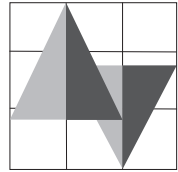


Thomas Salzmänn · Barry Edmonston · James Raymer (Eds.)

Demographic Aspects of Migration

VS RESEARCH

Demografischer Wandel – Hintergründe und Herausforderungen



Herausgegeben von

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Unsere Gesellschaft verändert sich tiefgreifend: Immer mehr Menschen erreichen in Gesundheit ein hohes Lebensalter, immer weniger Kinder kommen zur Welt, neue Partnerschafts- und Familienstrukturen entstehen, Menschen wandern über regionale und nationale Grenzen hinweg. In Zeiten einer alternden und schrumpfenden Bevölkerung sind neue Entwürfe für Biografien, für das Zusammenleben, für den Arbeitsmarkt, für den Wohlfahrtsstaat aber auch für die Regional- und Stadtplanung gefragt. Mit dieser Schriftenreihe wollen die Herausgeber zur verantwortungsvollen Diskussion um die Hintergründe und Herausforderungen des Demografischen Wandels beitragen und aktuelle Forschungsergebnisse in kompakter, allgemein verständlicher Form darstellen.

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Foreword

Dr. Albert Schmid

President of the Federal Office for Migration and Refugees

According to the United Nations, about 200 million people of the estimated world population of 6.8 billion are international migrants – that corresponds to about three per cent of the total world population. The proportion of international migrants in the global population has increased only marginally in the last 40 years. But, as a result of global population growth, the absolute number of migrants has increased, and their structure and spatial distribution has changed considerably. A structural shift has taken place primarily in the industrialised countries, where less than 20 per cent of the global workers are now living, but where more than 60 per cent of all migrants worldwide reside. Since 1990, more than 16 million people have moved to Germany, while about 11 million have left the country in the same period. Altogether, 15 million people of international migration origin are living in Germany, comprising almost 19 per cent of Germany's current population of 82 million. At the end of 2006, about 64 million people out of Europe's population of 732 million, or nine per cent, lived in a European country they were not born in.

But why does anybody migrate at all? People decide to leave because, in general, they expect to find better conditions and opportunities in other countries or regions.

The most important impetus for migration processes are economic factors. In a microeconomic view, migration flows are influenced by – at least in the context of the Western European receiving societies – short-term cyclical economic conditions, middle-term changes of the production organisation and basic structural settings of the national economies. Political and social factors determine migration flows, as well. These factors can take several forms: from local conflicts between power holders and the opposition or between majorities and minorities, to the general oppression of the population and nationwide human rights abuses. Environmental and climatic conditions can also be initiating factors for international migration processes. However, there are a wide range of environmental conditions that might influence migration, and it is difficult to predict how the future volume of migration may be affected by continuing environmental changes.

Demographic trends influence internal and international migration processes over the long term. In this context, the tempo and the regional spatial distribution

of the population growth are essential parameters. According to the United Nations Population Division, the estimated increase in the world population to more than 8.0 billion people in 2025, and to 9.1 billion in 2050 (under medium variant assumptions), will take place almost entirely in the developing countries, mainly in Africa and Asia. This vast population growth will intensify internal migration in the poorer countries (mainly rural-urban migration), and, as a possible result, will raise the potential for migration to Europe. In addition, this predicted population trend may act as a pull factor in Western European receiving countries, if a long-term population decline results in the lack of an adequate future workforce. These European countries face the question of whether these trends can be addressed by new, rational measures, or if, indeed, higher levels of migration are required.

To answer the question, studying the causes of migration, including the extent to which demographic trends in general, and migration in particular, influence population change, is of the greatest importance. The research group of the Federal Office, in co-operation with the research group “Young Demography” of the German Association for Demography (DGD), hosted a conference with the title “Demographic Aspects of Migration” in Nuremberg, Germany, on 9 and 10 October 2008. Researchers from several countries, as well as representatives from different Federal and State Offices, presented and discussed their research findings. Four topics were the focus of attention: population dynamic aspects of migration, demographic processes of migrants, socioeconomic aspects of migration and processes of internal migration.

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Introduction

Barry Edmonston, James Raymer, Thomas Salzmann

International migration between countries and internal migration within countries have become the main source of population change within recent decades. Prior to about 1750, mortality fluctuations were the major determinant of population dynamics. In the pre-industrial period in currently developed countries, fertility was relatively high and population movements were either relatively local – between nearby villages or within primarily rural agricultural areas – and limited to small groups of merchants or infrequent actions of military forces. Under these demographic conditions, the regular and often large fluctuations of mortality were the principal factor affecting population change. In the worst years – such as during the mid-1300s when the bubonic plague moved out of Central Asia and swept through Europe – mortality losses claimed more than one-fourth of the existing population. During times of heavy mortality, the number of deaths greatly exceeded the contributions of births and substantial population losses occurred. In other years, mortality was more modest and population would slowly increase. These periods of modest mortality should not be thought of as “normal”, however, because the characteristic demographic situation of pre-industrial societies was fluctuating mortality, evidenced by periods of modest increase and times of heavy population losses.

Fertility declines began to occur at different times in European and North American countries around the mid and late 1700s. These fertility changes were associated with improvements in food supplies – particularly better yields in cereal grains, improved storage facilities, and better transportation for foods – and significant progress in the advancement of public health, including cleaner water supplies, workable sewage systems, and better personal hygiene. By the early 1800s, the Industrial Revolution was underway in many countries of Europe and North America, providing support for further mortality decreases. As general levels of mortality began to steadily decline, fertility emerged as the key dynamic factor affecting population change. By about 1900, life expectancy at birth has increased in countries such as Great Britain from about 25 years in the medieval period to about 40 years. With mortality decreasing and staying relatively steady, albeit influenza and other epidemics still resulting in some mortality fluctuations, fertility became the key demographic component driving population change.

Fertility did not remain constant during the later periods of mortality improvements. By the mid-1800s, insipient fertility decreases were appearing throughout Europe and North American societies. Fertility declines gathered momentum in the late 1800s and early 1900s. By the 1930s, as documented by Dudley Kirk in his classic volume entitled *Europe's Population in the Interwar Years* (League of Nations, 1946), fertility has fallen to replacement-level in many European countries. In France, for example, fertility was below replacement by 1930 and several French provinces were experiencing heavy population losses.

For the recent decades, both mortality and fertility have remained at relatively low and (generally) unchanging levels. There are important variations, however, in mortality-fertility differences in European and North American countries. In some countries – such as Italy, Spain, and Greece – fertility has remained fairly low relative to mortality and these populations will experience long-term population decreases in the absence of net immigration. Three developed countries – France, Iceland, and United States – are somewhat exceptional in having fertility levels that are close to the level required for population replacement. Other developed countries lie in between the two boundaries of very low fertility and replacement-level fertility. In this situation, international migration has become the dynamic factor affecting population growth.

Background

This collection of research papers explores demographic issues related to migration from an interdisciplinary perspective. The issues relate to the population dynamic processes caused by migration, as well as the relationship between migration and fertility, migration and mortality and morbidity, and the socio-demographic and economic aspects of migration. Special thanks go to the Federal Office for Migration and Refugees, for their financial and organizational support.

We have grouped the 12 chapters in this volume in four sections below for purposes of discussion: measuring immigration and its effects, immigration and natural increase, labour force and employment, and internal migration and migration to Japan.

Measuring Immigration and Its Effects

The first three chapters deal with questions of migration data and measuring the effect of migration on population change. Barry Edmonston describes various methods for measuring the contribution of immigration to population, including a detailed illustration of one method useful for a historical reconstruction of Canada's

population. Before beginning the study of migration and population dynamics, we need to have accurate data. If no reliable data are available, there are other methods for estimating both internal and international migration flows, as described in a chapter by James Raymer. In a third chapter, Alberto del Rey and José Antonio Ortega demonstrate the usefulness of the birth replacement ratio for interpreting the role of migration in population dynamics for Spain, including analysis of international migration and migration changes for regions and provinces.

The question of the contribution of international migration to population growth has interested demographers for some time. At first glance, it may appear that it would be relatively simple to calculate and interpret the contribution of immigration. If one knew that a population received 100,000 immigrants last year, is not that a simple and easy to explain the number “100,000” as the contribution of immigration to population growth? The contribution of immigration, however, has a more complex set of effects. First, not all immigrants remain in their new destination and, for most immigrant-receiving countries, a significant proportion of immigrants later emigrate. So, emigration is a critical factor to take into account when studying the contribution of immigration. Second, immigrants make an important indirect contribution to population growth through their childbearing. In some countries, such as the United States, the fertility levels of immigrants are considerably higher than other residents, which magnifies the long-term contribution of immigrants to population change. In other countries, such as Canada, the fertility levels of immigrants are not greatly different than other residents, but the indirect effects of childbearing will still have important demographic consequences.

In the chapter by Barry Edmonston, he reviews three broad approaches that demographers have developed for measuring the contribution of immigration to population growth. The first approach deals with the study of period changes, focussing on population change during a specific period of time. It is quite common for demographers to use census and administrative records on international migration to report the amount of immigration – or immigration, emigration, and net immigration – for five or ten-year periods. Edmonston notes that there are two useful variants for this type of study. One variation is to estimate the indirect contribution of births to immigrants in order to assess the overall contribution of immigration during a period of time. A second variation is useful when studying populations with limited or inadequate data: it is a technique that estimates “corrected” international migration, birth, and death figures so that they are consistent with census data for the initial and ending period of study.

The second approach involves the use of cohort-component population projection models. These models share a common framework, starting with birth cohorts, and moving them through time while making assumptions about changes due to the components of birth, death, and migration. Cohort-component population projections models have been commonly used by researchers and government statistical

agencies to provide alternative forecasts for national populations, often illustrating the effects of zero and different levels of net immigration on future population growth. A novel adaptation of the basic model has been to incorporate immigrant generations that usually distinguish immigrants (the first generation), sons and daughters of immigrants (the second generation), and all subsequent generations. Such models have proved to be useful for the study of the effect of immigration on the labour force, ethnic intermarriage, and citizenship and nationality.

Cohort-component projection models are informative for studying the contribution of immigration to past population growth. Edmonston's chapter presents a detailed description of data sources, methods, and results for a historical reconstruction of Canada's population growth from 1851 to 2006. His work reveals that more than three-fourths of Canada's population growth during 1851 to 2006 was due to immigration, including childbearing of immigrants and their descendants. This type of approach is particularly helpful for understanding the long-term consequences for immigration during historical periods of time for population growth.

The third approach involves the use of stable population models to analyze migration's effect on population change. Some of the most useful demographic work has involved stationary population models that examine the role of immigration in the context of a hypothetical population with replacement-level fertility – that is, an assumption that the population has a net reproduction rate of 1, which implies long-term zero growth and an unchanging stationary population. These models have been useful for explicating and interpreting national and sub-national population dynamics influenced by international and internal migration.

The chapter by James Raymer notes that data on both international and internal migration are often inadequate. His chapter proposes a general methodological framework for estimating and improving migration data by using information from multiple sources. This general framework is applied to estimate a time series of detailed flows of internal migration in England and international migration between countries in Europe.

Current data on international and internal migration are often deficient in several ways. Regarding international data, origin-destination information may be derived from both sending and receiving countries, sometimes by sex and age. However, many countries do not provide data, for example Belgium, Estonia, Greece, France, and Ireland, among others. For those countries providing data, there are differences in migrant definitions and collection methods. For example, Norway applies a six month criterion to define an international migrant, whereas Sweden uses twelve months, Germany uses no particular definition and Poland uses 'permanent'. These differences in definition have important consequences for the number of report migrants. Second, there are differences in the reliability of data collection itself, with some countries underreporting the number of immigrants, either because the registration system does not canvas everyone or because some

migrants avoid registration deliberately. Similar problems exist for internal migration data, which are collected from periodic censuses, surveys or population registers.

The approach proposed by Raymer involves the estimation of origin-destination flow matrices – including selected characteristics of migrants, such as age, sex, ethnicity, and other variables of interest – using a log-linear statistical model. The approach consists of three key steps. In the first stage, data sets of interest are located and a model that incorporates these available data is developed. Next, if required, the basic data sets are harmonized, attempting to reconcile different variable definitions and achieving consistency among different estimates. Finally, a log-linear statistical model is used to estimate the migration flows.

Raymer's chapter provides two useful illustrations of the valuable new work on providing improved migration estimates. His first example shows how annual ethnic migration flows can be estimated for nine regions of England, and how annual economic activity flows can be estimated for 47 counties of England. His second example provides annual international migration estimates for 31 European countries. Raymer's work provides a helpful, new flexible framework for migration data, and is especially useful in the situation in which there are missing data. Moreover, the framework can be adapted for different levels of geography and for different policy needs.

As noted above, a particular challenge for today's demographers is to develop methods for understanding population dynamics in the context of migration. As argued by Alberto del Rey and José Antonio Ortega in their chapter, earlier work on population dynamics was dominated with the effects of fertility and mortality because migration often had a negligible role. Now, fertility and mortality are usually low and steady in modern societies and migration is the main determinant in population change. del Rey and Ortega have recently proposed some innovative methods for taking account of migration, fertility, and mortality, for both national and sub-national populations. They illustrate their methods with analysis of population change in Spain and its regions and provinces.

del Rey and Ortega argue that there are limitations in demography's traditional measures of population change and fertility levels because they do not incorporate the effects of migration and assume a constant rate of fertility. They suggest that the use of birth replacement ratios (BRRs) and its components provides information and insights on the reproductive situation of a national or regional population. Their chapter describes the birth replacement ratio and the decomposition of BRR into components that measure the effect of migration.

During the twentieth century, the population of Spain was greatly affected by the emigration of Spaniards, with almost a 20 per cent loss of women in the child-bearing years in the period from about 1900 to 1940. Because of heavy emigration, the observed ratio of the number of births to the number of mothers was considerably less than the traditional net reproduction rates (the calculated net reproduc-

tion rate for this period suggests that the ratio of daughters to mothers would be about 1.3; in fact, the ratio was about 1.0 because of emigration). Since 2000, migration has had an opposite effect. Although current fertility is comparatively low in Spain, there is positive net immigration and the observed ratio of daughters to mother is slightly higher than calculated by implied by the conventional net reproduction rate.

Birth replacement ratios are useful for studying regional population dynamics, as shown by del Rey and Ortega's analysis of regional and provincial populations in Spain. Internal migration has led to population losses in some areas and caused strong population growth in others. International migration, however, has not followed exactly the same pattern as internal migration, which complicates the description of the role of migration for sub-national populations in Spain. Nevertheless, the use of birth replacement ratios provides a needed technique for interpreting the role of migration in population change.

Immigration and Natural Increase

As noted above, migrants do not only add (or subtract) a resident from the study population. Every migrant also has an effect on population dynamics because of birth or death. The arrival of a relatively old immigrant may affect deaths in the population in the near future. On the other hand, the arrival of a young woman may affect births in the population over the next few decades, and her possible children will subsequently affect fertility and mortality in later years. This volume includes three chapters that examine the fertility and mortality aspects of immigrants. Kirk Scott and Maria Stanfors examine fertility changes for immigrants and the immigrant second-generation in Sweden. Martin Kohls presents a study of German migrant mortality using administrative data bases. Susanne Schmid and Martin Kohls provide an overview of the reproductive behaviour of female migrants in Germany, with special focus on a comparison of immigrant and non-immigrant fertility from 1970 to 2005; they also rely on additional administrative data bases for further information about immigrant fertility.

Immigration has played an important role in Sweden during the past five decades. The foreign-born population of Sweden numbered fewer than 100,000 in 1945, but has increased to 1.2 million in 2008. In 2007, more than 13 per cent of the Swedish population was foreign-born; in addition, about 11 per cent of the Swedish population was born in Sweden but with one or more foreign-born parents. Statistics Sweden expects the foreign-born population to increase by another one-half million by 2050. The study of social integration of immigrants in Sweden raises questions about education, social mobility, labour force status, intermarriage, and other issues. One important topic for study is understanding immigrant fertility and

assimilation. Kirk Scott and Maria Stanfors take an intergenerational approach in their chapter by investigating the childbearing behaviour of immigrant women and second-generation women.

The fertility of immigrants in Sweden varies for different countries of origin. The childbearing patterns of women born in Nordic and European Union countries is similar to that of Swedish women, who currently have about 1.9 children over their lifetime. Women who were born outside of Europe have higher fertility than Swedish women, although available research suggests that immigrant women adjust to the fertility pattern of Swedish women with longer duration of residence in Sweden.

Empirical research on the fertility of the immigrant second-generation has received less attention, and the Scott and Stanfors' chapter provides a useful addition to available studies. They analyze data from the Swedish Longitudinal Immigrant database to construct a multi-generational data set along with information about births. Their analysis reveals that, for second-generation immigrant women, integration has largely occurred, and national background does not provide much additional information about the childbearing behaviour of women. Rather, other factors such as employment and education offer more important information about first-time childbearing and overall childbearing levels.

Overall, the Scott and Stanfors chapter will interest readers involved in the study of the relationship of employment and childbearing. The results of their study suggests that the effects of the Nordic model of combining employment and childbearing has similar effects for immigrant and non-immigrant women, that all women seem to respond to the same incentives in similar ways. Differences that exist in childbearing appear to be primarily affected by education, especially the timing and attainment levels.

A number of studies have reported that the mortality patterns of migrants differ from those of non-migrants. These studies generally report that migrants have lower mortality than the other resident population. Because, in some studies, migrants have lower education and income than others, this has been pointed out as a paradox because there is usually a positive relationship between socioeconomic status and lower mortality. The usual explanation for this paradox is that migrants display a "healthy migrant" selection. This is based on the notion that people who migrate are both self-selected to be healthy (chronically ill or disabled are less likely to move) and selected deliberately by the receiving country (many immigrant-receiving countries require a medical examination prior to issuing a visa for migration). In the chapter by Martin Kohls, he discusses a theoretical framework for understanding the selection process and raises the question about whether adequate data have been used for studying the selection process in previous studies. He uses two administrative data sets to analyze the selection process and the mortality for migrants in Germany.

Kohls begins his analysis by demonstrating the inadequacies of official German death statistics for the mortality study of migrants. The key limitation for official death statistics is that the foreign-born population was last enumerated in the census of 1987. But, because the foreign-born population has been leaving Germany at higher than assumed levels, the actual number of immigrants in the Germany is probably less than estimated. As a result, the number of deaths relative to the estimated foreign-born population displays a declining overall death rate compared to the total population. At present, the official death rates for the foreign-born look implausibly low.

Kohls recommends that mortality statistics on migrants in Germany make use of two alternative administrative data sets, the Central Register of Foreigners (AZR) and the Statutory Pension Insurance (GRV). His analysis reveals that the mortality levels for migrants in these two data bases are higher than in official death statistics. The AZR data shows lower mortality for Asian and African migrants than other residents, supporting the healthy migrant effect. On the other hand, these migrants move to higher mortality – similar to other residents – with longer duration of residence in Germany. The GRV data do not show a mortality advantage for migrants and, in fact, provide evidence of higher mortality for migrants from the former Yugoslavia. Overall, Kohls' analysis of two administrative data sets finds mortality differences between migrants and Germans that are considerably less than reported in official statistics. And, if a mortality advantage exists for migrants, it appears to be a difference that characterizes the initial years after arrival and is not an advantage that persists for long periods after arrival.

A chapter written by Susanne Schmid and Martin Kohls examines the fertility of immigrants in Germany. The number of persons of immigrant background in Germany has increased steadily in recent years, and now number almost 7 million, or 8 per cent of Germany's total population. Given Germany's relatively low fertility (a total fertility rate of 1.38 children, which is significantly below the 2.1 level required to replace the population) and increasing proportion of immigrants, it is useful to study possible fertility differences for immigrants, and factors related to these possible differences.

Current research on fertility in Germany is hampered by the lack of adequate data. Previous fertility studies on immigrant fertility have relied on official statistics, which are found to be deficient, in part because only births registered in Germany are linked to resident women and many immigrant women have had children born outside Germany. Schmid and Kohls provide a comprehensive review of current German databases that are potentially useful for fertility research. Using official statistics and administrative data from the Central Register of Foreigners (AZR) and the Statutory Pension Insurance (GRV), they find that the total fertility rate of foreign women is between 1.62 and 1.83 and the similar rate for non-immigrant German women is 1.30 – the total fertility rate for foreign women is about 25 to 40

per cent higher than that for other women in Germany. Nevertheless, it should be observed that the total fertility rate for immigrant women is also significantly below replacement. While the fertility rate for immigrant women partially counterbalances the very low fertility rate for other women, it does not dramatically increase the overall total fertility rate for Germany.

The GRV data distinguish immigrant women by nationality, which permits separate estimates of fertility to be made for different groups. The highest total fertility rates are for African women (2.2, which are the only national group with above replacement fertility), Asian women (1.9), and Turkish women (1.8). Other nationality groups have fertility similar to that of German women. Women from neighbouring countries, such as France or the Netherlands, report extremely low fertility (total fertility rate of 1.1).

Available data sets on fertility permit only limited analysis of the factors related to current childbearing. There is room for further theoretical and empirical research on Germany fertility in order to improve understanding of the processes accounting for immigrant and non-immigrant fertility differences.

Labour Force and Employment

One of the most important aspects of immigration deals with the labour force and employment. This is a critical issue primarily because a key motivation of most immigrants is to improve their economic situation, which involves finding employment in their new destination country. In seeking employment, immigrants also affect the host country's labour market. Such effects have become one of the most prominent and controversial issues in current debates about immigration. In a 2008 report entitled *Transatlantic Trends: Immigration*, the German Marshall Fund reported that one-third of European respondents were worried about negative effects of immigrants on domestic employment. The greatest concern about deleterious employment effects of immigrants was in the United Kingdom and the United States, where more than one-half of respondents thought that immigrants would take jobs away from domestic workers.

Before discussing the two papers dealing with labour force and employment, it is helpful to summarize a leading review of what is known about the effects of immigration on the labour force. In the mid-1990s, the U.S. National Academy of Sciences in Washington, D.C. convened a panel of 10 economists and demographers with expertise in immigration. Their report, entitled *The New Americans: Economic, Demographic, and Fiscal Effects of Immigration*, was published by the National Academy Press in 1997 and offers a non-partisan, balanced assessment of the economic effects of immigration. This panel found that, although immigration makes national output go up, some domestic workers suffer and other workers benefit.

Immigration yields a positive net gain to domestic workers, but the gain is not spread equally: it harms workers who are substitutes for immigrants while benefiting workers who are complements to immigrants. Most economists believe that unskilled domestic workers are the substitutes, so their wages will fall, and skilled domestic workers are complements, so their wages will rise. These are important conclusions to keep in mind, because public perceptions and statements from political leaders often misperceive the labour market effects of immigration and some argue incorrectly that *all* workers are harmed by immigration.

This volume includes two chapters that investigate labour market issues and immigration. These two chapters give some descriptive information about the migrants: are there specific migrant groups, where do they come from, what is their demographic and socioeconomic background, how is their spatial distribution, is there a correlation to specific variables? The first chapter, co-authored by Federico Benassi and Linda Porciani, examines the destination choices made by immigrants in Tuscany, a region in central Italy that includes Florence, Pisa, and the rural area of Chianti. The second chapter, authored by Marina Shapira, looks at the effect of immigration on domestic employment and opportunities in Great Britain.

The chapter by Federico Benassi and Linda Porciani provides information on the dual demography of immigrants settling in Tuscany, Italy. They rely on 2001 Italian census data to show the settlement patterns of immigrants in Tuscany. As they note, however, the immigration situation has changed in two important ways since data collection for the 2001 census. First, the Italian government enacted legislation in 2002 that resulted in large scale legalization of previously undocumented immigrants. And second, twelve new, poorer countries became members of the European Union (EU) between 2004 and 2007, which has led to larger flow of immigrant arrivals in Italy from these new EU members.

Tuscany has emerged as the fastest growing area of settlement for immigrants in Italy. The foreign-born population has increased five-fold from 18,000 in 1981 to 109,000 in 2001, increasing from 0.5 per cent to 3.1 per cent of the total Tuscany population – compared to increases from 0.4 per cent to 2.3 per cent for the overall Italian population during the same period. By 2007, based on recent Italian government statistics, the foreign-born population in Tuscany has increased to 234,000, or 6.4 per cent of the total population. The countries of origin have special interest, because more than one-half (54 per cent) of immigrants in Tuscany come from Central and Eastern European countries, with Albanians being the most numerous, followed by immigrants from Romania and Poland. Not all large groups of immigrants arrive from Europe however. Chinese immigrants, numbering 25,000, or ten per cent of the foreign-born population, comprise a large recent immigrant group.

Benassi and Porciani argue that there is a dual profile to immigration in Tuscany because there are also a large number of foreign-born residents who come from

more-developed countries, including Germany, which has provided nearly 5,000 immigrants. The dual profile of immigrants in Tuscany is documented in other ways. Many immigrants from poorer countries settle throughout Tuscany (except for Chinese immigrants, who live in Florence and Prato near fashion and manufacturing centres), while immigrants from richer countries live in Florence or the attractive rural areas of Grosseto and Livorno. There are age and sex differences involved in the dual profile. Immigrants from poorer countries are younger and include slightly more men than women. Among immigrants from richer countries, however, they are older and include considerably more women than men.

What accounts for this dual profile of immigrants in Tuscany? Although Benassi and Porciani argue that it is hard to present definitive statements, the immigrants from poorer countries seem to be consistent with explanations of economically-driven migration, including younger immigrants (especially men) who arrive in Tuscany because of job opportunities. The motivation for immigrants from richer countries is less clear: their age-sex characteristics are not consistent with the notion that they are retirees, but their settlement pattern also suggests that they are not solely motivated by employment. Some may be early retirees and others may have adequate income for starting a new life in Tuscany where housing is less expensive and there are improved amenities.

The chapter by Marina Shapira examines the effect of immigration on employment and occupational opportunities in Great Britain. Although her paper focuses on Great Britain, it has wider appeal because it presents a useful conceptual framework for studying immigrant's effect on the labour market and utilizes a particularly innovative data set. Great Britain began to experience a dramatic increase in the number of immigrants in the late 1990s. This increase resulted from two factors: relatively attractive employment opportunities in Great Britain and changes in British immigration policy. The most important policy change was the accession of new European Union members with the right to free movement and work in the United Kingdom in 2004. Like other countries, there were fears in Great Britain that "cheap workers" from Eastern and Central Europe would reduce wages and take jobs away from domestic workers.

Shapira's study documents that immigrants have a profound effect on the host country's labour market because immigrants tend to concentrate in particular areas and to specialize in selected industries and occupations. This concentration and specialization usually makes their effects more noticeable. Her study is based on the United Kingdom's Annual Population Survey, a large annual household survey of about 375,000 individuals that provides sample data and estimates for about 200 local labour markets. Her analysis provides descriptive and multivariate analysis. Three outcome variables are examined: (i) being out of the labour force or being long-term unemployed, (ii) being in a skilled manual or supervisory occupation

versus being unskilled or unemployed, and (iii) being in white collar or professional occupation versus being unskilled or unemployed.

Shapira's paper presents a nuanced discussion of the empirical findings, which is beneficial because many commentators could easily use the results from this type of study to increase public concerns about immigrants. Overall, her findings suggest that immigrants do not have a negative effect on occupational opportunities of non-migrant British workers who have average levels of educational attainment. Many recent immigrants have sought employment in unskilled occupations; however, it is unclear whether this has had negative effects on domestic workers or whether native workers have had alternatives to low-paid employment. Furthermore, in *some* localities of Great Britain, better educated recent immigrants appear to have had a negative effect on the likelihood of British-born workers finding white collar employment; but, this effect is found only in selected localities where there were relatively few immigrants prior to 2004 and where recent immigrants now comprise a significant proportion of the local population. Finally, Shapira's study concludes that there is no evidence that British-born ethnic minorities or residents with lower levels of education have been more adversely affected by immigration than white British-born residents with average educational levels.

Internal Migration and Migration to Japan

The fourth part of this volume includes three chapters dealing with internal migration and a chapter on migration of caregivers to Japan. One chapter notes that there has been a decline in neighbourhood quality for immigrants in Canada, and asks whether this decline could be eased by shifting flows away from Canada's three major metropolitan areas (Montréal, Toronto, and Vancouver) to other parts of the country. The volume includes two chapters that focus on the interesting topic of migration between East and West Germany's regions, a topic that has received considerable attention in politics and the press. Jenny Schmithals' chapter examines the reasons for migrants moving to Magdeburg, an industrial city in East Germany. In a second chapter, Silvia Maja Melzer looks at the effect of regional characteristics on the migration of people from East to West Germany. A fourth chapter deals with how migration policy in Japan is changing because of the accelerating increase in population aging, and how a greater number of elderly is creating the need for more health-care workers.

A chapter by Michael Haan studies the neighbourhood quality for immigrants in Canada. He notes that about three-fourths of all arriving immigrants in Canada settle in the three largest metropolitan areas of Montréal, Toronto, and Vancouver – called Canada's immigration gateway centres. During 1996 to 2001, Toronto alone received about one-half of all new immigrants. As the number of immigrants in

these three metropolitan areas increased, however, immigrants' overall levels of well-being declined. In recent years, Canada's immigrants have fared worse in terms of earnings, employment mismatch, neighbourhood quality, and homeownership. Haan raises the question of whether immigrants would gain access to a better life in Canada if they settled outside the three main immigrant-receiving metropolises. This is not an idle academic question because Canadian government policymakers have expressed concerns about the "unbalanced geographic settlement" of immigrants while, at the same time, some local policymakers have suggested that it would be helpful to encourage immigrant settlement in other provinces, cities, and rural areas.

Haan notes that there are two key reasons why neighbourhood quality would improve for immigrants who settle outside the three gateway centres. First, there would be better employment options, which would provide families with improved economic resources. Second, the price of housing is considerably lower outside the gateway centres and a similar amount of financial resources would provide better housing in non-gateway areas. Although every city has undesirable areas, Haan argues that immigrants might benefit from improved neighbourhood quality if they were to settle in non-gateway cities, and this is the proposition that he examines empirically in his chapter.

Neighbourhood quality is measured in three ways in Haan's empirical analysis: median income, per cent with low family income, and per cent of dwellings in need of repair. His analysis shows, for all three outcome measures, that immigrants who live in non-gateway areas have improved neighbourhood quality compared to similar immigrants in the gateway metropolitan areas. Some caution is needed before jumping to the easy conclusion that *all immigrants* settling in gateway centres would have improved neighbourhood quality if they settled instead in non-gateway areas. If all immigrants were to settle elsewhere upon arrival in Canada, this would affect the quality of neighbourhoods in both the areas that they avoid as well as the new destination areas, which would alter the neighbourhood quality in both "old" and "new" areas. With this caution in mind, however, Haan's research suggests that there would be possible improvements in neighbourhood quality if immigrants moved away from gateway centres to other areas.

The chapter by Jenny Schmithals is based on a research project that has interviewed recent migrants to Magdeburg, Germany, including people who were returning to Magdeburg after living elsewhere. She notes that earlier studies have revealed that more than 50 per cent of East German migrants to West Germany wish to return and that return migration now accounts for a large share of current migration to East Germany. There have been few empirical studies, however, that try to understand the motivation and reasons for return migration to East Germany. Without adequate studies, it is difficult to evaluate possible policies and program that might encourage or support return migration.

Magdeburg provides an interesting research site for Schmithals' research because it has suffered considerable deindustrialization and out-migration since the reunification of Germany. Magdeburg had about 280,000 residents in 1990 but decreased to about 230,000 by 2007. Out-migration following reunification has been highly selective, with a loss of younger adults and those who have employment skills that are sought elsewhere. Most migrants to Magdeburg previously lived in West Germany, including 70 per cent of residents who were returning to Magdeburg. Many of the returning migrants are younger adults, but there are also a relatively large group of migrants who are older than 55 years.

Labour force participation rates among returning migrants are lower than other types of migrants to Magdeburg. Older returning migrants in the survey often reported that they originally left for employment reasons but has always wanted to return, and retirement offered than a chance to move back to Magdeburg. Among younger returning migrants, some had lost their jobs and decided to return because of personal reasons, including the desire to move closer to their families and friends.

This study illustrates that strong interest exists for some previous residents of East Germany to return to their home area. The study also documents that a considerable proportion of current migrants to East Germany are, in fact, returning migrants. Finally, the study points out that the reasons for return migration are varied, and are intertwined with life cycle changes such as retirement.

In a related chapter, Silvia Maja Melzer studies the relationship between regional characteristics and migration from East to West Germany. Her study focuses particularly on the effect of differences in regional income on the movement of people from East to West Germany, taking into account differences in individual characteristics. This is a useful study for German economic and population policy as well as an interesting study for migration research. Differences in the economic situation between East and West Germany were striking at the time of reunification and, indeed, persist to the current time (overall wages in East Germany compared to West Germany were 32 per cent lower for men and 19 per cent lower for women in 2006, for example).

Melzer's study relies on the 1992 to 2006 waves of the German Socio-Economic Panel, which is a representative longitudinal survey of households that was extended to the former German Democratic Republic in 1990. She identifies cases for people who were resident in East Germany at the time of original interview and examines whether the person subsequently moved to West Germany. This research design provides data on individual characteristics – such as age, education, and employment – and permits the researcher to examine regional characteristics about where people were living before and after their migration. Such data can be properly analyzed by multilevel regression models, which can disentangle the different effects of individual and regional characteristics.

The results of Melzer's statistical analysis provide evidence that individual characteristics had the strongest effect of migration from East to West Germany, but regional differences also had a potent effect. Several results are commonly seen in other empirical studies, including that migrants are usually younger and better educated. In the special case of East Germany following reunification, it is not surprising that unemployed workers and students were especially likely to move to West Germany. There are interesting differences, however, in the study of migration from East to West Germany: women are more likely to move than men and the gender-specific reasons for this difference are not apparent without further study.

Japan ranks among the countries of world with the fastest ageing population. The median age of the Japanese population is forecast to increase from 43 years in 2004 to 50 years in 2025 and an extraordinary 53 years in 2050. Gabriel Vogt's chapter describes the current situation of Japan's population – ageing and shrinking – and current Japanese migration debate. She clarifies current debate by examining the relationship between demographic change and migration policy through a case study of the international migration of Indonesian care givers to Japan.

Population ageing is primarily a result of fertility declines. With a total fertility rate of 1.29 children, Japan has one of the lowest fertility rates in the world: a total fertility rate of 1.29 implies that 100 Japanese women will complete their childbearing having only 62 daughters, meaning that the next generation will be almost 40 per cent smaller than the current generation. Such low fertility, in the absence of substantial net immigration, has two important consequences for Japan. First, the population will age fairly rapidly, with a relative and absolute decrease of children and youth, and younger adults, and a relative increase in the elderly. Vogt notes that there was an old-age dependency ratio of 29 elderly (persons aged 65 years or older) per 100 younger adults (persons aged 15 to 64 years of age) in 2004. This ratio will increase to 48 in 2025 and 67 in 2050, placing an increasingly heavy social welfare burden by the elderly on the working age population. Second, the Japanese population will experience a historically unprecedented population decline in the future. As long as fertility remains relatively low and there is little net immigration, the population will decrease an annual rate of 0.5 per cent, decreasing from 128 million in 2004 to 101 million in 2050, and a loss of 27 million residents over the next five decades.

Japan is not a major immigrant-receiving country, hosting only 2.2 million registered foreign nationals in 2007, or less than 2 per cent of the total population. Moreover, one large group of "foreign nationals" are 600,000 Koreans, a group that are descended from Korean residents of Japan who did not return to Korea after World War II. Vogt's chapter offers a useful description of Japan's current migration policy, with an interesting discussion of care-giver migration from Indonesia to Japan. The current program is relatively new and not large. Japan has initially set a limit of 500 Indonesian care-givers to be admitted to Japan. 208 care-

givers were accepted in the first year (2008). They finished their Japanese language education and began working in 98 Japanese hospitals and nursing homes in February 2009. It will not be evident how well the care-giver program is working for at least several years, when the Indonesian care-givers take the national care-giver examination and it will be clear whether this type of international labour recruitment is a possible option for filling Japan's needs for health care workers.

Although population ageing and shrinking offers a powerful push for changes in Japan's migration policy, with encouragement to expand international migration, any changes in immigration policy are controversial. Vogt's chapter shows, through the study of migration policies related to Indonesian care-givers, that policy shifts in Japan are complex and challenging.

Major Themes

Several common themes cut across the chapters in this volume. First of all, as is clear from the titles of chapters in this volume, migration takes many forms. The influx of Poles to Great Britain, of Chinese to Canada, and Germans to Italy have different causes and consequences. In each case, the motivation for the immigrants is to improve their situation, usually by finding a better job or to obtain a better quality of life. Immigration certainly helps the immigrants and their families, now as in the past. Immigrants also gain new skills, save money, learn new ideas, and often start new businesses and create jobs in their new destination. Immigrants also send considerable money back to their previous home country – \$260 billion in remittances were sent home by immigrants in 2006, which is greater than foreign aid and investment for many developing countries.

Immigration affects the population in the new country of settlement. Immigrants not only add new residents, they also affect the destination country's fertility and mortality, as discussed in several chapters in this volume. Because most immigrants are young, their effects on fertility are particularly important because they often contribute more births to the population than their numbers might suggest.

The migration of people helps developed countries in many ways. Rich developed countries generally have below-replacement fertility that is leading to an older workforce. Indeed, many advanced countries actively compete for immigrants with high education and technical job skills. Countries also admit immigrants with low-skills, as noted in Vogt's chapter on the recruitment of Indonesian care-givers to Japan and Shapira's study of recent Eastern and Central European immigration to Great Britain.

Above all, discussion of current immigration requires some historical perspective. An honest appraisal of immigration over the past fifty years needs to acknowledge that immigration has not brought about the civic disturbances that

some pessimists have predicted. Rather, the lives of millions of immigrants have been dramatically improved and immigrants have enriched host countries culturally and economically. To be sure, immigrants with low-skills have competed with low-skilled domestic workers and this has depressed wages for some. But low-skilled workers were already at risk because of technology improvements and, in some instances, competition from foreign goods. The more appropriate public policy is to help all low-skilled workers improve their job skills and not to restrict immigration, which may result in negative effects on the whole economy.

Recent migration trends ensure that populations in developed countries will continue to be reshaped by both international and internal migration. Long-term internal migration will continue as people move from small towns and rural areas to larger towns and cities and from less to more attractive areas, depending on many factors including economic opportunities. In addition, international migration will continue to be a powerful demographic force, as thousands of people move between countries and alter the populations and societies of both sending and receiving areas. Future migration will also not merely mirror old patterns. For example, future migration is likely to include a greater proportion of highly-skilled workers moving within and between countries. It is also likely to be more diverse in multiple ways, encompassing more categories of migrants and more varied forms of migration flows that will, for example, expand transnational migrant communities. Migration, by definition, is dynamic and fluid. We can be sure that future research on migration will discover new forms and new consequences of this powerful demographic process.

The Contribution of Immigration to Population Growth

Barry Edmonston

Introduction

“The population of the area now Canada has grown from 2,540,000 in 1851 to 13,728,000 in 1950, a multiplication by more than five in 99 years. A question frequently asked is how much of this growth has been the result of immigration from abroad, and how much the natural increase of residents.” Nathan Keyfitz, *Population Studies*, 1950.

The question posed by Nathan Keyfitz in 1950 continues to interest demographers (Edmonston/Michalowski, 2004). The purpose of this paper is to review demographic approaches that have been proposed for measuring the contribution of immigration to population growth. The paper also presents one approach – a historical reconstruction of Canada’s population – to illustrate a method that is useful for measuring the effect of immigration on population growth.

The population of Canada increased from 2.6 million in 1851 to 31.6 million in 2006, a twelve-fold increase in 155 years.¹ What has been the contribution of immigration to this population increase? One demographic answer to this question is to provide an estimate of total immigration. Such a calculation, however, ignores the effects of emigration and the contribution that immigration makes to population growth through fertility. A more complete answer would involve estimating the contribution made directly through both immigration and emigration, and indirectly by the childbearing of immigrants, as well as subsequent fertility by the descendants of immigrants. In providing an answer to the question about the contribution of immigration, this paper asks “what would have happened to population growth in Canada if there had been no immigration?”

1 The data refer to the population in the current combined area of the provinces and territories of Canada, including Newfoundland. The formerly British colony of Newfoundland did not join Canada until 1949, so population figures cited in this paper add estimates for Newfoundland’s population in order to provide comparable data for the present territory of Canada. The population of Newfoundland is relatively small, however, and does not have a substantial influence on Canada’s population changes.

Immigration to Canada during the past five decades has had a gradual, cumulative impact on the foreign-born composition of Canadian society. The effect of the new immigrants on Canadian society has become increasingly apparent in recent years. How does the effect of recent immigration compare with earlier waves of new arrivals? This paper describes changes in the immigrant composition of Canada's population that have taken place since 1851, using a population projection methodology to quantify the effect of immigration on the composition of the Canadian population in terms of the generational stock. The next section presents an overview of different ways for measuring the contribution of immigration to population growth, followed by a description of the model of population change used in this paper to determine the effect of immigration on Canada's population change from 1851 to 2006.

1. Three Ways of Measuring Immigration Effects on Population Growth

Demographers have developed three ways of measuring the contribution of immigration to population growth. This section offers an overview of the types of studies within three broad groups: (1) studies of period change, (2) population projections, and (3) stationary population models. Some methods have been available for many years and some are more recent. Following this section, we discuss data sources, methods, and results for one specific method, which offers a historical reconstruction of Canada's population using a population projection model.

Immigration has many effects on the destination population. This paper limits attention to the effect of immigration on population size and growth. Other work on the effects of immigration has been concerned with the age distribution, population composition (such as family and household composition), school enrolments and educational attainment, and the labour force. This other work is too large to review or cite here (Smith/Edmonston (1997) discuss research on the fiscal, economic, and demographic effects of immigration, citing primarily U.S. studies).

1.1 Studies of Period Change

There are a variety of demographic approaches within the first broad approach for measuring immigration's contribution to population growth. This first group of approaches deals with studies of period change. These approaches focus on population change during a specific period of time, usually relying on census and other data to examine population change during a five or ten-year period. Their purpose is to estimate immigration – or immigration, emigration, and net immigration for

the period – and compare the contribution of immigration and natural increase to overall population change.

Classic Approach.

The classic approach for measurement of immigration for a period of time is illustrated by Keyfitz's (1950) study, which uses estimates of fertility and mortality in conjunction with Canadian censuses for 1851 to 1941 to estimate net immigration for each ten-year period. This approach is usually discussed in basic demographic methods for estimating immigration (see Edmonston/Michalowski, 2004) for discussion of the standard ways for estimating immigration for a period of time). In Keyfitz's work, he uses mortality tables to survive the population from one census to the next, by age and sex groups, and uses the difference between the expected and observed population to provide an estimate of net immigration. Then, using estimates of actual immigration (taken from border crossing observations and other official counts of international arrivals), he estimates emigration as the difference between immigration counts and estimated net immigration. Once he has estimates of net immigration of each ten-year period, Keyfitz calculates the proportion of population change due to immigration.

This approach is useful for providing estimates of net immigration by age, sex, and other fixed population characteristics, such as country of origin. The classic approach for estimating net immigration, however, requires fairly accurate census data and mortality tables.

Taking Fertility into Account.

One limitation in the classic approach for measuring the contribution of immigration to population changes for a period of time is that it neglects the contribution to population growth from births to immigrants. Campbell Gibson (1975, 1992) has proposed a useful approach that involves estimating births to immigration during the period of study. He assumes that the rate of natural increase during the period of study is the same for immigrants and the resident population. He starts with population census data, estimates of natural increase for the resident population, and mortality tables. After estimating net immigration in a similar way to that described above for the classic Keyfitz method, he uses estimates of natural increase for the resident population to derive estimates of natural increase for the arriving immigrants. This provides an estimate for the period of study for net immigration as well as the contribution to population change stemming from immigrants and births to immigrants.

There are two cautions about assuming that the natural increase for immigrants may be the same as for the resident population. First, the age structure of immigrants may be different and result in different numbers of births and deaths than expected. Second, fertility levels of immigrants may be different. If immigrants are

younger and have higher fertility levels than the resident population, for example, then the assumptions of the Gibson method would lead to underestimates of the contribution of immigration to population change for the period of study.

Consistent Census Correction.

A major challenge for estimating period measures for the contribution of immigration to population change is limited or poor quality data for the population by age and sex, fertility, or mortality. If census data are severely affected by undercoverage, for instance, this will adversely influence estimates of net immigration.

Norman Luther and colleagues (Luther et al., 1987) at the East-West Population Institute of the University of Hawaii have proposed an innovative method for dealing with limited data. This method uses limited or deficient data but assumes that the analyst is knowledgeable about data limitations and is able to make assumptions about specific data inadequacies. Because this approach provides consistent estimates for adjusted census data as well as birth, death, and migration counts,² it is called consistent census correction method by Luther and his colleagues. The method also provides adjusted estimates for net immigration.

The consistent census correction method begins by expressing a set of demographic balancing equations for the initial and ending populations by age and sex. There is an equation for each birth cohort for the intercensal period, including the effects of birth, death, net immigration, and census undercoverage. The analyst provides starting estimates for births, deaths, net immigration, and census undercoverage. Also required are estimates of preliminary correction factors as well as estimates of how reliable the analyst believes the correction factors to be (these are called the correction weights).

The consistent census correction method optimizes the dimensional vector space for the balancing equations to provide adjusted, final consistent estimates. There are many possible solutions for the balancing equations. The consistent census correction method finds one consistent solution. But, changing the initial correction factors or correction weights will result in different consistent solutions.³

2 The use of “consistent” in this approach has a special meaning. Demographers often make separate estimates for fertility, mortality, and international migration. The work of Luther and colleagues uses “consistency” to mean that population changes for an intercensal periods involve birth, death, and migration estimates that together match the observed population changes by age and sex. That is, the corrected estimates are internally consistent with the overall observed intercensal population changes.

3 Software for consistent census correction estimates can be downloaded from: www.eastwestcenter.org/research/research-program-overview/population-and-health/demographic-software-available-from-the-east-west-center/ as of September 6, 2008. Available for downloading are a user’s manual and set of Fortran programs that will run in Microsoft’s Windows system.