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BACKGROUND PAPER

WHERE HAVE ALL YOUNG WOMEN GONE?

Gender-Specific Migration from East to West Germany

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Abstract

With the fall of the Berlin Wall in 1989, direct migration from East to West Germany became possible. Between 1989 and 2007 more than 1.7 million migrated from East to West – about 10 percent of the East's population in 1989. There is a surprising and rarely investigated outcome of this migration process: About 55 percent of all (net) East-to-West migrants since 1989 have been female. Since more than half of the migrants were younger than 30 years old, this selective migration led to a tremendous deficit of females in the 18-to-29-year-old age group. Currently, the female-to-male-ratio in that age group is only 89 to 100 in the East German population. In some rural counties the female-to-male ratio is as low as 80 percent. This paper investigates the reasons for the gender-specific migration from East to West Germany. We identify a considerable discrepancy in educational levels between women and men as the main cause for the *missing-women phenomenon* in East Germany. The female success in education, combined with an inadequate demand for highly skilled female labor in the East and a deficit of adequate local partners in terms of education are the main causes that make young women leave East Germany.

Keywords: gender differences, German unification, migration, mobility, education, labor markets, rural, urban, Germany, sex ratio.

JEL classification: J16, J61

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Where Have All The Young Women Gone?

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1 Introduction

With the fall of the Berlin Wall in 1989, direct migration from East to West Germany became possible. Opening the border led 400,000 people (about five percent of the East population) to leave the East and migrate to the West in each of the years 1989 and 1990. In later years, incomes levels started to converge and the emigration process slowed. In 2001 a recession in Germany caused about 100,000 people to leave the East for the West. By 2007 more than 1.7 million people had left the East (of about 17 million in the East at the time of the fall of the Berlin Wall).

Most aspects of German economic integration are well studied (cf. Akerlof et al., 1991; Burda & Hunt 2001; Hunt 2001, 2002, 2004; Lechner, 1999; Sinn, 2002, among others). The migration from East to West in the early 1990s (cf. Büchel & Schwarze, 1994; Burda, 1993; Burda et al., 1998; Decressin, 1994; Dienel et al., 2005; Hunt, 2000; Keil & Newel, 1993; Mai, 2004; Paulig & Schäfer, 1999; Parikh & van Leuvensteijn, 2002; Raffelhüschen, 1992; Schwarze, 1996, et al.) and a decline in fertility in East Germany after unification (cf. Adler, 2002, 2004; Conrad et al., 1996; Lechner, 1998, 2001; Witte & Wagner, 1995; among others) received particular attention in the literature. Brücker and Trübswetter (2007), Heiland (2004), and Zeiceva (2006, 2007) analyze the determinants and consequences of East-to-West migration within Germany for more recent years. Alesina and Fuchs-Schündeln (2007) recently analyzed the effect of the former German Democratic Rebuplic's (GDR) communism on the citizens' preferences today.

However, there is an interesting outcome of the German integration which has been pointed out just recently by Kroehnert, Medicus, and Klingholz (2006) and which is rarely studied. About 55 percent of all (net) East-to-West migrants since 1989 were females. Since more than half of the migrants were younger than 30, this led to a tremendous decline in female population in the age group of 18-to-29- year olds. Currently, there are only 89 women in that age group in East Germany for each 100 men. This discrepancy is especially dramatic for peripheral rural counties where the female-to-male ratio for that age group decreases to about 80 percent.

Such strongly unbalanced gender proportions are extremely unusual in the European context. Obst (2005) has analyzed the gender proportions in the group of young adults for all European regions and the period from 1991 to 2001. He found that for 2001, the eight East German states (excluding Berlin) had the highest deficit of females in the birth cohorts from 1972 to 1981 of all European regions.[3] So in a relatively short period of time, the east of Germany developed a large-area deficit in women which is unique in Europe and probably even among all industrialized countries worldwide.

But why is it that young East German women move to the economically more dynamic areas in the West, while men stay in the economically lagging areas of the East? Although there are some reasonable presumptions which might be able to partially explain this phenomenon, to date, there have been no studies investigating the reasons for this gender-specific migration in detail. Our paper is intended to fill this gap.

In Section 2 we present some stylized facts describing the unbalanced gender proportions among young people in East Germany and the development of this discrepancy over the past two decades. Section 3 contains our empirical analysis of the determinants for gender-specific migration from East to West Germany, including a cluster analysis to identify similarities and differences between German counties. In section 4 we conclude.

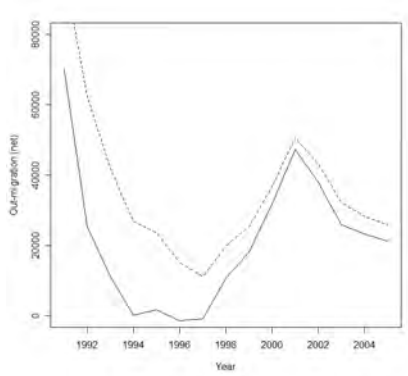
[3] Obst considered the birth cohorts 1986 to 1982, 1981 to 1977, 1976 to 1972, and 1971 to 1967 for the regional level NUTS2.

2 Development of unbalanced gender proportions in East Germany: Some stylized facts

When comparing the migration balances of the eastern and western German states, it is striking that in 1989 and 1990, more men than women were leaving the East for the West. With this behavior people were following the classical pattern of migration whereby the males are the ones who migrate initially to find a livelihood, while the partners and families follow later. It is at least a common interpretation of historic movements that males were the initiators of migration and the females merely followed. Hence the aggregate number of migrating women was almost always smaller than the aggregate number of migrating men (UNFPA, 2006).

However, in the case of East Germany, the pattern of migration started to deviate from the classical pattern in 1991. In the second year after German unification, about 59 percent of all East-to-West migrants were females (a fact only partly explainable by families following the previously migrated men). From 1991 to 1997 the share of women among East-to-West migrants increased. In 1993 the share of women among all aggregate East-to-West migrants since the fall of the Berlin Wall crossed the 50-percent level. In 1996 and 1997 East Germany even had a positive immigration balance for the men; for women this balance remained negative. Since 1999 the share of women among East-to-West migrants has stayed almost constant at around 55 percent. See Figures 1 and 2.

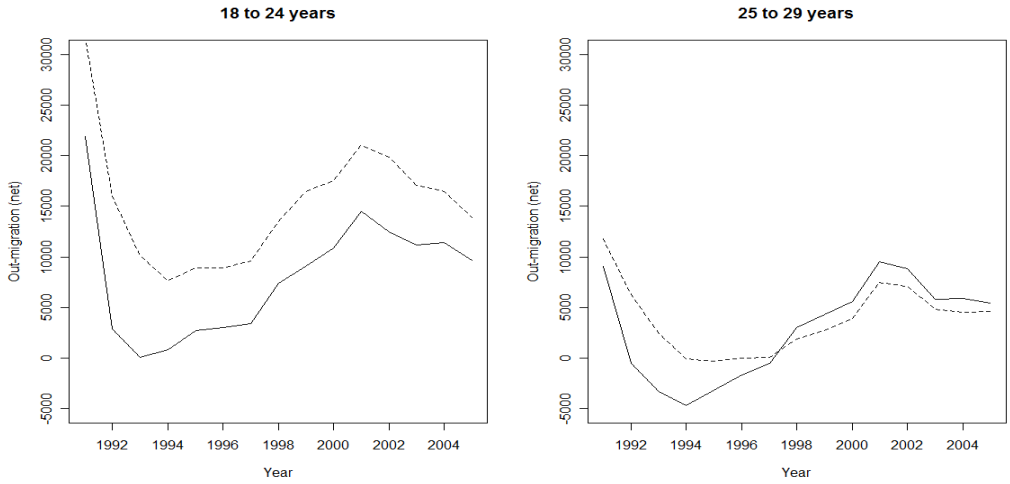
Figure 1 East-to-West Migration by Gender (1991–2005)



Note: Women (dashed line), men (solid line). Source: German Federal Statistical Office, own calculations.

The largest part of the migration balance fell upon the 18-to-24-year olds—an age group which is extremely mobile due to their search for education or a first job (Dienel et al., 2004). Having one's own family, the most common local commitment, usually does not exists yet at this age. The 18-to-24-year olds account for about 40 percent of the total number of 866,000 net East-to-West migrants after German unification (1991 to 2005). The women accounted for 65 percent in this age group. It is first and foremost the high mobility of women in this age group which is responsible for the present deficit of women in East Germany. In the group of the 25-to-29-year olds, males emigrate from the East even a little more frequently than females; nonetheless, this higher migration rate does not come close to compensating for the loss of females in the younger group.

Figure 2 **East-to-West Migration of Young People by Gender (1991–2005)**



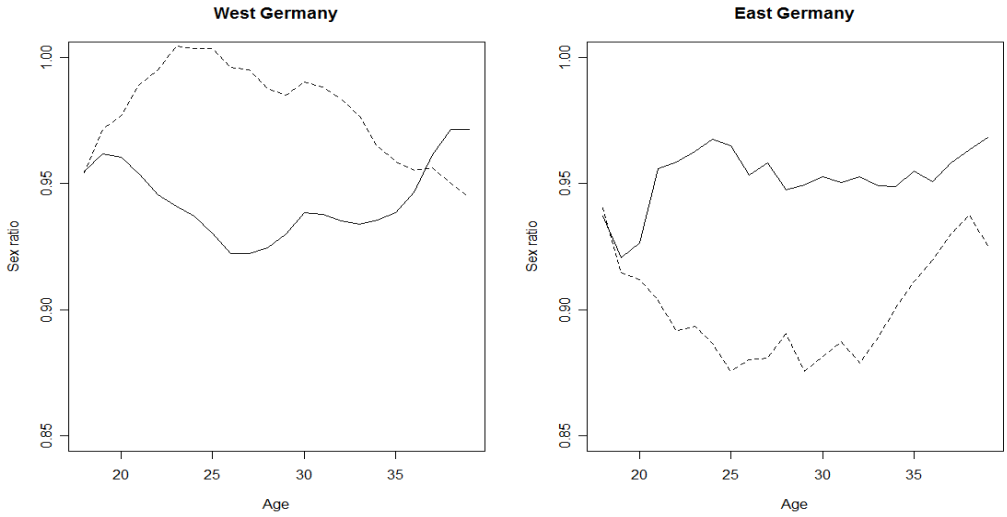
Note: Women (dashed line), men (solid line). Source: German Federal Statistical Office, own calculations.

Long-lasting, gender-specific migration has had a clear impact on the gender ratio within the East German population. Figure 3 illustrates the gender proportions (women/men) by age for the years 1991 and 2005. In 1991 any gender proportion discrepancy was inconspicuous for most age groups.[4] However, from 1991 until 2005 the female-to-male gender ratio in East

[4] Due to biological reasons, only 95 female children are born per 100 male children. The male-to-female ratio increases to 96 females per 100 males for the age group of 18 to 29 years old due to the higher mortality of young males. The number of men and women is equal for 50 year olds, but for higher ages there are more women than men.

Germany dropped below 0.9 for all ages from 23 to 34, meaning that there were less than 90 women per 100 men. In West Germany, on the other hand, the female-to-male discrepancy in the gender proportions increased during the same period for all ages. In some cases there were even more young women than young men.

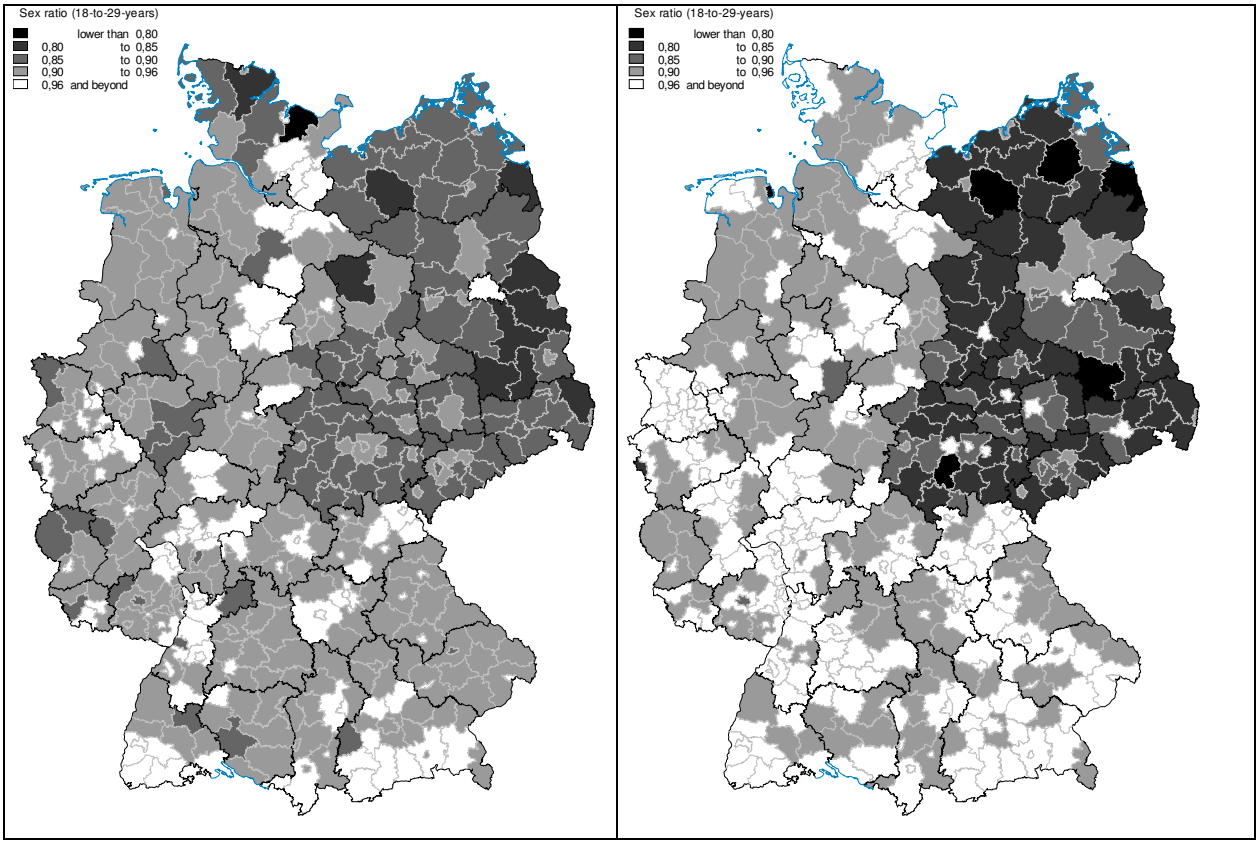
Figure 3 **Gender proportions—women/men, 18-to-39-years old living in East and West Germany (1991 and 2005).**



Note: 1991 (solid line), 2005 (dashed line). Source: German Federal Statistical Office, own calculations.

Looking at the development of the gender proportions for the 18-to-29-year olds on a more local or regional level, it is striking that regional disparities increased dramatically from 1995 to 2005. In 1995 only a few counties, primarily in the southeast of Brandenburg had female-to-male ratios below 0.85 (nine counties). In 2005, on the other hand, 59 counties in East Germany had female-to-male ratios ranging from 0.8 to 0.85; five counties even had values below 0.8. While only 28 East German counties (mostly urban areas) were able to reduce their surplus of males during this period, the surplus *increased* in 85 counties. In West Germany, in contrast, the gender-proportion discrepancy during the given period increased in 272 counties and decreased in only 54 counties.

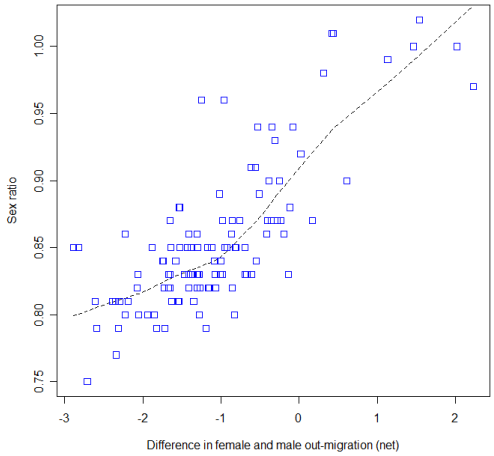
Figure 4 **Gender proportions (women/men) for the 18-to-29 age group at the county level (1995 and 2005).**



Source: German Federal Statistical Office, own calculations.

Those counties where a large surplus of males had already developed during the last decade, such as Uecker-Randow, Parchim, Elbe-Elster Kreis, and Prignitz, also had more women than men leaving in the more recent years from 2002 to 2005. In 2005 the gender proportions were balanced in only ten urban areas—Stralsund, Dresden, Jena, Weimar, Erfurt, Greifswald, Halle, Berlin, Leipzig, and Potsdam—and these urban areas were the only ones in East Germany where fewer women than men left in the period from 2002 to 2004. The correlation between gender-specific migration from 2002 to 2004 (women minus men) and the gender proportions in 2004 (women/men) is quite high, with a value of 0.78. So it seems that the reasons for the overlap of migrating women cannot be explained by temporary imbalances in the 1990s, but rather by factors which are still of importance today.

Figure 5 **Relationship between the gender proportions of the 18-to-29-year-old population in 2004 and the difference between female and male migration for the same age group from 2002 to 2004.**



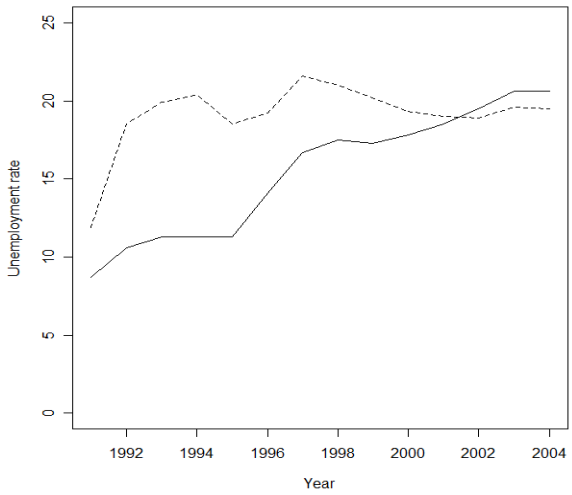
Source: German Federal Statistical Office, own calculations.

While the general reasons for migration from East to West have been investigated in several studies, there exists no study thus far which tries to empirically identify the determinants for the tremendous gender imbalance in the East which we observe today. However, some plausible presumptions have been made to explain the discrepancy. It has been argued that lesser opportunities for women in education and employment in the East and the greater desire for employment opportunities for East German women, compared to those in the West. precipitated them leaving the East at a higher rate than men (Dienel et al., 2004). The unemployment rates of women in the East were higher than those of men in the first years of the 1990s, with labor-force participation rates of 77.2 percent, compared to only 58.4 percent in the West in 1991 (Cornelißen 2005).

Geißler (2000) argues that the process of "catch-up modernization" in the East is connected with some phenomena of downgrading or negative modernization. Gains in gender equality in the labor market which were obtained in the socialist Germany were again lost in the process of unification. During the labor market crisis after unifaction, women's chances to find a new job after unemployment were significantly lower than those of men. According to Geißler,

gender-specific hierarchies in the labor market increased and women had therefore less opportunity to advance in the dynamics of change; men improved their job situation two-to-three times more than women.

Figure 6 Unemployment rates for East Germany by gender (1991–2004).



Note: Women (dashed line), men (solid line). Source: Institut für Arbeitsmarkt und Berufsforschung.

However, we would like to point out that all these findings focus on the first year of the 1990s and indicate little about the ongoing gender-specific migration from East to West. In more recent years, structural change occurred at the expense of men, because male-dominated jobs in particular were affected by cutbacks. While the unemployment rate of women in the East started to fall in 1997, the unemployment rate of men continuously increased and has been higher than the rate for women since 2002 (Figure 6). Nevertheless, even today more women than men leave the East.

3 Determinants of gender-specific migration from East to West Germany

In the following part, we analyze the determinants of the gender-specific migration from East to West at the county level. Germany has 439 counties, and the periods under study are 1995

to 2005, and 2002 to 2004, respectively.[5] We use data from the German Federal Statistical Office and combine socioeconomic indicators with data on migration. Our goal is to identify the patterns of gender-specific migration and the socioeconomic variables determining it.

3.1 Regional characteristics

We start with a cluster analysis to identify the regional patterns of gender-specific migration. There is a multitude of socioeconomic indicators available at the county level, including indicators for population, education, employment, and the economy in general. Thus, it was necessary to reduce the data based on theoretical considerations and the data availability for the age group 18-to-29-years old. Furthermore, we exclude variables which have a bivariate correlation greater than 0.8 with other relevant variables.

After reducing the data, we performed a cluster analysis. The analysis for East Germany alone did not yield satisfactory results since the socioeconomic conditions in the East are too homogeneous to generate clusters from which well-founded hypotheses can be usefully derived. When including the West, we find clusters which help us to better understand the reasons for the gender-specific East-to-West migration.

A solution with five clusters turned out to be the best. Table 1 summarizes the characteristics of the five clusters. In the following we describe the characteristics of each cluster. Cluster 3, which is typical for counties in the East, will be discussed in particular detail.

[5] Data on the number of men and women per age group is available from 1995 to 2005 at the county level. Several reforms of the county structure at the beginning of the 1990s make it extremely difficult to compile data from before 1995. Some gender-specific indicators, such as youth employment rates per gender, immigration and emigration rates per gender, and the number of new apprenticeships, are only available for 2002 to 2004 at the county level. Data sources are the German Federal Statistical Office, the *Bundesamt für Bauwesen und Raumordnung*, and the *Bundesagentur für Arbeit*.

Table 1 Regional Milieus of Gender-Specific Migration, Cluster Means

No.	Indicator	Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5
1	Percentage of women among school leavers with no degree or Hauptschule [6] (1998 to 2004)	41.71	40.56	36.38	41.90	41.23
2	Percentage of women among school leavers with Abitur [6] (1998 to 2004)	55.74	55.64	60.09	55.87	55.01
3	Share of female school leavers with Abitur among all female school leavers (1998 to 2004)	32.91	22.47	28.92	39.64	21.51
4	Share of male school leavers with no degree among all male school leavers (1998 to 2004)	11.91	11.71	14.89	8.92	10.93
5	University students per 1000 inhabitants (1998 to 2003)	61.61	3.87	5.97	166.74	2.14
6	Percentage of female university students (1998 to 2003)	46.39	14.44	16.76	48.99	12.80
7	Rate of women finding an apprenticeship training position (2002 to 2004)	93.57	93.85	90.23	95.78	94.39
8	Difference in the rates of finding an apprenticeship training position, females minus males (2002 to 2004)	-0.72	-1.23	-2.29	-0.73	-1.12
9	Students in professional schools per 1000 inhabitants (1998 to 2004)	6.40	1.80	2.34	9.26	2.68
10	Percentage of female students in professional schools (1998 to 2004)	51.32	14.27	77.73	52.16	66.30
11	Youth unemployment rate (1998 to 2004)	61.97	52.57	93.89	46.54	44.21
12	Difference in the youth unemployment rates, females minus males (2002 - 2004)	-3.45	-2.93	-4.07	-3.06	-2.85
13	Difference in unemployment rates, females minus males (2002 to 2004)	-2.96	-0.46	0.82	-3.02	-1.20
14	Employment rate of women younger than 30 years (2002 to 2004)	39.31	43.73	37.90	37.05	44.19
15	Difference in the employment rates, females minus males (2002 to 2004)	-0.66	-2.98	-2.17	-0.77	-2.95
	Percentage of employees in … among all employees (2004)					
16	Agriculture and forestry	1.67	3.62	3.05	1.61	3.85
17	Manufacturing	18.37	24.82	18.89	19.08	22.97
18	Construction	5.39	7.04	8.27	4.54	6.91
19	Retail, hotel and restaurant industry	24.99	24.74	24.35	24.53	25.64
20	Financing, renting and business services	16.92	12.50	12.51	16.51	11.70
21	Public administration	32.65	27.28	32.93	33.73	28.93
22	Net-migration rate of 18-to-29-year old women (2002 to 2004)	4.11	-0.60	-3.92	7.04	-0.02
23	Difference in net-migration rates of 18-to-29-year olds, females minus males (2002 to 2004)	0.19	0.07	-1.21	-0.26	0.39
24	Sex ratio of the 18-to-29-year olds, females/males (2004)	1.01	0.94	0.85	1.07	0.96

Source of the data: Indicators 1, 2, 3, 4, 14, 15, 22, 23, 24: German Federal Statistical Office, Datenbanken Statistik regional bzw. Genesis online, own calculations; Indicators 5, 6, 9, 10: Bundesamt für Bauwesen und Raumordnung, Datenbank INKAR 2006, own calculations; Indicators: 7, 8, 11, 12, 13: Bundesagentur für Arbeit, Online-Datenangebot; Indicators 16, 17, 18, 19, 20, 21: Arbeitskreis Erwerbstätigenrechnung des Bundes und der Länder (2006): Erwerbstätige in den kreisfreien Städten und Landkreisen der Bundesrepublik Deutschland 1991 bis 2004, own calculations.

Cluster Type 1—Service Metropolises: Type 1 includes 52 counties in West Germany and 13 counties in East Germany, primarily large cities. The gender proportion is above average in this cluster (more women than men immigrate) and the share of students is the second highest

[6] Germany has a traditional three tiered school system with an early selection into different school forms (Hauptschule, Realschule and Abitur). In general the selection is done after 4th grade. Abitur is also called general qualification for university entrance, while the overall job market situation for school graduates with Hauptschule is quite bad.

among all clusters. Large cities with important universities and strong service and tourism sectors belong to this cluster. Unemployment among young people is low. Employment rates of young women are low, as well, indicating the importance of these counties for the education of young people. The proportion of people employed in service sectors is among the highest of all clusters.

Examples: Berlin, Munich, Frankfurt/Main, Hamburg, Leipzig, Dresden

Cluster Type 2—Mixed-Type East/West: Type 2 characterizes mainly rural counties which have the highest proportion of employees in manufacturing of all counties. The gender proportion in this cluster is slightly below the national average. In general, this cluster includes both counties from the East (25) and from the West (77). However, in the West, counties which are primarily rural, peripheral, and highly dependent on manufacturing industries belong to this cluster, all of which attributes are not highly attractive to female immigrants. In the East primarily counties with a slightly better situation belong to this cluster, such as counties in the outskirts of larger cities, counties close to the West, or tourism-dominated counties at the coast of Mecklenburg-Vorpommern. Statistically, the lagging counties of the West and the counties which are slightly above average in these respects in the East seem to be quite similar. The eastern counties from this type differ mainly from the typical eastern counties (Cluster Type 3, which will be addressed later on) by having a rather high employment ratio for women under 30. Young people are moderately leaving Type 2 counties; however the gender proportion is not strongly unbalanced.

Examples: Oberbergischer Kreis, Ostalbkreis, Landkreis Oldenburg, Nordwestmecklenburg

Cluster Type 4—Student Cities: Only 15 (urban) counties belong to Cluster Type 4. All these counties are classical student cities, meaning that the number of students is extremely high in relation to the total population. The universities in these cities offer very broad curricula, including programs in social sciences, the humanities, medicine, and education, which are especially attractive for women. The gender proportion in these cities is high above average;

there already are more women than men living there, and still more women than men are moving to these cities. Only two cities from the East belong to this cluster, namely Jena and Greifswald.

Examples: Münster, Heidelberg, Freiburg

Cluster Type 5—Standard-Type West: Among Type 5 counties, the gender proportion of the 18-to-29-year olds is close to the national average; immigration and emigration of young people is more or less balanced, although slightly more women immigrate than emigrate. This cluster type is the characteristic type for West Germany. It includes 176 counties from the West and not a single county from the East. The gender proportion in this cluster is slightly above average; net migration of women is still positive but not disproportionately high compared to men.

Cluster Type 3—Standard-Type East: Cluster Type 3 is the predominant cluster type in the East. It is of special importance to understand the missing-women phenomenon in East Germany, therefore, it is evaluated in greater detail than the other types. 73 out of 81 counties of this cluster are from the East, two thirds of all East German counties. This cluster type is characterized by a very high emigration rate of young people. Women are leaving at an above–average rate and the gender proportion in these counties is strongly unbalanced; there are on average 85 young women per 100 young men. From 2002 to 2004 an average of 3.92 per 1000 women were emigrating from these counties, whereas the emigration rate for the young men was 2.7 per thousand. And women continue to leave at a disproportionately high rate compared to men currently. Cluster Type 3 therefore represents the East German phenomenon of a disproportionately high rate of emigration of young women.

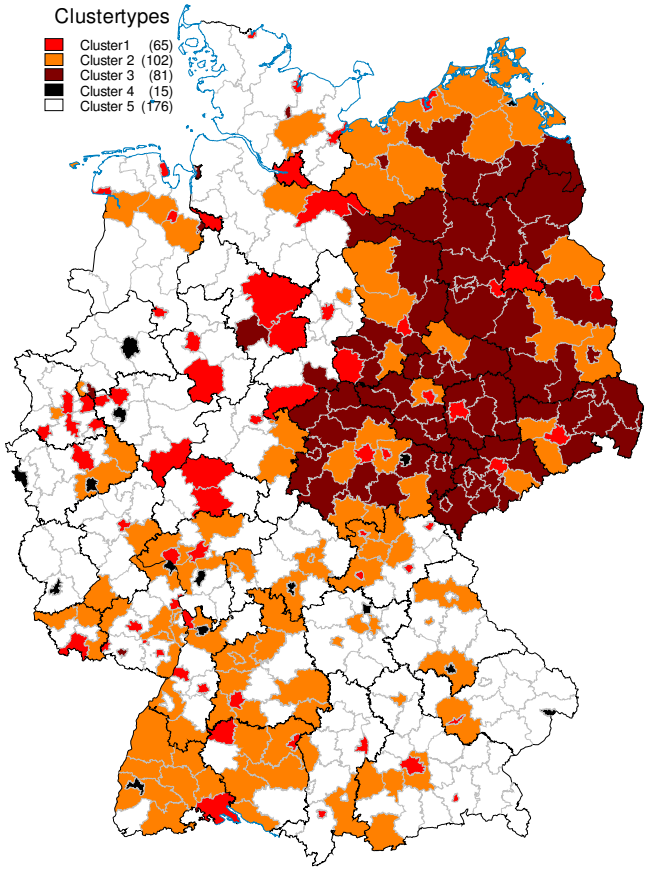
The characteristic of high emigration rates of young women is accompanied by a low female employment rate, low employment success rates for women difficulty finding apprenticeships, and an overall high unemployment rate among young people. Type 3 counties have by far the highest share of workers in construction and the lowest share of

employees in the retail or gastronomy sectors. The labor market of these counties is therefore characterized by an overall difficult situation and is additionally shaped by male-dominated jobs in construction and a less-developed service sector. The low female employment rates and difficulties in finding apprenticeships indicate that young women have inadequate economic opportunities or perspectives in these areas. The fact that apprenticeships rates for women are far below those of men should partly explain the disproportionately high emigration level of young women. Until this point, the findings are not very surprising and consistent with our expectations.

More surprising are the indicators for gender-specific education outcomes in Type 3 counties. The rate of young men leaving school without a degree is the highest among all clusters in that about 15 percent of the men who left school between 1998 and 2003 did not even receive the lowest degree of the German school system (*Hauptschule*). This failure of young men in school could possibly be explained by the difficult labor-market situation and their poor economic prospects, both likely causing a lack of motivation. Extremely surprising however is that this is only true for males: Only 36 percent of the students who leave school without any degree or with only the lowest degree are women. Nowhere else there are so few women among the dropouts with a low level of qualification. Moreover, nowhere else are there more women among the students who completed the highest degree in the German school system (60 percent), which degree gives access to university education (*Abitur*). Nevertheless, on average, women in the urban Clusters 1 and 4 are still more successful in school than women in Cluster 3, but there are not such big gender differences in these clusters. Remarkable is the high proportion of women in professional schools in Cluster 3—almost 78 percent of all students in these schools were female from 1998 to 2004. Professional schools are obviously considered a viable alternative to the weak dual apprenticeship market in these areas and seem to correspond to women's career aspirations and educational levels.

Nowhere else is the highest degree in the German system obtained less frequently by young men than in Cluster 3, and nowhere else are there less men in professional schools. These lesser acheivements of young men in education are not the result of good chances in the classical dual-apprenticeship or labor markets as the unemployment rate for these men is even higher than the rate for women of the same age.

Figure 7 **Regional clusters of gender-specific migration.**



Source: Own calculations.
Cluster 1… Service metropolises
Cluster 2… Mix-type east/west
Cluster 3… Standard type east
Cluster 4… Student cities
Cluster 5… Standard type west

The eight counties from West Germany which belong to Cluster 3 all are lacking in infrastructure and are characterized by old industry which is as well dominated by traditionally male jobs: Neumünster (military), Osterode am Harz (mining and metallurgy), Hameln-Pyrmont, Lüchow-Dannenberg (a former border region), Delmenhorst (military), Bremerhaven (shipyards and harbor), Gelsenkirchen (steel and coal), and Pirmasens (shoes

and military). In common with the East German counties, these few West German counties have low rates of women finding apprenticeships, a high proportion of women in professional schools, and a high percentage of male dropouts without a degree

For some reason women react to the less opportunities in these underdeveloped counties by increased efforts in education, while for men, in contrast, a decrease in educational outcomes can be observed. The observation that the genders are drifting apart with respect to education is especially pronounced in former East Germany. We assume that this gap in education outcomes in Type 3 counties itself is a reason for the disproportionately high emigration rate of young women.

3.2 Hypotheses

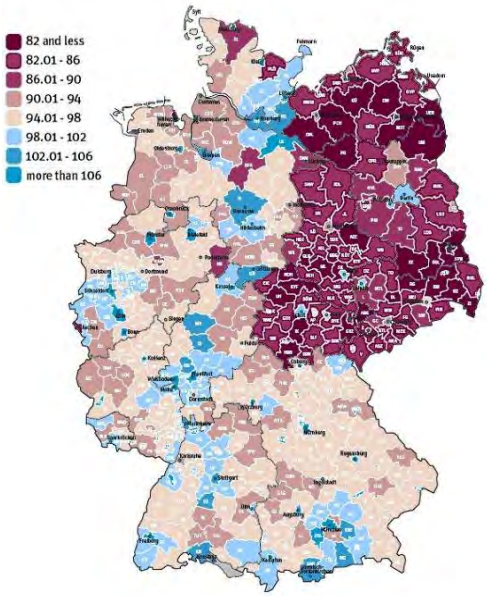
Comparing the two maps in Figure 8 one clearly indicates a strong correlation between the gender ratio (females/males) in the age group 18-to-29-years old and the economic dynamics or economic success of a region. However, it would be far too simple to conclude that young women go where the money is or that money goes where the young women are. We therefore try to go into more detail and do not take GDP or taxpayers' income as explanatory variables for the disproportionately high emigration rate of young women. Instead, we examine the structure of the economy in more detail and consider other factors which might play a role, as well.

Aside from family reasons, migration is usually motivated by the desire to improve the personal or family economic situation. People leave areas with bad economic prospects and migrate toward areas with good, or at least better, economic prospects, provided that the returns on migration are greater than the costs (Harris and Todaro, 1970; Mincer, 1978; Pissarides and Wadsworth, 1989; Sjaastad, 1962; Todaro, 1969). For young people the movement toward better economic prospects clearly includes the movement toward better educational opportunities. However, there have been discussions about whether it is really

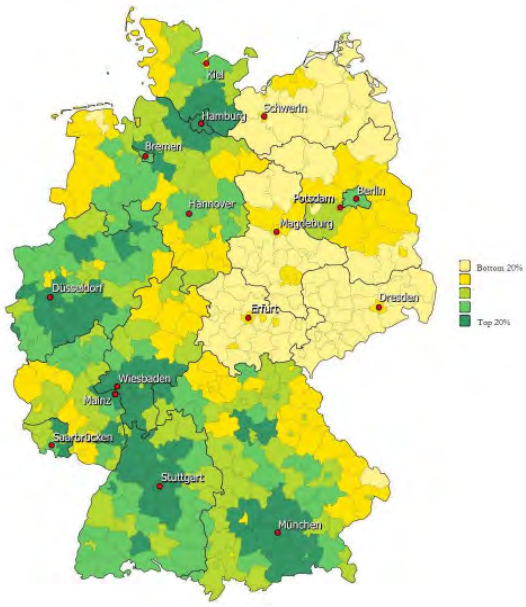
true that immigrants are self-selected, meaning that those who migrate are more ambitious and success-seeking in the destination labor market than they were in their home markets (Borjas, 1987; Chiswick, 1999; Jasso and Rosenzweig, 1990). Nevertheless, in the case of internal German East-to-West migration, we can be quite certain that migration is strongly influenced by economic prospects.

Figure 8 Do young women go where the money is, or does money go where the young women are?

Number of women per 100 men in the age group 18-29 in 2003.



Average income of tax payers



Source: German Federal Statistical Office, own calculations.

We therefore presume that regions with high unemployment, few institutions of higher education, and much "old-fashioned" industry are the regions most abandoned by young people. Further, we presume that those regions disproportionately deserted by women have labor markets shaped by traditionally male jobs.

The greater success of East German women in school clearly increases their ability to emigrate compared to men. We also believe that this not only increases their ability, but also their desire to emigrate, because they become aware of life and work opportunities existing elsewhere but absent locally. The fact that young East German women are on average better

educated than young men seems to be the crucial determinant of higher female emigration rates and the resulting missing-women phenomenon in East Germany. However, it remains puzzling why women in East Germany increase efforts in education, while for men, on the other hand, a decrease in educational outcomes can be observed. We are able to partially explain this phenomenon by a male-dominated industry in the East, which allows males to enter the job market with lower levels of qualification but does not offer enough jobs for females. However, gender differences in human behavior which are of biological or psychological (due to socialization) nature, maybe also play a role (Eagly and Wood 1999). It is perhaps indeed is the case that women are more flexible and are better able to handle structural change. Though these questions are interesting and provide a rich field for future research, they are beyond the scope of this paper. We focus rather on the economic and social aspects which influence gender-specific migration behavior.

Apparently, there are cultural differences in female labor-force participation rates and there is a broad literature base attempting to explain these differences across countries (Alwin et al., 1992; Antecol, 2000; Matysiak and Steinmetz, 2008; Reimers, 1985, among others). In the former GDR, the female labor-force participation rate was traditionally extremely high, and even after unification, it continued to be on a high level (Bonin and Euwals, 2005; Matysiak and Steinmetz, 2008). Adler (2002, 2004) even finds that family- and life-planning preferences of young East German women shifted after unification. Employment is prioritized over family formation, child bearing is postponed in favor of more child-free years, and marriage is diminished in importance. We presume that East German women's high preference for employment intensifies their movements toward economic prospects. Home production or unemployment is—at least for the majority—not considered an acceptable alternative to employment. The young women therefore move to areas where they can fulfil their desire to combine work and family.

Becker (1973, 1974) laid the foundations for an economic theory of partner selection and marriage. At its time of its inception, it was a groundbreaking idea that partner selection is not only about love and emotional things but also has economic aspects. Burdett and Coles (1997) developed the theory of marriage in relation to class and social status further. Timm (2004) and Fisman et al. (2006) confirmed empirically that social and educational status is very important to women's partner-selection decisions. Fisman et al. (2006) further point out that men do not value women's intelligence and social status when it exceeds their own. We therefore presume that the fact that females are outperforming males in terms of education in East Germany has severe consequences for the availability of enough adequate partners for young women. This limited supply of potential partners could influence the migration and return decisions of young East German women.

3.3 Regression analysis

In the following we analyze the determinants of gender-specific migration and account for their impact. In our regression analysis, we include several variables already used in the cluster analysis. The difference in the migration rates of males and females in the age group 18 to 29 years is our dependent variable.

We mainly focus on such available variables which are gender specific, because gender-specific information is necessary to be able to explain gender-specific migration behavior. The difference in youth unemployment rates is not included in the analysis because the unemployment rate of young males is higher than the unemployment rate of young females throughout East Germany. It therefore cannot explain the excess female emigration. Modeling the structure of the economy, we explore two different approaches. First, we include the share of employees in a certain sector relative to the whole (working-age) population in our analysis. Second, we only look at female employees relative to the female population. While the first step of the analysis gives insight into the structure of the economy as a whole, the

latter step includes specific information on female employment patterns. Due to data restrictions, we can only include jobs which are subject to social insurance contributions. As in the cluster analysis, we carry out the regression analysis at the county level. We previously argued that the migration behavior of the 18-to-24-year olds is of special importance for the resulting gender proportions. We therefore model the gender-specific migration both for all young adults (18 to 29 years) and just for the important group of the 18-to-24-year olds.

We perform stepwise simple linear regressions. The first step includes variables on the structure on the economy, namely the importance of certain sectors for the local labor market and, in particular, the labor market of women. In step two we additionally consider variables on gender-specific achievements in education. In the last step, we include an indicator which is relevant for female partner-selection behavior, namely the local availability of men with high educational or professional qualifications.

We start with the difference in female and male migration rates for the 18-to-24-year olds as a dependent variable. As shown before, the migration behavior of this age group accounts for the largest fraction of the unbalanced gender proportions in East Germany. We therefore expect the statistical effects to be strongest for this age group.

The variation in the structure of the labor market alone (Column 1) explains 47 percent (Table 2a) and 44 percent (Table 2b), respectively, of the dependent variables' variation. Column 1 shows significant negative beta coefficients for the size of the sectors agriculture, forestry, construction, and public administration, relative to the total population. Regions with a high proportion of employees in these sectors are abandoned (net) at a disproportionately high rate by young women. Either obtaining an apprenticeship or employment in these sectors seems to be insufficiently attractive or there are not enough jobs for women available in these male-dominated sectors, to prevent female emigration. In the case of public administration, this relationship between employment and emigration is somewhat surprising. Overall, female employment is very high in this sector. However, due to shrinking population size and

Table 2a Determinants of gender specific migration, 18-to-24-year olds
Dependent variable: Difference in net-migration rates of 18-to-24-year olds, females minus males (2002 to 2004)

	Std. Beta	VIF	Std. Beta	VIF	Std. Beta	VIF
Percentage of employees in … per 1000 18-to-60-year old inhabitants (2002)						
Agriculture and forestry	**-0.468**** (-9.77)	1.6	**-0.161**** (-3.06)	2.5	**-0.181**** (-3.44)	2.6
Manufacturing	-0.040 (-0.97)	1.2	**-0.094*** (-1.99)	2.1	-0.067 (-1.39)	2.2
Construction	**-0.177**** (-3.95)	1.4	**-0.160**** (-3.76)	1.7	**-0.123**** (-2.80)	1.8
Retailing	***0.096***+ (1.81)	2.0	0.029 (0.59)	2.2	0.045 (0.92)	2.2
Hotel and restaurant industry	**0.124**** (3.05)	1.2	0.054 (1.34)	1.5	***0.073***+ (1.79)	1.6
Transportation and broadcasting	-0.062 (-1.24)	1.8	-0.063 (-1.40)	1.9	-0.039 (-0.85)	1.9
Credit and insurance business	0.061 (1.13)	2.1	-0.039 (-0.79)	2.3	-0.019 (-0.39)	2.3
Housing business and business services	**0.168*** (2.37)	3.6	**0.231**** (3.49)	4.0	0.102 (1.27)	6.1
Public administration	**-0.175**** (-3.16)	2.2	**-0.129*** (-2.54)	2.4	***-0.092***+ (-1.78)	2.5
Education and teaching	-0.024 (-0.37)	2.9	0.085 (1.34)	3.8	0.014 (0.20)	4.4
Difference in the rates of finding an apprenticeship training position, females minus males (2002 to 2004)			0.046 (1.26)	1.2	0.041 (1.13)	1.2
Employment rate of women younger than 30 years (2002 to 2004)			**0.203**** (4.27)	2.1	**0.181**** (3.78)	2.2
Difference in the employment rates, females minus males (2002 to 2004)			**-0.167**** (-3.37)	2.3	**-0.202**** (-3.97)	2.4
Difference in unemployment rates, females minus males (2002 to 2004)			**-0.224**** (-4.48)	2.3	**-0.270**** (-5.16)	2.6
Percentage of female university students (1998 to 2003)			**0.140**** (3.53)	1.5	**0.119**** (2.98)	1.5
Percentage of women among school leavers with no degree or Hauptschule (1998 to 2004)			**0.114*** (1.97)	3.1	**0.112*** (1.96)	3.1
Percentage of women among school leavers with Abitur (1998 to 2004)			**-0.183**** (-3.56)	2.4	**-0.157**** (-3.02)	2.5
Percentage of female students in professional schools (1998 to 2004)			***0.067***+ (1.88)	1.2	**0.074*** (2.10)	1.2
Share of male employees with high qualification among all male employees (1999 to 2004)					**0.160**** (2.77)	3.1
Adjusted R^2	0.463		0.582		0.590	
Number of observations	363		363		363	

Table 2b Determinants of gender specific migration, 18-to-24-year olds
Dependent variable: Difference in net-migration rates of 18-to-24-year olds, females minus males (2002 to 2004)

	Std. Beta	VIF	Std. Beta	VIF	Std. Beta	VIF
Percentage of female employees in … per 1000 18-to-60-year old female inhabitants (2002)						
Agriculture and forestry	**-0.503**** (-11.02)	1.4	**-0.188**** (-3.66)	2.4	**-0.202**** (-4.00)	2.4
Manufacturing	-0.016 (-0.37)	1.3	**-0.113*** (-2.32)	2.1	**-0.096*** (-2.00)	2.1
Construction	**-0.091*** (-2.17)	1.2	**-0.091*** (-2.26)	1.5	***-0.067+*** (-1.67)	1.5
Retailing	-0.015 (-0.25)	2.3	-0.067 (-1.27)	2.5	-0.017 (-0.32)	2.6
Hotel and restaurant industry	0.015 (0.38)	1.1	-0.026 (-0.65)	1.4	0.006 (0.15)	1.5
Transportation and broadcasting	0.012 (0.24)	1.8	0.006 (0.13)	1.9	0.025 (0.56)	1.9
Credit and insurance business	0.038 (0.67)	2.2	-0.074 (-1.45)	2.4	-0.050 (-0.99)	2.4
Housing business and business services	**0.259**** (3.32)	4.2	**0.286**** (3.99)	4.6	0.117 (1.40)	6.5
Public administration	**-0.225**** (-3.80)	2.4	**-0.115*** (-2.15)	2.6	-0.084 (-1.58)	2.6
Education and teaching	0.004 (0.06)	2.9	***0.122+*** (1.88)	3.8	0.053 (0.80)	4.1
Difference in the rates of finding an apprenticeship training position, females minus males (2002 to 2004)			0.060 (1.63)	1.2	0.050 (1.38)	1.2
Employment rate of women younger than 30 years (2002 to 2004)			**0.240**** (4.75)	2.3	**0.217**** (4.34)	2.3
Difference in the employment rates, females minus males (2002 to 2004)			**-0.158**** (-3.27)	2.1	**-0.207**** (-4.21)	2.2
Difference in unemployment rates, females minus males (2002 to 2004)			**-0.159**** (-3.00)	2.5	**-0.222**** (-4.06)	2.8
Percentage of female university students (1998 to 2003)			**0.145**** (3.60)	1.4	**0.118**** (2.93)	1.5
Percentage of women among school leavers with no degree or Hauptschule (1998 to 2004)			**0.139*** (2.35)	3.1	**0.140*** (2.42)	3.1
Percentage of women among school leavers with Abitur (1998 to 2004)			**-0.206**** (-3.93)	2.5	**-0.169**** (-3.24)	2.5
Percentage of female students in professional schools (1998 to 2004)			0.043 (1.20)	1.2	***0.059+*** (1.66)	1.2
Share of male employees with high qualification among all male employees (1999 to 2004)					**0.196**** (3.75)	2.5
Adjusted R^2	0.437		0.569		0.583	
Number of observations	373		363		363	

associated reductions in staff in this sector, jobs in public administration are rare for new young female job market entrants. The hotel and restaurant industry, as well as the housing industry and business services, have a strong positive impact on female migration. Business services in particular seem to correspond best to female job perspectives and educational levels.

Column 2 contains the estimation results for a model which additionally contains indicators for female education outcomes relative to male-education outcomes. This increases the explained variation considerably, to 58 and 57 percent, respectively. Except for the restaurant and hotel industry, the significance of the sectoral variables remains more or less the same, both for all employees and for only female employees. Women leave such areas at a disproportionately higher rate when female unemployment is higher than male unemployment. The same is true for areas where the proportion of female dropouts with *Abitur* is high and the proportion of female dropouts with *Hauptschule* graduation or less is low, as is the case for many rural counties in East Germany. Female migration is directed to those counties where the employment rate of young women is high and where many women are enrolled in professional schools or universities. For the age group of 18 to 24 years, it is very clear that female emigration is directed to counties with a strong service sector and good learning opportunities.

In a last step we try to model the attractiveness of the domestic partner market. As indicator for a good supply of potential partners, we use number of men with high qualifications relative to the entire male working population. The explained variation increases slightly. This indicator carries a significant and positive sign. This implies that regions with many highly qualified men are inhabited by relatively more young women, whereas regions with only a few highly qualified men are left disproportionately bereft. To control we also ran a regression where we included the number of highly qualified women relative to the female working population. It turns out that this indicator is not significant. This means that it is not

the regions with many jobs for highly qualified women which favor female immigration, but rather those regions with many highly qualified men. However, due to possible problems of multicollinearity, we decided to only present the model with the highly qualified men as our main result. The results for the model which additionally includes the proportion of highly qualified women can be found in the annex.

Tables 3a and 3b show the same analyses for the 18-to-29-year olds. We expect that the overall results are little bit weaker compared to the 18-to-24-year olds, because the 25-to-29-year olds show migration patterns different than those of the younger group. Moves motivated by higher or professional education are now finished and migration due to jobs, returning after education, and especially the founding of a family and moving in with a partner become more important. Thus, the migration behavior of this group has in many ways alleviating effects on the unbalanced gender proportions resulting primarily from the migration behavior of the younger group.

As expected, the explained variation in these models is lower than the explained variation in the previous regressions. The effects of the industrial sectors are quite similar. Areas shaped by agriculture, forestry, construction, public administration, and education are deserted by young women at a disproportionately high rate, while areas with strong restaurant and hotel industry, as well as housing industry and business services, attract young women. For the educational sector, a similar argumentation like for the public administration sector is plausible. The overall share of women in these sectors is quite high, but the local prospects for young new job market entrants are quite bad. Since women in these sectors normally are well educated, they can compete in supraregional labor markets, and therefore have the ability to immigrate to areas which offer better job prospects for the future.

Table 3a Determinants of gender specific migration, 18-to-29-year olds
Dependent variable: Difference in net-migration rates of 18-to-29-year olds, females minus males (2002 to 2004)

	Std. Beta	VIF	Std. Beta	VIF	Std. Beta	VIF
Percentage of employees in … per 1000 18-to-60-year old inhabitants (2002)						
Agriculture and forestry	**-0.336**** (-6.19)	1.6	-0.037 (-0.59)	2.5	-0.052 (-0.83)	2.6
Manufacturing	-0.074 (-1.57)	1.2	-0.090 (-1.59)	2.1	-0.069 (-1.20)	2.2
Construction	**-0.139**** (-2.75)	1.4	**-0.118*** (-2.33)	1.7	***-0.090+*** (-1.70)	1.8
Retailing	***0.101+*** (1.68)	2.0	0.038 (0.66)	2.2	0.050 (0.86)	2.2
Hotel and restaurant industry	**0.177**** (3.83)	1.2	**0.095*** (1.97)	1.5	**0.109*** (2.24)	1.6
Transportation and broadcasting	***-0.099+*** (-1.76)	1.8	***-0.091+*** (-1.70)	1.9	-0.072 (-1.33)	1.9
Credit and insurance business	0.094 (1.53)	2.1	0.002 (0.03)	2.3	0.017 (0.28)	2.3
Housing business and business services	**0.168*** (2.09)	3.6	**0.221**** (2.81)	4.0	0.123 (1.28)	6.1
Public administration	**-0.128*** (-2.04)	2.2	***-0.099+*** (-1.65)	2.4	-0.072 (-1.16)	2.5
Education and teaching	**-0.366**** (-5.06)	2.9	**-0.252**** (-3.32)	3.8	**-0.307**** (-3.76)	4.4
Difference in the rates of finding an apprenticeship training position, females minus males (2002 to 2004)			0.044 (1.02)	1.2	0.040 (0.93)	1.2
Employment rate of women younger than 30 years (2002 to 2004)			**0.172**** (3.03)	2.1	**0.155**** (2.69)	2.2
Difference in the employment rates, females minus males (2002 to 2004)			-0.083 (-1.40)	2.3	***-0.109+*** (-1.79)	2.4
Difference in unemployment rates, females minus males (2002 to 2004)			**-0.185**** (-3.11)	2.3	**-0.220**** (-3.52)	2.6
Percentage of female university students (1998 to 2003)			**0.102*** (2.14)	1.5	***0.086+*** (1.78)	1.5
Percentage of women among school leavers with no degree or Hauptschule (1998 to 2004)			***0.115+*** (1.68)	3.1	***0.114+*** (1.67)	3.1
Percentage of women among school leavers with Abitur (1998 to 2004)			**-0.207**** (-3.37)	2.4	**-0.186**** (-3.00)	2.5
Percentage of female students in professional schools (1998 to 2004)			**0.092*** (2.17)	1.2	**0.097*** (2.30)	1.2
Share of male employees with high qualification among all male employees (1999 to 2004)					***0.123+*** (1.77)	3.1
Adjusted R^2	0.309		0.408		*0.411*	
Number of observations	373		363		*363*	

Table 3b Determinants of gender specific migration, 18-to-29-year olds
Dependent variable: Difference in net-migration rates of 18-to-29-year olds, females minus males (2002 to 2004)

	Std. Beta	VIF	Std. Beta	VIF	Std. Beta	VIF
Percentage of female employees in … per 1000 18-to-60-year old female inhabitants (2002)						
Agriculture and forestry	**-0.403**** **(-7.91)**	1.4	***-0.112+*** ***(-1.85)***	2.4	**-0.122*** (-2.02)	2.4
Manufacturing	-0.061 (-1.27)	1.3	**-0.128*** (-2.23)	2.1	**-0.116*** (-2.03)	2.1
Construction	-0.056 (-1.18)	1.2	-0.055 (-1.15)	1.5	-0.038 (-0.79)	1.5
Retailing	0.012 (0.19)	2.3	-0.041 (-0.67)	2.5	-0.007 (-0.11)	2.6
Hotel and restaurant industry	***0.077+*** (1.70)	1.1	0.022 (0.47)	1.4	0.044 (0.93)	1.5
Transportation and broadcasting	-0.009 (-0.16)	1.8	-0.005 (-0.09)	1.9	0.009 (0.16)	1.9
Credit and insurance business	0.074 (1.18)	2.2	-0.031 (-0.51)	2.4	-0.014 (-0.23)	2.4
Housing business and business services	**0.194*** (2.24)	4.2	**0.222**** (2.62)	4.6	0.105 1.06	6.5
Public administration	**-0.182**** (-2.77)	2.4	-0.091 (-1.44)	2.6	-0.070 (-1.09)	2.6
Education and teaching	**-0.313**** (-4.29)	2.9	**-0.192*** (-2.50)	3.8	**-0.240**** (-3.02)	4.1
Difference in the rates of finding an apprenticeship training position, females minus males (2002 to 2004)			0.050 (1.16)	1.2	0.044 (1.01)	1.2
Employment rate of women younger than 30 years (2002 to 2004)			**0.214**** (3.60)	2.3	**0.198**** (3.33)	2.3
Difference in the employment rates, females minus males (2002 to 2004)			-0.078 (-1.38)	2.1	***-0.112+*** (-1.91)	2.2
Difference in unemployment rates, females minus males (2002 to 2004)			***-0.121+*** (-1.94)	2.5	**-0.165*** (-2.52)	2.8
Percentage of female university students (1998 to 2003)			***0.090+*** (1.91)	1.4	0.072 (1.50)	1.5
Percentage of women among school leavers with no degree or Hauptschule (1998 to 2004)			**0.146*** (2.09)	3.1	**0.147*** (2.12)	3.1
Percentage of women among school leavers with Abitur (1998 to 2004)			**-0.198**** (-3.22)	2.5	**-0.173**** (-2.77)	2.5
Percentage of female students in professional schools (1998 to 2004)			0.066 (1.54)	1.2	***0.077+*** (1.54)	1.2
Share of male employees with high qualification among all male employees (1999 to 2004)					**0.135*** (2.17)	2.5
Adjusted R^2	0.299		0.401		0.406	
Number of observations	363		363		363	

Column Two indicates that fewer education-related factors are significant than in the analysis for the younger group. The group of the 25-to-29-year-olds weakens the effects of purely education-motivated migration. The impact of female employment rates, the difference in female and male unemployment rates, and the proportions of women among the school dropouts with *Abitur* and *Hauptschule* degrees or less remain significant. Interestingly, the proportion of women in professional schools has a stronger impact on female out-migration compared to the analysis which included the younger group alone. The migration behavior of the 18-to-29-year olds is directed towards areas with high female employment rates, especially in business services, with women leaving areas where women achieve better results in education than men.

Column 3 includes the same indicator for an attractive domestic partner market as before. The fraction of highly qualified men among all working men again shows a positive and significant sign. Also, the significance of the differences in female- and male-unemployment rates can be interpreted from a partner-selection viewpoint; in areas where the employment rate of young women is higher than the employment rate of young men, only few potential partners with adequate social status are available to the women and for this reason, as well as the other reasons discussed above, women are leaving these regions. The model presented here describes the phenomenon of disproportionately high emigration of young women from East Germany quite clearly. Enabled and motivated by their higher levels of education, the young women are leaving rural East German counties and moving to areas where they can find attractive jobs and where many men with high qualifications are available as potential partners.

4 Conclusions

The results of our analysis indicate that the disproportionately high emigration rate of young women from the East is mainly caused by the high female education level accompanied by a

lack of demand for highly qualified female labor. The higher the number of emigrating women compared to the number of leaving men is, the bigger is their share among school graduates with *Abitur*. The East regions which are most severely affected by emigration of young women have a labor market structure which does not conform to the wishes and life plans of young women, in that they have a high proportion of workers in construction and only a small share in real estate, finance, and business services.

Therefore, it is more difficult for women to find interesting apprenticeships or jobs locally. Moreover, young women in East Germany have an extraordinarily high level of education and often graduate from professional schools in services and medicine, which enables them to compete in job markets outside their home region, whereas this is not the case for most young men who traditionally have jobs in construction or manufacturing and lower levels of education. With education, both the will to migrate, as well as the ability to migrate, increase. Hence, women are more sensitive to deficits in the supply of adequate local jobs and react by emigrating, while young men mostly stay in their home regions.

However, in addition to education factors and economic structure, there are other interesting aspects of gender-specific migration. Pure economic factors can only partly explain the phenomenon of missing women in East Germany. Questionnaires asking women their motives for migration reveal that many times the reasons are private in nature (Paulig and Schäfer 1999; Dienel et al. 2003). These private reasons typically involve moving in with a new partner.

This does not necessarily mean that the women are following a partner from their home region to the West. The differences in male and female levels of education have also important consequences for women's partner-selection behavior since women prefare partners with at least the same educational level. Young women who leave their home region for higher education or a first job start new romantic partnerships in their new environment far more often than men who leave their home regions.

Kröhnert and Klingholz (2007) report that relationships between East German women and West German men occur much more often than vice versa. This fact naturally reduces the probability that the women will ever return to their regions of origin.

These conclusions raise the question why the dropout rate of young males in East Germany is so high and the final level of education so low compared to the young women. We presume that traditional male gender roles are a reason for this, because education and especially higher education were less important for traditional male jobs in crafts, manufacturing, and construction. All of these jobs once conferred a high social reputation in the former GDR. However, in recent years they have been severely affected by structural change of the economy and lost importance and stature.

The educational and spatial backwardness of young males has also social and economic consequences. Extreme right wing parties get the highest levels of support in counties with a considerable surplus of young male population (cf. Kröhnert und Klingholz 2007). The lack of education, career opportunities and – probably – potential partners can create a group of "bitter" young men that might be attracted by extreme right wing ideology with its traditional gender roles. In the 2006 election of the Landtag in Mecklenburg-Lower Pomerania, the region with the lowest female to male ratio in Eastern Germany, 23 percent of all men between 18 and 24 voted for extreme right wing NPD.[7] A lack of human capital and an atmosphere of xenophobia is a bad precondition for investment and economic development in East German regions.

We do not see any "easy solutions" for the *missing women phenomenon* in East Germany. Considering the complex reasons for the disproportional female out migration, simple financial incentives like "stay or return premia", recommended by the mayor of an East German town, will certainly fail. In the long run, the solution can only be found in the

[7] Infratest-Dimap, zit. nach www.endstation-rechts.de, http://www.endstation-rechts.de/index.php?option=com_content&task=view&id=201&Itemid=99, abgerufen am 24.5.2008

educational system and in a changing perception of gender roles by teachers, parents and young males themselves.

The discrepancy in educational levels of men and woman in Eastern Germany could also be seen as a consequence of the traditional German three tiered school system with its early selection into different school forms. A selection of 4th graders into three different power levels, like common in Germany, makes the educational performance of children especially dependent from the social and educational background of their parents and their expectations and motivation. In the case of Eastern Germany, boys seem to suffer from an outdated male role model that does not necessarily include higher education. Until today this extraordinary inequality is not adequately realized as a problem by political decision makers.

The consequences for East Germany, however, are severe. On the one hand, the over proportional out migration of young women aggravates the demographic decline of East German Regions. The drop of the total fertility rate to the lowest ever measured level of only 0.77 children per women in 1994 has already halved the next Generation of students, employees and potential parents in the East. Although the East German total fertility rate has been rising, its increase is partly compensated by decreasing numbers of young females. Kröhnert and Klingholz (2007) estimate, that between 1995 and 2005 about 100,000 children have not been born in East Germany due to a lack of women in relation to men. According to official population projections the East German population is expected to decline by 7.5 percent between 2007 and 2020, in Saxony-Anhalt even by 12.5 percent due to low birth rates and out migration (German Federal Statistical Office 2007).

References

Adler, M. (2002). German unification as a turning point in East German women's life course: biographical changes. *Work and Family Roles, Sex Roles* 47:83–98.

Adler, M. (2004). Child-free and unmarried: changes in the life planning of young East German women. *Journal of Marriage and the Family* 66:1170–1179.

Akerlof, G. A., A. K. Rose, J. L. Yellen and H. Hessenius (1991). East Germany in from the Cold: The Economic Aftermath of Currency Union. *Brookings Papers on Economic Activity* 1991,1:1-87.

Alesina, A. and N. Fuchs-Schündeln (2007). Good-Bye Lenin (or Not?): The Effect of Communism on People's Preferences. *American Economic Review* 97:1507-1528.

Alwin, D., M. Braun and J. Scott (1992). The separation of work and the family: attitudes towards women's labour force participation in Germany, Great Britain and the United States. *European Sociological Review* 8:13–37.

Antecol, H. (2000). An Examination of Cross-Country Differences in the Gender Gap in Labor Force Participation Rates. *Labour Economics* 7:409-26.

Becker, G. (1973). A theory of marriage: part I. *Journal of Political Economy* 81:813–846.

Becker, G. (1974). A theory of marriage: part II. *Journal of Political Economy* 82:11–26.

Bonin, H. and R. Euwals (2005). Why Are Labor Force Participation Rates of East German Women So High? *Applied Economics Quarterly* 51:359-386.

Borjas, G. (1987). Self-Selection and the Earnings of Immigrants. *American Economic Review* 77:531-553.

Büchel, F. and J. Schwarze (1994). Die Migration von Ost- nach Westdeutschland: Absicht und Realisierung. *Mitteilungen aus der Arbeitsmarkt- und Berufsforschung* 27:43-52.

Burda, M. (1993) The determinants of East-West German migration. *European Economtc Review* 37:452-461

Burda, M.C. und Hunt, J. (2001), From Reunification to Economic Integration: Productivity and the Labour Market in East Germany, *Brookings Papers on Economic Activity* 2001,2:1-92.

Burda, M. C., W. Härdle, M. Müller and A. Werwatz (1998), Semiparametric Analysis of German East-West Migration Intentions: Facts and Theory. *Journal of Applied Econometrics* 13:525-541.

Burdett, K. and M. Coles (1997) Marriage and Class. *Quarterly Journal of Economics* 112: 141–168.

Brückner, H. and P. Trübswetter (2004) Do the Best Go West? An Analysis of the Self-Selection of Employed East-West Migrants in Germany. *Empirica* 34:371–395.

Chiswick, B. R. (1999) Are Immigrants Favorably Self-Selected? *The American Economic Review* 89:181-185.

Conrad, C., M. Lechner and W. Werner (1996) East German fertility after unification: crisis or adaptation. *Population and Development Review* 22:331–358.

Cornelißen, W. (Ed.) (2005) Gender-Datenreport. 1. Datenreport zur Gleichstellung von Männern und Frauen in der Bundesrepublik Deutschland im Auftrag des BMFSFJ. *Bundesministerium für Familie, Senioren, Frauen und Jugend:* Berlin.

Decressin, J. (1994) Internal Migration in West Germany and Implications for East-West Salary Convergence. *Weltwirtschaftliches Archiv* 130:231-257.

Dienel, C. et al. (2004) Zukunftschancen junger Frauen in Sachsen-Anhalt. Abschlussbericht. *Hochschule Magdeburg-Stendal:* Magdeburg.

Eagly, A. H. and W. Wood (1999) The Origins of Sex Differences in Human Behavior: Evolved Dispositions versus Social Roles. *American Psychologist* 54:408–423.

Fisman, R., S. Iyengar, E. Kamenica and I. Simonson (2006) Gender Differences in Mate Selection. *Quarterly Journal of Economics* 121:673-697.

Geißler, R. (2000) Nachholende Modernisierung mit Widersprüchen. Eine Vereinigungsbilanz aus modernisierungstheoretischer Perspektive. *Aus Politik und Zeitgeschichte* 40.

Harris, J. R. and M. P. Todaro (1970). Migration, Unemployment and Development: A Two Sector Analysis. *American Economic Review* 60:120-42.

Heiland, F. (2004) Trends in east-West German Migration from 1989 to 2002. *Demographic Research* 11: 173-194.

Hunt, J. (2000) Why Do People Still Live in East Germany? *NBER Working-paper* No. 7645.

Hunt, J. (2001) Post-Unification Wage Growth in East Germany. *Review of Economics and Statistics* 83:190–195.

Hunt, J. (2002) The Transition in East Germany: When Is a Ten-Point Fall in the Gender Wage Gap Bad News? *Journal of Labor Economics* 20:148-169.

Hunt, J. (2004) Convergence and determinants of non-employment durations in Eastern and Western Germany. *Journal of Population Economics* 17:249–266.

Jasso G. and M. R. Rosenzweig (1990) Self-selection and the earnings of immigrants: comment. *American Economic Review* 80:298–304.

Keil, M. and A. Newell (1993) Internal Migration and Unemployment in Germany: An Anglo-Irish Perspective. *Weltwirtschaftliches Archiv* 129:514-536.

Kroehnert, S., F. Medicus and R. Klingholz (2006) Die demographische Lage der Nation. Wie zukunftsfähig sind Deutschlands Regionen? Daten, Fakten, Analysen. *Berlin-Institut für Bevölkerung und Entwicklung:* Berlin.

Kröhnert, S. and R. Klingholz (2007) Not am Mann. Von Helden der Arbeit zur neuen Unterschicht? *Berlin-Institut für Bevölkerung und Entwicklung:* Berlin.

Lechner, M., 1998. Eine empirische Analyse des Geburtenrückgangs in den neuen Bundesländern aus der Sicht der neo-klassischen Bevölkerungsökonomie, *Zeitschrift für Wirtschaft- und Sozialwissenschaften*, 118, 463–488.

Lechner, M. (1999) Earnings and employment effects of continuous off-the-job training in East Germany after unification. *Journal of Business and Economic Statistics* 17:74–90.

Lechner, M. (2001) The Empirical Analysis of East German Fertility after Unification: An Update. *European Journal of Population* 17: 61–74.

Mai, R. (2004) Abwanderung aus Ostdeutschland. Strukturen und Milieus der Altersselektivität und ihre regionalpolitische Bedeutung. *Verlag Peter Lang:* Frankfurt am Main.

Matysiak, A. and S. Steinmetz (2008) Finding their way? Female Employment Patterns in West Germany, East Germany and Poland. *European Sociological Review* Forthcoming.

Mincer, J. (1978). Family Migration Decisions. *Journal of Political Economy* 86:749-773.

Obst, T. (2005) Disproportionale Bevölkerungsentwicklung in europäischen Regionen dargestellt an ausgewählten Strukturveränderungen im demographisch aktiven Alter. *Diploma thesis (unpublished). Ernst-Moritz-Arndt-Universität:* Greifswald.

Parikh, A. und M. van Leuvensteijn (2002) Internal Migration in Regions of Germany: A Panel Data Analysis. *European Network of Economic Policy Research Institutes Working Paper* No. 12.

Paulig, H. and U. Schäfer (2001) Zur Geschlechtsstruktur jugendlicher Migranten und Auswirkungen auf die Geschlechtsstruktur der jugendlichen Bevölkerung im Freistaat Sachsen im Jahr 1999. *Statistik in Sachsen 1/2001. Statistisches Landesamt Sachsen:* Kamenz.

Pissarides, C. and J. Wadsworth (1989) Unemployment and the Interregional Mobility of Labour. *Economic Journal* 99:739-755.

Raffelhüschen, B. (1992) Labor migration in Europe: Experiences from Germany after Unification. *European Economic Review* 36:1453-1471.

Reimers, C.W. (1985) Cultural differences in labor force participation among married women. *American Economic Review* 75:251–255.

Schwarze, J. (1996) Beeinflusst das Lohngefälle zwischen Ost- und Westdeutschland das Migrationsverhalten der Ostdeutschen? *Allgemeines Statistisches Archiv* 80:50–68

Sinn, H.-W. (2000) Germany's Economic Unification: An Assessment After Ten Years. *Review of International Economics* 10:113:128.

Sjaastad, L. (1962) The costs and returns of human migration. *Journal of Political Economy* 70:80-93.

Statistisches Bundesamt (2007): Bevölkerung Deutschlands nach Bundesländern bis 2050. Ergebnisse der 11. koordinierten Bevölkerungsvorausberechnung nach Ländern. Wiesbaden.

Timm, Andreas (2004): Partnerwahl- und Heiratsmuster in modernen Gesellschaften. Der Einfluss des Bildungssystems. *Deutscher Universitätsverlag*: Wiesbaden.

Todaro, M. P. (1969) A Model of Labor Migration and Urban Unemployment in Less Developed Countries. *American Economic Review* 59:138-148.

United Nations Populations Fund (2006): State of World Population 2006. A Passage to Hope. Women and International Migration. *UNFPA*: New York.

Witte, J. C. and G.G. Wagner (1995) Declining fertility in East Germany after unification: a demographic response to socioeconomic change. *Population and Development Review* 21:387–397.

Wolff, S. (2006) Migration und ihre Determinanten im ostwestdeutschen Kontext nach der Wiedervereinigung: Ein Literaturüberblick. *Discussion Paper Series - Department of Economics* University of Goettingen No. 130.

Zaiceva, A. (2006) Self-Selection and the Returns to Geographic Mobility: What Can Be Learned from the German Reunification Experiment? *IZA Discussion Paper* No. 2524.

Zaiceva, A. (2007). East-West Migration and Gender: Is there a 'Double Disadvantage' vis-à-vis Strayers? *IZA Discussion Paper* 2810.