2 Why People Become Immigrants

People have always migrated. The movement of early humans out of Africa across Eurasia set the stage for later migrations across the globe. Early humans migrated primarily in search of food and safety. Although the details have changed, people migrate today largely for the same reason: to have a better life. They move to another country because of better opportunities to work or to study, or to join family members. Others become immigrants not because they are pulled by better opportunities or family but rather because they are pushed out and need to move in order to escape violence or oppression.

Immigrants are from virtually everywhere. However, more people leave some countries than others. This chapter examines the push and pull factors that underlie the decision to become an immigrant. Immigration policies and migration costs also play important roles in the decision to migrate. The chapter develops an economic model of individuals' decision to migrate and an aggregate model of migration flows between pairs of countries that incorporate such factors. It then examines the empirical evidence on these models with regard to sending countries.

Where are immigrants from?

Table 2.1 lists the top 15 source countries of immigrants worldwide. Many of the world's most populous countries are on the list: China, India, Pakistan, Bangladesh, Russia and Mexico. But some other big countries are not on the list, such as the United States, Indonesia and Brazil. Few people are likely to leave the United States since it is among the world's wealthiest countries, but it is surprising that Indonesia and Brazil are not on list. Proximity to a rich country seems unlikely to fully explain the list. Some of the countries on the list are not near a rich country, while some countries that are not on the list are near a rich country.

Another surprise is that not all of the major immigrant-sending countries are poor. Some of the countries on the list are indeed quite poor, but the United Kingdom and Germany are most definitely not. Just because a country has a relatively high average income does not mean that no one in that country is better off if she migrates.

The emigration rates shown in Table 2.1 provide another way of looking at whether a country is a major immigrant-sending country. The emigration rate—the number of immigrants from that country relative to its current population—for the top 15 immigrant-sending countries by absolute number of migrants ranges from 68 percent in the West Bank and Gaza to just 0.9 percent in India and 0.6 percent in China. Part of this variation is due to the size of

Table 2.1 Top 15 immigrant-sending countries and their emigration rates

	Number of migrants (millions)	*Emigration rate (%)*
India	14.2	0.9
Mexico	13.2	10.7
Russia	10.8	7.9
China	9.3	0.6
Bangladesh	7.8	3.3
Pakistan	5.7	2.5
Ukraine	5.6	14.4
Philippines	5.5	4.6
Afghanistan	5.1	8.1
United Kingdom	5.0	7.5
Germany	4.0	4.3
Kazakhstan	3.8	23.6
Poland	3.7	8.2
West Bank and Gaza	3.6	68.3
Egypt	3.5	4.4

Source: Number of migrants from United Nations, Department of Economic and Social Affairs (2013). "Trends in international migrant stock: Migrants by destination and origin." Available at: http://esa.un.org/unmigration/TIMSO2013/migrantstocks2013.htm?msdo [12 December 2013]. Emigration rates from World Bank (2010). *Migration and Remittances Factbook 2011*. Available at: http://econ.worldbank.org/WBSITE/EXTERNAL/EXTDEC/EXTDECPROSPECTS/0,,contentMDK:21352016~pagePK:64165401~piPK:64165026~theSitePK:476883,00.html [17 December 2013].

the sending countries. If China's emigration rate was the same as the West Bank and Gaza's, it would have more than 900 million emigrants, or almost three times the current total number of migrants worldwide! The bigger the country, the lower its emigration rate tends to be, all else equal. As discussed in Chapter 1, small countries tend to have higher emigration rates, perhaps because economic opportunities are more limited there.

Most of the world's poorest countries would not be on a list of top immigrant-sending countries either by absolute number of migrants or by emigration rate. Most of the poorest countries in the world are in sub-Saharan Africa, where emigration levels and rates tend to be relatively low. Afghanistan is the poorest of the countries listed in Table 2.1, with a GDP per capita of only $687 in 2012 (World Bank, 2014). But that's 2.5 times bigger than GDP per capita in the Democratic Republic of the Congo or Burundi—countries that are not on the list. Yet Afghanistan's emigration rate was more than six times the Democratic Republic of the Congo's rate, and twice Burundi's rate. The poorest of the poor may not be able to afford to migrate even though they have the most to gain by doing so.

Push and pull factors

Push factors are conditions that propel people to leave the origin country, while pull factors are conditions that entice people to enter a destination country. Push factors matter more for some groups of immigrants, while pull factors matter more for other groups. For most immigrants, however, both push and pull factors are at play in the decision to become an immigrant.

Virtually every push factor has a corresponding pull factor, and vice versa. For example, a high cost of living in the origin country is a push factor while a low cost of living in the destination country is a pull factor. For many factors, what matters to potential immigrants is relative values, or the difference between countries—is the cost of living lower in the destination country than in the origin country?

The economics of immigration focuses on the role of economic push and pull factors in determining whether people become immigrants. Labor market conditions and economic growth in both sending and receiving countries are key economic factors, particularly for work-based immigrants. As John Hicks, a Nobel Prize winner in economics, wrote in 1932, "Differences in net economic advantages, chiefly differences in wages, are the main causes of migration" (Hicks, 1932: 76). High wages and strong economic growth in a receiving country act as a pull factor, while high unemployment in a sending country acts as a push factor. Other economic factors that motivate some people to become immigrants include the opportunity to get a better education and the availability of more generous welfare benefits in another country. Better access to advanced technologies may be a pull factor for some scientists and medical professionals, while poor health care may be a push factor for people who are ill.

Political and social factors also affect the decision to become an immigrant. Some of these factors are intertwined with economic factors. For example, corruption may push some people who want to run a business but are unable or unwilling to pay the bribes necessary to do so into becoming immigrants. Meanwhile, enforcement of private property rights may act as a pull factor for people who want to run a business without having to worry that the government will confiscate their assets. For many immigrants, having family or friends who live abroad—what economists and sociologists call "networks"—is a pull factor. As discussed later, having a network can also enable migrants to bear migration costs and can even lower migration costs. Other political and social push factors that influence the decision to become an immigrant include discrimination, violence, political oppression and having to serve in the military in the home country.

Wars and changes in national borders have caused some of the largest immigration episodes in history. The end of World War II resulted in more than nine million people migrating across Japan, Korea and the former Manchuria as the Japanese army demobilized, ethnic Japanese moved back to Japan from other parts of Asia that the country had occupied, and foreigners were deported from Japan (Araragi, 2013). At the same time, millions of ethnic Germans moved from Soviet bloc countries to Germany and Austria (Gibney and Hansen, 2005). When India was partitioned upon becoming independent from Britain in 1947, more than seven million Muslims moved to Pakistan from India, and a similar number of Hindus and Sikhs moved to India from Pakistan (Zamindar, 2013).

Natural disasters and famines have also caused several major migration episodes. For example, one to two million Irish emigrated during the 1845–1852 famine, and at least another one million died (Ó Gráda and O'Rourke, 1997). More recently, emigration from Honduras tripled after Hurricane Mitch devastated that country in 1998 (Kugler and Yuksel, 2008). As sea levels rise in the coming decades because of global warming, millions of people are likely to leave low-lying countries around the globe. Other climate changes due to global warming, such as desertification and food shortages, are also likely to lead to substantial migration.

Attractive amenities may lure some immigrants to particular destinations. Amenities are location-specific, immobile factors, such as beautiful scenery, a pleasant climate and a good quality of living. The desire to be near mountains, the beach or good museums may attract some immigrants, particularly wealthy people or retirees who have more leisure time to enjoy such amenities.

Figure 2.1 summarizes the push and pull factors that influence immigration flows. These push and pull factors suggest different reasons for immigration for different groups of immigrants. Work-based immigrants and foreign students move primarily because of the push and pull of relative economic conditions in the origin and destination countries. Family-based immigrants are pulled to join relatives living abroad. Refugees are pushed by political and social conditions, typically war or conflict; other conditions, such as famine, may be a factor as well. Asylum seekers are pushed by political and social conditions as well, but economic factors may also play a role in their decision to migrate. The fraction of asylum seekers officially recognized as refugees and awarded asylum is low—typically less than 40 percent globally (UNHCR, 2013). The fraction of asylum seekers actually awarded asylum is so low because receiving countries often decide that asylum seekers are economic migrants, not people fleeing persecution.

The relative importance of push and pull factors in a given migration stream can change over time. For example, political upheaval or economic distress may prompt emigration from

Figure 2.1 Immigration push and pull factors.

a country to a particular destination. Once there, migrants may recruit their friends and families to join them. Employers may become accustomed to hiring a steady stream of readily available migrant workers. What started as push-driven migration thus transforms into pull-driven migration.

Whether a country is an origin or a destination country can change over time as well. Some countries undergo the "migration transition" of moving from experiencing sizable net outflows to simultaneously experiencing both inflows and outflows that roughly balance out to experiencing sizable net inflows. And some of those countries eventually experience net outflows once again. South Korea and Ireland are examples of countries that underwent the migration transition but then experienced net outflows during the late 1990s and late 2000s Asian and global financial crises, respectively.

Push and pull factors may affect whether immigration is permanent or temporary. Moves that were planned to be temporary may become permanent if push conditions in the origin country worsen or pull conditions in the destination country improve. Conversely, moves that were planned to be permanent may become temporary if push conditions in the origin country improve or pull conditions in the destination country worsen. Changes in immigration policy may also cause temporary stays to become permanent, or vice versa.

Push and pull factors affect legal and illegal, skilled and unskilled immigrants alike. Some factors may play bigger roles for one group than the other as a result of immigration policy. For example, if a country admits immigrants based primarily on family ties, the pull factor of family may matter a lot for legal immigrants. Meanwhile, the push and pull of relative economic conditions may matter more for illegal immigrants than for legal immigrants. In many countries, illegal immigrants enter mainly to work, while legal immigrants enter for a wider variety of reasons, including family ties. As a result, relative economic conditions may matter more for illegal immigrants than for legal immigrants. Regardless of their legal status, skilled and unskilled workers alike are affected by the push and pull of relative economic conditions.

The opposite of the push and pull factors listed in Figure 2.1 will cause some potential migrants to remain in their home country. Better economic, political, social and other conditions at home—or worse conditions elsewhere—will reduce migration. The opposite of the pull factors may also divert some migrants from a particular receiving country to a different country. For example, worse economic conditions in the United States may cause some people to migrate to, say, Canada instead. This may be preferable to remaining home and not migrating at all. Of course, countries do not deliberately seek undesirable conditions in order to discourage potential immigrants from coming there. Instead, they are likely to adopt restrictive immigration policies.

The role of immigration policy

Public policies play an important role in determining whether people become immigrants. Sending country governments may make it difficult for people to leave, such as by requiring an exit visa or charging a fee. Such policies allow sending countries to influence the number and characteristics of emigrants. For example, countries may refuse to issue exit visas to highly skilled workers or to political dissidents. Restrictions on emigration beyond requiring a passport are uncommon today, although a few countries still have them, most notably North Korea.

Restrictions on immigration—who can enter a country—are far more common. Virtually every country in the world imposes some limit on the number of immigrants and tries to influence the characteristics of immigrants. This is usually done by determining who can qualify for a visa that allows them to work or live, either temporarily or permanently, in a country. Some countries do not require that foreigners have a visa, particularly if they are only in the country on a temporary basis and are not working there. Such policies, called visa waiver programs, are usually limited to countries that have reciprocal arrangements and are not major sources of unauthorized immigrants. Visa waiver programs are usually aimed at tourist and business travelers and involve a time limit—often three or six months—and do not allow visitors to work in the country they are visiting.

Most of continental Europe has gone even farther and joined the so-called Schengen area. People who travel from one of the 26 member countries to another are not asked to present their passport or a visa when entering or exiting. The Schengen Borders Agreement even extends to people who are not citizens of the member countries. The agreement only allows people freedom of movement, not necessarily the right to live or work in any of the member countries.

In addition, some groups or pairs of countries have agreed to allow each others' citizens unrestricted access to their labor markets. Examples include the European Economic Area (the European Union plus Iceland, Norway and Liechtenstein); the Mercosur bloc in South America (Argentina, Brazil, Paraguay and Uruguay plus Bolivia and Chile); and Australia and New Zealand. Under the 1992 North American Free Trade Agreement (NAFTA), skilled professionals have relatively free movement across the Canadian, Mexican and U.S. labor markets.

The United States has a complex system of immigration quotas and admissions requirements that heavily favors potential immigrants who are closely related to a U.S. citizen or a permanent resident or who are highly skilled and have a U.S. job offer. Immigrants who do not fit into one of those categories typically find it very difficult to migrate legally to the United States. Some immigrants enter as refugees or asylum seekers, of course. A few enter under the unique diversity lottery program, which allocates up to 55,000 permanent resident visas per year to people from countries with historically low rates of immigration to the United States. For fiscal year 2014, more than 9.3 million people entered the diversity lottery, meaning that less than 1 percent ultimately won a visa (U.S. State Department, 2013).

The low success rate among diversity lottery entrants points to the excess demand among potential immigrants to the United States (and other developed countries). Far more people want to enter developed countries than those countries are willing to admit. In the United States, there are lengthy backlogs for some categories of numerically limited permanent resident visas. More people have been approved to receive those visas than are admitted under the annual quotas, so many people must wait years or even decades before they can receive a legal permanent resident visa. Some of those people live in the United States on a temporary visa while waiting for a permanent resident visa; others wait in their home country or another country. Most years, employers submit far more applications for numerically restricted categories of temporary foreign workers than the numbers of visas available. One consequence of this excess demand for visas is that some people enter illegally, while others enter legally on

a temporary visa but then illegally overstay their visa. The large number of asylum seekers in developed countries is another consequence of excess demand for visas.

Migration costs

Costs also play a role in determining the size and composition of immigrant flows. Migration costs usually include a passport fee charged by the origin country and a visa fee charged by the destination country. These costs are nontrivial. Table 2.2 lists passport fees in various countries and some common visa fees in the United States. Migrants also bear transportation costs, which may be substantial if traveling a long distance. Decreases in transportation costs are a major reason why immigration has become more common over time.

Undocumented migrants who enter a country illicitly avoid passport and visa fees. However, they often must pay a smuggler to help them enter a country. The United Nations Office on Drugs and Crime (2014) estimates that human smugglers operating between East, North, and West Africa and Europe and between South and North America earn more than $6.75 billion annually. The costs of using a smuggler typically far exceed passport and visa fees. Undocumented immigrants who enter a country illicitly are not trying to avoid paying passport and visa fees but rather cannot get a visa.

Table 2.2 Passport and visa fees

Passport fees around the world in local currencies			
Australia	A$208	Mexico	1795 pesos
Canada	C$87	New Zealand	NZ$150
China	200 yuan	Russia	2500 rubles
France	89 €	Singapore	S$80
Germany	59 €	South Africa	R190
India	1000Rs	South Korea	55,000 won
Indonesia	250,000 rupiah	Thailand	1000 baht
Ireland	80 €	Trinidad & Tobago	TT$250
Israel	NIS 220	United Kingdom	£77.50
Japan	16,000¥	United States	US$135

U.S. visa fees			
Nonimmigrant (temporary) visas:		*Immigrant (permanent) visas:*	
Visitor or student	$160	Diversity lottery	$330
Temporary worker	$190	Family-based	$650
Fiancé(e) or spouse of U.S. citizen	$240	Intercountry adoption	$720
Treaty trader/investor	$270	Employment-based	$985

Passport fees are for adult applicants as of 2011. U.S. visa fees include petition fees charged by the U.S. Department of Homeland Security for family- and employment-based immigrants and are as of November 2013.

Source: HM Passport Office (2011) "International passport comparisons." Available at: https://www.gov.uk/government/publications/international-passport-comparisons [15 November 2013]; U.S. Department of State (2013) "Fees for visa services." Available at: http://travel.state.gov/visa/temp/types/types_1263.html [17 November 2013]; and U.S. Department of Homeland Security (2013) "Forms." Available at: http://www.uscis.gov/forms [17 November 2013].

The costs of entering a country illicitly usually rise as that country increases border enforcement. As border enforcement increases, entering a country becomes more difficult, and immigrants entering illicitly are therefore more likely to need to hire a smuggler. This increase in demand for smugglers increases the price of hiring them. At the same time, increased border enforcement makes it more difficult for smugglers to enter the country. This increases smugglers' costs and therefore further increases their price.

Figure 2.2 shows a supply and demand framework for smuggling services. The quantity of smuggling services demanded falls as the price increases, creating a negatively sloped demand curve. Meanwhile, more people are willing to act as a smuggler as the price increases, creating a positively sloped supply curve. Increased border enforcement causes demand to increase and supply to decrease. The decrease in supply is due to higher costs. For example, smugglers are more likely to be apprehended and find it more difficult to smuggle people into a country as border enforcement increases. As the figure shows, increased border enforcement results in an unambiguous increase in the price of smuggling services. However, the net effect on quantity—the number of people who hire a smuggler—is ambiguous. The increase in demand causes quantity to increase, while the decrease in supply causes quantity to decrease. The net effect is uncertain. Other factors that might shift the supply or demand for smuggling services include changes in smugglers' other labor market opportunities and changes in visa availability.

Research indicates that smuggling prices along the U.S.–Mexico border increase by 3 to 6 percent when U.S. border enforcement, as measured by hours worked by the U.S. Border Patrol, increases by 10 percent (Roberts et al., 2010). Hiring such a smuggler—called a *coyote*—to help cross the Mexico–U.S. border cost about $2,500 in 2013.

High direct costs of migrating may lead to trafficking. Immigrants who are not able to bear the costs of migrating, either legally or illegally, may make a deal with an employer or a smuggler who promises to help them migrate in exchange for the immigrant working to pay off the debt. These arrangements, called "debt bondage," are akin to the indentured servitude agreements that enabled poor Europeans to immigrate to the United States in previous centuries. Just as some indentured servants were exploited and mistreated back then, so are some

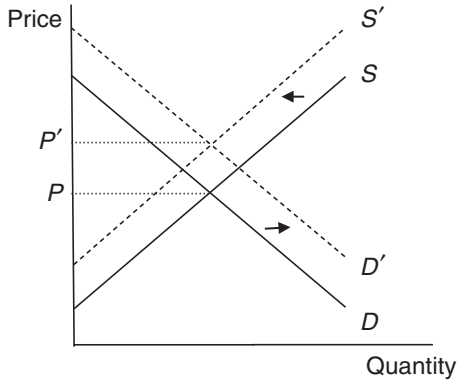

Figure 2.2 The market for smuggling services.

An increase in border enforcement increases the demand for smuggling services and decreases supply. This results in a higher price.

immigrants who enter into debt bondage contracts today. Away from home, unable to speak the local language and with few resources, immigrants who enter into debt bondage contracts are vulnerable to further abuse. They may be forced to work indefinitely as prostitutes, in factories and restaurants, or as household slaves. The higher the costs of migrating, the less likely it is that an immigrant can afford to pay those costs in advance, and therefore the more likely it is that an immigrant enters into a debt bondage contract.

There are other, indirect costs of migrating that many immigrants incur, not just those who are unauthorized or victims of human trafficking. Immigrants may experience psychic, or non-monetary, costs of missing family and friends and having to adjust to a new culture and a new language. They may have difficulty finding work, particularly initially. They may need to go back to school to acquire occupational certifications that are valid in the new country, such as the licenses required in the United States to sell real estate, to cut hair and to practice medicine or law. They may lose their eligibility for a pension program or their right to vote in their home country, and they may need to pay taxes in both the origin and the destination countries.

Some immigrants pay an extraordinarily high price for attempting to migrate: they die. Some unauthorized migrants, refugees and asylum seekers undertake perilous journeys that put them at risk of dying. Between 1990 and 2012, more than 2,200 migrants died in Arizona while trying to enter the United States from Mexico (Binational Migration Institute, 2013). Crossing the border on foot through Arizona involves a two- or three-day trek through a remote, mountainous desert where temperatures often reach 115° F (46° C) degrees or higher during the summer and drop below freezing during the winter.

As high as the death toll of attempting to enter the United States is, it appears to be even higher elsewhere. Since 2000, more than 1,400 migrants have died at sea while trying to reach Australia (Australian Border Deaths Database, 2014). The United Nations High Commissioner for Refugees (2012) declared the Mediterranean Sea the deadliest stretch of water in the world for migrants, with more than 1,500 people drowned or missing in 2011 alone while trying to cross from Africa to Europe.

Immigration paradigms

This book focuses on the neoclassical model of immigration. This model is rooted in individual utility maximization, although it can easily be extended to include the family, the household and the community. There are at least three other paradigms that people who study the economics of immigration should be familiar with: the new economics of migration, dual labor market theory and world-systems theory (Massey et al., 1993). Other disciplines, particularly sociology, often focus more on these paradigms than on the neoclassical model.

The new economics of migration paradigm focuses on immigration as a collective decision made not only to maximize income but also to minimize risks and loosen constraints that result from incomplete markets. Markets are incomplete when supply is not sufficient to meet demand in an economy (or vice versa). For example, families in agricultural areas may not be able to insure against crop losses. There is no market for crop insurance in some countries. They may therefore send a family member to work in an urban area or abroad in order to diversify their income and reduce risk. Financial markets are limited in many

developing countries, making it difficult for people to borrow enough money to buy land or start a business. Moving abroad to earn funds may be the best solution to incomplete financial markets.

Dual labor market theory posits that immigration is the result of industrial countries' need for a continual stream of low-skilled, low-wage labor (Piore, 1979). Labor markets in industrialized countries are divided, or segmented, into a primary sector of high-skilled, high-wage jobs and a secondary sector of low-skilled, low-wage jobs. Natives are reluctant to take low-skilled, low-wage jobs, but immigrants will, at least initially, because they have a different frame of reference than natives. Immigrants from poorer countries tend to perceive such jobs more positively than natives of rich countries do. In this theory, immigration is largely a response to firms' demand for workers, and firms may actively recruit workers abroad.

World-systems theory argues that, as capitalism spreads globally, it creates dislocations that lead to migration. For example, international trade may lead to lower prices for goods that are not a country's comparative advantage. Comparative advantage is when a country can produce a good at a lower opportunity cost than other countries. That is, a country with a comparative advantage in a good gives up the fewest resources to produce that good. If a country that opens up to international trade no longer produces a good because another country has a lower cost of producing that good, people who used to produce that good lose their jobs and may become immigrants.

The push and pull factors discussed above include facets of all of these paradigms, particularly the new economics of migration. The neoclassical model developed below can also be modified to include some facets of these paradigms. This book focuses on the neoclassical model because it is the main paradigm in economics.

The migration decision

One of the canonical assumptions of neoclassical economics is that people are utility maximizers. People act on the information they have to make decisions that make them as well off as possible—to maximize their utility—given the constraints they face. In most economic models of the decision to migrate, people's utility depends only on their income, net of migration costs, and income varies across locations. In more complex models, utility depends on multiple factors, such as family members' preferences, and can be uncertain. Formal models of migration were first created by Larry Sjaastad (1962) and others to understand internal migration and then later applied to international migration.

Individuals have a utility function represented by U. For simplicity, the model only compares utility across two locations, the origin and the destination. The destination can be thought of as the best of all possible destinations for a potential immigrant. Individuals thus compare their utility based on their income in the origin and in the destination, net of migration costs, and decide whether to remain in the origin or move to the destination. People move if

$$U(\text{Income in Destination} - \text{Migration Costs}) > U(\text{Income in Origin}) \tag{2.1}$$

and stay in the origin country if the inequality is reversed. People are indifferent about moving if the two sides of the equation are equal.

Box 2.1 Internal migration

Internal migration—the movement of people within national borders—far dwarfs international migration. Economics defines internal migration as moves that result in a change in a person's economic environment. Moving within the same city or region is not internal migration, while moving across a country usually is.

Globally, at least one in eight people are internal migrants, or people who live in their birth country but not in their birth region. Perhaps the largest migration episode in human history is the rural to urban migration movement that has been underway in China since 1978. About 250 million people have moved from rural areas with few economic opportunities to cities with plentiful factory jobs. However, the *hukuo* system acts as a barrier to internal migration in China. Under the *hukuo* system, households are registered to live in a certain region. People have less access to social services, including health care and education, if they live outside that region. Many migrants therefore have left their children behind in rural areas to be raised by grandparents or other relatives.

The United States has had two major long-term migration episodes. The first is the westward movement of the population as the United States acquired new territories in the late 1700s and 1800s. Transportation improvements, most notably the transcontinental railroad, facilitated this movement. The second is the movement of blacks from the South to the North during the 1900s in pursuit of better employment and educational opportunities. Smaller but notable internal migration episodes include movement to California, first by poor farmers during the 1930s Dust Bowl and then by skilled workers joining the state's burgeoning aerospace industry in the 1950s and 1960s, and then an exodus from California in the late 1990s and 2000s as the state's economy slowed relative to the rest of the United States.

Another major example of internal migration is from eastern to western Germany. From 1949 to 1990, East and West Germany were separate countries. East Germany was a socialist state that tried to limit out-migration to the more prosperous West Germany. In the first two years after the fall of the Berlin Wall and collapse of communism, more than 7 percent of the former East Germany's population moved to western Germany. The young and the high skilled were particularly likely to move (Hunt, 2006).

Economics views internal migration, like international migration, as motivated by differences in incomes and living standards. Migration costs are typically much lower for internal migration than for international migration, and there are usually fewer policy barriers to internal migration. Internal migration also often does not require learning a new language. It is therefore no surprise that internal migration is much more common than international migration.

Internal migration is quite common in the United States. About 1.5 to 3 percent of the U.S. population migrates internally each year, and slightly less than one-third of the U.S.-born population lives outside their state of birth. Internal migration in the United States declined by about one-half over the 1990s and 2000s. Greg Kaplan and Sam Schulhofer-Wohl (2012) conjecture that this decline is due in large part to two factors. The first is shrinking geographic differences in the returns to skills as occupations have become more evenly spread across the country. Cross-state differences in

earnings within occupations have fallen over time. This reduces workers' potential gains to moving if they plan to stay in the same occupation. The second factor is better information about job opportunities in other parts of the country as a result of the Internet and declining travel costs.

European countries tend to have lower mobility rates than the United States. Raven Molloy, Christopher Smith and Abigail Wozniak (2011) show that only Denmark and Hungary have higher within-country mobility rates than the United States, and only Demark and Finland have higher overall mobility rates (any move at all). Mobility between European countries appears to have been flat or increasing during the early 2000s, perhaps because of rising economic integration there.

Internal migration can be a stepping stone toward international migration or a substitute for it. When people migrate internally, they may develop networks that facilitate international migration. Alternatively, people who can improve their educational and employment opportunities by moving internally may not need to leave the origin country.

If utility increases linearly with income, the model can be simplified by just comparing income in the origin and in the destination, net of migration costs. In this case, if utility depends only on income in the origin and in the destination, people decide to move if

$$\textit{Income in Destination} - \textit{Migration Costs} > \textit{Income in Origin} \tag{2.2}$$

This simple income-maximization model predicts that increases in a person's income in the destination country will make migration more likely, holding constant income in the origin country and migration costs. Increases in migration costs will make it less likely a person migrates, holding constant income in both countries. Increases in a person's income in the origin country will make it less likely that person migrates, holding constant income in the destination country and migration costs.

The utility- or income-maximization model can be made more realistic in several ways. It can incorporate the fact that income depends on wages and probabilities of being employed. It also can incorporate differences in the costs of living in the origin and destination countries. The model can incorporate a time horizon to indicate that migration may occur only for a certain period, such as while someone is of working age. When a time horizon is added, future income is discounted to its present value. (The appendix to Chapter 1 explains present discounted value.)

In a more realistic model that includes these factors, people migrate if

$$\sum_{t=1}^{T} \frac{\widetilde{Wage}_t \times \widetilde{Prob\ Emp}_t - \widetilde{Cost\ Living}_t}{(1+\delta)^t} - \textit{Migration Costs} > \sum_{t=1}^{T} \frac{Wage_t \times Prob\ Emp_t - Cost\ Living_t}{(1+\delta)^t} \tag{2.3}$$

where the terms on the left-hand side (those with a ~ over them) indicate the destination country, the terms on the right-hand side indicate the origin country, and t represents time (usually measured in years). *Wage* is earnings among people who are employed, *Prob Emp* is the probability of being employed and *Cost Living* is the cost of living. The term δ is the discount rate, or the time value of money. The model assumes that migration costs are a one-time cost paid up front when a person migrates. Migration costs therefore are not discounted.

The time horizon of the model, T in equation 2.3, may vary across people. People may decide whether to migrate based on income and cost of living differences for the rest of their lives, their working lives or a shorter time horizon. People with shorter time horizons are less likely to migrate since there is less time to "earn back" the cost of migrating. This may be one reason why young people are more likely than older people to move. (Differences in risk preferences by age are another reason, as discussed later.)

Looking at the present discounted value of income in the origin and in the destination, net of migration costs, makes it clearer that immigration can be viewed as a form of investment. Much like students boost their future earnings by bearing the costs of attending college, immigrants boost their future income by bearing the costs of migrating. Immigrants may even earn less initially after they move than if they had stayed home, but their lifetime income is higher. The model predicts that they won't move otherwise.

Like the simple model, this more complex model predicts that people will be more likely to migrate as the wage in the destination country increases and less likely to migrate as the wage in the origin country increases. People are also more likely to migrate as the probability of finding a job in the destination country increases and less likely to migrate as the probability of finding a job in the origin country increases. An increase in the discount rate reduces the time value of money and makes future income less important in the migration decision. If income increases over time at a different rate in the destination country than in the origin country, for example, this will have a bigger effect on the migration decision for a person with a low discount rate than for a person with a high discount rate.

In the model, an increase in migration costs makes it less likely a person migrates. Migration costs include direct costs, like transportation, as well as indirect costs, like missing family and friends. Migration costs tend to increase with the distance between the origin and the destination. Economists often use distance as a proxy for migration costs since it is fairly easy to measure. In addition, the cultural and linguistic differences between countries may increase as distance increases, causing the psychic costs to be higher. More restrictive immigration policy increases migration costs but can be harder to quantify. Having a larger network of family and friends in the destination is likely to reduce migration costs. Networks pass along information about how to migrate and about opportunities abroad. Speaking the destination country language may also lower migration costs by making it easier to enter a country.

Some of the factors that affect migration costs also affect income in the destination. Having a larger network makes it easier to find a job and housing in the destination. Larger networks also may lead to a better-paying job in the destination. Immigrants who speak the destination country language have more and better opportunities there. More restrictive immigration policy may boost immigrants' incomes by keeping the supply of immigrant workers in the destination country labor market low. This creates a paradox—restrictive immigration policies that raise incomes in the destination country make immigration more attractive while they simultaneously make it more difficult to migrate legally. Illegal immigration is often the

result. However, unauthorized immigrants tend to earn less than legal immigrants, making it less desirable to migrate illegally than legally.

This model can explain not only why people move but also why some people move again. Some people become return migrants by moving back to their home country. Changes in conditions in the origin country relative to the destination country, such as a relative increase in wages or the probability of employment in the home country, may cause a person to return migrate, for example. Some other people become repeat migrants by moving on to yet another destination country. Conditions in that new destination may have improved relative to the place where the migrant currently is, making it more desirable to be in the new destination than in the current destination.

This model of the migration decision can be adapted to include some of the other push and pull factors discussed earlier, but not all of them. The model in equation 2.3 focuses on labor market outcomes and the cost of living. The model can easily be modified to incorporate taxes and government transfers, like social insurance and public assistance programs, that affect incomes. It implicitly includes economic growth, which affects future wages and employment probabilities. If economic growth is stronger in the destination country than in the origin country, future income is likely to increase faster in the former than in the latter. Schooling and health care also may affect future wages and employment probabilities. For example, migrating may enable someone to obtain more education, which boosts earnings in the destination country. (Obtaining education abroad may also boost earnings in the origin country, but education usually is the most valuable in the country in which is it obtained.)

The model can also incorporate political and social factors that affect earnings, such as discrimination, insofar as such factors affect earnings or the cost of living. Crime and corruption, for example, might raise the cost of living in a country. The model does not easily include factors that do not affect earnings or the cost of living, such as religious freedom.

This model applies well to economic migrants, people who migrate to work or study. It can be stretched to apply to migrants who move to join family or friends. Such migrants may have lower migration costs because family or friends who have already migrated may be able to pay those costs. Having family or friends in the destination country may also boost the probability of finding a job or reduce the cost of living there. The model does not apply well to refugees, asylum seekers and other involuntary migrants, nor to migrants moving because of a natural disaster or famine. Such migrants move in part for economic reasons, such as the inability to earn a living, but primarily because of other factors not captured by the model.

The model does a particularly poor job of explaining migration because of better amenities in the destination country than in the origin country. Areas with more amenities are likely to have a higher cost of living since more people want to live there. A model like equation 2.3 therefore predicts that people are less likely to migrate to areas with amenities that are reflected in a higher cost of living. However, access to amenities increases people's utility, so a more general model of utility that is not exclusively focused on income may explain why people move to areas with better amenities.

Family decision-making

The migration decision may be made by an individual or by a family. A family may want to remain together—everyone moves or everyone stays. Alternatively, a family may decide that

one member will migrate in order to boost total family income. If a family decides to remain together, it chooses whether to migrate based on what makes the family as a whole best off. But that decision may not make each individual within the family better off. For example, a wife may earn more if a family moves, but her husband may earn less. The family moves if the wife's gains are greater than the husband's losses, net of migration costs. In this case, the husband is a "tied mover," or someone who moves because of his ties to another migrant. If the family stays because the wife's gains are smaller than the husband's losses, the wife would be a "tied stayer."

Figure 2.3 illustrates the joint decision. The horizontal axis shows the wife's private gains from migration, which is the present value of the change in her income less her migration costs (ΔPV_W). If she were single, she would move if those gains were positive. This occurs in region C, D or E in the figure. The vertical axis shows the husband's private gains from migration (ΔPV_H). If he were single, he would move if his gain were positive, which occurs in region A, B or C in the figure. The couple benefits from moving if the sum of their net gains is positive.[1] The 45° line in the figure shows the sum of their net gains. To the right of this line, the sum is positive; to the left of this line, the sum is negative. The couple therefore jointly benefits from moving if they are in region B, C or D.

Another possibility is that one or more members of a family migrate while others stay behind. Those with the biggest gains from migration are the most likely to migrate, of course. For families, having some but not all members migrate may be a way to reduce risk. Immigration or internal migration is a way for a family to diversify its sources of income. Rural families can reduce the likelihood that a bad harvest will devastate the family if a family member works in a factory in a city, for example.

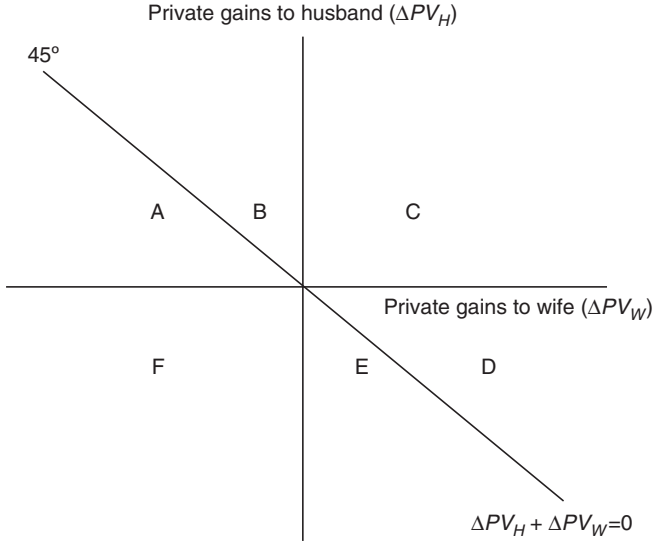

Figure 2.3 Immigration under joint decision-making.

The husband gains from moving in regions A, B and C. The wife gains from moving in regions C, D and E. The couple jointly gains from moving in regions B, C and D.

Family members who migrate can send back remittances to those who stay behind. Remittances are money sent by immigrants to people back in the origin country. Those who migrate first also may pave the way for the rest of the family to migrate later. Remittances sent back by immigrants may fund migration by other family members, and immigrants may be able to sponsor their relatives for visas. In many cases, there is an expectation that an immigrant will send remittances home to replace the income that person contributed to the family when he was working in the origin country.

Uncertainty

Although migration can be a way for families to reduce risk, moving is often a risky activity. The model in equation 2.3 already includes the risk of not finding a job. It can be adapted further to include uncertainty by using the expected values of income and migration costs. Equation 2.3 can also incorporate a measure of the variation in those values to account for the disutility of uncertainty—most people dislike not knowing what their income will be, and they dislike fluctuations in their income.

Income may be more uncertain in the destination country than in the origin country since immigrants are likely to have less knowledge about their prospects abroad than at home. Income also may be more variable abroad than at home since immigrants may have fewer family and friends to rely on for help in bad times. On the other hand, the destination country may have a more generous social insurance and public assistance system, reducing uncertainty and fluctuations in income.

The model can also include a measure of potential immigrants' tolerance for risk or their risk aversion. Some potential immigrants may be quite willing to bear risk, while others may not. The model can incorporate utility functions that allow for varying degrees of risk aversion. If income is more uncertain in the destination country than in the origin country, people with less tolerance for risk will be less likely to migrate for a given difference in expected income. Risk aversion may depend on factors such as age, with older people more risk averse; on sex, with women more risk averse; and on the number of family and friends in the destination country, with people with smaller networks more risk averse.

Do potential immigrants have accurate expectations about their incomes if they move? Previous immigrants are one of the main sources of information about incomes abroad.[2] Previous immigrants may exaggerate their success, creating over-optimistic expectations about incomes abroad. Alternatively, previous immigrants may downplay their incomes abroad in order to reduce expectations about how much money they can send to family and friends. Relatives who live abroad are likely to be a source of information about income, but do potential migrants with relatives abroad have better estimates of their incomes if they move than potential migrants without relatives abroad?

To examine these questions, David McKenzie, John Gibson and Steven Stillman (2013) surveyed Tongans who applied for visas to move to New Zealand about what they expected to earn if they moved. The economists compared potential migrants' expectations to their actual earnings if they moved. They find that men underestimated their likely earnings in New Zealand by almost two-thirds prior to moving; women estimated their likely earnings quite accurately. In recent years, Tongan men experienced much larger earnings gains than women

when they moved to New Zealand, a fact that potential migrants did not seem to know. In addition, men who had non-immediate relatives living in New Zealand tended to underestimate their earnings more than men with no relatives living in New Zealand or with close relatives living there. This suggests that immigrants understate or do not report their earnings to their extended family back in Tonga.

The role of immigration policy

The model does not directly incorporate immigration policy in either the destination country or the origin country. It assumes that people can move if they want to, and it says nothing about whether migration is legal or illegal. It can apply to legal and illegal, skilled and unskilled immigrants alike. The model can easily incorporate immigration policies that are based on quantifiable factors, such as policies in destination countries that allow only people with incomes or education above a certain level to move there. This can be done by making the ability to migrate subject to meeting such conditions.

However, the model cannot easily incorporate immigration quotas, which limit the number of immigrants allowed to legally enter a country. This is because the model is at the individual level, not at the aggregate level—it says nothing about the number or share of people who want to move, only whether an individual wants to move. One way to incorporate restrictive policies like quotas is via migration costs, which can be modeled to increase as immigration policies become more restrictive. The gravity model, explained next, can better incorporate immigration quotas.

The gravity model of migration

The utility- or income-maximization model discussed above is a microeconomic model. It models whether a person benefits from migrating. Economists are interested not only in whether a certain person becomes an immigrant but also in how many people in total or what proportion of a country's population become immigrants. The gravity model is frequently used to model migration at the macroeconomic level. The model is implicitly rooted in utility or income maximization—it assumes that people base their decision to migrate on whether migration makes them better off.

The gravity model is based on Isaac Newton's law of gravity, which states that the attraction between two bodies is directly proportional to the product of their masses and inversely proportional to the distance between them. George Zipf applied this idea to migration in 1946.[3] In the gravity model, the volume of migration between two countries is equal to a constant times the product of those countries' population, and inversely proportional to the distance between them, or

$$Migration\ from Origin\ to\ Destination = c \times \frac{Population\ of\ Origin \times Population\ of\ Destination}{Distance\ between\ Origin\ and\ Destination} \quad (2.4)$$

where c is a constant for a given origin and destination pair. Intuitively, the bigger the population in each of the countries, the bigger the number of people who benefit from migrating.

Further, the effect is multiplicative, not additive. The bigger the population of the other country, the more opportunities there are there, which increases the number of people who benefit from moving. In addition, the bigger the distance between two countries, the higher migration costs are. Fewer people will therefore benefit from migrating.

Migration between two countries is also likely to depend on relative income in those countries. Migrants are expected to flow from countries with relatively low incomes to countries with relatively high incomes. The gravity model of migration flows from the origin to the destination is better written as

$$Migration = c \times \frac{Population\ of\ Origin \times Population\ of\ Destination}{Distance\ between\ Origin\ and\ Destination} \times \frac{Income\ in\ Destination}{Income\ in\ Origin} \quad (2.5)$$

When the model is applied to data, GDP per capita is often used as a proxy for income.

Applications of the gravity model also often include other variables that proxy for migration costs or the benefits of migrating. For example, the benefits might be higher (and the costs lower) if more people have already migrated from the origin to the destination. The benefits are likely to be smaller the higher the cost of living in the destination relative to the origin. The benefits are likely to be bigger if people in the two countries speak the same language. Migration costs are likely to be lower if two countries have historical ties, such as one being a colony of the other, and if two countries are contiguous.

Applications of the gravity model may also include variables that measure the restrictiveness of immigration policy. For example, immigration quotas are expected to reduce immigration flows, while liberal immigration policies, like belonging to the Schengen Borders Agreement or the European Economic Area, are expected to increase immigration flows.

Like the utility- or income-maximization model, the gravity model applies best to economic migrants. It has limited applicability to family-based migrants, although a bigger population in either the origin or the destination may increase the number of family members who have already migrated. It also has limited applicability to refugees and asylum seekers.

The gravity model applies to both temporary and permanent migration. Most data on migration flows or immigrant stocks do not distinguish between temporary and permanent migrants, making a model that applies to both useful. It also applies to both legal and illegal immigration and to skilled and unskilled immigrants. Data on flows and stocks often do not distinguish between legal and illegal immigrants, while data on stocks and flows by education level are increasingly available.

Empirical evidence

Economists use the utility- or income-maximization model to estimate the determinants of migration when using individual-level data and the gravity model when using aggregate data. More data on migration are available at the macro level than at the micro level, so the gravity model is more commonly applied to data than the utility- or income-maximization model. Traditionally, most studies used data on immigration only to one country, but large datasets on bilateral migration flows—flows between pairs of countries—have been created in recent years. Some of the results of studies using those data are consistent with theoretical predictions while others are not.

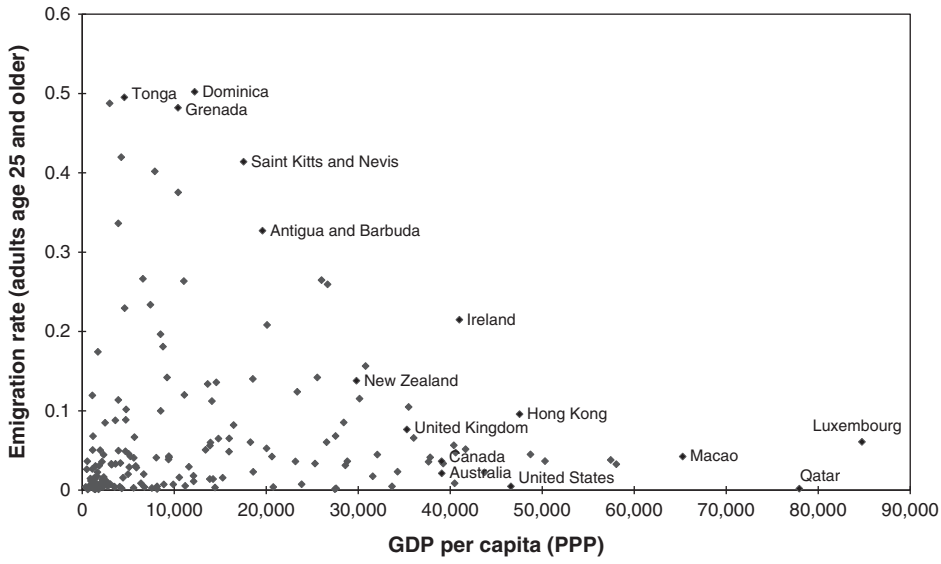

Figure 2.4 Emigration rate and source country GDP, 2010.

Source: Emigration rate from Brücker, H., Capuano, S. and Marfoulk, A. (2013) "Education, gender and international migration: Insights from a panel-dataset 1980–2010." Available at: http://www.iab.de/en/daten/iab-brain-drain-data.aspx [12 December 2013]; GDP per capita (PPP) data from World Bank (2013) "GDP per capita, PPP." Available at: http://data.worldbank.org/indicator/NY.GDP.PCAP.PP.CD [17 December 2013].

The role of economic conditions

The utility- or income-maximization and gravity models predict that as income in a country increases, emigration from that country should decrease and immigration to that country should increase, all else equal. Figure 2.4 gives an initial look at the relationship between emigration and income in the origin country, a push factor. (Chapter 3 looks at the role of income and other pull factors in where immigrants go.) The emigration rate is based on the number of adult immigrants aged 25 and older in 20 Organization for Economic Cooperation and Development (OECD) countries in 2010. GDP per capita, converted into U.S. dollars using purchasing power parity (PPP) rates, in 2010 serves as a measure of income. The figure shows a sizable cluster of countries with low incomes and low emigration rates. Several notable countries are indicated by name, but each diamond in the figure indicates a country.

Unlike the negative prediction of the model, there is no clear pattern in the figure—higher incomes in the origin country neither discourage nor encourage emigration. Other studies likewise fail to find a significant relationship between emigration and origin country GDP per capita (e.g., Mayda, 2010).[4] Some studies even find a positive relationship, perhaps because higher incomes or stronger economic growth in the origin enable people to cover the costs of migrating (e.g., Greenwood et al., 1999). (As discussed in Chapter 3, research does typically find a positive relationship between immigration and destination country GDP per capita.)

The lack of a negative relationship in the figure does not necessarily mean that income in the origin country does not affect whether people move. The data only include immigrants to

20 countries, almost all of them high income. Data that include all destinations might show a different pattern. In addition, the figure compares the stock, or the accumulated number, of emigrants as a fraction of the origin country population with GDP in the origin country at a point in time. The gravity model is about flows of migrants, not stocks. Current income in the origin may not be closely related to what income was in the origin when emigrants left, and emigration may have affected average incomes in the origin. However, research by Anna Maria Mayda (2010) finds a similar null result using annual data on flows (although still using only a sample of OECD destination countries).

Mayda (2010) finds that the relationship between origin country income and emigration becomes negative—as predicted by theory—when destination country immigration policies become less restrictive. Restrictive immigration policies may dampen the effect of push (and pull) factors by preventing some people from migrating. People who would like to move from low-income to high-income countries may not be able to do so (at least legally) because of restrictive immigration policies.

Some indirect evidence suggests that income in the origin country does affect whether people migrate. Research shows that birth rates and rainfall—variables that are related to income—in Mexico affect whether people migrate from there to the United States. The size of birth cohorts in Mexico is positively related to the Mexico–U.S. emigration rate (Hanson and McIntosh, 2010). A bigger birth cohort means a bigger increase in labor supply when a cohort reaches working age. The increase in labor supply reduces wages, all else equal. Population growth in Mexico can account for two-fifths of emigration from there to the United States between 1977 and 1997. Population growth has slowed dramatically in Mexico over the last few decades. If this theory is correct (and if nothing else changes), that portends a drop in Mexico–U.S. migration in the future. The level of rainfall is important to agricultural communities in Mexico—too little rainfall can mean crop failures and lower incomes in rural areas. Low rainfall is associated with more emigration from rural areas (Munshi, 2003).

Research suggests that emigration flows respond more to long-run trends in income than to short-run fluctuations in income (Simpson and Sparber, 2013). For most people, whether to migrate is a major decision made in response to long-standing circumstances, not a response to temporary shocks. Migration tends to respond slowly over time to changes in economic, political and social factors, not quickly. Refugee movements can be an exception, however. They often occur quickly in response to abrupt, major changes in political and social conditions.

The availability of social insurance programs appears to affect whether people migrate. Research finds that immigration to the United States is lower from countries that have public health insurance and unemployment insurance programs (Greenwood et al., 1999). Immigration to the United States is higher from countries that require employers to make severance payments when they dismiss workers, perhaps because such funds enable people to move. Employment-related funding of old-age and sickness programs in the origin increases immigration to the United States, presumably because such funding raises the tax burden on workers. Taxes also matter, at least for football stars (see Box 2.2, "Football players and tax rates").

The role of migration costs

The models also predict that as migration costs increase, emigration should decrease. Researchers typically use the distance between countries, whether countries share a common language

Box 2.2 Football players and tax rates

The utility- or income-maximization model and the gravity model predict that high tax rates in a country should encourage emigration and discourage immigration, all else equal. Research shows that this is the case for a group of highly compensated workers: European football players. Top football (soccer in the United States) players earn millions of dollars a year, giving them a potential reason to move in response to tax rates. Their mobility was limited until 1995, however, because the European Football Association required that teams could not field more than three foreign players in any club competition. Most national competitions had a similar rule. As a result, clubs had few foreign players. The European Court of Justice ruled against the three-player rule in late 1995, paving the way for football players to move across countries.

Henrik Kleven, Camille Landais and Emmanuel Saez (2013) use data on the rosters of football clubs in 14 European countries from 1985 to 2008 to examine how top marginal tax rates on labor income are related to the immigrant shares of clubs before and after 1995. Before 1995, immigrant shares were unrelated to tax rates. After 1995, however, clubs in countries with higher tax rates had lower immigrant shares. Moreover, native-born players were more likely to be playing in another country the higher the tax rate in their origin country. Higher tax rates thus encouraged emigration and discouraged immigration by football players. Interestingly, clubs in countries with higher tax rates earned fewer points in European Football Association competitions after 1995. Countries with higher tax rates were less able to attract or retain good players, and so they lost more matches.

and whether countries have a colonial history as proxies for migration costs. Studies typically find the distance between two countries is negatively related to the scale of migration between them, while having a common language is positively related to the scale of migration between two countries. Studies typically find that having a colonial relationship is positively related to the scale of migration between two countries.

Although the models treat migration costs and income in the origin as separate variables, they may jointly affect whether people emigrate. Timothy Hatton and Jeffrey Williamson (2005) observe that there is an inverse U-shaped relationship between economic development in a country and emigration. They show that increases in income in middle- or high-income countries, like those in much of East Asia, South America and Western Europe, appear to reduce emigration rates to the United States. Increases in income in low-income countries, like those in much of Africa, appear to boost emigration rates to the United States, in contrast.

Hatton and Williamson offer two potential, non-mutually-exclusive explanations for this pattern. First, at low levels of average income in the origin, few people may be able to finance an international move. As average income rises, more people can afford to move. But when average income becomes high, the gains from moving are smaller. Second, the structural and demographic changes that often cause or accompany rising incomes—such as moving from an agricultural to an industrial economy, opening up to more international trade and declining childhood mortality—may generate more migration in early stages than later on.

Another example of the joint effects of migration costs and income is the effect of women's rights in the origin country on emigration. At low levels of women's rights, women may face prohibitively high costs of migration. For example, they may be required to have their husband's or, if single, a male relative's permission to leave the country. Women also have limited earnings opportunities in countries with low levels of women's rights. As women's rights increase, women may be more able to leave. But their labor market opportunities likely improve as well, which reduces their incentive to emigrate. Research shows an inverse U-shaped pattern between women's rights and the emigration rate of highly-educated women relative to highly-educated men (Nejad, 2013). Saudi Arabia is on the left-hand side of the inverse U, with increases in women's rights predicted to increase emigration by women relative to men there, while Costa Rica, Greece, Malaysia and Turkey are all on the right-hand side of the U, with increases in women's rights predicted to decrease emigration by women relative to men.

The role of migrant networks

The existence and size of migrant networks also influence whether people become immigrants. Networks typically lower the costs of migrating while raising the benefits. Based on surveys conducted in rural Mexican communities between 1987 and 1992, Douglas Massey and Kristin Espinosa (1997) show that the odds of the average young adult male becoming an undocumented U.S. immigrant were about 4 percent each year. If a man's parent has migrated, the odds that he himself will migrate increase by more than one-half; if he has two siblings who have migrated, the odds more than double. The higher the fraction of people in his hometown who have migrated to the United States, the more likely he is to migrate. More generally, the higher the share of a country's population already living in the United States, the higher that country's emigration rate to the United States. Research shows that the annual flow of immigrants increases by 4.7 people if the stock of immigrants from that country increases by one thousand people, although the effect dies out as the migrant stock gets bigger (Clark, Hatton and Williamson, 2007).

Empirical evidence on refugees

A study by Susanne Schmeidl (1997) of refugees between 1971 and 1990 shows that the number of refugees depends primarily on political, not economic, conditions. Specifically, the number of refugees fleeing a country is bigger when a country is experiencing genocide or a civil war, especially a civil war that involves foreign intervention. The number of refugees is not directly related to economic conditions, as proxied by energy consumption per capita and population density. However, the effect of genocide or a civil war on the number of refugees appears to be larger in poorer countries than in richer countries. People in more developed or more population-dense countries appear to be more likely to remain in their country during genocide or a civil war. Conventional economic models like those presented here thus have limited applicability to refugees.

Research indicates that the number of asylum seekers likewise depends on political conditions. The number of asylum applicants from a source country is higher when a country is

experiencing conflict, political oppression or human rights abuses (Neumayer, 2005; Hatton, 2009). However, economic conditions in the origin country appear to matter as well. This suggests that at least some asylum seekers are economic, not humanitarian, migrants.

The role of immigration policy

Immigration policy in receiving countries plays an important role in determining the number of people who become immigrants. For example, the 1986 Immigration Reform and Control Act, which gave legal status to 2.7 million unauthorized U.S. immigrants, led to substantial increases in the number of legal and illegal immigrants from Mexico entering the United States to reunite with family members who had acquired legal status (Orrenius and Zavodny, 2003, 2012). The yearly probability of undocumented migration to the United States rose from 4 percent to 35 percent for young Mexican men who lived in a household where someone received amnesty under a 1986 U.S. legalization program (Massey and Espinosa, 1997).

Immigration policy also determines where people go. The next chapter turns from looking at why people become immigrants and where they are from to where they go when they become immigrants.

Problems and discussion questions

1 Explain which push and pull factors apply to the following groups of immigrants: economic migrants; foreign students; family members; refugees and asylum seekers; and victims of human trafficking.
2 Using exchange rates, such as those available from the World Bank, convert the passport visas for various countries in Table 2.2 into a common currency. Which country has the highest fee, and which has the lowest? What factors do you think determine how much a country charges for a passport?
3 Why would a country waive visa requirements for immigrants from some countries but not from others?
4 Explain in what region(s) in Figure 2.3 the husband or wife is a tied stayer or a tied mover.
5 Suppose a person has a utility function that increases linearly with net income. Suppose the person can earn the equivalent of $8,000 if employed in the origin country and $12,000 if employed in the destination country. At what level of migration costs is this person indifferent to moving if the probability of employment is 100 percent in both countries? If migration costs $1,000, and the person has a 90 percent chance of being employed in the origin, how high does the probability of employment in the destination need to be for this person to be willing to move?
6 Describe the differences between a person with a low discount rate and a person with a high discount rate. How does the discount rate affect the decision to migrate? Do you think you have a high or low discount rate, and why? Similarly, how does risk aversion affect the decision to migrate?
7 Describe the determinants of an interesting migrant flow. Which push and pull factors influenced that flow?

8 A couple is considering moving to Tokyo from New York. Ashley's cost of moving is $300, and Casey's cost of moving is $600. Ashley earns $500 in New York and $550 in Tokyo (after converting earnings from yen into dollars). Casey earns $200 in New York and $1000 in Tokyo. Will they move as a couple? Is one of them a tied mover or a tied stayer?

9 Using the supply and demand model of smuggling services, explain how an increase in the number of visas affects the quantity and price of smuggling services.

10 Think about a friend's or relative's migration experience. Describe where that person came from, and when, how and why that person migrated. Consider the following questions: Was that person a voluntary or involuntary migrant? Did networks help that person migrate, and how? What push factors may have contributed to her decision to migrate?

Notes

1 The model assumes that the net gains can simply be added, or there are no spillovers from one spouse to the other as a result of where they live and there are no savings in migration costs when both spouses move.

2 The mass media can be another source of information. Research shows that, in Indonesia, access to cable television reduces internal migration by giving people more information about labor markets in potential destinations. See Farŕe and Fasani (2013).

3 Zipf analyzed internal migration, but the model applies to international migration as well. The gravity model has also been used to model bilateral trade patterns, or imports and exports between pairs of countries.

4 A notable exception that does find a negative relationship between outflows and origin country GDP per capita is Pedersen, Pylikova and Smith (2008). Results in studies that use the ratio of origin to destination GDP per capita, adjusted for PPP, are mixed. One study that finds no significant effect is Grogger and Hanson (2011). Studies that find significant negative effects include Hatton and Williamson (2005) and Clark, Hatton and Williamson (2007).

Internet resources

Herbert Brücker, Stella Capuano and Abdeslam Marfouk have made data on immigrants in 20 OECD destination countries by year, gender, country of origin and education level available at the Institute for Employment Research's website (IAB): http://www.iab.de/en/daten/iab-brain-drain-data.aspx.

The OECD's International Migration Database has data on stocks and flows of immigrants for OECD countries by nationality and country of birth: http://stats.oecd.org/Index.aspx?DataSetCode=MIG.

Suggestions for further reading

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