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Declining Fertility
in East Germany
After Unification: A
Demographic Response
to Socioeconomic
Change

James C. Witte Gert G. Wagner

POST—WORLD WAR II GERMANY has provided social scientists with a unique opportunity to study social change. At the end of the war a single nation with a common culture was divided. Two distinct political entities undertook the process of reconstruction, each guided by its own set of ideological principles. Now, after 40 years of separation, East (the German Democratic Republic) and West (the Federal Republic of Germany) are united as the Federal Republic of Germany. Political and economic unification were quickly achieved; the Berlin Wall fell in November 1989, the West German Mark was adopted as the common currency in July 1990, and formal political unification followed in October of the same year.

The social unification of Germany will take far longer, however. The integration and assimilation of the two populations cannot simply be proclaimed or ratified. Instead it must be effected by altering the patterns of behavior of the millions of citizens of the unified German state. Any number of behavioral patterns—such as consumer choices, voting behavior, church attendance, and labor force participation—may be taken as indicators of the progress and course of social unification. But to obtain a first measure of the extent of social change, there is a certain appeal to considering fertility—one of the fundamental demographic processes touching countless aspects of social life.

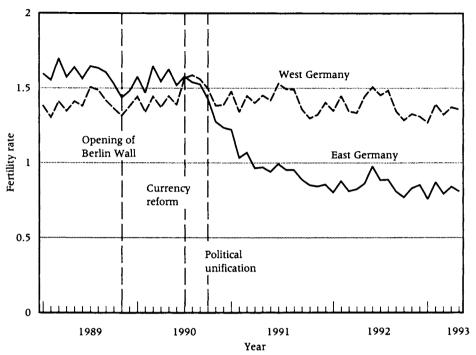
A convincing illustration of the sensitivity of fertility rates to social change was presented by Rindfuss, Reed, and St. John (1978), who found a 5 percent decline in birth rates among American Southern whites approximately 12 months following the 1954 *Brown v. Board of Education* desegregation ruling by the US Supreme Court. This decline, they argue, was a response to uncertainty regarding the future of an established way of life. It was only a temporary deflection, however, and in a matter of months fertility returned to previous levels, when it became clear that implementation of desegregation with "all deliberate speed," as required by the Court decision, could be very deliberate indeed.

Like the 1954 desegregation ruling, the collapse of the Berlin Wall was a historical event with the potential to upend the existing social order. In part due to the nonviolent character of the so-called *Wende* (U-turn), the magnitude of the event is easily underestimated. As distinct from a political revolution, such as the American War of Independence, where the basic social structure is left unchanged by a rapid transformation of the state, the events in Germany constitute a social revolution, a change marked by a fundamental reordering of class as well as state structures. Moreover, the fertility effects of the 1954 desegregation ruling pale in comparison to those brought about by German unification. Rindfuss et al. note a 0.7 percent decline in the South between 1954 and 1955, while the national fertility rate increased by 1.9 percent. Put differently, they show that the predicted average number of children a woman in the South was expected to bear in her lifetime decreased from just over 3.3 to just under 3.2, if the estimate is based on fertility data from 1955 rather than 1954.

Figure 1 shows that the changes beginning in November 1989 in East Germany are of an entirely different order of magnitude. Between 1990 and 1991 alone there is a 40 percent decline in fertility, as the average predicted number of children per woman declines to approximately 0.9 from just under 1.5, itself an extremely low total fertility rate. As Eberstadt (1994) has observed in an article in this journal on the vast demographic changes in East Germany since unification, this decline considerably exceeds fertility changes in Germany brought about by war, hunger, or the introduction of liberal abortion and birth control policies. Figure 1 further emphasizes how rapidly East Germans altered their fertility patterns following unification. A noticeable decrease in the fertility rate is observed around October 1990. By the fall of 1991 this rate has been nearly halved and has remained at this level through the first six months of 1993. It is also interesting to note in Figure 1 that during this same period the fertility behavior of West Germans appears to be essentially unaffected.

Vital statistics data, such as those summarized by Figure 1 or those presented by Eberstadt (1994), can describe this trend and accurately measure the decline in fertility; however, other sources of information are

FIGURE 1 Monthly estimates of total fertility rates in the former East and West German states



SOURCE: German Federal Statistical Office (Statistisches Bundesamt). Based on actual monthly live births except for May and June 1993, for which numbers of births were estimated.

needed to test and refine plausible explanations for the abrupt change in fertility patterns.

The German Socioeconomic Panel

We use data from the German Socioeconomic Panel (GSOEP)¹ to examine the individual-level correlates of changing fertility patterns in East Germany. Since June 1990 the GSOEP has surveyed over 4,000 East German respondents annually. Among other topics, the survey covers labor force participation, family events (including births), and attitudes and opinions regarding current and anticipated social and economic trends and developments. In addition, all female respondents were asked to provide retrospective fertility, education, and employment histories. The variety of individual-level socioeconomic variables collected by the GSOEP permits analyses that go beyond those based on vital statistics.

The added information obtained by any sample survey must be weighed against the inherent risk that the sample does not accurately rep-

resent the full population. This issue assumes added significance with a panel survey such as the GSOEP, because even if the representative quality of the survey is known at the start of the study, sample attrition over time makes the representative character of the data a time-variant quality. Patterns of attrition in the GSOEP have been monitored closely, however, and longitudinal adjustment factors have been calculated based on models of panel nonresponse. After taking these adjustment factors into account, the fertility histories reported retrospectively in 1993 yield results that compare quite closely with total fertility rates based on official birth records.²

The immediate fertility effects of German unification

The significance of economic uncertainty for the decision to bear a child can be directly shown with the GSOEP data. In June 1990 all respondents were queried regarding their current worries and future expectations. Most broadly, they were asked whether they considered themselves optimistic when they thought about the future. They were then asked how worried they were about general economic developments, as well as the extent to which they worried about their own economic situation. Our analysis examines whether those who anticipated economic problems in their own lives after unification were less likely to have children between April 1991 and March 1992 than women with fewer economic concerns. Thus our analysis focuses on the months immediately following unification. Although fertility remained low through 1994, it would be premature to assume that the same processes that account for the initial decline also explain why births remain at a low level.³ At this point one should also note that generous pronatalist policies in place between 1976 and 1989 minimized the effect of economic uncertainty on fertility decisions in the former German Democratic Republic.4

Table 1 shows that economic uncertainty defined in terms of one's personal interests appears to inhibit fertility. Neither a pessimistic orientation toward the future⁵ nor concern about the economy as a whole is associated with reduced fertility. Women who expressed concern about their personal economic situation were far less likely to have a child in the coming months, however, than those who faced unification without these worries. For first births the negative effect of individual economic concerns is even stronger than for all births taken together. This comes as no surprise, as first births have a more profound effect on parental labor market flexibility than higher-parity births. If a child is already in the home, it is likely that significant adjustments in labor force participation have already occurred.

Assuming that the extent to which economic factors affect fertility decisions varies with age, times of great uncertainty or security should introduce variation in age-specific fertility patterns. The upper panel of Table

TABLE 1 Predicted probabilities of East German women giving birth between April 1991 and March 1992 according to current worries and future expectations expressed in June 1990

	All births	First births
Optimistic about the future		
Yes	.04	.08
No	.06	.11
Concerned about general economic developments		
Yes	.04	.09
No	.05	.12
Concerned about personal economic situation		
Yes	.04	.07
No	.17	.31

NOTE: Based on a sample of 539 women aged 18–30 at risk of giving birth and a subsample of 190 women aged 18–30 at risk of a first birth between April 1991 and March 1992.

SOURCE: GSOEP East.

2 contains predicted probabilities of giving birth in any single year within various time periods preceding unification as well as in the year following the event. Predicted conditional probabilities of giving birth are provided in the first row for each period as a whole and are then broken down by age group. Separate results are reported for all births and for first births. These probabilities are based on logistic regression models estimated separately for each period; the regression coefficients and indicators of their statistical significance are presented in the lower panel of Table 2.

Looking first at the results for all births, the postunification decline in fertility for women between ages 18 and 30 is readily apparent.⁷ Only 5 percent of all women between these ages gave birth in 1991. In the period immediately before unification, 12 percent of all women gave birth in any given year. In earlier periods the effects of the 1972 liberalization of abortion policy and the 1976 package of pronatalist policies may be noted as well.

Examining the results for all births according to specific ages, the decline in fertility appears to cut across all age groups, with the greatest impact on women aged 26–30. In examining first births among women in this age group, however, one finds hardly any difference in the predicted probabilities before and after unification. In this group, it may be concluded, only decisions regarding second and higher-order births had a significant impact on the overall decline in fertility.

Indeed, the degree of rationality reflected in the decision not to have children is even more obvious if one concentrates on first births.8 Over time it becomes more difficult for women to postpone their desire for children, since the risk grows that one may not later be able to fulfill one's

TABLE 2 Age- and period-specific fertility patterns in East Germany, 1964-91

	Predicted conditional probabilities of giving birth in a single year									
Age group	All births				First births					
	1965-72	1973-76	1977-81	1982-90	1991	1965-72	1973-76	1977-81	1982-90	1991
All ages	.13	.11	.14	.12	.05	.15	.14	.18	.16	.09
18-19	.09	.07	.07	.06	.03	.09	.07	.07	.06	.04
20-25	.17	.14	.18	.16	.07	.20	.18	.23	.19	.10
26–30	.11	.08	.11	.12	.04	.15	.14	.25	.23	.22
	Logistic regression coefficients									
18-19	76*	63*	-1.1*	-1.1*	67	95*	-1.0*	-1.4*	-1.4*	94
20-25	_	_	_	_	_		_	_	_	_
26-30	55*	75*	51*	52*	95*	31	37	.07	.23	.86
Constant	-1.6*	-1.8*	-1.5*	-1.6*	-2.5*	-1.4*	-1.5*	-1.2*	-1.4*	-2.1*
No. of wo	man-years							· · · · · · · · · · · · · · · · · · ·		
at risk	4124	2140	3124	5463	539	1973	1046	1400	2214	190

^{*}p<.05

NOTES: 1991 excludes the first three months of 1991 and includes the first three months of 1992. In estimating the coefficients the age group 20–25 is the reference category.

SOURCE: GSOEP East.

wish. Accordingly, one would expect the decline in first births to be much greater among younger women. Consistent with this expectation, 23 percent of the women between ages 26 and 30 who had not yet borne a child gave birth in the final years of the GDR. After unification, in this age group the probability of giving birth fell only to 22 percent. Among women aged 20–25, on the other hand, comparing results from before and after unification, the decrease in the probability of giving birth is much greater: the probability of a first birth before unification stood at about 19 percent; after unification the probability fell to 10 percent.

To summarize, in East Germany after unification first births are declining among young women, while slightly older women are having fewer second and third children. The decline in second and third births can also be noted in the rising proportion of all births that are first births: this number fluctuated between 45 and 50 percent over the past two decades and has since risen to close to two-thirds in 1991. The fertility decisions of older women who do not yet have a child are minimally affected by economic uncertainty.

Changing fertility and the dynamics of assimilation

There is little doubt that unification has produced a marked decline in East German fertility. In assessing the long-term implications of this decline,

however, one ought to keep in mind that these changes stem from a relatively short period in the overall fertility history of a cohort of young women. In recent years women in the GDR became mothers at very early ages—for example, in 1985 the highest age-specific fertility rates were found among 21-year-olds, that is, five years younger than women with the peak age-specific fertility rates in West Germany at that time (Heilig, Büttner, and Lutz 1990). Widely available child care facilities in the East made it relatively easy for young women to combine motherhood with entry into the labor force or university study. Moreover, having a child was a means for a young woman to receive official authorization to obtain an apartment and attain independence from her parents.

In West Germany, on the other hand, children were generally born only after a woman had completed her education and was becoming established in a career (Huinink 1989). Burdened by the costs of unification and a sluggish world economy, with unemployment nationwide reaching well into the double digits, Germany is likely to experience little change in the deliberate approach to fertility established in part as a response to a highly competitive labor market. Seen against this backdrop, young women in East Germany who are choosing not to have children at this time are not simply reacting to short-term labor market problems, but also appear to be making a significant contribution to the "unification of lifestyles" within East and West.

Looking beyond the short-term effects of unification, however, the future of fertility patterns in unified Germany is an open question. To illustrate this point, Büttner and Prinz (1991) estimate the impact of three fertility scenarios on unified Germany, starting with a combined population of nearly 78 million in 1990. A constant-fertility scenario, in which fertility rebounds to its previous level in the East and remains unchanged in the West, yields a total population of 63 million in the year 2030. In a low-fertility scenario, in which patterns in the East come to resemble those in the West, population declines still further, to 60.5 million, by 2030. Even with a very unlikely high-fertility scenario, where women in the West adopt the fertility patterns previously found in the East, population would still fall to 69 million in 2030.

One immediate implication, common to each of these scenarios, is that public officials at the federal, state, and local levels ought to prepare for some sort of baby boom by the turn of the century, that would compensate for births postponed in the years immediately following unification. In this event, local officials, in particular, need to ensure that adequate supplies of schools and day care slots are available. More importantly, all three scenarios remind policymakers that rapid fluctuations in fertility following unification should not divert their attention from long-term population trends common to East and West Germany. For decades, fertility in Germany has been below replacement level and falling. At this point,

policymakers can do little more than slow the rate of decrease and mitigate the consequences of the so-called birth dearth. All too familiar with the social costs of relying on foreign labor, Germany must maintain and improve its educational system so as to maximize the productivity of all members of its shrinking labor force.

Yet, our analysis raises the possibility of a fourth option: a low-low-fertility scenario, where fertility in the East stays below that of the West and the population of unified Germany falls below 60 million by the year 2030. Not only does this possibility accent the urgency of the long-term policy issues, it also suggests that the concept of assimilation bears closer inspection. Sociologists use the term "assimilation" to refer to the process whereby groups with different cultures come to have a common culture. As a rule, in the process of assimilation one society takes a dominant role—the give-and-take between cultures rarely seems to operate on an equal basis. As noted above, the general view is that the process of assimilation brought on by German unification will have a distinctly Western flavor. In the words of two prominent observers:

[W]e interpret the current demographic changes in East Germany as the aggregate effects of individual experiences of shock and strategies for overcoming problems of transition. We stand by the prognosis of long-term, social structural changes in demographic patterns of behavior in the direction of those found in West Germany. (Zapf and Mau 1993: 5)

Indeed, this expectation is widespread. A recent review (Münz and Ulrich 1994) of the various forecasts regarding the long-term implications of demographic change in the former East Germany includes a discussion of the techniques and assumptions employed by each. It is revealing that these estimates commonly assume that fertility patterns of women in the East will come to match those in the West by the year 2001. The taken-forgranted nature of this assumption is all the more striking, since a careful review of the demographic evidence to date concludes that "nothing would indicate a speedy adjustment to the behavioural patterns of the former Federal territory" (Dorbritz 1994: 394).

In our view, the assumption that women in the East will adapt their fertility behavior to the patterns found in the West warrants reconsideration. Our finding that lower fertility is tied to individuals' own economic situation is an indication that some intimate aspects of behavior have already been changed through assimilation. Couples, knowing that unemployment is high, that their labor market value is relatively low, and that there are less generous maternity benefits, perhaps less flexible employers, and far fewer child care alternatives, respond rationally to socioeconomic change by limiting fertility. In fact, if East German women are well assimilated in this way, it also follows that fertility in the East may continue to

lie well below that of the West until the educational attainment and the labor market position of the two populations begin to converge. In the language of demography, we must consider composition effects. Comparing two populations, it is not enough simply to take age and sex distributions into account; a finer analysis of the composition of the two subpopulations is necessary as well. Regardless of similarities in the age distribution, if men and women in East Germany are less inclined to marry, if they recognize that the old mechanisms supporting single mothers are gone, and if they are aware of their own economic vulnerability, there is no reason to expect the total fertility rate in the East to rebound to the level found in the West.

This discussion further suggests the need to reassess other aspects of unification. Just because East Germans are now Germans, one should not expect that they will necessarily act—or even want to act—like Germans who grew up in the West. Rather than to expect a simple Westernization of the East—not only in Germany, but throughout Eastern Europe—we should not be surprised if the course of assimilation is varied and uneven. Within Germany it will play itself out in various arenas as differences between the two cultures and the two populations become apparent and must be reconciled.

Looking at the history of immigration in the United States gives some sense of the possible variations in the balance struck between two societies, in terms of the processes of resolution as well as the outcomes of assimilation. In some instances, aspects of the old East German culture may hold sway, while in others individuals in the East may embrace attitudes and values of the West with such fervor that they may appear more West German than many lifelong residents of West Germany. And, perhaps most importantly, those in the East may endorse values and attitudes prevalent in the West, but lack the resources—social, cultural, and human capital—to effectively embody the values in the expected fashion. Sources of data such as the German Socioeconomic Panel, which collects a variety of longitudinal information, will be an invaluable resource for researchers attempting to disentangle the disparate elements that determine the dynamics of assimilation.

Notes

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1994 Annual Meeting of the Population Association of America in Miami.

1 The GSOEP is a nationally representative household panel study similar to the American Panel Study of Income Dynamics (PSID). Conducted by the German Institute

for Economic Research (Deutsches Institut für Wirtschaftsforschung) in Berlin, the GSOEP has reinterviewed all adult members of approximately 5,000 West German households annually, beginning in 1984. A supplementary sample of respondents in just under 2,000 East German households was added to the panel in 1990. Detailed information concerning this data source may be found in Wagner, Burkhauser, and Behringer (1993).

- 2 The estimated combined total fertility rates—taking sampling error into account—correspond closely to the pattern found in vital statistics data for the period 1964 to 1992. See Bundesinstitut für Bevölkerungswissenschaft (1993).
- 3 Quite plausibly, after the initial fertility shock related to uncertainty, the continued low level of fertility may stem from the fears of some, but also from a sense of freedom for others. Moreover, as labor market and social welfare constraints become clearer, relatively higher fertility rates may be observed among women whose own employment prospects are poor, if their partner's employment prospects are secure.
- 4 Regarding general fertility patterns in the GDR see Höhn (1991); Höhn, Mammey, and Wendt (1990); Büttner and Lutz (1990); and Vortmann (1987).
- 5 In fact, the predicted probability of giving birth was lower among women with an optimistic view of the future, though the difference is not statistically significant—for all births the Wald statistic equals .92 (p=.34), for first births it equals .32 (p=.57). Nevertheless, this finding suggests another plausible explanation to consider once additional waves of GSOEP data become available. The observed decline in fertility may be the result of changes in behavior within two heterogeneous groups—those with the greatest hopes and those with the greatest economic fears.
- 6 All births from the year 1990 are included in the period immediately prior to unification, since the majority of these children were conceived prior to unification and

before its economic consequences could enter into women's fertility decisions. The periods used in this analysis are marked by two major shifts in East German family policy: a 1972 provision that liberalized access to induced abortion during the first three months of pregnancy and brought about a significant decline in fertility; and a 1976 package that extended maternity leaves, provided family formation loans and generous birth allowances for young couples, and expanded child care services for all women, especially single mothers (Höhn 1991; Büttner and Lutz 1990: Vortmann 1987). Similarly, the age categories selected reflect important constraints and incentives affecting fertility: through age 19 a significant minority of women are still engaged in secondary or vocational education, while a number of the pronatalist policies provided benefits only to mothers aged 25 or younger.

- 7 We restrict the analysis to this age group because our sample size is not large enough to provide reliable results for particularly early or late births. This reflects the fact that since 1964 in the GDR approximately 90 percent of all births were to women between ages 18 and 30 (Büttner and Lutz 1990). Thus, in the GSOEP sample, only four births were reported in 1991 by East German women over age 30.
- 8 In contrast to German vital statistics, which record parity only within an ongoing marriage, the GSOEP data permit analyses of parity independent of marital status. This is particularly important because the proportion of out-of-wedlock births increased sharply after unification; in 1992 42 percent of all births were to single mothers.
- 9 In the months immediately following the fall of the Berlin Wall, full employment was artificially maintained in the East. However, by Autumn 1991 the East German economy had lost an estimated 2.4 million jobs, close to a quarter of all jobs at the end of summer 1989. By the end of 1992, the total decline in employment exceeded 35 percent of the preunification labor force (Büchtemann and Schupp 1992).

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