CHAPTER 24

Immigration in Europe: Trends, Policies, and Empirical Evidence

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1. INTRODUCTION: DEFINING FEATURES OF IMMIGRATION IN EUROPE

Immigration is a prominent economic and political issue in Europe as well as in most of the developed world. In 2013, about 3.2% of the world's population (or 232 million people) lived outside their country of birth. With this figure projected to reach 5% within one generation (World Bank, 2011), international migration is bound to become ever more salient over the next few decades.

The European continent has been shaped by a long history of internal migration flows. Such flows often occurred in response to the constant shifts of economic and geopolitical power between Europe's constituent nation states. In the aftermath of World War II (WWII), for example, Germany received several million refugees from regions formerly part of Nazi Germany, while large numbers of Finns and Poles had to relocate to the Western parts of their countries. Large-scale immigration into Europe from the rest of the world, however, is a more recent phenomenon. Starting in the early 1950s, many European colonial powers (in particular the UK and France, but also Belgium, the Netherlands, and Portugal) lost their colonies abroad, triggering large population movements toward the mother countries from such diverse regions of the world as Africa, the Caribbean, and South Asia. Countries with no colonies, particularly in Northern and Central Europe, often addressed their severe postwar labor shortages by signing guest-worker agreements. The ensuing immigrant inflows played an important role in the economic expansion in Europe after WWII, and turned many ethnically homogeneous countries into multi-ethnic societies. By the 1980s, former "temporary" guest workers had turned into permanent residents, and facilitated further entries from their countries of origin through family reunification. At the beginning of the 1990s, the fall of the Iron Curtain triggered a large flow of workers from Central and Eastern Europe to Western Europe. At the same time, Southern European countries, such as Italy, Greece, Spain, and Portugal, started to become net immigration countries, attracting workers from Latin America and the North of Africa.[1] More recently, the 2004 and 2007 Eastern enlargement of the EU gave rise to large migration flows from the incoming EU countries toward the rest of the Union. Many Poles moved to Ireland and the UK, while Bulgarians and Romanians settled primarily in Italy and Spain. With the onset of the Great Recession, immigration flows into many European countries have slowed down significantly or even come to a halt.

These migration experiences have raised two fundamental economic questions in all immigrant-receiving countries. First, what has been the economic performance of immigrants in their host countries and in how far have the latter been successful in providing the necessary instruments to ensure the economic assimilation of immigrants and their

[1] Another important example is Ireland, which had for a long time been a net emigration country but during the 2000s experienced large immigration flows originating mainly in Eastern Europe.

children? Second, what have been the economic consequences of immigration for the native populations in the host societies? The main goal of this chapter is to review the corresponding evidence that is emerging from a large host of studies across several European countries. The diversity of the European experiences, both in terms of the migrants' countries of origin and the policies adopted to manage their flows and foster their integration, make studying the European context particularly insightful.

Due to space constraints, we focus in this chapter on a subset of six large immigrant-receiving countries: France, Germany, Italy, Spain, Sweden, and the UK. According to the most recent UN estimates, these six countries together hosted more than 38 million international migrants in 2013, around 71% of all international migrants residing in Europe (United Nations, 2013). They are also representative along a number of important dimensions. Geographically, they represent the North (Sweden), the Center (France, Germany, the UK), and the South (Italy, Spain) of Europe. In the time dimension, they can be classified into traditional immigration countries (France, Germany, Sweden, the UK) and more recent immigration countries (Italy, Spain). In terms of the immigrant source countries, they represent countries whose migrant stocks were primarily shaped by their colonial history (France, UK, partly Italy and Spain), and countries whose migration flows were primarily driven by labor recruitment policies (Germany, partly Sweden). And finally, they are countries that are particularly relevant to understand the policy options regarding specific immigration issues, such as asylum seekers (Sweden), and border control and amnesty programs (Spain, Italy). One can think of the immigration policy challenges faced by the other European countries not included in our list as largely a combination of these issues.

The chapter is structured as follows. The next section presents the main migration trends, both regarding migration into Europe from the rest of the world and migration flows within Europe. Section 3 summarizes the key migration policies in place to regulate different aspects of immigration, both on the European level and the level of individual countries. Section 4 is devoted to review the European literature on immigrant outcomes, with an emphasis on research conducted over the last decade. Section 5 reviews the literature on the economic effects of immigration for the host economies, focusing on the labor market and the welfare state. We conclude the chapter with a summary of the main findings and suggestions for future research.

2. HISTORICAL MIGRATION TRENDS

2.1 Migration into Europe

Until the middle of the twentieth century, Europe was characterized by substantial emigration to the rest of the world. Between 1815 and 1930, around 50 million Europeans left their home countries and headed for the US, Canada, Australia, Brazil, and Argentina

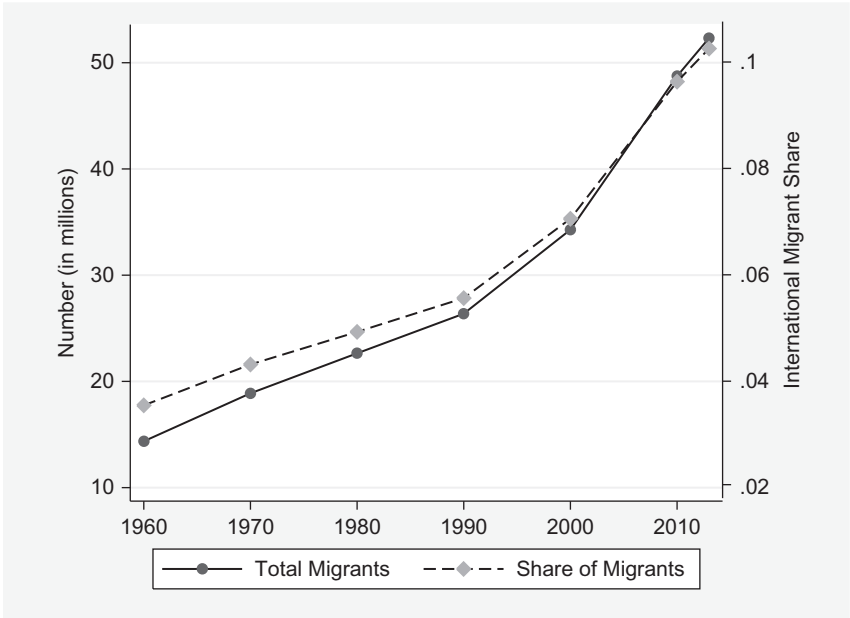

Figure 24.1 ***Immigration in Europe.*** This figure shows the total stock of international migrants living in either one of the 27 EU member states (excluding Slovenia, Estonia, Latvia, and Lithuania) or any non-EU member state belonging to the Schengen Area (Iceland, Liechtenstein, Norway, Switzerland). The share of migrants is calculated as the total stock divided by the total population in the set of countries considered. Source: *United Nations (2009) for 1960–80, and United Nations (2013) for 1990–2013.*

(Ferenczi and Wilcox, 1929).[2] Gross emigration rates per decade of more than 5% were a common phenomenon across European countries—a magnitude far exceeding more recent migration outflows.[3]

However, after the end of World War II, Europe gradually shifted from being a major source of emigration to becoming a major destination for immigrants, as illustrated in Figure 24.1.[4] In 1960, the number of international migrants living in Europe was around 14.4 million or 3.5% of the total population. In the subsequent decades, there was a steady increase in the number of migrants, which accelerated from the early

[2] Prior to World War I, there were also substantial migration flows from Eastern Europe, mainly toward Germany and France.

[3] For a thorough review of the mass migrations between Europe and the New World between 1850 and 1914, see Hatton and Williamson (1998).

[4] Throughout this chapter, unless otherwise indicated, Europe refers to the current 27 EU member states plus the four non-EU member states of the Schengen Area. The 27 EU member states are Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, and the UK. The four non-EU member states of the Schengen Area are Iceland, Liechtenstein, Norway, and Switzerland.

1990s onwards, reaching 52.3 million or 10.3% of the total population in 2013. This shift did not happen simultaneously in all European countries and was, at least in the first decades after WWII, primarily driven by changes in individual countries' immigration policies. In many instances, these policy changes were either linked to the process of decolonization or to active labor recruitment. On the one hand, former colonial powers such as France and the UK regulated—and often greatly facilitated—the arrival of immigrants from their former colonies after independence.[5] On the other hand, Northern European countries such as Belgium, Germany, the Netherlands, Switzerland, and to some extent also Sweden, actively recruited migrants in response to the significant labor shortages during their postwar economic recoveries, drawing predominantly from Southern European countries such as Greece, Italy, Spain, Portugal, and Turkey. Both the colonial and the labor migrant flows were substantial, and their influence through persistent ethnic networks on the current composition of the immigrant population in these countries remains strong.

The 1980s were characterized by stable immigrant flows in most European countries, as we document later on. However, there were two important underlying changes. First, regarding the composition of migration flows, family reunification was gaining importance relative to labor migration. Second, the European Union continued to expand geographically with the adhesion of Spain and Portugal in 1986 and the German reunification in 1990. The political turbulence of the 1990s gave rise to important new migration episodes. Chief among these events were the fall of the Iron Curtain, which led to large East–West migration (particularly to West Germany), and the war in former Yugoslavia, which created large numbers of refugees. Simultaneously, strong economic growth in Southern European countries turned Italy, Spain, and Portugal into important net receivers of immigration. During the 2000s the most relevant events were the Eastern enlargements of the European Union in 2004 and 2007, which gave rise to substantial East–West migration flows. As the decade came to an end, the Great Recession has led to a reduction of immigration into Europe while, at the same time, increasing intra-European migration from the worst hit countries towards those that have fared relatively better.

2.2 Migration within Europe

While the rules governing internal migration between different member states of the European Union are primarily set on the European level, and today effectively guarantee unrestricted freedom of movement, immigration policy regarding entries from outside the European Union remains largely a country-specific prerogative.

[5] Most notably, Morocco in 1956, Côte d'Ivoire in 1960, and Algeria in 1962 for France, and India and Pakistan in 1947, Nigeria in 1960, and Jamaica in 1962 for the UK.

One of the tenets of European integration is the freedom of movement of EU citizens, rooted in the founding treaty of the European Economic Community in 1957. Steps toward this goal have been taken gradually and expanded in geographical scope with the successive waves of enlargement. Today's EU citizens are entitled to look for a job in another EU country, work and reside there without needing a work permit, stay there even after employment has finished, and enjoy equal treatment with nationals in access to employment, working conditions, and all other social and tax advantages (European Commission Home Affairs, 2011). These rights are central to the idea of the single European market and have effectively allowed unrestricted intra-European migration.

The culmination of this process is the Schengen Agreement. The agreement, signed in 1985 and implemented a decade later, created an area defined by a common external border and the absence of any internal borders between signatory countries, facilitating short-term intra-EU travel.[6] With the exception of the UK and Ireland, who opted out, all EU member states had signed the agreement by 1997. Since the incorporation of the Schengen Agreement into European Union Law through the Amsterdam Treaty in 1997, any additional countries joining the EU are required to implement the Schengen rules, which concern issues such as controls of land, sea and air borders, the issuing of visas, police cooperation, and the protection of personal data. As of 2012, the Schengen Area comprises 26 European countries, including four non-EU member states—Iceland, Liechtenstein, Norway, and Switzerland—as well as all EU member states except the UK and Ireland, and Cyprus, Bulgaria, and Romania, whose implementation of the Schengen Agreement is still pending.

In recent years, the European Union has experienced two significant enlargements, in the course of which the fundamental right to freedom of movement was temporarily restricted. In May 2004, the EU experienced its largest single expansion when 10 mostly Central and Eastern European countries joined the existing EU15 member states (Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia, and Slovenia). In January 2007 then followed the latest expansion, which saw Bulgaria and Romania join the European Union. The joint size of the 12 new accession countries, which together make up about 21% of today's EU population and 23% of its territory, coupled with the substantial gap in income per capita relative to the rest of the EU at the time of joining, led to concerns of mass migration. In response to these concerns, existing member states were given the right to impose transitional restrictions to the free movement of people from the new Central and Eastern European member states, initially for two years, but extendable by another three years and, under exceptional circumstances,

[6] Anticipating the Schengen treaty by almost half a century, the formation of the Nordic Passport Union between 1952 and 1958 greatly enhanced worker flows among its member states Denmark, Finland, Iceland, Norway, and Sweden. For more details, see Pedersen et al. (2008).

by a further two years.[7] With the exception of Ireland, Sweden, and the UK, all existing member states decided to impose at least some transitional restrictions, most of them lasting until 2006–08. The only two countries imposing restrictions for the maximum of seven years were Austria and Germany, who together share most of the land borders with the new accession countries. While today there is complete freedom of movement of workers from the 2004 accession countries, temporary restrictions for workers from Bulgaria and Romania remain in place in several EU15 countries (including Ireland and the UK), and are expected to be lifted in January 2014.

As a result of these enlargement episodes, between 2004 and 2009 substantial numbers of Eastern and Central Europeans, notably Poles and Romanians, have migrated westwards, predominantly to Ireland and the UK (Poles), and Spain and Italy (Romanians). Figure 24.2 shows the number of citizens from the new accession countries residing in one of the EU15 countries as well as their share of the overall foreign population in these countries. In 2001, the total number of Eastern European emigrants was just above 1 million, constituting a mere 6.3% of the overall foreign population in the receiving countries. The accelerated inflows, especially since 2005, led to a quintupling of this number to about 5.3 million in 2011, or 19% of the foreign population in the EU15.[8]

2.3 Country-specific trends

While today's intra-European migration is largely unrestricted, the regulation of immigration flows from outside the EU remains primarily the responsibility of the individual national governments. These flows from third countries differ greatly across European host countries, both in terms of size and composition, as a result of a variety of factors ranging from each country's colonial past and prior immigration policy stances. To provide an overview, Figure 24.3 depicts the immigrant share in each of our six countries of interest—France, Germany, Italy, Spain, Sweden, and the UK—between 1960 and 2013. With the exception of France, whose immigrant share has been relatively stable since the 1970s, all countries have experienced large increases over the last few decades, with particularly fast growth rates in Italy and Spain since the year 2000.

[7] Note that these restrictions only applied to the right to work in another EU country, not to the freedom to travel. Under the transitional restrictions, national laws and policies of the existing EU member states determine the access to their labor markets, for example by requiring workers from the new accession countries to apply for a work permit. The final extension of the transitional measures by two years had to be justified to the European Commission by proving that inflows of workers from the new accession countries would seriously disrupt the host country's labor market. Transitional rules could not be applied to migrants from Malta or Cyprus. For an analysis of the policy coordination issues related to European enlargement and their consequences for individual EU member states, see Boeri and Brücker (2005).

[8] An exhaustive description of the migration trends and trajectories within Europe after EU enlargements can be found in Kahanec et al. (2010).

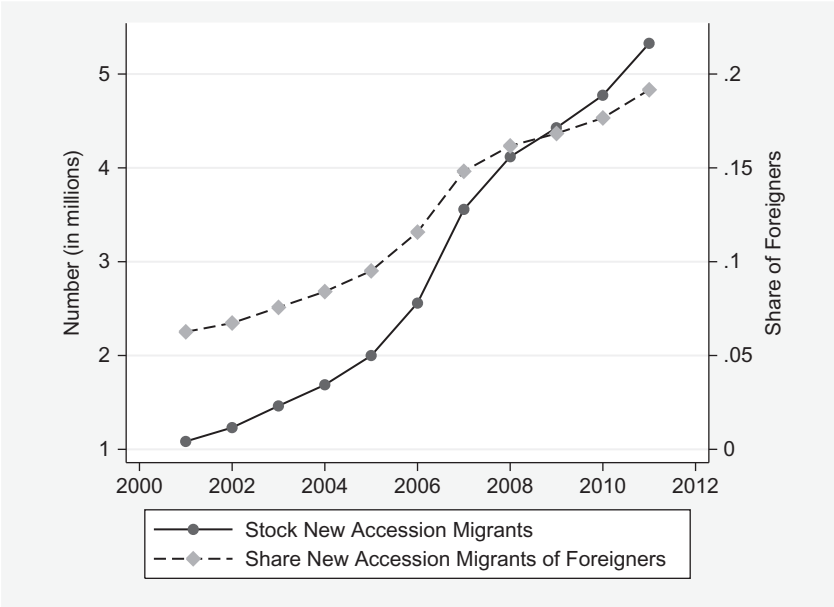

Figure 24.2 ***Immigrant inflows after EU enlargement.*** This figure shows the total number of foreign citizens from the 12 new EU accession countries (Bulgaria, Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Romania, Slovakia, and Slovenia) who live in countries of the original EU15 (excluding France and Ireland, for which data were not available) between 2001 and 2011. The figure also shows the share of the new accession migrants relative to the total foreign population in the 13 destination countries considered. Source: *International Migration Database of the OECD and OECD Population Data.*

Table 24.1 provides some additional summary statistics describing each country's immigrant population, with figures referring to 2011. We will now discuss each country in turn, starting with France.[9]

In 2011, there were about 7.4 million foreign-born individuals living in France, making up about 11.6% of the overall population. As column 3 of Table 24.1 shows, the main countries of origin of French migrants are Morocco and Algeria, both former French colonies.[10] Together, these two source countries make up more than 30% of the overall foreign-born population in France. Current immigrant inflows to France are predominantly due to family reasons with only 11.4% of inflows due to third-country nationals seeking work in France. French immigration policy has traditionally been dictated by

[9] The main source for our review of the recent developments in immigration policy in these countries is the OECD International Migration Outlook (OECD, multiple years).

[10] Hunt (1992) studied in depth the migration flows into France triggered by Algerian independence in 1962.

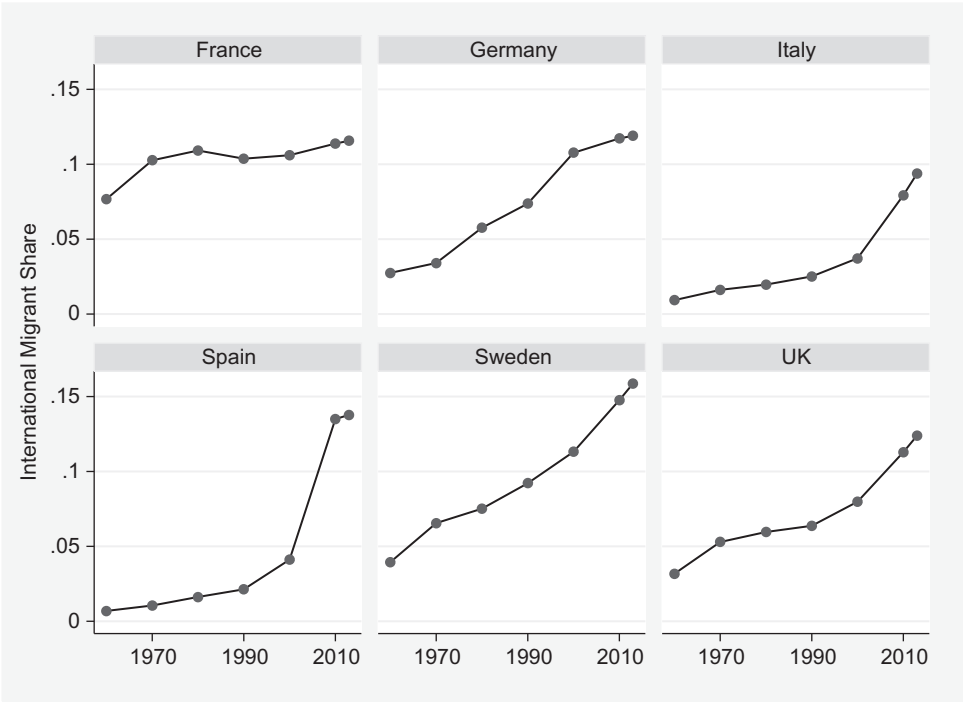

Figure 24.3 ***Immigrant shares in selected countries.*** This figure shows the share of international migrants in the six main immigrant-receiving countries in Europe. Source: *United Nations (2009) for 1960–80, and United Nations (2013) for 1990–2013.*

labor market conditions, with colonial ties playing a key role, although more recently identity concerns are also shaping French immigration policy.[11]

Germany is the largest migrant host country in Europe with 10.7 million foreign-born individuals (13.1% of the population) in 2011. Contrary to France, Germany has experienced sustained growth in its foreign-born population over the last half century. Facing substantial shortages of particularly low-skilled workers during the economic boom of the 1950s and 1960s, Germany implemented a "guest-worker" system, actively recruiting workers in Southern European countries—primarily Turkey, former Yugoslavia, Italy, Greece, and Spain—to come to work in (West) Germany. This active recruitment policy lasted until the economic crisis of 1973 and led to an increase in the foreign population in Germany from about half a million individuals in 1955 to almost 4 million in 1973. Although initially envisaged to be only temporary, a large number of guest workers remained in Germany after the termination of the active recruitment policy. During the consolidation phase after 1973, many immigrants were joined by their

[11] For a detailed description of the evolution of immigration in France, see Algan et al. (2012).

Table 24.1 Summary statistics, 2011

Destination country	Number foreign-born	Share foreign-born (%)	Main countries of origin (share of foreign-born population)	Share work-related inflows (%)	Share family-related inflows (%)	Share free movement (%)
	(1)	(2)	(3)	(4)	(5)	(6)
France	7,358,218	11.6	Algeria (18.9), Morocco (12.2), Portugal (8.5)	11.4	39.9	33.7
Germany	10,689,000	13.1	Turkey (14.0), Poland (10.6), Russian Federation (9.4)	9.0	18.6	67.9
Italy	5,457,820	9.0	Romania (17.7), Albania (10.1), Morocco (7.4)	33.4	27.9	34.9
Spain	6,737,933	14.6	Romania (12.4), Morocco (11.5), Ecuador (7.0)	38.9	16.4	42.6
Sweden	1,427,296	15.1	Finland (11.7), Iraq (8.8), Poland (5.1)	6.6	37.7	38.0
UK	7,430,000	11.7	India (9.2), Poland (8.3), Pakistan (5.9)	35.5	26.2	22.6

Population data taken from the International Migration Database of the OECD. Columns 1–3 refer to the foreign-born population in 2011. For each destination country the three biggest countries of origin are shown in column 3. For France and Italy, column 3 is based on data for 2008 and 2009 respectively. Data in columns 4–6 taken from OECD International Migration Outlook 2013 and refer to the year 2011.

relatives thanks to clauses of family reunification. Even today, the composition of Germany's immigrant population strongly reflects the immigration inflows of that period. As column 3 in Table 24.1 shows, the largest individual group of immigrants in Germany today is from Turkey, making up 14.0% of the total foreign-born population. Italians also still constitute an important group of migrants with a share of 4.0%, making them the fifth largest group in Germany. With the collapse of the Soviet Union and the political changes in Eastern Europe at the end of the 1980s, Germany experienced its most recent wave of immigration. Throughout especially the first half of the 1990s, the country received large inflows of asylum seekers—mostly as a result of the war in former Yugoslavia—and ethnic German immigrants, so-called *Aussiedler*. The latter group consisted of immigrants of German descent, primarily originating from Poland and the former Soviet Union, who had the constitutional right to return to Germany and be granted German citizenship upon arrival. In the year 1992 alone, some 1.5 million

immigrants, both refugees and ethnic Germans, arrived in Germany, representing the largest annual immigrant inflow since the end of WWII. This most recent wave of immigration, which after 1995 slowly decelerated, is the second major immigration episode shaping today's immigrant population in Germany. Consequently, after Turkey-born immigrants, Polish and Russian immigrants constitute the second and third largest foreign-born groups in Germany today, making up 10.6% and 9.4% of the overall foreign-born population respectively. As Table 24.1 further shows, contemporaneous migration inflows into Germany are primarily inflows from other EU countries based on the right of free movement within the European single market.[12]

Unlike Germany and France, Italy has, for most of the last half century, been one of the most important emigration countries in Europe. In 1960, international immigrants made up less than 1% of the overall population residing in Italy. Since then, and in particular since the year 2000, Italy has experienced rapid growth in its foreign population, which by 2011 amounted to 5.5 million individuals or 9.0% of the population. For Italy, the main countries of origin are Romania, Albania, and Morocco, contributing 17.7%, 10.1%, and 7.4% respectively to the overall foreign population (see Table 24.1). After WWII, Italy experienced large outflows, primarily to Northern Europe and especially to Germany. At the same time, it also experienced substantial internal migration from the less-developed South to the more industrialized North. During the 1970s, migrant outflows declined substantially and Italy slowly turned into a country of immigration (Del Boca and Venturini, 2005). Initially, migrant inflows mostly originated from other European countries, but in the 1980s the composition shifted in favor of African and Asian migrants, mostly from Morocco and the Philippines. Throughout the 1990s and 2000s, migration shifted back to European source countries, with migrants now arriving predominantly from Romania, Albania and the former Yugoslavia, and settling overwhelmingly in the economically more prosperous North of the country. Both geographical and, in the case of Romania, linguistic proximity have made Italy particularly interesting for this set of source countries. Since the 1990s, legal immigration in Italy is regulated by means of a system of annual quotas (see Triandafyllidou and Veikou, 2002; and Fasani, 2009). Today's immigrant flows into Italy are relatively balanced, with about equal shares due to work-related reasons, family-related reasons, and intra-European mobility (columns 4–6 in Table 24.1).[13]

In many ways, the migration experience of Spain resembles that of Italy. Spain was also until quite recently a net emigration country, with comparatively low immigrant shares of only 0.7% in 1960 and 4.1% as late as 2000. However, since the end of the 1990s, Spain has

[12] For a detailed overview of the German migration experience and policies since WWII, see Bauer et al. (2005).

[13] For more details on the Italian immigration history and the relevant legal framework, see Del Boca and Venturini (2005) and Fasani (2009).

been experiencing inflows of migrants at a rate surpassing that of any other European country. Within less than 15 years, the foreign-born share in Spain increased to 14.6% (see Figure 24.3 and Table 24.1). Between 1998 and 2009 the foreign-born share among the working-age population increased from around 4% to 17%, with an aggregate inflow of 4.5 million immigrants (González and Ortega, 2011). Of the 6.5 million immigrants living in Spain in 2011, 12.4% were born in Romania, 11.5% in Morocco, and 7.0% in Ecuador. Fundamentally, this large immigration wave was driven by robust economic growth. Between 1997 and 2007, real GDP grew by more than 3% almost every year and the unemployment rate fell from 21% to 8% (Spanish Statistical Institute) in a context of rising female labor force participation. During this period immigrant employment in construction, services, and domestic help rose markedly (Farré et al., 2011b; González and Ortega, 2011).[14] Cultural factors have also played a role in shaping Spain's recent immigration experience. By 2008, over 2 million immigrants in Spain originated from Latin America, accounting for almost half of the foreign-born working population. Besides cultural affinity, the large migration from Latin America to Spain can be explained by the special arrangements that allowed citizens of the former colonies to enter the country without a visa. These immigration privileges were gradually removed by EU imperative. However, implementation was slow and often lax. Many immigrants decided to overstay and wait for one of the frequent amnesties (2000, 2001, and 2005) to legalize status. As Bertoli et al. (2011, 2013) documented, many Ecuadorians entered Spain following this route. Furthermore, Spain allows children and grandchildren of Spanish citizens to obtain Spanish nationality. Indeed, this was extensively used by Argentines to migrate to Spain in the aftermath of the economic crisis between 1999 and 2002. Linguistic similarity has also been an important attraction factor for Romanians.[15] In fact, since 2010, Romania is the main country of origin of Spain's immigrants.[16]

Sweden currently displays the highest foreign-born share in our set of key immigration countries in Europe, with about 15.1% in 2011. This high share is the result of an uninterrupted and steady growth in its immigrant population since 1960 (see Figure 24.3).[17] As host of an important Swedish-speaking minority, neighboring Finland is Sweden's main source country of immigrants, contributing 11.7% to the latter's foreign-born population.[18] The next three biggest source countries are Iraq with 8.8%, Poland with 5.1%, and the former Yugoslavia with 5.0%, which is indicative of

[14] With the Great Recession and the housing bust, net immigration into Spain fell to zero in 2010 and became negative in 2011.

[15] The important role of linguistic similarity in shaping international migration flows has been documented by Adsera and Pytlikova (2012).

[16] For more details on Spain's immigration laws and recent trends, see Carrasco et al. (2008) and Farré et al. (2011b).

[17] In fact, Sweden has experienced net immigration almost every year since 1930.

[18] Citizens of Nordic countries have enjoyed free mobility among these countries since the 1950s.

one of the key features of the Swedish migration experience: the important role of asylum seekers. While the inflow rate of asylum seekers per 1000 inhabitants never exceeds 1 in any of the other countries throughout the 2000s, it averages about 3.1 annually in Sweden. We will discuss the issue of refugees and asylum seekers in more detail in Section 3.2. A noticeable feature of contemporary immigrant inflows into Sweden is that only a small share of 6.6% is due to work-related reasons (see column 4 in Table 24.1).[19]

The UK's immigrant stock of 7.4 million foreign-born individuals is a reflection of two important migration episodes that occurred during the last half century and that raised the migrant share from 3.2% in 1960 to 11.7% in 2011. On the one hand, there were the large inflows of migrants arriving from former British colonies after these obtained their independence throughout the middle of the twentieth century. These included flows from large countries such as India, Pakistan, Bangladesh, Nigeria, and South Africa, but also those from numerous smaller African or Caribbean countries. More recently, the UK—as one of only three EU15 countries that did not impose transitional measures to protect its labor market after EU enlargement in 2004—received substantial inflows of Eastern European migrants, in particular from Poland. Within less than a decade, Poles have become the second largest immigrant group residing in the UK, with a share of 8.3% of the overall foreign-born population, placing it between the more traditional source countries India (9.2%) and Pakistan (5.9%) in terms of relative size. In response to these large inflows from Eastern Europe, the UK joined most other Western European countries in imposing extended restrictions for the access of Bulgarian and Romanian migrants to its labor market after their accession to the EU in 2007. Compared to other European countries, a relatively small fraction of contemporaneous immigrant inflows into the UK originate from within the EU (see column 6 in Table 24.1), a reflection of its colonial past as well as its more general appeal as an English-speaking country (for more details, see Dustmann et al., 2005).

3. POLICIES REGULATING MIGRATION

This section discusses the most salient aspects of immigration policy in Europe, covering both country-specific and EU-wide legislation.

3.1 Access to citizenship

Columns 1 and 2 of Table 24.2 report average annual naturalization rates over the period 2006–10 and the share of naturalized immigrants in our six countries of interest (for the

[19] For more details see Edin et al. (2000). Often the source for the figures on the Swedish foreign-born share is administrative (registry) data. Several studies have noted that these data tend to overestimate the stock of immigrants since exits from the country are not accurately captured (see, e.g., Bengtsson, 2010). To some extent this also applies to some studies using Spanish data.

Table 24.2 Policy outcomes

Destination country	Annual naturalization rate (%)	Share of immigrants naturalized (%)	Index citizenship laws (1948, 1975, 2001)	Share refugees in population (per 1000)	Inflow rate of asylum seekers (per 1000)	Undocumented immigrants as % of all immigrants (min–max)	Share college education foreign-born (%)	Share college education native-born (%)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
France	3.8	47	2, 2, 2	3.2	0.6	4.9–11.0*	22.1	16.9
Germany	1.6	37	1, 1, 2	7.0	0.3	2.7–6.3	15.6	19.3
Italy	1.0	—	1, 1, 2	1.0	0.3	9.5–15.7	11.2	8.1
Spain	1.6	44	1, 1, 2	0.1	0.1	6.1–7.7	23.6	18.0
Sweden	6.2	82	1, 1, 2	9.2	3.1	1.6–2.4*	26.5	22.8
UK	4.2	67	3, 3, 2	3.1	0.5	11.4–23.6	47.4	20.1

Figures in column 1 show annual naturalization rates, defined as the number of naturalizations as a percentage of the foreign population, averaged over the years 2006–10 (OECD International Migration Outlook 2013). Figures in column 2 show the share of naturalized immigrants in percent for around the year 2007 (OECD, 2011). Data in column 3 are based on Bertocchi and Strozzi (2010). The index takes three possible values, ranging from 1 (*jus sanguinis* without any *jus soli* element), to 3 (full *jus soli*). Figures in column 4 are calculated based on the refugee stocks reported in Table 1 of the UNHCR Statistical Yearbook 2011 and population figures from Eurostat for the year 2011. Figures in column 5 show inflows of asylum seekers per 1000 inhabitants, averaged over the years 2006–10 (OECD International Migration Outlook 2013). Figures in column 6 show estimates of the minimum and maximum share of undocumented immigrants (irregular foreign residents) in the total immigrant population in 2008, taken from Kovacheva and Vogel (2009). An asterisk indicates a low-quality estimate. Educational data in columns 7 and 8 are taken from the Database on Immigrants in OECD Countries (DIOC) of the OECD and refer to the year 2005/06. Observations with unknown education level were excluded from the calculation of education shares. Education shares are calculated for the population aged 15 and older and are reported in percentages.

year 2007). According to both measures, naturalizations are most prevalent in Sweden and the UK, and least prevalent in Italy, Germany and Spain. While the regulations governing naturalization varied greatly across European countries during the postwar period, the last few decades have witnessed sustained convergence toward a more homogeneous legal framework (for a comprehensive discussion, see OECD, 2011).

One of the main dimensions of policy convergence has been the growing emphasis on citizenship by birth (*jus soli*). To illustrate this point, we use data produced by Bertocchi and Strozzi (2010) to compare the laws governing citizenship at birth for our countries of interest. Column 3 in Table 24.2 reports an index of the predominance of elements of *jus soli* (as opposed to *jus sanguinis*) in each country's legal system and how this has evolved over time (snapshots for the years 1948, 1975, and 2001).[20] The index takes three possible values, ranging from 1 (*jus sanguinis* without any jus soli element) to 3 (full *jus soli*).

With the exception of the UK, there is a clear general trend toward a larger prevalence of *jus soli* provisions among our six countries of interest between 1975 and 2001. Interestingly, these developments are at odds with the status quo in the rest of the world, where the trend has been toward *jus sanguinis* regimes (from a modal index of 3 in 1948 to a modal index of 1 in 1975 and 2001). Among the countries included in the table, the policy reversal regarding access to citizenship is particularly noteworthy in the case of Germany. The large inflows of guest workers in the postwar era, mainly from Turkey, gave rise to a large population of first- and second-generation immigrants that lacked German citizenship. In response to the social and legal tensions that this was producing, the German government has gradually adjusted its immigration law so that those immigrants rooted in the country (and their children) can become German citizens. In particular, since 1 January 2000, children born to non-German parents who have legally resided in Germany for at least eight years are automatically granted German citizenship in addition to their parents' citizenship. To avoid multiple citizenships, those immigrant children then have to definitively opt for either the German or the foreign citizenship between the age of 18 and 23. In addition to this new regulation, the revised German citizenship law also shortened the minimum period of legal residence in Germany required from an adult to gain the right to naturalization from 15 to eight years.

[20] *Jus sanguinis* dictates that citizenship at birth is based on descent (through bloodline), so that a child inherits the nationality of a parent, regardless of his or her own country of birth. In countries that apply *jus soli*, citizenship is granted automatically to all children born in the country, regardless of the parents' citizenship or immigration status. In many countries, the rules governing citizenship at birth contain elements of both legal traditions. For example, some countries require "double *jus soli*", which means that only the children with parents and grandparents born in the country are granted automatic citizenship at birth. Another example of mixed regulation is the case where a native-born child of immigrants does not automatically obtain citizenship but can apply for it at a later point in his or her life (e.g., when becoming an adult). For more details on the data reported in Table 24.2, see Bertocchi and Strozzi (2010) and the corresponding data appendix.

Citizenship policies have also converged somewhat on other dimensions. Most countries have made changes to better link the applications for residence and work permits in order to facilitate the transition of immigrants into the labor market. Furthermore, several countries have increased the requirements to obtain permanent residence or citizenship, often involving language and civic knowledge testing (as in France, Germany, and the UK). Both France and Germany have also adopted more stringent requirements for family reunification, which include passing a language test.

3.2 Refugees and asylum seekers

Columns 4 and 5 in Table 24.2 report the share of refugees in the population and the average annual inflow rates of asylum seekers over the period 2006–10. The country with both the highest stock of refugees and the consistently highest inflow of asylum seekers per capita in Europe is Sweden, whose recent applicants originate primarily from Somalia and Iraq, followed by France and the UK, whose main groups originate from Serbia and the Russian Federation, and Zimbabwe and Afghanistan respectively. During the 2000s, the European countries with a sizeable refugee population, notably Sweden and Germany, have passed a number of measures aimed at streamlining the processing of applications and making it more transparent. Spearheaded by Sweden, there is also a noticeable trend toward extending the concept of refugee, for example to include those in fear of persecution because of their gender or sexual orientation. Under new German legislation, refugees who are entitled to asylum are also given faster access to the labor market.

From a European perspective, the legal cornerstone of how to deal with individuals seeking asylum in any EU member state is the so-called Dublin II Regulation (which also applies to Norway, Iceland, and Switzerland). Adopted in 2003 with the objective of avoiding "asylum shopping" in several EU member countries and to reduce the number of asylum seekers orbiting between EU member states, the Dublin Regulation determines which EU member state is responsible to examine a given asylum application.[21] In most cases, this is the state through which the asylum seeker has first accessed the EU territory. The introduction of this regulation has put a particularly heavy burden on those member states that are situated at the European periphery, such as Greece, whose annual inflow rate of asylum seekers (per 1000) has increased from an average of 0.6 during 2001–05 to an average of 1.5 during 2006–10. Naturally, the issue of asylum seeking is closely related to border control and the decisions regarding those individuals apprehended while attempting to enter into the country illegally, which we discuss next.

3.3 Border enforcement and amnesties

While legislation concerning citizenship is still largely determined at the national level and will probably remain so for the foreseeable future, the degree of coordination

[21] For more details, see http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32003R0343:EN:HTML.

between EU member states regarding border controls has increased significantly over the last decade. It is helpful to organize the discussion around two issues: border controls and management of the unauthorized population already in the country. The two EU countries where these issues are particularly relevant are Spain and Italy, as a result of their close physical proximity to the North African coastline.

Regarding border control, two recent developments are worth mentioning. First, in 2007, new EU regulation approved the creation of Rapid Border Intervention Teams, which consist of teams of border guards from other member states that can be deployed at the request of a member state facing an exceptional influx of illegal migrants. For instance, these forces were requested by the Italian government to deal with the large displacement of individuals during the Libyan uprising in 2011. Second, Spain has pioneered the strategy of deploying attachés to several West African countries to try to stymie illegal entries before they arrive in Spanish territory. This is partly motivated by the desire to reduce the high death toll due to the dangers of open sea travel and to make it more difficult for criminal organizations to profit from illegal smuggling by sea. In exchange for their cooperation in patrolling the main gateways and in speeding up repatriation, the countries of origin are offered development aid and legal work visas for their nationals. From the EU perspective, an action plan for 2008–10 has been adopted to try to engage several African governments in a partnership, so far with limited success. In contrast, during 2007 readmission agreements were signed with Russia, the Ukraine, and the former Yugoslavia by offering short-stay visas, which have been implemented quite successfully. Italy has also established mobility partnerships with several countries, starting with Moldova in 2003, Morocco and Egypt in 2005, and many others thereafter.

While border enforcement has been an important aspect of European migration management, it has not been able to prevent a large number of immigrants taking up residence in Europe illegally. It is estimated that between 0.4% and 0.8% of the total population and between 6.7% and 13.2% of the total foreign population in the EU in 2008 are undocumented immigrants (Kovacheva and Vogel, 2009). However, there is substantial variation in the relative size of the undocumented immigrant population across destination countries, as shown in column 6 of Table 24.2. While in Germany and Sweden, the share of undocumented immigrants in the total immigrant population is almost negligible at between 2% and 6%, it rises to between 10% and 20% in Italy and the UK. To address this issue, the main policies adopted have been legalization processes (amnesties), which have taken place repeatedly over the last decade, particularly in Italy and Spain.[22] Between 1981 and 2009, Italy has conducted eight regularization programs (in 1982, 1986, 1990, 1995, 1998, 2002, 2006, and 2009), through which, in total, almost 1.9 million unauthorized immigrants were legalized (Del Boca and Venturini, 2005; Fasani, 2009), including 650,000 in the 2002 amnesty alone. According to Blangiardo and

[22] During the 1990s and 2000s, regularization programs have also been adopted in other European countries, such as Belgium, France, Greece, Portugal, and Sweden (OECD, 2003).

Tanturri (2004), more than half of the documented migrant population residing in Italy in 2003 had obtained its legal status through one of the amnesties.[23]

Spain has carried out six general amnesties over the last few decades (in 1985, 1991, 1996, 2000, 2001, and 2005), granting legal status to more than 1.2 million undocumented migrants, 700,000 alone in the most recent amnesty in 2005. Typically, these legalization schemes sought the cooperation of employers rather than punishing them for employing undocumented immigrants. In 2006, Spain changed its approach to legalization, switching from large, episodic regularization events to a continuous regularization scheme. This scheme is consistent with the EU legal framework and is expected to reduce the politicization of the legalization debates.[24]

3.4 Attracting highly skilled immigrants

In stark contrast to the hardening of entry conditions for the purpose of family reunification, virtually all European countries are in the process of implementing policies aimed at increasing entry (or facilitating stay) of highly skilled individuals and, more broadly, of individuals with skills that are deemed as scarce in the labor market.

Before turning to the specific policy tools, it is interesting to compare the success of different European countries in attracting foreign talent. Columns 7 and 8 of Table 24.2 report the share of college graduates among the foreign-born and native populations in each of our six countries of interest. Interestingly, with the exception of Germany, the share of highly educated individuals is higher among the foreign-born than the native population. This is particularly clear in the UK, where the share of college graduates among the foreign-born is more than twice as high as among the native-born (47.4% versus 20.1%). Similarly, the share of college graduates in the immigrant population is 31% higher in France, 38% higher in Italy, 31% higher in Spain, and 16% higher in Sweden. Only in Germany is the share of college graduates in the native population higher than in the immigrant population, by about 24%.[25] What accounts for these disparities? Undoubtedly, the economic structure and sectoral composition of each country of destination is likely to have played an important role in determining demand for certain

[23] The majority of undocumented immigrants in Italy overstayed their visas (60–75%) and originate from either Eastern Europe (Albania, Romania, and the Ukraine) or Northern Africa (Morocco and Tunisia). Overall, however, there are no significant differences between the nationality composition of the legal and illegal immigrant populations in Italy.

[24] Domingo and Sabater (2012) described the new program and analyzed its performance relative to the more traditional programs. There is also a growing literature that studies the political economy aspects of immigration amnesties and the incentives for governments to use them as integral parts of their migration policies (see Chau, 2001; Karlson and Katz, 2009; Epstein and Weiss, 2011; Casarico et al., 2012).

[25] It is worth noting that immigrants are often overeducated—that is, are employed in occupations that require much lower levels of qualification than their actual educational attainment (e.g., Andersson Joona et al. (2012), in the Swedish context). This is important when evaluating their economic impact on natives (Dustmann et al., 2013).

types of immigrant skills (e.g., the large financial sector in the City of London). In addition, however, national policies have also differed in their effectiveness to attract global talent.

New legislation in France gives precedence to immigrants with expertise in certain occupations in which employers are experiencing recruitment difficulties, with most of these occupations being highly skilled. Spain has also adopted a similar scheme to allocate special work permits. Germany has recently decreased the entry barriers for foreign entrepreneurs by reducing the requirements on newly created jobs and financial investments by half (to five new jobs and half a million Euros). In this climate of increased global competition for talent, most countries have also adopted measures to try to encourage international students to remain in the country after their graduation, mostly by issuing work permits to ease their transition into the labor market. This has been the case in France, Germany, Sweden, and the UK. In the UK, for example, students receive work permits for one to two years after graduation, allowing them to take up any employment they like. In France and Germany, in contrast, permits are granted for one year and six months respectively, and the jobs available have to correspond to the graduate's qualification and are subject to labor market testing.

Probably the boldest manifestation of a shift in the priorities on immigration policy is the points-based system adopted in the UK in 2008. This new system is specifically designed to select individuals with skills regarded as beneficial to the national economy. While similar to the Australian selection system in some respects, the British system has several defining features. Specifically, there are no pre-specified numerical limits but the application requirements are substantially more stringent than in Australia. Furthermore, the UK embraces past earnings as the best guide to future performance, as opposed to the emphasis on educational credentials in the Australian or Canadian immigration systems. The British system is organized along several tiers, which partly build on visa programs already in operation. Tier 1 is aimed at highly skilled migrants, entrepreneurs, wealthy investors, and international graduates from UK universities. Qualifying individuals are offered unrestricted access to the labor market without a prior job offer or sponsor for two to three years, and can eventually lead to permanent residence. Tier 2 allows employers to become sponsors. Besides allowing for uncapped intra-company transferees, it also contains a list of shortage (mainly skilled) occupations, which depend on labor market conditions. Another tier in the system regulates the entry of international students, who need to be sponsored by a licensed educational institution.

In December 2011, the European Union adopted the so-called EU Blue Card Scheme, which lays the foundations for a new residence and work permit. The goal is to compete with the US, Canada, and Australia in the global race to attract talent.[26]

[26] All members of the European Union except the UK, Denmark, and Ireland participate in this program.

During the course of 2012, several countries such as Germany have adapted their national laws to the new directive. However, other countries are dragging their feet and delaying the implementation. Applicants must have a work contract offering a minimum salary and documents proving the relevant qualifications. Holders of the Blue Card gain free movement within the Schengen area and are entitled to a series of rights, including a track to permanent residence and family reunification.

It is worth emphasizing that all the mentioned arrangements are aimed at nationals of third countries. Within the European Union, unfettered labor market mobility reigns and EU nationals are free to locate wherever they see fit. In this context it is important to point out the efforts toward the harmonization of university education across the EU, aimed at increasing the internal mobility of students, the so-called Bologna process. This should lead to better command of the languages of other member states, more familiarity with other countries' cultural idiosyncrasies, and better knowledge of their labor market institutions. This in turn should lead to higher intra-EU labor mobility, particularly among the highly educated. Some have argued that these trends are already noticeable, as illustrated by the large migration flows of recent graduates from the countries that have been hit hardest by the Great Recession toward other EU member states that have better weathered the recession. For instance, since 2009 large numbers of recent Spanish college graduates have left Spain to seek employment in other European countries, mainly Germany and the UK.

4. IMMIGRANTS' OUTCOMES

The performance of immigrants and their descendants in the host country is a matter of substantial interest. Immigrants who succeed in adapting to their new environment often experience an improvement in their economic well-being as well as that of their descendants. In addition, successful immigrants may be able to contribute to the creation of wealth both in their host and home countries. In contrast, a poor economic performance may lead to social exclusion and marginalization, with potentially severe negative externalities.

Immigrants' outcomes in their host countries are also crucial in shaping the attitudes of natives towards immigration, which can affect voters' views toward immigration policy. We devote this section to explore what we know about immigrants' outcomes in their European host countries, with a particular emphasis on studies carried out during the last decade. We start with outcomes related to the labor market (employment, occupation, and earnings). We also review some related issues, such as the impact of the economic cycle on immigrants' employment, and the role of language proficiency and residential segregation. We then review the evidence on the performance of immigrants in terms of their educational attainment as well as other indicators of integration in the host countries.

4.1 Estimating native–immigrant gaps

A primary goal of research on the economic outcomes of immigrants is to measure the gaps between immigrants and natives along several dimensions, and to analyze how those gaps evolve as a function of time spent in the host country. In practice, the starting point is often a cross-sectional regression estimated on a sample including both natives and immigrants that relates a particular outcome of interest, such as employment status or log earnings, to an indicator variable for immigrant status. The coefficient associated with this indicator provides a measure of the average difference (the gap) in the corresponding outcome between the native and the immigrant population. Typically, this regression is augmented by including a set of socio-demographic characteristics, such as age, gender, or education, in which case the identified parameter measures a *conditional* native–immigrant gap. Occasionally, the coefficients for the socio-economic characteristics are allowed to differ for immigrants and natives in order to allow for, say, differential returns to education across these two groups.

Of course when panel data are available it is natural to include a set of year dummies in the regression in order to obtain a representative estimate of the average gap over the period of interest. Again, when additional controls are included, such as years of education, or experience, the coefficient associated with the immigrant status indicator identifies conditional gaps. Many panel data studies also examine how native–immigrant gaps evolve over time by introducing years since migration as an additional regressor. In this case, the coefficient associated with the immigrant dummy captures the average native–immigrant gap at the time of the immigrant's arrival in the host country while the coefficient associated with the years since migration regressor can be used to assess the speed with which immigrant outcomes converge to those of comparable natives.[27]

Before reviewing the existing empirical evidence, it is informative to take a first look at a number of important labor market outcomes in each of our six focus countries. Table 24.3 provides the relevant figures for the year 2012. With the exception of Italy and Spain, immigrants have a lower labor force participation rate than natives (columns 1 and 2). However, this is exclusively driven by a roughly 10-percentage-point lower participation rate of immigrant women relative to native women. In all six countries, immigrants have higher unemployment rates than natives, ranging from a small 1.5-percentage-point differential in the UK to substantial gaps of 11.7 and 9.6 percentage points in Spain and Sweden respectively. In some countries, the higher unemployment

[27] In specifications including years since migration and experience, the rate at which the outcomes of immigrants converge to those of comparable natives is given by the coefficient on years since migration plus the difference between the coefficient on experience for immigrants and the analogous coefficient for natives. If the resulting term is positive (negative), we conclude that there is evidence of convergence (divergence). This argument can easily be extended to specifications that include polynomials in experience and years since migration.

Table 24.3 Labor market outcomes

Destination country	Participation rate foreign-born (%)	Participation gap (foreign-born – native-born) (%)	Unemployment rate foreign-born (%)	Unemployment gap (foreign-born – native-born) (%)	Median wages foreign-born over median wages natives	Share low education foreign-born (%)	Gap share low education (foreign-born – native-born) (%)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
France	68.2	−3.2	15.8	6.7	0.90	49.6	3.8
Germany	74.0	−3.8	8.7	3.7	0.93	44.0	19.8
Italy	76.2	13.4	13.9	3.5	n.a.	50.4	−13.2
Spain	79.3	6.3	34.7	11.7	n.a.	45.5	−20.9
Sweden	74.9	−6.6	16.1	9.6	0.93	27.8	2.8
UK	73.5	−3.3	9.3	1.5	n.a.	28.0	−23.2

Data in columns 1–4 are taken from OECD International Migration Outlook 2013 and refer to the working-age population aged 15–64 in the year 2012. Data in column 5 are taken from International Migration Outlook 2008 (OECD, 2008), Chart I.13, and refer to unconditional relative median wages. Educational data in columns 6 and 7 are taken from the Database on Immigrants in OECD Countries (DIOC) of the OECD and refer to the year 2005/06. Low educational attainment means up to lower secondary education. Observations with unknown education level were excluded from the calculation of education shares. Education shares are calculated for the population aged 15 and older and are reported in percentages.

rates of immigrants partly reflect their lower educational attainment relative to the native population. For example, in Germany the share of the foreign-born population with only low educational attainment (lower secondary education or less) is 19.8 percentage points higher than the corresponding share of the native German population (column 7 in Table 24.3). In contrast, immigrants in Italy, Spain, and the UK appear better educated than the native population. However, since the host country labor market typically does not place a high return on formal education obtained in the home countries (see Dustmann and Glitz, 2011a), we also observe higher unemployment rates among immigrants in these countries. Only in the UK, where the educational attainment of immigrants is significantly higher than that of the native population, do we observe unemployment rates that are broadly comparable, 9.3% for immigrants compared to 7.8% for natives in 2012.

Immigrants not only perform worse than natives in terms of employment but also in terms of wages. Column 5 of Table 24.3 shows that median wages in France, Germany, and Sweden are around 7–10% lower than median wages for natives. As in the case of unemployment, one likely reason for these gaps in earnings is the lower educational attainment of the immigrant population. To assess how much of the unconditional gaps can be explained by this difference in educational attainment (and other socio-economic characteristics) one needs to study conditional outcome gaps, which we turn to next.

4.2 Labor market outcomes

The performance of immigrants in the labor market is a topic widely studied in the economics literature. We start by examining the evidence on employment and earnings gaps between immigrants and natives in France, Germany, Italy, Spain, Sweden, and the UK. We report, when possible, the evidence separately for, on the one hand, EU immigrants and non-EU immigrants, and, on the other hand, men and women, as there is evidence that the gaps differ substantially across these groups. We focus primarily on first-generation immigrants. However, in countries with a longer immigration tradition, such as Germany, France, and the UK, the second-generation immigrant populations are sufficiently large to be included in the analysis.

4.2.1 Gaps in employment

Dustmann and Frattini (2011) provided a useful general overview of recent employment gaps between immigrants and natives in 15 Western European countries. Based on the European Labor Force Survey for the years 2007–09, they analyzed differences in the probability of being employed between the two groups. As a first general approximation, their findings showed that after conditioning on age, education, and the regional distribution, immigrants in Central and Northern Europe face important disadvantages relative to natives, with an employment gap of between 8 and 15 percentage points. In Ireland and the UK, as well as the Southern European countries Italy, Spain, and Portugal, the employment differential is smaller, between 0 and 6 percentage points.

In spite of this general picture, however, remarkable differences emerge across host countries with respect to the immigrants' region of origin and their length of stay. Owing to the diversity in countries of origin of their immigrant populations, we now summarize a number of studies that deal more specifically with individual host countries. Algan et al. (2010) documented in a comparative study for France, Germany, and the UK that in all three countries most immigrant groups today have significantly lower employment rates than their native counterparts. In France, this is particularly the case for African and Eastern European immigrants, for whom, according to data from the French Labor Force Survey, the employment gap amounts to between 16 and 18 percentage points in the period 2005–07. For women, all immigrant groups perform worse in terms of employment than observationally comparable natives, with a particularly high employment gap of more than 45 percentage points for Turkish women. Focusing on the group of second-generation immigrants, the study further showed that, with the exception of immigrants from Africa and Turkey, all groups display substantial convergence from the first to the second generation.

Regarding immigrants in Germany, Algan et al. (2010) reported that the lowest performing male groups are immigrants from Central and Eastern Europe and Turkey, for whom the employment gap in the first generation is about 15–19 percentage points. Immigrant women, in contrast, perform significantly worse throughout, both relative to native women and their male counterparts. Again, the worst performers are women from Central and Eastern Europe and Turkey, whose employment probabilities are 26 and 31 percentage points lower respectively than those of native women. Worryingly, most of the immigrant groups seem to be unable to reduce the employment gaps relative to natives from the first to the second generation. This is particularly the case for male immigrants from Turkey. With respect to second-generation women, the picture looks more promising, as all female second-generation immigrant groups manage to reduce their gaps in employment.

According to data from the UK Labour Force Survey for the period 1993–2007, male immigrants clearly perform worse than similar natives in terms of employment probabilities. Individuals from Africa, Bangladesh, and Pakistan display the largest differentials, with employment gaps of 20 or more percentage points. For most immigrant women, the gaps are even higher, particularly for those from Bangladesh and Pakistan, for whom they exceed 50 percentage points. Second-generation immigrant males in the UK exhibit relatively little intergenerational improvement while women of most origins show some progress. Clark and Lindley (2009) reported that the employment gap between white immigrants (men and women together) and native workers is basically zero at the moment of entry into the labor market. For non-white immigrants the initial gap is about 10 percentage points. In both cases the gap appears to widen with age.

Venturini and Villosio (2006) considered the Italian case, exploiting data from the Work Histories Italian Panel for the period 1990–2003. Rather than focusing on the

probability of being employed, the authors focused on the number of days worked in a year. They found that, on average, natives work about 20% more days in a given year than immigrants. Interestingly, on arrival into the country this gap is only about 10% but increases with time spent in Italy.[28] The authors argued that this employment gap is largely due to the fact that immigrants often hold temporary or highly unstable jobs, with frequent unemployment spells.

Amuedo-Dorantes and De la Rica (2007) used 2001 Census data to study the labor market performance of immigrants in Spain. They found that during the first year in the country, the employment gap amounts to 15 percentage points for men and 4 percentage points for women. This gap, however, varies notably depending on country of origin.[29] African men, for example, have an initial employment gap of 8 percentage points. For women, the evidence for Latin American immigrants is particularly interesting since already in the first year their employment rate is equal to that of comparable natives.[30] Both for men and women the gaps decrease with time spent in the country, and some groups (Latin American women) even display higher employment rates than similar native females five years after arrival in Spain.

As pointed out by Schröder (2007), since the 1970s the employment rates of immigrants have fallen substantially below those of comparable natives in Sweden. Nekby (2002) measured the employment gap of immigrants relative to natives using a longitudinal dataset for the period 1990–97. She found large employment gaps, which vary by immigrants' place of origin. The largest gaps pertain to East European and non-European immigrants who are, on average, 65–80% less likely to be employed than their native counterparts. Although employment gaps generally decrease over time, primarily during the first 15 years of residence, none of the immigrant groups converges fully to native employment levels during the observation period. Nordic and West European immigrants display a 30% lower employment probability, while this gap rises to over 60% for Eastern and Non-European immigrants.[31]

To sum up, in most of our six host countries there is a sizeable native–immigrant employment gap, even after extended periods of residence. This gap tends to be larger

[28] This is similar to the finding of Clark and Lindley (2009) for the UK.

[29] EU15 immigrants, both men and women, exhibit very large employment gaps relative to native Spaniards, but this is a reflection of many EU15 individuals coming to Spain without the intention to work rather than difficulty in finding a job.

[30] De la Rica and Ortega (2012) reported employment rates for women by marital status for different immigrant groups. Their findings reveal similar employment rates for single women regardless of their origin country. However, they found important differences in the size of the marriage employment penalty. Morocco-born females experienced a much larger penalty (about 40 percentage points) than native women (5 percentage points) or immigrant females from other origins.

[31] An important caveat for Swedish studies that rely on registry data is that the employment rates of immigrants tend to be underestimated. Some immigrants that appear as non-employed have actually left the country but the registry has not been adjusted accordingly.

for immigrants from non-EU countries and for female immigrants. From a dynamic perspective, in most of the countries surveyed there has been relatively little progress regarding male employment gaps from one generation to the next. However, female employment gaps have typically declined considerably between the first and second generations.

4.2.2 Gaps in the quality of employment: occupations and earnings

Let us now examine the average quality of the jobs held by immigrants and comparable natives. We shall conduct this comparison by looking first at differences in the type of occupations held, before turning to gaps in earnings.

Occupational gaps

Dustmann and Frattini (2011) provided comparative evidence on this issue for their sample of 15 EU countries. To measure the degree of segregation of immigrants into particular occupations, the authors constructed an index of skills, the so-called ISEI scale, and estimated the differences in the distribution of immigrants relative to natives along this scale. Conditional on workers' age, gender, education, and region of residence, they found that in most countries, both EU and non-EU immigrants work in less skilled occupations than their native counterparts. Their findings suggest that the extent of occupational segregation is more pronounced in Italy and Spain than in France, Germany, Sweden, and the UK.

Amuedo-Dorantes and De la Rica (2007) analyzed occupational upgrading in Spain. Ranking occupations by their average wage, these authors estimated ordered-probit models to measure the extent to which immigrants upgrade their occupations, relative to natives, as the duration of their stay in the country increases. They found no evidence of occupational segregation between EU immigrants and natives. In contrast, they reported substantial occupational segregation of non-EU immigrants into low-skill occupations in the first few years after arrival. Over time, Eastern Europeans and Latin American immigrants experience an improvement, moving up to better paid occupations, but no such progress is found among Africans. Complementing these findings, Alcobendas and Rodriguez-Planas (2010) reported that occupational assimilation in Spain is slower for women and for more educated immigrants.

Earnings gaps

We next turn to the analysis of gaps in earnings. The study by Dustmann and Frattini (2011) offered a recent picture of earnings differentials between immigrants and natives for some European countries using the European Labor Force Survey (2009).[32] Overall,

[32] In the years covered in the study, the survey only reported earnings for Belgium, Germany, Finland, France, and Italy.

the authors concluded that, in line with the results reported in Table 24.3, immigrant earnings are located at the bottom of the overall earnings distribution. Even after conditioning on demographic characteristics, such as age and education, the adjusted gap remains highly significant. Their results also revealed that these gaps are primarily driven by the low earnings of non-EU immigrants.

Algan et al. (2010) presented evidence of earnings gaps between immigrants and natives in France, Germany, and the UK. The results are based on regression models that condition on education, experience, and region of residence. For France, the findings show that among first-generation immigrant men, Europeans and Asians do not exhibit significant earnings gaps. In contrast, the gap is large for Turkish workers (0.10 log points), even higher for workers from the Maghreb (0.16 log points), and at its maximum for sub-Saharan African workers (0.26 log points). In terms of improvements in relative earnings from the first to the second generation, the results suggest significant progress only for second-generation immigrants from the Maghreb. For female immigrants, the wage gaps with comparable female natives are similar to those for males from the same region of origin, and there is no evidence of improvement for second-generation female immigrants.

In Germany, there exists a substantial earnings gap between male immigrants and natives across all countries and regions of origin, with a maximum of 0.21 log points for Greeks and 0.08 log points for Turks, Germany's largest immigrant group. The picture is similar for female immigrants, with Turkish females exhibiting the largest gap (0.17 log points). The degree of progress in the second generation is non-existent for women and relatively limited among men, of whom only Greeks and Yugoslavs manage to reduce the wage gap relative to the first generation. Several other studies have analyzed earnings assimilation in Germany. Among these we highlight two, both based on longitudinal data from the German Socio-Economic Panel (GSOEP), covering the period 1984–2007. Basilio and Bauer (2010) concluded that the wage differential between natives and immigrants can be explained by immigrants' lower returns to education relative to natives. Fertig and Schurer (2007) compared the wage profiles of natives and first-generation immigrants. Their findings suggest that ethnic German immigrants and the most recent cohort of immigrants are able to achieve full earnings assimilation after nine years of arrival in the country, while for other groups and earlier cohorts full convergence takes almost twice as long (16 years).

The empirical results reported by Algan et al. (2010) for the UK reveal earnings gaps between first-generation immigrants and natives that are substantially higher than those found for France or Germany. Across regions of origin, the earnings gaps for male immigrants range from 0.55 log points for Bangladeshis to 0.22 log points for Black Caribbeans. In contrast to this rather grim picture for the first generation, relative earnings outcomes improve substantially for the second generation across all groups. For example, the earnings gap of male Bangladeshis and Pakistanis decreases to 0.13 and 0.11 log points

respectively in the second generation. First-generation female immigrants exhibit smaller earnings gaps than their male compatriots. Again, with the exception of Black African women, there is significant progress for second-generation female immigrants, with an average remaining gap of 0.05 log points. Clark and Lindley (2009) provided additional evidence for the UK by studying wage profiles of (white) natives, white immigrants, and non-white immigrants. Their findings revealed that native workers exhibit a substantially steeper age earnings profile than both groups of immigrants, which implies a widening of the wage gaps over time.

The finding of diverging earnings profiles between immigrants and natives is also found in Italy. As documented by Venturini and Villosio (2006), wage gaps between immigrants and natives are insignificant at entry into the Italian labor market but widen over time. After five years of experience, the conditional wage differential already amounts to about 12% and increases further to 19% after 10 years of experience. African immigrants are the worst performers in the Italian labor market with continuously diverging wage profiles. Eastern European and Asian immigrants, on the other hand, begin to reduce their wage differentials vis-à-vis natives a decade after arrival.

In contrast to Italy and the UK, the initial earnings of immigrants and their subsequent adjustments in Spain follow a more typical pattern of wage assimilation. Izquierdo et al. (2009) found an initial earnings differential of about 35% at the time of arrival, which subsequently decreased for each additional year spent in Spain, reaching about 15% after 10 years of residence. After those 10 years, there is no further assimilation. Overall, this assimilation profile is similar for all immigrant groups. Sanromá et al. (2007) provided additional evidence for increasing wages for immigrants as a function of the duration of their stay. According to their cross-sectional estimates, an additional year in Spain increases wages by 1.4%. In addition, having legal status is associated with a significant wage premium of around 15%. In a complementary study that looked in more detail at the entire wage distribution, Simón et al. (2008) showed that legal immigrants from developing countries have lower mean wages and a more compressed wage structure than native-born workers. These differences are largely driven by differences in observable characteristics, and in particular workplace and occupational segregation.

For Sweden, Edin et al. (2000) found that the overall earnings gap between immigrants and natives at their time of arrival in Sweden is substantial, around 40%, and that there is some assimilation during the first five years in the country, roughly of the order of 2 percentage points per year. However, there is substantial heterogeneity across regions of origin. Nordic and other OECD immigrants enter with only a 20% gap relative to the typical native and exhibit a very low rate of assimilation. Immigrants from non-OECD countries, on the other hand, start out with a large earnings disadvantage of nearly 60% but display rapid convergence towards natives during the first five years of their stay. However, after

that initial period, convergence comes to a halt so that even in the long run, non-OECD immigrants end up earning around 40% less than their native counterparts.

In conclusion, the evidence for the host countries that we have examined points to substantial earnings gaps between natives and immigrants, particularly for those from non-EU/non-OECD countries. The evolution of these gaps over time does not fit a simple pattern, with substantial variation across origin and destination countries. Overall, the gaps appear to decrease vigorously during the first few years spent in the host countries. But while the gaps continue to narrow in Germany, progress stalls in Spain and Sweden, or even reverses in Italy and the UK. Regarding the second generation, large earnings gaps persist in France and Germany. Only in the UK is there evidence of a significant reduction in the earnings gaps from the first to the second generation.

4.2.3 Explanations

As we have just seen, there are important gaps in the labor market outcomes between immigrants and comparable natives. Moreover, these gaps vary widely across host countries as well as immigrant groups within a given country. Next we discuss four theories behind these gaps that have been proposed in the literature: lack of country-specific skills (language), precarious employment, spatial segregation, and discrimination.[33]

Language proficiency

The lack of country-specific skills, in particular language, has been proposed as one important reason behind the gaps in labor market outcomes between recent immigrants and natives. The acquisition of language proficiency can be viewed as an increase in an immigrant's human capital that fosters social and economic integration.[34] Human capital theory predicts that language proficiency should raise an individual's productivity in the labor market, leading to higher employment rates and earnings. Consistent with this view, there is strong evidence that language similarity is an important determinant in migrants' destination choices (Adsera and Pytlikova, 2012).

Over the last decade a few studies have explored the role of language proficiency in accounting for the underperformance of immigrants in European labor markets. For Germany, Dustmann and Van Soest (2002) exploited information on the degree of German language proficiency in the GSOEP for the period 1984–93 to analyze the link between language fluency and earnings. Conditional on socio-economic characteristics, such as experience, years since migration, education, and marital status, these authors found that the return to a good command of the German language in a straightforward

[33] Part of the measured earnings gaps between otherwise similar immigrants and natives may also be due to monopsonistic discrimination against immigrants by their employers, who are exploiting the fact that immigrants supply their labor less elastically to firms than natives (see Hirsch and Jahn, 2012).

[34] Around the 1980s, when the US faced a rapid increase in the number of immigrants who did not speak English, economists started to emphasize immigrant language skills as an important form of human capital.

OLS regression is around 5%. However, if one takes into account the possible endogeneity of language skills and the issue of measurement error in the language skill variable, the estimated effect is much higher, around 11% for men and 10% for women.

For the UK, Dustmann and Fabbri (2003) studied the impact of English language proficiency on immigrants' labor market performance, using data from the Fourth National Survey on Ethnic Minorities and the Family and Working Lives Survey for the years 1994 and 1995. Their OLS estimates suggested that a good command of the English language increases the probability of being employed by around 15 percentage points. As in the case of Germany, controlling for both endogeneity and measurement error leads to a substantially higher positive effect of around 26 percentage points. Their analysis also showed a large effect of English proficiency on earnings, with a 28% premium for those workers who speak English well.

In support of these findings, Andersson Joona and Nekby (2012) reported that some counseling and training programs for recent immigrants in Sweden are proving successful in raising employment probabilities by providing local skills valued by employers.

As discussed earlier, Amuedo-Dorantes and De la Rica (2007) reported that Latin American immigrants in Spain perform better in the labor market than immigrants from non-Spanish-speaking countries, again reinforcing the idea that language is an important determinant of employment and earnings gaps. Apart from its direct effect, language may also play an important role in facilitating the transfer of home country human capital to the host country economy, as suggested by, for example, the findings of Sanromá et al. (2007), who reported higher returns to schooling for Latin Americans than for immigrants from Eastern Europe.

The business cycle

A number of recent studies have examined the relative performance of immigrants in the labor market and its relation to the business cycle.[35] Dustmann et al. (2010a) studied the case of Germany and the UK. They showed that the unemployment probabilities of immigrants are significantly more sensitive to the economic cycle than those of natives, even after conditioning on individual characteristics and region of residence. Furthermore, the degree of cyclicality in employment is higher for less educated workers and for immigrants from non-OECD countries.

Åslund and Rooth (2007) examined this issue in the context of Sweden. Their identification strategy was based on the comparison of refugees arriving in the country at different points of the business cycle and the details of a governmental refugee settlement policy. They found that earnings assimilation depends crucially on a favorable labor

[35] Since the onset of the Great Recession, unemployment rates among immigrants have climbed faster than for natives in several countries, most dramatically in Spain.

market upon arrival in the host country. In addition, high local unemployment rates have persistent effects on immigrants for at least 10 years.[36]

De la Rica and Polonyankina (2013) analyzed the impact of immigration on native workers in different phases of the business cycle. They considered two periods: 2001–07, when Spain was in a clear expansionary period; and 2008–12, a period of deep economic recession. For the expansionary years, they found a sizeable relocation of native workers to occupations with more interactive rather than manual content in response to immigration and a zero impact on native employment levels. However, the pattern changed completely in the recession period of 2008–12. There is no evidence of any relocation of natives to different occupations in response to an immigration shock. In addition, they found a sizeable negative impact on the employment levels of earlier immigrants, which suggests that new immigrants in recession years displace earlier immigrants, as they are likely to be close substitutes in terms of jobs.

To sum up, the employment rate of immigrants appears to be more sensitive to the business cycle than that of natives. The more precarious employment of immigrants may be due to a variety of factors, such as differences in the sectors of employment or rigid labor markets that tend to favor insiders over outsiders.

Spatial segregation

Studies of the impact of residential and workplace segregation of immigrants on their performance in the labor market are relatively scarce in Europe. An important exception is Sweden, for which Åslund and Skans (2010) showed that groups with low employment rates are more segregated from natives and that those surrounded by many immigrant colleagues in the workplace tend to earn lower wages. Edin et al. (2000) studied the effect of segregation at a more aggregate level, identifying the causal effect of living in an ethnic enclave on labor market outcomes by exploiting a refugee placement policy that was in place in Sweden between 1985 and 1994.[37] Their findings show that living in an ethnic enclave improves labor market outcomes for low-skilled immigrants, in particular if the ethnic enclave is of high quality (in terms of average income).[38]

Glitz (2012a) documented substantial residential and workplace segregation of immigrants in Germany over the last three decades, with workplace segregation comparable in

[36] A similar finding was observed by Barth et al. (2004) regarding immigrants in Norway: non-OECD immigrants were much more affected by negative economic conditions than both OECD immigrants and natives.

[37] Under this policy, refugees were exogenously assigned to municipalities in order to obtain a more favorable distribution across the country.

[38] Following a similar empirical strategy, Damm (2009) confirmed the overall positive effect of living in an enclave on labor market outcomes for refugees in Denmark. Åslund et al. (2014) and Andersson Joona and Wadensjö (2012) showed that immigrant managers and self-employed immigrants respectively are substantially more likely to hire other immigrants than natives, giving rise to workplace segregation.

magnitude to the degrees of segregation of blacks in the US and immigrants in Sweden. Segregation turns out to be particularly pronounced in sectors such as agriculture, construction and the low-skill service sector, and among low-educated immigrant workers. From a dynamic point of view, workplace segregation declines with time in Germany but never disappears entirely. This pattern is reminiscent of the corresponding wage assimilation profiles in Germany, indicating that ethnic segregation and the relative earnings position of immigrants are closely related.

Discrimination

It is perhaps tempting to interpret native–immigrant gaps that cannot be explained by the usual proxies of individual productivity as evidence of ethnic discrimination. However, this can be quite misleading and over the last decade a lot of progress has been made to strengthen the identification of discrimination in the data, often by means of experimental methods. In most studies, evidence of discrimination against immigrants is based on their differential treatment in the labor market (e.g., lower call-back rates to job applications) compared to natives with the same qualifications.

Much of the discrimination research focuses on Sweden. This partly reflects the concerns in this country about the consequences of the important shift in the ethnic composition of its immigrant population over the last few decades. Recent immigrants in Sweden are more "visible" (that is, less white) than earlier immigrants who mostly originated from within Europe. Despite the fact that the most recent immigrants are as educated, on average, as natives, their labor market performance has been worse than that of earlier cohorts of immigrants. To assess the potential role of ethnic discrimination, Carlsson and Rooth (2007) carried out an audit study by mailing fictitious applications to real job openings in which they randomly assigned foreign-sounding names to some applications, keeping qualifications constant across applications. They found that applications with Swedish-sounding names received about 50% more call-backs. Arai and Thoursie (2009) analyzed the effects of surname changes on earnings for immigrants from Asian, African, or Slavic countries. They found a substantial increase in annual earnings after a name change, pointing again to race-based wage discrimination. Finally, in a recent study, Arai et al. (2011) set up a field experiment where they enhanced details for job applicants with Arabic names to investigate how much more work experience is necessary to compensate for the initial difference in call-back rates relative to Swedish-sounding applications. The findings from this study show that Arabic men face stronger discrimination in the labor market than Arabic women. Nekby and Rödin (2010) took a different approach to accounting for employment gaps between natives and immigrants, focusing on the role of identity. They found that attachment to the majority culture is crucial to avoid low employment rates, and that a strong attachment to one's ethnic group does not have a detrimental effect on employment.

Similar methodologies have also been applied to the cases of Germany, Spain, and the UK. In a correspondence study for a sample of 528 advertisements for student internships in Germany, Kaas and Manger (2011) found a 28.6% higher call-back rate for German-sounding names relative to Turkish-sounding names, with a particularly large differential treatment by smaller firms. Interestingly, the inclusion of additional personality information in the application reduced these gaps almost entirely, pointing towards an important role for statistical discrimination by the employers. Farré et al. (2010) investigated discrimination in the context of the housing rental market. They found that applicants with a Moroccan name are 15 percentage points less likely to receive a call back than those with a Spanish name. However, this penalty is substantially reduced by revealing positive information about the socio-economic status of the applicants. In a follow-up study, Farré et al. (2011a) reported that this seemingly discriminatory treatment varies considerably with the concentration of immigrants in the area. In neighborhoods with a high immigrant share (above 50%) the degree of measured discrimination disappears. For the UK, Wood et al. (2009) found a 74% higher positive response rate for "white" job applications relative to otherwise equivalent ethnic minority applications, with no significant differences between individual ethnic groups.

In the context of ethnic discrimination, it is interesting to see how immigrants themselves perceive the degree of discrimination against them in their host economies. Using the 2004 European Social Survey, we computed the shares among the foreign-born population that report feeling that the group they belong to is being discriminated against. In Table 24.4, we report both a general measure of discrimination and one explicitly referring to racial or ethnic discrimination.[39] As the table shows, a non-negligible fraction of immigrants feel that they are being discriminated against, with the highest share being observed in France and Spain, with about 21% compared to 17% in the UK, 16% in

Table 24.4 Self-reported discrimination

Destination country	Group	Race or ethnicity
France	0.22	0.13
Germany	0.16	0.05
Spain	0.21	0.11
Sweden	0.14	0.05
UK	0.17	0.14

Table displays the share of respondents that feels belonging to a group or race/ethnicity that is being discriminated against. Entries are weighted averages. Sample restricted to population aged 18–64 and foreign-born.
Source: Own calculations using the 2004 European Social Survey.

[39] Specifically, we compute the average of an indicator variable that takes the value 1 if the individual feels discriminated against, applying survey weights in our calculations.

Germany, and 14% in Sweden. In many of these countries, the perceived main reason for discrimination appears to be race or ethnicity-related, as suggested by the second column of Table 24.4.

4.3 Education outcomes

One of the main determinants of an individual's labor market outcomes is his or her educational attainment. For immigrants who arrive in their host country as adults, their formal education was almost always completed in their home country and the return to this component of their human capital is often remarkably low. This is particularly the case when the country of origin is a less developed country (see Dustmann and Glitz, 2011a). In contrast, for immigrants who arrive in their host country as children or for children of immigrants who are born in the host country, schooling in the host country is an important determinant for their subsequent labor market performance.

Dustmann et al. (2011) analyzed the different trajectories of immigrants and natives in compulsory education in the UK, which comprises primary education (from ages 4–5 to 10–11) and secondary education (from ages 11–12 to 15–16). At the beginning and at the end of compulsory education, the proficiency of all students in Math and in English was assessed by means of a test. Using data from the National Pupil Database (NPD) and other sources, the authors showed that over time there is a substantial gain for all ethnic minority groups except Black Caribbean students relative to white British-born students, despite a large initial disadvantage. This gain is more pronounced for girls than for boys and takes place primarily within schools rather than across schools. Further analysis shows that the most important determinant of this gain is to speak English at home.

Most of the empirical evidence about the educational attainment of immigrants has exploited recent results from the PISA study, which provides internationally comparable measures of proficiency in reading, mathematics, and science for students at age 15 across most OECD countries (for details see OECD, 2007). Entorf and Minoui (2005) provided interesting evidence on the importance of migration background and command of the foreign language for understanding differences in the PISA results between immigrants and natives of some European countries (including Germany, Finland, France, Sweden, and the UK) in comparison to other traditional immigration countries, such as Australia, Canada, and New Zealand. For the group of students most likely to perform particularly poorly—students with foreign parents and foreign language spoken at home—the difference in test scores relative to their native counterparts amounts to 105.7 PISA score points for Germany, 83.8 for France, and 63.6 for Sweden (with a typical native average of around 500 points). In contrast, differences are much smaller in Australia and Canada (about 25 PISA score points). This is interpreted as evidence of these countries' selective migration policies, which have attracted immigrant populations characterized by high

socio-economic status. In line with the findings of Dustmann et al. (2011) for the UK, when the host country language is spoken at home, scores improve significantly.

Schnepf (2007) focused on ten immigration countries—Australia, Canada, France, Germany, the Netherlands, New Zealand, Sweden, Switzerland, the UK, and the US—to study the gap in educational outcomes between natives and immigrants using information from PISA, TIMSS, and PIRLS. In line with the results found by Entorf and Minoui (2005), her findings suggest that, in English-speaking countries, immigrants exhibit relatively little educational disadvantage relative to natives, whereas educational achievements of immigrants in continental Europe are substantially lower than those of their native counterparts. These results were confirmed by Dustmann and Glitz (2011a) using more recent data from the 2006 wave of the PISA study.

In addition to these comparative studies, some analyses focused specifically on one particular destination country, notably Germany and the UK, and analyzed in more depth the educational performance of immigrants, with a particular emphasis on the heterogeneity across countries of origin. Entorf and Tatsi (2009) analyzed differences in PISA scores for immigrant and native students in Germany and the UK. The findings for Germany show that the language that immigrants speak at home is the most important factor for success in PISA outcomes. Furthermore, the authors showed by means of an Oaxaca–Blinder decomposition that much of the raw educational gap is due to differences in observable characteristics and, in particular, the better socio-economic background of natives. The corresponding evidence reported by Entorf and Tatsi (2009) for the UK suggested that, in contrast to Germany, language spoken at home is not an important issue for student performance among UK children with an immigrant background. Instead, the authors showed that parental background is the key element for understanding differences in PISA outcomes between immigrant students and natives in the UK.

Murat (2011) used data from PISA 2006 to analyze gaps in educational outcomes between immigrants and natives in Italy and France. In both countries, unconditional gaps are substantial in all three subject areas. However, controlling for socio-economic characteristics explains almost all of the gaps in Italy, whereas in France, despite a substantial reduction, a significant unexplained gap remains.

Anghel and Cabrales (2010) studied children's performance in standardized exams in Spain.[40] Confirming previous studies, they found that parental background plays an important role. They also documented important heterogeneity across children of different ethnic backgrounds, even after controlling for the parents' socio-economic status. Children of Asian or Eastern European descent tend to do very well in mathematics and less well in language (in fact, poorly in the case of Asians). After controlling for parental background, the children of Moroccan parents are no different from the children of

[40] This study used test scores for the region of Madrid only. While an important region, it is not clear to what extent the results can be generalized to the rest of the country.

natives in mathematics and general knowledge, though they perform worse in language tests. Finally, controlling for parental background, children of Latin American descent tend to display the worst outcomes in all subjects.

Besides parental education and the language spoken at home, a few other explanatory factors have been analyzed in the literature. Nekby et al. (2009) studied the role of identity on the educational attainment of immigrants in Sweden. They found that integrated men (attached both to the majority culture and to their own ethnic group) attain significantly higher levels of education than assimilated men (who only self-identify with the majority group), and no differences between assimilated and integrated women. Cobb-Clark et al. (2011) used PISA data to link institutional arrangements in OECD countries to the immigrant–native gaps in test scores. They found that these gaps are larger for immigrant youths who arrive later in the host country, and for those who do not speak the test language at home. With regards to the effectiveness of institutional arrangements in mitigating these gaps, they found that starting school early helps some migrant children in some cases. Their findings also suggest that limited tracking on ability appears to be beneficial.

4.4 Other socio-economic outcomes

Recently, economists have started to widen the scope of their analyses of the socio-economic situation of immigrants by examining a broader set of outcomes. Here we summarize a few studies that focus on two of these outcomes using a similar methodology. The outcomes of interest are the probability of early marriage (by age 25) and the fertility rate. These variables are particularly informative about the degree of empowerment of women from each immigrant group in the host countries that we consider.[41] Methodologically, these studies estimate linear regression or probit models for each of these outcomes conditional on age, education, and country of origin.

Algan et al. (2012) used the French Labor Force Survey (2005–07), supplemented with data from other sources. Their findings suggest that the probability of early marriage is higher for most immigrant groups than for natives and that immigrant women exhibit higher fertility rates than comparable native females, with the highest rates exhibited by women from the Maghreb, Asia, and Africa. Their results also showed a substantial reduction in these gaps vis-à-vis natives for second-generation immigrant women.

Constant et al. (2012) used the German Socio-Economic Panel for the years 2005–07 to provide comparable evidence for Germany. Immigrants in Germany are more likely to marry young than natives. The difference is largest for women from Turkey, Greece, Poland and Russia, and for men from Turkey, the former Yugoslavia, Greece, and Poland. The age gap at marriage disappears for second-generation immigrants, with the exception of Turkish women. First-generation female immigrants also exhibit higher

[41] Female employment rates are also highly informative. We have already discussed native–immigrant gaps in employment for both men and women earlier in the text.

fertility rates than comparable natives. However, the fertility rates of second-generation immigrant women are indistinguishable from those of comparable natives.

Nekby (2010) analyzed registry data for Sweden for the year 2005. Because of data constraints she only examined early marriage for second-generation immigrants and found higher rates compared to natives for individuals of Asian and African descent. In her paper, she also analyzed a number of other indicators, such as intra-group marriage and identity formation. Overall she found evidence of native–immigrant gaps but also clear evidence of convergence across generations. Examining fertility patterns for foreign-born females in Sweden, Andersson and Scott (2005) found higher levels of childbearing for immigrant women although the determinants of first births are similar to those of native women.

Georgiadis and Manning (2011) used the Labor Force Survey 2000–08 to provide evidence for the UK. They found that early marriages are uniformly higher for immigrant groups than for natives, with the highest probability of early marriage found for Pakistanis and Bangladeshis. In terms of fertility rates, practically all immigrant groups display higher rates than natives, with again Pakistanis and Bangladeshis standing out with the highest fertility rates. The results further showed clear evidence of convergence toward the native norm for the second generation, both in terms of early marriage and fertility.[42]

Bisin and Patacchini (2012) used the Italian Labor Force Survey (2005–07) to provide evidence for Italy. Immigrants are, in general, more likely to marry young than Italian-born comparable individuals, with the exception of Northern Europeans and South Americans. In contrast to the results for the other European countries, immigrants in Italy, however, tend to have fewer children than native Italians, with the exception of African women.

De la Rica and Ortega (2012) analyzed data for Spain, using the 2007 Spanish Labor Force Survey and the National Immigration Survey. Immigrants in Spain are more likely to marry young than similar natives, particularly Moroccans. A simple comparison of (unconditional) means reveals that Eastern European and Latino females display lower fertility rates than native females, whereas Moroccans and women from other Muslim countries (mainly Pakistan) exhibit higher fertility rates than native women. Regression analysis showed that the higher fertility rates of Moroccan women are fully accounted for by their lower educational attainment. However, controlling for education does not eliminate the gaps for the other immigrant groups.[43]

[42] Casey and Dustmann (2010) analyzed the identity formation process of immigrants in the UK. They found that labor market outcomes only play a minor role but that there is a strong intergenerational transmission of identity.

[43] De la Rica and Ortega (2012) also studied the gaps between natives and immigrants in Spain along a variety of additional dimensions. Their results revealed that Latinos are the group with patterns of behavior closest to those of natives, followed by Eastern Europeans. In several dimensions, such as the marriage penalty for females, Moroccans are the groups with larger gaps relative to Spanish-born individuals. They also pointed out that even though employment rates of immigrants tend to be higher than those of natives, immigrants are much more likely to be employed in low-paying occupations.

Finally, Aleksynska and Algan (2010) used the Cumulative European Social Survey for the years 2001–09 to examine native–immigrant gaps in a broad range of socioeconomic indicators across 16 European countries.[44] Their findings are broadly consistent with the studies surveyed above. In addition, these authors also compared the degree of religiosity (measured by the frequency of praying) between natives and immigrants and found that immigrants from Africa, Asia, and to a lesser extent from South America are more religious than the native populations. In line with the intergenerational trends in most other indicators, their findings further showed that this gap in religiosity is substantially reduced among second-generation immigrants.

Taken together, all the studies surveyed here found substantial differences in early marriage and fertility for immigrants relative to the native population. However, the evidence also shows significant convergence from the first to the second generation.

5. ECONOMIC CONSEQUENCES OF IMMIGRATION

What are the economic effects of immigration on the receiving countries? This important question is at the heart of much of the policy debate surrounding immigration and has motivated extensive research. The focus of this research has been primarily on the labor market, but some attention has also been paid to the fiscal consequences of immigration and the effects on aggregate productivity. The goal of this section is to provide a concise review of the recent European evidence on these topics.

5.1 Labor market effects

When thinking about the labor market impact of immigration, labor economists have typically assumed that the main mechanism through which the host country's labor market adjusts to immigrant inflows is changes in factor prices, in particular changes in skill-specific wages. In a simple one-good neoclassical economy, the factor proportions approach postulates that as long as immigrants differ in their skill composition from the existing labor force in the host country, their arrival will lead to changes in the relative supplies of different skill groups and, in turn, to changes in relative wages.[45] If the native labor supply is elastic or if wages are rigid, there may also be adjustments in native employment.

Early work on the labor market effects of immigration focused on testing these predictions. However, when a large number of empirical studies failed to find conclusive

[44] The sample sizes are substantially smaller than in the data sources used for the national studies reviewed above.

[45] In the short run it is also possible that immigration will reduce capital intensity and, hence, the average wage in the economy. As the capital–labor ratio returns to its steady-state level, this effect should disappear. In integrated markets such as the European Union, capital flows relatively freely and, as a result, the capital supply may be almost perfectly elastic even in the short run.

evidence of a negative effect of immigration on wages and employment, economists were forced to consider potential alternative adjustment channels. One such channel is that changes in factor endowments (due to migration) may be readily absorbed in open economies by changes in the output mix (Lewis, 2003).[46] A second mechanism that has been proposed is that economies may absorb new immigrant inflows by adopting production technologies that are more intensive in the use of the skills brought by those immigrants (Lewis, 2011). Third, the absence of detrimental effects of immigration on native outcomes among similarly skilled workers could also be due to the fact that immigrants are simply not competing with native workers and that both groups specialize in different occupations and tasks in the labor market (Peri and Sparber, 2009; Manacorda et al., 2012; Ottaviano and Peri, 2012). Finally, it is possible that strong complementarity effects operating through household production can attenuate the effects of immigration on the labor market outcomes of similarly skilled natives (Cortes and Tessada, 2011).

5.1.1 Wages and employment

We begin by summarizing the main empirical approaches used to analyze the wage and employment impact of immigration in the host economies, and then review the relevant literature.

Empirical methodologies

The *spatial correlation approach* (Altonji and Card, 1991; Borjas et al., 1997) consists of estimating regression equations, either in levels or first differences, in which the dependent variable is the average outcome (typically wages or employment rates) in a region, and the main explanatory variable is the foreign-born share in that same region. This approach exploits variation in the immigrant density across regions to identify the causal effects of immigration. The basic idea is that native wages (or employment rates) may be lower in regions with more immigrants or, in the first differences specification, in regions that have received a larger inflow of immigrants.

This strategy faces two important econometric challenges: First, it is likely that the location decisions of immigrants respond to region-specific shocks that are unobservable to the researcher. The presumption is that immigrants tend to choose regions experiencing positive labor demand shocks, which will tend to generate an upward bias in OLS estimates of the effect of immigration on native wages and employment rates. Second, cities and regions are not isolated entities. As a result, immigration into one region may trigger labor outflows or capital inflows. If not accounted for, these compensating flows are likely to exacerbate the bias in OLS estimates.[47]

[46] This is the celebrated Rybczynski theorem.

[47] Aydemir and Borjas (2011) have argued that attenuation bias due to measurement error could be an additional problem, biasing OLS estimates toward zero.

Besides a few scarce quasi-natural experiments that we will discuss later on, the most common way to tackle the endogeneity concerns has been to exploit the tendency of immigrants to locate in cities and regions in which individuals from their own country of origin are already present (Bartel, 1989; Munshi, 2003). Altonji and Card (1991) and Card (2001) developed an instrumental-variables strategy based on this idea, which has subsequently been used by many authors in a variety of contexts. Regarding the compensating inter-regional factor flows, some aspects have been addressed relatively convincingly, while others still remain unanswered. Card and DiNardo (2000), Card (2007), Wozniak and Murray (2012), and others have shown that when a city receives an inflow of unskilled immigrants, its total unskilled labor force (including both natives and immigrants) increases roughly one for one.[48] Much less evidence exists regarding the inter-regional mobility of firms and capital in response to immigration. Olney (2013) found that immigration into a city leads to an increase in the number of establishments as well as the size of the existing ones. Along these lines, Beaudry et al. (2011) found evidence that the number of entrepreneurs and, more generally, the demand for labor in a city is proportional to the size of the local population.

The second widely used empirical methodology to study the labor market impact of immigration is the *structural skill-cell correlation approach* proposed by Borjas (2003).[49] Central to this approach is the assumption that the production process in a host country's economy can be described by a nested constant elasticity of substitution (CES) production function that, on the highest level, combines labor and capital to produce a single aggregate output good. In the original application, Borjas (2003) modeled the overall labor input as a CES aggregate of education-specific labor inputs that are, in turn, CES aggregates of education-and-experience-specific labor inputs. The key parameters in this production structure are the elasticities of substitution governing each nest. These parameters are estimated as follows. First, workers are assigned to skill cells based on observed formal education and potential work experience. The elasticity of substitution between different education–experience groups is identified by regressing the average wage in each skill cell on the supply of workers (in logs) in that same cell and fixed effects dictated by the theoretical marginal product equation. Using the estimated elasticity (and

[48] Not all studies reached this conclusion. Borjas (2006), for example, found that immigration into a local labor market is associated with a lower in-migration rate, a higher out-migration rate, and a decline in the growth rate of the native workforce. For Italy, Mocetti and Porello (2010) found evidence that immigration into a region may have reduced the inflows of low-skilled natives and increased the inflows of highly skilled natives. Peri and Sparber (2011) discussed the role of inherent model bias in the estimation of these immigrant–native displacement effects.

[49] Besides the structural approach presented here, which extends earlier factor proportions approaches in the literature (e.g., Borjas et al., 1992). Borjas (2003) also estimated reduced-form regressions relating the nationwide average wage in a given skill cell (defined by education and experience) to the corresponding nationwide share of immigrants in that same skill cell, controlling for secular changes in the wage profiles of different education and experience groups by including a comprehensive set of fixed effects.

estimated fixed effects), we can then aggregate to compute the labor composite at the immediate higher level—that is, education groups. Again, the elasticity of substitution across the (education) groups in this nest will be identified by regressing average wages on the size of the labor composite in that same cell, along with the required fixed effects. The fully parameterized production function can then be used to simulate the wage effects of an immigration flow with any desired size and composition, taking into account the full set of own- and cross-factor elasticities. By carrying out the analysis at the national level, the structural skill-cell correlation approach alleviates the concerns about offsetting labor and capital flows across regions that complicate the identification of the wage effects of immigration in the spatial correlation approach.

Manacorda et al. (2012) and Ottaviano and Peri (2012) pointed out that the framework in Borjas (2003) assumes perfect substitutability between natives and immigrants with the same observed levels of formal education and potential experience. In order to test this assumption, these authors added one more level to the production function by allowing labor in a given experience–education cell to be a CES aggregate of native and immigrant workers, governed by an elasticity of substitution that needs to be estimated as well. As we discuss below, this seemingly minor extension has important implications for the assessment of the labor market impact of immigration and has motivated several studies in the European context.

Although seldom discussed, the skill-cell correlation approach is not free of endogeneity concerns either.[50] First, immigrants in a particular experience–education cell endogenously choose their destination country. While this may be less relevant for the case of the US, it is certainly important in the context of Europe, where countries are geographically much closer together and barriers to internal labor mobility are practically non-existent. As a result, the observed immigrant inflows into specific skill cells may be driven by economic conditions, rendering them endogenous and potentially biasing the estimates of the associated elasticities of substitution. Second, immigration quotas and the enforcement of immigration laws often, explicitly or implicitly, depend on labor market conditions in the host country (Hanson and Spilimbergo, 2001; Fasani, 2010), creating a direct link between observed inflows into given skill cells and economic conditions. Third, the basic skill cell correlation approach ignores the fact that natives and immigrants with the same observable skills often work in very different occupations (Steinhardt, 2011) and regional labor markets with potentially large differences in wage levels and other relevant characteristics.[51] This affects the degree of their substitutability

[50] Borjas (2003) acknowledged the potential for endogeneity bias. Felbermayr et al. (2010) discussed these identifying assumptions in detail. Our discussion here draws heavily on their paper.

[51] Llull (2010) has extended this framework to allow for endogenous decisions on education, labor market participation, and occupation choice. The paper presented the results of a structural estimation for a sample of Census-based US data. His findings revealed a fair amount of adjustment along these margins, together with a significant residual effect on the wages of natives.

with native workers, a point also raised by Dustmann and Preston (2012), who showed that estimated elasticities of substitution between immigrants and natives are systematically affected by the skill downgrading experienced by recently arrived immigrants.

Besides the spatial correlation approach and the skill-cell correlation approach, a third methodology attempts to exploit events that can be reasonably considered as *natural experiments* to identify the labor market impact of immigration. In an ideal experimental setting, differently sized immigration flows would be randomly assigned to different markets, thus circumventing the inherent endogeneity of immigrant location choices. Not surprisingly, given the nature of the question, most applications to date fall somewhat short of this perfect setting, and should therefore more appropriately be characterized as quasi-experiments. The seminal study in this literature is Card's (1990) Mariel boatlift study, which exploited a particular episode of Cuban emigration to the US in 1980.[52] Below we will focus on those studies that exploit historical events in Europe: the war in Yugoslavia (Angrist and Kugler, 2003), the repatriation of Algerians to France in the early 1960s (Hunt, 1992), and the return of ethnic Germans after the fall of the Berlin wall (Glitz, 2012b).

Cross-country evidence

Because many European countries lack consistent data on wages, the emphasis in the cross-country studies has been on employment rates.[53] Somewhat departing from the tradition in studies for the US, several authors have paid attention to the mediating effect of labor-market rigidities on the effects of immigration in the European context.

Angrist and Kugler (2003) provided the first comprehensive analysis for Europe, exploiting Labor Force Survey data for 18 countries for the years 1983–99. Methodologically, they adopted the spatial correlation approach and addressed endogeneity concerns through instrumental variables estimation. Specifically, they used geographical distance to Yugoslavia as an instrument for immigration flows based on the idea that the costs of migration for the Yugoslavs displaced by the wars of the 1990s were an increasing function of the distance to each potential destination country. Their results suggested that immigration had a negative effect on the employment rates of natives, with a particularly large effect on young native workers and in countries with more rigid labor markets (measured by high firing costs and wage rigidities).

D'Amuri and Peri (2011) used longitudinal cross-country data for 14 Western European countries to analyze the effects of immigration on the overall employment of natives and its task composition, distinguishing between jobs characterized by simple tasks (routine and manual) and jobs requiring complex tasks (abstract and communication). In

[52] For a critical review of this event as a natural experiment, see Angrist and Krueger (1999).

[53] High-quality wage data based on social security records have recently become available in several European countries, giving rise to a flurry of new empirical studies.

defining their skill cells by education, age, country, and year, their methodology is somewhat of a hybrid of the skill cell and the spatial correlation approaches. Using data from the European Labour Force Survey for the years 1996–2007, the authors regressed the employment–population ratio of natives and the relative supply of complex tasks in a given skill cell on the share of foreign-born workers in the same skill cell, controlling for education–country and education–year fixed effects. The main results show that immigration does not reduce the employment rates of natives, somewhat in disagreement with the findings of Angrist and Kugler (2003). Rather, immigration induces a change in the composition of native employment in terms of occupations, with native workers shifting from less to more complex occupations. This reallocation takes place primarily through job destruction and creation, and appears to be faster in countries with less rigid labor market institutions.

Before turning to country-specific studies, it is worth mentioning a series of studies by Longhi et al. (2005a, b, 2008), who conducted meta-analyses of the literature. Their main conclusions are that the impact of immigration on natives is typically quantitatively small, but that there seems to be a substantially negative effect of new immigrant inflows on the labor market outcomes of earlier cohorts of immigrants. The analysis also showed that the effects of immigration on labor force participation and employment in Europe tend to be larger than the effects on wages. This is consistent with the view that wage rigidities are important in many European labor markets.

Individual country evidence

Next we turn to studies using data for individual European countries. While substantial research has been devoted to the cases of Germany and the UK, and to a lesser extent Spain and France, relatively few studies have analyzed the effects of immigration on the Italian and Swedish labor markets.

In a seminal study for France, Hunt (1992) analyzed the effect of the large inflow of repatriates triggered by Algerian independence in 1962 on the French labor market. Adopting the spatial correlation approach and instrumenting region-specific inflows with measures of local average annual temperatures and the number of previous Algerian repatriates already settled in each region, her results suggested almost negligible effects of immigration on native wages and unemployment. One of the few studies using French data over the last decade is Gross (2002). Using quarterly data from the mid 1970s through to the mid 1990s, the author estimated a vector-auto-regression model for the unemployment rate, the immigration rate, real labor costs, and the female labor-force participation. The main finding was that immigration reduces permanently the unemployment rate in France, suggesting that the increase in aggregate demand and the derived labor demand generated by the immigrants more than offset the increase in labor supply.

Over the last decade, the case of Germany has attracted considerable attention and multiple studies have been conducted using a variety of methodologies. Adopting the

skill-cell correlation approach and assuming perfect substitutability between immigrants and natives within the same skill group, Bonin (2006) found a very small effect of immigration on wages and no effect on unemployment.[54] More recently, D'Amuri et al. (2010) extended this approach by allowing for imperfect substitution between immigrants and natives, as well as between recent and previous immigrants. Using the same administrative dataset as Bonin (2006), the IAB Employment Subsample, their estimates pointed toward a significant degree of imperfect substitutability between observationally equivalent immigrants and natives. In contrast, recent immigrants and older cohorts of immigrants appear to be perfect substitutes. Consequently, their estimates imply very small adverse effects of recent immigration on natives, but a large negative effect on previous immigrants. In a closely related analysis based on data from the German Socio-Economic panel and the German Microcensus, Felbermayr et al. (2010) found a comparatively low elasticity of substitution between immigrants and natives within skill groups but relatively high elasticities across education and experience groups. Overall their estimates imply an effective degree of substitution between immigrants and natives close to that found by Borjas (2003) for the US. The authors concluded that immigration has moderately negative effects on wages and employment outcomes for some types of native workers.[55] The starting point in Steinhardt (2011) is the observation that the skill-cell correlation approach implicitly assumes that immigrants and natives with the same education and potential experience work in the same occupations. Providing ample evidence that this assumption is violated in the German data, the author then exploited variation in immigrant shares across occupations to estimate the labor market impact of immigration. The empirical findings suggested that an inflow of immigrants increasing the number of employees in a given occupation group by 10% leads to a relatively small reduction in native wages of about 1.3%. However, for low-skilled service occupations the effect is about three times as large.[56] In terms of methodology, the study by Glitz (2012b) is markedly different. This author used a spatial correlation approach and addressed the endogeneity concerns with respect to immigrant location choices by exploiting a quasi-experiment. In particular, he exploited the fact that in the years following the fall of the Berlin Wall in 1989, ethnic German immigrants, arriving primarily from Poland and the Former Soviet Union, were exogenously allocated to different regions by the German government to ensure an even distribution across the country. Combining data on these inflows with those from German social security records and the German Microcensus, the empirical analysis revealed no systematic effect of

[54] Specifically, a 10% increase in the share of immigrants is associated with a reduction in natives' wages by less than 1%.

[55] For an analysis using a wage-setting approach in which wage and employment effects are simultaneously determined in equilibrium, see Brücker and Jahn (2011).

[56] These results are robust to the inclusion of additional controls for occupation-specific demand shocks and to treating the occupational choice of immigrants as endogenous.

immigration on relative wages but significant displacement effects of the order of 3 unemployed workers for every 10 immigrants who find a job.

Gavosto et al. (1999) provided the first empirical analysis of the labor market impact of immigration on natives in Italy. Based on administrative data for the period 1986–95, and exploiting variation in immigrant inflows across regions and industries, these authors found that immigration raised the wages of native manual workers, in particular in small firms and in northern Italian regions. The evidence thus points towards low substitutability between natives and immigrants or perhaps even an overall complementarity between immigrant and native manual workers in Italy, a conclusion also supported by the findings of Venturini and Villosio (2006). Staffolani and Valentini (2010) provided more recent evidence based on administrative data from the Work Histories Italian Panel covering the period 1995–2004. Defining skill groups by gender and age, the authors performed an analysis akin to Borjas's skill-cell correlation approach at the national level. In line with the earlier findings of Gavosto et al. (1999), the results pointed to a positive effect of immigration on native wages, both for native blue-collar and white-collar workers.

The first paper to investigate the labor market effects of the recent wave of immigration received by Spain was Carrasco et al. (2008). These authors adopted the skill-cell correlation approach and used data from the 1991 and 2001 Population Censuses and the 2002 Survey of Earnings Structure, thus only covering the first part of the immigration episode. The main finding of this study was that increases in the foreign-born share in a skill cell are negatively associated with employment and wage growth. However, the estimated magnitudes are small and the effects not very robust, leading the authors to conclude that there were no economically significant effects on natives' employment and wages. González and Ortega (2011) adopted instead the spatial correlation approach (coupled with the ethnic network instrument) and combined data from the Labor Force Survey for the years 2001–06 with social security wage records and data from the population registry. Their instrumental variables estimates revealed no evidence of detrimental effects of immigration on native wages or employment rates, a result in line with the findings of Amuedo-Dorantes and De la Rica (2011).

Dustmann et al. (2005) also employed a spatial correlation approach to study the labor market impact of immigration in the UK context, using data from the British Labour Force Survey for the period 1977–99. The empirical analysis revealed no effect of immigration on native wages but a small negative effect on the employment of natives with intermediate levels of education, which is offset by a positive impact on those with higher education. The authors concluded that overall the net effects of immigration on native labor market outcomes are small. As pointed out earlier, Manacorda et al. (2012) extended the skill-cell correlation approach by allowing for imperfect substitutability between immigrants and natives within the same skill group. They found a non-negligible degree of imperfect substitutability, implying that recent immigrant inflows into the UK have primarily impacted the wages of earlier cohorts of immigrants while

leaving native wages relatively unaffected. Dustmann et al. (2013) aimed to estimate the effect of immigration along the distribution of natives' wages. Using data from the British Labour Force Survey covering the period 1997–2005, the main estimation equation related changes in the log wages of natives at different percentiles of the wage distribution in a given region to changes in the immigrant share in the region. In stark contrast to the skill-cell correlation approach, their method did not rely on a pre-allocation of immigrants to specific age–education cells, which is problematic due to the pervasive skill downgrading suffered by immigrants upon arrival in the host country.[57] The empirical findings suggested that immigration has reduced wages below the twentieth percentile, where the relative density of immigrants (and thus the relative supply) is higher than that of natives. At the same time immigration has increased wages in the upper part of the earnings distribution as well as the average native wage in the UK.

5.1.2 Sectoral composition and endogenous technology adoption

Faced with the recurring finding of a lack of adjustments in relative wages and employment in response to immigrant inflows, labor economists turned to international trade theory for explanations. Using US data, Lewis (2003) provided the first formal test of the classical Rybczynski theorem, according to which a small open economy may respond to an increase in the supply of, say, unskilled labor by expanding employment and output in unskilled-intensive industries while leaving relative factor intensities and factor prices unaffected.[58] Building on this study, González and Ortega (2011) and Dustmann and Glitz (2011b) systematically tested the predictions of the Rybczynski hypothesis in the Spanish and German contexts respectively. After showing that relative wages do not respond to immigrant inflows in either Spain or Germany, both studies proceeded by providing comprehensive evidence that regional economies absorb immigration flows primarily through within-industry/firm adjustments in relative factor intensities rather than between-industry/firm adjustment as predicted by the Rybczynski theorem. That is, an increase in the local supply of, say, unskilled labor leads to an increase in the relative use of unskilled labor in production. The fact that such adjustments in relative factor intensities are not accompanied by changes in relative wages strongly points towards endogenous changes in production technologies as an alternative mechanism through which local economies can absorb immigration-induced changes in local labor supply. Namely, if an inflow of immigrants that increases the local availability of unskilled labor induces firms to switch toward production technologies that are more intensive in

[57] The authors addressed endogeneity concerns using the ethnic networks instrument and relatively large regional units.

[58] Hanson and Slaughter (2002) and Gandal et al. (2004) pioneered the analysis of immigration through the lens of the small open economy model.

unskilled labor, then the resulting change in the relative unskilled wage will be mitigated.[59]

5.1.3 Occupational and task specialization

The expectation that immigration should reduce the wages of native workers with similar skill levels relies on the implicit assumption that these workers are perfect substitutes in production. As we outlined earlier, there is a growing literature attempting to estimate the degree of substitution between observationally equivalent natives and immigrants. Peri and Sparber (2009) have investigated the micro-foundations for this mechanism. They hypothesized that native workers have a comparative advantage in communication-intensive tasks (as opposed to manual tasks), relative to recent immigrants. As a result, natives and immigrants with the same observable skills (education and potential experience) will specialize in different occupations, reducing the degree of labor market competition between the two groups. Using data for the US, these authors showed that less-educated natives in high-immigration cities switched disproportionately more from manual-intensive occupations toward communication-intensive occupations.

Amuedo-Dorantes and De la Rica (2011) investigated this mechanism for Spain, using data from the Spanish Labor Force Survey for the period 2000–08. Their findings provide strong support for the occupational specialization hypothesis. Additionally, these authors explored the role played by language proficiency in explaining immigrant specialization patterns. They found that immigrants from Spanish-speaking countries specialize in more communication-intensive occupations than other immigrant groups, providing further support for the hypothesis of task specialization based on comparative advantage. Using cross-country data for 14 European countries, D'Amuri and Peri (2011) provided evidence that this finding is more generally applicable, showing that in this set of countries immigration has led native workers to specialize in occupations involving relatively complex tasks.[60]

[59] Such technology shifts may be driven by directed technical change as suggested by Acemoglu (2002) or by producers' optimal choice of production technologies from a given pool of alternatives as suggested by, for example, Beaudry and Green (2003) and Caselli and Coleman (2006). Several studies provided empirical evidence of the connection between the composition of the labor force at the local level and technology adoption. For instance, Lewis (2011) found that the use of automation machinery indeed expands more rapidly in areas with faster growth in the relative supply of skilled labor, and Beaudry et al. (2010) showed that local skill abundance leads to a faster adoption of new technologies.

[60] Using attitudinal data, Ortega and Polavieja (2012) showed that Europeans employed in manual-intensive occupations (and thus more exposed to labor market competition from immigrants) are less in favor of immigration than other natives with the same levels of education. These findings based on attitudinal data are also consistent with the occupational specialization hypothesis.

5.1.4 Household services

Another important channel through which immigration may affect the well-being of the native population is by reducing the prices of non-traded services such as child care, elderly care, and household chores. By effectively increasing their purchasing power, cheaper services may benefit native households and lead to reorganizations of household production with consequences for the labor supply of the (highly skilled) natives that rely on these services.

The pioneering study in this literature is Cortes (2008), who found that low-skill immigration in the US leads to a reduction in the prices of household services such as housekeeping and gardening. By making these services more affordable, (unskilled) immigration may allow skilled natives to increase their labor supply. Further probing this mechanism, Cortes and Tessada (2011) found that low-skilled immigration leads to an increase in hours worked by highly educated women in the US along with corresponding reductions in the time devoted to household work. As a result of the higher labor market attachment of skilled (female) workers, the overall change in the relative supply of skilled to unskilled labor triggered by unskilled immigration may be mitigated, contributing to explain the apparent lack of response of natives' wages to immigration.[61]

Let us now turn to findings based on European data, beginning with evidence on the effects of immigration on the prices of low-skilled services. Using data for the UK over the period 1995–2006, Frattini (2010) adopted the spatial correlation approach to estimate the effects of immigration on the prices of traded and non-traded goods. His main finding was that immigration reduced price growth in service sectors that use unskilled labor intensively, such as restaurants and take-away food, with similar magnitudes as in Cortes (2008).[62]

Regarding the labor supply of skilled native women, Farré et al. (2011b) followed the approach of Cortes and Tessada (2011) and found that female immigration to Spain has increased the local availability of household services and reduced their prices. By allowing skilled native women to return to work earlier after childbirth and to continue working while caring for elderly dependents, immigration is estimated to account for one-third of the recent large increase in the employment rates of college-educated women in Spain.

[61] Cortes and Pan (2012) found similar results using data for Hong Kong, where hiring foreign domestic workers is a very prevalent phenomenon.

[62] There is also a literature concerning the effects of immigration on the housing market, another important non-traded sector. This work was pioneered by Saiz (2003, 2007) and Ottaviano and Peri (2007), and some recent contributions are Bohn et al. (2014) in the US context and González and Ortega (2013) for Spain. All these studies found that immigration inflows appear to increase housing prices in the receiving region. Sá (2011), in contrast, found that immigration has a negative effect on house prices in the UK as wealthy natives move out of those areas that receive large immigrant inflows, reducing overall housing demand. Grossmann et al. (2013) analyzed the interaction between migration and house prices from a dynamic perspective.

The findings are supported by Barone and Mocetti (2011), who provided evidence of a positive effect of immigration on female labor supply in Italy, especially for highly skilled Italian women.

5.2 Fiscal consequences

The most comprehensive studies about the fiscal consequences of immigration have been carried out in Sweden. The reasons are twofold. First, the fiscal consequences of immigration are quantitatively more important in countries with large public sectors. Second, this type of calculation is particularly demanding in terms of data and Sweden has made very rich administrative datasets available to researchers. Clearly, extrapolation of the results to other countries requires caution since the composition and labor market performance of the immigrant populations as well as the size and design of the public sector vary widely across countries.

Ekberg (1999) evaluated the fiscal contribution of immigration in Sweden during the years 1991 and 1994.[63] This study exploited unique data obtained by matching income and population registers at the individual level. The author found that over this period immigration has constituted a fiscal burden, in contrast to the experience of the 1950–80 period. This reflects the more recent deterioration in employment rates among immigrants in Sweden. Quantitatively, the author estimated that the loss has been at most 2% of GDP. Gustafsson and Österberg (2001) confirmed the downward trend in the net fiscal contribution of immigrants over the 1980s and 1990s. These authors documented that Swedish immigrants and particularly refugees are, on average, a burden on the public sector upon arrival. However, over time their net contribution into the Swedish public system increases.[64]

Storesletten (2003) performed a dynamic accounting exercise of the net fiscal benefits from immigration in Sweden. The framework is an overlapping-generations model that allows for individual heterogeneity in terms of age and skills and a careful modeling of the Swedish welfare system (including the pension system).[65] The model is calibrated using data from Ekberg (1995). The main findings reveal that the net balance depends crucially on age at arrival. While immigrants that arrive in age bracket 20–30 generate important gains, those who arrive above age 50 or below age 10 entail a substantial net cost. Comparing the empirical results with estimates from a similar study for the US (Storesletten, 2000) reveals that the gains from immigration in Sweden are substantially lower than in

[63] The first estimates of the fiscal effects of immigration in Sweden were provided by Wadensjö (1973).

[64] Wadensjö and Orrje (2002) estimated the fiscal effects of immigration in Denmark and found similar results.

[65] In order to simplify the analysis, this exercise assumes that individual behavior and factor prices are unaffected by immigration. Storesletten (2000) provided a full general-equilibrium analysis for the US.

the US, partially reflecting the smaller size of the welfare state and the higher employment rates of immigrants (relative to natives) in the US.

Collado and Iturbe (2004) quantified the long-run fiscal effects of immigration for Spain, using 2000 as the base year and considering a range of different immigration scenarios. Applying the methodology of generational accounting (Auerbach and Oreopoulos, 1999) and calibrating their model using data from the European Community Household Panel, the authors showed that in the Spanish context immigration is expected to substantially lower the fiscal burden for natives, given the projected aging and declining fertility among the native population.

Bonin (2006) calculated the net contribution of immigrants to the fiscal balance in Germany for the year 2004. Using a static setting and accounting for the main taxes and transfers, the author calculated that the net contribution was about 2000 Euros per immigrant. This net contribution is primarily due to the fact that most immigrants are of prime working age and thus net contributors to the fiscal system. The author also simulated the long-term contribution and found an average per-capita net contribution equal to 11,600 Euros (compared to 68,200 Euros for native Germans). He also found that second-generation immigrants will, on average, be net recipients over their lifetime, receiving around 31,000 Euros in present value terms, reflecting their predicted higher rates of unemployment and lower wages.

Dustmann et al. (2010b) assessed the fiscal consequences of the substantial immigrant flows from Eastern Europe into the UK in the aftermath of the 2004 EU enlargement. They found that immigrants from the new accession countries have substantially lower take-up rates of social services and public benefits than natives. While part of this differential is due to demographic differences, with the new immigrants being younger and better educated on average than natives, take-up rates remain lower among immigrants even after controlling for observable characteristics. Calculations of the overall net fiscal contribution further show that immigrants from the new accession countries made positive net contributions to the British public coffers in each year covered by the analysis.

5.3 Macroeconomic outcomes

A series of studies have examined the economic effects of immigration from a more aggregate perspective, focusing on outcomes such as income per capita, total factor productivity, and inflation. Naturally, these studies rely on country-level data and employ identification strategies that differ from those reviewed earlier.

Building on the empirical literature attempting to estimate the effects of international trade flows on income, Ortega and Peri (2014) extended the analysis to jointly estimate the long-run effects of trade and immigration on income. Specifically, using a large cross-section of countries, this paper estimates a regression model for income per capita where the key regressors are openness to trade and the foreign-born share in a country.

Endogeneity concerns are addressed using an instrumental-variables strategy that exploits variation in exogenous factors, such as geographical distance, that account for bilateral trade and migration flows. The estimates provide evidence of a robust, positive effect of openness to immigration on long-run income per capita.[66] Furthermore, the findings suggest that the effect operates through an increase in total factor productivity, which appears to be driven by the degree of diversity within the immigrant population (in terms of countries of origin).[67] Following a similar identification strategy, Andersen and Dalgaard (2011) estimated the effects of temporary cross-border flows of people on aggregate productivity. They also found evidence of a positive effect on productivity and showed that their results are robust to using a dynamic panel approach with internal instruments as an alternative identification approach.[68]

Docquier et al. (2014) adopted a model-based approach to the study of these questions. These authors simulated the labor market effects of immigration and emigration during the 1990s for all OECD countries using a general equilibrium model with elastic labor supply. Their migration data are based on stocks of immigrants and emigrants (by country of origin) for the years 1990 and 2000, and distinguish between college- and non-college-educated workers. The main simulation results showed that immigration over the 1990s has tended to increase the wages of low-skilled native workers, reduce the gap between skilled and unskilled wages, and leave the average wage of all native workers unchanged. This pattern is a reflection of the relatively high skill level of the migrants arriving to OECD countries during the 1990s.

Di Giovanni et al. (2012) conducted an evaluation of the global effects of international migration using a model that accounted for trade openness and allowed for endogenous varieties. These authors found that immigration increases real income per capita in the long run by as much as 5% in the main immigration countries. The main reason is that immigration triggers the creation of new firms and product varieties. Interestingly, most origin countries (though not all) are also better off because remittances more than compensate for the loss of workers. In a similar spirit, but employing a different theoretical framework, Docquier et al. (2013) also predicted increases in world GDP if international migration were to be liberalized.

[66] In contrast, the effect of trade openness on income is much weaker, proving very sensitive to changes in the sample or specification.

[67] Trax et al. (2012) estimated plant-level production functions and also found that cultural diversity within the firm (and outside the firm but within the region) lead to productivity increases.

[68] These findings stand somewhat in contrast to those reported in Llull (2011). Ortega and Peri (2011) conducted a similar analysis but this time they exploited year-to-year variation on a sample of OECD countries. This analysis found no short-run effect of immigration on income per capita. However, this masks offsetting effects. Immigration leads to an increase in the employment rate of the receiving economy but, at the same time, it appears to reduce TFP in the short run.

Bentolila et al. (2008) focused on the relationship between immigration and inflation in Spain and argued that the relatively stable inflation during the period of a rapidly falling unemployment rate between 1995 and 2006 can be largely attributed to the rising immigration over those years.

6. CONCLUSIONS

This chapter has reviewed the economic research devoted to the recent European immigration experiences. We started by providing descriptive evidence on long-term immigration trends and current characteristics of the immigrant populations in various important European destination countries and Europe as a whole. We then discussed key policy issues in the European context, focusing on access to citizenship, asylum seeking, border enforcement, amnesties, and policies to attract talent. With regards to the review of the economic research devoted to European immigration, we focused on two broad questions: What has been the socio-economic performance of immigrants in their destination countries and how has immigration impacted these countries' economies and native populations.

Beginning with the performance of immigrants in their host economies, our review has delivered some consistent findings. There are large gaps in labor market outcomes between immigrants and natives in most countries, both in terms of employment and wages, even after prolonged residence in the host country. These gaps are typically larger for non-OECD immigrants and female immigrants but their time profiles, as a function of residence, do not fit a simple pattern, with large variation across host countries and immigrant groups. In most of the countries surveyed, there has been relatively little progress from the first to the second generation, perhaps with the exception of the UK. A closer look reveals, however, consistent reductions in the female employment gap in several countries. In terms of policy actions, the evidence suggests large returns to programs that provide training and improve the proficiency in the language of the host country.

Turning to the effects of immigration on the economic outcomes of natives, the majority of studies, though not all, found a surprisingly small response of the relative wages of natives to immigration-induced changes in the size and skill composition of the labor force. While this could in principle be due to weak identification or large measurement error, it appears unlikely. Exploiting improved and expanded datasets, several authors found statistically and economically large effects on the wages of subsets of the workforce. In particular, there exists clear evidence that immigration reduces the wages of workers employed in unskilled-intensive service sectors. Likewise, several authors have shown that recent immigration leads to a sharp reduction in the wages of previous immigrants.

The overall absence of significant wage impacts of immigration suggests that there are additional channels of adjustment through which economies are able to accommodate immigration flows. It appears that comparably skilled natives and immigrants are imperfect substitutes in production. This seems to be the result of endogenous responses by native workers, who are able to reduce their exposure to competition from recent immigrants by specializing in occupations that build on their comparative advantage in communication-intensive tasks. Furthermore, skilled native females increase their labor supply in response to the greater availability of household services provided by immigrants, and firms adjust their production technologies to the changes in the skill composition of the local workforce. While some of these findings were initially established using US data, our reading of the European literature is that these mechanisms of adjustment are also at work in European labor markets.

To conclude, the last decade has seen an explosion of research in the field of immigration economics, in part fueled by the large increase in the volume of immigrants in many European countries. We now have a much better understanding of the different channels through which economies adjust to immigration-driven changes in the size and composition of the labor force. Of course there are many issues that are not yet well understood. For instance, we have seen evidence of striking disparities in the performance of immigrants in the labor markets of different European host countries. Quite possibly, the specific policies and institutions of the receiving countries have played an important role in determining the relative success of immigrant workers and their children. Identifying the most effective policies in fostering the socio-economic integration of immigrants should be on top of the research agendas for the next decade.

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