

**Parity Specific Birth Rates for West Germany: An
Attempt to Combine Survey Data and Vital Statistics**

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Parity Specific Birth Rates for West Germany: An Attempt to Combine Survey Data and Vital Statistics

In this paper, we combine vital statistics and survey data to obtain parity specific birth rates for West Germany. Since vital statistics do not provide birth parity information, one is confined to using estimates. The robustness of these estimates is an issue, which is unfortunately only rarely addressed when fertility indicators for (West) Germany are reported. In order to check how reliable our results are, we estimate confidence intervals and compare them to results from survey data and estimations conducted by the German Statistical Office. Although our estimations show a similar trend, the magnitude of some fertility indicators differ substantially from the ones reported in other studies. However, estimations from other studies do not give a consistent picture of German fertility, either.

Paritätsspezifische Geburtenziffern für Westdeutschland: Ein Versuch Umfragedaten mit den Daten der Bevölkerungsstatistik zu verknüpfen

Ziel dieses Beitrags ist es, die amtliche Daten der Bevölkerungsstatistik mit Befragungsdaten zu kombinieren, um paritätsspezifische Geburtenziffern für Westdeutschland zu schätzen. Da die amtliche Statistik keine paritätsspezifischen Fertilitätsziffern bereitstellt, ist es unumgänglich, Schätzwerte zu verwenden, um die paritätsspezifische Geburtenentwicklung in Deutschland zu beschreiben. Die Robustheit dieser Schätzungen ist jedoch ein Aspekt, der leider nur selten diskutiert wird. Um die Reliabilität der Schätzungen zu überprüfen, werden sie mit den Ergebnissen anderer Erhebungen und denen des Bundesinstituts für Bevölkerungsforschung verglichen. Obwohl die in diesem Artikel unternommenen Schätzungen einen ähnlichen Trend in der paritätsspezifischen Fertilität in Westdeutschland zeigen, unterscheiden sich die einzelnen Fertilitätsindikatoren erheblich von jenen vorhergehender Studien. Jedoch liefern auch die unterschiedlichen Vergleichsstudien kein konsistentes Bild.

1. Introduction

In contrast to the large majority of other western European countries, German vital statistics do not include birth rates by order of births. Instead, the Statistical Office provides births by order in the current marital union only.¹ This practice is unfortunate from the point of view of a researcher since it means that crucial indicators such as the mean age at first birth and the extent of childlessness are not available for (West) Germany. What is known about fertility patterns in Germany frequently comes from the analysis of survey data (e.g., Klein 1989, Blossfeld und Huinink 1991, Hullen 1998, Huinink 2000). The survey data that are probably most often used in this context are the German Socio-Economic Panel (SOEP), the Family Survey (*Familiensurvey*), the Family and Fertility Survey (FFS) and the German Life History survey (GLHS).² Survey data are certainly crucial in order to understand how socio-economic factors determine family formation patterns. However, as a means of displaying long time trends, they are only of limited value. Sample sizes are either too small, or time periods are too short, or too few birth cohorts are covered. The German micro-census provides a larger sample size (e.g., Schimpl-Neimanns 1998). Unfortunately, it has only become a file available for standard scientific usage since 1989. In principle, one can infer fertility information by the number and the age of the children who live in the household at the time of interview. In other words, also for the time prior to 1989, the scientific use files of the micro-census provide parity specific fertility information for Germany. However, the older the respondents at the time of interview, the more likely it is that

the respondents' children have already moved out of the parental home. This involves that the scientific use files of the German micro-census are only of limited value for the analysis of demographic events of older birth cohorts (i.e., birth cohorts born before 1955).

In the following, we combine vital statistics and survey data in order to obtain parity specific birth rates for West Germany for the period 1985-1995.³ The primary motivation for this venture is to provide parity specific fertility information for a longer time period than is available from the German survey data sets. Furthermore, by combining survey and register data, we attempt to reduce the sampling error which usually occurs when using survey data alone. Handcock et al. (2000) employ a similar method to British data and report a substantial reduction in the variance of their estimated birth probabilities.

As a basis for our computation, we use non-marital births and births by order in the current marriage from vital statistics. Additional information is gathered from the German Socio-Economic Panel (SOEP). It should be noted that the procedure draws very much on a study conducted by Birg et al. (1990). They also used vital statistics and combined them with survey data. Combining these two data sources, they estimated parity specific birth rates for West Germany for the period 1960-1985.

The remainder of this paper is structured as follows. Firstly, we discuss our estimation technique. Secondly, we describe some general findings on the West German fertility pattern for the period 1960-1995, using our own estimations and the estimations conducted by Birg et al. (1990). Thirdly, we try to validate our estimations by comparing them with findings from other studies.

2. Combining survey data and vital statistics

2.1 German vital statistics

German vital statistics explicitly distinguish non-marital (*nicht-ehelich*) and marital (*ehelich*) births. Marital and non-marital births are defined according to the German civil code (*Bürgerliches Gesetzbuch* § 1591f.). Non-marital births are basically births to women who are not married when they have a child. In addition, non-marital births also include births to women who are divorced or widowed and who have a child with a new partner to whom they are not married. Accordingly, marital births are births to women who were married when they gave birth. For non-marital births, only the age of the woman is recorded, but no information on the order of the birth is available. The way the order of a marital birth is recorded is rather complicated, so we explain it in more detail below.

Marital births are assigned according to the order in the current marital union (*in der bestehenden Ehe*). One would expect that with each new marriage, the “birth parity clock” is set to zero. But this is not always the case. If the woman has a first child, separates from her partner, finds a new partner and has another child, the new child is counted as the first child in the current marital union. However, if a woman has a first child, gets married and has a second child with the same partner, the second child is counted as the second child in the current marriage. This means that the marital birth distribution gives primarily the order of the birth in the current

partnership.⁴ This also means that in the very large majority of cases, marital births are assigned according to their biological order. The only cases which are not classified by biological order are when a woman has a child, splits up with her partner, gets married and has another child after getting married to a new partner.

In the following, we “distribute” non-marital births to the different birth parities. For marital births, though, we use the given parity distribution. We assume here that in the large majority of cases the birth order given for marital births is the biological one.⁵ Since we do not correct the distribution for marital births, we expect that we slightly underestimate the percentage of childless women and overestimate the percentage of higher order births.

2.2 Estimation procedure

The aim of this paper is to estimate parity specific birth rates for West Germany for the period 1985-1995. Clearly, once the number of births is obtained, rates can easily be estimated by using the population at risk of childbirth. Therefore, our main concern is to obtain the number of births by age of the mother and order of the birth. It should be pointed out that we use period data, but not cohort data. In other words, we want to obtain the number of births by the age of the mother and order of birth in a given year.

The German Statistical Office provides the total number of births by age of the woman (${}_nB_x$). Additionally, they provide the number of non-marital births by the

age of the woman (${}_nN_x$) and the number of marital births by the age of the woman and the order of birth in the current marital union (${}_nM_x^j$). Of course, non-marital births and marital births add up to the total number of births:

$$(1) \quad {}_nB_x(t) = \sum_{j=1}^k {}_nM_x^j(t) + {}_nN_x(t) \quad \text{for} \quad \begin{array}{l} t = 1985, \dots, 1995 \\ n = 1 \\ x = 15, \dots, 45 \\ j = 1, \dots, k. \end{array}$$

In order to obtain the number of births by biological order (${}_nB_x^j$), we have to re-weight the distribution of non-marital births. In other words, we must find a system of weights that allows us to “redistribute” non-marital births to the different birth parities. (As said before, for marital births, we do not apply any weights.) If μ_j is the probability of a non-marital birth being a birth of order j , we obtain the following relationship:

$$(2a) \quad \hat{B}^1 = \mu_1 N + M^1$$

$$(2b) \quad \hat{B}^2 = \mu_2 N + M^2$$

$$(2c) \quad \hat{B}^3 = \mu_3 N + M^3$$

$$(2d) \quad \hat{B}^{4+} = \sum B - [\hat{B}_1 + \hat{B}_2 + \hat{B}_3]$$

(Note: Subscripts for age and period are omitted for the improved readability of the equations.)

2.3 The survey data (SOEP)

As explained above, we are using the German Socio-Economic Panel (SOEP) to estimate our system of weights (denoted as μ_j in the equations). The SOEP is a representative household panel for Germany. The first survey was conducted in 1984 and since then individuals have been re-interviewed on an annual basis. In 1984, the SOEP contained two sub-samples, namely the “West German sample”, which is representative of all Germans living in private households in 1984, and a sample of foreigners living in Germany in 1984. Since 1984, the SOEP has been extended by several other sub-samples (e.g., by an immigrant sample, an East German sample, a refreshment sample). For this analysis, we only use the two first samples, respectively the “West German sample” and the “foreigner sample”.⁶ The major aim is to estimate a system of weights that can be used for the whole period of 1985-1995. Therefore, we are only interested in non-marital births that happened within this time frame. Altogether, there are 211 non-marital births in the sample, 147 are first births, 47 second and 17 third order births.⁷

Using a multinomial logit model, we estimate the probability of whether a non-marital birth is a first, second or third order birth. This probability clearly depends on the age of the woman. To allow the age variable to vary more flexibly, we insert it as a quadratic term, too. We also insert the calendar year into the regression to allow for potential time trends. Table 1 displays the results from the multinomial logit model on the probability of having a first, second or third order birth. The coefficients from the model are then used to obtain μ_j , the respective predicted probability of whether a non-marital birth is a first, second or third order birth.

In the Appendix of this paper, we display the vital statistics (Table 5 –Table 10) and the estimated number of births by the age of the woman (Table 11 –Table 14). We furthermore display some key fertility rates for the period 1960-1995 (Table 15 – Table 18). For the period 1960-1984, the data comes from Birg et al. (1990). For the period 1985-1995, we employ our own estimations. In the following, we use these indicators to describe some major fertility trends in West Germany for the period 1960 until 1995.

Table 1: Multinomial logit model on first, second and third birth probability

	b	exp(b)	t	
Second birth				
Intercept	-3.82	0.02	-0.60	
Age	0.20	1.23	-0.27	
Age squared	0.00	1.00	-0.27	
Year	-0.02	0.98	0.65	
Third birth				
Intercept	-20.87	0.00	-2.03	**
Age	0.21	1.23	-0.14	
Age squared	0.00	1.00	1.70	*
Year	0.16	1.17	0.42	
Sample size				
First births	147			
Second births	47			
Third births	17			
Total	211			
Notes: (1) Method: Multinomial logit model (2) Dependent variable: first, second or third order birth; reference category: first birth (3) Population: only women who had a non-marital birth in the period 1985-1995				
Source: SOEP 1999 (own estimations)				

3. Fertility trends in West Germany (1960-1995)

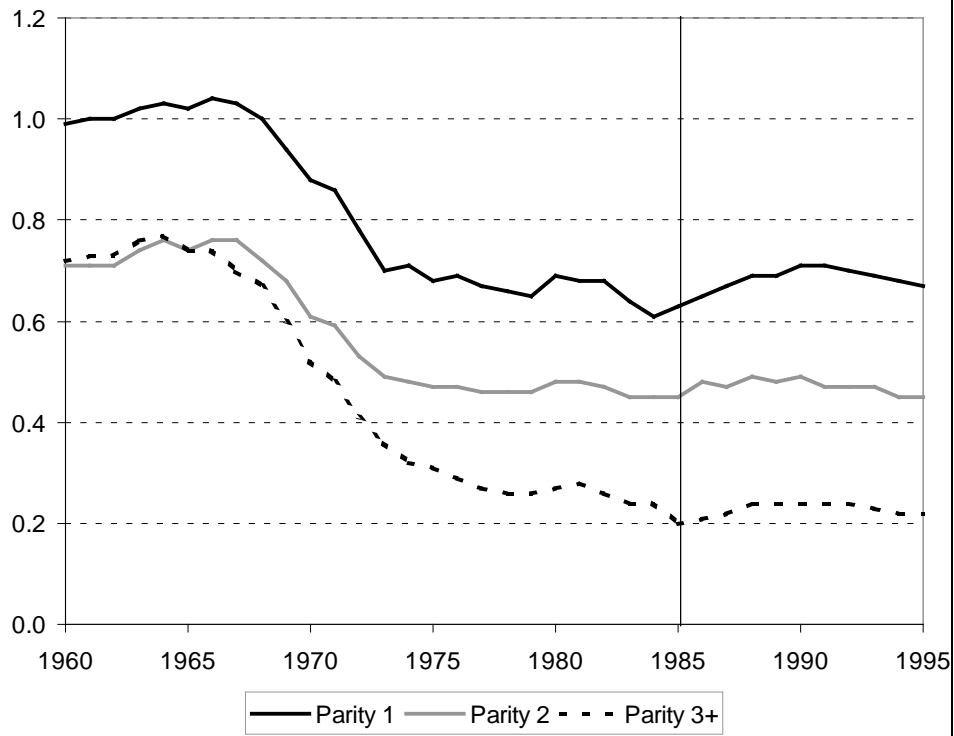
Figure 1 displays the total fertility rate for West Germany for the period 1960 until 1995. Since the 1960s, the TFR in Germany has, similar to other European countries, steadily declined. While it was around 2.5 in 1965, it was down to 1.5 only ten years later. Since the middle of the 1970s, West Germany's TFR has only fluctuated modestly and it seems to have now stabilized at a level of below 1.5.

Since the figure distinguishes by birth parities, one can make inferences about the extent to which fluctuations in the TFR can be attributed to the different birth orders. The figure suggests that the fertility decline of the early 1960s was primarily a decline in third and higher order births. In the late 1960s, the TFR for first births declined from 1.0 in 1965 to 0.7 in 1975, where it has remained ever since.

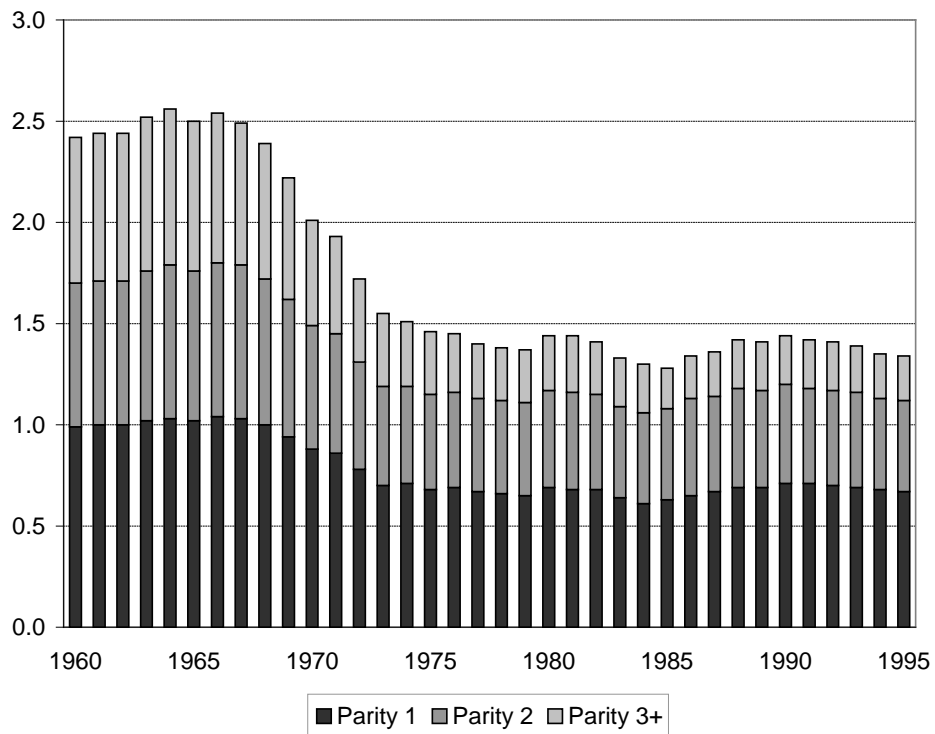
As stated earlier, for the period 1960-1984 we use estimations conducted by Birg et al. (1990) and for the period 1985-1995 we employ our own estimates. As can be depicted from Panel 2 in Figure 1, there is a sizeable increase in the TFR for first births and a decline in the TFR for third and order births in 1985 when we stack together both time series. The fluctuations in this graph might be partially related to the fact that different methods were used before and after 1985. However, for the year 1985 (where we have data from both sources), Birg et al. (1990) estimate a TFR of 0.61 for first births. We estimate a TFR of 0.63, which is only a difference of 0.02.

Figure 1: TFR by birth parities

Panel 1: TFR by birth parities



Panel 2: TFR by birth parities (cumulated)



Source: Birg, et al. (1990), own estimations

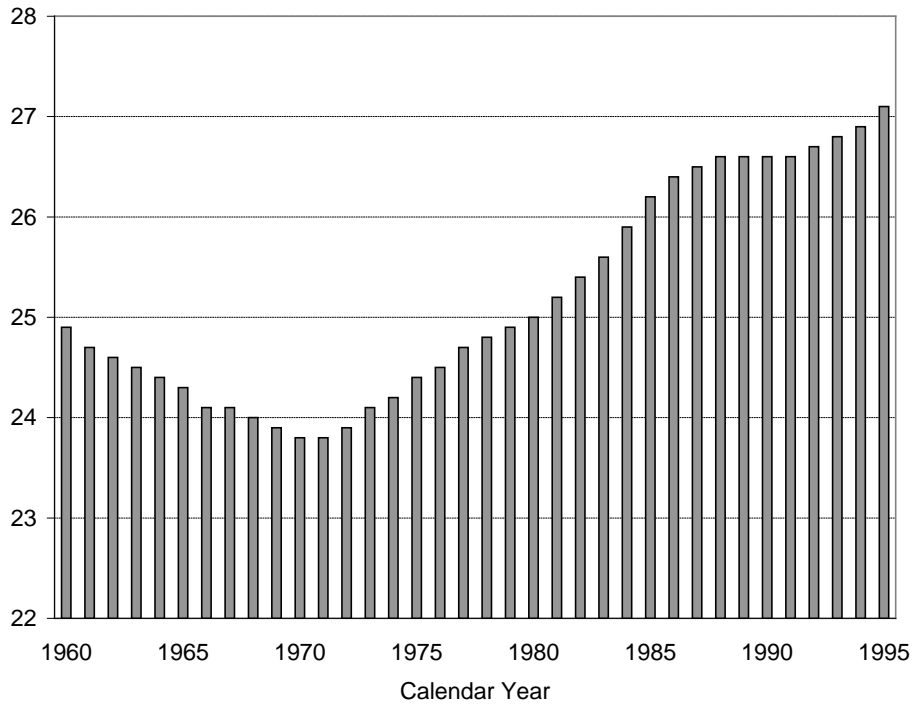
Age at first birth

Panel 2 in Figure 2 displays the development in the mean age at first birth by calendar year. Since the 1970s, the age at first maternity has steadily increased in West Germany. While the mean age at first birth was still age 24 in the 1970s, it had increased to age 27 by the middle of the 1990s.

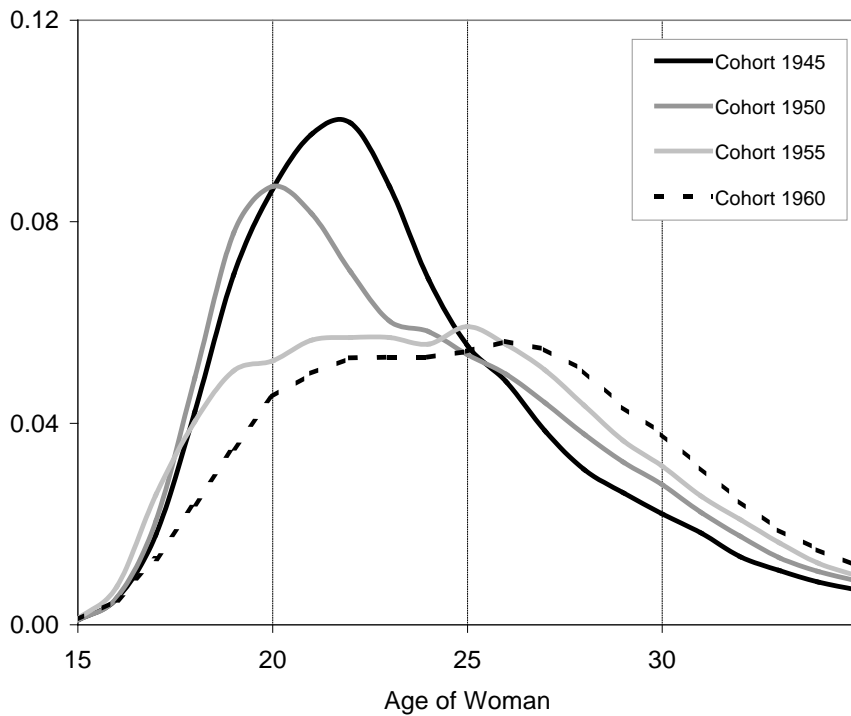
From the cohort perspective, the cohorts born around 1950 have started postponing first motherhood, compared to their predecessors (see also Table 17 in the Appendix). This increase in the age at first birth was accompanied by a substantial increase in the variance around the mean age at first parenthood. This aspect can be depicted from Panel 2 in Figure 2, which displays the age specific fertility rates for the birth cohorts 1945, 1950 and 1955. While the age specific fertility rate for the cohort 1945 had a maximum age of 22, the one for the cohort 1955 is so flat that no maximum can clearly be distinguished. In other words, a characteristic feature of the current West German “fertility regime” is not only the relatively high age at first birth, but also a substantial variance around the mean age at first maternity.

Figure 2: Age at first birth and age specific fertility rate

Panel 1: Mean age at first birth (measured at age 35)



Panel 2: Age specific fertility rate (first birth)

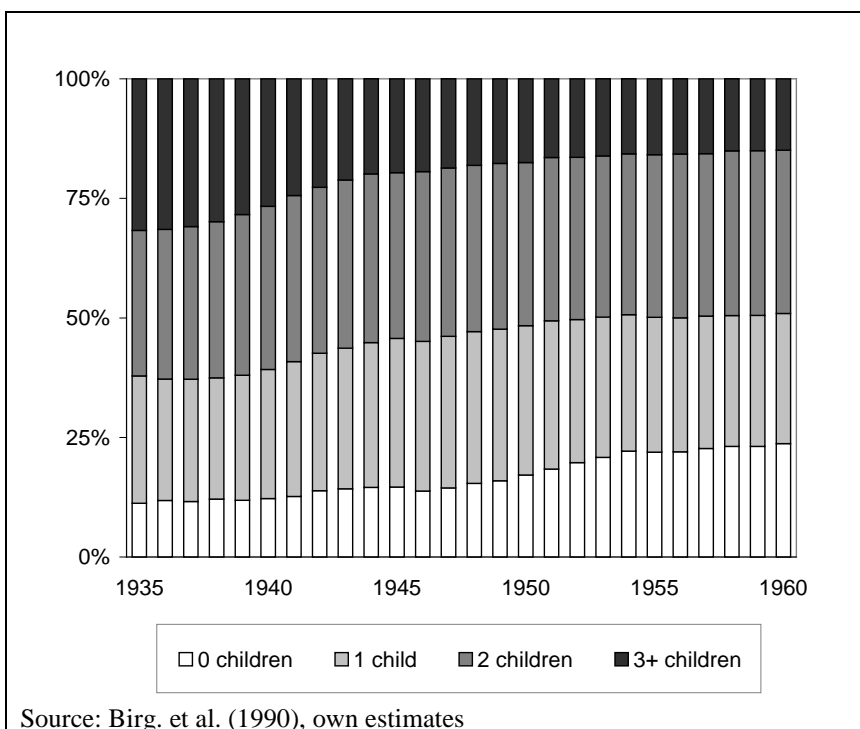


Source: Birg, et al. (1990), own estimations

Family Size

In Figure 3, we display the family size distribution for the cohorts 1935–1960. The most remarkable aspect this figure reveals about West German fertility is the steady increase in the percentage of childless women. For the birth cohort 1950, childlessness (at age 35) amounts to only 17 percent and increases to 24 percent for the cohort 1960. The percentage of couples with exactly one or two children remains relatively stable over the birth cohorts.

Figure 3: Family size at age 35 by birth cohort



4. Reliability of results

4.1 Confidence intervals

A crucial question in this context concerns the reliability of our estimations. As previously mentioned, Handcock et al. (2000) combined survey and register data, showing how the sampling error of their survey data could be reduced by this procedure. In our approach, we started with German vital statistics and combined them with survey data. In order to get an idea of the sampling error, we calculated the mean age at first birth for the time period 1985-1995. By means of bootstrapping, we estimated the sampling error involved.⁸

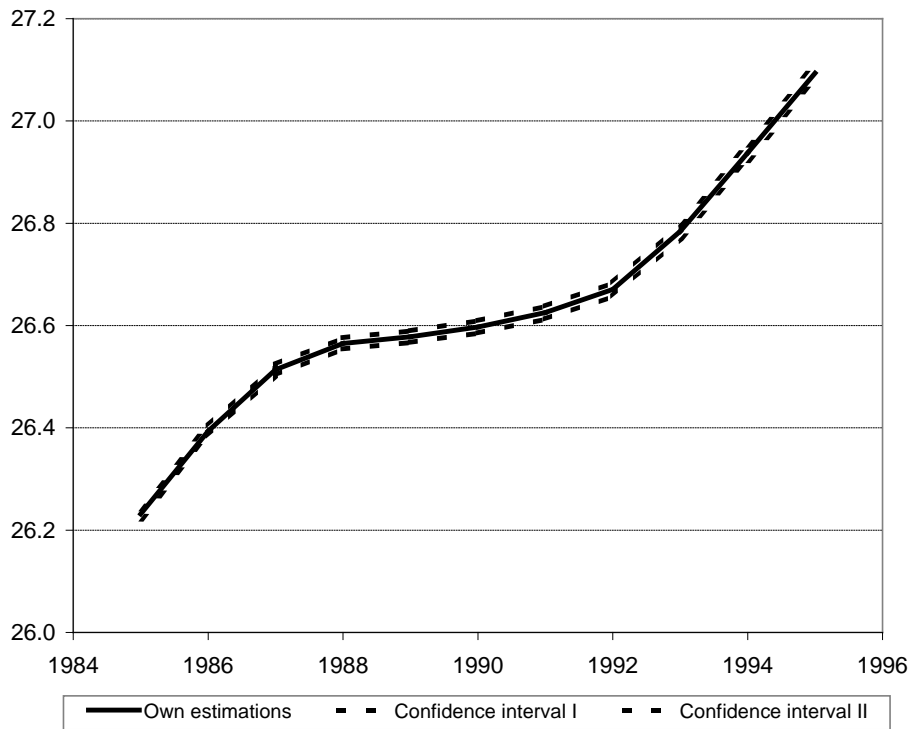
In Panel 1 Figure 2, we display the mean age at first birth and the 99-percent confidence interval. The confidence interval (dotted line) is with roughly 0.02 years very narrow, suggesting that the sampling error involved is indeed very small. However, there are other aspects which might also contribute to deviations from the mean age at first birth in the total population. For example, we assumed that marital births were classified by their biological order, which is not always the case. Furthermore, we estimated a multinomial logistic regression with age, age squared and calendar time as covariates. Yet, we did not check how sensitive the results are regarding the specification of the equation. In order to check how responsive our results are regarding the algorithm one uses for distributing the non-marital births to the different birth orders, we applied two different “rules of thumbs”. In a first step, we assumed that 50 percent of all non-marital births are first births and the others of higher order (Simulation I). This is similar to the procedure applied by Dorbritz and Schwarz (1996) (see also below). In a second step, we assumed that until age 25 all

non-marital births are first births, thereafter they are assumed to be of higher order (Simulation II). Both simulations provide very different results from our initial estimations. For both simulations, there is a difference in the age at first birth of roughly 0.3 years. In other words, while the sampling error involved with combining SOEP data and vital statistics is relatively small, the results are fairly responsive to the specification of the equation, i.e. the algorithm one uses to distribute the non-marital births to the different birth orders.

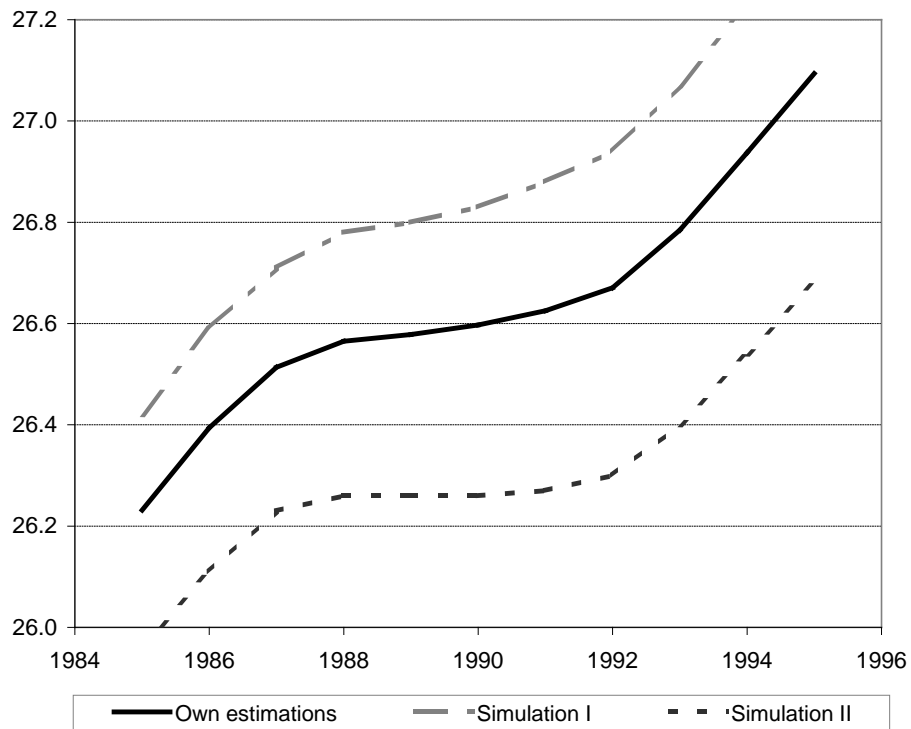
Based on these considerations, one might conclude that our attempt to combine survey data and vital statistics was quite a failure. However, one has to take into consideration that not much parity specific fertility information is available for Germany in the first place. The question not only is how reliable our results are, but also whether there are other statistical sources which provide superior information. In the next step, we compare our estimates to the results from frequently used survey data sets. Instead of the mean age at first birth, we now use the distribution of the final number of children by birth cohort.⁹

Figure 4: Estimated mean age at first birth and simulations

Panel 1: Own estimations and 99% confidence interval



Panel 2: Simulations



Note *) Simulation I: Assumption that 50 percent of all non-marital births are first births. **) Simulation II: Assumption that all non-marital births are first births up to age 25 and higher order births thereafter.

Source: own estimations

4.2 Comparison with estimations from survey data

German micro-census

In the first step, we compare our estimations with results from the scientific use file of the German micro-census for the year 1997. The major drawback of the German micro-census is that the “fertility history” is not surveyed. The age at childbirth and the order of the children can only be inferred from the age and number of the children who still live in the household of the parents. Naturally, the older a respondent, the more likely it is that the respondent’s children have already moved out of the parental home. Therefore, for the analysis of fertility patterns, the micro-census can only be used for younger respondents. Nevertheless, it is common to use the micro-census and calculate fertility indicators for women up to age 39 (see e.g., Schwarz 1999, Schwarz 2002).

Below, we display the family size of the cohorts 1958 to 1960 whose members were ages 37-39 at the time of the survey. There is a large difference in the percentage of childless women between the micro-census and our own estimations. Since we did not adjust the marital birth distribution, it is possible that we underestimate the percentage of childlessness. However, it is just as likely that the micro-census overestimates the percentage of childless women. As stated before, only children who are still living in the household of the respondents are recorded in the German micro-census. This might already be a problem for the cohorts under consideration here.

Table 2: Family size by birth cohort, comparison with the 1997 micro-census

	Cohort		
	1958	1959	1960

Micro-census			
Parity 0	27%	26%	27%
Parity 1	25%	24%	24%
Parity 2	35%	35%	35%
Parity 3+	13%	15%	14%
Total	100%	100%	100%
Own estimations			
Parity 0	23%	23%	24%
Parity 1	27%	27%	27%
Parity 2	34%	34%	34%
Parity 3+	15%	15%	15%
Total	100%	100%	100%
Difference			
Parity 0	+4	+3	+3
Parity 1	-2	-3	-3
Parity 2	+1	+1	+1
Parity 3+	-2	0	-1
Notes: (1) Own estimations: family size measured at age 35 (2) Micro-census: family size measured at age 35 as well			
Source: own estimations			

Family and Fertility Survey

In the second step, we compare our estimations with the family size distribution calculated with data from the German Family and Fertility Survey (FFS). The German FFS was surveyed in 1992 and since then it has frequently been employed to calculate fertility indicators for Germany (see e.g., Dorbritz and Schwarz 1996, Hullen 1998). The FFS contains roughly 10,000 German respondents who are aged 20 to 39 at the date of the interview; i.e., most of the respondents are still of childbearing age at censoring. To make the FFS comparable with our estimations, we censor our data in the year 1992 as well.

Table 3 displays the family size distribution calculated on the FFS. There are huge differences between our estimations and the ones from the FFS. In contrast to the results from the micro-census, there is no general pattern. For the cohort 1955, we underestimate the percentage of women with two children and for the cohort 1956

we overestimate this percentage.

Again, it is difficult to assess whether our estimations or those from the FFS are closer to the “true” fertility distribution in West Germany. The major advantage of the FFS over the micro-census is that the complete fertility history of all women in the sample are surveyed. However, the FFS contains other serious drawbacks. First, the FFS is not representative for the entire population living in Germany since foreign nationals are not surveyed. Second, although the FFS contains almost 10,000 respondents, there are only about 150 women per West German cohort. In other words, the sample size of the FFS is relatively small for displaying the family size by single birth cohorts.

Table 3: Family size by birth cohort, comparison with the FFS 1992¹⁰

	Cohort				
	1953	1954	1955	1956	1957
FFS					
Parity 0	18%	16%	19%	17%	21%
Parity 1	23%	31%	22%	30%	30%
Parity 2	45%	41%	46%	32%	36%
Parity 3+	14%	12%	14%	20%	14%
Total	100%	100%	100%	100%	100%
Own estimations					
Parity 0	18%	20%	20%	21%	23%
Parity 1	29%	28%	28%	28%	28%
Parity 2	35%	35%	35%	35%	34%
Parity 3+	18%	18%	17%	17%	16%
Total	100%	100%	100%	100%	100%
Difference					
Parity 0	0	-4	-1	-4	-2
Parity 1	-6	3	-6	2	2
Parity 2	10	6	11	-3	2
Parity 3+	-4	-6	-3	3	-2
Note: (1) For the FFS sample weights were applied. (2) Censoring is the year 1992, i.e. , for the cohort 1953 this is age 39.					
Source: own estimations					

4.3 Comparison with estimations from the Statistical Office

In the last step, we compare our estimations with data provided by the German Statistical Office. More precisely, we use the family size distribution provided by Dorbritz and Schwarz (1996). Unfortunately, Dorbritz and Schwarz (1996) do not explain their estimation technique in great detail. They note, however, that their estimations are based on a study conducted by Birg and Flöthmann from the year 1993. They furthermore explain that they distribute the non-marital birth on different birth parities by applying a “rule of thumb”, i.e., they assume that 50 percent of the non-marital births were first, 40 percent second and 10 percent third order births (Dorbritz and Schwarz 1996: Footnote 2). Table 4 displays the results from our estimations, the data given by Dorbritz and Schwarz (1996) and the difference between the two. Our estimations on the percentage of women with two children is substantially lower; the percentage of women with three children higher. Both estimations reveal an almost identical pattern of childlessness. Again, the question emerges which of the estimations are closer to the “true” parity distribution in West Germany. Dorbritz and Schwarz (1996) apply a similar procedure as we do, i.e., they distribute the non-marital births on the different birth orders. Therefore, their results should be as sensitive to the algorithm used as our results are.

Table 4: Family size by birth cohort, comparison with estimations by Dorbritz and Schwarz (1996)

	Cohort				
	1940	1945	1950	1955	1960
Dorbritz/ Schwarz					
Parity 0	10%	13%	15%	19%	23%
Parity 1	24%	27%	27%	24%	22%
Parity 2	39%	39%	40%	39%	37%

Parity 3+	27%	20%	19%	18%	18%
Total	100%	100%	100%	100%	100%
Own estimations					
Parity 0	11%	13%	15%	19%	24%
Parity 1	26%	31%	31%	28%	27%
Parity 2	34%	35%	35%	35%	34%
Parity 3+	29%	22%	20%	18%	15%
Total	100%	100%	100%	100%	100%
Difference					
Parity 0	-1	0	0	0	-1
Parity 1	-2	-4	-4	-4	-5
Parity 2	+5	+4	+5	+4	+3
Parity 3+	-2	-2	-1	0	+3
Notes: Own estimations: family size measured at age 40, for the birth cohort 1960 at age 35					
Source: Dorbritz and Schwarz (1996), own estimations					

5. Conclusion

This paper was an attempt to combine German survey data and vital statistics in order to calculate parity specific birth rates for West Germany for the period 1985-1995. It is a response to the very specific German situation, where vital statistics do not provide parity specific fertility rates. From the vital statistics, we used the number of non-marital births and the number of marital births by order in the current marriage. From the German-Socio Economic Panel, we obtained weights to distribute non-marital births on the different birth parities. Based on our estimations, we calculated several fertility indicators for West Germany. Major aspects, these indicators show, can be summarized as follows:

- The mean age at first birth has constantly increased since the 1970s. While it was still age 24 in the 1970s, it has increased to age 27 in the 1990s.
- From the cohort perspective, there is a steady postponement of first parenthood for the cohorts born after 1950. Along with the increase in mean age at first birth, the variation in the age at first maternity increased substantially.
- The percentage of childlessness is at exceptionally high levels in West Germany. For the birth cohort 1950, we estimate that 17 percent of the women are childless at age 35. For the birth cohort 1960, this applies to 24 percent.
- The percentage of women with three or more children has declined from 30 percent for the cohorts born around 1940 to 15 percent for the cohorts born around 1950.
- Compared to the drastic increase in childlessness, the percentage of women with

one or two children has remained relatively stable over the birth cohorts.

Roughly 30 percent have only one child and 35 percent have two children.

Although our estimations are in line with other findings on the West German fertility pattern, we are reluctant to draw strong inferences from them. We tried to validate our estimations by comparing them to survey data and to other estimations. The external validation shows considerable differences between our estimations and the ones from other studies. The other studies do not provide a consistent picture, either. Without an indicator for whether the estimations are representative and reliable, it is hard to tell which one of them is closest to the “true” fertility distribution in Germany. So far, only little effort has been undertaken to compare the various, often contradictory results and to assess how sensitive they are regarding the methods applied and the data sets used.

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Appendix

Vital Statistics

Table 5: Female population (West Germany) (in 1,000)

Age	Calendar year										
	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
15	403	373	338	309	297	298	302	305	308	318	332
16	440	404	375	340	314	305	305	308	310	312	322
17	473	441	408	375	344	321	312	313	315	316	317
18	495	474	446	410	381	354	331	322	321	322	322
19	510	497	483	449	418	394	367	343	333	329	330
20	519	513	503	484	459	434	410	382	356	342	338
21	525	522	512	506	494	475	449	425	394	365	351
22	521	528	520	519	516	510	489	462	435	402	373
23	510	524	526	526	529	531	522	501	472	442	408
24	501	513	522	531	536	544	543	533	510	478	448
25	490	503	511	527	540	550	554	553	542	515	482
26	474	492	499	516	535	554	560	563	561	546	519
27	458	476	488	506	524	549	563	568	570	564	549
28	446	459	472	494	514	537	557	570	574	574	567
29	435	447	458	478	502	526	545	564	576	578	576
30	427	436	445	462	485	513	533	551	570	579	580
31	423	428	434	451	469	496	520	540	557	573	581
32	420	424	425	439	457	479	503	527	545	560	575
33	416	420	418	429	446	467	485	509	532	548	562
34	416	417	416	423	435	455	473	491	514	535	550
35	418	416	417	420	428	443	460	478	495	516	537
36	414	418	418	419	424	436	449	465	482	498	519
37	397	414	424	421	423	432	441	453	469	485	500
38	374	397	422	425	425	430	436	445	457	472	487
39	342	374	401	421	428	431	434	440	449	460	474
40	335	342	385	404	424	434	435	438	444	451	462
41	372	335	333	379	406	429	438	438	441	446	453
42	396	372	322	346	381	410	432	441	441	443	447
43	414	396	384	337	347	385	413	435	443	443	444
44	462	413	401	373	338	351	387	415	437	445	444
45	500	462	424	397	375	341	352	388	417	438	445

Notes: (1) Population: midyear population (2) Age: difference between year of birth and calendar year: e.g. age 15 in the calendar year 1995 relates to women born in 1980.

Source: Own calculations based on Statistisches Bundesamt (1997b)

Table 6: First births in marital union (West Germany)

Age	Calendar year										
	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
15	30	37	50	54	67	50	55	51	52	41	28
16	271	310	357	387	467	394	350	328	283	266	216
17	1060	1033	1174	1143	1250	1167	1175	1035	913	835	747
18	2733	2650	2888	2868	2902	2926	2950	2809	2322	2161	1931
19	6393	5812	5735	5993	6002	6072	5957	5785	5241	4641	4228
20	10044	9486	9107	9148	9293	9154	9224	8759	8031	7287	6503
21	13901	13198	13007	12116	12154	12534	11863	11424	10149	9275	8544
22	17593	17556	16699	16427	14914	15380	14876	13822	12590	11130	10179
23	20837	21299	20991	20261	19379	18977	17955	16712	14738	13486	12079
24	24005	24080	24463	25007	23658	23923	21927	20198	18588	16174	14504
25	25146	27154	26786	28329	27302	27915	26136	23773	22748	20210	17735
26	24705	26529	27572	29014	29348	30819	29170	27676	26110	23892	21644
27	22263	24524	25745	27783	27522	29948	30075	28420	28028	26056	24461
28	19201	21115	22709	24155	24897	27161	27926	28015	27570	27141	26076
29	16099	17492	18902	20579	21220	23663	24146	24863	25400	25755	25545
30	13038	14377	15673	16508	17397	19136	20509	20903	22683	23322	23258
31	10305	11061	12240	13360	13711	15263	16205	17167	17767	18967	19680
32	7675	8682	9247	10124	10389	11494	12408	13149	13822	14677	15686
33	5954	6484	7087	7442	7951	8945	9221	9758	10476	11371	11828
34	4366	4968	5314	5854	5909	6617	7113	7625	7975	8680	9417
35	3579	3671	4122	4281	4638	4951	5467	5718	6024	6457	7048
36	2603	2854	3092	3394	3497	3695	3930	4360	4515	4681	5336
37	1773	2179	2302	2334	2546	2623	2889	3019	3227	3491	3638
38	1194	1400	1588	1729	1832	1993	2098	2284	2288	2484	2796
39	803	929	1063	1301	1269	1329	1497	1526	1657	1787	1915
40	511	612	696	780	920	1008	982	1044	1129	1116	1249
41	407	342	422	500	579	623	688	703	747	725	799
42	271	271	224	308	318	354	406	443	424	435	452
43	166	151	152	135	156	163	204	271	260	247	292
44	90	82	67	95	73	108	111	126	123	157	138
45	50	50	38	53	41	44	43	65	60	58	75

Notes: (1) Births that occurred before age 15 and after age 45 are omitted. (2) Age: difference between year of birth and calendar year

Source: 1985-1990: Statistisches Bundesamt (1997b), 1991-1995: Statistisches Bundesamt (1993,1994,1995,1996,1997a)

Table 7: Second births in marital union (West Germany)

Age	Calendar year										
	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
15	0	0	0	3	1	3	2	2	2	3	3
16	19	13	20	20	19	22	16	19	18	10	10
17	60	77	96	111	102	115	116	92	85	66	67
18	237	286	323	392	378	435	419	410	335	251	245
19	895	774	869	928	1036	1065	1004	1014	912	726	713
20	2196	2143	1960	2033	2163	2275	2202	2152	1999	1752	1563
21	4198	4048	3712	3707	3699	3850	3880	3739	3647	3377	3030
22	6726	6758	6198	6176	5499	5963	5850	5638	5463	4992	4654
23	9568	9775	9029	8821	8485	8321	7828	7862	7527	6993	6264
24	12475	12645	12097	12248	11255	11584	9981	9911	9693	8568	8211
25	15442	16075	15030	15327	14963	14860	13492	12756	12401	10987	10162
26	17036	18332	17941	18370	17992	18296	16713	16106	15088	13391	12924
27	17755	19555	19538	20277	19824	21176	20105	19189	18803	16281	15406
28	17688	19387	19906	21178	21130	22397	22001	21703	21569	19209	18118
29	16527	18381	18631	20088	20822	22526	21779	22092	22645	21088	20713
30	14776	16713	16832	18744	19129	20786	21166	21032	22577	21534	21121
31	13040	14010	14529	15771	16162	18091	18250	18865	19953	19620	20437
32	10665	11947	11915	13332	13693	15033	15230	16138	16961	16858	18233
33	8545	9231	9692	10410	11022	12155	12274	12867	13672	14215	14985
34	6661	7114	7431	8019	8272	9262	9525	9939	10683	10919	11745
35	5141	5349	5692	6087	6315	6935	7264	7446	7922	8253	8989
36	3652	3910	4071	4375	4629	5016	5095	5379	5820	5797	6420
37	2420	2776	2928	3050	3428	3408	3685	3664	4093	4228	4486
38	1444	1751	1997	2145	2200	2381	2380	2638	2652	2881	3167
39	942	1142	1266	1435	1495	1600	1695	1749	1771	1916	2063
40	533	644	806	865	971	1087	1058	1193	1187	1291	1281
41	410	345	437	506	555	639	695	683	658	731	769
42	278	285	225	275	296	341	380	387	401	409	439
43	142	144	158	126	169	169	184	208	236	219	221
44	76	85	74	77	83	85	78	95	119	134	114
45	43	41	40	42	43	27	38	47	49	58	62

Notes: see Table 6

Table 8: Third births in marital union (West Germany)

Age	Calendar year										
	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
15	0	0	0	0	0	0	0	0	0	1	0
16	3	1	0	2	1	1	3	1	2	2	0
17	2	4	4	7	7	8	9	7	5	10	2
18	19	17	27	30	44	45	32	47	31	16	24
19	61	63	85	99	119	108	112	133	135	82	67
20	218	218	196	235	269	320	330	328	260	282	204
21	535	558	523	483	558	678	723	690	638	563	498
22	1106	1131	1082	1044	1022	1157	1082	1199	1084	1025	884
23	1863	1919	1920	1916	1707	1789	1701	1858	1808	1687	1503
24	2744	2794	2884	2928	2824	2918	2530	2681	2622	2438	2216
25	3827	4061	3968	4138	4078	4167	3815	3573	3483	3116	2933
26	4716	5285	5095	5372	5476	5543	5174	4826	4281	3968	3775
27	5220	6018	6484	6440	6414	6921	6603	6334	5900	5028	4785
28	5847	6669	7267	7930	7697	8052	7854	7621	6969	6249	5669
29	6643	7226	7518	8360	8835	9087	8656	8625	8380	7568	7073
30	6614	7530	7789	8509	8837	9913	9360	9235	9201	8504	8010
31	6825	7457	7920	8606	8809	9816	9850	9710	9534	9010	8762
32	6463	7144	7635	8451	8258	9183	9484	9876	9413	8852	8982
33	6194	6464	7014	7374	8074	8480	8581	8671	9197	8563	8484
34	5377	5907	6364	6746	6797	7649	7521	7754	7927	7822	7947
35	5106	5180	5529	5866	5852	6678	6462	6629	6659	6487	6973
36	4190	4596	4475	4845	4918	5301	5318	5582	5456	5558	5539
37	3200	3630	3908	3827	4049	4059	4380	4418	4457	4209	4292
38	2374	2663	2947	3286	3074	3419	3245	3294	3274	3244	3242
39	1575	1834	2099	2301	2261	2381	2415	2411	2435	2291	2497
40	1022	1256	1376	1571	1719	1869	1711	1880	1687	1720	1656
41	952	730	943	949	1092	1205	1273	1127	1155	1179	1163
42	626	650	560	616	643	740	760	852	732	767	728
43	375	376	422	358	379	425	475	453	499	420	405
44	286	239	236	233	208	223	231	253	233	272	211
45	171	128	140	116	143	126	109	102	157	125	147

Notes: see Table 6

Table 9: Fourth and higher order births in marital union (West Germany)

Age	Calendar year										
	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
15	0	0	0	0	0	0	0	0	0	1	0
16	1	0	0	0	0	0	1	0	0	0	0
17	0	1	0	1	1	2	0	0	0	2	1
18	2	1	2	4	4	2	2	3	5	2	5
19	3	5	10	12	12	13	15	14	17	7	6
20	27	20	20	27	32	46	39	34	35	42	29
21	52	70	52	62	80	96	112	109	115	86	79
22	156	158	118	160	131	177	173	210	205	195	147
23	247	290	318	306	280	279	277	350	350	321	280
24	473	456	519	555	522	521	512	525	563	531	472
25	686	801	761	815	885	863	805	807	737	685	653
26	948	1070	1054	1137	1173	1255	1126	1136	975	919	832
27	1131	1254	1505	1350	1436	1612	1561	1582	1421	1260	1131
28	1297	1427	1614	1879	1737	1908	1839	1880	1799	1489	1331
29	1612	1672	1764	2035	2245	2256	2131	2265	2120	1961	1763
30	1648	1916	1862	2110	2322	2656	2519	2521	2460	2297	2057
31	1821	1887	2137	2251	2400	2637	2758	2674	2564	2365	2285
32	1806	2080	2220	2374	2326	2690	2691	2883	2682	2486	2501
33	1881	1959	2122	2297	2447	2561	2693	2697	2943	2554	2457
34	1740	1910	2047	2182	2304	2623	2417	2518	2585	2575	2407
35	1900	1819	1931	2098	2064	2376	2303	2296	2380	2148	2378
36	1630	1841	1714	1843	1868	2049	2060	2152	2015	2061	1989
37	1370	1567	1614	1460	1629	1651	1788	1839	1786	1647	1690
38	1104	1187	1340	1512	1377	1471	1402	1441	1463	1429	1370
39	814	882	1000	1106	1133	1119	1131	1157	1131	1065	1135
40	538	669	705	846	913	1019	878	914	827	865	798
41	537	439	527	535	577	662	722	595	615	622	621
42	387	406	342	365	407	443	430	522	410	463	380
43	254	236	253	245	232	262	311	279	305	248	251
44	174	166	154	152	145	146	164	166	149	154	132
45	124	89	95	82	101	87	82	65	116	76	99

Notes: see Table 6

Table 10: Non-marital births (West Germany)

Age	Calendar year										
	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
15	259	176	148	183	184	185	186	208	221	234	202
16	633	550	541	542	533	593	633	704	619	657	677
17	1525	1533	1341	1487	1316	1315	1406	1527	1488	1406	1407
18	2812	2609	2406	2447	2342	2490	2471	2589	2600	2414	2296
19	3604	3528	3496	3557	3461	3658	3545	3407	3429	3206	3335
20	4286	4564	4314	4366	4194	4392	4581	4260	3997	3945	3878
21	4550	4542	4693	4772	4609	4894	4727	4860	4513	4041	4238
22	4220	4632	4526	4903	4934	5087	5033	4906	4740	4474	4218
23	4041	4416	4651	4718	4841	5121	5281	5053	4797	4747	4345
24	3822	4200	4491	4741	4679	5044	5131	5249	5081	4790	4788
25	3408	3965	4157	4600	4669	4982	5235	5325	5336	5052	4934
26	3069	3592	3799	4275	4617	5118	5280	5419	5532	5399	5254
27	2706	3200	3517	4122	4134	4736	5178	5181	5433	5401	5426
28	2516	2778	3182	3618	3937	4351	4849	5142	5270	5474	5664
29	2202	2536	2734	3214	3387	3941	4184	4811	4976	5090	5521
30	2023	2215	2443	2835	3217	3624	4032	4313	4786	5111	5096
31	1798	2023	2293	2565	2672	3155	3487	4036	4216	4554	4906
32	1442	1743	1859	2157	2398	2637	3038	3357	3637	4042	4305
33	1299	1467	1614	1907	1987	2235	2420	2830	3152	3404	3763
34	1068	1240	1366	1551	1679	1950	2134	2266	2652	2836	3109
35	992	1066	1198	1339	1402	1590	1716	2002	2164	2442	2655
36	754	869	943	1057	1149	1374	1496	1564	1774	1893	2169
37	585	666	815	824	968	1047	1238	1286	1351	1527	1614
38	453	530	599	730	769	873	866	972	1051	1161	1290
39	322	386	412	498	570	590	677	724	815	906	942
40	218	293	309	386	413	500	497	550	537	596	679
41	180	153	206	218	245	313	379	384	412	366	450
42	129	146	101	128	134	205	199	243	243	312	267
43	64	68	74	59	90	128	133	145	161	162	187
44	42	37	40	47	40	58	67	74	80	81	99
45	33	17	20	36	26	33	33	30	34	45	49

Notes: see Table 6

Estimations

Table 11: First births (West Germany)

Age	Calendar Year										
	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
15	267	198	185	221	235	218	224	239	251	251	208
16	841	805	843	874	945	925	915	955	832	846	810
17	2411	2390	2360	2457	2411	2324	2408	2370	2207	2051	1956
18	5178	4917	4977	4990	4928	5075	5075	5026	4536	4203	3858
19	9464	8816	8708	9013	8934	9161	8938	8636	8093	7287	6956
20	13614	13285	12693	12770	12763	12774	12983	12234	11269	10455	9585
21	17598	16885	16811	15975	15869	16463	15638	15279	13700	12424	11808
22	20930	21215	20267	20282	18780	19347	18777	17596	16203	14503	13317
23	23939	24684	24549	23859	23056	22845	21917	20471	18270	16938	15192
24	26846	27197	27788	28505	27094	27605	25643	23964	22191	19523	17797
25	27593	29996	29758	31604	30609	31419	29786	27447	26382	23597	20982
26	26829	29010	30188	31944	32494	34279	32705	31261	29718	27353	24943
27	24064	26648	28071	30496	30225	33018	33395	31699	31412	29356	27703
28	20807	22884	24727	26436	27361	29858	30896	31119	30696	30321	29287
29	17445	19037	20560	22516	23245	25994	26589	27627	28205	28559	28506
30	14219	15666	17087	18138	19230	21177	22747	23256	25240	25986	25838
31	11307	12183	13505	14764	15159	16951	18042	19254	19898	21208	22020
32	8440	9602	10223	11246	11623	12833	13924	14790	15557	16551	17616
33	6609	7220	7892	8384	8921	10019	10363	11065	11894	12855	13411
34	4878	5559	5960	6580	6685	7504	8064	8612	9098	9842	10643
35	4030	4153	4659	4875	5251	5634	6189	6539	6885	7395	8028
36	2928	3226	3492	3837	3972	4252	4523	4964	5178	5363	6085
37	2012	2449	2629	2661	2924	3024	3351	3486	3701	4006	4159
38	1369	1604	1816	2003	2115	2308	2403	2616	2634	2851	3185
39	921	1069	1211	1478	1467	1530	1721	1758	1909	2055	2180
40	587	713	801	909	1056	1168	1137	1210	1285	1281	1427
41	466	392	488	569	655	718	799	812	859	820	910
42	311	316	255	346	357	413	461	508	486	511	513
43	185	171	173	152	181	197	239	307	299	284	332
44	102	92	78	108	83	123	127	143	141	174	158
45	59	55	43	62	47	52	51	72	67	67	84

Source: own estimations

Table 12: Second births (West Germany)

Age	Calendar Year										
	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
15	20	13	11	17	14	16	15	16	17	19	16
16	76	61	67	66	64	71	67	75	66	60	60
17	216	232	229	256	228	239	246	230	217	188	187
18	565	586	595	664	633	702	678	676	597	489	466
19	1371	1233	1316	1375	1463	1508	1425	1410	1302	1082	1075
20	2834	2811	2581	2651	2745	2873	2813	2708	2509	2244	2034
21	4957	4793	4469	4463	4415	4596	4585	4448	4290	3938	3603
22	7510	7605	7011	7041	6352	6825	6685	6433	6212	5680	5284
23	10400	10669	9954	9742	9412	9281	8796	8766	8363	7797	6978
24	13343	13582	13081	13267	12240	12623	11014	10941	10663	9456	9070
25	16290	17044	16027	16409	16039	15982	14643	13896	13511	12005	11123
26	17868	19289	18934	19465	19149	19549	17973	17364	16334	14568	14028
27	18550	20478	20533	21420	20944	22429	21439	20486	20120	17546	16629
28	18485	20251	20876	22258	22278	23634	23342	23083	22937	20579	19479
29	17275	19226	19524	21115	21878	23723	23014	23468	24019	22441	22119
30	15509	17500	17682	19709	20197	21957	22430	22340	23976	22969	22489
31	13732	14773	15376	16696	17101	19169	19405	20156	21251	20963	21818
32	11251	12641	12639	14153	14581	15981	16287	17265	18134	18105	19497
33	9100	9845	10353	11172	11794	12997	13155	13859	14732	15307	16132
34	7139	7658	8016	8666	8953	10028	10334	10765	11608	11862	12724
35	5604	5836	6227	6669	6906	7584	7939	8202	8702	9090	9849
36	4018	4323	4508	4851	5131	5596	5703	5988	6478	6463	7140
37	2714	3103	3318	3433	3864	3863	4202	4178	4607	4778	5033
38	1679	2019	2293	2495	2556	2771	2751	3036	3060	3307	3612
39	1114	1343	1475	1680	1766	1870	1991	2051	2094	2254	2392
40	652	800	966	1059	1171	1320	1280	1426	1403	1516	1521
41	511	428	546	618	676	787	867	848	825	871	929
42	352	366	279	342	363	440	471	493	501	529	535
43	179	182	199	157	215	231	246	272	302	282	288
44	101	106	96	102	104	114	109	128	152	165	150
45	63	51	51	61	56	43	54	60	63	75	80

Source: own estimations

Table 13: Third births (West Germany)

Age	Calendar Year										
	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
15	2	2	2	3	3	4	4	5	7	8	8
16	8	8	8	11	11	14	19	23	24	29	33
17	20	24	26	34	35	40	52	61	67	76	80
18	56	58	70	80	100	118	117	150	150	148	167
19	115	123	151	177	209	221	240	279	305	278	306
20	269	295	283	334	379	447	502	522	474	525	500
21	577	598	604	578	655	802	858	877	842	808	821
22	1049	1100	1109	1067	1106	1238	1207	1326	1257	1243	1187
23	1723	1765	1770	1809	1665	1803	1775	1898	1887	1857	1742
24	2384	2484	2547	2597	2560	2720	2400	2609	2567	2460	2380
25	3254	3413	3395	3565	3480	3660	3444	3277	3338	3077	3005
26	3881	4370	4232	4485	4618	4693	4533	4266	3984	3811	3793
27	4199	4916	5174	5357	5289	5723	5566	5358	5211	4604	4615
28	4663	5387	5847	6308	6285	6561	6553	6399	5946	5684	5430
29	5139	5699	5937	6575	6896	7244	7031	7031	7057	6540	6464
30	5074	5753	6105	6639	6831	7669	7371	7366	7571	7219	7101
31	5109	5707	5964	6591	6694	7568	7587	7695	7758	7615	7663
32	4748	5192	5574	6291	6208	6843	7257	7582	7460	7287	7592
33	4401	4621	5041	5281	5873	6238	6285	6505	6929	6836	7060
34	3715	4102	4452	4741	4715	5323	5477	5689	5946	5979	6444
35	3283	3458	3724	3932	3986	4560	4478	4758	4802	5006	5410
36	2623	2839	2867	3139	3222	3489	3553	3782	3894	4042	4250
37	1882	2132	2391	2481	2574	2599	2850	2884	3034	3024	3149
38	1313	1534	1683	1881	1826	2116	2033	2096	2108	2183	2329
39	793	997	1154	1272	1229	1382	1440	1444	1545	1526	1710
40	507	623	714	788	883	956	953	1117	1026	1061	1119
41	435	311	446	451	563	613	647	642	673	688	721
42	254	264	234	274	263	345	383	403	403	420	458
43	129	150	181	124	166	194	201	219	250	235	234
44	117	78	89	90	72	92	86	111	113	150	123
45	51	42	49	41	48	48	37	47	54	68	70

Source: own estimations

Table 14: Fourth and higher order births (West Germany)

Age	Calendar Year										
	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
15	0	0	0	0	0	0	0	0	0	1	0
16	1	0	0	0	0	0	1	0	0	0	0
17	0	1	0	1	1	2	0	0	0	2	1
18	2	1	2	4	4	2	2	3	5	2	5
19	3	5	10	12	12	13	15	14	17	7	6
20	27	20	20	27	32	46	39	34	35	42	29
21	52	70	52	62	80	96	112	109	115	86	79
22	156	158	118	160	131	177	173	210	205	195	147
23	247	290	318	306	280	279	277	350	350	321	280
24	473	456	519	555	522	521	512	525	563	531	472
25	686	801	761	815	885	863	805	807	737	685	653
26	948	1070	1054	1137	1173	1255	1126	1136	975	919	832
27	1131	1254	1505	1350	1436	1612	1561	1582	1421	1260	1131
28	1297	1427	1614	1879	1737	1908	1839	1880	1799	1489	1331
29	1612	1672	1764	2035	2245	2256	2131	2265	2120	1961	1763
30	1648	1916	1862	2110	2322	2656	2519	2521	2460	2297	2057
31	1821	1887	2137	2251	2400	2637	2758	2674	2564	2365	2285
32	1806	2080	2220	2374	2326	2690	2691	2883	2682	2486	2501
33	1881	1959	2122	2297	2447	2561	2693	2697	2943	2554	2457
34	1740	1910	2047	2182	2304	2623	2417	2518	2585	2575	2407
35	1900	1819	1931	2098	2064	2376	2303	2296	2380	2148	2378
36	1630	1841	1714	1843	1868	2049	2060	2152	2015	2061	1989
37	1370	1567	1614	1460	1629	1651	1788	1839	1786	1647	1690
38	1104	1187	1340	1512	1377	1471	1402	1441	1463	1429	1370
39	814	882	1000	1106	1133	1119	1131	1157	1131	1065	1135
40	538	669	705	846	913	1019	878	914	827	865	798
41	537	439	527	535	577	662	722	595	615	622	621
42	387	406	342	365	407	443	430	522	410	463	380
43	254	236	253	245	232	262	311	279	305	248	251
44	174	166	154	152	145	146	164	166	149	154	132
45	124	89	95	82	101	87	82	65	116	76	99

Source: own estimations

Indicators

Table 15: Mean age at birth by birth order and calendar year (West Germany)

Year	First births	Second births	Third births
1960	24.9	28.0	30.5
1961	24.7	27.9	30.5
1962	24.6	27.8	30.4
1963	24.5	27.6	30.3
1964	24.4	27.6	30.2
1965	24.3	27.4	30.2
1966	24.1	27.3	30.1
1967	24.1	27.3	30.1
1968	24.0	27.2	30.1
1969	23.9	27.3	30.3
1970	23.8	27.3	30.3
1971	23.8	27.2	30.3
1972	23.9	27.2	30.3
1973	24.1	27.3	30.3
1974	24.2	27.2	30.1
1975	24.4	27.3	29.9
1976	24.5	27.4	30.0
1977	24.7	27.5	30.0
1978	24.8	27.6	30.0
1979	24.9	27.7	30.0
1980	25.0	27.7	30.1
1981	25.2	27.8	30.2
1982	25.4	28.0	30.4
1983	25.6	28.1	30.5
1984	25.9	28.3	30.6
1985	26.2	28.5	30.7
1986	26.4	28.7	30.7
1987	26.5	28.7	30.7
1988	26.6	28.9	30.8
1989	26.6	29.0	30.9
1990	26.6	29.0	30.9
1991	26.6	29.1	30.9
1992	26.7	29.1	30.9
1993	26.8	29.2	30.9
1994	26.9	29.3	30.9
1995	27.1	29.4	30.9

Source: 1960-1984: estimations by Birg et. al (1990), 1985-1995: own estimations

Table 16: Birth order specific TFR (West Germany)

Year	Parity 1	Parity 2	Parity 3	Parity4+	All
1960	0.99	0.71	0.39	0.33	2.37
1961	1.00	0.71	0.39	0.34	2.46
1962	1.00	0.71	0.39	0.34	2.44
1963	1.02	0.74	0.41	0.35	2.52
1964	1.03	0.76	0.41	0.36	2.54
1965	1.02	0.74	0.40	0.34	2.51
1966	1.04	0.76	0.41	0.33	2.53
1967	1.03	0.76	0.39	0.31	2.49
1968	1.00	0.72	0.38	0.29	2.38
1969	0.94	0.68	0.34	0.26	2.21
1970	0.88	0.61	0.30	0.22	2.02
1971	0.86	0.59	0.28	0.20	1.92
1972	0.78	0.53	0.24	0.17	1.71
1973	0.70	0.49	0.21	0.15	1.54
1974	0.71	0.48	0.19	0.13	1.51
1975	0.68	0.47	0.19	0.12	1.45
1976	0.69	0.47	0.18	0.11	1.45
1977	0.67	0.46	0.17	0.10	1.40
1978	0.66	0.46	0.17	0.09	1.38
1979	0.65	0.46	0.17	0.09	1.38
1980	0.69	0.48	0.18	0.09	1.45
1981	0.68	0.48	0.19	0.09	1.44
1982	0.68	0.47	0.18	0.08	1.41
1983	0.64	0.45	0.17	0.07	1.33
1984	0.61	0.45	0.17	0.07	1.29
1985	0.63	0.45	0.14	0.06	1.28
1986	0.65	0.48	0.15	0.06	1.35
1987	0.67	0.47	0.16	0.06	1.37
1988	0.69	0.49	0.17	0.07	1.42
1989	0.69	0.48	0.17	0.07	1.40
1990	0.71	0.49	0.17	0.07	1.45
1991	0.71	0.47	0.17	0.07	1.42
1992	0.70	0.47	0.17	0.07	1.40
1993	0.69	0.47	0.17	0.06	1.39
1994	0.68	0.45	0.16	0.06	1.35
1995	0.67	0.45	0.16	0.06	1.34

Source: 1960-1984: Birg et. al (1990), 1985-1995: own estimations

Table 17: Mean age by birth order and birth cohort (West Germany)

Cohort	First births	Second births	Third births
1935	24.70	27.57	29.68
1936	24.64	27.36	29.43
1937	24.55	27.27	29.24
1938	24.48	27.15	29.03
1939	24.37	27.00	28.83
1940	24.23	26.83	28.62
1941	24.15	26.74	28.57
1942	24.05	26.66	28.55
1943	23.97	26.61	28.54
1944	23.81	26.50	28.59
1945	23.68	26.43	28.66
1946	23.63	26.45	28.75
1947	23.68	26.59	29.00
1948	23.80	26.80	29.18
1949	23.90	27.01	29.36
1950	24.14	27.32	29.66
1951	24.27	27.51	29.86
1952	24.50	27.71	30.01
1953	24.68	27.84	30.04
1954	24.91	28.03	30.13
1955	25.05	28.04	30.05
1956	25.23	28.15	30.08
1957	25.37	28.19	29.89
1958	25.44	28.13	29.87
1959	25.48	28.03	29.66
1960	25.45	27.87	29.38

Notes: Mean age calculated at age 35

Source: Birg et. al. (1990), own estimations

Table 18: Family size by birth cohort (West Germany)

Cohort	Childless	One child	Two children	Three or more children
1935	11%	27%	30%	32%
1936	12%	25%	31%	31%
1937	12%	26%	32%	31%
1938	12%	25%	33%	30%
1939	12%	26%	34%	28%
1940	12%	27%	34%	27%
1941	13%	28%	35%	24%
1942	14%	29%	35%	23%
1943	14%	29%	35%	21%
1944	15%	30%	35%	20%
1945	15%	31%	35%	20%
1946	14%	31%	35%	19%
1947	14%	32%	35%	19%
1948	15%	32%	35%	18%
1949	16%	32%	35%	18%
1950	17%	31%	34%	18%
1951	18%	31%	34%	16%
1952	20%	30%	34%	16%
1953	21%	29%	34%	16%
1954	22%	29%	34%	16%
1955	22%	28%	34%	16%
1956	22%	28%	34%	16%
1957	23%	28%	34%	16%
1958	23%	27%	34%	15%
1959	23%	27%	34%	15%
1960	24%	27%	34%	15%

Notes: Family size measured at age 35

Source: Birg et. al. (1990), own estimations

Endnotes

- 1 Other Statistical Offices which only provide birth order information for births in marital unions are the ones of France, Switzerland, Luxembourg and the United Kingdom (Council of Europe 2000: 77).
- 2 The SOEP is provided by the German Institute for Economic Research (DIW) (Deutsches Institut für Wirtschaftsforschung 2000). The *Familien*survey is provided by the German Youth Institute (DJI) (Bien 1996). The German Life History Survey is monitored by the Max-Planck Institute for Human Development in Berlin (Mayer and Brücker 1989). The FFS was initiated and coordinated by the United Nations and the Economic Commission for Europe. In Germany, it is monitored by the Federal Institute for Population Research (BiB) (Pohl 1995).
- 3 We do not attempt to estimate parity specific birth rates for East Germany. For the time prior to unification, these data were collected from the Statistical Office of the former East Germany. Since unification, only births by order in marital unions are collected for East Germany (the same as for West Germany). One might want to estimate parity specific birth rates for East Germany. However, the non-marital birth rates increased rapidly after unification, reaching 50 percent in 2000 (Konietzka and Kreyenfeld 2002). In other words, one would have to redistribute half of the birth on the different birth orders.
- 4 Until recently, it was the case that, in situations where women were in the process of divorce but not yet legally separated and then had a child from a new partner, the order of the birth was still assigned according to the “old” marriage. The same still applies to children of married women who have a child with another partner.
- 5 We will therefore wrongly classify children who are born to couples who already have stepchildren. By ignoring “stepfamily fertility”, we should slightly underestimate childlessness and overestimate the mean age at first birth. Possibly, one could “correct” the vital statistics also for this aspect using survey data such as the Family and Fertility Survey, which provides such information. However, there are too few “stepfamily births” in the data set, which allows any reasonable inference.
- 6 It should be noted that we do not take into account the oversampling of foreigners in the SOEP.
- 7 In order to identify the year of birth, we use the annual fertility biography generated by the SOEP group (labeled BIOBIRTH). In order to identify the marital status at childbirth, we employ the annual marriage history (labeled MARSY). If first birth and first marriage occur in the same year, we assume that the woman got married before the date of birth.
- 8 We drew 100 random samples from our original sample and predicted 100×10 mean ages at first birth (10 for the 10 years). For each year, we utilize the 100 “observations” to calculate a standard deviation (for details, see Stata Corporation 1999: 157ff.).
- 9 For the period 1960-1984, the data comes from Birg et al. (1990). For the period 1960-1984, we employ our own estimations.
- 10 For this calculation, we used the standard record file of the FFS. We only consider the number of biological children (variable v301 and variable v302). We furthermore applied sample weights (variable weight).