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To go or not to go : emigration from Germany

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TO GO OR NOT TO GO: EMIGRATION FROM GERMANY

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TO GO OR NOT TO GO: EMIGRATION FROM GERMANY

Abstract

This study analyzes the qualitative aspects of emigration from Germany taking account of economic and non-economic reasons. The reported willingness to emigrate from Germany in the German Socio-Economic Panel (GSOEP) is explained for men and women by three groups of variables: individual characteristics, household characteristics, and regional characteristics. It turns out that the educational background and West German residency positively affect the willingness to emigrate, whereas German nationality, age, and the family situation are mostly negatively correlated with it.

JEL Code: F22, C20, H55.

Keywords: emigration, intention variable, probit estimation, German Socio Economic Panel (GSOEP).

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1. Introduction

For John Hicks (1932), there was no doubt about why individuals would migrate. It is “[d]ifferences in net economic advantages, chiefly differences in wages, [which] are the main causes of migration”. According to this view economic differences induce migration from disadvantaged countries or regions to places where wages are higher, unemployment is lower, and economic prospects in general are better. But how then can there be any emigration from high-wage countries like Germany, given that the German wages are in the range of other industrialised countries and the general economic situation is also comparable?

These observations indicate that not only differences in earnings but also other, non-earnings-related factors affect the propensity to migrate. In order to gauge the quantitative and qualitative evolution of net migration, it is important to know more about immigration *and* emigration and about the characteristics and motivations of the migrants. This paper deals with emigration in order to shed some light on factors which induce people to think about leaving their country of residence. Although emigration and immigration are only two different sides of the same coin, the migration literature is mostly about immigration. Various studies have looked into the social and economic integration of immigrants in countries like the United States, Canada, Australia, and Israel benefiting from an exhaustive collection of data. These analyses focus on who immigrates (e.g. Borjas, 1987 and 1994) and on how immigrants coming from different countries of origin and arriving at different points in time adapt to the new environment (e.g. Chiswick, 1978, and Borjas, 1994, for a survey).¹ Emigration, on the contrary, has not been much examined with the exception of emigration from industrialised countries in the form of return migration (e.g. DaVanzo, 1983, and Dustmann, 1996, for a survey) and emigration from developing countries linked to the brain drain problem (e.g. Hamada, 1996, Stark et al., 1997). The educational level of emigrants is also at the centre of the small literature analyzing emigration by natives from industrialised countries (e.g. Iqbal, 2000, and Becker, Ichino and Peri, 2003). These studies, however, exclude many groups of (potential) emigrants by focusing on highly educated individuals.² Hunt (2000) looks at emigration patterns for a larger sample, but restricts her analysis to migration of East Germans to West Germany.

This paper complements these studies and analyzes emigration from Germany with data from the German Socio-Economic Panel (GSOEP) by using the reported attitude towards emigration. The dataset enables the consideration of detailed information at the individual, household, and regional level which helps to determine the characteristics of those who intend to emigrate relative to those who stay in Germany and the most important reasons for emigration.

¹ Examples of empirical analyses can be found in Beggs and Chapman (1988, 1990 and 1991), Chiswick and Miller (1985), Dustmann (1993), Greenwood and McDowell (1991), Mayer and Riphahn (2000), and Schmidt (1997).

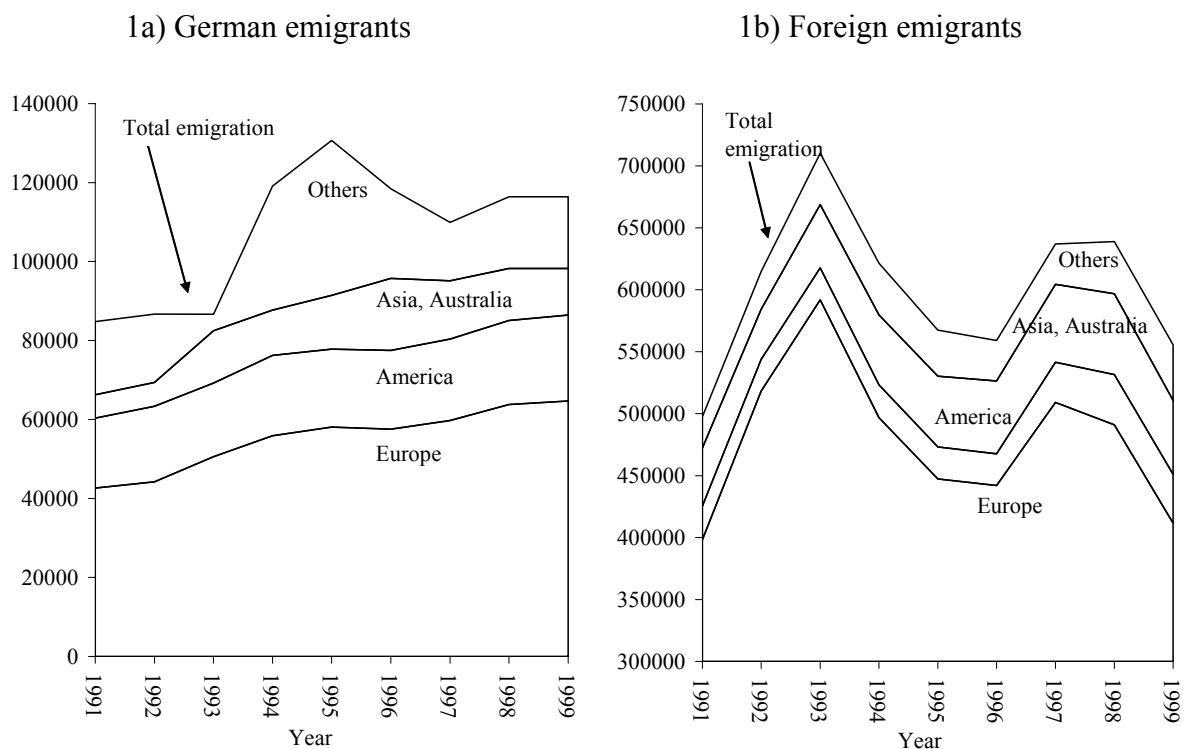
² See also EEAG (2003) for a discussion of highly skilled and highly talented emigrants from Europe to the United States.

The next section presents some facts about emigration from Germany. In section 3, the data set is described. Section 4 develops the econometric framework and presents the results for the willingness to emigrate. Section 5 concludes.

2. Emigration from Germany

Before concentrating on the econometric analysis, we describe the volume of emigration from Germany. Figure 1 shows the number of emigrants by region of destination from 1991-1999.³

Figure 1: Total emigration from Germany by region of destination



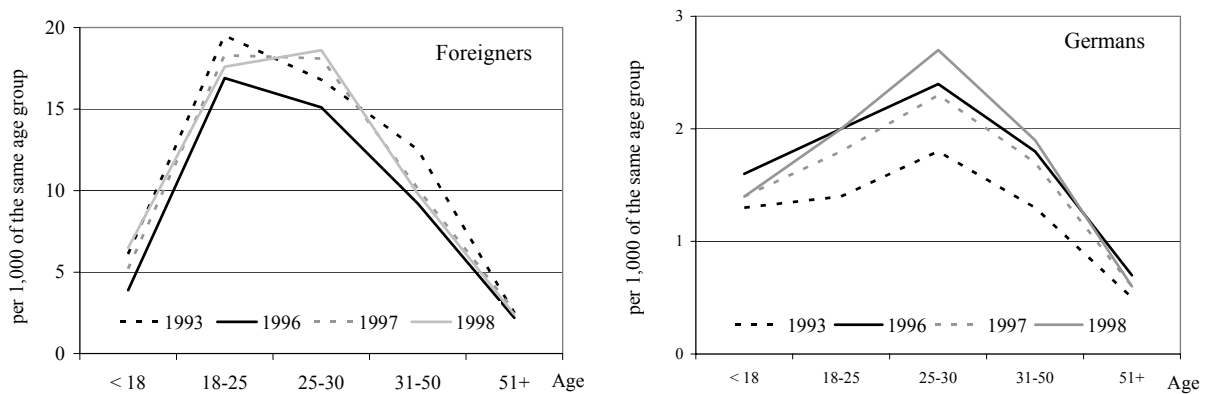
Source: Federal Statistical Office Germany (different volumes).

Up to now, the volume of emigration of Germans from Germany is rather negligible, whereas the number of foreigners who leave Germany to return or to move to another country is much higher. In 1998, e.g., 638,955 foreigners left, but only 116,403 Germans emigrated. Over the period from 1991 to 1999, less than 0.15% of the German population left Germany each year according to official data compared to between 7.5% and 10.5% of the foreigners. The majority of both groups has chosen another European country as their destination while about 20% of the Germans and 5% of the foreigners have moved to the United States and about 10% of both groups have left Germany for Asia or Australia.

³ As we are interested in emigration on the basis of the rules now in force, i.e. after the establishment of the freedom of movement within the European Union, we focus on emigration in recent years. For an analysis of emigration from and immigration to Germany from 1945-1994, see Münz and Ulrich (1996).

Figure 2 shows a breakdown by age groups for the years 1993, 1996, 1997, and 1998 which we will focus on in the analysis. For all four years, one can observe that the share of individuals who emigrate increases with age up to the age of 25-30 for Germans and up to the age of 18-25 for foreigners in 1993, 1996, and 1997 and up to the age of 25-30 in 1998. The share declines for older individuals. This data gives a first idea of the quantity and quality of emigration from Germany. This will be helpful later when evaluating the plausibility of the data which we will use for the estimations. But note that the number of emigrants is probably underestimated due to problems of registration.

Figure 2: Emigration from Germany 1993, 1996, 1997, 1998



Source: Federal Statistical Office Germany (various volumes)

3. Data

The data for this analysis stems from the German Socio-Economic Panel (GSOEP) – samples A, B, C, D, and E. We use the waves 10 (1993), 13 (1996), 14 (1997), and 15 (1998) because these waves are the only ones where individuals are asked about their intentions to emigrate. Wave 13 in addition comprises information about the reasons if the intention to move is positive.

Individuals in the sample are between 16 and 95 years old. As the gender can be expected to influence the propensity to move in different ways – e.g. through stronger family ties for women (Naskoteen and Zimmer, 1980) and through different educational and professional careers – the sample will be subdivided into a female and a male subsample. We excluded individuals with missing values for relevant variables – mostly concerning the propensity to migrate and the schooling and work history. For the four waves considered, the sample consists of 4,354 men and 4,424 women leading to 10,332 male observations and 10,557 female observations due to repeated answers from given individuals in subsequent years.⁴ Table A1 in the appendix describes sample characteristics for the variables used in the empirical analysis.

⁴ See section 4 for information about how the potential correlations in the error term which arise from repeated answers from given individuals are taken into account.

a) Propensity to emigrate

We use the answers to the question “Would you consider moving to another country?” of the GSOEP as the dependent variable. Table 1 presents sample statistics for this variable (“move”). Women have a slightly smaller propensity to migrate than men. While 52% of the men consider migrating “easily” or “if necessary”, the share in the female subsample is only 47%.

Table 1: Description of the dependent variable and sample statistics

move	Women		Men	
	Mean	SD	Mean	SD
	2.408	0.917	2.519	0.876
	Cases	Percent	Cases	Percent
no (1)	1,882	17.83%	1,344	13.01%
rather not (2)	3,766	35.67%	3,610	34.94%
yes, if necessary (3)	3,629	34.38%	4,048	39.18%
yes, easily (4)	1,280	12.12%	1,330	12.87%
Sum	10,557	100.00%	10,332	100.00%

Source: Waves of 1993, 1996, 1997, and 1998 (GSOEP)

Tables 2 and 3 show the breakdown of the responses for women and men according to a number of personal, household, and regional characteristics. Various patterns are immediately apparent.

For men and women, the propensity to emigrate decreases with age – with few exceptions – while it is positively affected by a higher school qualification. A university degree, however, does not further increase the probability compared to a higher secondary school qualification; neither does occupational training compared to an elementary or secondary school qualification.⁵ Employed men and women display a higher propensity to emigrate than unemployed and retired. For the specific occupations considered, we find high probabilities for most of them – including self-employed and civil servants. The probability of thinking about migrating increases with income levels – even though not by much.⁶

Not surprisingly, Germans do not intend to emigrate as much as foreigners who already have special ties to a foreign country. Being single is correlated with a higher propensity to consider emigrating relative to being married to a German while those with a foreign partner display the highest propensity. Children do not play an important role, but the propensity is higher for individuals living in West Germany.

⁵ In Germany, young individuals with a completed educational – mostly elementary or secondary – school qualification have the opportunity to continue their education after having left school by opting for occupational training which combines vocational on the job training with formal education in vocational schools (*Berufsschulen*).

⁶ For non-retired individuals without any (information about) net wages – 1,761 out of 9,415 men and 3,358 out of 9,403 women, we simulate net wages using the Heckman procedure (1979). The predicted net wages allow us to judge the “earnings potential” for these individuals in Germany and enable us to analyze any correlation between (potential) earnings in Germany and the propensity to migrate. The estimation results are available from the author.

Table 2: Intention of emigration (Women)

Variable	Yes, easily		Yes, if necessary		Rather not		No		Total sample
Age <20	110	24.72%	172	38.65%	118	26.52%	45	10.11%	445
Age 20-29	458	16.03%	1,062	37.17%	1,017	35.60%	320	11.20%	2,857
Age 30-39	359	11.76%	1,094	35.85%	1,178	38.60%	421	13.79%	3,052
Age 40-49	185	9.06%	754	36.92%	799	39.13%	304	14.89%	2,042
Age 50-59	128	10.36%	391	31.63%	418	33.82%	299	24.19%	1,236
Age 60+	40	4.32%	156	16.86%	236	25.51%	493	53.30%	925
Education (highest qualification)									
Elementary	382	10.91%	1,002	28.61%	1,129	32.24%	989	28.24%	3,502
Secondary	493	10.77%	1,558	34.04%	1,818	39.73%	707	15.45%	4,576
Higher secondary	238	17.84%	559	41.90%	433	32.46%	104	7.80%	1,334
University degree	167	14.59%	510	44.54%	386	33.71%	82	7.16%	1,145
Occupational training	757	10.35%	2,413	32.99%	2,776	37.95%	1,368	18.70%	7,314
Occupation									
Employed	1,108	13.08%	3,135	37.02%	3,127	36.92%	1,099	12.98%	8,469
Blue-collar worker	124	12.68%	288	29.45%	365	37.32%	201	20.55%	978
Self-employed	48	14.81%	139	42.90%	98	30.25%	39	12.04%	324
Trainee	90	18.56%	201	41.44%	146	30.10%	49	9.90%	485
White-collar worker	495	12.26%	1,490	36.92%	1,606	39.79%	445	11.03%	4,036
Civil servant	35	11.25%	139	44.69%	115	36.98%	22	7.07%	311
Other	316	13.53%	878	37.60%	797	34.13%	344	14.73%	2,335
Unemployed	112	11.99%	259	27.73%	347	37.15%	216	23.13%	934
Individual Data									
German nationality	1,112	11.12%	3,403	34.02%	3,643	36.42%	1,845	18.44%	10,003
Other nationality	168	30.32%	226	40.79%	123	22.20%	37	6.68%	554
Not married	685	15.97%	1,522	35.44%	1,365	31.78%	722	16.81%	4,295
Married	594	9.49%	2,107	33.65%	2,401	38.34%	1,160	18.52%	6,262
Foreign partner	28	19.18%	74	50.68%	34	23.29%	10	6.85%	146
German partner	566	9.25%	2,033	33.24%	2,367	38.70%	1,150	18.80%	6,116
Children under 16	509	11.02%	1,583	34.28%	1,804	39.06%	722	15.63%	4,618
No children under 16	771	12.98%	2,046	34.45%	1,962	33.04%	1,160	19.53%	5,939
West German residence	1,075	14.69%	2,780	37.98%	2,396	32.73%	1,069	14.60%	7,320
East German residence	205	6.33%	849	26.23%	1,370	42.32%	813	24.12%	3,237
Labour Income									
Yes ⁷	1,220	12.97%	3,394	36.09%	3,474	36.95%	1,315	13.98%	9,403
Low net income	303	12.69%	802	33.60%	860	36.03%	422	17.68%	2,387
Middle net income	604	13.00%	1,601	34.46%	1,756	37.80%	685	14.74%	4,646
High net income	313	13.21%	991	41.81%	858	36.20%	208	8.78%	2,370
No (retired)	60	5.20%	235	20.36%	292	25.30%	567	49.13%	1,154

Source: Waves of 1993, 1996, 1997, and 1998 (GSOEP)

⁷ Actual or simulated labour income (cf. footnote 6) – with low net income referring to the first quartile of the wage distribution and high net income to the fourth quartile.

Table 3: Intention of emigration (Men)

Variable	Yes, easily		Yes, if necessary		Rather not		No		Total sample
Age <20	81	17.84%	155	34.14%	169	37.22%	49	10.79%	454
Age 20-29	481	17.54%	1,198	43.69%	863	31.47%	200	7.29%	2,742
Age 30-39	397	12.77%	1,280	41.17%	1,098	35.32%	334	10.74%	3,109
Age 40-49	180	9.24%	770	39.53%	763	39.17%	235	12.06%	1,948
Age 50-59	144	10.67%	477	35.36%	486	36.03%	242	17.94%	1,349
Age 60+	47	6.44%	168	23.01%	231	31.64%	284	38.90%	730
Education (highest qualification)									
Elementary	466	12.56%	1,242	33.47%	1,261	33.98%	742	19.99%	3,711
Secondary	490	11.69%	1,246	37.36%	1,304	39.10%	395	11.84%	3,335
Higher secondary	236	16.92%	659	47.24%	428	30.68%	72	5.16%	1,395
University degree	238	12.59%	901	47.65%	617	32.63%	135	7.14%	1,891
Occupational training	841	11.56%	2,673	36.74%	2,694	37.03%	1,067	14.67%	7,275
Occupation									
With job	1,145	13.26%	3,552	41.13%	3,044	35.25%	895	10.36%	8,636
Blue-collar worker	317	11.12%	986	34.60%	1,082	37.96%	465	16.32%	2,850
Self-employed	108	16.69%	284	43.89%	201	31.07%	54	8.35%	647
Trainee	85	15.77%	208	38.59%	192	35.62%	54	10.02%	539
White-collar worker	379	12.33%	1,385	45.07%	1,098	35.73%	211	6.87%	3,073
Civil servant	84	12.35%	288	42.35%	238	35.00%	70	10.29%	680
Other	172	21.31%	401	47.34%	233	27.51%	41	4.84%	847
Unemployed	100	12.84%	263	33.76%	280	35.94%	136	17.46%	779
Individual Data									
German nationality	1,166	12.05%	3,759	38.84%	3,444	35.59%	1,309	13.53%	9,678
Other nationality	164	25.08%	289	44.19%	166	25.38%	35	5.35%	654
Not married	706	16.11%	1,860	42.44%	1,401	31.96%	416	9.49%	4,383
Married	624	10.49%	2,188	36.78%	2,209	37.13%	928	15.60%	5,949
Foreign partner	33	27.97%	54	45.76%	25	21.19%	6	5.08%	118
German partner	591	10.14%	2,134	36.60%	2,184	37.45%	922	15.81%	5,831
Children under 16	493	12.04%	1,578	38.54%	1,521	37.15%	502	12.26%	4,094
No children under 16	837	13.42%	2,470	39.60%	2,089	33.49%	842	13.50%	6,238
West German residence	1,094	15.23%	3,007	41.86%	2,305	32.09%	777	10.82%	7,183
East German residence	236	7.49%	1,041	33.06%	1,305	41.44%	567	18.01%	3,149
Income									
Yes ⁸	1,245	13.22%	3,815	40.52%	3,324	35.31%	1,031	10.95%	9,415
Low net income	293	12.31%	848	35.62%	895	37.59%	345	14.49%	2,381
Middle net income	595	12.78%	1,838	39.48%	1,699	36.50%	523	11.24%	4,655
High net income	357	15.01%	1,129	47.46%	730	30.69%	163	6.85%	2,379
No (retired)	85	9.27%	233	25.41%	286	31.19%	313	34.13%	917

Source: Waves of 1993, 1996, 1997, and 1998 (GSOEP)

⁸ Actual or simulated labour income (cf. footnote 6) – with low net income referring to the first quartile of the wage distribution and high net income to the fourth quartile.

As the motivation to emigrate might differ significantly between men and women and for individuals with different characteristics, we complement the description by making use of information available in the 1993 wave of the GSOEP about the potential reasons. Tables 4 and 5 provide an overview of the reasons for migration stated by those who show a positive propensity.⁹

Table 4: Reasons for emigration (Women)

Variable	Training / education		Better job		Retirement		Family / friends		Total
Total	84	12.35%	269	39.56%	180	26.47%	147	21.61%	680
Age <20	18	40.91%	16	36.36%	0	0%	10	22.73%	44
Age 20-29	60	27.65%	104	47.93%	10	4.61%	43	19.82%	217
Age 30-39	3	1.74%	99	57.56%	26	15.12%	44	25.58%	172
Age 40-49	2	1.56%	41	32.03%	64	50.00%	21	16.41%	128
Age 50-59	1	1.18%	8	9.41%	59	69.41%	17	20.00%	85
Age 60+	0	0%	1	2.94%	21	61.76%	12	35.29%	34
Education									
Elementary	10	4.46%	74	33.04%	81	36.16%	59	26.34%	224
Secondary	27	10.15%	111	41.73%	69	25.94%	59	22.18%	266
Higher secondary	42	37.50%	43	38.39%	10	8.93%	17	15.18%	112
University degree	5	6.41%	41	52.56%	20	25.64%	12	15.38%	78
Occupational training	24	5.54%	182	42.03%	128	29.56%	99	22.86%	433
Occupation									
Employed	77	13.37%	231	40.10%	150	26.04%	118	20.49%	576
Unemployed	5	8.77%	31	54.39%	7	12.28%	14	24.56%	57
Retired	2	4.26%	7	14.89%	23	48.94%	15	31.91%	47
Individual Data									
Not married	73	24.58%	120	40.40%	37	12.46%	67	22.56%	297
Married	11	2.87%	149	38.90%	143	37.34%	80	20.89%	383
Children under 16	23	8.52%	134	49.63%	50	18.52%	63	23.33%	270
No children under 16	61	14.88%	135	32.93%	130	31.71%	84	20.49%	410
West German residence	50	9.62%	198	38.08%	150	28.85%	122	23.46%	520
East German residence	34	21.25%	71	44.38%	30	18.75%	25	15.63%	160

Source: Wave 1993 of the GSOEP

Better professional opportunities are important for 60% of the men and for 40% of the women. For those individuals, relevant differences in wages and/or employment probabilities seem to exist. However, reasons which are not directly linked to economic differences also play a significant role. 22% of the men and 26% of the women want to spend their retirement period abroad. The motivation to migrate is thus not directly related to wage/employment differentials although the economic situation in the destination country is important to judge the purchasing power of the pension benefits. Better institutions for training and education are the reason given by 13% of

⁹ For this, we focus on those individuals with a positive propensity to migrate who name “training/education”, “better job”, “retirement” or “friends/family” as the main reason. Individuals who choose “other reason” (372 women and 321 men) or “no answer” (73 women and 70 men) are excluded.

the men and 12% of the women. Again, the economic situation only plays an indirect role if these individuals reckon on better job opportunities abroad – or at home – after having completed their studies abroad.¹⁰ Family reasons are mentioned by men in 4% of the cases and by women in 21%. Here, the economic situation only indirectly influences the decision to migrate if these individuals follow family members who might have migrated for economic reasons.

Table 5: Reasons for emigration (Men)

Variable	Training / education		Better job		Retirement		Family / friends		Total
Total	116	13.20%	531	60.41%	194	22.07%	38	4.32%	879
Age <20	19	46.34%	18	43.90%	2	4.88%	2	4.88%	41
Age 20-29	80	26.14%	206	67.32%	12	3.92%	8	2.61%	306
Age 30-39	13	5.78%	177	78.67%	27	12.00%	8	3.56%	225
Age 40-49	2	1.31%	92	60.13%	52	33.99%	7	4.58%	153
Age 50-59	2	1.72%	38	32.76%	72	62.07%	4	3.45%	116
Age 60+	0	0%	0	0%	29	76.32%	9	23.68%	38
Education									
Elementary	8	2.75%	173	59.45%	93	31.96%	17	5.84%	291
Secondary	41	15.07%	174	63.97%	46	16.91%	11	4.04%	272
Higher secondary	53	36.81%	75	52.08%	11	7.64%	5	3.47%	144
University degree	14	8.14%	109	63.37%	44	25.58%	5	2.91%	172
Occupational training	43	7.33%	369	62.86%	144	24.53%	31	5.28%	587
Occupation									
Employed	111	14.25%	482	61.87%	161	20.67%	25	3.21%	779
Unemployed	3	6.12%	41	83.67%	2	4.08%	3	6.12%	49
Retired	2	3.92%	8	15.69%	31	60.78%	10	19.61%	51
Individual Data									
Not married	102	24.70%	265	64.16%	30	7.26%	16	3.87%	413
Married	14	3.00%	266	57.08%	164	35.19%	22	4.72%	466
Children under 16	34	10.21%	228	68.47%	62	18.62%	9	2.70%	333
No children under 16	82	15.02%	303	55.49%	132	24.18%	29	5.31%	546
West German residence	71	11.34%	359	57.35%	170	27.16%	26	4.15%	626
East German residence	45	17.79%	172	67.98%	24	9.49%	12	4.74%	253

Source: Wave 1993 of the GSOEP

These general patterns can also be found when looking at women and men in more detail. The higher importance of better job opportunities abroad for the migration intention of men compared to women can be observed throughout, independent of individual or household characteristics. Women on the other hand think about migration to a much larger extent because of friends and family members who live abroad whereas this plays a negligible role for men, with the exception of the old and the retired.

¹⁰ We do not have information about the intention of individuals to return after having completed their education. See Dustmann (1995 and 1997) for an analysis of the long-run effects of return migrants.

Thus, the economic situation in the destination country compared to Germany plays a role for the propensity to migrate as can be seen when looking at the importance of “training/education” and “better job” opportunities. But also reasons which are not directly related to economic aspects like spending the retirement period abroad or joining friends and family members are of importance. It is therefore necessary to choose an approach which is flexible enough to allow for different motivations.

b) Intention variable

Given the few actual emigrants in the GSOEP, and given the fact that in general information about emigration – in contrast to immigration – is hard to find,¹¹ the variable on the intention to move allows an approximation of realised migration. As Manski (1990, p. 935) states, “intentions data do potentially convey information about behaviour”.

To get a feeling for the reliability of the data set of the GSOEP, we compare it with similar data from the study “Performance of the European Union Labour Market” by the European Commission (1995). In this study, individuals are asked whether they would be willing to work in an EC Member State different from the one of which they are a national. 34% of the men and 21% of the women answered the question with yes. With data from the 10th wave (1993) of the GSOEP, we find that 22% of the men and 11% of the women name better job opportunities abroad as a possible reason to think about emigrating.¹² In both data sets, men are more willing to migrate for professional reasons than women. It is not surprising that the numbers from the GSOEP are smaller given the fact that in the GSOEP individuals have to choose the most likely reason among several reasons.¹³ Overall, the answers are comparable.

It is, however, still necessary to reconcile the different orders of magnitude of the statistical information of the Federal Statistical Office Germany and the responses in the GSOEP. From figure 2 and tables 2 and 3 we see that the data from the Federal Statistical Office Germany is quantitatively different but not qualitatively. The absolute number of emigrants is much lower than what one would expect from the answers to the willingness-to-migrate question. But the general picture with an increase in emigration up to the age group 25-30 for Germans and up to 18-25 (25-30 in 1998) for foreigners and a decline thereafter can be found again.¹⁴

¹¹ The U.S. Census Bureau has recently developed some techniques to estimate the number of emigrants, which underlines the difficulty to obtain reliable emigration data. See Bashir and Robinson (1994) for the foreign-born population and Fernandez (1995) for the U.S. born population. In Germany, on the contrary, emigrants are legally obliged to give notice when leaving the country. However, the number of emigrants is probably underreported due to registration problems, and information about the destination country is very limited.

¹² Ratio of those who name “better job opportunities” as the reason to move (tables 4 and 5) to the 2,491 women or 2,440 men respectively in the dataset (wave 13).

¹³ Cf. tables 4 and 5 for the other reasons.

¹⁴ This is confirmed by the study of the European Commission (1995). The willingness to work abroad is highest for those below 31 years (39%) and decreases to 27% for the 31-49 year old and to 15% for the 50 year old and older.

We thus follow Burda et al. (1998) in assuming that intentions are a monotonic function of the variables which motivate migration. We will therefore concentrate on identifying those characteristics which affect the propensity to emigrate. We will interpret the results of the estimation accordingly, namely that individuals with these characteristics will be over-proportionally represented among the emigrants.¹⁵

4. Estimation of the propensity to migrate

According to the standard human capital model,¹⁶ the mobility decision of an individual is guided by the comparison of the present value of lifetime earnings – labour income and pension benefits – in the home country and in the foreign country, net of migration costs for migration at a certain age. As with all decisions, the individual chooses the alternative that maximises utility. Thus, within this framework, migration occurs when utility with migration exceeds utility without migration. The human capital model suggests comparing the economic situation in the source and in the destination country taking migration costs into account.

However, this modelling has two shortcomings in our context. First, it neglects any reasons which are not earnings-related, but which play an important role when thinking about migration as illustrated in tables 4 and 5. Second, it requires that the destination country with its specific characteristics is known. However, information about the volume of emigration in general and about characteristics of the destination country in particular is mostly lacking.

Our approach alleviates both problems. We assume that the emigration decision is a function of individual characteristics, characteristics of the household, and characteristics of the (home) region. We thus include economic but also non-economic factors which can be important for the (potential) migration decision and aim at identifying their effects. In addition, we abstract from variables concerning the destination countries for the analysis which can be justified as we are only interested in the attitude towards migration and not in the probability of migrating to a specific country. It is reasonable to assume that there is at least one country for individuals with a positive propensity to migrate for which the utility exceeds the utility without migration.

We focus on a systematic analysis of the data. We assume that the decision to emigrate can be approximated by the variables describing the individual characteristics, the characteristics of the household, and the characteristics of the (home) region.¹⁷ As the dependent variable, we use the reported propensity to move to another country which can be viewed as an ordered response with four categories: (1) “no”, (2) “rather not”, (3) “yes, if necessary” and (4) “yes, easily”.

¹⁵ See also Papapanagos and Sanfey (2001) who use intention data to analyze emigration from Albania.

¹⁶ See Sjaastad (1962) for an early version of this model.

¹⁷ Burda et al. (1998) follow a similar approach in analyzing the intention to migrate from East to West Germany.

Table 6: (Modified) marginal effects

Variable	Women		Men	
	Yes, easily	Yes, if necessary	Yes, easily	Yes, if necessary
Baseline probability	0.100	0.355	0.114	0.404
Age	-0.079* (0.005)	-0.028* (0.006)	-0.016 (0.005)	-0.005 (0.005)
Education				
Secondary vs. Elementary	0.353** (0.007)	0.121** (0.008)	0.270** (0.008)	0.076** (0.008)
Higher secondary vs. Elementary	0.841** (0.013)	0.208** (0.008)	0.544** (0.012)	0.124** (0.007)
University degree vs. Elementary	1.120** (0.016)	0.243** (0.007)	0.571** (0.013)	0.133** (0.008)
Occupational training vs. not	-0.041 (0.007)	-0.014 (0.009)	-0.049 (0.008)	-0.015 (0.008)
Occupation				
Unemployment rate	-0.013 (0.001)	-0.005 (0.002)	0.011 (0.002)	0.003 (0.002)
Trainee vs. blue-collar worker	0.176 (0.015)	0.056 (0.015)	0.087 (0.014)	0.025 (0.014)
Other vs. blue-collar worker	0.153 (0.010)	0.052 (0.012)	0.410** (0.014)	0.097** (0.009)
Self-employed vs. blue-collar worker	0.435** (0.020)	0.122** (0.015)	0.565** (0.016)	0.121** (0.008)
Civil servant vs. blue-collar worker	-0.069 (0.015)	-0.025 (0.020)	0.114 (0.013)	0.032 (0.012)
White-collar vs. blue-collar worker	0.164* (0.009)	0.057* (0.011)	0.296** (0.008)	0.082** (0.007)
Unemployed vs. not	0.044 (0.011)	0.015 (0.013)	0.051 (0.010)	0.015 (0.010)
Individual Data				
Nationality: German vs. Non-German	-1.013** (0.019)	-0.218** (0.008)	-0.735** (0.016)	-0.142** (0.007)
Residence: West German vs. East German	0.673** (0.011)	0.275** (0.017)	0.619** (0.012)	0.219** (0.016)
Married to German partner vs. Single	-0.208** (0.007)	-0.072** (0.008)	-0.186** (0.008)	-0.055** (0.008)
Married to foreign partner vs. Single	0.484* (0.026)	0.131** (0.019)	0.653** (0.036)	0.127** (0.014)
Children under 3 vs. not	-0.393** (0.006)	-0.168** (0.011)	-0.141** (0.008)	-0.046* (0.010)
Children from 4- 6 vs. not	-0.163** (0.007)	-0.063** (0.011)	-0.159** (0.008)	-0.053** (0.010)
Income				
Net hourly wage (in DM)	0.001 (0.000)	0.000 (0.000)	0.002** (0.000)	0.000** (0.000)
No (retired) vs. not	-0.424** (0.011)	-0.185** (0.021)	0.261 (0.019)	0.068* (0.015)

Note: **, * indicate statistical significance at the 5, 10 % level of the simulated effects.
Standard errors (in parentheses) are calculated by using the Delta method.
1 DM = 0.51 €.

As a statistical model for this categorical data we use an order probit model (maximum-likelihood estimation). Potential correlations in the error terms due to the fact that the sample includes repeated answers from given individuals in subsequent years are taken into account. For this, the repeated observations of given individuals are clustered and the assumption of independence of observations within the different clusters is relaxed while it is still required for observations across clusters.

We first estimate the model. The estimation results for the male and female subsample are given in tables A2 and A3 in the appendix with column 1 presenting results of the basic specification and columns 2 and 3 adding measures of the occupational situation and the environment respectively. We then predict the probabilities for each outcome on the basis of the estimated coefficients for the case that the independent variables are at their sample means. In what follows we will refer to these probabilities as “baseline probabilities”.

As the interpretation of the estimated coefficients in an ordered probit model is not straightforward, we proceed as follows. For the marginal effects, we consider marginal variations of the continuous variables and 0-1 variations of the dummy variables focusing on men or women with characteristics according to the sample means. In order to make the marginal impact of a variable on the propensity to migrate comparable across the two subsamples, we modify the marginal effects by dividing them by the baseline probabilities. This gives us the marginal impact of changes in the independent variables on the migration propensity measured in percent of the baseline probabilities. Table 6 presents these (modified) marginal effects¹⁸ where for easier interpretation, we only display the results for categories 3 (“yes, if necessary”) and 4 (“yes, easily”).¹⁹ The results confirm mostly what one would expect. We only comment on some of them.

The coefficients for the age variables are significant at the 10 percent level in the female subsample and insignificant in the male subsample. With a human capital theory a la Sjaastad (1962) in mind, we would expect the propensity to move to decrease with age as the shorter period abroad decreases the net gains of migration – at least if migration is considered for economic reasons. The very small marginal effects hint at other potential reasons which are not captured by the human capital theory, e.g. joining friends and family members or emigrating in order to spend the years as retiree abroad.

¹⁸ The reported effects describe the marginal effects relative to the baseline probability:

$$(\text{Modified}) \text{ marginal effect} = \frac{\text{marginal effect}}{\text{baseline probability}} \quad \text{for continuous variables (e.g. age)}$$

$$(\text{Modified}) \text{ marginal effect} = \frac{\text{dummy set to 1} - \text{dummy set to 0}}{\text{baseline probability}} \quad \text{for dummy variables (e.g. nationality)}$$

¹⁹ The results for categories 1 (“no”) and 2 (“rather not”) are available from the author.

The propensity to migrate should increase with the years of education and training (Borjas, 1996). First of all, highly educated individuals might be more efficient at learning about employment opportunities abroad, thus reducing migration costs. Second, the geographic region which makes up the relevant labour market is larger for highly educated individuals than for less educated individuals. Last but not least, higher education implies better knowledge of foreign languages which is an essential prerequisite for economic and social integration.²⁰ The marginal effects show that the significant school and university variables have large effects in the expected direction. With a “Secondary school qualification” the probability for the “yes, easily” alternative increases by 35% (27%) in the female (male) subsample and the alternative “yes, if necessary” increases by 12% (8%) for women (men). The effect of a “higher secondary school qualification” and a “university degree” on the propensity to migrate is even larger for both men and women. In general, the marginal effect of a higher educational qualification is more pronounced for women than for men while occupational training does not have any significant effect in either subsample.

The occupation plays a significant role for a “self-employed” and for a “white-collar worker” in the female subsample and for a “self-employed”, a “white-collar worker” and “other” forms of occupation in the male subsample relative to an individual who is a “blue-collar worker”. Being self-employed is positively correlated with a higher probability to migrate for men and women. It seems therefore that the entrepreneurial spirit of a self-employed outweighs the counter-argument brought forward by Naskoteen and Zimmer (1980) that self-employment should lead to a smaller propensity to move as the self-employed are less susceptible to promotion opportunities. “White-collar workers” also display a higher propensity to migrate in both subsamples.

The level of net hourly wages shows a positive and significant effect in the male subsample, but is not significantly different from zero in the female sample.²¹ Retirement, i.e. no wage income, increases the propensity to migrate (+26% and +7% respectively) for men, but not for women (-42% and -19% respectively).

As to the private environment, the partner variable for those who are married to a German should be negatively correlated with the propensity to move abroad as it is both partners together or the family as a whole who must gain by migrating.²² Moving with the partner or the family – especially when there are children – induces higher migration costs as all members of the family incur monetary and non-monetary costs when trying to adapt to a foreign environment. Those with a foreign partner should show a higher propensity to emigrate implying that for those couples the migration costs are lower. We find that with a German partner, women and men display a sig-

²⁰ See, e.g., for the relevance of language skills for social integration Chiswick and Miller (1995) and for economic integration Dustmann (1994).

²¹ This does not change in an important way if we estimate the effect for given educational qualifications.

²² See Mincer (1978) for an analysis of migration decisions of families.

nificantly lower propensity to migrate compared to being single while with a foreign partner, the propensity is higher. Children in the household have a significantly negative effect in both subsamples – though this effect is twice as large for “children under 3” in the female subsample. This underlines that the mobility of women is more affected by family ties.

What is quite surprising at first sight is the significance of living in the western part of Germany in both subsamples and the impact this variable has on the propensity to migrate. Individuals who live in West Germany display a probability for the alternative “yes, easily” (“yes, if necessary”) which is 66% (28%) higher for women and 60% (22%) higher for men than for East Germans. One explanation for this phenomenon could be that more mobile individuals from East Germany have already migrated either to the West or to a foreign country or – to put it differently – that there is a negative selection regarding the mobility of individuals who still live in East Germany. The state unemployment rate, however, has no significant effect.

5. Conclusions

In order to shed some light on a so far rather neglected aspect of migration, namely emigration from an industrialised country in particular by natives, this paper determines the characteristics of an individual and his or her environment which positively or negatively influence the propensity to migrate. Especially when discussing the economic consequences of the demographic development, it is important to complement the insights about the projected evolution of life-expectancy and fertility with insights about migration in general. This paper aims at providing some indications about the qualitative aspects of emigration – who is most likely to emigrate and for which reasons – from an industrialised country illustrated by the case of Germany.

As the analysis has shown the probable emigrants are young, with an above-average school level and without small children. They are white-collar workers or self-employed. The propensity to emigrate is higher for individuals with a foreign nationality as well as for those residing in West Germany and increases with the wage income. It has also become clear that migration is not exclusively economically motivated. Other reasons like better training or educational opportunities, friends or family abroad or the wish to spend the retirement years in another country also play an important role.

The next step would then be to complement this qualitative study with quantitative analyses provided that the necessary data of actual migration flows is available. Information about the composition *and* the volume of emigrants could then be combined with the immigration data for better founded projections of net migration flows. This is, however, left for future research.

Appendix:

Table A1: Descriptive statistics

Variable	Dummy	Women		Men	
		Mean	SD	Mean	SD
Age		38.30	14.05	37.81	13.32
Education (highest qualification)					
Elementary °	x	0.33	0.47	0.36	0.48
Secondary	x	0.43	0.50	0.32	0.47
Higher secondary	x	0.13	0.33	0.14	0.34
University degree	x	0.11	0.31	0.18	0.39
Occupational training	x	0.69	0.46	0.70	0.46
Occupation					
Blue-collar worker°	x	0.09	0.29	0.28	0.45
Self-employed	x	0.03	0.17	0.06	0.24
Trainee	x	0.05	0.21	0.06	0.22
White-collar worker	x	0.38	0.49	0.30	0.46
Civil servant	x	0.03	0.17	0.07	0.25
Other	x	0.22	0.42	0.08	0.28
Unemployed	x	0.09	0.28	0.08	0.26
Individual Data					
Nationality: German	x	0.95	0.22	0.94	0.24
Residence: West German	x	0.69	0.46	0.70	0.46
Married to German partner	x	0.58	0.49	0.56	0.50
Married to foreign partner	x	0.01	0.12	0.01	0.11
Children ≤ 3 years	x	0.12	0.33	0.11	0.32
Children 4-6 years	x	0.08	0.27	0.07	0.26
Income					
Net hourly wages (in DM)		49.18	51.33	73.45	50.56
No (retired)	x	0.11	0.31	0.09	0.29
Unempl. rate (state level)		12.33		4.18	
Number		10,557		10,332	

°: Omitted in the estimation to avoid multicollinearity

Source: Waves of 1993, 1996, 1997, 1998 of the GSOEP – except for the unemployment rate which is from Federal Statistical Office Germany (various volumes)

Table A2: Parameter estimates (Women)

Variable	Coeff.	Std. Error	Coeff.	Std. Error	Coeff.	Std. Error
Age	-0.066	0.025**	-0.074	0.026**	-0.045	0.026*
Age ²	0.001	0.001**	0.002	0.001**	0.001	0.001*
Age ³	-0.000	0.000**	-0.000	0.000**	0.000	0.000**
Education (qualification)						
Secondary	0.181	0.038**	0.191	0.039**	0.198	0.039**
Higher secondary	0.410	0.050**	0.412	0.051**	0.400	0.051**
University degree	0.498	0.056**	0.493	0.059**	0.505	0.059**
Occupational training	-0.051	0.039	-0.043	0.040	-0.023	0.040
Occupation						
Unemployment rate (state level)	-0.052	0.004**	-0.006	0.008	-0.007	0.008
Unemployed			0.113	0.055**	0.025	0.061
Trainee			0.186	0.073**	0.095	0.076
Other			0.080	0.048*	0.085	0.055
Self-employed			0.332	0.085**	0.218	0.088**
Civil servant			0.093	0.084	-0.040	0.088
White-collar worker			0.209	0.044**	0.093	0.050*
Individual Data						
German citizenship			-0.465	0.069**	-0.454	0.069**
West German residency			0.433	0.072**	0.425	0.072**
Married to foreign partner					0.239	0.112**
Married to German partner					-0.117	0.037**
Children ≤ 3 years					-0.255	0.045**
Children 4-6 years					-0.098	0.046**
Income						
Net hourly wage (in DM)					0.000	0.000
Retired					-0.279	0.086**
λ_1 : threshold for probit	-2.488	0.331	-2.127	0.366	-1.881	0.364
λ_2 : threshold for probit	-1.383	0.329	-1.001	0.365	-0.755	0.363
λ_3 : threshold for probit	-0.239	0.329	0.150	0.365	0.411	0.363
Pseudo R ²	0.052		0.061		0.065	
Log-Likel.	-12984.894		-12874.744		-12803.992	

Note: Results for the constant and the “year of survey” dummies are not reported.

Reference categories are: Elementary school qualification for secondary and higher secondary school qualification, blue-collar worker for trainee, other, self-employed, civil servant and white-collar worker, and not married for married to a foreign/German partner.

** and * indicate statistical significance at the 5 and 10 percent level respectively for the ordered probit estimation.

Table A3: Parameter estimates (Men)

Variable	Coeff.	Std. Error	Coeff.	Std. Error	Coeff.	Std. Error
Age	-0.027	0.023	-0.033	0.025	-0.009	0.026
Age ²	0.001	0.001	0.001	0.001	0.000	0.001
Age ³	-0.000	0.000	-0.000	0.000	-0.000	0.000
Education (qualification)						
Secondary	0.152	0.039**	0.161	0.039**	0.154	0.040**
Higher secondary	0.363	0.046**	0.311	0.049**	0.285	0.049**
University degree	0.361	0.049**	0.335	0.052**	0.302	0.053**
Occupational training	-0.077	0.040*	-0.034	0.041	-0.029	0.041
Occupation						
Unemployment rate (state level)	-0.040	0.004**	0.006	0.008	0.007	0.008
Unemployed			0.040	0.052	0.029	0.052
Trainee			0.014	0.069	0.050	0.071
Other			0.258	0.058**	0.218	0.060**
Self-employed			0.290	0.063**	0.289	0.064**
Civil servant			0.064	0.063	0.065	0.065
White-collar worker			0.162	0.038**	0.168	0.039**
Individual Data						
German citizenship			-0.362	0.057**	-0.363	0.059**
West German residency			0.423	0.071**	0.401	0.072**
Married to foreign partner					0.323	0.134**
Married to German partner					-0.109	0.038**
Children ≤ 3 years					-0.087	0.043**
Children 4-6 years					-0.099	0.046**
Income						
Net hourly wage (in DM)					0.001	0.000**
Retired					0.144	0.086*
λ_1 : threshold for probit	-2.075	0.308	-1.637	0.358	-1.303	0.367
λ_2 : threshold for probit	-0.927	0.308	-0.477	0.357	-0.139	0.367
λ_3 : threshold for probit	0.304	0.308	0.770	0.357	1.112	0.367
Pseudo R ²	0.037		0.045		0.047	
Log-Likel.	-12578.985		-12474.521		-12445.710	

Note: Results for the constant and the “year of survey” dummies are not reported.

Reference categories are: Elementary school qualification for secondary and higher secondary school qualification, blue-collar worker for trainee, other, self-employed, civil servant and white-collar worker, and not married for married to a foreign/German partner.

** and * indicate statistical significance at the 5 and 10 percent level respectively for the ordered probit estimation.

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