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Tensions of female employment, reconciliation policies and fertility in Germany

Part 1: The national context of Germany: Silke Tophoven, Katharina Maul, Sonja Bastin, University of Bremen

Part 2: Tensions of female employment, reconciliation policies and the intention and transition to the first child in Germany: Katharina Maul, Mandy Boehnke, Michael Feldhaus, Johannes Huinink, University of Bremen

Part 3: Mothers educational attainment and occupational position and the decision for the second child: Sonja Bastin & Michael Feldhaus, University of Bremen

Abstract:
This national report aims to give an overview about the tensions between female employment and fertility plans and transitions in Germany and how this connection is influenced by reconciliation policies. We therefore firstly explain the German context which can be characterized as conservative (part 1).
Analyzing the intentions and transitions for the first (part 2) and the second child (part 3) reveals persisting differences between Eastern and Western German women's fertility behavior. Furthermore employment characteristics seem to influence fertility realization but to a much lesser degree childbearing intentions.

Keywords: fertility intention, fertility transition, female employment, reconciliation, reunification, Germany

PART 1: The national context of Germany

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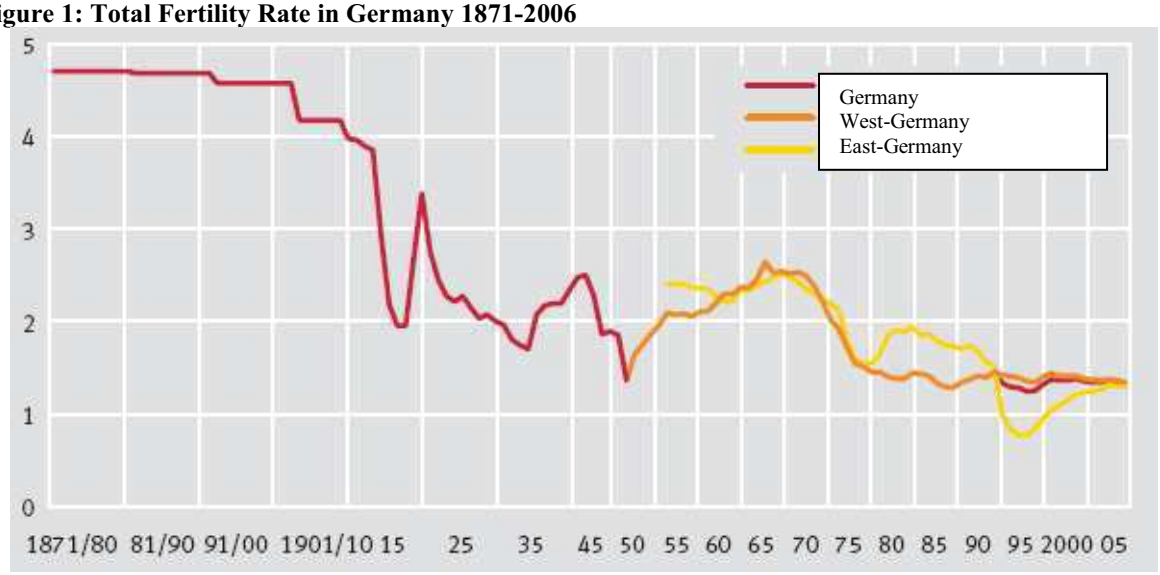
The aim of this section is to give an overview of the context in which German couples plan and have their children. Germany, being a conservative welfare state in Esping-Andersen's classification (1990), is supposed to promote traditional living-arrangements, like the male bread-winner model. This characterization will be verified by analyzing the developments regarding fertility, female labor force participation and reconciliation politics.
Furthermore the situation regarding living standards and gender roles is described.

1. Low fertility in Germany for decades

Like almost all other industrialized societies Germany is facing fertility rates below reproduction level for several decades now. Birth rates began to sink at the end of the 60s after the so-called baby boom. The decreasing rates were due to later and fewer births. Women began to be more engaged in the labor market. New contraceptives made it possible to plan parenthood. The development of birth rates in the former GDR differs from the development in the FDR. Even though a similar decrease in birth rates can be observed, family politics were able to influence this development and birth rates increased during the 1980s, although they could not reach replacement level. With reunification East-Germany experienced a "demographic shock". Fertility rate sank to historically unique numbers below one (Huinink and Schröder 2008).

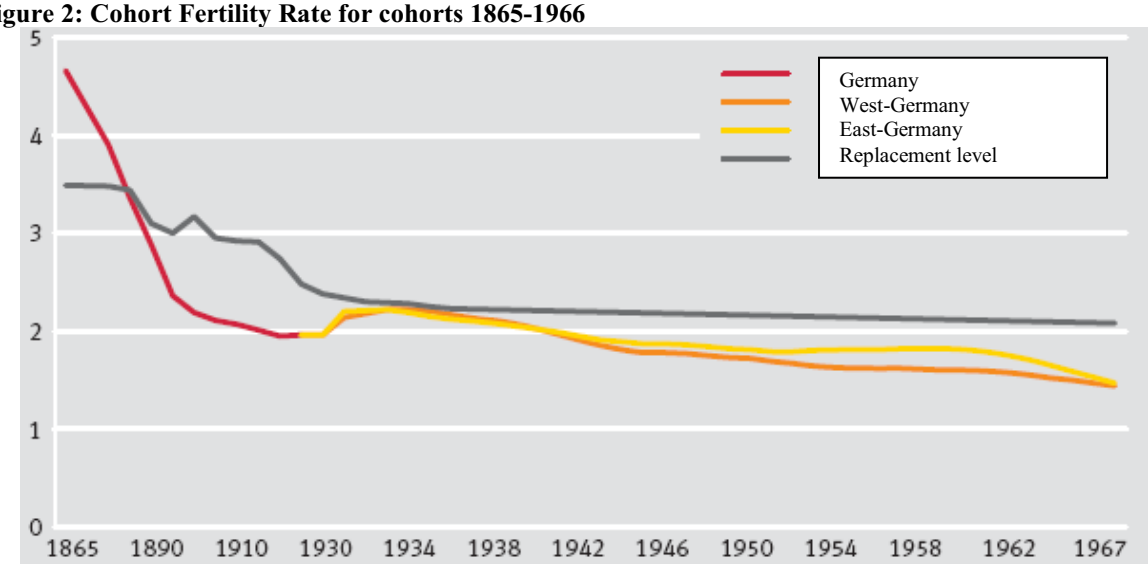
Figure 1: Total Fertility Rate in Germany 1871-2006



Source: BIB 2008: 36.

Even though the total fertility rate is rather discontinuous, the realized fertility stayed relatively constant at 1.6 children per women for cohorts born 1940 and later. This low number is the result of fewer high-parities births[1] on the one hand and a rising percentage of childless women on the other.

Figure 2: Cohort Fertility Rate for cohorts 1865-1966



Source: BIB 2008: 38.

Another important point in fertility development, which greatly influences the total fertility rate, is the rising age at first motherhood. Again, differences between women in Eastern and Western Germany can be observed. Women in the GDR had their children traditionally early. This circumstance is partly still valid, even though women in the East follow the Western trend and seem to adapt the pattern of late births (Huinink and Schröder 2008).

2. Living standard in East and West

Due to the political division of Germany for forty years and the fact that the GDR and the FRG were based on two different economic regimes, there are still distinct differences in the living standards of the populations in the two regions.

While the economic system of the capitalistic FRG was built on the free market economy, the socialistic GDR reposed upon the principles of a centrally planned economy. At the German Reunification the GDR politically as well as economically adapted to the West German systems, which brought positive consequences as well as new complications. For example unemployment was an unknown problem for the East German citizens, who were used to have full employment, and for the first time had to rely upon their personal work and

[1] For details on the number of children see table A1 in the appendix.

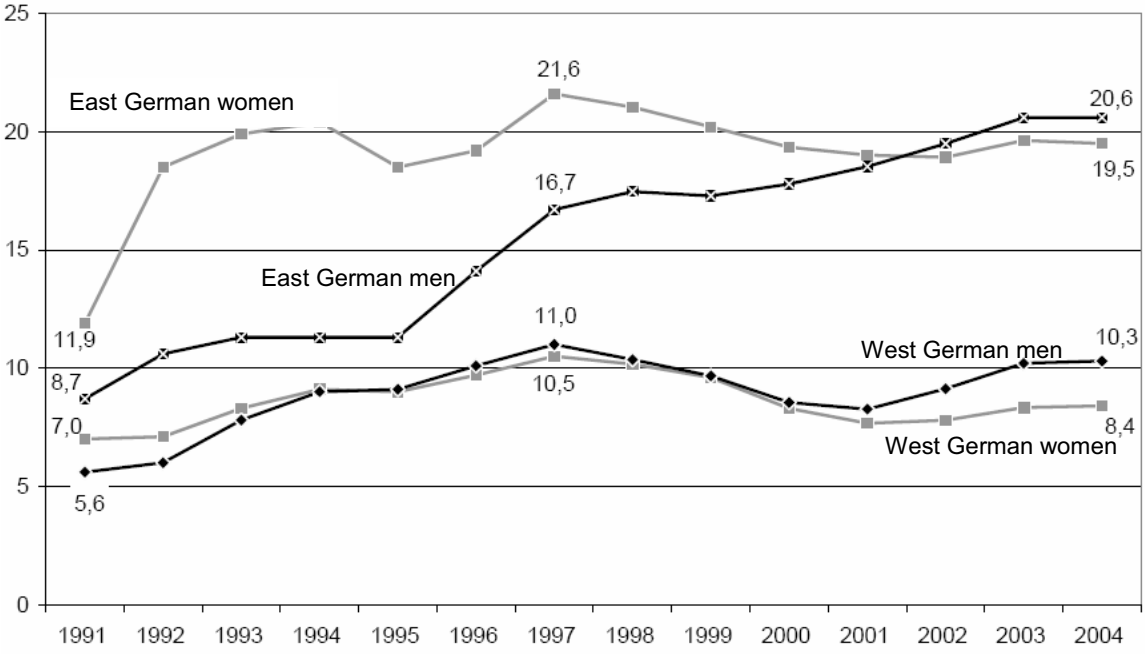
property. Referring to figure 3 female unemployment rates in East Germany climbed from 11.9 in 1991 to 21.6 percent in 1997 (male unemployment rates even from 8.7 to 20.6). Another indicator for these still counting economic differences is the GDP. Although it increased nearly threefold in East Germany from 1991 till 2007 the GDP per citizen still amounts only two thirds of the West German one (Schroeder 2009).

A similar picture becomes apparent when contrasting the East and West German household incomes and poverty rates. While East German households are especially overrepresented in income groups below 2000 €, West German households are overrepresented in those categories above 2000 €. The higher the income group, the bigger the difference between West and East German rates. And also the eastern poverty rate is with 18.4 percent in 2004 5.7 percent higher than the general value for the whole country. These conditions contribute to differing figures between East and West Germany regarding people's satisfaction. Thus, in 2006 the satisfaction mean with for example household income, personal income, living standard and also general life satisfaction was higher for West German citizens than for their East German counterparts (Huinink and Schröder 2008).

3. Labor market structure and female employment

The enrollment of women in the labor market has been rising for the last decades. The development goes along with a higher participation in the educational system and a higher percentage of working mothers, but also with a rise in unemployment of men (figure 3). This situation leads to potentially different financial initial positions for the two regions, also demanding different behaviour regarding employment of women on the whole but especially of mothers.

Figure 3: Unemployment rates of women and men in West and East Germany from 1991 to 2004 (annual mean in %)



Source: Bundesministerium für Familie, Senioren, Frauen und Jugend 2005b.

In 2007, 71 percent of the 15 to 65 year old women and 82 percent of the 15 to 65 year old men were employed (Statistisches Bundesamt 2008a). The difference in gender is due to a different effect of having children on the employment. Women tend to take a career break and reduce working hours to raise their children. As can be seen in the following table the effect of children on female employment is moderated by education of women and the region (East or West Germany) they are from[2].

Table 1: Labor force participation of women

Age of the youngest child	West Germany	East Germany
Education less than university graduation		
without children	92	79
youngest child under 3 years	33	45
youngest child 3 to under 10 years	68	70
youngest child ten years and older	81	81
With university graduation		
without children	91	87
youngest child under 3 years	42	58
youngest child 3 to under 10 years	72	82
youngest child ten years and older	84	91

Percentage of employed women in West and East Germany, age 25 to 40; Source: Huinink/ Schröder 2008 on the basis of the census 2001

[2] For an overview of female labor force participation in different age groups see table A2 in the appendix.

In all groups women with young children are less often employed than women without children or mothers whose children are older. Women with university education stay employed more often even if they have young children. Another effect can be observed for the region in which the woman lives. Although there has been a rise of mother employment in the West from 54 percent in 1996 to 62 percent in 2004 (Bundesministerium für Familie, Senioren, Frauen und Jugend 2005b) the percentage of women being employed while having young children is still higher amongst those living in the *Neue Länder* (new German federal states).

The focus of women on raising the children can also be seen when analyzing the working hours of women. Most women with young children reduce their working hours. They are either part-time or marginal employed. Marginal employment relationships are usually restricted to a certain income (400 Euros at the moment) and few working hours. Many of these jobs do not require formal qualification. They are mostly hold by women to have an additional income for their family. Marginal employment has a special status in social law. Employers normally do not pay for social insurance and tax. With marginal employment one usually does earn only little pension rights. In December 2008, 6.7 million people had a part-time job with an income not higher than 400 Euros. 63 percent of them were women (Deutsche Rentenversicherung 2008).

Table 2: Working hours of female labour force

Hours worked last week	All women	Single women	Married women with children < 10 years	All married women
0	9	7	16	10
1 – 9	8	6	14	10
10 – 20	21	9	36	28
21 – 31	14	9	15	16
32 – 35	5	6	3	5
36 – 39	11	17	4	8
40 – 44	22	32	8	16
45 and more	10	14	4	8

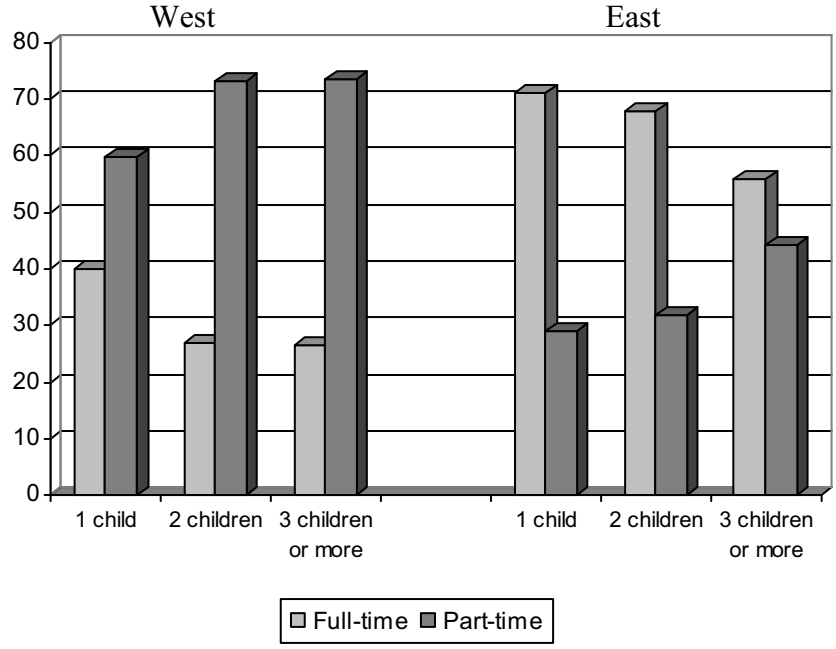
Source: Percentages are own calculations based on Statistisches Bundesamt 2008a

The differences in working hours can be seen in the table above. One third of all employed and married women with young children works less than ten hours a week.

In general, female employment in Germany differs very much between women with and without children. While Germany is among those with the highest female employment rate in the OECD (rank 7), this picture changes once only mothers are looked at. Here, Germany reaches rank 12 only. Most of the German women are employed part-time while for men full-time arrangements are normal. With regard to the extent of working hours we find a

difference between East and West German women, the latter working to a higher percentage part-time. Amongst employed mothers in the West approximately one third works part-time and the rest full-time, while the situation in the East is the other way round. The difference between the states becomes most apparent, when the mother has got two children (see figure 3) (Bundesministerium für Familie, Senioren, Frauen und Jugend 2005b).

Figure 4: Full-time and part-time rates of mothers (aged 15 to 64 years) according to parity in East and West Germany 2004 (in %)



Source: Bundesministerium für Familie, Senioren, Frauen und Jugend 2005b.

4. Gender Roles in East and West

Both regions live with a different cultural heritage. The norm for mothers to be employed has been promoted in the GDR very much, while in the FDR not only the role as housewife was and is much more accepted, but also the attitude that young children have to be cared for by the mother and that they would suffer from institutional childcare was and is more dominant

Thus, figures from the Gender Datenreport 2005 point to the differences in attitudes towards gender roles in the two German regions. While in the East 29 percent agree with the opinion that young children would suffer from a mother's employment, in the West more than double as much people agree with this statement in 2004. Nevertheless, a remarkable development can be realised here, as in 1982 the percentages of people advancing this view lay 25 percent in the West, respectively 29 percent in the East, higher than in 2004. Similar differences between the regions can be taken from the fact that in 2002 66 percent of West German women and 59 percent of West German men do *not* agree with the statement that the male's

task is to earn money, the female's to care for the children. In the East both figures are 10 percent higher. And also ideal conceptions of young women reveal normative differences between East and West Germany: While only 4.2 percent of West German women think that a mother should work full-time while having young children, 11,9 percent of their eastern counterparts agree with this view (Bundesministerium für Familie, Senioren, Frauen und Jugend 2005b). But apart from these differences, the overall view of German citizens points to a general strong existence of traditional attitudes, putting the main responsibility of raising children on mothers.

5. Family policies with growing interest for reconciliation policies

The typical German model of labor division between men and women is the male breadwinner model. This implies an institutional regime which encourages women to cease to work after the birth of a child. The father then has the task to support the family. A modified version of the male breadwinner model implies the encouragement of women to change working full-time into working just part-time. The improvement of reconciliation of work and family in Germany first became an important political issue with the change of government in 1998 (Bothfeld et al. 2005).

Legal regulations of parental leave influence the labor market behaviour of young mothers and fathers. There is empirical evidence that a long-lasting leave makes it more difficult to return to the labor market. Furthermore, a low payment during the period of parental leave has a negative influence on the decision to have a baby in the first place (Eichhorst et al. 2007).

Child benefit (Kindergeld) in Germany

In Germany, child benefit amounts 184 EUR per month and per child. For the third child families receive 190 EUR, for the fourth and subsequent children 215 EUR per month. Child benefit is normally paid until the age of 18. If children are unemployed, the benefit is paid until the age of 21 and if it is enrolled in further education until the age of 25. For disabled children the benefit is not limited at all. There is also the possibility to receive a tax allowance instead of receiving monthly child benefit. This is more profitable for families with higher income (Bundeszentralamt für Steuern 2010).

Tax Relieves for German families

Germany's tax system rewards married couples. Spouses can choose between being assessed separately or jointly. In case of joint assessment the income of both spouses is summed up and

divided by two (splitting of income between spouses). The normal income tax scale is applied of each half. The calculated amount is doubled and this result is the couple's tax due. In case of splitting of income between spouses the rate of taxation is particularly low if one spouse earns much less than the other one or even nothing, giving the women an incentive not to be employed. Beside income splitting between spouses there are other tax relieves based on having children (Dingeldey 2002). Another tax relief for families is as mentioned before the possibility to choose between child allowance and child benefit.

Development of Maternity and Parental Leave in the Federal Republic of Germany[3]

Since 1952 mothers are not permitted to work six weeks before the expected date of birth and (up to) eight weeks after birth (until 1968 six weeks) (*Mutterschutz*). During this period all employed women receive a payment (*Mutterschaftsgeld*). This law – with little modification – has been valid until today. The intention of is to protect pregnant women and new mothers for health reasons.

Table 3: Maternity leave for pregnant women and new mothers

Date of validity	Name of Leave	Duration of leave	Name of Payment	Duration of payment	Amount of Payment
1952 - 1968	Mutterschutz	6 weeks before and 6 weeks after birth	Mutterschaftsgeld (Maternity Benefit)	6 weeks before and 6 weeks after birth	Equal to previous earnings
1968 till now	Mutterschutz	6 weeks before and 8 weeks after birth*	Mutterschaftsgeld (Maternity Benefit)	6 weeks before and 8 weeks after birth*	Equal to previous earnings; min. 13€ per working day.

**12 weeks in case of multiple or premature birth*
Sources: Bird 2004, BMFSFJ 2008a.

For the same reason, a law concerning maternity leave (*Mutterschaftsurlaub*) was passed in 1979 to give mothers the possibility of having a break with pay lasting up to six months after giving birth.

More focusing on employment and social policy reasons, parental leave (*Erziehungsurlaub*) and childrearing allowance (*Erziehungsgeld*) were newly arranged in 1986 and have often been modified since then. Especially the duration of a possible leave and payment was more and more enlarged. Since 1992 the duration of leave and the duration of payment can differ. It was then possible to take a leave without financial support.

During the time of leave, mothers and fathers can not be dismissed. Their workplaces are supposed to be secured during this time. From 1979 to 1968 mothers could return to their

[3] For details see table A3 in the appendix

old job after their break. Since 1986 parents have a guarantee that they can return to a *similar* job.

The first version of parental leave in Germany only applied to mothers. Since 1986, fathers have been given the possibility to take parental leave as well. Since 2001, fathers and mothers are able to take leave together or to share the parental leave with each other (*Elternzeit*). Furthermore, the duration and payment of parental leave has become more flexible. Parents can choose between receiving child-raising allowance for one or two years. Additionally, parents can opt to take the third year of parental leave (without cash benefit) at some time before the child's 8th birthday (Bird 2004).

Another arrangement concerning working parents is the child sick leave. In case of a child's sickness, parents can take up to 10 days off if they have one child and up to 20 sick days if they have two or more children. Single parents receive twice as many days off (Kreyenfeld 2004).

A major change concerning financial support during parental leave was passed in 2007. The so-called *Elterngeld* (parental allowance) now replaces the childrearing allowance. This cash benefit is at present 67 percent of the income before having a child. The maximum benefit is 1,800 €. The former income of parents shall be replaced by parental allowance. Expectations towards parental allowance were on the one hand to increase birth-rates among higher educated women and on the other hand to make women's employment more continuous. Mothers should have more incentives to re-entry earlier in their former job (Spieß and Wrohlich 2006). First evaluating studies show that most young parents consider the *Elterngeld* as helpful and indeed it stabilizes the household income after the childbirth. The other aim – relative continuous female employment- has been met as well. Women reentry the labor market earlier than before the implementation of the *Elterngeld* (Bundesministerium für Familie, Senioren, Frauen und Jugend 2008b).

Additionally, some Länder (e.g. Saxony) have special childrearing allowances for the time after receiving parental allowance.

Development of Family Benefits in the German Democratic Republic[4]

In the German Democratic Republic (GDR), a child benefit for parents was paid as well. In addition, a birth grant was paid uniquely at a child's birth (in most cases more than one monthly salary). Maternity and paternity leave were also common but not lasting as long as in the FRG. Maternity leave usually lasted 14 weeks and could be prolonged up to 18 weeks

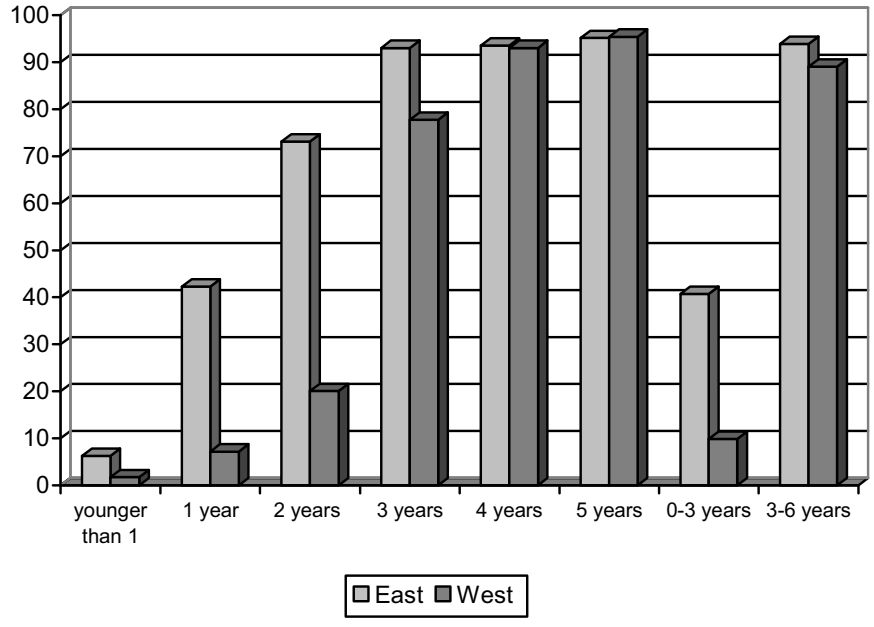
[4] For details see table A4 in the appendix

(until 1972), later up to 26 weeks. Since 1972, single mothers have been able to take a paid leave of one year in case no day care was available. Since 1976, mothers with two and more children have been given a paid break of one year. In 1984, the leave was extended to 18 months for mothers with three and more children. Since 1986, all mothers had the opportunity of a paid leave for one year. Furthermore, some arrangements have been made for single mothers and mothers with more than one child (since 1972). Their working hours have been reduced and it has become possible for them to have a leave in case of a child's sickness. Mothers with two and more children have been given more holidays (Kreyenfeld 2004).

6. Childcare Facilities in Germany[5]

Childcare facilities are an important condition for the reconcilability of work and family. 3,218,983 places in childcare facilities were offered in 2007. 2,981,993 children were registered in a childcare facility. Thus, 93 percent of all places were taken. 78 percent of the children were between three and seven years old, 9 percent were under the age of three. The rest of the children were already attending school (see table A5 in the appendix).

Figure 5: Attendance in Childcare according to age (2007)



Source: National Education Report (Autorengruppe Bildungsberichterstattung 2008)

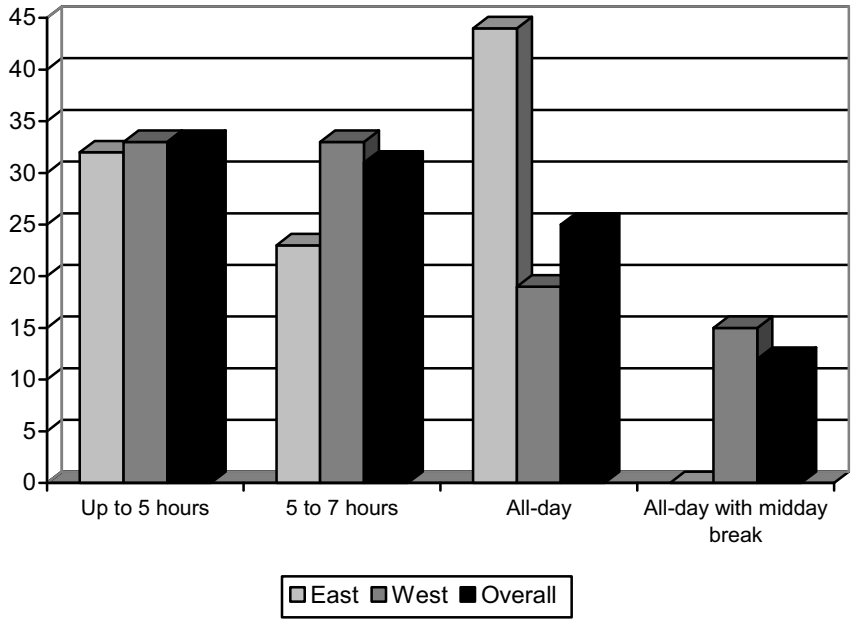
The data differs considerably between the Eastern (former GDR) and the Western part of Germany. In East Germany, more children under the age of three are cared for in facilities (40 per cent of all children in this age group). In West Germany, only 10 percent of under three-

[5] For details see table A5 in the appendix.

year olds use childcare centers (see figure 5). Additionally, more school children in East Germany have a place in after-school childcare. 31 percent of children in childcare facilities are school children, in West Germany only 8 percent.

Also the hours per day in childcare differ substantially. In East Germany, 44 percent of all children have a place in an all-day childcare facility which in West Germany only 19 percent have (Statistisches Bundesamt 2008b).

Figure 6: Hours per day in childcare in 2007



Source: Percentages are own calculations based on Statistisches Bundesamt 2008b
* excluding Berlin

The National Education Report 2008 also detects big differences between childcare in East and West Germany. In spite of a massive reduction of child-care institutions, the *Neue Länder* still have more child-care establishments with longer opening hours. Differences are most prominent in the under-3 age group: In the new German states 37 percent of children under 3 are registered in a child-care institution. In the West only 8 percent are registered (National Education Report 2008). It could also be shown that the demand for childcare institutions depends on population density. Areas with a dense population have more childcare facilities. In order to provide childcare for 35 percent of all under three-year-old children until 2013 70,000 places have to be created in the *Alte Länder*. In addition – as the DJI-Child-Care Study of 2006 claims – childcare facilities should offer more flexible arrangements (Fendrich and Pothmann 2007). To meet these demands, the "law to encourage children" (Kinderförderungsgesetz) was confirmed, which became effective in December 2008. The

legislative initiative intents to extend the coverage of child care facilities, which include child minders and institutional care centers. The aim is to provide one third of under three-year-olds with day care outside of the family from 2013. Furthermore, ensuring and increasing quality of institutional care, and therewith infantile education, is another ambition.

7. What do German companies do?

In the context of the DJI-Child-Care Study, mothers and fathers were asked what their companies offer to support childcare. Flexible working hours and flexible solutions in case of need were named most often. The possibility of part-time work was named often as well. Childcare at work, the possibility of telework, financial support and the procurement of childcare were rarely named (Jurczyk and Lange 2007). Employees wish for family-friendly companies. More and more companies already try to support the reconciliation of work and family. Personnel policy highlighting families has several positive outcomes (Eichhorst et al. 2007). The German Federal Ministry for Family Affairs obtained expert opinions concerning the economic effects of work-life balance measures. Result was that family-friendly measures are indeed profitable. The Ministry for Family Affairs has initialized programmes to enhance and support the companies' reconciliation efforts (Bundesministerium für Familie, Senioren, Frauen und Jugend 2009).

Part 2: Tensions of female employment, work-family-reconciliation policies and the intention and transition to the first child in Germany

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1. Introduction

This part wants to investigate the relationship between female labor force participation, work-family-reconciliation policies and fertility in the particular national context of Germany. In the years since the collapse of the German Democratic Republic (GDR) and the subsequent German unification, Germany has undergone fairly dramatic changes. We will see that it is necessary to further divide Germany and to look and the eastern parts (former GDR) and western parts (former FRG) separately. Although many of the demographic coefficients have equalized between the so-called old and new German states, there seem to be certain aspects, for which no assimilation has taken place, or for which differences have even become bigger. With respect to female occupational behavior and attitudes towards parental involvement in work and care one still finds clear distinctions. East and West German women do not only react to work-family-balance tensions in another way, they also perceive them differently as we will see below.

In the first part an introduction on the demographical, economical, institutional and political background of Germany was given. Germany can be characterized as a typical conservative welfare state promoting traditional family arrangements. This setting promotes the tensions women face when combining both life spheres: family and employment, a finding which has been found in a number of previous studies. However, as our empirical results show tensions are differently perceived and reacted to in both parts of Germany. While women in the West anticipate and fear difficulties and thus try to reach certain preconditions before having a first child, women in the former GDR tend to be more relaxed.

The focus of this part lies on family foundation processes (intention and transition to have a first child), a second part considers family enlargement.

2. Relationship between female employment, work-family-reconciliation policies and childbearing plans in the German context

2.1. State of the art[6]

When analyzing childbearing plans it is necessary to first consider the demand for children. German studies come to different results for childbearing desires. Some see a declining demand for children consisting of a decrease of the number of children desired and a higher percentage of those who do not want children at all. Others find a continuously high wish for children but a lower chance to realize this desire. This difference seems to be a consequence of different questions used to measure the demand for children (Huinink et al. 2008, Dorbritz 2005). From findings of our own research in pairfam panel study[7] we assume that the majority of young Germans want children of their own, even though some of them will postpone this step and might not take it at all (Huinink et al. 2008). One important reason for postponing is the difficulty to reconcile family with their employment. In most families one of the parents, mostly the mother has to reduce employment which results in relatively high opportunity costs. Opportunity costs depend on the possibility to reconcile employment with the care for children, which is strongly influenced by the institutional structures in the country and the individual employment characteristics (for the institutional context in Germany see part 1 of this report).

In this chapter we will concentrate on current research regarding the influence of educational and occupational attainment on childbearing plans in the German context. For many questions it is necessary to differentiate between the Eastern and Western part of Germany even though the political situation is the same since 1990. As mentioned earlier there are still differences according to attitudes towards maternal employment and the availability of child care.

The interdependence of labor force participation and fertility has been an important subject of empirical and theoretical research for a long time. The main focus is the question how one sphere influences the other (Brewster and Rindfuss 2000). Empirical studies in Germany use mainly structural information explaining the interaction between fertility and employment (Blossfeld and Huinink 1991, Tölke and Diewald 2003, Kreyenfeld 2004, Kurz 2005).

[6] We have concentrated on publications that address the causal relationship of female employment on childbearing; papers that that are interested in the influence of motherhood on female working arrangements are left out.
[7] For more information see www.pairfam.uni-bremen.de

Educational Attainment

There are two main effects regarding educational attainment. One is due to the actual time stayed in the educational system. Huinink names three reasons why it is inappropriate to have a child while in school, occupational training or university: a) the difficulty to divide the time between child and education; b) the lack of own financial resources and c) the insecurity about the future career perspectives of oneself and the partner (Huinink 2000). This institutional effect leads to a postponement of parenthood during educational attainment and the establishment of a career which correlates positively with the achieved education. The higher the education the later an occupational position can be held which is widely regarded as necessary for family formation is achieved (Maul 2007).

The second effect refers to the difference in opportunity costs. The German welfare system is known as one that does not make it easy for women to combine work and motherhood (Brewster and Rindfuss 2000; Dornseiff and Sackmann 2003; Hank et al. 2004; Huinink 2001).[8] A higher education normally leads to a job with a higher income. This means that the opportunity costs are higher for women with a good education, a point which leads to a higher rate of childlessness for higher educated women. However, Klein (2006) does not find a significant influence of educational background on childbearing intensions in her analysis of childless men and women. Ruckdeschel (2004) on the contrary finds that higher education influences childbearing intentions positively, but only for women who have at least one child. This on first sight contradictive result can be explained by a polarization of women. The difficult reconciliation can lead to the necessity for women to decide for one of the life spheres, since a decision for the family will lead to a career break or even an end of the career; a problem which might be more important for higher educated women. If highly educated women fear negative consequences they might decide not have any children at all or decide for a family life and have a second or even third child. Material resources are earned by the normally fulltime working (also high educated) partner. As a consequence we find a polarization of well educated women in one career-orientated group with no children and a family-orientated group with at least two children (Huinink 2002). When asking women without children intensions between educational groups might not differ (yet), once a first child is born, the group becomes selective, the intention for another child dependent on education.

The strong difference in childlessness of highly educated women between East and West Germany might be an expression of the polarization phenomenon. Boehnke (2007)

[8] Which is different from the situation in the former GDR, where the reconciliation politics favored working mothers, see for example: Huinink and Wagner (1995).

points out that besides different attitudes on the micro-level (e.g. working orientation and the importance of children) a different climate on the macro-level, institutional factors (e.g. availability of childcare) play an important role. It seems that for women in the *Neue Länder* there is not such a pressure to decide between work and family, not only because of the more extensive availability of childcare but also because childcare institutions are widely accepted even for under-three-year olds. Furthermore children are seen as more important for life satisfaction and are planned upon earlier in life. For this reason we find lower overall percentages of childless women in the East and no such polarization. It is rather likely that the number of children is being reduced than opting for a life without children (Boehnke 2007; Huinink 2002).

Characteristics of Employment

Characteristics of employment are another fundamental factor in studies concerning fertility. A stable job of the potential father is still a necessity before having a child for German couples. Only if men can provide for the family couples decide for a family formation (Kurz 2005; Tölke 2005; Kühn 2004; Tölke and Diewald 2003). Despite the persistence of the male provider model, female job trajectories influence the decision as well. Following the argument of opportunity costs women being unemployed, not employed, working part-time or in marginal jobs should have a positive risk of having a child. However, no general effect of female unemployment could be found (Kurz et al. 2001). The effect depends on the women's educational level and whether they are from the new or old federal states of Germany. Well educated women in West Germany avoid birth while being unemployed to preserve their chance to find a job (Kreyenfeld and Konietzka 2005), while unemployment has rather a positive effect for Eastern German women (Kreyenfeld 2001). Bernardi et al. (2008) also report substantial differences between East and West German men and women with regard to job insecurity on childbearing intentions. While a secure job is a necessity to start childbearing in the West, in the East job security and family formation are more seen as parallel investments. Focusing on West Germany Brose (2008) assumes income and income security as central conditions for family formation. Her analysis distinguishes between individual economic factors and the overall economic development (aggregated unemployment rate). In general, the results show that individual factors matter more and that especially longer and recurrent periods of personal unemployment hinder family foundation. The result supports the finding of Bernardi et al. (2008) on the importance of job security for women in the West.

Working part time is a predictor for fertility for all women, but the causal direction is a matter of discussion. On one hand opportunity costs are relatively low, giving an argument for employment causing fertility behavior but on the other hand it is possible that women choose this kind of employment for compatibility reasons (Hakim 2000). The causality would then lead from anticipated fertility behavior to employment decisions. Schröder and Brüderl (2008) study this problem of causality by using indirect test methods. They follow Hakims tenet of preferences leading to certain employment patterns. Their results show that the effect of employment on fertility is partly not causal, but might be a consequence of family-orientated women leaving the labor market when they intend a child.

2.2. Hypotheses

The aim of this report is to analyze the interdependency between the female labor force participation and the intention and realization of family formation in the German context. Previous research has proven the immense effect of women's employment status on the transition to motherhood – an effect which is different for the regions of East and West Germany. Still a matter of discussion is the causality concerning the employment status and the intention to have a child. Unfortunately we can not shed more light on this question either. The timing of the decision to have a first child would be needed to do so. A variable which is not part of the studies we will use.

Taking the previous research into account we state the following hypotheses regarding the employment situation of women:

> *H1: The influence of working conditions on the decision for a first is different in East and West Germany. Having stable working conditions such as a permanent and full-time employment will increase the probability to intend and to have a first child for women in West Germany, while we assume no effect on the intention and the realization of a first child for women in East Germany.*

We will control for the institutional effect of *being in education* as there are substantial reasons that hinder young women to have a child while they are still in education: lack of time, lack of money and lack of perspective.

Another relevant aspect for family formation is the respondent's age. We postulate a non-linear effect. It will have a negative effect in younger ages, a positive one in middle ages and again a negative effect when the women approaches the end of her fertility phase. In the beginning she might find herself too young to be a mother and at the end of the fertile phase

there is probably a selective group left, who has not yet done the transition. They are less likely to be generally in favor of children.

H2: Age has a non-linear effect on the probability to intend and to realize a first birth, with a negative effect at the beginning and the end of the fertile phase.

The educational background of a person serves as an indicator of the individual's opportunities on the labor market. With higher education one has in general higher wages and better labour market chances. As in (West-)Germany children and employment are rather incompatible, high female education should increase the opportunity costs of childrearing and reduce fertility.

The intention to have a child within the next three years it is to some degree an expression of timing plans. We will therefore postulate effects of educational level according to age groups. Aiming for a high education means that one has to stay in the institution for a longer time and being in education hinders family foundation, so high educated women are usually older when they have their first child than other women.

H3: For the younger age group a lower educational background will increase the probability to intend and realize family formation, while for the older age groups it should be the higher educational level that increases the probability.

Furthermore we added a few control variables. Besides the educational system and the labor market, the personal situation of the respondent is crucial as well. Especially the existence of a partnership is a key prerequisite before founding a family. Therefore we control also for *being in a partnership.*

We are furthermore interested in the influence of partner's employment characteristics on the intention to have a first child. As research has shown we assume that:

H4: Income security of the partner has a positive influence on the willingness to start a family.

3. Analysis

3.1 Intention for the first child

Method

The present research utilizes data available from the first wave of the German Generations and Gender Survey (GGS). The GGS is part of Generations and Gender Programme (GGP) which provides knowledge for policy-makers in UNECE countries. The GGS is a panel survey of a nationally representative sample of 18-79 year-old resident population in each participating country with at least three panel waves and an interval of three years between each wave. In Germany, the first wave was conducted in 2005 with 10.000 participants. The questionnaire covered besides childbearing intentions a number of other areas, e.g. family relationships and social networks.

. The present study includes women between the ages of 18 and 45 without children. The mean age of the participants (N=880) is at 28 years. The sample size for East Germany (*Neue Länder*) is 155, for West Germany (*Alte Länder*) it is 725.

Instruments

The dependent variable of this section is *the intention to have a first child in the next three years.* Responses were originally measured on a four-point scale, from 'certainly not' (1) to 'certainly yes' (4) and were dichotomized into 'yes' (1) and 'no' (0). As predictors employment status (1=in education, 2=unemployed, 3=not employed[9], 4=part-time employed, 5=full-time employed) and age (1=18-26, 2=27-35, 3=36-45) were included. The model will also control for educational level (1=low, ISCED 1 and 2, 2=middle, ISCED 3 and 4, 3=high, ISCED 4 and 5[10]) and whether the respondents have a partner or not ('no' coded '0,' and 'yes' coded '1').

In a second model we added an interaction term of age and education. Age and education were this time included as dichotomous variables, age (0= 18-31-year olds, 1= 32-45-year olds), educational attainment (ISCED levels 1, 2, 3 coded '0', levels 4, 5 and 6 coded '1').

In a third model we included the characteristics of the partner's employment status as

[9] The category includes being a housewife, a pensioner or on long-term sick leave.

[10] The International Standard Classification of Education (ISCED) is designed and adjusted by UNESCO and especially helpful for international comparisons. Level 1 and 2 cover basic education, level 3 and 4 secondary and post-secondary education (for Germany e.g. vocational training), level 5 and 6 include tertiary education (such as advanced vocational training *Meister* as well as *Fachhochschule* and university).

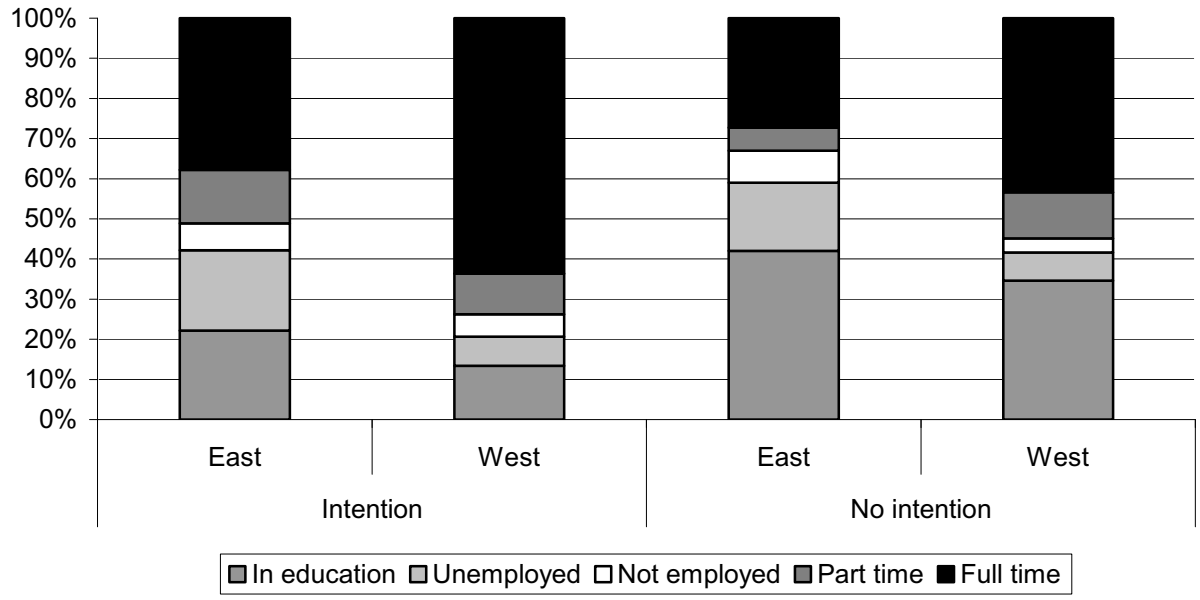
predictor (1=in education, 2=not employed, 3= part-time employed, 4=full-time employed[11]) and therefore restricted the model to women who live in partnership (N=504).

All models (except the one including characteristics of the partner) are calculated separately for East and West Germany[12].

Results

Descriptive results of the study are presented first (figure 1). We see that unemployment in general is higher in the new federal states and there is almost no difference between women who intend to have a child within the next three years and those who have no intention. Furthermore interesting is the difference between old and new states with regard to full time employment. While in the East women intending to have a child are rather equally distributed among the categories (except not employed), in the West the by far highest proportion of women who want to become mother soon are working full time. This is probably due to different labour market conditions but could hint at a different importance of prerequisites for motherhood.

Figure 1: Employment characteristics in East and West Germany



Source: Generations and Gender Programme 2005, women, 18-45, without children, own estimations

[11] Categories 'unemployed' and 'not employed' were subsumed to ensure sufficient number of cases per cell.
[12] Survey participants from Berlin were randomized to either one of the regions.

Using logistic regression models[13] we estimated the probability of intending to have a first child within the next three years. Table 1 displays the results from our first estimations. Being in education clearly decreases the chance to intend having a first child in the near future. Beside from this result no influence of stable working conditions in neither one of the two regions could be found (H1). With regard to the importance of age the expected effect becomes obvious (H2). Being in the age group of 27-35 (an age that most would see as ideal for children) increases the chances to start childbearing in comparison to being 18-26 years old[14]. Being older than 35 reduces the relative chance again. No influence of educational attainment was found. Having a partner increases the probability to start a life with children in the next three years.

Table 1: Logistic Regression Model, Dependent Variable: Intention to have a first child within the next 3 years

	East		**West**	
	β	Odds ratio	β	Odds ratio
Employment status				
Full-time (Ref.)	0	1	0	1
Part-time	.84	2.33	-.48	.62
Not employed	-.41	.66	.69	2.00
Unemployed	.53	1.70	-.18	.83
In education	-.57	.56	-1.07***	.34***
Age				
18-26 (Ref.)	0	1	0	1
27-35	1.13*	3.10*	.41^{+}	1.50^{+}
36-45	-1.74*	.18*	-1.98***	.14***
Educational level				
Low	-.03	.97	-.39	.68
Middle (Ref.)	0	1	0	1
High	1.03	2.81	-.17	.84
Having a partner	1.13*	3.10*	1.23***	3.43***
Intercept	-1.33*	.27*	-1.31***	.27***
Nagelkerke's R^2	.29		.27	
N	128		592	

$^{+}$ p<0.10 *p< 0.05 **p<0.01 ***p<0.001
Source: Generations and Gender Programme 2005, women, 18-45, without children, own estimations

Table 2 includes interaction effects of age and educational attainment. We predicted that in young age lower educational background will increase the probability to intend family formation, while later higher educational level that increases the probability. We find at least

[13] As the parallel regression assumption underlying the ordinal regression models was violated and in order to ensure a sufficient number of cases per cell we decided in favour of the logistic approach.
[14] This effect is insignificant in the Easten model though.

for West Germany that the negative age effect on the intention to have a first child is less important for high educated women, those women who have their first child later in life. For East German women from 18-45 years this process seems to play no important role.

Table 2: Logistic Regression Model, Dependent Variable: Intention to have a first child within the next 3 years

	East		**West**	
	β	Odds ratio	β	Odds ratio
Employment status				
Full-time (Ref.)	0	1	0	1
Part-time	.60	1.82	-.63	.78
Not employed	-.48	.62	.32	1.38
Unemployed	.04	1.04	-.25	.78
In education	-1.14*	.32*	-1.03***	.27***
Age * Education	-.12	.89	.41^{+}	1.50^{+}
Age				
18-31 (Ref.)	0	1	0	1
36-45	1.30^{+}	.27^{+}	-1.66***	.19***
Educational level				
Low (Ref.)	0	1	0	1
High	.36	1.43	.06	1.06
Having a partner	.96*	2.62*	1.24***	3.47***
Intercept	-.64	.53	-1.05***	.35***
Nagelkerke's R^2	.21		.20	
N	128		592	

$^{+}$ p<0.10 *p< 0.05 **p<0.01 ***p<0.001
Source: Generations and Gender Programme 2005, women, 18-45, without children, own estimations

The models in Table 3 refer to women in partnership and test the hypothesis of the influence of partner's employment status. Because the limited number of cases in the new federal states this model is calculated for whole of Germany. For reasons of comparison we start with a replication of the model in Table 1, and include partner's employment status in a second step. While the reported effects for women's employment situation remain largely unchanged the additional importance of the partner's work situation becomes evident. We find the same significant effect of partner being in education (it decreases the probability of a first child) as we did before for women. In addition there is some indication that a partner working part-time is not a perfect basis to start a family.

Table 3: Logistic Regression Model, Dependent Variable: Intention to have a first child within the next 3 years

Women in partnership				
	β	Odds ratio	β	Odds ratio
Employment status				
Full-time (Ref.)	0	1	0	1
Part-time	-.23	.80	-.18	.84
Not employed	.63	1.87	.55	1.74
Unemployed	-.11	.89	-.35	.71
In education	-.89**	.41**	-.76*	.47*
Employment status partner				
Full-time (Ref.)			0	1
Part-time			-1.1	.33
Not employed			.40	1.49
In education			-.87*	.42*
Age				
18-26 (Ref.)	0	1	0	1
27-35	.64*	1.89*	.51^{+}	1.66^{+}
36-45	-2.14***	.12***	-2.43***	.09***
Educational level				
Low	.32	1.38	.24	1.28
Middle (Ref.)	0	1	0	1
High	.61*	1.84*	.70*	2.02*
Region				
East (Ref.)	0	1	0	1
West	-.55^{+}	.58^{+}	-.48	.62
Intercept	.19	1.21	.34	1.40
Nagelkerke's R^2	.25		.28	
N	435		416	

$^{+}$ p<0.10 *p< 0.05 **p<0.01 ***p<0.001
Source: Generations and Gender Programme 2005, women, 18-45, without children, own estimations

3.2 Transition to the first child

Method

To validate our stated hypotheses on the effect of female employment on the transition to the first child we will use data of the German Life History Study. The study provides retrospective data for several cohorts born between 1919 and 1971 in Eastern and Western Germany. It offers rich information on respondents' life courses, including their employment trajectories, the partnership and fertility biographies.[15] For this report the youngest cohort, born 1971, was selected. The data collecting took place in 1996-98 in the East and 1998-99 in

[15] For more information on the study see http://www.yale.edu/ciqle/GLHS/index.html
We thank Karl-Ulrich Mayer for making the data available to us.

the West (wave 1) when respondents were 25-27 and 27-28 years respectively and in 2005 (wave 2) when respondents were 34. 517 women took part in both waves of the survey, 373 (72.15 percent) coming from the Western and 144 (27.85 percent) from the Eastern part of Germany. 69 percent make the transition to having the first child during the observed time frame. However, it is important to notice that the fertility phase is censored, so these results can not reveal how many of them will stay childless in the end.

Instruments

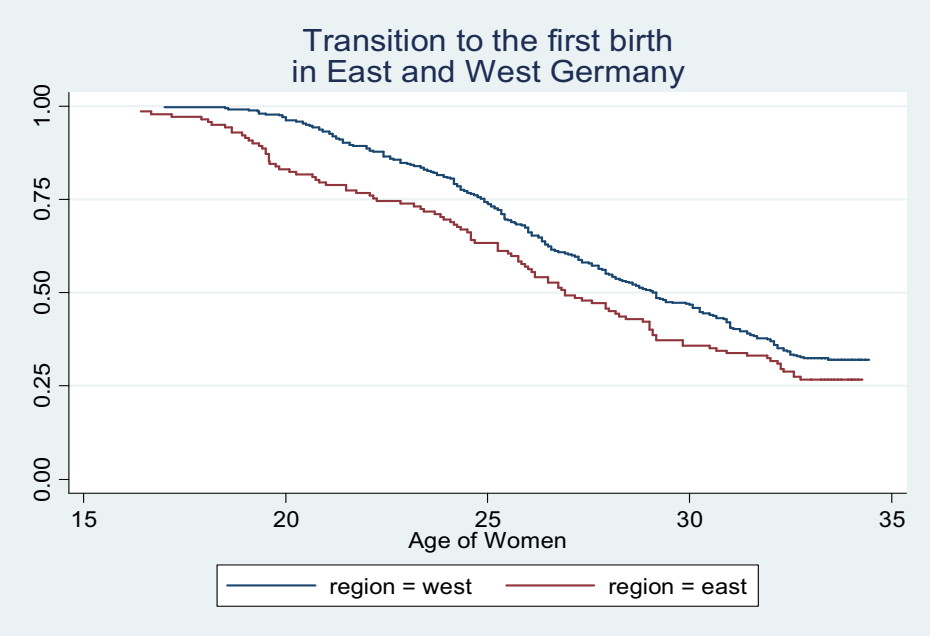
The fact whether the event of a first child occurred serves as dependent variable in the empirical model. The probability of having the event will be estimated controlling for a set of independent variables. Central for this report are variables regarding the employment status. The status itself is differentiated between 'being in education', 'not employed' and 'employed'. 'Not employed' can either mean that the responding women is unemployed or a housewife[16]. The variables related to the employment are used as time-variant-covariates in the model. An important factor for fertility decisions is the partnership. One variable indicates whether a partnership exists or not (time-variant). Unfortunately, information on the employment situation of the partner is not available for all respondents and can not be integrated. Finally, the model will control for age, educational level and the region (East and West).

Results

Analyzing the transition to the first birth in Germany, it is still reasonable to divide the sample according to the region of Eastern and Western Germany. In the new federal states women have the transition earlier than their neighbors in the old federal states. This difference was strongest before the fall of the wall but can still be observed today. In figure 2 the Kaplan-Meier curve clearly shows that eastern women (born 1971) start family formation early resulting in lower level of childlessness by the age of 35.

[16] The category „being on parental leave" is obviously not possible before having the first child.

Figure 2: Transition to first birth, Kaplan-Meier survival curve



Source: German Life History Study, Cohort 1971, own estimations

The result of the cure regression models show that the difference between East and West indeed is a matter of timing and not a matter of fewer events as such (table 4).

The cure regression model, which is also called a 'split-population' (Schmidt and Witte 1989) or a 'mover-stayer' model divides the effects of the covariates into a risk-effect (the cure fraction or the part of the 'stayer'), those who don´t have the event (here: childbearing) and a timing-effect (Lambert 2007). There is only one effect in regard to the event itself. Women not living with a partner have a higher probability not to have the event of a family formation. Other variables only affect the timing of the event: A low educational level pushes family formation, a high education delays it. Being in education also delays the transition to a first child, just like being from West Germany brings a delay compared to women from the East.

Table 4: Cure Regression Model, Dependent Variable: Transition to first child

	Cure Fraction (Risk-effect)		Scale (Timing-Effect)	
educational level				
low	0.448		0.130	**
middle (Ref.)				
high	0.703		-0.151	***
employment status				
in education	0.279		-0.063	+
not employed	-0.693		-0.065	
employed (Ref.)				
partner status				
single	2.862	***	-0.027	
partner (Ref.)				
region				
east (Ref.)				
west	-0.524		-0.124	**
N of subjects	503			
Log likelihood	-1137.963			

Source: GLHS, cohort 1971, own estimations, + p<0.10 *p< 0.05 **p<0.01 ***p<0.001

Using event history analysis to analyze employment biographies and their impact on fertility behavior, we find the postulated effects of the control variables (table 5). The hazard rate is lowest in younger ages. Due to the censoring at an age in which the fertile phase is not over yet a decline in transition rates can not be observed. Hypotheses 2 can not be verified conclusively. Having a partner is an important factor for family formation. With regard to educational level, we find some significant effects as well. The effects clearly go in the postulated direction. High education decreases the probability of the transition to a first child (significant in both regions) and low education increases the probability (at least significant in the East).

Table 5: Piecewise Constant Exponential Model, Dependent Variable: Transition to first child

	East		West	
	Hazard ratio		Hazard ratio	
age episode				
age < 18	0.001	***	0.000	***
age 18 - 26	0.013	***	0.021	***
age 27 - 35	0.019	***	0.044	***
educational level				
low	4.461	*	1.270	
middle (Ref.)				
high	0.518	**	0.533	***
employment status				
in education	0.800		0.527	***
not employed	1.489	+	0.434	+
employed (Ref.)				
partner status				
single (Ref.)				
partner	7.806	***	3.964	***
N of subjects	142		361	
N of events	104		242	
Log likelihood	-32.062		-57.789	

Source: GLHS, cohort 1971, own estimations, + p<0.10 *p< 0.05 **p<0.01 ***p<0.001

The institutional effect of not having children while still in the educational system can clearly be seen in West Germany, as a trend also in East Germany. The main difference between women from old and new federal states is their reaction to unemployment. In East Germany a positive effect becomes obvious; women in this region tend(ed) to use the phase of unemployment to have a first child. The opposite seems to occur in the Western parts of Germany. The effect is clearly negative.

4. Discussion

Two main conclusions can be drawn from our analyses about the interdependencies of female labor force participation and the intentions and transitions to family formation in Germany. First, employment characteristics influence the intention of childbearing and its realization differently and second, there are still some differences between East and West Germany 20 years after unification.

Apart from the institutional effect of being in education, the employment status and the educational level seem not to influence the intention of having a first child but the realization of this intention. Accordingly, the cure fraction model demonstrates the importance of education (and partly the employment) for the timing and not for the event as such. This finding gives evidence to the statement above saying that the desire for children

and the intention to have one is independent of the educational background but those with a higher education postpone childbearing (institutional effect).

The crucial finding regarding the region is the different effect of non-employment in East and West Germany in the model for the transition to first parenthood. While East German women of the cohort 1971 used the time while they are not employed for having children, women in the West fear to further reduce their chances on the labor market when they have children during a time of non-employment. This finding does not support the thesis of self-selection, we described above. With regard to childbearing intentions only a few differences between East and West could be found.

Lately new political instruments were implemented: The *Elterngeld* (parental allowance) reduces opportunity costs, when staying at home for up to 12 months after the birth of a child, more childcare for under 3 years olds is planned and there are political programs promoting family-friendly companies. The future will show whether these developments can change the institutional and normative setting for family formation in Germany.

Part 3: Mothers educational attainment and occupational position and the decision for the second child

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1. Introduction

Research in the context of analyzing fertility behavior focuses mainly on the process of family formation. Thus studies deal either with the transition to the first child or with childlessness and stopping behavior. Higher parities like the transition to the second or third child are underspecified (Brose 2008; Huinink 1989; Kohlmann and Kopp 1997; Dornseiff and Sackmann 2003). This leads to the situation that we do not know enough about what the expected utilities or costs are in regard to the second or third child? Why do parents still continue childbearing at all, even though theoretical approaches in the context of the "value of children" argue that psychological benefits in regard to children have already been fulfilled with the first or second child (Nauck 2001) and financial costs support arguments for stopping this behavior. This report on Germany focuses on the decision to have a second child. We start with some descriptive analysis of the official statistics and present some results about the transition to the second child. For this we use data from the German Life History Study (Mayer 1990) as well as from the German Census. After discussing some theoretical considerations we compute some multivariate analysis using event history analysis.

2. Family expansion: some descriptive results

Table 1 shows the distribution of families in Germany by the number of children. These data are from an access panel, particularly conducted for getting valid estimations about childbearing behaviour (Pötsch and Emmerling 2008). It is still not possible to estimate exact birth rates exactly with the German Census, because the Census is based on the household and does not ask for women's completed fertility biography which results in an underestimation of the total fertility rate.

Table 1: Women´s number of children (2006)

Date of birth	Age in 2006	Childless	With children			
			total	With		
				1 child	2 children	3 or more children
Germany						
1972-1981	25-34	53	47	48	38	13
1962-1971	35-44	23	77	32	48	20
1952-1961	45-54	19	81	31	50	19
1942-1951	55-64	14	86	31	47	22
West-Germany						
1972-1981	25-34	55	45	46	40	14
1962-1971	35-44	25	75	29	49	22
1952-1961	45-54	21	79	31	49	20
1942-1951	55-64	14	86	31	47	21
East Germany						
1972-1981	25-34	41	59			
1962-1971	35-44	11	89	40	46	14
1952-1961	45-54	7	93	28	56	16
1942-1951	55-64	8	92	25	48	27

Source: Federal Statistical Office

In general for the three oldest cohorts we see an increasing amount of childless women, going from 14 percent to 23 percent. This tendency is the same in East and West Germany. But we find that the rate of childless women is much higher in West as in the East. Regarding the 1962-1971 cohort in the East the data show 40% of families with one child compared to 29 percent for West German women. Additionally, the numbers of families with two and three children are higher in West Germany. These descriptive results should be handled with care because for the cohort born in 1962-1971, and particularly for the cohort born in 1972-1981 we do not have completed fertility rates. But these figures provide a tendency for both West and East Germany, Using data from the Eurobarometer Huinink (2005) reports that in East Germany there are more one-child families, compared to West Germany. From this he concludes that East Germany could be on the way to the one-child family.

For further descriptions we use data from the German Census, conducted by the Federal

Statistical Office and compute survival analysis for the transition to the first and second child for women in East and West Germany in 2005 (figure 1 and 2). These data provide information about a broad sample size, which gives us the opportunity for an external validation of the dataset we used for our multivariate analysis, the German Life History Study. The Census is an annual survey, with a sample size of 1per cent of the whole population. For scientific interests the statistical department provides a Scientific Use File, which contains 70 per cent of the Census. The sample size of the Scientific Use File for the Census 2005 is 477,239. Unfortunately, the Census does not include the whole information about the fertility biography. The childbearing behaviour of the respondents has to be calculated on information in regard of the age of children living in the household. This leads to the problem of non-consideration of children who do not live in the motherly household, either because they already have started living on their own (or with a partner) or because the parents are separated and the child does not live in the mother's household. However, for our question about the transition to the first and second child on the 1970´s birth cohort this will not be a big problem, as the children are most likely to be still living at home at this age respectively be living in the household of the mother if the parents are seperated (Kreyenfeld and Huinink 2003).

The German Life History Study (GLHS) is theoretically based on the life course approach and contains complete biographies for different life domains (partnership, education and employment, children, mobility) and for different birth cohorts. In this report we will refer to the 1971 birth cohort. This cohort offers the opportunity for analyzing fertility behavior after the German reunification. These data are particularly appropriate for a comparative analysis between East and West Germany. This East-West-comparison is of high interest because even 20 years after unification in 1989, cultural and political differences still exits in both parts of Germany which determine fertility behavior in specific ways (Huinink 2005). Thus the transition to the first and second child has to be analyzed separately for East and West. The GLHS' 1971 birth cohort provides this opportunity. The survey was conducted in 2005, thus the respondents are 34-35 years old. However, it has to be mentioned, that the women of this cohort are still in their childbearing years, and further births and late motherhoods can be expected.

In the following paragraph we would like to compare the transition rates to the first and second child in East and West Germany by using data from both surveys, the Census and the GLHS. In the Census we include women, born in 1970 and 1971 (N= 4915 in West and 984

in East Germany). The GLHS contains only 370 women from West and 142 from the East Germany.

Figure 1: Transition to the first child in West Germany: Census and GLHS (in 2005)

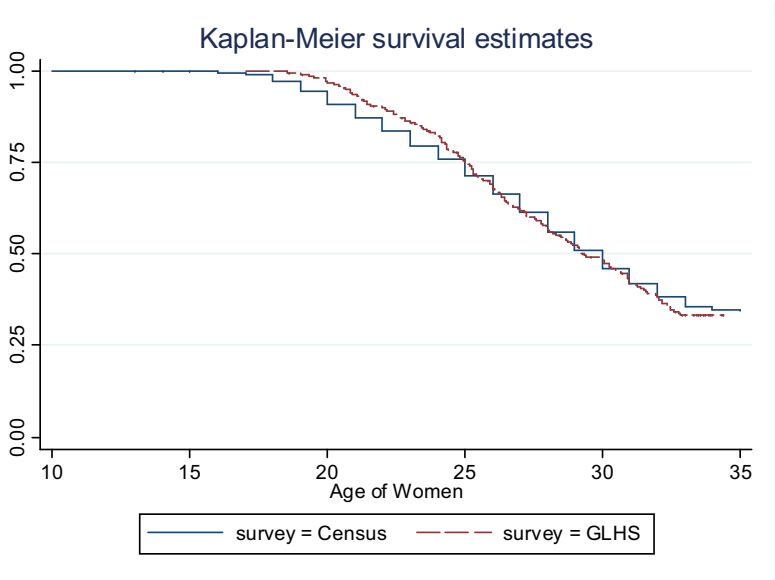
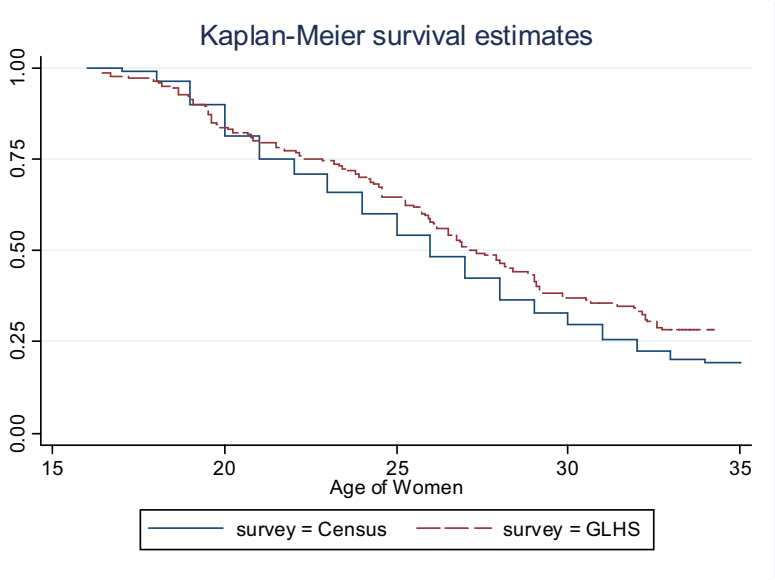


Figure 2: Transition to the first child in East Germany: Census and GLHS (in 2005)



For West Germany the data show a median survival time of 30 years (mean 28.8) for the Census data and for the GLHS of 29. A Log-Rank-Test as well as a Wilcoxon-Test for testing the equality of the survival functions reports that the difference between both survival functions is not significant. In East Germany we estimate a median survival time of 26 (mean 26.5) for Census data and 27 for the GLHS. But we repeat, that this mean is underestimated because the data are censored at age 35, which means that births after this age are not taken

into account. Both tests show weak differences (Log-RankTest: p=0,08; Wilcoxon: p=0,09). All in all, this means that the GLHS fits very well to the Census data.

Figure 3: Transition to the second child in West Germany: Census and GLHS (in 2005)

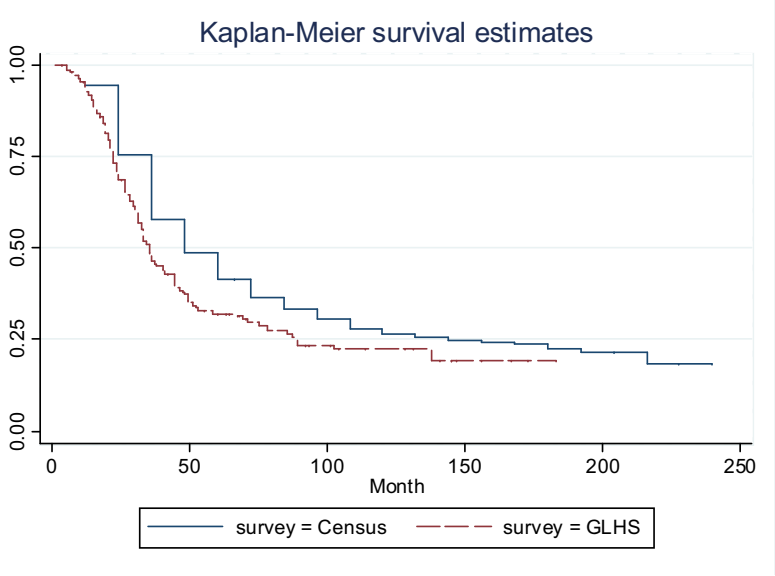
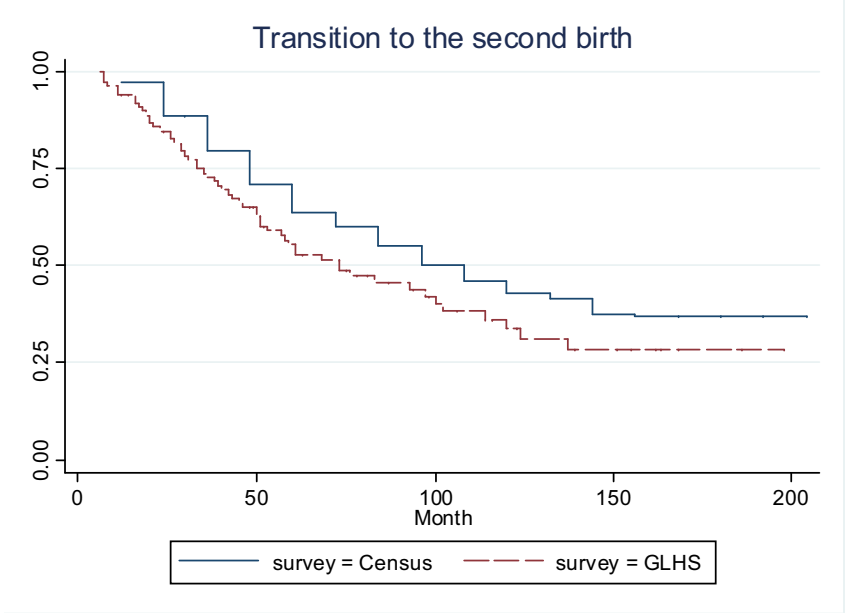


Figure 4: Transition to the second child in East Germany: Census and GLHS (in 2005)



Now we focus on the transition to the second child. Here the starting point of the x-axis is the birth of the first child, measured in past months. For West Germany we compute a median survival time of 48 months for the Census and 35 months for the GLHS data. For East Germany the median transition rate is 96 months for the Census and 73 months for the GLHS. Equality-tests of the survivor function show a significant difference between both studies. We

find a significant shorter median time of the transition to the second child for the GLHS compared to Census data. This means that in the GLHS has a bias towards a higher family orientation, which has to be considered.

Figure 5: Transition to the second child in East and West Germany: Census data (in 2005)

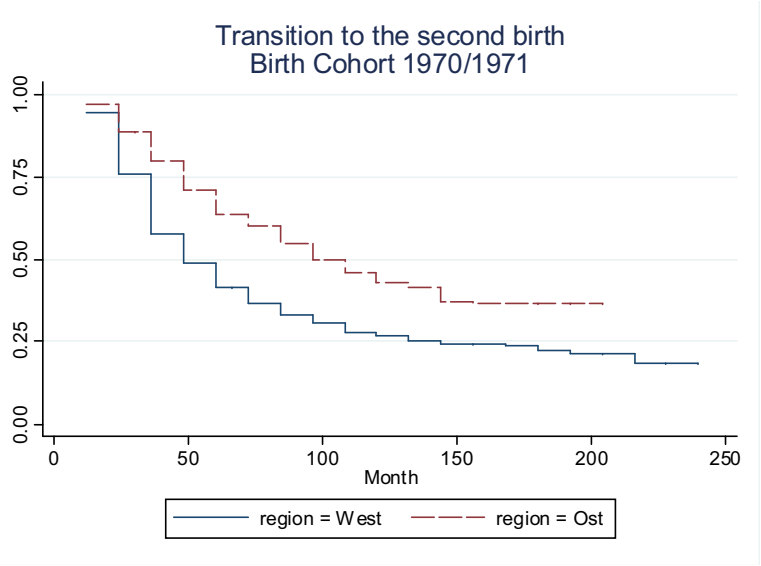
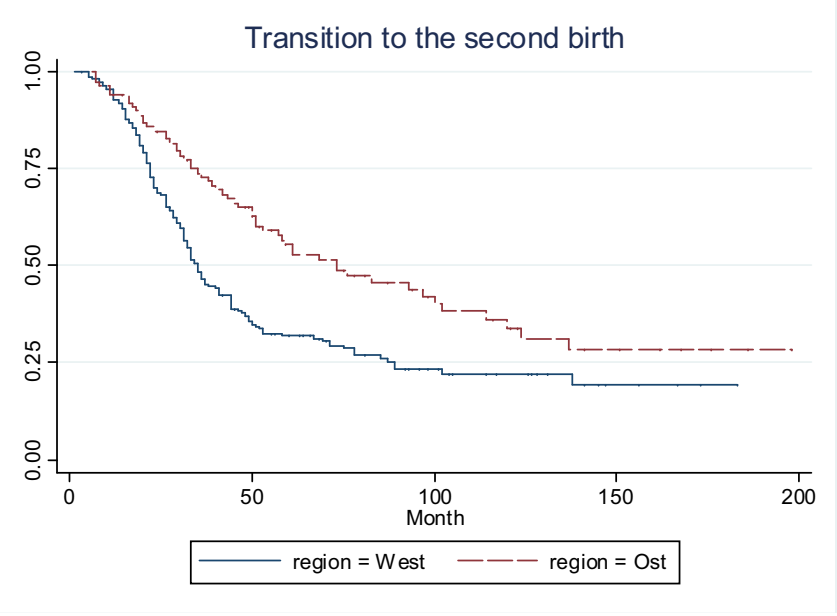


Figure 6: Transition to the second child in East and West Germany: GLHS data (in 2005)



Comparing the transition to the second birth we find with Census data as well as with the GLHS, that the transition to the second child is decelerated in East Germany, compared to the situation in the West. This means that we still find for the youngest cohort of the 1970s big differences particularly in the transition to the second child. In the following, we will discuss

these different processes between East and West in regard to the transition to the first and second child in more detail.

3. Transition to the second child: theoretical considerations and hypotheses

The transition to the second child differs from that of family formation in some important points. After the birth of the first child, parents make a lot of experiences in regard to the changing living conditions which might influence their future decision-making process according to higher parities. Compared to the process of family formation, parents know more or less in which way a newborn will change their life. They have a concrete idea of what economical theorists mean by opportunity costs, based on real experiences. They know how time consuming a baby will be, but also how it increases or decreases their personal well-being. They have an answer in regard to the question of whether it is easy or exhausting to manage the child caring. Parents are informed about their opportunities and constraints in regard to formal or informal infrastructure of child caring and how it fits with an ongoing full or part time employment and with the current and future financial situation. Mothers and fathers are aware of the impact on other life domains, such as contact to friends or leisure time activities. And they know about the consequences on the quality and stability of their intimate relationship (Reichle and Werneck 1999). Thus, compared to the situation of the transition to the first child, in regard to family expansion parents have at least concrete experiences about the relevant factors of this decision-making process. Given the fact that this situation differs from that of family formation, fertility theorists emphasize that for analyzing the transition to the second child a special theoretical framework is necessary (Huinink 1995).

Theoretical explanations, particular in the context of economic theory and the early works of Hoffman & Hoffman (1973; Leibenstein 1957; Becker 1981; Nauck 2001), emphasize the ’values of children’, their utilities and costs for their parents. These theoretical constructs are well known and often used as a framework for many studies. But in regard to analyzing the process of family expansion in low fertility and well developed countries these theoretical approaches are not sufficient enough in explaining why some parents have an additional child. Some important theoretical questions are still unsolved: What are the utilities and costs of a second child, what is the ‘added value’ of the next birth?

On the other hand Becker’s (1982) argumentation of the quality and quantity of children as an explanation for decreasing fertility rates in industrialized countries is very convincing and provides an answer to the question why people *do* stop their family extension after the first child is born. He argues, that in industrialized countries people suffer from high direct and

indirect opportunity costs when getting children. Due to that, they minimize their final family size and invest more in the quality of their children, e.g. in educational qualification. This again increases the direct costs of children and therefore it raises the costs of a second child. Thus, increasing demands on the quality of children put further economical pressure on the conditions for realizing childbearing intentions.

These introductory theoretical remarks focus more on economic theory and, of course, a lot of other theoretical concepts for explaining fertility are also available which are more or less based on empirical studies (the role of values, attitudes, preferences, and framing concepts, age norms, prerequisites for childbearing behavior, the role of dyadic decision-making processes, the impacts of psychosocial disposition, the surrounding child caring system, educational attainments and occupational situation, the welfare system etc.). But these factors focus mainly on the explanation of family formation or on stopping behavior. However, this national report focuses only on the relation between the mothers' educational attainment and their occupational status as explaining variables for the transition to the second child.

Referring to the timing of family formation educational attainment is indicated as an important independent variable. Several studies reveal that educational participation is negatively correlated with first births, which is explained by monetary, temporal and normative constraints (Blossfeld and Huinink 1991). Furthermore, it is assumed that higher educated women postpone family formation as they are more career and less family oriented. This may lead to a deceleration of family formation or to a more or less intended stopping behavior. In addition to that, relatively high opportunity costs are crucial for the intention of not getting children until they have settled into stable employment (Liefbroer and Coijin 1999; Brewster and Rindfuss 2000). But as already mentioned above, the economical hypothesis of opportunity costs differs in regard to higher parities. For family formation the expectation of high opportunity costs are fixed to their educational and occupational attainment. Thus it is negatively correlated with family formation or comes along with a postponement of childbearing. But after the first child, some opportunity costs in regard to income, leisure time, and social activities are already ‘realized’. This means that the negative correlation of expected opportunity costs for higher educational attainment does not apply to family expansion. Quite the reverse could be the case. For family expansion we would expect that the higher the educational level the higher the propensity for having a second child. Because a higher educational attainment could come along with more resources – compared to other groups – this should influence the process to the second child in two ways:

H1: The rate should be higher and,

H2: there should be an accelerating effect in regard to the second transition,

as women will try to complete their childbearing behavior in a way which allows them to return to work in a reasonable time span (see also Kohlmann and Kopp 1997; Huinink 1989). This situation should be different for West and East Germany. In West Germany the lack of a well-organized childcare system reduces the opportunity to reconcile work and family. Thus, in West Germany the threshold for 'realising' opportunity costs is rather the transition to the first child which means for women have to cut back their work orientation and invest more time within the family context. But this also leads to the situation, that the threshold for a second child is lower, because important opportunity costs are already realised with the transition to the first birth. In addition to that, focusing the political and cultural background we find, that in West Germany the traditional male breadwinner model was politically and normatively promoted, whilst in the former GDR full-time work was assumed for both, fathers and mothers (see chapter 1). While in the 'traditional' state work and family life was promoted as incompatible, the other, 'family-work friendly' state tried to make these spheres combinatorial. Thus, in West German mother employment was seen to have a negative impact on child development. And institutions with a traditional, high political and cultural influence forced the support of the male-breadwinner model with a strong separation of gender roles.

Even after unification the differences are still obvious. We find a structural disagreement as well as an ideological one between East and West (Dornseiff and Sackmann 2003). In East Germany we find a better child care system compared to that of West Germany, and studies about attitudes towards women and mother employment still show that both parts of the country are different. Women in West Germany state traditional attitudes and they mention that children will suffer under mother employment. Given the situation of a high work orientation for women, we find different opportunities and constraints in regard to supporting both family and work in the East and in the West. In East Germany the situation is rather similar to the situation in the Scandinavian countries: a well organized childcare infrastructure and a high work orientation of women. This means that it is easier in East Germany to combine family and work, but this should particularly be the case for the one-child family. The burden and the threshold for realizing opportunity costs should start more with a second and third child, because with two children, especially with pre school children, a combination of work and family should be very difficult, even if a well-organized child care system is available (Huinink 2005). Thus for East Germany (compared to the West).

H3: we expect a lower propensity for a second birth

H4: and a decelerated effect – which is already shown in the descriptive analysis above.

Deceleration because with growing age of children it should be easier to combine family with occupational attainment.

In this research context variables regarding the employment status are also central. Here we only differentiate between 'being employed' or 'being unemployed'. According to the status of being employed Kohlmann/ Kopp (1997; using SOEP data) find results in a way that the higher the occupational position of women the lower the odds ratio for the second child (see also Huinink 1989). Both studies focus on the situation in West Germany. It is stated in the literature, that starting or continuing employment after a first child could be a sign for a work preference (Hakim 2003; Bernhardt 1993) which could be based either on economic pressure or on aspects of self-fulfilment and a high career orientation. Given the male breadwinner model we assume that the status of unemployment increases the propensity for a second child in West Germany, while for East Germany quite the reverse should be the case. Given the high work orientation of women, unemployment is more a sign of unsecured living conditions, which means that an important prerequisite is missing. This reduces the propensity of having the next child.

H5: Unemployment is a positive predictor for the second child in West Germany and a negative predictor for women in East Germany

4. Methods and Variable Description

To examine our hypotheses we use again data from the German Life History Study (GLHS). For this report we refer to the youngest cohort, born in 1971. The data collection took place in 2005, thus respondents are 34/35. This means, that the fertility phase is censored, which could be a problem particularly for women with high educational attainment. We constrain our analysis to this cohort, because from this cohort we have data from both regions of Germany after reunification took place. This allows us to compare fertility behavior of individuals who grew up in completely different political systems and for which the infrastructure of the child caring system is still different (see part 1 of this country report).

Included variables:

The dependent variable is the transition to the second child. As covariates we refer to variables which should be similar for both countries. Thus, we only focus on educational status (dummy variables for low, middle and high); the region (East and West) as well as the employment status (dummies for employment and unemployment). Unfortunately, we do not

have information from the partner, but we at least control for the kind of living arrangement (dummies for single, living apart together, cohabitation, married) and for age.

Method:

To examine our hypotheses we use event history analysis. First we compute a piecewise constant model with constant hazard rates for specific time intervals (Blossfeld et al. 2007), and we use 'split population models', which are also called 'mover-stayer-models', or 'cure models', depending on the discipline (Lambert 2007). In the split population approach two analytical model are combined: one model for the surviving fraction (risk effects) and one model for analyzing the passed time to an event, the timing effect (Brüderl and Diekmann 1995). We refer to parametric-cure-models, which are available for STATA (Lambert 2007).

5. Results

As already mentioned, we use data from the German Life History Study. For the transition to the second birth 337 individuals in the sample are left; 236 for West Germany, and 101 for East Germany. To examine hypotheses 1 and 3 we compute a piecewise constant model.

Table 2 shows that similar to our expectations we find a positive effect for those with higher educational attainment compared to those with a lower level. This effect is significant but only on the 5 per cent level (see hypothesis 1).

Furthermore, our third hypothesis, which assumed a lower propensity for East German women compared to their Western counterparts, can be confirmed by the data as well. We find a high significant effect and a hazard rate of 0.494. In addition to these findings our analysis shows a significant negative age effect and we see that women who live separated from the current partner have a lower propensity of having a second child, compared to women who live in more institutionalized settings, such as cohabitation and marriage.

In regard to hypothesis 2 we argued for an accelerating effect of education as well as a decelerated effect for East Germany (hypothesis 4). To validate this we compute a cure split population model, which enables us to differentiate between a risk and a timing effect. From the analysis below we see that we do not get a confirmation for hypothesis 2. There is no significant effect for educational attainment. But we find that for East German women the transition to the second birth is decelerated, and this effect is significant (see hypothesis 4). This result can also be seen in our descriptive survival curve analysis in the beginning.

Table 2: Piecewise Constant Exponential Model, Dependent Variable: Transition to second child

	Germany	
	Hazard ratio	
Time periods		
0-24 months	0.147	**
24-36 months	0.417	
..36-48 months	0.312	
..more than 48 months	0.309	
educational level		
low (Ref.)		
middle (Ref.)	1.298	
high	1.662	*
employment status		
not employed	2.536	***
employed (Ref.)		
partner status		
partner (separated)	0.263	***
cohabitation	0.877	
marriage (Ref.)		
Age	0.894	***
Region		
…West Germany (Ref.)		
…East Germany	0.494	***
N of subjects	327	
N of events	190	

Source: GLHS, cohort 1971, own estimations, $^{+}$p<0.10 *p< 0.05 **p<0.01 ***p<0.001

Table 3: Cure Regression Model, Dependent Variable: Transition to second child

	Cure Fraction (Risk-effect)	Scale (Timing-Effect)	
educational level			
low (Ref.)			
middle	-0.124	0.077	
high	-0.572	0.066	
employment status			
not employed	-2.819	0.411	***
employed (Ref.)			
Region			
east (Ref.)	-0.042	-0.501	***
west			
Cons	-0.699	0.931	
N of subjects	327		

Source: GLHS, cohort 1971, own estimations, $^{+}$p<0.10 *p< 0.05 **p<0.01 ***p<0.001

In regard of our last hypothesis, the assumption that unemployment is a positive predictor for the second child in West German and a negative predictor for women in East Germany we find from the analysis of the piecewise constant model, that unemployed women overall have a significant higher propensity of having a second birth. In addition to that, empirical findings displayed in table 3 show that being unemployed accelerates the transition to the second child significantly. But comparative analysis for East and West Germany does not reveal confirmation of our hypothesis that being unemployed in East Germany is correlated with a negative effect in regard to family expansion. For both regions the effect is significantly positive.

6. Discussion

In our analysis we find some empirical evidence for our hypotheses. Especially the different path ways to family expansion in East and West Germany are very interesting and significant. Even after German reunification in 1989 the historical and cultural backgrounds as well as the current differences in regard to child caring facilities show long term effects for fertility behavior.

From our theoretical remarks we expect that on the contrary to the transition to the first child, a higher level of educational attainment should come along with a higher relative risk to a second birth, because higher educated women often have more resources compared to lower educated. We find that the relative risk for having a second birth is 66 percent higher for a higher educational level attainment compared to a low level. Confirming this hypothesis provides some additional information that it is useful to compare different kinds of opportunity costs for different parities. Here it would be interesting to run two models, for East and West separately. Unfortunately, the sample size for this is too small. That it is of particular interest to compare the situation between East and West Germany was already shown in the descriptive analysis in the beginning. Going into more detail we obtain empirical evidence for our hypothesis of a lower propensity for East German women of having a second birth compared to their Western counterparts. In addition to that we find for East German women that the transition to the second birth is decelerated, which can also be seen from the survival analysis. Thus, East German women have a lower rate for second birth and they postpone the second birth, both results confirm the hypothesis of different contextual situation in East and West Germany. West German women tend to cut back their working orientation if a first child is born and try to have a second birth within this time, while East German women try to reconcile family and work after the first child is born. Because it is much more difficult

to take care for two young children and keeping their working orientation - a combination which could be realized with one child and a well-established child care system - a postponement of second births could be the result for East German women. But with the data we use for this analysis we run into problems of sample sizes. For a better understanding it is also necessary to invest more time in theoretical explanations in regard to the process of family expansion. At least we should include more data about the occupational and financial situation of *both* partners (Brose 2008; Kreyenfeld 2002) as well as instruments for assessing partnership dynamics and individual attitudes towards a second child.

From a societal as well as from a sociological point of view it seems very important to invest more effort in disentangling these empirical findings of East and West Germany. Even 20 years after reunification, structural as well as cultural differences between East and West Germany are still there and influence the childbearing behaviour.

Appendix

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2. Tables

Table A1: Families with children younger than 18 in 2006

Family structures	Number of children			
	1	2	3	4 and more
Married couples	35	47	14	4
Cohabitation	62	30	7	2
Single-parent families	59	31	8	2
Total	41	43	12	4

Percentages are own calculations based on Statistisches Bundesamt 2008c

Table A2: Labor force participation rate of women

Age	West Germany	East Germany (Former GDR)*
15 – 20	29	32
20 – 25	68	67
25 – 30	75	78
30 – 35	76	85
35 – 40	78	90
40 – 45	82	91
45 – 50	82	90
50 – 55	77	88
55 – 60	64	77
60 – 65	28	25
Total	51	54

Source: Percentages are own calculations based on Statistisches Bundesamt 2008a
* including Berlin

Table A3: Development of Parental leave in the FRG

Date of validity	Name of Leave	Duration of leave	Name of Payment	Duration of Payment	Amount of Payment
1979 – 1985	Mutterschafts-urlaub	6 months	Mutterschafts-urlaubsgeld	6 months	equal to previous earnings
1986 – 1987	Erziehungs-urlaub	10 months	Erziehungsgeld (childrearing allowance)	10 months	Proportional to previous earnings (max. 750 DM per month)
1988	Erziehungs-urlaub	12 months	Erziehungsgeld	12 months	Proportional to previous earnings (max. 750 DM per month)
1989 – 1990	Erziehungs-urlaub	15 months	Erziehungsgeld	15 months	Proportional to previous earnings (max. 510 DM per month)
1990 – 1991	Erziehungs-urlaub	18 months	Erziehungsgeld	18 months	600 DM in the first 6 months, thereafter means tested, max. 600 DM
1992	Erziehungs-urlaub	36 months	Erziehungsgeld	18 months	600 DM in the first 6 months, thereafter means tested, max. 600 DM
1993 - 2000	Erziehungs-urlaub	36 months	Erziehungsgeld	24 months	600 DM in the first 6 months, thereafter means tested, max. 600 DM
2001 - 2006	Elternzeit	36 months	Erziehungsgeld	12 months or 24 months	Either 900 DM for one year or 600 DM for two; 2002: Either 460 € for one year or 307 € for two
Since 2007	Elternzeit	36 months	Elterngeld (parental allowance)	12 months up to 28 months	Proportional to previous earnings (67%), min. 300 € and max. 1,800 € per month

Sources: Bird 2004

Table A4: Family Benefits in the GDR (1949-1990)

Name of Benefit	Introduction	Description
Birth Grant	1950	lump-sum paid for the 3rd and following children, since 1958 for the 1st and following children, since 1972 lump-sum 1000 GDR Mark on every child birth
Child Benefits	1950	monthly paid benefit for the 4th and following children, since 1969 for the 3rd and following children, since 1972 for every child
Maternity Leave	1950	Maternity leave with a duration of 14 weeks, since 1972 18 weeks, since 1976 26 weeks
Parental leave	1972	Paid leave for single mothers if no place in daycare available, since 1976 possible for all mothers with two and more children for one year
Reduced Working Hours	1972	Reduced working hours for mothers with three or more children, since 1976 for mothers with two or more children
Extra Holidays	1972	Extra holidays for mothers with two or more children
Child Sick Leave	1972	paid leave for single mothers in case of a sick child, since 1984 also for mothers with three or more children, since 1986 also for mothers with two or more children
Interest-Free Loan	1972	couples who married before age 26 receive a marriage loan of 5000 GDR Mark Partly release out on birth of a child, since 1980 for couples who married before age 30, since 1986 a higher loan of 7000 GDR Mark

Source: Kreyenfeld 2004, 280

Table A5: Age of Children in Childcare Facilities in 2007

	Children's Age			
	0-3	3-7	School children	Total
East Germany*	17	52	31	100
West Germany*	6	85	8	100
Overall Germany	9	78	13	100

Row Percentages; Percentages are own calculations based on Statistisches Bundesamt 2008b
* excluding Berlin