

Discussion Papers

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**Heike Trappe
Annemette Sørensen**

**Economic Relations between Women
and Their Partners:
An East-West-German Comparison after
Reunification**

Berlin, December 2005



DIW Berlin

German Institute
for Economic Research

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1 Introduction

Women's lives and opportunities in the economically advanced industrialized countries have changed dramatically during the last decades of the 20th century. One of the important implications of women's increased labor force participation and intensity, their improved occupational qualifications and corresponding earnings capacity is that women's economic dependence on male partners has declined. A decrease in women's economic dependence would often be associated with an overall reduction of gender inequality within households as well as with changed power relations and would have important consequences for gender stratification in larger society. Some argue in the framework of bargaining theories that a decline in women's economic dependence motivates male partners to invest additional time in housework (Jan Künzler, Wolfgang Walter, Elisabeth Reichart, and Gerd Pfister 2001) while others suggest that women's greater economic independence enables them to invoke the threat of separation or divorce if a more favorable division of domestic duties cannot be negotiated (Lynn Prince Cooke 2004). Gender stratification inside and outside the household is assumed to be mutually reinforcing (Janet Saltzman Chafetz 1991) but at this stage women's economic dependence on their partner may no longer be the key to the perpetuation of women's subordinate status (Annemette Sørensen 2004). Although economic dependence within couples continues to be gender biased in all advanced societies (Sørensen 2001), there has been a considerable qualitative change over time. The meaning of economic relations within couples has changed because the level of women's economic dependence declined as well as the length of time a woman might be completely dependent on her partner and because dependence at a given time might be perceived as a voluntary choice (Catherine Hakim 2002). In addition, a rather high and probably increasing degree of insecurity of men's employment might contribute to a rising dependence of men on their female partner's earnings, thus increasing the interdependence within couples. Two incomes might be the best guarantee to maintain a satisfactory standard of living.

The previous description depicts a general trend but there are also considerable differences across societies in the degree and patterns of women's economic dependence (Sørensen 2001). This is usually attributed to cross-country differences in female labor supply and in the position women hold in the earnings distribution which in turn depend on employment opportunities, wage structures, welfare state provisions, and attitudes about gender roles and child care.

Corresponding to those factors, societies display variation in the degree of women's dependence on their partners and of interdependence among partners within couples. Moreover, the direction of change in those conditions suggests how economic relations among the partners will tend to develop over time. Although the trend so far has been one of decline in women's economic dependence, there is, no obvious inherent tendency of societies to move toward ever more economic independence of women on their partners. Rather, "structures of constraint" (Nancy Folbre 1994) providing partners with different opportunities to negotiate their employment strategies will determine future changes. In that sense, recent developments in Central and Eastern Europe after the collapse of state socialism pose a challenge to scholars of economic gender equality because those societies experienced tremendous labor market shifts that often weakened women's and to a lesser extent also men's labor force attachment (Lynne Haney 2002).

In this article, we use a comparison of women's and men's economic relations in East and West Germany during the period following reunification in 1990 to exemplify the differential impact of varying opportunity structures on the extent and the development of women's economic independence. East Germany represents a special case among transitional economies because it was literally taken over by West Germany and incorporated into a preexisting institutional structure (Karl Ulrich Mayer 1994), setting in motion a rapid transformation of East German institutions and employment structures, while West Germany remained relatively unchanged. This comparison offers a powerful case study of the interplay between employment opportunities, social policies, and economic relations between partners under conditions of substantial social change.

2 Changing employment opportunities in Germany after reunification

Prior to reunification, there were different economic arrangements between women and men within households and between households and the state in the two German societies. The two countries embraced different gender ideologies with a greater emphasis on women's full-time employment in the East and a stronger accentuation of women's roles as wives and mothers in the West and both enacted family and employment policies to support them. While these policies in West Germany were geared towards enforcing the traditional male breadwinner model, in East Germany women were evaluated more or less in terms of the male norm (Christiane Lemke 2002). Partly as a result of that, women in East Germany contributed considerably more to household income than women in West Germany. The amount of women's contribution to household income on the eve of reunification varies somewhat depending on how it is calculated (e.g., Lemke 2002 reports the following figures: East Germany – 40 percent, West Germany – 18 percent; Irene Dölling 2002 reports: East Germany – 43 percent, West Germany – 18 percent) but they consistently show a large difference. Although even among younger cohorts, women in the East never reached parity in earnings with men (Annemette Sørensen and Heike Trappe 1995), their relatively high economic contribution gave them a greater sense of independence, a stronger position in the family and facilitated leaving unsatisfactory intimate relationships.¹ These differences in economic arrangements between women and men were also reflected at the level of attitudes and norms relating to economic independence. Comparative analyses of gender role attitudes that relied on the German General Social Survey (ALLBUS) from 1991, show that East German women and men put more emphasis on the notion that a job is the best way for a woman to be independent and considerably more often stress that both partners should contribute income to the household than their West German counterparts (Michael Braun, Jacqueline Scott, and Duane F. Alwin 1994). Moreover, East German women expressed stronger preferences than West

¹ The institutionally shaped economic foundation of family life in turn was reflected in quite different legal arrangements, e.g., relating to marriage and divorce laws. In West Germany, there was joint income taxation with a substantial marriage gain, meaning that married couples were jointly taxed at a lower rate than single persons with the same before tax income, and hence reducing the incentive for wives to remain employed or to reenter the labor market, especially those with low earnings potential relative to their husbands (Siv Gustafsson 1992). In East Germany, there was compulsory separate taxation of husbands and wives. In addition, generally low wages made it almost impossible for the family to live on one income. In case of divorce, in the East economic relations

German women for all aspects of employment, which the authors attributed to remnants of past differences in experience (Marina A. Adler and April Brayfield 1997).

In the remainder of the paper we contextualize the development of employment opportunities for women and men in the two parts of Germany over the decade following reunification. This allows us to hypothesize about developments in economic relations among couples. Employment opportunities are conceived of as being simultaneously shaped by social policy and institutional settings, by economic development and restructuring, and by attitudes toward gender roles and child care. In unified Germany, the 1990s were a time of considerable economic and social change, most notably in the eastern part of the country. Soon after reunification, the policies and institutions that affect women's and men's employment opportunities were largely transferred from the West to the East (e.g., family policies, income tax regulations) with two important exceptions: The public supply of child care remains considerably higher in the East (Heribert Engstler and Sonja Menning 2003), as does the percentage of jobs that are in the public sector (Wolfgang Franz and Victor Steiner 2000). Importantly, these institutional transfers and financial support intertwined with an acute labor market crisis and economic dislocation to set in motion a societal transformation with serious consequences for social stratification in general and gender stratification in particular.² In West Germany, processes of social change were more modest in the 1990s, for the most part continuing many previous trends.

Employment opportunities and risks continued to differ and even diverged between the two parts of Germany after reunification (Thomas Lange and Geoffrey Pugh 1998). In 2002, women's labor force participation in the West had increased to 64 percent (from 56 percent in 1989), whereas men's rates in both East and West had fully converged at around 80 percent. Women's participation in the East declined sharply, from nearly 90 percent (in 1989) to 73 percent in 2002 (Deutscher Bundestag 2002).³ The decline of women's and men's labor force participation in East Germany unfolded rapidly in the early 1990s, then stabilized after 1993 at the current level. Only women in the western part of Germany experienced employment

among former couples were generally terminated after the divorce, whereas in the West, spousal support was common.

² For a detailed review see Rachel A. Rosenfeld, Heike Trappe, and Janet C. Gornick (2004).

³ Figures for 2002 are taken from ZUMA (2004) if not otherwise noted:

http://www.gesis.org/dauerbeobachtung/sozialindikatoren/Daten/System_Sozialer_Indikatoren/keyindik.htm

gains after reunification, and then at slow pace and mainly through part-time work.⁴ They benefited from the growth of the service sector and made some inroads into new professional fields. While West Germany showed little change in its basic industrial structure in the 1990s, the sectoral distribution in East Germany shifted rapidly as a result of the reorganization of firms. Yet, contrary to the West, there was no absolute increase of jobs in the service sector. Between 1989 and the end of the 1990s, the number of regular jobs in East Germany declined by about 40 percent (Gerhard Bosch and Matthias Knuth 2003: 276). These were mainly jobs in the primary and secondary sectors whereas the number of jobs in the tertiary sector remained relatively stable. The public and private service sectors were characterized by parallel job growth (e.g., in financial services and insurance) and loss (e.g., in public administration and transportation) (Anne Goedicke 2002). By the end of the 1990s, the distribution of men and women across industries was much the same in East and West Germany with the exception that women in the East had a relatively higher share in the service sector, partly because of their higher presence in the public sector with its greater job protection (Franz and Steiner 2000).

Taken together, over the course of the 1990s a partly forced convergence in the extent of men's and women's employment took place. Women's labor force participation in the East declined, but remained relatively high, and it increased in the West. Despite active labor market policies, retirement programs and migration from East to West Germany, employment opportunities in East Germany were reduced resulting in persistently high levels of unemployment and increasing competition for jobs between and among women and men. For most of the 1990s in the East, women's unemployment rate was higher than men's; in fact, during the first half of the 1990s it was almost twice as high whereas in the West unemployment has been considerably lower and not very different by gender. Over the second half of the 1990s, men's unemployment rate in the East increased because of a massive reduction of male-dominated jobs in production, and it approached and even exceeded the high level of women's unemployment. In 2002, unemployment in East Germany was 19 percent for women and 20 percent for men, while in the West it was 9 percent for both women and men. Still women in East Germany have greater problems than men reentering the labor market after spells of

⁴ In fact, as Hannah Brückner (2004: 38) notes the increase of women's share of the labor force in West Germany was entirely due to the increase in part-time workers. In 2002, 44 percent of women employed there worked part-time as compared to 25 percent in the East. For men, part-time work is far less common, 6 percent in the West, 5 percent in the East. Much of the recent increase in East German women's part-time work has been involuntary because full-time jobs were not available (Deutscher Bundestag 2002).

joblessness than do men, which results in their relatively longer spells of unemployment (Bundesagentur für Arbeit 2003). The risk of unemployment is reduced for those who are employed in the public sector, who are younger than 50 and without small children, and for those who are qualified for a semiprofessional or professional occupation (Heike Solga and Martin Diewald 2001).

During the 1990s, although women in the East still participated at a higher rate than in the West, women's employment levels in both parts of the country converged. Despite that, however, a substantial difference remains among mothers (Engstler and Menning 2003). In 2002, 38 percent of women with at least one child below age four were employed in the East, compared with only 19 percent in the West. Mothers in the East interrupt their employment for shorter periods of time for child rearing and return more often to full-time work than do mothers in the West (Elke Holst and Jürgen Schupp 2004). The shorter interruptions are facilitated because of the considerably greater availability of child care for young children still operating in the East.⁵ In spite of the difficulties in sorting out causality between attitudes and employment behavior, it appears likely that differing attitudes toward maternal employment contribute to these contrasting employment patterns: In 2000, both women and men in East Germany stressed the importance of mothers' employment whereas in the West women expressed significantly less favorable attitudes and men were even more opposed (Michael Blohm 2002).

Overall, the still substantial East-West discrepancy in women's employment patterns is most often attributed to social and cultural as well as economic factors. There is not only a greater need for two incomes in the East because of lower wages, but also women value their economic independence more highly based on their self-perception as qualified workers. In addition, there is more comprehensive child care provision, there are different concepts of motherhood, and non-employed women are more likely to register as unemployed (Bosch and Knuth 2003; Hildegard Maria Nickel 2003). Nickel (2003: 45) explains the argument about economic need as follows: "In eastern Germany it is not primarily the income of a 'male bread-winner' which determines how well a family prospers, but whether the female partner is able to earn an income or not. Women's labour market integration is the main criterion for

⁵ Child care provision represents one of the very few institutional practices of the former East Germany that have been maintained rather than having been replaced by West German standards after reunification. Although more than half of the child care facilities in East Germany were closed during the 1990s, there is still more extensive child care provision than in the West because there was also a rapid fertility decline and migration of younger persons to the West. Child care provision in the West is far less available in particular for children younger than four years, and after school care and child care covering the whole day (Statistisches Bundesamt 2004).

socially stable families ...With comparatively low general levels of household income, the transformation process in eastern Germany has turned many women into the principal earners of family income.”⁶ There is evidence that during the 1990s financial reasons were of greater importance to women to reenter employment in East than in West Germany (Holst and Schupp 2001).

With the exception of a short period of economic upturn in the western part of Germany directly following reunification, Germany as a whole was characterized by high unemployment, slow economic growth, and a rather high and probably increasing degree of insecurity of men's employment, especially in the East. The latter is related to structural change increasingly influencing male-dominated occupations as well as rising variability of wages and flexible working arrangements. These helped to undermine the economic logic underlying the limited employment by female partners that is also reflected by attitudes. Over the course of the 1990s there has been some convergence in gender role attitudes that appreciate the contributions of both partners to the household income, particularly among younger age groups in the two parts of the country (Blohm 2002).

Under the conditions that prevailed in Germany in the 1990s, we expect that only women in West Germany were able to take advantage of improved employment opportunities largely due to the expansion of the service sector. In line with the institutional setting that supports a modified breadwinner model via tax laws and insufficient child care provision, and in response to men's slowly weakening employment situation, women, and particularly mothers, increased their employment mainly in part-time work. Men's position in the labor market in both parts of the country deteriorated owing to the reduction of jobs in male-dominated fields. Hence, women's economic contribution became more important and accepted. Insecurity in men's employment should have been more pronounced in the East than in the West and gained in importance in the second half of the 1990s when men's likelihood of unemployment increased. Women in the East were particularly hard hit by reduced employment opportunities in the first half of the 1990s, but their economic position in the labor market and within families might have improved again thereafter. Their high presence in the public sector might have served as a shelter for some groups of women. Incentives to withdraw from employment or to

⁶ Changes in gender relations in East Germany due to changes in the economic situation are mainly discussed at a relatively general level (see Nickel 2003). Therefore, we know little about the prevalence and persistence of rather unusual gender arrangements (e.g., men who are unemployed or earn less than their wives).

reduce employment would be low owing to relatively low household income, cultural norms, good child care coverage and an increasing mutual interdependence among partners. Of course, good occupational qualifications are an important prerequisite for everyone to secure employment.

As a result of these trends, women's economic dependence on male partners in West Germany is expected to have declined while in East Germany an initial increase in women's economic dependence would be followed by leveling off or slight recovery. We go on to examine the 1990s in Germany as a case study of a period of accelerated social and economic change with large effects on economic gender relations that would have been less dynamic without reunification.

3 Data, measures, and models

Our empirical analyses are based on data from the German Socio-Economic Panel (GSOEP), a representative sample of households and their members who are surveyed repeatedly each year. In 1990 there were about 14,000 individual respondents living in approximately 6,800 households in all of Germany which include people born in both parts of the country as well as immigrants. We use data for women and men who live as couples in joint households from 1990, 1996 and 2002 to ascertain the degree of women's economic independence over the course of the 1990s.⁷ We do not include immigrant couples in this analysis whose consideration would be beyond the scope of this paper. It was important to start the observation period in 1990 before the currency union took place in East Germany and major economic and social changes set in, thus reflecting to a large part the earlier situation. We use data from the subsamples A (West German natives) and C (East Germans) (SOEP Group 2001). We restrict our analyses to unmarried and married couples where the woman is between 20 and 59 years old, and hence of working age, and to couples with valid information on all variables used in the multivariate analysis.

Our main dependent variable is a woman's relative contribution from her net earnings to a couple's net household income, thus reflecting her relative independence on her partner's earnings and on all types of social transfers. It ranges from 0 to 1, with 0.5 indicating perfect equality, and 0 and 1 complete dependence of the woman on her partner or conversely.⁸ Net earnings refer to earnings after taxes and social security, that is, take home pay. Net household income includes earnings and regular social transfers to household members (e.g., unemployment benefits) or households (e.g., social assistance, child allowance). This measure most likely underestimates women's relative contribution to gross family income first, because the German taxation system taxes the lower earning spouse's earnings at a relatively high rate. It seems likely, however, that it is the actual take-home pay and not gross income

⁷ We excluded the very few homosexual couples because their small number does not allow for separate analysis.

⁸ Over the time covered by our study, there have been twice currency changes in Germany. With the currency union that went into effect on July 1, 1990, the West German Mark became the official currency in the whole country. As a consequence, wages in the East increased considerably within a short period of time. On January 1, 2002 the Euro became the new currency in Germany changing the absolute amount of wages and social transfers according to the given exchange rate. There is no reason to assume that women and men were affected differently by those currency changes. Hence the comparison of women's economic contribution across time remains meaningful even given the currency changes.

that matters for gender relations in households. We therefore suggest that the women's relative contribution to net household income is the preferred measure. Second, this measure may underestimate women's relative economic contribution because it does not consider social transfers from non-earnings earned by the individual. This matters particularly if there is differential receipt of such payments by gender. Unfortunately, the data do not provide comprehensive information on individual monthly gross income that includes earnings as well individual social benefits for all points of time.⁹

We introduce the following sets of explanatory variables, showing the reference group in a parenthesis for dummy variables:

- East Germany (reference group West Germany)
- Age in four categories (reference group 50 years and older)
- Age of children under 16 in the household in four categories (reference group no children)
- Being married (reference group not married)
- Employment status of the woman and her partner: both full-time; woman full-time/man other; woman part-time/man full-time; all other (reference group woman out of labor force/man full-time)
- Occupational training: woman higher level than man; both the same level (reference group woman lower level of training than partner)
- Woman employed in the public sector
- Proportion of net household income from other sources of income than earnings
- East Germans living in West Germany (in 1996 and 2002)¹⁰

Tables A1 and A2 in the appendix provide descriptive statistics for the sample of all the variables used in the analysis.

⁹ Another way to look at women's relative economic contribution is to consider it as the proportion of a couple's combined net earnings. This leaves out those couples that rely on social transfers only. Therefore, our measure is preferable.

¹⁰ There was sizable migration from the East to the West but not the other way around during the 1990s reflecting the difference in employment opportunities in the two parts of the country.

We begin the analysis by describing important shifts in couples' joint employment patterns. These reflect changes in opportunity structures and strongly influence the trends in women's economic contribution to household income. Next, we turn to a multivariate analysis to determine the sources of variation in women's contribution to couples' household incomes. We consider the division of labor among partners and the ratio of unearned income to total household income. Other potential sources of women's relative economic power are differential human capital endowments of partners or differential employment opportunities of women and men. In addition, women, on average, receive lower financial returns to their human capital than men (Deutscher Bundestag 2002), so that they contribute less to household income even when the partners have the same human capital and work for pay the same number of hours. Overall, women's economic contribution is a function of labor supply, the gender wage gap, and unearned income. In the multivariate analysis, we estimate OLS regressions of the logit of women's relative contribution from their net earnings to the net household income.¹¹

¹¹ Our dependent variable is a proportion variable and falls between 0 and 1. The logit transformation looks like this: $\ln(\gamma/(1-\gamma))$ and is not defined when γ equals 0 or 1. Because our data has meaningful values for both, we replaced those values with 0.001 and 0.999 respectively.

4 Empirical findings

The changing opportunity structure for men and women in Germany is powerfully reflected in couples' employment situation (Table 1). The most striking development in West Germany was the fast decline in the share of couples who adhere to a traditional male breadwinner model from more than 40 percent in 1990, to 33 percent in 1996, and 29 percent in 2002. Women became increasingly employed, largely in part-time work. The most remarkable development in East Germany was the rapid decline in the proportion of couples where both worked full-time. On the eve of reunification, both partners were employed full-time in fully 56 percent of couples. Only six years later, this had declined by 20 percentage points! Part-time work did not replace full-time work for East German women. Instead, many women were without employment. The table also clearly shows that men's employment position in East Germany was considerably weaker than in the West, turning more women there into principal earners of their families. The percentage of women working full-time while their partners are not employed increased from 3 percent in 1990 to 11 percent in 2002. The proportion of couples where neither partner is employed was very low at 2 percent in 1990, but by 1996 neither partner was employed in 16 percent of couples. Although the share then declined to 11 percent by 2002, this ratio was still twice as high as in the West. All this suggests a higher degree of economic interdependence among East German couples.

Table 1:
The couple's joint employment status (in %)

Employment status		West Germany			East Germany		
Woman	Man	1990	1996	2002	1990	1996	2002
Full-time	Full-time	19.1	20.5	22.2	56.2	35.6	35.3
Full-time	Part-time	0.5	0.7	0.8	0.3	0.4	3.8
Full-time	Not employed	4.5	5.2	3.7	2.6	10.0	10.7
Part-time	Full-time	23.7	25.6	30.4	21.4	11.4	15.9
Not employed	Full-time	41.0	33.3	29.1	15.6	23.1	18.8
Part-time	Part-time	0.2	1.7	0.8	0.5	0.3	0.3
Part-time	Not employed	3.3	4.5	6.5	1.2	3.3	4.0
Not employed	Part-time	0.4	0.3	1.2	0	0.2	0.2
Not employed	Not employed	7.3	8.2	5.3	2.2	15.7	11.0

Source: Own calculations from the GSOEP, weighted.

Given these changes, it is not surprising that West German women's economic position improved as their partners' contribution declined (Table 2). In contrast, East German women's economic contribution decreased from a high level during the first half of the 1990s and increased again until 2002. Contrary to our expectation, their partners' economic position weakened even more between 1990 and 1996 and remained stable thereafter. Both trends contributed to a comparably high level of dependence on social transfers in East Germany where social transfers rose from 16 percent of net household income in 1990, to almost a third in 1996 and 2002. In West Germany, social transfers contributed about 20 percent of net household income throughout this period. Overall, the discrepancy in the economic position of partners was smaller in East Germany and diminished over time pointing to increasing interdependence. For example, in 1990 in East Germany men's earnings constituted 52 percent of net household income and women's earnings 32 percent. By 2002, these figures were 41 percent and 31 percent, respectively. In the western part of the country, difference in women's and men's relative contribution was large at 47 percentage points in 1990, but by 2002 had declined to 38 percentage points.

Table 2:

Women's and their partners' relative economic contribution from net earnings to net household income and income from non-earnings as a proportion of net household income

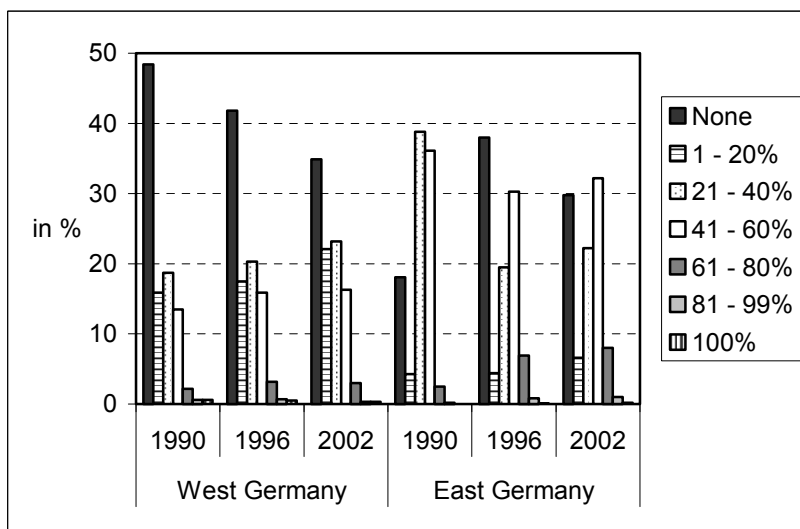
	1990	1996	2002
<i>Women's relative economic contribution</i>			
West Germany	0.17	0.19	0.20
East Germany	0.32	0.27	0.31
<i>Male partners' relative economic contribution</i>			
West Germany	0.64	0.59	0.58
East Germany	0.52	0.42	0.41
<i>Income from non-earnings</i>			
West Germany	0.19	0.22	0.22
East Germany	0.16	0.31	0.28

Source: Own calculations from the GSOEP, weighted.

A closer look at the changes in the distribution of East and West German women's contribution to the income of their households provides additional insights (Figure 1). The very high proportion of West German women who were completely dependent on their partners or on social transfers decreased considerably over time. In 1990, almost half of West German women living with a partner had no earnings. Six years later, it had declined to 42 percent, and by 2002, only 35 percent had no earnings. There is a corresponding increase in the proportion

of women who contribute up to 40 percent to household income, although there was no change in the proportion of women who contributed equally or more than their partner. In the East, the percentage of women with no earnings increased sharply from less than 20 percent in 1990 to almost 40 percent in 1996, but then declined again to 30 percent in 2002. At the same time, the share of women who earned between 20 and 60 percent of household income is distinctly higher in the eastern than in the western part of the country.¹²

Figure 1:
Women's relative contribution from net earnings to net household income



Source: Own calculations from the GSOEP, weighted.

In the multivariate analysis presented next (Table 3), we examine whether it is possible to account for the difference in women's relative contribution to household income in the two parts of Germany by taking into account differences between the East and the West relating to opportunity structures. In particular, we examine the extent to which differences in the ages of children, marital status, working in the public sector, the amount of a woman's occupational training compared to her partner, and her age are relevant. We include the ages of children in our models because they reflect the differential impact of child care coverage and perhaps more broadly of norms regarding motherhood on women's economic contribution. Marital status depicts whether economic relations are more or less equitable among married as com-

¹² One reviewer pointed out that a high relative contribution by the woman may be associated with low family income. This is the case for the very few women who bring in more than 80% of the family's income. However, the difference in family income between women contributing between 40 and 80% and women who contribute less is modest. We also tested the hypothesis that the East-West difference could be accounted for by the lower family income in the East. This is not the case. In fact, the difference in relative contributions is somewhat greater when family income is taken into account (Figures not shown).

pared to unmarried couples and also to what extent married couples can take advantage of income tax splitting. Employment in the public sector offers greater job protection than the private sector and might serve as a shelter for women in times of rapid structural change. In addition the gender wage gap is expected to be smaller in the public sector due to more rigid wage regulation and equal employment opportunity legislation. The relative level of training of partners is a proxy for power relations and age serves as a control. Next we ask, whether the effects of having children of different ages and of being married differ between East and West, and whether by taking such interaction effects into account, it is possible to explain the difference in women's relative contribution to household income. Next, we add a variable to indicate whether individuals moved from East to West Germany after reunification because this might be a strategy to improve employment opportunities. In the final model, we then introduce controls for the couple's employment status and for the relative contribution of income from social transfers to family income.

Table 3:

Multivariate analysis of women's relative contribution from earnings to net household income. OLS regression with logit transformation of the dependent variable

3-1 Baseline Model

Variables	1990		1996		2002	
	Coefficient	Std. Error	Coefficient	Std. Error	Coefficient	Std. Error
East Germany	2.06	0.12	0.72	0.14	0.57	0.15
Constant	-3.60	0.08	-3.37	0.09	-3.03	0.09
Adjusted R ²	0.11		0.01		0.01	

Note: Bold coefficients indicate significant differences between 1990 and 1996 or 1996 and 2002 at the 0.05 level (two-tailed tests).

The baseline model in Table 3.1 shows once again that there are significant differences between East and West German women's relative contribution to family income. The difference was large and statistically significant in 1990 as was its decline from 1990 to 1996, but the further decline from 1996 to 2002 is not statistically significant.¹³

¹³ Statistical significance of these differences over time was tested using a t test, with the equation: $(b_{t1} - b_{t2}) / \sqrt{(se_{t1}^2 + se_{t2}^2)}$ (see Barry R. Chiswick and Stephen J. Chiswick 1975).

3-2 Modell II

Variables	1990		1996		2002	
	Coefficient	Std. Error	Coefficient	Std. Error	Coefficient	Std. Error
East Germany	1.59	0.11	0.26	0.12	0.20	0.13
<i>Age of children</i>						
Child 0-2	-3.06	0.16	-2.85	0.21	-2.77	0.22
Child 3-5	-1.28	0.15	-1.38	0.18	-1.22	0.20
Child 6-10	-0.63	0.13	-0.79	0.15	-0.70	0.18
Child 11-16	-0.35	0.13	-0.32	0.15	-0.72	0.16
Being married	-0.43	0.19	-0.64	0.20	-0.55	0.20
Public sector	2.28	0.12	3.07	0.13	2.54	0.16
<i>Training</i>						
Woman > Man	0.92	0.23	0.69	0.25	0.64	0.23
Same level	0.56	0.12	0.40	0.14	0.57	0.15
<i>Age</i>						
20 - 29	2.07	0.18	1.26	0.21	0.66	0.26
30 - 39	1.88	0.17	1.58	0.19	1.22	0.20
40 - 49	1.01	0.15	0.92	0.17	0.86	0.18
Constant	-4.51	0.23	-3.98	0.25	-3.39	0.26
Adjusted R ²	0.38		0.34		0.27	

Note: Reference group for age is 50 - 59 year olds, for age of children older than 16 or no children, and for occupational training woman has less than partner. Bold coefficients indicate significant differences between 1990 and 1996 or 1996 and 2002 at the 0.05 level (two-tailed tests).

In Model II (Table 3.2), we see that women with any children under 16 contribute less to family income, but the effect is stronger the younger the children are. Married women and women over 50 contribute less to family income than other women, while women working in the public sector contribute more. Further, women with more than or an equal amount of occupational training as their partner contribute significantly more. These effects are observed in all three years. In 2002, these variables account for the initial difference between East and West in women's relative contribution, while the difference is smaller but nonetheless significant in 1990 and 1996.

It is well known that the presence of young children and marital status had less of an effect on women's earnings in East than in West Germany before reunification (Trappe and Rosenfeld 2000), while it is unclear whether such an interaction persisted thereafter. In the model presented in Table 3.3, we introduced two interaction effects, one between the ages of children

under 16 and residence in East Germany, and another between being married and living in the East.

3.3 Model III

Variables	1990		1996		2002	
	Coefficient	Std. Error	Coefficient	Std. Error	Coefficient	Std. Error
East Germany	0.08	0.37	-0.64	0.34	-0.63	0.32
<i>Age of children</i>						
Child 0-2	-2.46	0.21	-2.48	0.24	-2.49	0.27
Child 3-5	-1.61	0.20	-1.21	0.22	-1.05	0.24
Child 6-10	-0.82	0.18	-0.82	0.20	-0.61	0.21
Child 11-16	-0.45	0.17	-0.56	0.19	-0.46	0.21
Interaction East child 0-2	-1.08	0.30	-1.21	0.43	-0.61	0.44
Interaction East child 3-5	0.81	0.28	-0.54	0.40	-0.37	0.41
Interaction East child 6-10	0.58	0.24	0.20	0.28	-0.28	0.37
Interaction East child 11-16	0.24	0.24	0.58	0.27	-0.53	0.30
Being married	-0.98	0.24	-1.06	0.25	-1.17	0.26
Interaction East married	1.44	0.38	0.93	0.36	1.25	0.35
Public sector	2.24	0.12	3.05	0.13	2.54	0.16
<i>Training</i>						
Woman > Man	0.92	0.23	0.69	0.25	0.61	0.23
Same level	0.57	0.12	0.40	0.14	0.58	0.15
<i>Age</i>						
20 - 29	1.96	0.18	1.23	0.21	0.64	0.26
30 - 39	1.80	0.17	1.46	0.19	1.20	0.21
40 - 49	1.02	0.15	0.90	0.17	0.82	0.18
Living in the West			0.30	0.36	0.80	0.36
Constant	-3.93	0.26	-3.56	0.28	-2.98	0.30
Adjusted R ²	0.39		0.34		0.27	

Note: Reference group for age is 50 - 59 year olds, for age of children older than 16 or no children, and for occupational training woman has less than partner. Bold coefficients indicate significant differences between 1996 and 2002 at the 0.05 level (two-tailed tests).

With the added interaction effects, the main effect of East Germany is no longer significant in 1990 and in 1996. In other words, the higher relative contribution of East German women can be accounted for by the fact that having children at home and being married reduced their earnings less than was the case for women living in West Germany. There is, however, an important exception, namely that there is a stronger negative effect of having a very young child at home in the East in these two years probably because at least some mothers of young children managed the double burden by taking jobs below the level of their qualifications if

they offered other advantages (Trappe and Rosenfeld 2000). At the same time East German mothers of older children had a relatively stronger economic position in the family until 1996 but by 2002, there were no significant differences between the East and the West. The effect is negative in both parts of the country, and more so the younger the children are. This convergence also implies an evolving negative impact of older children on East German women's economic standing in the family, unknown there before, and a significant change.¹⁴ This conclusion receives support from research investigating changes over the life course with event history analyses (Jennifer Hunt 2004). Interestingly, living in the West does not make a difference for East German women in 1996 but has a positive impact on the relative amount they contribute to household income in 2002, most likely reflecting a strategic option for increasing numbers of families to improve their employment situation.

¹⁴ The negative impact of older children on East German women's economic contribution to household income in 2002 shows up more clearly in reduced models that control only for family status (Table not shown).

3.4 Final Model

Variables	1990		1996		2002	
	Coefficient	Std. Error	Coefficient	Std. Error	Coefficient	Std. Error
East Germany	0.09	0.14	-0.10	0.15	-0.39	0.15
<i>Age of children</i>						
Child 0-2	-0.26	0.08	-0.20	0.11	-0.25	0.13
Child 3-5	-0.20	0.08	-0.21	0.10	-0.07	0.12
Child 6-10	-0.07	0.07	-0.14	0.09	-0.13	0.10
Child 11-16	-0.08	0.06	-0.09	0.09	-0.11	0.10
Interaction East child 0-2	0.05	0.12	-0.12	0.19	0.09	0.21
Interaction East child 3-5	0.10	0.11	0.05	0.17	0.08	0.19
Interaction East child 6-10	0.06	0.09	0.20	0.12	0.17	0.17
Interaction East child 11-16	0.06	0.09	0.27	0.12	0.16	0.14
Being married	-0.23	0.09	-0.13	0.11	-0.50	0.12
Interaction East married	0.23	0.14	0.20	0.16	0.57	0.16
Public sector	0.40	0.05	0.60	0.06	0.58	0.08
<i>Training</i>						
Woman > Man	0.13	0.09	0.19	0.11	0.31	0.11
Same level	0.07	0.05	0.15	0.06	0.16	0.07
<i>Age</i>						
20 - 29	0.20	0.07	0.12	0.10	-0.001	0.13
30 - 39	0.09	0.07	0.06	0.09	-0.01	0.10
40 - 49	0.09	0.06	0.14	0.08	0.09	0.09
<i>Employment status</i>						
Full-time/full-time	5.78	0.06	5.52	0.08	5.47	0.10
Full-time/part-time or out	7.77	0.11	7.93	0.12	7.40	0.13
Part-time/full-time	5.12	0.06	4.76	0.08	4.69	0.09
Other	3.67	0.11	4.75	0.12	4.06	0.14
Other income	-2.60	0.12	-4.31	0.15	-3.61	0.17
Living in the West			-0.04	0.16	-0.06	0.17
Constant	-6.24	0.11	-6.02	0.14	-5.59	0.16
Adjusted R ²	0.91		0.88		0.84	

Note: Reference group for age is 50 - 59 year olds, for age of children older than 16 or no children, for employment status, woman not employed, partner full-time, and for occupational training woman has less than partner. Bold coefficients indicate significant differences between 1996 and 2002 at the 0.05 level (two-tailed tests).

In the final model (Table 3.4), we added controls for the couple's joint employment status and for social transfers. Not surprisingly, the employment status variables have considerable impact. It is, after all, through employment that most household income is generated. The reference group is women who are not employed and whose partner is in full-time employment. The effects themselves are of little substantive importance, but the effects of other variables in the model are interesting. In 1990 and 1996, the effect of living in the East is statistically

insignificant as it was in the previous model. The effect of children is much reduced, and these small effects are similar in the two parts of the country in all three years suggesting that their negative impact on women's relative contribution to household income is fully mediated by mothers' lower participation in employment. The impact of being married is much reduced in 1990 and disappears in 1996, while the interaction effect is no longer significant. Nor are the effects of the partners' occupational training in 1990 and they are quite small six years later. In other words, the effects that we saw in Table 3.3 apparently came about because of their association with the partners' employment status. The model for 2002 presents some slightly different results. Controlling for the couple's employment status, the effects of occupational training are reduced, but remain significant. That is, net of employment status, women with an equal or higher level of occupational training contribute somewhat more to family income than women with less training than their partner. In 1990 and 1996, occupational training effects were almost completely mediated by employment status. Maybe we here see an increase in returns to education. The effect of marriage is smaller than before controlling for employment status, but it is significantly larger than in 1996, and its impact is positive in the East but negative in the West, possibly indicating that married couples in the East enjoy less of the "income splitting advantage" of joint taxation due to less unequal earnings among couples (Viktor Steiner and Katharina Wrohlich 2004). Notably, employment in the public sector continues to have a positive impact on women's contribution to family income net of employment status. These women not only enjoy greater job protection but also a relative earnings advantage throughout the period. As expected, in 2002, the relative advantage of East German couples who moved to the West was largely due to their better employment situation. Finally, income from social transfers reduces women's relative contribution to family income. If women and their partners in the East had received transfer income at the same level as couples in the West, East German women's earnings would have constituted a higher proportion of family income than we observed.

5 Conclusions

During the first twelve years after German reunification, there were substantial changes in women's contribution to family income in both East and West Germany. Our analysis shows that women's economic position within the family depends strongly on specific conditions, such as employment opportunities, social policies and their partners' employment. In West Germany women's economic contribution increased over time due to better employment opportunities, especially in part-time work, and the importance of the public sector with its greater job protection. The dominance of the one-earner family among couples living in West Germany was reduced, meaning that many more women make some financial contribution to their family, in part due to a worsening of men's employment situation. In East Germany women's economic contribution takes a U-turn that largely reflects their and increasingly also their partners' difficult employment situation following reunification. We found that couples in the East in 1990 were much more equal than in the West, but that this changed as a consequence of the economic restructuring in the course of the 1990s that resulted in large scale loss of employment opportunities. One implication was an increase in the proportion of women who had no earnings and thus depended solely on their partner and social transfers. At the same time, the earnings of many men also declined or even disappeared. This in turn meant that although women's contribution to family income was lower in 1996 and 2002 than in 1990, so was their partners'. We interpreted this to mean that the economic interdependence among couples living in the East increased and remained higher than in the West.

The multivariate analysis revealed that women in the West were more likely to work less or not at all, relative to East German women. This tendency was strengthened by the presence of children in the household and if the women were married. Less equitable gender relations within married couples were often reinforced by taxation policy, with secondary earners bringing in less take-home pay in West Germany. This was not the case in the East due to continuing differences in the economic foundation of families with greater equality in earnings between partners more common. This is a nice example of how the same social policy can produce different outcomes as a result of varying employment opportunities, living conditions, and cultural norms.

The time between 1990 and 2002 was a period of unusually large social and economic changes that altered the opportunity structures for women and men. We have here focused on just one of the ramifications of these changes, namely the convergence between East and West in the extent to which women living with a partner contribute to family income. The convergence came about because West German women continued in the trend towards more economic power. This trend was partly fueled by changes in men's opportunities to hold stable jobs, that enabled them to be the sole supporter of a family, and by more opportunities for women to take on part-time work. The development for women in East Germany can best be described as forced retrenchment to a situation that is more like the one found in the western part of Germany. As the analysis here has shown, the changing opportunity structure in Germany following reunification in 1990 had profound effects not only for individual workers but also for the economic relations between men and women who share a household. The ways in which the employment situation changed in the East and the West also meant that women's relative contribution to family income converged although women in the eastern part still contributed more in 2002. The degree to which the presence of children in the household affects their mother's financial contribution to the family economy became more similar over time, thus furthering the convergence between East and West. In closing, it is important to point out that the cross-sectional approach we have employed here to document developments over time only tells us about aggregate changes. A longitudinal design is needed to show how a woman's economic contribution develops over her lifetime and how such changes are related to the opportunities that she and her partner face.

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Appendix

Table A1.

Descriptive statistics for variables used in the multivariate analysis

Variable	1990		1996		2002	
	Mean	Std. Dev	Mean	Std. Dev	Mean	Std. Dev
East Germany	0.42	0.49	0.41	0.49	0.40	0.49
<i>Age dummies</i>						
20 - 29	0.21	0.41	0.17	0.38	0.12	0.33
30 - 39	0.31	0.46	0.32	0.47	0.33	0.47
40 - 49	0.25	0.43	0.28	0.45	0.31	0.46
Being married	0.92	0.28	0.88	0.32	0.84	0.37
<i>Employment Status (F/M)</i>						
Full-time / full-time	0.37	0.48	0.28	0.45	0.27	0.44
Full-time / part-time or not employed	0.04	0.19	0.06	0.25	0.08	0.27
Part-time / full-time	0.24	0.42	0.21	0.41	0.27	0.44
Other constellations	0.07	0.25	0.14	0.35	0.14	0.34
<i>Occupational Training</i>						
Woman more than man	0.06	0.24	0.06	0.25	0.11	0.31
Same level of training for both	0.70	0.46	0.72	0.45	0.67	0.47
In public sector	0.25	0.43	0.24	0.43	0.21	0.41
Income from non-earnings	0.17	0.25	0.24	0.31	0.25	0.30
Living in West Germany (for East Germans only)		NA	0.03	0.16	0.03	0.18
N of observations	2427		2197		1784	

Source: Own calculations from the GSOEP, unweighted.

Table A2.

Age of children below age 16 in the household in different years (in %)

	1990	1996	2002
No child	48.0	50.0	51.6
At least one child 0-2	13.1	9.5	10.4
At least one child 3-5	15.3	12.6	13.0
At least one child 6-10	23.7	22.1	17.9
At least one child 11-16	23.7	25.5	24.9
N of observations	2427	2197	1784

Source: Own calculations from the GSOEP, unweighted.