape into early motherhood. Therefore, further research, above all with more information on support by the partner, parents, friends and institutions as well as subjective information on future prospects are needed.

In contrast, for the second dependent variable "time in employment" the effect of early motherhood disappeared when other explanatory variables were taken into account. According to the empirical analyses, teenage mothers' lower labor force attachment can be explained by two factors: they are less likely to have attained a vocational qualification, and they have on average more children, which both lower the likelihood of continuous employment. That is, teenage mothers lack human capital resources that foster labor force attachment and they struggle more than other mothers with problems of reconcilability between family and employment.

Finally for last dependent process, the lower stability of marriages of adolescent mothers could be explained by timing factors, mainly by the age at first marriage and the order of wedding and first childbirth. Since the partner searching process is possibly early interrupted by having a child together, the match might be unsatisfying. Thus, the likelihood of being divorced can be reduced by not finishing the partner searching process until finding a good matching partner.

The empirical results give relatively clear hints for policy orientations. Adolescent mothers suffer from low educational levels, low employment prospects, problems of reconcilability between family and employment and relatively instable partnerships. It seems that the most important issue is to support young mothers to complete vocational training, so that their prospects for achieving better employment prospects and economic independence rise. Indeed, it is assumable that giving young girls with low general educational attainment the opportunity to participate in vocational training will in itself lower the risk of teenage pregnancy. Furthermore, as has publicly been discussed for years now, a suitable infrastructure for childcare is of prime importance in order to make it more feasible to combine a job with having a family – not only for teenage mothers, but for all mothers (and fathers).

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