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Coming and Leaving Internal Mobility in Late Imperial Austria^{*}

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Abstract — *The paper investigates the determinants of internal migration within late imperial Austria. In contrast to the modernization paradigm which studies one-directional migration flows from rural to urban areas, our approach highlights that spatial mobility consisted of movements in both directions. Using data on all districts of the Austrian part of the Hapsburg Monarchy, we find that in- and out-migration rates are positively correlated, and that the modernization paradigm in migration research is consistent with our results for net-migration rates, but inconsistent with those for out-migration.*

Keywords: economic history, migration, Late Imperial Austria

JEL-Classification: N30; F22

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Introduction

“During the second half of the nineteenth century migration from rural to urban areas was the most important form of regional mobility.” This is Heinz Fassmann’s conclusion in his survey on Austrian internal migration, which contains a chapter on migration from rural to urban areas and on migration to Vienna, but none on migration between rural areas or on out-migration from the city.¹ In contrast, based on a study on regional mobility in Germany, Steve Hochstadt claims that “the first point to make is that high rates of urban immigration were accompanied by high rates of outmigration.”² To overcome a one-directional view on migration patterns during industrialization – a move from the countryside to the cities – it will be necessary to get a better understanding of different measurements of regional mobility and to analyze them more carefully.

Our paper aims to contribute to debates on determinants of internal migration during industrialization, by analyzing data for all districts of late imperial Austria. We argue that previous research has focused on net-migration rates and on urban in-migration and that these methodological limitations have impeded its ability to understand actual migration movements. Migration is a complex process that consists of various activities of coming and going. Building on Hochstadt’s conclusions, we argue that out-migration was never limited to marginal rural areas and internal mobility was not a one-directional movement from meager agrarian regions to more wealthy urban agglomerations. In late nineteenth century the intensification of existing migration patterns affected already established urban areas, the newly developing industrial centers, agrarian regions and rural communities.³ A statistical analysis based on district data for the entire Austrian part of the Hapsburg Monarchy enables us to highlight a more diverse picture of internal migration patterns.

For our analysis a precise definition of migration paths will be necessary. The term *internal migration* used here refers to movements within the Austrian part of the Hapsburg Monarchy. Migration to other countries (including Hungary)⁴ is referred to as *international migration*. As our data refer to districts, internal migration movements out of one political district of late imperial Austria into another one will be called internal gross out-migration (henceforth: *out-migration*) and movements into a political district from another one inside imperial Austria are called internal gross in-migration (henceforth: *in-migration*). The term

¹ Fassmann, "A Survey of Patterns", p. 74.

² Hochstadt, *Mobility and Modernity*, p. 136.

³ Ehmer, *Bevölkerungsgeschichte*, pp. 19-33.

⁴ Hungary was politically part of the same Monarchy, but had its own administration and population census.

internal net in-migration (henceforth: *net-migration*) is defined as in-migration minus out-migration.

The article is structured as follows. Section two describes key socio-economic characteristics of late imperial Austria. Section three gives an overview over the research and ongoing debates on internal migration. Section four distills testable hypotheses from these debates. Section five presents the data set and a graphic analysis of key variables. In section six the causes of internal migration within the Austrian part of the Hapsburg Monarchy are investigated by means of a regression analysis of net-migration and out-migration rates.

Socio-Economic Structures in Late Imperial Austria

The economic development of the Austrian part of the Hapsburg Monarchy, both in industrial and agricultural sectors, was strongly determined by regional processes. Despite the relatively early onset of industrialization, the country has nevertheless often been described as 'backward' because of comparatively weak economic growth rates during the nineteenth century.⁵ Some parts of late imperial Austria ranked among the most highly industrialized regions of continental Europe. For example, the northern districts of Bohemia, as well as some regions of Moravia and Austrian Silesia, underwent an early transition to mechanized production, forming the Monarchy's industrial core. The Czech lands, which represented only a quarter of the total territory, were responsible for nearly 65 percent of its industrial production in 1880.⁶ Vienna and its environs were also an important industrial center, albeit dominated by small-scale production.

With the exception of the westernmost part (Vorarlberg) and a few industrialized provincial cities and areas such as northern Styria, in all other regions agriculture continued as major economic activity into the early twentieth century, characterized by a wide range of different production types. The Alpine districts of present-day Austria were dominated by family farms mainly living off cattle-breeding, with large numbers of co-resident servants. In other regions of present-day Austria as well as in Carniola and in some parts of Bohemia and Moravia, small family farms living off a combination of grain-growing and cattle-breeding prevailed. In southern Moravia the most successful members of society practiced a highly developed

⁵ On a discussion of the economic development in the Hapsburg Monarchy see Good, "Modern Economic Growth". Good's results are somewhat contradicted by a newer article on the Hapsburg economy see Schulze, "Patterns of Growth".

⁶ Kořalka, "Tschechische Bergarbeiter", p. 253.

commercialized animal husbandry system, one that, in practice, afforded exceptional opportunities for economic stability and permanent settlement.⁷

Although the so called 'second serfdom' which dominated the agricultural structure of Bohemia, Moravia, Austrian-Silesia, Galicia, and Bukovina was abolished in the nineteenth century, at least parts of these provinces were still characterized by large-scale dominions owned by only a few noble families. Around 1900, Galicia and Bukovina were still predominantly rural provinces, relying on traditional agricultural production and had almost no industrial penetration: their per capita production and consumption were almost 40 percent below those in the western parts of late imperial Austria. To provide for their families, about two-thirds of the rural population in western Galicia turned to wage labor positions as either the sole form or a necessary supplement to their livelihood. By the turn of the century various forms of seasonal labor migration were of great significance in these provinces.⁸

Since the 1860s inhabitants were allowed to move freely without any identification documents inside the Monarchy, and even into other Western European countries. Passports for internal travels were already abolished in 1857 and the Constitution (*Staatsgrundgesetz*) from 1867 finally entitled every citizen of late imperial Austria to a free choice of residence. But, simultaneously with the liberalization of free movement, the Austrian government increased the observation of aliens and the possibilities of deportation. The legislative right of domicile (*Heimatgesetz*) which was passed in 1863 assigned each person to a certain locality. According to this law, the 'hometown' was responsible to take care of old and pauper citizens if no private safety net was available. Therefore, especially people from the lower strata of society could be restricted in their mobility, since, in case of impoverishment, they risked compulsory deportation to their domicile community. It has been estimated that, between 1880 and 1910, on average 5,000 persons per year have been deported from Vienna because of the right of domicile; in comparison to the huge number of internal migrants in late imperial Austria a rather low rate.⁹

Austrian and International Research on Internal Migration

This section presents a review of research on internal migration. First literature on the Hapsburg Monarchy is discussed, second comparable literature on the German Reich and, third, literature on other regions is reviewed. We argue that research on historic migration has

⁷ Ehmer and Zeitlhofer, "Ländliche Migration."

⁸ Morawska, "Labor Migrations," pp. 177-79.

⁹ For more information on legal restrictions of mobility see Komlosy, "Empowerment and Control."

strongly been shaped by the modernization paradigm, which interprets internal migration as *flowing* from the (poor) rural areas to (rich, industrialized) urban areas because of industrialization and modernization processes.¹⁰ “The conventional analysis of the link between migration and urbanization declared that city growth in the nineteenth century was caused by the movement of rural dwellers, who were irreversibly drawn from their sedentary villages into the city, and that this signaled a transition to the modern urban-industrial era.”¹¹ Migration scholars’ focus on permanent rural to urban movements resulted in a strict separation in ‘regions of emigration’ and ‘regions of immigration’. Migrants were described as people who moved in one direction from sending to receiving areas, driven by various push and pull factors.

The modernization paradigm is consistent with the push and pull model but more specific in that it refers to the period of industrialization. According to this approach internal (as well as international) migration is caused by geographic differences in the supply of and demand for labor. Regions with a large endowment of labor relative to capital have a low equilibrium market wage, while regions with a limited endowment of labor relative to capital are characterized by a high market wage.¹² Additionally, ‘demographic pressure’ is thought to affect the supply of labor and hence to cause out-migration. This provides an intellectual bridge to older Malthusian theories. Despite growing criticisms and rejection by many scholars since the 1980s, neoclassical models are still widely used in recent historical as well as in contemporary migration studies.¹³

The modernization paradigm at first appears to have been successful, that is, consistent with the data. However, we argue that the success rests on two methodological misunderstandings, both of which are, to a significant extent, due to data availability. First, most research has focused on towns, but neglected rural areas. Second, much of the research has confused gross and net in-migration rates. Both methodological shortcomings have led to findings that support the modernization paradigm – erroneously, as we will clarify.

Our approach is not the first to realize the limitations of the modernization paradigm. For example Dudley Baines argues in his study on England and Wales: “A [...] serious [...] problem is the failure of many studies to distinguish between gross and net emigration.”¹⁴ This paper contributes to the existing critical literature, firstly, by clarifying methodological

¹⁰ For a discussion of the modernization paradigm see Lucassen and Lucassen, "Introduction," p. 28.

¹¹ Jackson and Moch, "Migration and the Social History," p. 53.

¹² Massey et al., "Theories of International Migration," p. 433.

¹³ See Whyte, *Migration and Society*, p. 14. For more information on the discussion of Malthusian theories see Stockhammer, "The Effect of Wages."

¹⁴ Baines, *Migration*, p. 21.

issues and, secondly, by using a rich dataset to illustrate how the modernization paradigm misinterprets actual migration flows. The literature on late imperial Austrian migration patterns is still strongly in the tradition of the modernization paradigm, whereas the literature elsewhere has started to move away from this approach. In particular the discussion of internal migration in the German territories, while still predominantly focused on towns, has clarified some confusion of net- and gross-migration rates.

With few exceptions, current research on late imperial Austria still concentrates on a one-way rural to urban movement, more or less the same topic as studies at the end of the nineteenth century: the movement to the cities.¹⁵ The main focus is on labor movements from rural areas to urban centers and newly built factories and thereby overlooks the fact that older migration routes were by no means abandoned during industrialization. Until today, the modernization paradigm dominates the field of research. Many aspects of internal migration were for a long time ignored. The first of these issues is out-migration from towns. For example, the already mentioned Austrian researcher Heinz Fassmann, who has done the most prominent studies on internal migration patterns, mainly focuses on connections between migration balances and processes of urbanization: “Economic conditions (which varied from region to region) coupled with changes in the structure of agriculture, a long-term upward trend in population, and increasing mobility all led to a rise in migration away from rural areas.”¹⁶ He also conflates the stock of in-migrants (at a given point in time) with a (steady) flow of net in-migration. The possibility that Viennese people (or previous in-migrants) might have migrated *out* of Vienna is ignored.

Owing to its exceptional importance as the center of imperial administration and government, Vienna has always attracted historians’ attention.¹⁷ Few studies deal with migration to other cities or even more rural places,¹⁸ and William Hubbard’s analysis of spatial mobility in Graz, the capital city of Styria, is alone in including migration *to* - as well as *from* - the city.¹⁹ Movements of Czech-speaking people from the Bohemian provinces (Bohemia, Moravia, and Austrian-Silesia) to Vienna and the surrounding region of Lower Austria were dominant patterns in late nineteenth century. Therefore, most research is devoted

¹⁵ As an example for nineteenth century migration research see Rauchberg, "Der Zug."

¹⁶ Fassmann, "Survey of Patterns", p. 73; and *ibid.*, "Emigration, Immigration."

¹⁷ See for example John and Lichtblau, *Schmelztiegel Wien*; and Weigl, *Demographischer Wandel*.

¹⁸ Hahn et al., *Aufbruch in der Provinz*; *ibid.*, *Migration, Arbeit*, pp. 414-35; and John, *Bevölkerung in der Stadt*.

¹⁹ Hubbard, *Auf dem Weg*.

to this topic, highlighting in-migration to Vienna but hardly mentioning return migration or movements of Czechs from the countryside to cities other than Vienna.²⁰

Indeed, during the second half of the nineteenth century Vienna invariably had a population majority born outside the city. In 1910, some 1,040,000 out of a total of 2,030,000 inhabitants were born in other provinces or outside late imperial Austria. About 470,000 of these in-migrants moved there from the Bohemian lands. Contrary to a one-way approach, urban out-migration rates seem to have been of high importance. Between 1900 and 1910 only one out of six Bohemian and Moravian migrants stayed in Vienna, while the other five moved on shortly after their arrival.²¹ Andreas Weigl describes Vienna as a transit center with many people arriving but nearly as much departing. In 1900 at least 900,000 temporary migrants were counted in the city.²²

While Vienna has always been the focus of migration research, southern Bohemians were also attracted by other internal destinations such as Upper Austria and Styria. For example, in 1910, nearly 8 percent of the population of Steyr, a small industrial town in Upper Austria, was born in Bohemia.²³ Most cities in late imperial Austria had a high turnover of migrants, as for example, Linz, the capital of Upper Austria, is described by Michael John as a 'clearing house', with many in-migrants soon moving on.²⁴

The second area ignored is rural to rural migration. The active traffic among rural areas is demonstrated by Josef Ehmer and Hermann Zeitlhofer in their case study on rural migration patterns in the Czech lands.²⁵ Instead of focusing on one direction, they identified various mobility routes – short and long distance, circular temporary and permanent, rural to urban, and rural to rural. In Bohemia internal mobility was high compared to other Austrian provinces and its inhabitants had a range of destinations from which they selected the one that best suited their aspirations. However little is known about rural to rural migration elsewhere in the Austrian part of the Hapsburg Empire.

Contrary to research on late imperial Austria the importance to distinguish carefully between in- and out-migration rates, has been highlighted in the debates on the effects of internal migration on urban population growth for the German territories. The former German

²⁰ See for example Lánik, "Urbanisierung in Böhmen;" and Komlosy, *Grenze und ungleiche regionale Entwicklung*.

²¹ John and Lichtblau, *Schmelztiegel Wien*, pp. 14-15 and p. 91.

²² Weigl, *Demographischer Wandel*, p. 109.

²³ Meinzingen, Franz v. "Die Wanderbewegung," pp. 137-38.

²⁴ In the 1850s and 60s, the city had roughly 30,000 inhabitants, but in the twelve years between 1854 and 1866 no less than 130,000 people lived there, at least temporarily; around 11 percent of them originated from Bohemia. John, *Bevölkerung in der Stadt*, p. 78.

²⁵ Ehmer and Zeitlhofer, "Ländliche Migration."

Reich constitutes the most prominent example for these methodical discussions, because of its high quality documentation of historical internal migration patterns for urban areas. For example, Wolfgang Köllmann, the most prominent German historical demographer in the second part of the twentieth century, who primarily focused on urban gross in-migration rates, concluded his calculations of German census data that “urbanization emerged from internal migration”.²⁶ His approach is still supported by recent studies: “... in most European countries, the first factor [natural increase] was not important: the rate of natural increase in cities was generally below that in rural areas. So, rising urbanization was a consequence of migration.”²⁷ This argumentation implies that net-migration rates were exceptionally high in urban agglomeration.

Other scholars contradicted Köllmann’s conclusions. They found much smaller contributions of migration to urban population growth by analyzing net-migration rates in relation to rates of natural population increases (birth and death rates). Natural increases could exceed migration effects, even in heavy industrialized agglomerations.²⁸ “The efficiency of migration was always low,” is the result of a re-construction of nineteenth century total mobility rates, which is based on arrivals *and* departures in German cities.²⁹ New approaches in city growth argue that there was a high in-migration rate simultaneously with a nearly as high out-migration rate. These studies are criticizing the long lasting paradigm that urban agglomerations were the most attractive spots of in-migration during the period of industrialization. For example, according to the Prussian census of 1900 only one out of five individuals, who had left their place of birth, resided in a German city.³⁰ In towns in- and out-migration rates, which were high in 1900 and lower in 1980, were always nearly balanced.³¹

Migration linked cities and countryside in a relationship of exchange. Within German regions even during the phases of industrialization return migration and counterflows *from* urban *to* rural areas were of great importance. “Cities like Duisburg and Königsberg had to exchange large numbers of people with the countryside to see a comparatively small net gain”.³² Based on information from the ‘Statistical Yearbook of German Cities’, which contains data for every in- and out-migration into German cities with more than 50,000

²⁶ Köllmann, *Bevölkerung in der Industriellen Revolution*, pp. 130, 141, 146-9.

²⁷ Grant, *Migration and Inequality*, p. 59.

²⁸ For example, Matzenrath declared that in the German province of Prussia the population growth was mainly caused by natural increases. Matzenrath, *Urbanisierung in Preußen*, pp. 304-11; see also Bleek, "Mobilität und Sesshaftigkeit;" and Ehmer, *Bevölkerungsgeschichte*, p. 83.

²⁹ Hochstadt, *Mobility and Modernity*, p. 136 and pp. 112-14.

³⁰ *Ibid.*, p. 114. and Ehmer, "Urbanisation, Migration."

³¹ Hochstadt, *Mobility and Modernity*, p. 136.

³² Jackson, *Migration and Urbanization*, p. 309.

inhabitants, Dieter Langewiesche stated that from 1880 to 1890 Berlin had an in-migration of 1.5 million people, but at the same time 1.16 million left the city. For an increase in population of 1,000, Berlin needed a migration volume (in- and out-migrations) of more than 6,000 individuals in that period.³³ Similar rates were counted for other German speaking cities.³⁴ Although before 1920 no broad data source offers information about mobility in rural Germany, Steve Hochstadt convincingly demonstrates by estimation that even in the nineteenth century migration rates in rural communities were approximately the same as, even a bit higher than, rates in urban communities. “There is no particular reason that we should assume that mobility was significantly lower in rural villages than elsewhere.”³⁵

Yet, to some respect, historical migration research has still not challenged its urban-centric perspective. To date, studies on migration *within* rural areas still form a blind spot. One of the rare exceptions is Paul-André Rosental’s study on rural migration in France. By analyzing the destinations of out-migrants from French villages he reconstructed a dominant pattern of rural to rural movements and demonstrated that the picture of a rural exodus is the result of a research design where birth places of urban in-migrants are in the focus of the investigation.³⁶ Slowly, studies on other European regions also recognize the high importance of rural destinations, as for example Javier Silvestres’ article on internal migration in Spain. He mentions the movement of people inside rural Catalonia for getting better paid agricultural jobs.³⁷

Deriving Testable Hypotheses

Before proceeding with econometric tests it will be helpful to review the key implications of the modernization paradigm and to develop alternative hypotheses. The modernization paradigm interprets migration as having occurred predominantly from (poor) rural to (industrializing and thus rich) urban regions. It is an application of push and pull models. Historical migration studies can be based on a variety of push and pull arguments, but the most prominent ones are the pauperization theorem, i.e. people leaving poor regions with high unemployment rates, and the idea of ‘demographic pressure’, i.e. people leaving areas with high population growth and/or density in relation to a low supply of nutrition, as push factors, and wage gaps, i.e. people move to regions with higher income, and the level of

³³ Langewiesche, "Wanderungsbewegungen," p. 5 and 13.

³⁴ Ehmer, *Bevölkerungsgeschichte*, pp. 80-86.

³⁵ Hochstadt, *Mobility and Modernity*, p. 53 and p. 132.

³⁶ Rosental, *Les Sentiers Invisibles*.

³⁷ Silvestre, "Internal Migrations," p. 240.

industrialization and urbanization, i.e. people move to areas where jobs are available, as pull factors.³⁸

A first implication of this argument is that in-migration and out-migration are explained by the same variables, with the effects going in opposite directions. For example a higher wage level in a region will lead to more in-migration and less out-migration. Consequently in-migration and out-migration can readily be aggregated to obtain net in-migration. In their article on European mass migration in the late nineteenth century Timothy Hatton and Jeffrey Williamson stated that: “Apart from [...] minor differences [...] net and gross emigration can be explained by the same set of variables”³⁹ Second, a straightforward consequence of the first point is that there should be a distinct *inverse relationship between in- and out-migration*. We shall refer to this as the *one-way hypothesis*: where out-migration is high in-migration ought to be low and vice-versa.

The counterhypothesis that is found in the literature is that migration is a *two way street*. The migration is a *two-way hypothesis* states that *in-migration and out-migration will be positively correlated* across districts. This may be due to various reasons. There may be persistent links with sending and receiving regions. So people may be moving back and forth between them in a circular temporary pattern. Incoming migrants may improve information about their region of origin and thereby motivate other people to migrate in the opposite direction. Or they may motivate other residents to relocate, for example if they push down wages in certain professions.⁴⁰ There may be factors affecting mobility generally speaking, that is, in-migration and out-migration simultaneously, such as improvements in transportation. Finally there may be stage migration, with migrants moving on after a while. To be clear, these are theoretical arguments. As our census data does not account for more than one migration per person, it excludes some of these types of migration. In the empirical section we can therefore only test whether the one-way hypothesis or the two-way hypotheses fit the data more accurately. However, we are unable to distinguish between the different reasons for two-way migration.

Similarly the modernization paradigm implies that the *degree of industrialization* has a positive effect on in-migration, a negative effect on out-migration and a positive effect on net-migration. Finally, the modernization paradigm argues that the *natural rate of population growth*, i.e. population growth excluding changes due to migration, have a negative effect on

³⁸ For a critical discussion on push and pull models see Parnreiter, "Theorien und Forschungsansätze," and Smith, "Current Dilemmas," p. 122.

³⁹ Hatton and Williamson, "Mass Migrations," p. 551.

⁴⁰ For an interesting discussion on the effects of immigration on wage levels and internal migration, albeit for a recent migration pattern see, Borjas, "Native Internal Migration."

in-migration, a *positive effect on out-migration* and a negative effect on net-migration. The counterhypothesis is that population growth is not so much a determinant of income, but rather an *effect of prosperity*. The hypothesis is that there is a positive effect of the level of income on natural population growth. As a consequence, the correlation between natural population growth and out-migration is negative. This, however, is not based on causal relation.

Data Sources

To test our hypotheses a data set comprising different sources will be used: The main sources for analyzing internal migration patterns are the published results of the official censuses from the Austrian part of the Hapsburg Monarchy.⁴¹ The data set is based on information for 399 out of a total of 406 political districts in 1910.⁴² An additional data source will be an Austrian survey from 1893, which contains detailed information on regional rural wages.⁴³

Since our analysis is based on census material our definition of in-, out- and net-migration rates differs from that used in the debates on migration in the German Reich, which typically use serial statistics, such as the ‘Statistical Yearbook of German Cities’ which is based on migration registration data (*Melderegister*). There are two important differences: First, data based on the *Melderegister* document every departure and arrival within a year.⁴⁴ While census data refers to people and allows reconstructing one movement per individual, German city data refer to movements, not persons. Second, until 1920 the German *Melderegister* are only available for cities, but not for rural areas. Therefore, one has to compare census and *Melderegister* data to estimate rural migration patterns.⁴⁵ However, *Melderegister* data are not available for the Hapsburg Monarchy. Our 1910 census data covers the whole late imperial Austria, urban and rural districts. This systematic documentation of in- and out-migration for each administrative unit of a state is the key advantage of the census data used here.⁴⁶

But migration rates based on census data have its limitations. A comparison of birthplace with place of residence at a given time ‘ignores’ all movements of an individual in the

⁴¹ *Österreichische Statistik*, 1882-1915.

⁴² Seven districts of the province of Lower Austria had to be excluded because natural increase in population could not be reconstructed due to changing district borders.

⁴³ Inama-Sternegg, "Die landwirtschaftlichen Arbeiter."

⁴⁴ See for example Langewiesche, "Wanderungsbewegungen,;" and Hochstadt, *Mobility and Modernity*, pp. 110-13.

⁴⁵ See for example Hochstadt, *Mobility and Modernity*, p. 132.

⁴⁶ For a discussion of the advantages and disadvantages of different data and methods in historical migration research see Bleek, "Mobilität und Sesshaftigkeit."

meantime, therefore a person who moved back and forth, but finally returned to her or his place of birth is not counted as a migrant. The Austrian census was normally taken on December 31. As seasonal migration culminated in spring and summer and most often ended before Christmas, our data does not cover temporary, seasonal movements. Furthermore, only individuals remaining in late imperial Austria were listed, those moving abroad disappear from the statistics. Despite these shortcomings, censuses are primary documents of any systematic analysis of spatial mobility in Central Europe.

The variables on migration rates as well as other demographic and socio-economic characteristics of each district in 1910 are as follows. *INMIG*, is the gross internal in-migration into a district as proportion of the total population of the district, that is all people living in a district, who were born elsewhere in late imperial Austria. *OUTMIG* is the gross internal out-migration from a district (as proportion of the total population of the district), that is all people born in a district but residing elsewhere in late imperial Austria. *NETMIG* is the net in-migration rate of a district (in proportion of the district's total population), which is *INMIG* minus *OUTMIG*. While *INMIG* and *OUTMIG* can only be positive (or zero), *NETMIG* can be negative, if *OUTMIG* is greater than *INMIG*. A positive value for *NETMIG* means that more people migrate into a district than migrate out of it.

NATINCR is the natural increase of population and thus measures the rate of births and deaths between 1890 and 1900. This variable is used to test the influences of (lagged) population growth on migration rates. *AGSHARE* is the share of people working in agriculture in 1910, including not only peasants but also servants and agricultural laborers, as well as their family members. Since the higher the percentage of people belonging to the agricultural sector of the economy, the lower is the percentage of industrialized and skilled work force *AGSHARE* is an inverse indicator of the degree of industrialization within each district.

The second data source, a survey for agricultural wages, is dealing with regional levels of income. Unfortunately for our purposes, however, it is not organized according to political districts and it does not indicate average wages for the entire regions, but ranges for agricultural day-laborers. This study was used to construct the categorical variable *WAGE* that classifies districts as having a very low, low, medium and high wage level.⁴⁷ For 374 rural districts the variable is based on the wages for male and female day-laborers in 1893; but since we do not have agricultural wages for the 32 town districts, we use average wages for

⁴⁷ Based on the average wages of female and male day-laborers our wage levels are *WAGE1* = 27 Kreuzer per day; *WAGE2* = 32 Kreuzer per day; *WAGE3* = 41 Kreuzer per day; *WAGE4* = 60 Kreuzer per day.

crafts and trades in the early 1890s.⁴⁸ In the regression analysis, this variable is transformed into dummy variables, where *WAGE1*, *WAGE3*, and *WAGE4* stand for districts with very low, medium, and high wage levels respectively. In the regression analysis wage level 2 will be omitted and thus will serve as the reference wage. Our wage variable is a measure for the pay of low skill jobs in agricultural and town districts. However, the data is not strictly comparable between agricultural and town districts. Therefore in the regression analysis a dummy variable for town districts is included.

Figures 1 and 2 show the geographical distribution of *INMIG* and *OUTMIG*.⁴⁹ The provinces of Bohemia, Moravia, Lower and Upper Austria, as well as the northern part of Styria were the main centers of out-migration to other political districts. These areas formed the geographical and economic core of late imperial Austria; they were in quantitative terms at the center of internal migration activity. But while rural districts dominated the picture of internal out-migration, the number of out-migrants was also high in most urban agglomerations. The highest rates were found in parts of Central and Southeast Bohemia (Prague and surroundings) as well as in many provincial towns, such as Klagenfurt in Carinthia, Olomouc (Olmütz) in Moravia, Innsbruck in Tyrol, Graz and Maribor (Marburg) in Styria, as well as Ljubljana (Laibach) in Carniola, and Salzburg.

The regions with the highest rates of in-migration were the big and heavily industrialized cities like Vienna, Prague, and Ostrava (Ostrau) in Northern Moravia. But, while only Vienna had enough attraction to pull people from all over late imperial Austria, all other cities – even the bigger ones such as Prague or Lviv (Lemberg) - functioned as provincial centers, as only people from the surrounding provinces moved there.⁵⁰ Besides larger cities, the most attractive centers of in-migration from other districts were industrialized areas, such as the surrounding area of Vienna in Lower Austria, the mining region of northern Styria, the surrounding of Prague, and the northern parts of Bohemia. Based on census data, the border regions such as Galicia and Dalmatia experienced both, low internal out- as well as low internal in-migration rates.⁵¹

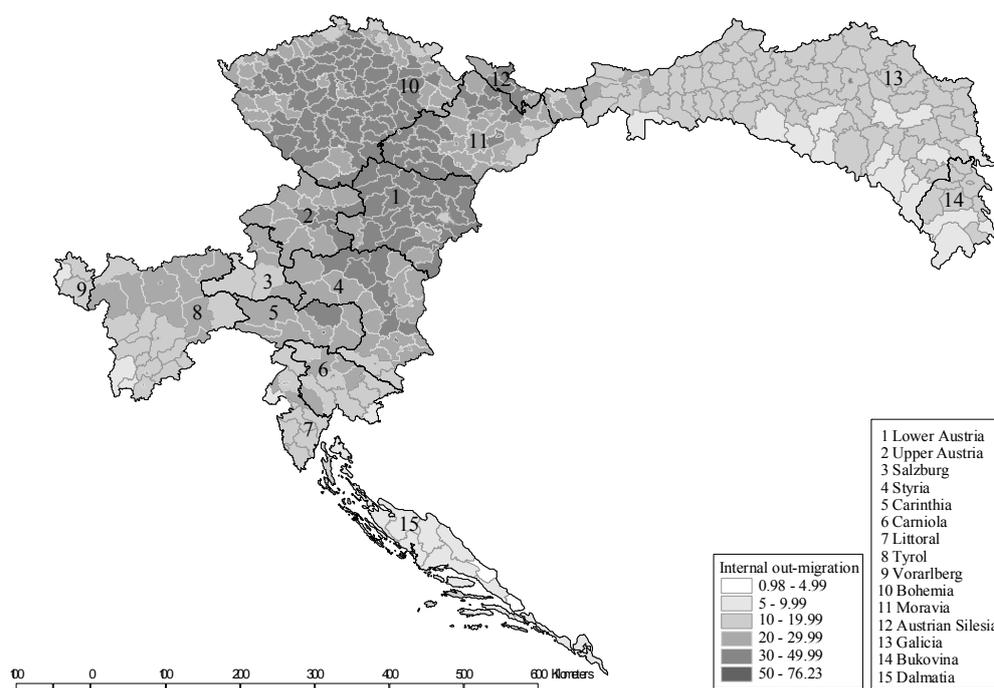
⁴⁸ For information on industrial wages in the 1890s in a few urban districts see Mesch, *Arbeiterexistenz in der Spätgründerzeit*.

⁴⁹ *Österreichische Statistik*, 1912-15.

⁵⁰ *Österreichische Statistik*, 1912-15. For more examples on the attraction of small Bohemian towns on migrants see Zeitlhofer, "Bohemian Migrants."

⁵¹ For more information on various migration patterns in late imperial Austria see, Steidl, Stockhammer, and Zeitlhofer, "Relations among Internal."

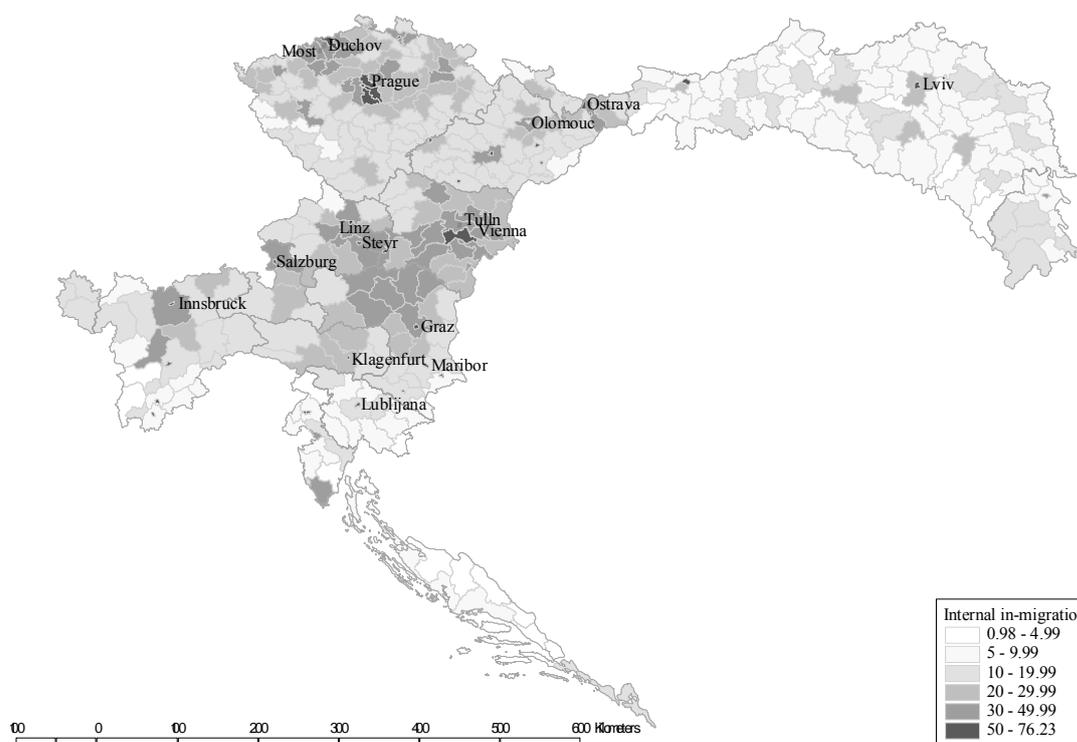
Figure 1: Regional distribution of internal out-migration in the Austrian Empire in 1910



Source: *Österreichische Statistik 1912-15*.

Note: Internal out-migration = Proportion of inhabitants who were born in a political district but in 1910 had their place of residence in another district of the Empire.

Figure 2: Regional distribution of internal in-migration in the Austrian Empire in 1910

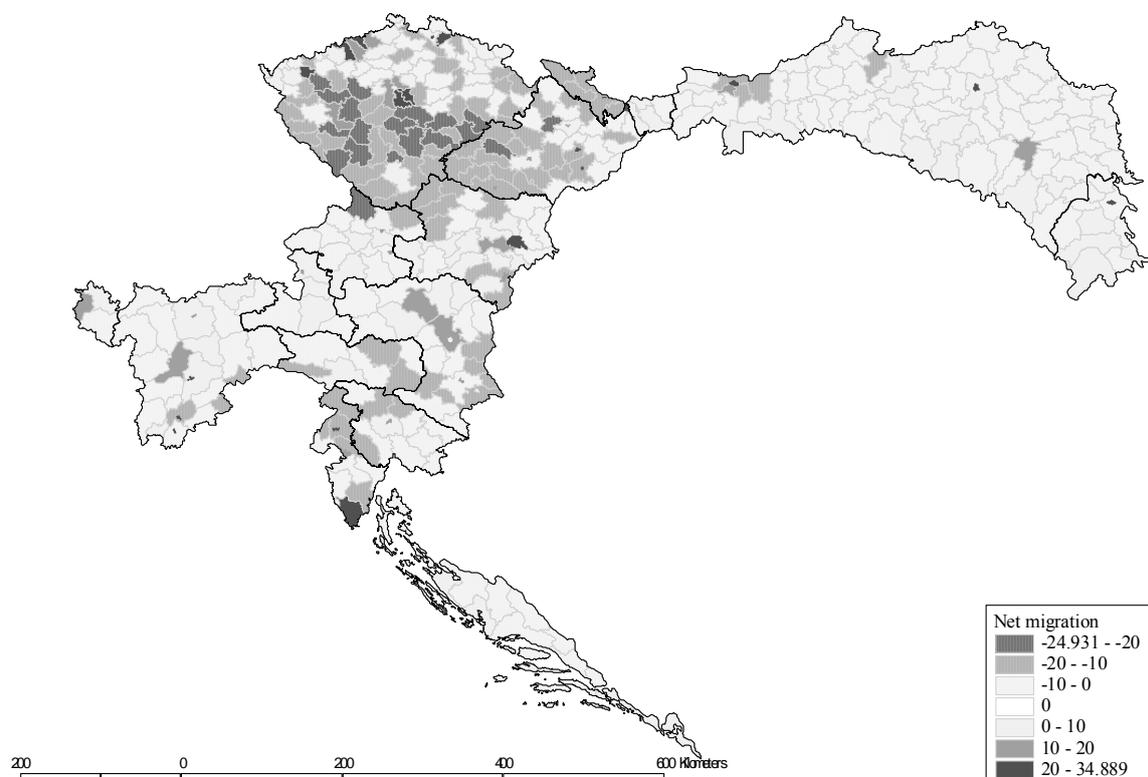


Source: *Österreichische Statistik 1912-15*.

Note: Internal in-migration = Proportion of inhabitants who in 1910 had their place of residence in a political district but were born in another district of the Empire.

Figure 3 shows the distribution of net-migration rates. Indeed, at the beginning of the twentieth century, urban agglomerations were the most important centers of a positive net-migration; nearly all larger cities had a net-migration rate over 20 percent of its inhabitants. Additionally, a lot of Austrian inhabitants also moved to rural areas, as can be seen by numerous rural districts with a positive net-migration rate. In 1910, only the southwestern parts of Bohemia were characterized by an exceptional high negative net-migration rate.

Figure 3: Regional distribution of net migration in the Austrian Empire in 1910



Source: *Österreichische Statistik 1912-15*.

Note: Internal in-migration – internal out-migration.

In some cases, migration relations between two regions were even reciprocal in the sense of nearly equal exchanges in the number of migrants: some 12,000 people born in the district of Tulln (30 km west of Vienna) lived in Vienna, but on the other hand some 10,000 people born in Vienna lived in Tulln.⁵² Similar patterns can be found in the province of Bohemia: in the northwest 3,248 people migrated from the political district of Duchow (Dux) to the district of Most (Brüx), as compared with 4,561 from Duchow to Most.⁵³ Based on Austrian census

⁵² *Österreichische Statistik, 1912-15*.

⁵³ Zeitlhofer, "Bohemian Migrants."

data from 1910 these patterns of exchange in the number of migrating people in both directions are found especially around the area of Prague, but also around other major cities of the Austrian part of the Monarchy such as Vienna, Graz, and Lviv. This suggests that connections between regions of origin and destiny remained strong. Even if migration routes between two regions were not reciprocal in the sense of a balanced exchange but rather asymmetrical and unequal, for a full understanding it is important to realize that migration flows operated in both directions.

Regression Results

This section presents the econometric results on the hypotheses derived from the modernization paradigm and the corresponding counter hypotheses. Regression analysis was performed using net-migration and out-migration as dependent variables. This will highlight differences in the predictions of the modernization paradigm and the counter hypotheses. It will be shown that while the modernization paradigm is able to explain the determinants of net-migration reasonably well, it is incapable of qualitatively explaining the determinants of out migration.

Table 1 summarizes the regression results for net-migration rates. As our sample covers regions heterogeneous along several dimensions, it is important to check the robustness of the results. Thus four specifications are reported. Specification (1) includes provincial dummy variables for all 15 Austrian provinces next to various other explanatory variables. These provincial dummy variables will capture various unobserved characteristics of the provinces that are internally much more homogenous than our overall sample. As several variables are correlated with *AGSHARE*, specification (2) omits this variable. Specification (3) includes the logarithm of provincial per capita income instead of provincial dummy variables.⁵⁴ This captures only one dimension along which the provinces differ, per capita income, but it has a straightforward interpretation. Since this variable is available only for provinces, its inclusion conflicts with the regional dummy variables. Finally, specification (4) excludes town districts from the sample in order to check whether the results are robust for rural districts. Conveniently, it turns out that the results for the variables of interest do not differ qualitatively between these specifications. All regressions report heteroscedasticity-consistent standard errors.

⁵⁴ The variable $\log(REGINC)$ = provincial per capita income is based on information from Good, "Modern Economic Growth".

Table 1

Dependent Variable: NETMIG

	389		389		382		382	
specification	(1)		(2)		(3)		(4)	
Variable	Coefficient	<i>t-Stat</i>	Coefficient	<i>t-Stat</i>	Coefficient	<i>t-Stat</i>	Coefficient	<i>t-Stat</i>
constant					146.066	10.587	33.693	2.380
WAGE1	3.159	2.952	2.419	2.008	2.702	2.928	1.915	1.805
WAGE3	2.467	2.147	4.397	2.786	3.931	4.101	4.784	3.876
WAGE4	3.181	2.296	9.908	5.544	5.548	4.564	10.014	6.449
AGSHARE	-0.415	-13.640			-0.367	-12.203		
CITY	3.741	1.596	24.872	11.490	5.222	2.244	24.432	12.734
NATINCR	0.129	2.318	0.231	2.777	0.047	0.948	0.167	2.320
Styria	16.089	6.494	-11.617	-5.542				
Carniola	18.935	6.889	-10.462	-4.910				
Littoral	13.231	3.669	-17.293	-4.688				
Austrian Silesia	5.285	1.715	-14.048	-3.926				
Upper Austria	11.759	5.135	-13.166	-5.350				
Lower Austria	9.151	3.548	-13.646	-4.942				
Moravia	5.722	2.405	-17.871	-7.514				
Salzburg	17.648	7.358	-6.710	-2.402				
Carinthia	11.905	4.723	-13.302	-5.262				
Tyrol	17.147	5.983	-13.307	-5.349				
Vorarlberg	13.329	5.793	-10.058	-3.010				
Bohemia	4.112	1.952	-17.292	-8.393				
Galicja	23.121	7.305	-11.757	-3.897				
Bukovina	24.823	7.900	-9.332	-3.042				
Dalmatia	26.356	7.911	-10.722	-3.263				
LOG(REGINC)					-21.446	-10.956	-7.405	-3.463
R-squared	0.703		0.474		0.650		0.450	
Adjusted R-squared	0.686		0.447		0.643		0.441	
S.E. of regression	6.246		8.297		6.679		8.357	
Sum squared resid	14358.7		25400.9		16685.0		26189.9	
Log likelihood	-1253.8		-1364.8		-1263.4		-1349.5	
Mean dependent var	-3.306		-3.306		-3.311		-3.311	
S.D. dependent var	11.156		11.156		11.180		11.180	
Akaike info criterion	6.554		7.120		6.657		7.102	
Schwarz criterion	6.768		7.323		6.739		7.175	

Overall the regressions perform reasonably well, with the adjusted R^2 ranging between 0.45 (in specification 4) and 0.7 (for specification 1). Specifications with provincial dummies have higher R^2 than those with provincial income, confirming that they pick up other unobserved factors. The results for the important variables, however, are not affected by these changes in specification.

The dummy variables for the district wage level are statistically significant (at the 1 percent level) in all specifications. The omitted dummy variable is that for wage level 2, which thus serves as reference point. All dummy variables have positive coefficient estimates.

This implies that, other things equal, districts with a very low wage level will have higher net-migration than one with low wages, which is at odds with the simple version of the modernization paradigm. Further increases of the wage level have the expected positive effects on net-migration. There thus is a non-linearity in the relation between wage level and net-migration.

AGSHARE has the expected negative sign and is statistically significant at the 1 percent level. A more rural district will have lower net-migration rates. This is in line with predictions of the modernization paradigm. Since this measure is correlated with the wage measures, they are excluded in specification (2). Omitting *AGSHARE* from the specification does not change the results for other variables qualitatively, that is signs do not change, but the coefficient estimates in particular of *CITY* increases substantially. *CITY* is a dummy variable for bigger towns in the Monarchy which are treated in the census as political districts and has a statistically significant positive effect on net-migration in all specifications.

Remarkably, the coefficient estimate for $\log(\textit{REGINC})$ in specifications (3) and (4) is negative and statistically significant at the 1 percent level. This is the opposite from what the modernization paradigm would predict, since it implies that a higher per capita income in the province leads to less net-migration. The variable *REGINC* is only available at the province level, thus it fits uneasily with the district level data that are otherwise employed in the analysis.

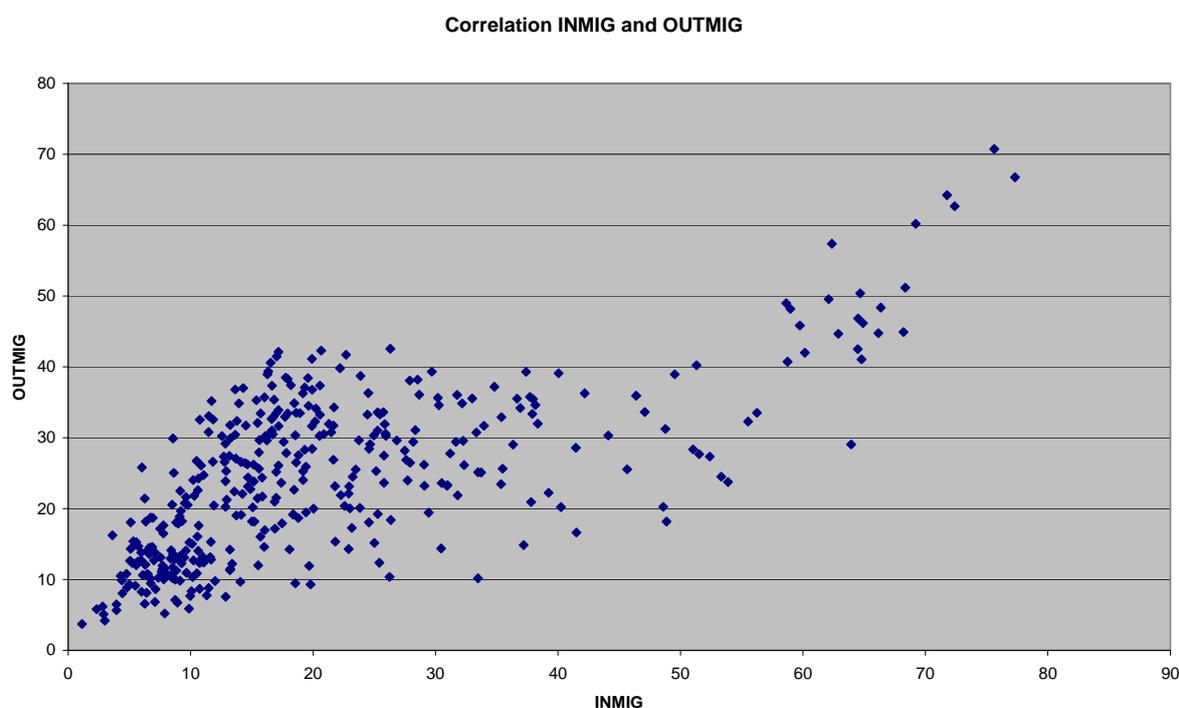
NATINCR, consistently has a positive sign and is statistically significant in specification (1) and (2). In specifications without the regional dummies, the sign remains positive, but the coefficient estimate is not statistically significant at conventional levels any more. This is against the expectations of the Malthusian argument, which would suggest a negative effect of population growth on net-migration.

Overall the results of the regression analysis for net-migration rates match the predictions of the modernization paradigm, though with some qualifications. The strongest point in support of the modernization paradigm certainly is the strong inverse correlation between the share of people working in agriculture and net-migration rates. There is also a positive relation between net-migration and income of the districts. Richer districts experience higher net-migration rates. However, there is evidence for a non-linear relation between the wage level and net-migration. Other things equal, a district that increases the wage level from very low to low will decrease net-migration; further wage increases have the expected positive effect on net-migration. With respect to the role of income only a minor modification of standard arguments is necessary. The role of population growth, however, is very different

from how Malthusian theory would have it. Higher natural population growth, according to our evidence, leads to higher, not lower net-migration rates. This might be due to simultaneity. Economic prosperity in a district may lead to higher net-migration as well as higher birth rates.

The analysis of net-migration rates gives a mixed picture and some support for the modernization paradigm. The modernization paradigm, and indeed any version of the push and pull model, suggests that migration would mostly be one from poor to rich districts. As a consequence, in-migration and out-migration ought to be negatively related (what we called the one way hypothesis). Figure 4 plots out-migration and in-migration rates: the correlation is unambiguously *positive*, with a correlation coefficient of +0.704.

Figure 4



Source: *Österreichische Statistik* 1912-15.

Of course this positive binary correlation may be due to common factors. The first obvious candidate for such is the size of the district. A small district will have higher rates of in- as well as out-migration simply because a move over the same distance will lead to crossing a district border, whereas in a large district it might take place within the district and thus not be counted as internal migration. The variable included to capture this effect is the logarithm of the area of the district $\log(\text{AREA})$. The second possible factor that may drive in- as well as out-migration is whether the district is a border district. If a district borders on another country, then migration over a medium distance, say to the next major village, may

imply crossing state borders, in which case the type of migration is not internal, but international. Thus one would expect the internal migration variables in our dataset to underestimate medium distance in- and out-migration in border districts. To control for this effect, a dummy variable *BORDER* is used that takes the value of one if the district borders on another country. The question is whether the positive correlation between in- and out-migration still holds once these factors are controlled for.

Table 2 summarizes results of the regression analysis for out-migration. To ensure robustness of the results, several specifications are reported. Specification (1) includes the same explanatory variables that were already used earlier, the full set of provincial dummy variables, and the variables *BORDER* and $\log(\text{AREA})$. The latter two are included in order to control for factors that may simultaneously affect in- and out-migration. Specification (2) replaces the provincial dummy variables with a measure of provincial per capita income. Specifications (3) and (4) include in-migration and are otherwise identical to specifications (1) and (2) respectively. Finally, specification (5) restricts the sample to non-urban districts as results of previous specification might be driven by urban districts. It turns out that there are no substantial differences in the results.

Table 2

Dependent Variable: OUTMIG

Included

observations: 382

382

382

382

382

348

specification	(1)		(2)		(3)		(4)		(5)	
Variable	Coeff	t-Stat	Coeff	t-Stat	Coeff	t-Stat	Coeff	t-Stat	Coeff	t-Stat
WAGE1	-2.749	-3.430	-5.496	-6.742	-6.062	-7.645	-2.842	-3.456	-3.180	-3.735
WAGE3	-1.880	-1.846	-1.906	-2.238	-1.736	-2.192	-2.127	-2.266	-2.195	-2.569
WAGE4	-4.195	-3.144	-5.224	-4.169	-4.612	-4.216	-3.778	-3.349	-3.480	-3.257
AGSHARE	0.041	1.681	-0.040	-1.832	0.049	2.083	0.197	6.947	0.145	5.006
CITY	2.979	0.764	-3.843	-1.454	-10.034	-4.219	-0.270	-0.097		
NATINCR	-0.100	-2.085	-0.187	-5.282	-0.190	-5.845	-0.114	-2.745	-0.114	-3.488
Styria	52.838	8.741					25.484	4.748	16.537	3.257
Carniola	43.014	7.089					18.507	3.599	9.624	1.912
Littoral	42.494	7.198					20.393	4.009	13.753	2.611
Austrian Silesia	51.551	9.459					29.058	6.221	22.113	4.786
Upper Austria	52.848	9.450					27.275	5.476	19.796	3.972
Lower Austria	56.947	9.819					30.930	5.893	24.081	4.650
Moravia	51.781	9.240					29.133	6.106	21.799	4.649
Salzburg	49.198	7.969					22.692	4.265	13.349	2.530
Carinthia	54.008	8.153					27.968	4.977	17.439	3.342
Tyrol	46.242	7.137					21.116	3.763	13.067	2.464
Vorarlberg	44.547	6.843					21.641	4.188	12.589	2.558
Bohemia	54.751	9.979					31.511	6.617	24.530	5.317
Galicia	38.990	6.346					14.395	2.814	6.485	1.316
Bukovina	37.487	6.243					12.747	2.559	5.669	1.191
Dalmatia	35.419	5.851					10.795	2.154	3.133	0.652
LOG(REGINC)			9.266	14.370	7.210	12.332				
LOG(AREA)	-3.273	-4.081	-3.560	-5.365	-3.279	-6.049	-2.093	-3.350	-0.106	-0.178
BORDER	-4.511	-6.372	-6.234	-9.399	-4.860	-7.712	-2.444	-3.771	-2.829	-4.900
INMIG					0.310	6.900	0.411	8.023	0.280	5.619
R-squared	0.782		0.735		0.771		0.830		0.823	
Adjusted R-squared	0.769		0.729		0.766		0.819		0.811	
S.E. of regression	5.612		6.072		5.646		4.963		4.251	
Sum squared resid	11307.8		13751.2		11858.5		8819.0		5872.8	
Log likelihood	-1189.1		-1226.5		-1198.2		-1141.6		-985.5	
Mean dependent var	24.212		24.212		24.212		24.212		22.588	
S.D. dependent var	11.669		11.669		11.669		11.669		9.787	
Akaike info criterion	6.346		6.468		6.326		6.103		5.796	
Schwarz criterion	6.584		6.561		6.429		6.351		6.051	

WAGE1 has a *negative* effect on out-migration that is statistically significant at the 1 percent level in all specifications. Again this is a perverse effect for the modernization paradigm. Other things equal, a district with very low wages will have lower rates of out-migration. One plausible explanation for this would be that while people in very low wage districts have an incentive to migrate, they lack the means to do so. Thus out-migration rates

are low. *WAGE3* and *WAGE4* also have statistically significant effects in all specifications, with the coefficient estimate being consistently higher (in absolute terms), which is consistent with standard expectations. *AGSHARE* has the expected positive effect statistically significant at the 1 percent level. *CITY* has a statistically significant (negative) effect only in specification (3).

NATINCR consistently has a statistically significant (at the 1 percent level) negative effect on out-migration. Other things equal a district with a higher rate of (natural) population growth has less out-migration, not more. As expected, *BORDER* and $\log(\text{AREA})$ have both negative effects on out-migration that are statistically significant at the 1 percent level.

INMIG has a statistically significant (at the 1 percent level) positive effect in all specifications. Districts with higher rates of in-migration also have higher rates of out-migration, even once we control for variables (such as the size of districts) that may directly affect both in- and out-migration and for standard variables that are expected to affect out-migration. The coefficient estimate ranges between 0.28 in specification (5) and 0.41 in specification (4). Interpreting the results at face value this means that ten additional migrants arriving lead to some three to four migrants leaving. However, such an interpretation is probably too simple, since it ignores inverse causation. Out-migration may be the cause for in-migration as well, which would lead to an upward bias of our coefficient estimates. The key finding here is that the positive effect of in-migration on out-migration is unambiguous. Classifying districts as primarily in-migration and primarily out-migration ones is misleading as the two are in fact positively correlated and this correlation withstands the inclusion of various control variables.

Conclusion

Most literature on internal migration in Hapsburg Austria is still strongly rooted in the modernization paradigm. First, it strongly focuses on Vienna, with some research on secondary towns (Linz and Graz), but little research on rural areas, with the exception of Bohemia. Second, much of the literature on Vienna conflates the stock of in-migrants (at a given point in time) with a (steady) flow of net in-migration. It simply ignores the possibility that Viennese people (or previous in-migrants) might have migrated *out* of Vienna. Much of the literature on internal migration in Germany has overcome the second problem, but, with a few exceptions, it shares the focus on urban migration. Some recent historical research on France move further in also considering rural migration. This paper contributed to the

literature in carefully considering in- and out-migrants. It is unique in that it includes data on *all* districts of the Austrian part of the Hapsburg Monarchy.

This paper has applied regression analysis to explore the different effects of wages, the level of industrialization, and population growth (in a given political district) on both, net- and out-migration rates in late imperial Austria in 1910. Our key findings for net-migration rates match the predictions of the modernization paradigm, though with some qualifications. One can thus defend the push and pull model, since richer districts experienced higher net-migration rates. However, investigation of the determinants of out-migration rates led to the conclusion that in- and out-migration are positively correlated and this positive effect of in-migration on out-migration is robust to the inclusion of control variables. This is in stark contrast to the modernization paradigm that predicts a negative correlation. The theory is unable to explain underlying migration movements. A simple explanation is that higher income leads to higher *mobility*, that is, in-migration as well as out-migration, rather than net migration.

While our findings refer to late imperial Austria, they are of much broader relevance for historical migration research. First, our analysis highlights the importance of considering both sides, in- and out-migration. Mobility to urban agglomerations was a constant coming and going rather than a one-way flow. A high turnover of the labor force seems to be typical for many Central European cities at the end of the nineteenth and beginning of the twentieth century. Second, and closely linked, it highlights that migration between and to rural areas has to be taken more seriously. Although cities usually had the highest rates of in-migration, many agricultural areas too had relevant numbers of people who moved there, for example in Bohemia, where in several districts nearly half of all out-migrants went to agrarian destinations. Rather than conceptualizing rural regions as poor areas where the population gets slowly drained, migration research should conceptualize migration patterns between urban and rural areas as a complex relation of exchange. Negative net-migration rates from rural areas often were the results of a high rate of incoming people and somewhat higher rates of people leaving the district. The challenge for migration research is to understand the complexity of actual migration patterns, not only the much smaller net-migration rates.

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