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## Return migration to East Germany: Spatial patterns and the relevance for regional labor markets

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# **Return migration to East Germany: Spatial patterns and the relevance for regional labor markets**

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## **Abstract**

Against the background of increasing labor market tightness in East Germany, we analyze labor-market related return migration from West to East Germany. Using a unique data set that covers all labor market participants in Germany, we trace the migration and employment history of East Germans as of December 31st, 2012 from 1999 onwards. Our research adds to the existing literature in three ways. First, complementing survey-based findings, we provide novel and detailed descriptive evidence on migration from West to East Germany. Second, we map the spatial migration patterns of the return migrants. Special emphasis is given to the relocation of the place of living only against the simultaneous relocation of the place of work. Third, we follow the question if and how the migrants' situation on the labor market improved after migrating, measured by the improvement of their labor market status and changes in wages. This way, we contribute to the discussion on the relevance of economic motives versus social ties as motives for return migration. Our results provide good news for the East German districts directly at the former intra-German border, the larger cities and the regions surrounding Berlin that might well profit from return migration for the stabilization of regional labor supply. However, for the remaining mostly rural regions they rather provide bad news.

**JEL Classification:** J30, R23

**Keywords:** regional labor markets, return migration, East Germany

# 1 Introduction

One of the most far-reaching challenges East Germany has been confronted with since the reunification of Germany is the massive population decline due to a pronounced deficit of births over deaths and the high degree of net out-migration of its inhabitants mainly to the western part of the country. The long-standing bad labor market conditions with high unemployment, poor job prospects and low wages have been important factors for the economically induced decision to move (Hunt 2006). Around 2005, however, the situation on the German labor market started to change fundamentally. In East Germany, the unemployment rate was virtually cut in half from 20.6 % in 2005 to 11.0 % in 2014. The differences between East and West Germany with regard to the unemployment rate declined from 9.6 to 4.3 percentage points, thereby reducing the pronounced labor market divide between the two parts of the country. Furthermore, employment opportunities have improved substantially during the last years, further indicating improvements on the labor-demand side (Fuchs/Wesling/Weyh 2014).

Although the decrease in labor supply and the increase in labor demand affect also West Germany, employers in East Germany have lately experienced more intense problems with the recruitment of qualified workers for vacant positions (Dummert et al. 2014; Brenzel et al. 2014). Against this background, the systematic approach of East Germans who migrated to West Germany to induce their return has become a popular way to tackle the challenge of stabilizing labor supply in East Germany. Often supported by the respective federal governments, throughout East Germany initiatives binding together various labor market actors have established internet platforms that provide job offers and information for potential return migrants.<sup>1</sup> Yet, albeit return migration has gained much in political importance, very little is known about the actual numbers, characteristics, spatial destinations, and motives of the return migrants themselves.

Most studies so far have concentrated on migration from East to West Germany solely (e.g., Burda 1993; Heiland 2004; Brücker/Trübswetter 2007). In contrast, there are only few studies that focus on facts and determinants of West-East migration. Schneider/Kubis/Wiest (2011), for example, use a survey on people formerly emigrated from Saxony-Anhalt to study determinants of their re-migration intentions. They provide evidence for both labor market success in the destination region and social ties in the home region as important factors for return migration. Beck (2005) descriptively analyzes the socio-economic structure of migrants

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<sup>1</sup> For Saxony-Anhalt, see, e.g., [www.pfiff-sachsen-anhalt.de](http://www.pfiff-sachsen-anhalt.de), for Saxony [www.sachsekommzurueck.de](http://www.sachsekommzurueck.de), for Thuringia [www.thaff-thueringen.de](http://www.thaff-thueringen.de) or for Mecklenburg-Vorpommern <http://mv4you.de>.

from West to East Germany and distinguishes between native West German migrants and native East German return migrants. She finds that each group contributes to roughly half of total West-East migration, but detects also pronounced differences between the two groups of migrants.

Against this background, the present paper provides new and comprehensive insights into labor migration from West to East Germany. Using the Integrated Employment Biographies (IEB) of the Institute for Employment Research (IAB) that contains information on all labor market participants in Germany, we trace the migration and employment history of those individuals that lived in East Germany as of December 31st, 2012 from 1999 onwards. Apart from presenting detailed descriptive evidence for the return migrants to East Germany, one key aspect is to map the spatial return migration patterns. Special focus is on the question if and how the two groups' situation on the labor market improved after returning to East Germany. Our two measures of labor market performance are the retention or improvement of their labor market status, and, in the case of the employees, changes in wages. As to the employees, the question if they relocated only their place of living or also their place of work to East Germany merits further attention.

Our research adds to the existing literature in several ways. First, we are, to the best of our knowledge, the first to provide a detailed and comprehensive overview of the magnitude and socio-demographic characteristics of the return migrants to East Germany. Only this way, the relevance of this group for stabilizing labor supply in East Germany can be assessed. Due to the complete coverage of the East German work force, our data set used has decisive advantages over survey-based findings provided, e.g., by Fuchs-Schündeln/Schündeln (2009), Beck (2005) or Schneider/Kubis/Wiest (2011). Second, we scrutinize the spatial migration patterns in detail. Mostly because of inadequate data sets, this aspect has largely been ignored by the few existing studies. Since regional labor markets differ widely, however, it is highly relevant to know about the degree to which return migration takes place into the own region of origin or into other regions in East Germany. Third, we take a detailed look at all labor market participants. Apart from employees liable to social security, we consider unemployed, apprentices, and marginally employed. For all four groups, we investigate whether they maintained or improved their labor market status by migration. For the employees liable to social security, we additionally scrutinize changes in wages as a determinant of migration.

The paper is structured as follows. Chapter 2 provides an overview of theoretical approaches on migration and return migration. In chapter 3, results of central empirical studies on migration in Germany are presented, and chapter 4 is dedicated to the data used and to

definitions. Empirical results are at the center of chapter 5. Chapter 6 concentrates on differences between the relocation of the place of living and the place of work, and chapter 7 concludes.

## **2 Theoretical background**

Several theoretical approaches explain why individuals migrate between countries or regions (see, e. g., Greenwood 1997). The neoclassical model acts hereby as the workhorse for explaining economically induced migration. The microeconomic foundation is the ambition of an individual to maximize utility across his whole life span (Sjaastad 1962). Accordingly, the decision to migrate is taken when the expected utility in the sense of higher wages of improved employment possibilities exceeds the expected costs of migration. In accordance with neoclassical theory individuals migrate because of regional differences in economic possibilities. Since these are strongly related to conditions on the labor markets, migration can be specified as a function of real wages and employment opportunities in a region. The probability of migration rises with increasing differences between the region of origin and destination. Hence, migration acts as an adjustment mechanism between regions with differing labor market conditions, since it induces an equalization of wages and employment opportunities.

One further explanation of the decision to migrate that might also be of relevance for migration between East and West Germany is given by network theories (Jackson 2006). They emphasize the role of social networks for example for obtaining labor market specific information or contacts (Carrington/Detragniache/Vishwanath 1996, Calvo-Armengol/Jackson 2004). Hence, in addition to the neoclassical determinants, the existence of friends and relatives in the destination region increases the probability of migrating to this region.

The return migration of persons to their region of origin can be regarded as a special form of migration. Already Ravenstein (1885, 185) discusses so-called “counter currents”, i. e. migration to the opposite direction. In order to theoretically explain return migration, Dustmann/Weiss (2007) extend the neoclassical approach by the possibility of the individual to reverse his migration decision and offer three reasons for this behaviour. The first reason is based on the assumption that migrants possess a preference for consumption in their home region. On the basis of their utility maximization strategy, they migrate to a certain destination region, but consuming there provides them with less utility than consuming in the home region. Under certain assumptions the benefit of migration decreases and the costs increase, which ultimately leads to return migration. A second reason for return migration can

be traced back to differences in relative prices between the destination and home region. If the currency in the destination region has a higher purchasing power in the home region, the migration decision is only temporary, because the individual can benefit from high wages in the destination region and low prices in the home region. A third reason results according to Dustmann/Weiss (2007), when the possibility of accumulating human capital abroad enhances the migrant's earnings potential back home. According to Borjas/Bratsberg (1996), however, return migration can also occur when the migrants have based their initial migration decision on erroneous information on economic prospects in the destination region.

In sum, the theoretical approaches generally deal with migration from poor to rich countries or regions. Migration from rich to poorer regions, however, is approached very rarely. Since this is the case for migration from West to East Germany, further explanations have to be considered that compensate possible economic disadvantages of return migration.

### **3 Empirical evidence for Germany**

Most of the empirical literature on migration within Germany deals with migration from East to West Germany. As Kemper (2004, 661) notes, this special focus can be explained by the extraordinarily large degree of outmigration from East Germany in the course of the breakdown of communism. Important reasons for this process can be seen in a mixture of political and economic motives, whereas later in the 1990s the economic motives for migration to West Germany became dominant (Kemper 2004). Correspondingly, the migration flows have shifted geographically away from the regions directly adjoining the former German-German border and towards regions with attractive labor market conditions especially in the South of Germany (see Heiland 2004, Kemper 2004). Since 2001, migration rates from East to West Germany have declined again and in 2010 reached the level of 1995 (Sander 2014).<sup>2</sup>

The general relevance of disequilibria on regional labor markets as determinants of migration is confirmed by empirical studies on the validity of the neoclassical migration model (see Parikh/van Leuvensteijn 2003, Alecke/Mitze/Untiedt 2010 or Mitze/Reinkowski 2011). The vast majority of studies that specifically deal with migration from East to West Germany also identify higher wages and better labor market prospects in West Germany as central economic determinants for East-West migration (Burda 1993, Hunt 2000, Burda/Hunt 2001,

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<sup>2</sup> Sander (2014) further emphasizes that since 1995, migration flows within East Germany are considerably larger than those from East to West Germany.

Brücker/Trübswetter 2006, Hunt 2006). Fuchs-Schündeln/Schündeln (2009) furthermore highlight the role of psychological and social factors for the individual decision to migrate. In the same vein, according to Rainer/Siedler (2009) social networks in the form of friends and relatives increase the propensity to emigrate from East Germany.

Compared to the vast amount of studies on migration from East to West Germany, analyses on migration from West to East Germany and especially on return migration of East Germans are sparse. Fuchs-Schündeln/Schündeln (2009) provide an econometric study on the differences between permanent and temporary outmigrants from East Germany. According to their results, the migration probability is higher among single and unemployed persons than among married and elder persons, but the probability of return migration is higher as well. On the other side, among the persons aged over 50 years who emigrated to West Germany return the probability of returning is higher than among the younger outmigrants. Schneider/Kubis/Wiest (2011) focus on the determinants of the preferences for return migration and conclude that labor market success in the destination region reduces the preference for returning, whereas the keeping up of social ties to the home region increases the preferences for returning. A descriptive overview of West-East migration comes from Beck (2005). The author distinguishes between return migrants and migrants from West to East Germany with a West German origin and finds that both groups are of roughly the same size, but that they also feature distinctive differences. Furthermore, case studies provide insights into return migration into selected regions (Schultz 2004, Jain/Schmithals 2009, Matuschewski 2010). To sum up, a comprehensive overview on return migration to East Germany that is furthermore of specific relevance for the East German labor market is missing, which is also related to the sparse data at hand.

The majority of the literature on migration between the two parts of Germany uses either general migration data for the whole population (e.g., Heiland 2004 or Sander 2014) or survey data. The German socio-economic panel (GSOEP) is used by Burda (1993), Hunt (2006) or Fuchs-Schündeln/Schündeln (2009). The latter authors furthermore recur to the Microcensus that constitutes a 1 % random sample of the German population. Merely Brücker/Trübswetter (2007) work with a 1% sample of the full-time employed covered in the social security files in Germany and thus provide a more comprehensive picture of labor market relevant migration. Similarly, the existing studies on migration from West to East Germany are based on surveys that mostly have a case-study character and focus on both the inclination of return migration and the actual return. In this vein, Schultz (2004) concentrates on the potential of return migration for the *Bundesland* of Mecklenburg-Vorpommern and Schneider/Kubis/Wiest

(2011) for Saxony-Anhalt. The study of Jain/Schmithals (2009) is based on an interview of return migrants to the city of Magdeburg, and Matuschewski (2010) describes two case studies on return migrants to Mecklenburg-Vorpommern and Saxony. Such survey data have the advantage that individual determinants of the migration decision such as the familial context can be considered. It is not possible, however, to conduct representative analyses especially at a disaggregated regional level. Furthermore, with one-time surveys the employment history of the migrants cannot be followed, which is indispensable for an analysis of potential labor market gains through migration. Such a representative and comprehensive analysis of the labor-market oriented return migration to East Germany does not exist so far (see also Matuschewski 2010). The present paper takes a first step into this direction.

#### **4 Data and definitions**

Our empirical analysis rests on the Integrated Employment Biographies (IEB) of the Institute for Employment Research (IAB), version V11.01.00. This merged administrative data set contains daily status information for all individuals in Germany who are employed subject to social security, marginally part-time employed, receive benefits in accordance with Social Code Book III and II, are job seekers or participate in measures of active labor market policies. For each individual, information on the date of birth, gender, education, place of residence, place of work or branch of industry are provided. These data are linked to create personal accounts by using a general artificial personal identifier that can be followed over time, so that the individual life courses on the labor market including changes in the place of living and the place of work can be followed.<sup>3</sup>

The vast amount of information in the IEB has the decisive advantage over survey data like the GSOEP or the Mikrozensus that labor-market induced migrations can not only be analysed between the two broad regional aggregates of East and West Germany, but also on the small-scale district level (NUTS3). Hence, we are able to depict spatial migration patterns that add important information to the existing evidence (see also Sander 2014). We further assume that the migration patterns of the total labor force can be replicated quite well with our data (see also van Leuvensteijn/Parikh 2002). Disadvantages arise through the fact that no information on the household situation like the family status, the number and age of children

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<sup>3</sup> vom Berge/Burghardt/Trenkle (2013) provide details on a sample of the IEB that is available for external researchers.



or the living situation in the form of property or rent is available. Hence, we cannot provide insights into migration that is induced by non-labor market motives like education, family reasons or retirement. The results of our analysis must be interpreted accordingly in that our data only cover labor-market oriented migration.

To the data we have from the IEB, we add information from other data sets. Details on the settlement structure of the districts are taken from a classification according to the degree of urbanization and population density developed by the BBR (*Bundesamt für Bauwesen und Städtebau*, i. e. the Federal Office for Building and Regional Planning). We aggregate the districts according to agglomerations, urbanized regions, and rural regions. Data on unemployment rates in the districts is obtained from the Federal Agency of Labor.

For our purposes, we aggregate the daily information in the IEB into quarterly data and only consider individuals between 15 and 64 years of age with their place of living as registered in the IEB in East Germany on December 31, 2012 only. Individuals living in Berlin are excluded, because their migration behavior might be biased due to the city's function as capital and its general attractiveness as metropolitan hot spot (see Sander 2014). Of this total of roughly 4.7 million persons, the identification of who is originally from East or West Germany is central for our analysis. We proceed along three criteria (see also Brücker/Trübswetter 2007): First of all, we define all persons with the first recording in the IEB before 1990 as West Germans, since East Germans were virtually not included before. For those individuals with the first status information in 1990 or later, further criteria have to be applied. Hence, in a second step we make use of the insurance number that is provided for every one registered in the German statutory pension insurance scheme and that contains information on the region where it was issued. Accordingly, we define a person as East (West) German if the insurance number was issued in East (West) Germany.<sup>4</sup> In the case of missing insurance numbers, we decide according to a third criterion which is the year of the first registered place of living. A detailed list of the various criteria and the corresponding numbers of observations can be found in table 1 in the Appendix. The resulting number of persons registered in the IEB with place of living in East Germany on December 31, 2012 and with East Germany as regional origin amounts to 4,074,527. They form the basis for the following analyses.

Since in the IEB the place of living is not recorded before 1999, we observe the first movements between East and West Germany in the second quarter of 1999 and follow the last

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<sup>4</sup> The place of issue is in East Germany if the area codes are 2 to 9, 42 to 49, or 89. Otherwise, the place of issue is in West Germany.

cohort in the fourth quarter of 2012. We define return migrants to East Germany as those individuals who have their regional origin in East Germany and who both lived and participated in the labor market in West Germany before re-migrating to East Germany between 1999 and 2012. Likewise, we define migrants to East Germany as those individuals with regional origin in West Germany and having both lived and participated in the labor market in West Germany before migrating to East Germany between 1999 and 2012.

In order to find out about whether there are any labor-market oriented or economic improvements that go along with migration, we focus on two outcome variables. We first want to know if the individuals could improve their labor market status after moving or at least retain it. To this we define the status before migration as indicated by their position on the labor market as unemployed, apprentice, marginally employed or regularly employed, i. e. liable to social security contributions. The individuals improve their status after migration if they either find a job or enter into employment that can be considered to be of better quality (see table 1). We only consider those individuals who only had one single indication on their labor market status during the three consecutive quarters directly before and after migration, respectively.

**Table 1: Definition of improvements in the labor market status after migration**

<b>Status before migration</b>	<b>Status after migration</b>
Unemployed	Apprenticeship, marginally or regularly employed
Apprenticeship	Marginally or regularly employed
Marginally employed	Apprenticeship or regularly employed
Regularly employed	Regularly employed

The second outcome variable relates to wages as a major economic motive for migration. In spite of the large differences in wages between East and West Germany, both migrants and return migrants might improve on their salaries. Furthermore, if, after matching, the wages of the return migrants tend to be lower than those of the comparable migrants, this might support the hypothesis that for the return migrants social networks in their native region are important determinants for returning to East Germany. Because in the IEB there is no information available on the number of hours worked, for the second outcome variable we only consider the wages of persons employed full-time in the three quarters directly before and after migration.

## 5 Results

Of all persons included in the IEB and living in East Germany as of December 31, 2012, 2.24 % East Germans migrated to West Germany and subsequently returned to East Germany. These 101,659 persons are defined as return migrants. In the following, we scrutinize this group with respect to socio-demographic and labor-market related characteristics, their spatial migration patterns, and discuss possible determinants of return migration.

### 5.1 Who returns?

In the period of 13 years that is covered in our data, it might well be the case that persons move between East and West Germany more than only once. As can be seen in table 2, however, the vast majority migrates only once. 13.5 % move twice between the two regions, and less than 2 % migrate more than twice. In the following analysis, among those East Germans who changed more than once their place of living between 1999 and 2012 we only consider the last return migration event.

**Table 2: (Return) migration of East Germans between 1999 and 2012**

Number of (return) migration moves	Number of persons	Share (in %)
1	86,111	84.71
2	13,721	13.50
3	1,534	1.51
4	223	0.22
5	48	0.05
6	14	0.01
7	7	0.01
8	1	0.00
<b>N</b>	<b>101,659</b>	<b>100.00</b>

Source: IEB, own calculations.

One prominent finding in the empirical literature is that migrants generally differ in various respects from non-migrants. For Germany, Fuchs-Schündeln/Schündeln (2009) show that return migrants and non-migrants differ in their socio-demographic characteristics. Also in our analysis, significant differences arise with respect to gender, qualification, age and labor market experience (see table 3). Among the group of return migrants, the share of women is higher and the qualification level is lower on average. The return migrants are also younger than the stayers, which corresponds with the generally higher migration propensity of the younger generations (Greenwood 1997). As a consequence, the labor market experience of the return migrants is lower.

A further breakdown of the return migrants into their labor market status shows that the majority is regularly employed (52.6 % of all return migrants). The second largest group consists of the unemployed. Only 1,964 persons are marginally employed.<sup>5</sup> Striking is the high share of women among the return migrants who are in apprenticeship or marginally employed. As can be expected, those return migrants who are in apprenticeship are on average youngest and have the lowest labor market experience.

**Table 3: Socio-demographic characteristics of non-migrants and return migrants**

Characteristic	Shares in percent					
	Non-migrants	All return migrants	Regularly employed	Apprenticeship	Marginally employed	Unemployed
<b>Share women</b>	47.39	48.03***	46.50	63.20	69.65	48.22
<b>Qualification</b>						
High qualified	11.70	8.92***	12.47	18.88	4.68	3.12
Medium qualified	81.97	75.20***	78.54	73.90	60.08	76.35
Low qualified	4.59	12.89***	6.49	6.18	25.25	18.03
No information	1.74	3.00***	2.50	1.03	9.98	2.50
<b>Age (in years)</b>						
15 until <25	11.11	26.36***	18.06	85.72	27.85	27.79
>=25 until <35	9.44	49.95***	55.65	13.76	40.63	45.46
>=35 until <45	26.30	13.46***	15.10	0.39	9.67	15.76
>=45 until <55	37.83	7.71***	8.52	0.12	9.98	8.73
>=55 until <65	14.25	2.38***	2.61	.	8.55	2.23
Average age	43.01	32.80	34.38	21.89	33.14	32.65
<b>Labor market experience (in years)</b>						
< 5	9.80	16.81***	13.23	24.64	10.54	16.85
>=5 until <15	9.86	54.88***	56.86	68.14	47.51	50.57
>=15 until <25	24.92	14.51***	15.89	0.91	9.73	17.57
>=25 until <35	37.83	7.92***	8.56	0.12	10.34	9.45
>=35	15.85	2.88***	2.96	.	11.91	3.07
No information	1.74	3.00***	2.50	1.03	9.98	2.50
<b>N</b>	<b>2,489,397</b>	<b>101,659</b>	<b>53,458</b>	<b>3,299</b>	<b>1,964</b>	<b>7,633</b>

\*\*\*: Difference between non-migrants and return migrants significant at the 1 % level.

Source: IEB, own calculations.

For those migrants who were regularly employed after returning to East Germany, further labor-market related characteristics can be analysed (see table 4). Full-time employed return migrants earned 4.96€ more on average in West Germany than in East Germany, independently if they shifted only their place of living or also their place of work. They work also less often in a small plant with less than 20 full-time equivalents. This is insofar

<sup>5</sup> When return migrants are considered according to their labor market status only those persons are considered who can be clearly assigned to one category in the quarter when return migration takes place. The rest has missing information on employment or parallel spells in the data set, i. e. they are, for example, unemployed and marginally employed at the same time.

interesting, as large plants pay higher wages than small plants. The fundamental difference in wages between East and West Germany thus seems to interfere with a purely monetary motive for return migration.<sup>6</sup>

**Table 4: Labor-market related characteristics of the regularly employed return migrants**

<b>Characteristic</b>	<b>Before return migration</b>	<b>After return migration</b>
<b>Working time</b>		
Full-time employed	75.91	69.35
Part-time employed	7.54	7.79
No information	16.55	22.86
<b>Economic sector</b>		
Primary sector	1.09	1.18
Secondary sector	23.12	24.17
Tertiary sector	71.98	74.65
No information	3.80	0.01
<b>Occupational sector</b>		
Production	24.09	25.42
Personal services	23.90	25.77
Commercial and business-related services	27.62	29.68
IT and natural sciences services	3.21	3.38
Other economic services	11.33	11.76
No information	9.85	4.00
<b>Plant size</b>		
Small (<20 FTE*)	73.95	72.78
Medium-sized (≥20 and <100 FTE*)	14.21	16.38
Large (≥100 FTE*)	8.04	10.83
No information	3.79	0.00
<b>Daily wages (when full-time employed)</b>	<b>79.78 €</b>	<b>74.82 €</b>

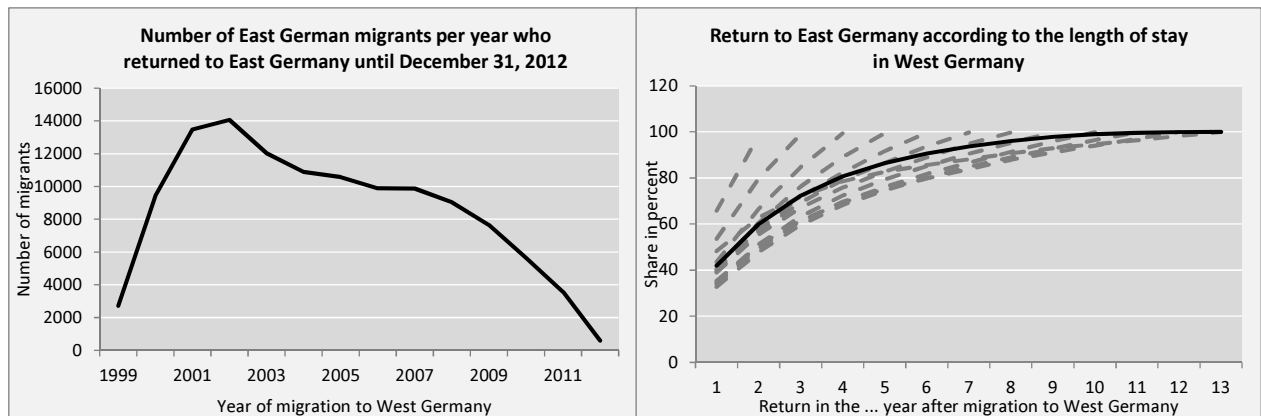
\*: FTE = Full-time equivalent (full-time employees x 0.5 part-time employees x 0.3 marginally employed).  
Source: IEB, own calculations.

## 5.2 When do the migrants return?

In accordance with the generally declining migration flows from East to West Germany since 2001 (see figure A1 in the Appendix), the number of East Germans covered in the IEB who had migrated to West Germany between 1999 and 2012 and returned until December 31, 2012, peaked in 2002 and then declined steadily (figure 1). Most of them returned within a few years after their move to West Germany. As figure 2 shows, 40 % returned within one year and 75 % within three years. This is broadly the case for all cohorts under consideration and corroborates similar findings for other countries (see Dustmann/Weiss 2007).

<sup>6</sup> In order to further investigate this issue, it would be necessary to consider the differing regional price levels in the home and destination regions of the migrants. Data on regional prices is not available for Germany, however.

**Figure 1: Timing of the migration and return migration decision**



In the right-hand figure, the grey dashed lines give information for the 13 yearly return cohorts, the black solid line depicts the average length of stay.

Source: IEB, own calculations.

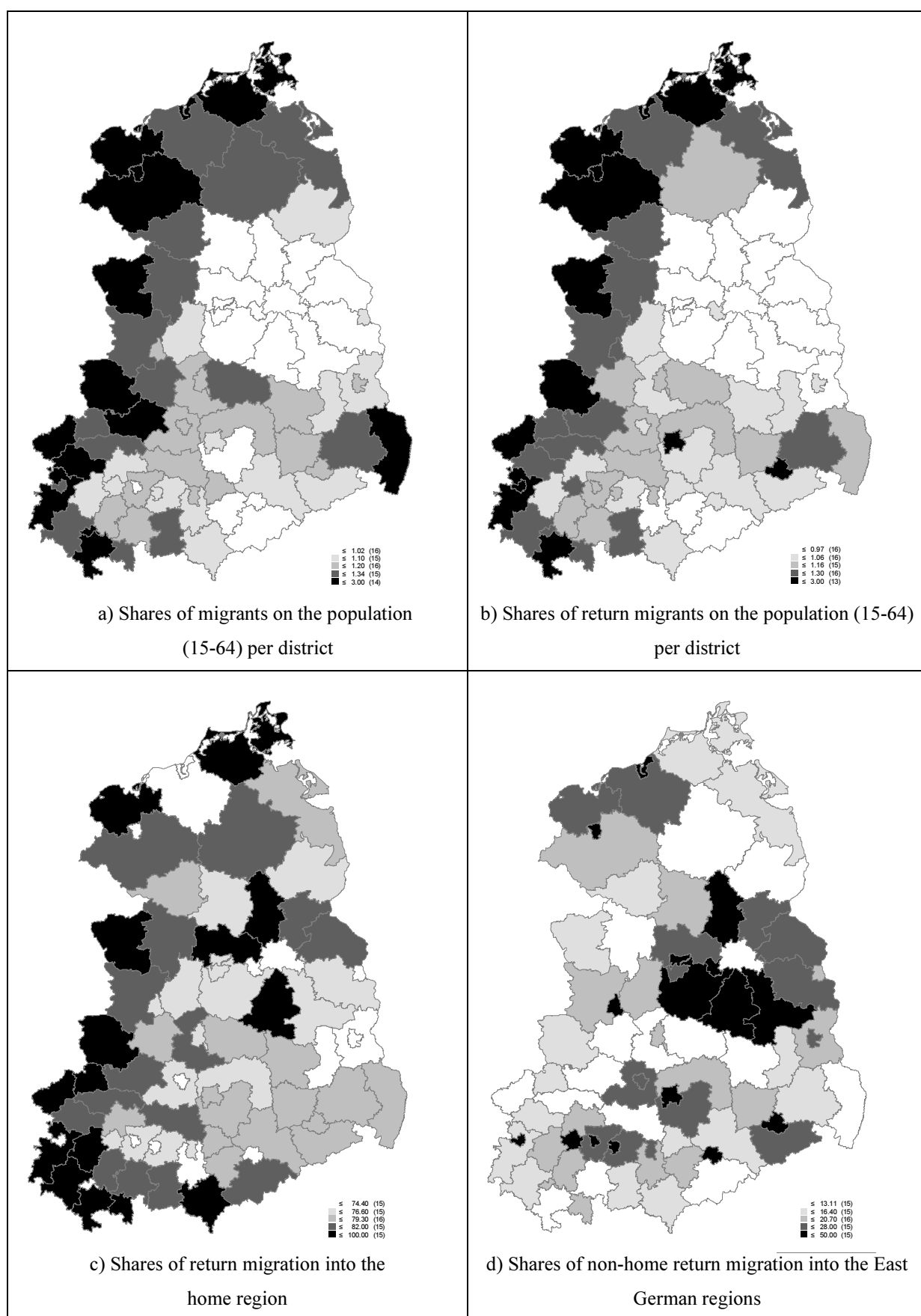
### 5.3 What are the spatial patterns of migration?

The analysis of the spatial patterns of migration starts with the question from which East German regions most people migrate to West Germany. The shares of those East Germans who migrated to West Germany on the population aged 15 to 64 years per district are depicted in figure 2a. The migration rates are generally highest in the regions adjoining the former intra-German border and decline in the regions further East. Correspondingly, the district of Eichsfeld directly adjoining the West German *Bundesländer* Niedersachsen and Hessen has the highest migration rate (2.56 %), whereas the district of Oberhavel close to Berlin has the lowest rate (0.49 %).

A closer look at the West German destination regions highlights the importance of geographic closeness and good economic conditions as pull factors for migration (see figure A 2 in the Appendix). 3.83 % of all migration flows can be allotted to those East and West German districts that are directly at the former intra-German border. Further important destinations are the West German agglomerations around Munich, Stuttgart, Frankfurt, and Hamburg.

Concentrating on return migration, it becomes clear that, in relative terms, migration between East and West Germany is shaped by a few regions only (figure 2b). The regions adjoining West Germany feature not only the highest migration rates, but also the highest return migration rates. Since most of these regions can be classified as rural and only some as urbanized regions, more than half of all return migrants move to rural regions and only about 17 % move to agglomerations like Leipzig and Dresden (table 5). This pattern also holds for the regularly employed return migrants.

**Figure 2: Spatial patterns of East-West-East migration (shares in %)**



Source: IEB, own calculations. The migration flows are averaged across the observation period.

**Table 5: Return migration patterns according to the settlement structure**

Settlement structure	All return migrants	Regularly employed return migrants
Agglomerations	16.58	17.39
Urbanized regions	26.51	26.33
Rural regions	56.91	56.27

Source: BBR, IEB, own calculations.

If one focuses on return migration into the original home region only, the spatial pattern changes somewhat (figure 3c). Still, it is mostly the regions directly adjoining West German districts where most migrants return to. This provides evidence that migration rates between East and West Germany are much driven by movements to and from regions that lie in a small corridor along the former intra-German border. The picture changes fundamentally, however, when investigating the destination regions of those migrants who did not return into their home region (figure 3d). Evidently, the larger cities and the districts surrounding Berlin are the most attractive destinations. Only few persons move to the rural regions.

#### 5.4 What are possible motives for return migration?

In the following, we provide descriptive evidence on possible motives for return migration. To this, we resort to our two outcome variables as discussed in chapter 4. Table 6 provides an overview of changes in the labor-market status. Of the 54,480 return migrants for who we have the relevant information, around 84 % were regularly employed, 6 % were unemployed, 5 % were in apprenticeship, and 2 % were marginally employed both before and after returning to East Germany. In contrast, only few transitions from one status to another in the course of migration can be observed.

**Table 6: Labor market status before and after return migration**

		After return migration				N
		Unemployed	Apprenticeship	Marginally employed	Regularly employed	
Before return migration	Unemployed	3,222	18	24	435	<b>3,699</b>
	Apprenticeship	52	3,047	6	88	<b>3,193</b>
	Marginally employed	15	4	1,127	120	<b>1,266</b>
	Regularly employed	699	11	49	45,563	<b>46,322</b>
	N	<b>3,988</b>	<b>3,080</b>	<b>1,206</b>	<b>46,206</b>	<b>54,480</b>

Source: IEB, own calculations.



As a consequence, the vast majority of the return migrants can retain their labor market status (table 6). For around 3.7 %, an improvement can be attested, and only 1.6 % face a deterioration of their labor market situation. The second outcome variable, however, asserts a clear monetary deterioration of the return migrants who are full-time employed. Their average daily wage declines from roughly 80 Euro before migration to around 75 Euro after migration. Table 7 lists three additional possible push and pull factors. Roughly 15 % of the return migrants were faced in West Germany with the closure of the plant they worked in. On the other side, around 5 % of the return migrants work in a newly established plant in East Germany after returning. Finally, the relatively high unemployment rates in the home region surely acted as a push factor for migrating to West Germany in the first place. The subsequent return to East Germany occurred in spite of the still high unemployment rates, which is rather counterintuitive to the economic motives for migration.

**Table 7: Selected indicators for the motives of return migration**

<b>Indicator</b>	<b>Share</b>
<b>Labor market status</b>	
Improvement	3.66
Stability	94.7
Deterioration	1.64
<b>Change in average wages (when full-time employed after migration) (in %)</b>	-6.22
Average wage, if full-time employed before return migration	79.78 €
Average wage, if full-time employed after return migration	74.82 €
<b>Plant closure in West Germany</b>	14.72
<b>Plant establishment in East Germany</b>	5.48
<b>Changes in the unemployment rate (in percentage points)</b>	-0.07
Average unemployment rate home region East	15.36
Average unemployment rate destination region East	15.29

Source: IEB, own calculations.

To sum up, according to the descriptive results presented here labor market conditions do not seem to be strong motives for the decision to return to East Germany. The return migrants are faced, on average, with lower wages and return to regions with much higher unemployment than in West Germany. On the other hand, the vast majority retain their labor market status. This might be good news if the return migrants had experienced a deterioration would they have remained in West Germany. Such an analysis is out of the scope of this paper, however.

## 6 Relocation of the place of living and the place of work

If the place of work differs from the place of living, an alternative to changing the place of living, i. e. migration, is commuting between the two places. In this section, we ask about the relevance of this phenomenon for the West-East migration patterns in Germany. Against the politically motivated background that the return migrants also be at the disposal on the local labor markets, they should relocate not only their place of living, but also their place of work to East Germany. For the following analysis we therefore restrict our data to the return migrants who are regularly employed after relocating their place of living to East Germany, since for this group only we can track the place of work.

Of the total of the such defined 53,458 return migrants, for 8,973 the place of living corresponded with the place of work, 4,915 had their place of work in another district in East Germany, 1,092 had their place of work in Berlin, and 38,478 retained their place of work in West Germany.<sup>7</sup> This means that 72 % of the return migrants moved to East Germany, but work in West Germany and hence are not available for the East German labor market. Only 26 % actually moved to East Germany and also work there. Admittedly, the return to East Germany went along with a direct change of the place of work from West to East Germany in only 3,714 cases. 10,137 persons already had their place of work in East Germany before actually moving to East Germany.

Table 8 gives an overview of socio-demographic and labor market related characteristics of the return migrants who relocated their place of work to East Germany and those who did not. Major differences between the two groups arise. Among the return migrants who also work in East Germany, the share of women and the share of high qualified are higher, they are on average younger and have less labor market experience. The decline in the share of being full-time employed after migration is more pronounced, which might be related with the high share of migrants for who no information on their working time is available. They further work more in the services sector. The most striking difference, however, concerns the changes in the size of the plants they are employed in before and after migration. About 89 % of the migrants who also relocated their jobs worked in small plants before returning to East Germany. This share is cut in half after migration, whereas the importance of the medium-sized and large plants increased. These profound changes cannot be observed for those migrants who remained employed in West Germany.

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<sup>7</sup> Since we did not control for keeping the same place of work in West Germany, people could also have relocated their place of living to East Germany and also changed their place of work within West Germany.

**Table 8: Socio-demographic and labor market related characteristics of the return migrants with and without changes in the place of work (shares in percent)**

Characteristic	Relocation of place of living and place of work from West to East		Relocation of place of living from West to East, place of work in West	
	Before migration	After migration	Before migration	After migration
<b>Share women</b>		49.35		46.82
<b>Qualification</b>				
High qualified		17.53		11.45
Medium qualified		77.06		79.00
Low qualified		3.63		6.89
No information		1.78		2.65
<b>Age (in years)</b>				
15 until <25		20.79		18.92
>=25 until <35		61.09		56.68
>=35 until <45		12.17		14.01
>=45 until <55		4.95		7.64
>=55 until <65		1.00		2.69
>= 65		.		0.05
Average age		29.94		31.41
<b>Labor market experience (in years)</b>				
< 5		16.88		13.55
>=5 until <15		62.82		58.14
>=15 until <25		12.57		14.91
>=25 until <35		4.90		7.68
>=35		1.05		3.06
No information		1.78		2.65
<b>Working time</b>				
Full-time employed	73.58	60.96	76.03	70.81
Part-time employed	6.83	7.54	6.89	6.99
No information	19.59	31.50	17.07	22.20
<b>Economic sector</b>				
Primary sector	0.83	1.05	0.98	1.02
Secondary sector	19.12	23.26	22.63	23.19
Tertiary sector	79.99	75.69	73.65	75.79
No information	0.05	.	2.73	.
<b>Occupational sector</b>				
Production	20.33	21.08	24.17	25.32
Personal services	29.51	29.35	24.42	26.06
Commercial and business-related services	31.34	33.31	27.41	29.23
IT and natural sciences services	4.07	4.60	3.25	3.32
Other economic services	8.35	7.24	11.89	12.36
No information	6.41	4.42	8.86	3.71
<b>Plant size</b>				
Small (<20 FTE*)	88.83	40.23	83.19	85.47
Medium-sized (>=20 and <100 FTE*)	8.80	29.35	10.44	10.76
Large (>=100 FTE*)	2.37	30.43	3.64	3.77
No information	.	.	2.73	.
<b>Daily wages (when full-time employed) (in €)</b>	83.49	71.26	81.58	77.46
<b>N</b>		<b>3,714</b>		<b>38,478</b>

\*: FTE = Full-time equivalent (full-time employees x 0.5 part-time employees x 0.3 marginally employed).

Source: IEB, own calculations.

The spatial pattern of return migration changes visibly when looking at return migration with and without job relocation separately. In figure 3a, the shares of the return migrants who returned to their home region with respect to both living and work is depicted. The special role of the regions at the former intra-German border that was characteristic in figure 2c has now dissolved. While a clear spatial pattern is not discernible, those migrants who relocate both their place of living and their place of work to a non-home East German region (figure 3b) have a clear preference for the larger cities and the surrounding agglomerations. The most preferred city is Potsdam, followed by Leipzig, Weimar, and Dresden. Exemplified by the city of Leipzig, Buch et al. (2011: 1972) note that the above-average migration rate of the city arises despite poor labor market conditions and that its attractiveness seems to be mainly driven by the amenities that it offers. Hence, there seem to be factors other than related to a good labor market that determine which region the return migrants move to.

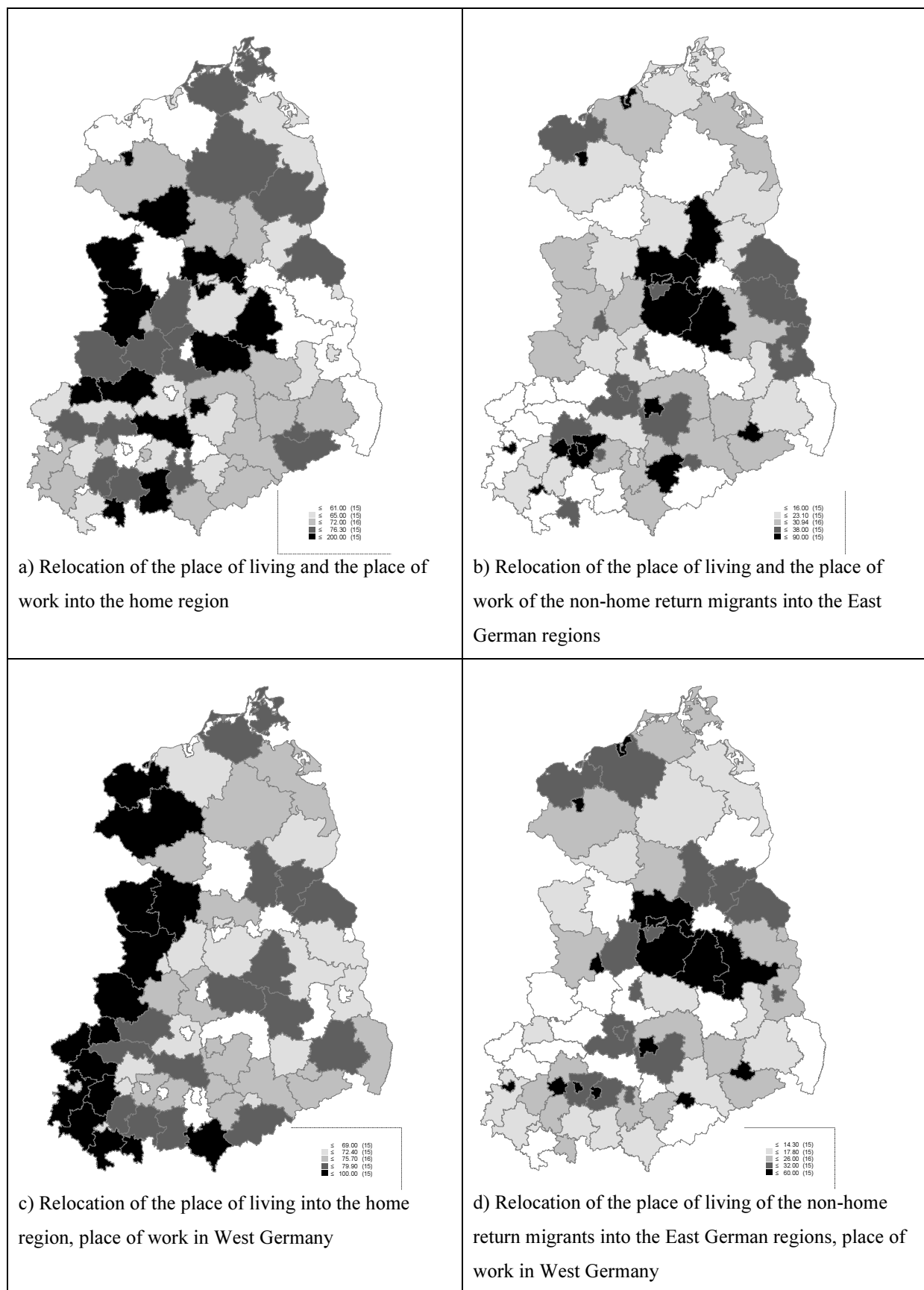
Figure 3c provides the spatial pattern of the migration back to the home region when the place of work is kept in West Germany. It is clearly dominated by the regions along the former intra-German border. Obviously, the geographical proximity to West Germany facilitates both the migration from East to West Germany and back, with the advantage of retaining employment in West Germany. When focussing on those migrants who relocate their place of living to an East German region other than their home region and keeping their job in West Germany (figure 3d), a similar spatial pattern emerges than in figure 3b. Also in this case, people move to the larger cities, probably to make use of the general attractiveness with better cultural and leisure amenities.

## **7 Conclusions**

This paper has presented novel and detailed empirical evidence on the magnitude and spatial patterns of labor-market related return migration to East Germany. Based on comprehensive data on all labor-market participants living in East Germany as of December 31, 2012, we traced the migration history of the East Germans between East and West Germany in combination with their employment history on the NUTS3-level since 1999.

During the observation period, about 101,600 East Germans migrated to West Germany and subsequently returned to East Germany. They correspond to 2.2 % of the East German population in 2012. In accordance with the generally declining East-West migration flows since 2001, the number of return migrants decreased steadily from 2002 onwards. Most East

**Figure 3: Spatial patterns of return migration according to the place of living and the place of work (shares in %)**



Source: IEB, own calculations.

Germans migrated only once to East Germany, and more than half of them returned within two years. In accordance with international findings, the return migrants differ from non-migrants in various socio-demographic respects. On average, the share of women is higher, their qualification level is lower, and they are also younger.

The analysis of the spatial migration patterns brings along some important implications for the potential of return migration for the regional labor markets in East Germany. First of all, it becomes clear that migration between East and West Germany is shaped by a few regions only, under which the regions adjoining the former intra-German border play a central role. They feature not only the highest migration rates, but also the highest return migration rates. Further return destinations are the regions surrounding Berlin and the larger cities mainly in the southern regions like Leipzig and Dresden. Concerning possible motives for return migration, we find that most return migrants are regularly employed and do not feature big changes in their labor market status after re-migrating. The full-time employed, however, experience a profound decline in daily wages of roughly five Euros. These findings might provide some evidence against the relevance of economic motives and rather for the importance of social factors and networks as return motives. However, in order to provide sound and causal evidence on this issue, matching analyses with adequate control groups would have to be conducted. This shall be left for future research.

A seminal finding relates to the migration patterns when the return migration of the regularly employed is separated into the relocation of the place of living, as is usually studied, and the relocation of the place of work. Only 26 % of the return migrants actually moved to East Germany and work there, the rest has a job in West Germany. The high migration rates to and from the East German districts directly at the former intra-German border can herewith be explained by the fact that the geographical proximity to West Germany facilitates both the migration from East to West Germany and back, with the advantage of retaining employment in West Germany. The other return migrants clearly favour the large cities and the regions surrounding Berlin. Although we find no descriptive evidence for improvements of their labor market situation, this might well be compensated by other factors like social networks and amenities generally provided by larger cities. Assessing return migration for the stabilization of regional labor supply, our results thus provide good news for the cities, but bad news for the rural regions further away from the former intra-German border.

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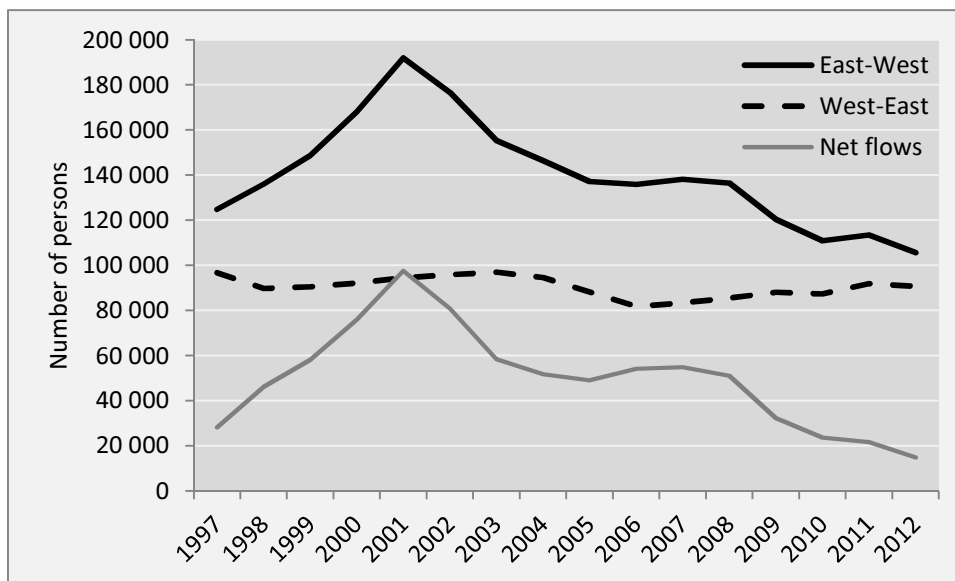
## Appendix

**Table A 1: Identification criteria for the regional origin of East or West Germany**

Year of the first recording in the IEB	Insurance number area code	First registered place of living	Year of the first registered place of living	Number of observations	Regional origin
before 1990	East/West	East/West	before 1990/after 1989	71,223	West
after 1989	West	West	after 1989	65,219	West
after 1989	East	West	after 1989	36,044	East
after 1989	no information	West	after 1989	62	West
after 1989	West	East	after 1989	246,891	West
after 1989	East	East	after 1989	4,032,309	East
after 1989	no information	East	after 1989	3,261	East
after 1989	West	no information	after 1989	469	West
after 1989	East	no information	after 1989	2,913	East
no information	no information	no information	no information	257,751	-
Total number of observations				4,716,142	

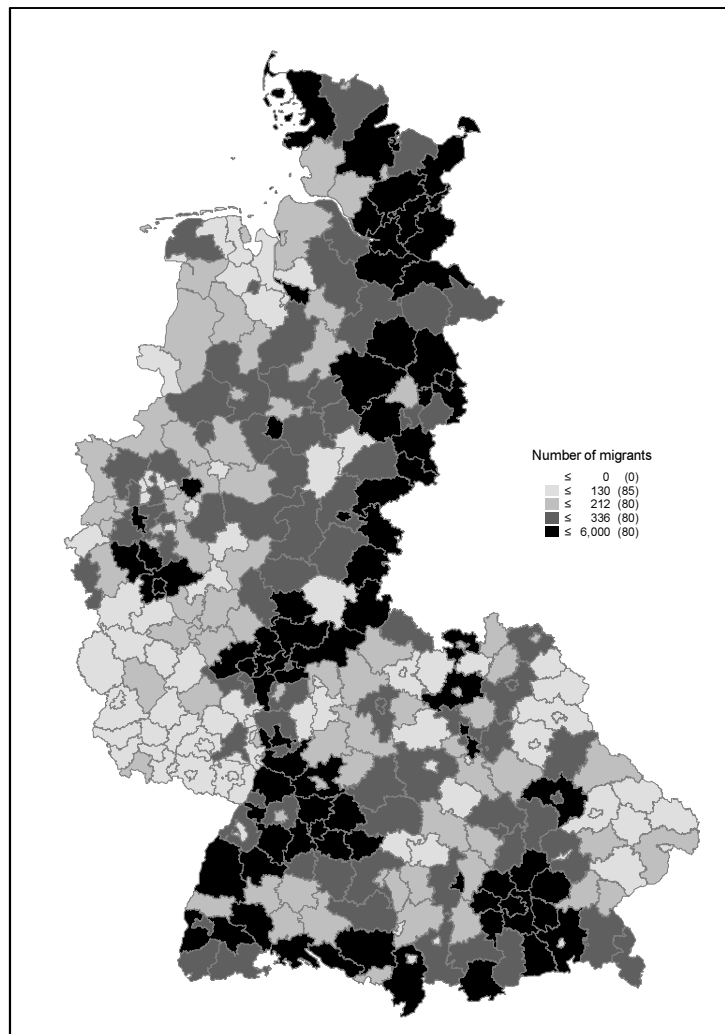
Source: IEB, own calculations.

**Figure A 2: Migration flows of the total population within Germany, 1997 to 2012**



Source: German Statistical Office, own calculations.

**Figure A 2: West German destination districts of the East German migrants**



Source: IEB, own calculations.