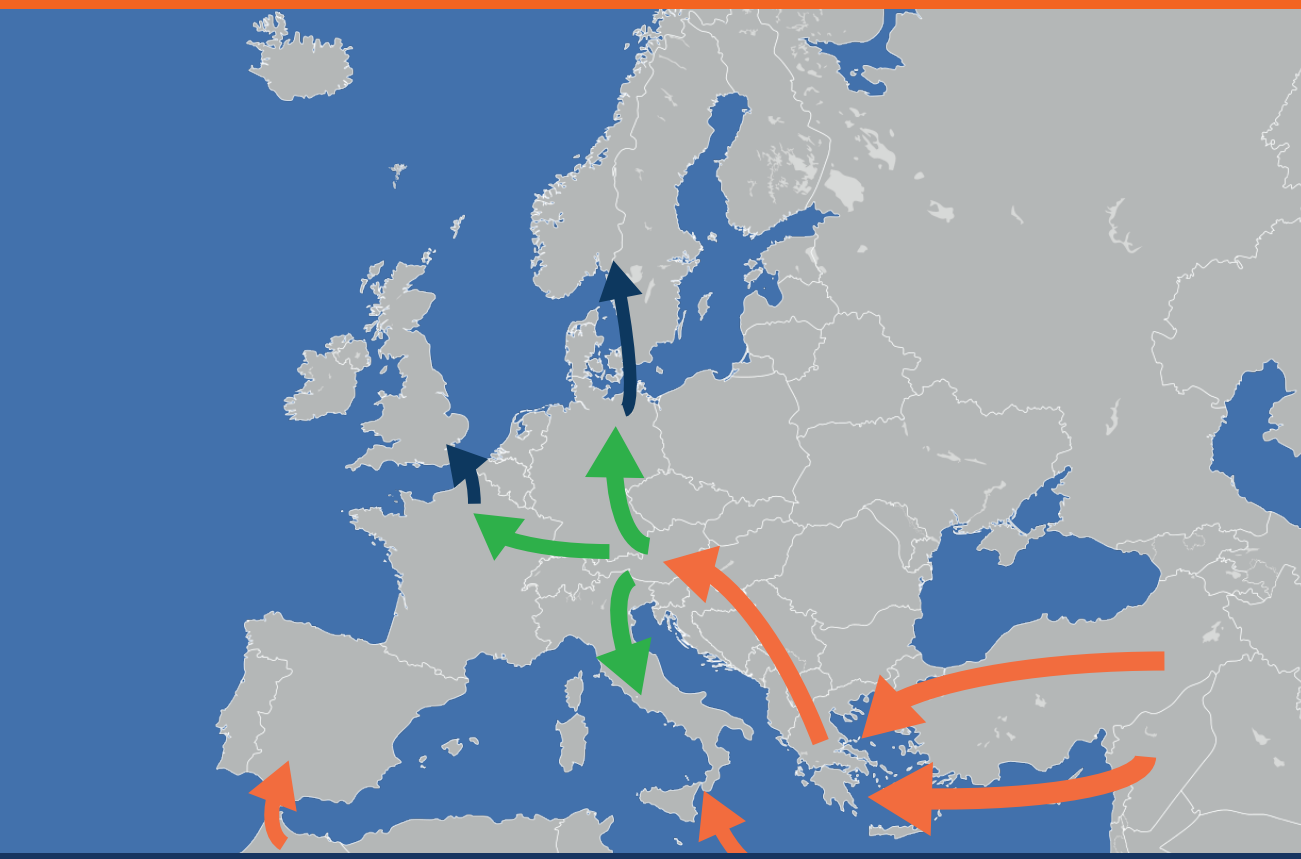
October 2016

Refugees and Economic Migrants:

Facts, policies and challenges

Edited by Francesco Fasani



A VoxEU.org Book

CEPR Press

Refugees and Economic Migrants

Facts, policies, and challenges

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Foreword

Civil war and political instability around the globe have driven levels of migration to historic highs. The role migration plays within the realms of politics and the media has always been one of great significance. As a social issue, immigration is often portrayed as causing great difficulty to recipient countries. In economic terms, however, immigration can be seen in an entirely different light. Having been a major issue in the Brexit referendum and one which is increasingly debated in many other European countries, it is essential to fully understand the true effects of migration within Europe. This would help to ensure that the economic aspects of future migration policy are properly thought through.

This new eBook summarises recent lessons learnt by economists regarding migration and migration policy. The authors examine the recent refugee crisis in Europe; discuss the impacts of immigration on labour, health, education, crime and elections in hosting societies; present evidence from major recipient countries such as the US, the UK, Norway, Spain and Italy, and address a host of other topics that highlight the key issues facing policymakers in this area. Empirical analysis of migration has only been undertaken in relatively recent years, and thus the results reported here are novel. It is important to disseminate this information as widely as possible, especially to policymakers as a tool to use in tackling these issues.

CEPR is grateful to Dr Francesco Fasani for taking the initiative to organise and edit this eBook. Our thanks also go to Simran Bola and Anil Shamdasani for the excellent and swift handling of its production. CEPR, which takes no institutional positions on economic policy matters, is delighted to provide a platform for an exchange of views on this crucially important topic.

Tessa Ogden
Chief Executive Officer, CEPR
October 2016

Introduction

Francesco Fasani
Queen Mary University of London

The media and political attention that migration issues receive goes through cycles. From the point of view of European countries, we are currently going through the peak of a cycle. In the last few years, news stories about and images of the dramatic and perilous trips to – and through – Europe of refugees from Asia and Africa have become a constant feature of all major European media outlets. The political repercussions of hosting – or of refusing to host – refugees are regularly debated in several European countries, from the future of the German Chancellor Angela Merkel to the effects of the recent (failed) referendum on the EU refugee resettlement scheme promoted by the Hungarian Prime Minister Vicktor Orban. Immigration also took centre stage in the campaign that led to the vote for the 'Brexit' of the UK from the EU in June 2016. As a consequence, the future of EU immigrants in Britain (and of British citizens in the EU) is now arguably the main issue the new British Prime Minister Theresa May will have to address in her future negotiations with the EU. Further, terrorist attacks in France and Belgium perpetuated by second-generation immigrants triggered a harsh debate that questioned the very idea of integration of foreign nationals in hosting societies.

Immigration – and undocumented migration, in particular – is an extremely divisive issue in the US political debate. The Obama administration is coming to an end without having delivered an immigration reform or a solution to the estimated 11 million undocumented immigrants who currently reside in the US. President Obama's plan to spare an estimated 4 million unauthorised immigrants – parents of citizens or of lawful permanent residents – from the risk of deportation and to grant them work permits was recently blocked by the Supreme Court. In the meantime, the Republican candidate for presidency, Donald Trump, proposed a radical solution: the mass deportation of all

immigrants residing unlawfully in the US and the construction of a wall along the US-Mexican border that would allegedly stem any future inflow (and that would be paid for by the Mexican government).

Two concurring factors have arguably contributed to bringing migration to the centre of public attention. First, the aftermath of the Great Recession, with weaker economic prospects and generalised cuts to public spending, led voters to question progressively more the legitimacy of foreign nationals' presence in their countries. Fears of potential competition for access to the labour market and to the welfare state naturally intensify when opportunities shrink, especially when some politicians actively work to exaggerate such concerns. The second element has been the ongoing refugee crisis. The number of people that have arrived in Europe in the last few years to seek asylum having fled conflicts and oppression in Asia and Africa has reached a level that has not been experienced since the mid-1990s. It is up for debate whether a cohesive and solid EU would face serious constraints in effectively welcoming and integrating such an inflow of refugees. It is clear, however, that the European institutions – already weakened by the difficulties in producing a coordinated response to the Great Recession – are struggling and are revealing all of their fragilities. While member countries are engaging in autonomous and uncoordinated responses, concern and hostile feelings seem to be on the rise among the general public.

Economic migrants and refugees in Europe

To what extent does the relevance of immigration in the political debate reflect actual flows of foreign citizens to Europe? How sizeable is this phenomenon for European countries? We summarise the recent immigration experience in Europe in Figure 1, in which we combine OECD estimates on annual inflows of foreign nationals to EU countries, Norway and Switzerland ('EU+NOR+CHE') with records from the UN High Commissioner for Refugees (UNHCR) on asylum applications and Eurostat data on the average unemployment rate in the EU.

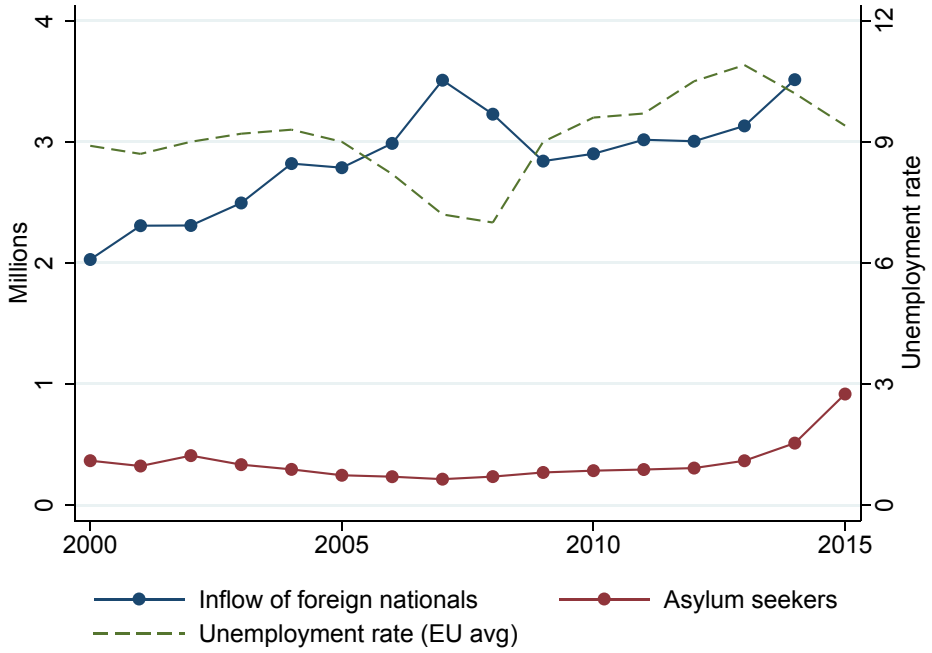
Sustained inflows of foreign nationals (blue line in the graph) were recorded in all European countries in the 2000s. The total annual inflow of immigrants steadily increased from about 2 to 3.5 million between 2000 and 2007. This upward trend was

reversed in the following two years – new entrants dropped to 2.8 million in 2009 and then stabilised at around 3 million per year until 2013. The inflow then reached 3.5 million again in 2014, the last year for which the data are available. Note that all these figures include both inflows from non-EU countries and movements of EU citizens from one EU country to another. As expected from economic migrants, fluctuations in the arrivals of foreign workers closely followed the economic cycle of European economies. The average EU unemployment rate over the period is displayed by the dashed line in Figure 1. Increasing inflows of immigrant workers were recorded in years of declining unemployment rates in European countries – between 2000 and 2008, the average unemployment rate in the area dropped by more than 20%, decreasing from 9% to 7%. The arrival of the Great Recession, however, increased the number of unemployed workers in all European countries, pushing the average unemployment rate towards a peak of almost 11% in 2013. Inflows of migrants declined in response to the worsening of economic opportunities in Europe. Economic recovery finally lowered the average unemployment rate to 9.4% in 2015, and the annual intake of immigrants started increasing again. The fact that most of the substantial immigration to Europe in the 2000s occurred in times of economic expansion, combined with the responsiveness of migrants inflows to the economic downturn of the Great Recession, may explain why most EU countries managed to accommodate large foreign populations without generating major political discontent among voters.

Inflows of asylum seekers to Europe are illustrated by the red line in Figure 1. The number of asylum applications filed in European countries remained fairly flat at around 200-300,000 individuals per year for most of the period, showing no visible response to the onset and spread of the economic crisis across European economies. The numbers started growing only in 2013, when UNHCR recorded 360,000 asylum applications submitted in EU+NOR+CHE countries. In 2014 the figure was above 500,000, and in 2015 it reached more than 900,000 applications. The timing of this 'refugee crisis' was determined by dramatic political events that took place outside Europe, and were unrelated to the 2007-2008 financial crisis and the ensuing recession. This timing was truly unfortunate for the victims of displacement, whose arrival in Europe was met with political disagreement at the EU level and with opportunistic behaviour at the individual country level. The onset of a refugee crisis in the aftermath of dramatic economic recession – from which some European countries were still struggling to

recover – resulted in an immediate and pressing concern among policymakers and voters about the potential costs of welcoming the refugees. These national political concerns were magnified by the absence of a supranational, EU-level coordinated approach to the emergency and by the lack of an effective mechanism to allocate refugees across member countries and spread the economic burden of hosting them.

Figure 1 Inflow of foreign nationals, asylum seekers and unemployment rate in the EU, Norway and Switzerland, 2000-2015



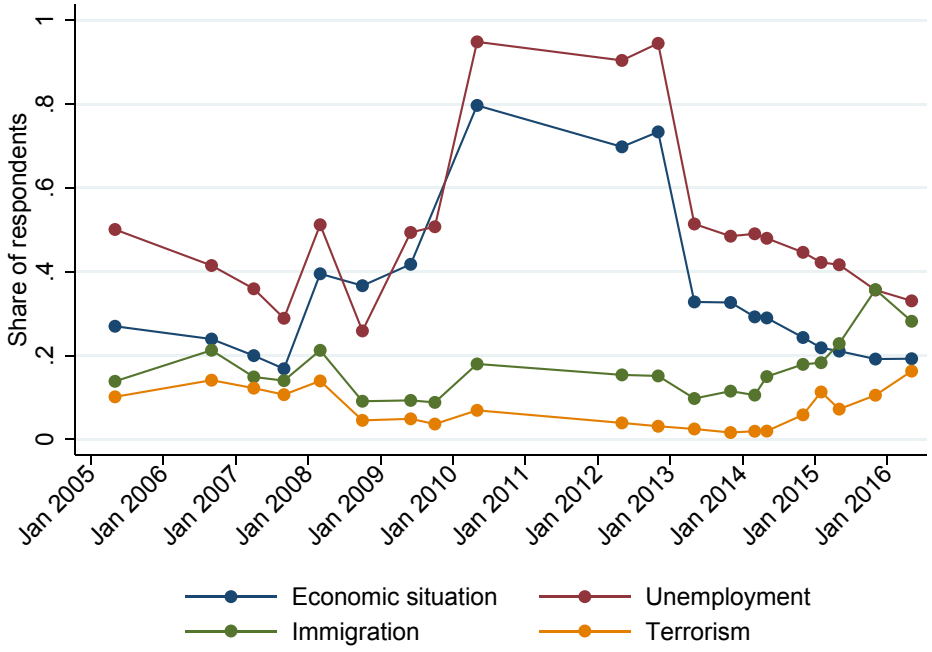
Note: The figure reports: i) inflows of foreign nationals: OECD estimates; ii) asylum seekers: UNHCR records; and iii) EU average unemployment rate: Eurostat.

The political salience of immigration

Data from the Eurobarometer survey provide a clear picture of the salience of immigration in European countries in recent years. The question, "What do you think are the two most important issues facing (our country) at the moment?", can be used to analyse political priorities of European citizens over time. Figure 2 uses data from 20 Eurobarometer waves collected between May 2005 and May 2016. It reports the

average share of interviewees in the EU who answered that (i) the economic situation, (ii) unemployment, (iii) migration, or (iv) terrorism were among the two most relevant political issues for their countries.

Figure 2 Responses to the question "What do you think are the two most important issues facing your country at the moment?", EU average, 2005-2016



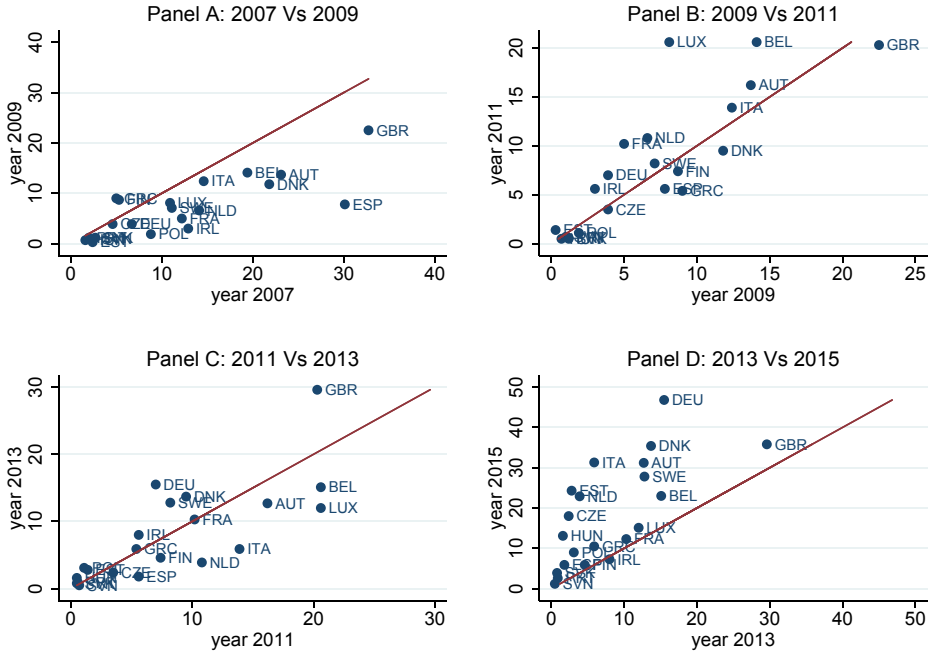
Note. The figure reports the EU average share of respondents who mention (i) the economic situation, (ii) unemployment, (iii) migration or (iv) terrorism as one of the two most important issues that their countries are currently facing. Source: Eurobarometer waves: May 2005 – May 2016.

Concerns about general economic conditions and the unemployment rate were fairly high throughout the entire period, but they jumped up and approached unanimity in the aftermath of the 2008 financial crisis. Unemployment was a major concern for more than 90% of the EU citizens interviewed between 2010 and 2012, while 70-80% of them worried about the economic situation of their countries. Immigration remained stable at below 20% for most of the period; neither the sizeable inflows of immigrants shown in Figure 1 nor the onset of the Great Recession seem to have prompted much of an effect on these attitudes. The salience of immigration, however, started increasing in 2014, precisely when larger inflows of asylum seekers were recorded in Europe (see Figure 1). In 2015, immigration overtook concern about the overall economy to join

unemployment as the top two major political challenges for European countries. The salience of terrorism – an issue often associated with immigration in the public debate – followed a similar trend. It remained fairly flat at around 10% for most of the period, and increased only in the last couple of years. In May 2016, 33% of EU interviewees considered unemployment to be a pressing political priority, immigration was in second place with 28% of respondents, followed by worries about the economic situation at 19% and terrorism at 16%.

We can further analyse the salience of immigration over time and across European countries by using data from five Eurobarometer waves, selected every two years from 2007 to 2015. Figure 3 reports scatter plots of the share of respondents who mention immigration as one of the two most important issues that their countries are currently facing. Each panel contrasts the responses in one wave (horizontal axis) with those provided two years after (vertical axis), and the straight line is the 45-degree line. Panel A highlights a remarkable reduction in the salience of immigration between 2007 and 2009 – all countries but Finland and Greece had a higher share of respondents identifying at immigration as a major issue in 2007 than two years later. As highlighted by Figure 2, concerns about the economic recession took central stage in those years. Panels B and C, instead, display the stability of immigration salience between 2009 and 2013, when all countries were clustered around the 45-degree line. Finally, Panel D illustrates the sharp increase in the salience of migration issues that took place between 2013 and 2015. Not only are respondents in all countries (except Ireland) more concerned about immigration in 2015 than in 2013, but the level of concern reaches unprecedented levels. In 2015, almost 50% of respondents in Germany and more than 30% in Austria, Italy, Denmark and the UK consider immigration to be one of the top two political priorities to be addressed. Remarkably, in all panels the UK displays one of the highest levels of immigration salience.

Figure 3 Salience of immigration, 2007, 2009, 2011, 2013 and 2015



Note. The figure displays scatter plots of the share of respondents to Eurobarometer waves 2007, 2009, 2011, 2013 and 2015 who mention immigration as one of the two most important issues that their country is currently facing.

Source: Data are taken from Table 9 in Hatton, T.J. (2016), "Refugees and Asylum Seekers, the Crisis in Europe and the Future of Policy", CEPR Discussion Paper No. 11271.

Economic and political challenges of migration: What can economists contribute to the debate?

The constant presence of immigration in the media and the political debate does not necessarily mean that the discussion has become progressively deeper and better documented. The presence of openly racist and xenophobic stances among individuals, policymakers and political movements is only part of the problem. Even the more civilised and politically correct debate is often very confused and poorly informed. The media coverage of the refugee crisis is riddled with wrong – and often exaggerated – figures and with a profound misunderstanding of the legal framework, of its definitions, and of its attribution of entitlements and responsibilities. The Brexit debate on immigration is another example of a highly polarised debate that was hardly grounded on any serious analysis or credible empirical evidence.

As this eBook shows, economists have much to say about immigration. Although the economic analysis of migration is a relatively recent field of research, a solid, rigorous and insightful body of research has developed in recent years. Important empirical and theoretical results have been produced in many areas, from the impact of immigration on receiving and sending countries to the process of conceiving and implementing migration policies. However, these findings still need to be fully disseminated among policymakers and the general public.

Economic research on migration phenomena has gone well beyond studying the impact of immigrants on natives' wages and employment. Within the labour market, economists have analysed the interaction between immigrants and natives, their degree of substitution and complementarities, and how native workers, firms and local economies can react and adjust to the labour supply shocks caused by the arrival of foreign workers. The focus of researchers has also moved towards other outcomes in host societies where immigrants may have an impact, including public finances, educational choices, health and health care, crime, residential decisions and housing prices. The determinants of social and economic integration of immigrants in host countries have also been thoroughly investigated.

Growing attention has also been devoted to sending countries and communities. What are the differences between internal and international migration in developing countries? What is the effect of migration on the migrants and on the families they leave behind? To what extent do migration and the associated outflows of human capital and inflows of remittances contribute to social and economic development in sending communities? What is the role played by return migration? What are the global gains from migration? These are just some of the highly relevant questions economists have tried to address.

Economists have also tried to evaluate migration policies and to quantitatively assess how they influence flows of foreign workers and their impact on both origin and destination countries. Researchers have studied, for example, which policies perform better in attracting skilled immigrants and which interventions are instead effective in stemming unauthorised inflows. The process of policymaking in the area of immigration has also come under increasing scrutiny. What is shaping voters' attitudes toward immigration and how these preferences are then reflected in policymakers' decisions? How does the presence of immigrants influence electoral outcomes in hosting societies? Does

the exposure of immigrants to more democratic regimes in hosting societies influence electoral outcomes in their origin areas? There is now rigorous and compelling evidence available to answer all of these questions.

All of this exciting and insightful research is well represented in this eBook. Written by some of the leading scholars in the field, it offers a brief summary of what economists have learnt about migration in several crucial areas of policymaking, and points out all the important questions that still remain to be answered.

Structure of the eBook

The eBook is organized into four sections: i) refugee migration; ii) economic migrants and their impact on hosting societies; iii) gains from migration for migrants and for the world economy; iv) migration policy and politics.

The volume starts with a section on refugee migration, one of the most dramatic and debated topics in Europe in recent years. In the first chapter of this section, **Timothy Hatton** (University of Essex) describes the current European refugee crisis and the policy responses that European countries have put in place. In the second chapter, **Jesús Fernández-Huertas Moraga** (UC3 – Madrid) argues for a tradable quota system to regulate asylum policy. Finally, **Bernt Bratsberg**, **Oddbjørn Raaum** and **Knut Røed** (Fisch Center; Oslo) describe the labour market integration of refugees in Norway - a major recipient country of refugee flows in recent years.

The second section includes several contributions on economic migrants and their impact on hosting society. The first chapter, written by **Marco Alfano** (University of Strathclyde), **Christian Dustmann** (UCL) and **Tommaso Frattini** (University of Milan) – focuses on the British case and discusses the role played by immigration in the debate that led to the vote for Brexit in June 2016. **Francesc Ortega** (CUNY) and **Chad Sparber** (Colgate University) explain the economic contribution of skilled immigrants in the next chapter. In the third chapter in this section, **Osea Giuntella**, **Catia Nicodemo** and **Carlos Vargas-Silva** (Oxford University) discuss the link between immigration, health and healthcare in receiving societies. **Paolo Pinotti** (Bocconi University) reviews evidence on the highly debated link between immigration

and crime, and the section ends with a discussion of the impact of immigration on education policies in host countries by **Lidia Farré** (Universitat of Barcelona) and **Ryuichi Tanaka** (University of Tokyo).

The third section looks at the gains from migration for migrants and for the world economy. **David Mc Kenzie** (World Bank), **Steve Stillman** (University of Bozen) and **John Gibson** (Waikato University) discuss the impact on migrants, drawing on evidence from a lottery programme in New Zealand. Then **Frederiq Docquier** (Université Catholique de Louvain) analyses the global costs from migration barriers and the gains that would be produced by removing them.

The fourth and final section deals with different aspects of migration policy, with the political process that shapes it, and with the impact that migration can have on politics in both hosting and sending countries. In the first chapter, **Jennifer Hunt** (Rutgers University) analyses the pros and cons of migration point systems. The enforcement of migration policy – with a particular focus on the US context – is discussed in the second chapter by **Catalina Amuedo Dorantes** (San Diego State University) and **Esther Arenas Arroyo** (QMUL). The third chapter, written by **Giovanni Facchini** (Nottingham University), highlights the role played by the media and political accountability in shaping the voting behaviour of elected representatives on migration (and trade) issues. The impact of migration on democratisation processes in sending countries is analysed by **Hillel Rapoport** (Paris school of Economics) in the fourth chapter, and in the final chapter of the section, **Anna Maria Mayda** (Georgetown University), **Giovanni Peri** (UC Davis) and **Walter Steingress** (Banque de France) discuss how migration can affect – both directly and indirectly – electoral outcomes in host countries.

About the author

Francesco Fasani is a Lecturer at the School of Economics and Finance, Queen Mary - University of London. After completing his PhD in Economics at University College London in 2011, he worked as Affiliated Professor at the Barcelona Graduate School of Economics (GSE) and Researcher at the Institute for Economic Analysis (IAE-CSIC) in Barcelona. He is a Research Affiliate of CEPR and a Research Fellow

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Part I

Refugee migration

1 The migration crisis and refugee policy in Europe

Timothy J. Hatton
University of Essex and CEPR

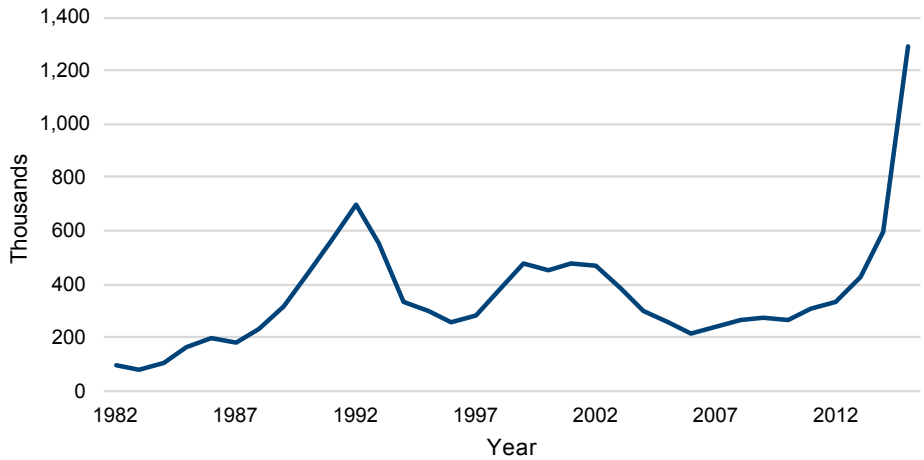
The Syrian exodus created a crisis that has thrown the existing European asylum system into chaos and has led to an increasingly polarised debate over extemporised solutions. It has thrown into sharp relief the inadequacies of the existing system and the need for reform. In this chapter, I outline some key facts relating to trends in asylum applications and policy. I also report some results of recent research on the determinants of asylum applications and the effects of asylum policies in countries of arrival. In order to provide a background to what policy reforms might be feasible, I examine several important features of public opinion in Europe and trends over the last decade. This leads to three key areas that should be the principal focus of reforms: border control policies, programmes for resettling refugees who are in the greatest need of protection, and enhanced cooperation and burden sharing among European countries.

These issues are examined at greater length in a recent paper (Hatton 2016b). In this light I argue that, in the long term, we need tighter border controls in order to move away from the current system of 'spontaneous' asylum migration. But this must be accompanied by a shift towards a comprehensive resettlement programme, built upon wider burden sharing among receiving countries in order to expand the capacity to host refugees. I argue that such reforms would do more to help those refugees who are most in need of protection. It is important to stress that these measures would work *with* the grain of public opinion rather than *against* it in the way that the current system does. Otherwise, we risk an even greater political backlash than we have seen so far and we shall end up assisting fewer of those in desperate need of protection

Applications for asylum

Figure 1 shows the annual number of applications for asylum lodged in Europe from 1982 to 2015. The steep increase since 2012 has now surpassed the surge from the late 1980s by a wide margin. Some authorities, such as the UN High Commissioner for Refugees (UNHCR 2015, p. 3) argue that this is the new normal, but that remains to be seen. These data comprise applicants who have reached a destination country by independent means and then applied individually for asylum. They are sometimes called 'spontaneous' asylum seekers, as distinct from those arriving through resettlement programmes, of whom there are very few. Some arrive with valid visas, but an increasingly large proportion enter without authorisation. In the last few years, the press and the public have been mesmerised by the numbers arriving by boat across the Mediterranean and the Aegean. According to the EU Border agency, Frontex, these unauthorised border crossings increased from 95,000 in 2011 to 1.82 million in 2015.

Figure 1 Asylum applications in European countries, 1982-2015

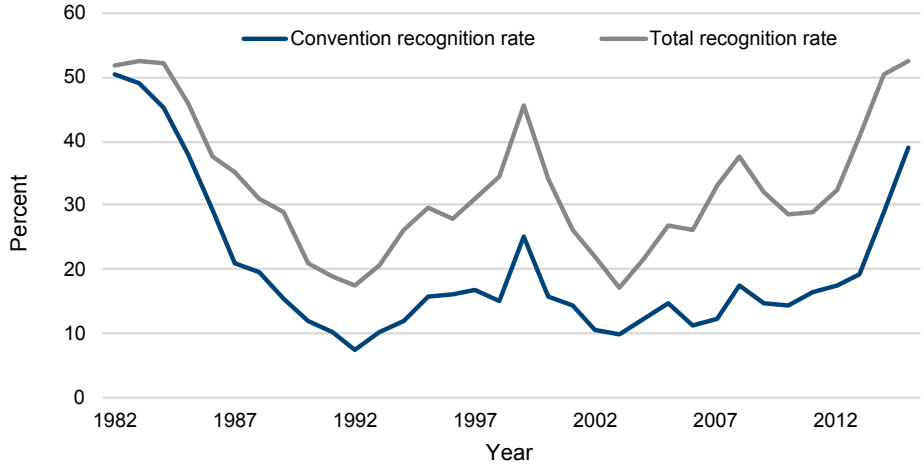


Source: Hatton (2016b), Figure 1.

Applications for asylum are entered into a process of refugee status determination. The individual may qualify under the definition in the 1951 Refugee Convention as "having a well-founded fear of persecution", or may be granted the right to remain on other humanitarian grounds, often because conditions in the home country make it impossible for them to return. As Figure 2 shows, the total recognition rate (Convention

plus humanitarian) fell steeply to less than 20% in 1992, before rising again at the time of the Kosovo crisis. After reaching a low point in 2003, it rose 50% in 2014 as the Syrian exodus unfolded. Over the whole period the average is about one third, although this would be a little higher if successful appeals were included. Unsuccessful applicants are required to leave (either voluntarily or by force). Nevertheless, a significant (but unknown) proportion remain as illegal immigrants.

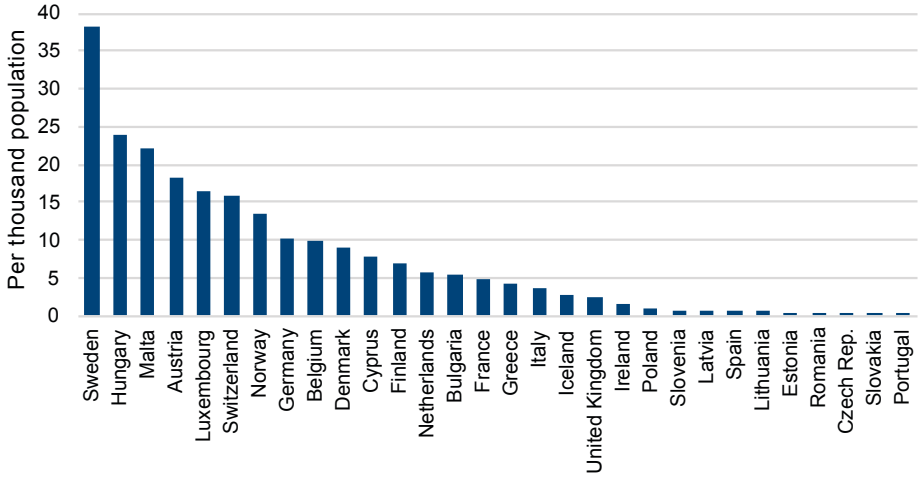
Figure 2 Refugee status recognition rates, 1982-2015



Source: Hatton (2016b), Figure 2.

One important feature of asylum applications in Europe is the distribution across countries. This is illustrated in Figure 3, which shows total applications over the five years from 2011 to 2015 per thousand of the host population. These range from 38 per thousand in Sweden to less than one per thousand for a number of the Eastern European countries, Spain, Portugal and the Baltic states. These differences reflect a combination of the respective countries' reputations among asylum seekers and past migration history, as well as the ease of access to their borders and their asylum policies. This is one source of political friction, and a point that will be taken up further below.

Figure 3 Number of asylum applications per capita over the five years from 2011 to 2015



Source: Hatton (2015b) Figure 6.

What drives asylum applications?

The recent crisis has rekindled the debate over whether those claiming asylum in Europe are genuine refugees or simply 'economic migrants' from poor countries seeking a better life. On one hand, it is argued that most applicants are from countries embroiled in civil wars and human rights abuse. On the other hand, it is pointed out that less than half of all applicants are recognised as refugees. So what drives asylum applications?

In order to investigate the determinants of applications for asylum, I estimate a model on panel data for the number of applications from each of 48 strife-prone countries to 19 OECD destinations over the period from 1997 to 2014 (Hatton 2016a, 2016b). The results strongly support the view that violence and human rights abuse are among the most important factors, particularly as represented by the effect of the political terror scale. Economic imperatives also matter – asylum applications are negatively related to GDP per capita of the origin country. In addition, the choice of destination country is positively influenced by the existing stock of immigrants from the same origin living

at that destination, which captures network effects. And it is negatively influenced by the distance between origin and destination, which reflects the costs and difficulties of clandestine migration (Hatton 2016a).

I also examine the effects of asylum policies that have been developed in destination countries, often with a view to deterring applications. These effects are assessed with an index of asylum policies that comprises three main components. I find that policies aimed at restricting access to the territory (border controls, carrier sanctions, etc.) significantly reduce the number of applications. Tougher rules relating to decisions on granting refugee status also deter applications. But the effect of welfare conditions for asylum seekers during processing is insignificant. One interpretation of these results is that what matters most to asylum seekers is the probability of gaining permanent settlement. As asylum seekers are willing to undergo enormous hardships in order to get to the destination in the first place, it is perhaps not surprising that the prospect of further privations has little effect.

As Table 1 shows, for the 19 destinations in the dataset, the overall effects of changes in policy between 1997 and 2005 was to reduce annual asylum applications by nearly 30%. From 2005 to 2014, policies in some countries were eased while in others they were further tightened, and so the overall effect was a marginal increase in applications. As these figures imply, policy was tightened sharply between the late 1990s and the mid-2000s. After 2005 there was little change in the overall average, but wide variation between countries. Even though policy was increasingly harmonised under the Common European Asylum System (CEAS), there remains considerable scope for variations in policy among the European countries that are included in the table. These largely reflect policy imperatives operating at the national level, and this in turn suggests that public attitudes may be important.

Table 1 Predicted change in asylum applications due to asylum policies (%)

	1997-2005	2005-2014		1997-2005	2005-2014
Australia	-56.2	-4.4	Italy	-28.3	20.0
Austria	-42.3	0.0	Netherlands	-48.6	-10.9
Belgium	-14.8	-10.9	Norway	-32.3	-20.5
Canada	-18.2	-32.3	Poland	-14.8	-4.4
Czech Rep.	-4.4	0.0	Spain	-29.4	-16.2
Denmark	-39.6	0.0	Sweden	0.0	103.4
France	-27.4	17.4	Switzerland	-29.2	-38.3
Germany	-7.1	2.9	UK	-59.1	-19.5
Hungary	0.0	-10.9	USA	-27.4	-21.3
Ireland	-42.3	0.0	Total	-28.9	2.9

Source: Hatton (2016b), Table 7.

Public opinion

In democratic countries, politicians have to pay attention to public opinion because it constrains their policy options. As recent events have demonstrated, public opinion has been an influential force driving policy as well as a source of difference between countries. But it is important also to recognise the various different dimensions of public opinion, which need to be understood when considering the implications for policy.

The first point is that opinion has become more favourable towards genuine refugees. In 2002 and 2014, the European Social Survey (ESS) asked a question on whether the respondent agreed that "the government should be generous in judging refugee claims". In the 18 countries listed in Table 2, the proportion disagreeing or disagreeing strongly declined, in some cases very steeply. On average, opinion became more pro-refugee by 14.7 percentage points. This, perhaps, is one reason that policy has been tightened rather less in the last decade than previously. By contrast, opinion on admitting immigrants from poor countries outside Europe hardened; the share wanting to admit "a few" or "none" increased by an average of 6.7 percentage points. While there is some evidence that an increasing share of foreign born in the population is associated with more negative opinion toward immigrants, it is not associated with a more negative opinion towards refugees (Hatton 2016b).

Table 2 Public opinion on refugees and immigrants 2002 and 2014

	Government should be generous in judging refugee claims (% disagree)			Admit immigrants from poor countries outside Europe (% preferring few or none)		
	2002	2014	Change	2002	2014	Change
Austria	43.0	36.8	-6.2	61.1	55.9	-5.2
Belgium	59.5	44.4	-15.1	38.0	47.6	9.6
Switzerland	50.4	34.9	-15.5	26.9	44.5	17.6
Czech Republic	62.8	44.6	-18.2	46.0	72.4	26.4
Germany	59.3	32.4	-26.9	35.8	33.7	-2.1
Denmark	50.3	29.0	-21.3	43.6	55.2	11.6
Spain	18.5	16.2	-2.3	48.8	47.5	-1.3
Finland	33.1	21.8	-11.3	53.6	64.8	11.2
France	18.3	18.0	-0.3	42.6	48.0	5.4
United Kingdom	47.1	27.7	-19.4	46.8	57.3	10.5
Hungary	64.8	39.1	-25.7	83.6	87.3	3.7
Ireland	20.9	20.9	0.0	31.8	57.4	25.6
Netherlands	74.8	47.0	-27.8	41.5	46.8	5.3
Norway	46.1	18.3	-27.8	33.3	32.0	-1.3
Poland	13.0	8.6	-4.4	41.5	47.5	6.0
Portugal	11.3	7.6	-3.7	61.0	52.9	-8.1
Sweden	23.1	9.8	-13.3	13.2	12.6	-0.6
Slovenia	49.5	24.1	-25.4	40.7	47.8	7.1
Country average	41.4	26.7	-14.7	43.9	50.6	6.7

Source: Hatton (2016b), Tabl7.

The second point is that public opinion is not as anti-immigration as it is sometimes portrayed. Among the 18 countries listed in Table 2, on average half of respondents want to see few or no immigrants from outside Europe (the other options are "some" or "many"). But public opinion is massively negative on one particular issue: illegal immigration. According to another survey (*Transatlantic Trends*), the proportion of respondents that is "worried about illegal immigration" is more than twice as high as the proportion that is worried about legal immigration. And in 2015 Eurobarometer recorded that, across 27 EU countries, an average of 87% of respondents were in favour of additional measures to fight illegal immigration. This suggests that the recent increase in unauthorised border crossings is one factor that has raised public concern about immigration policy. In particular, it has engendered the view that governments have lost control.

This is also reflected in a third dimension of public attitudes, which is the *salience* of immigration as a policy issue. This is distinct from responses to questions on whether the individual would like to see more or less immigration, which reflect *preference*. Salience is captured by the following question, asked regularly by Eurobarometer: "What do you think are the two most important issues facing our country at the moment?" The proportion of respondents listing immigration as one of the two most important issues (from a list of 14 alternatives plus "other") has risen sharply in recent years. The average across 27 EU countries fell from 11.6% in 2007 to 8.1% in 2011. Then it more than doubled to reach 18.8% in 2015 as immigration increased and other concerns (such as the recession) faded. So while the average preference over immigration has become somewhat more negative, the increase in salience has tended to magnify preferences for and against immigration, making the issue more divisive and elevating its importance in the policy agenda.

A fourth aspect of public opinion is that, despite the growth of Euroscepticism, there has been a remarkable increase in the proportion of respondents that would like to see decision-making on immigration conducted at the EU level rather than solely at the national level. In 2015, Eurobarometer asked: "Please tell me whether you are for or against … [a] common European policy on migration." The average response across

27 EU countries was 70% in favour (72% percent in the EU15). This suggests that the EU has a much greater mandate for setting immigration (and asylum) policies than is often believed.

Policy implications

Asylum policy exists to provide protection for refugees fleeing persecution, something that commands majority support (Table 2). Yet existing asylum policy is dysfunctional. For the most part it requires that, in order to lodge a claim for asylum, potential applicants must first risk their lives in hazardous sea voyages, circumnavigating fences and dodging border guards, and often falling prey to unscrupulous people smugglers. It selects a range of migrants more than half of whom are rejected as genuine refugees, and some of whom remain in the limbo of the informal economy. Worse still, it leaves behind many of those that are in the greatest need of protection, doing little to assist them in the camps and shanty towns where they languish.

So what can be done? Recent events have polarised opinion and have led to increasing support for right-wing populism. It is important to recognise this as a political reality and to develop policies that provide the most benefit to genuine refugees while avoiding a populist backlash.

First, the incentives for 'spontaneous' asylum migration must be reduced. Border controls that have broken down need to be strengthened. As we have seen, unauthorised entry is a concern for an overwhelming majority of the European population. This is not only because of perceptions that policymakers have lost control, but also because of the widespread view, backed by the evidence of low recognition rates, that many of those that do manage to gain unauthorised entry to European countries are not genuine refugees.

As noted above, econometric evidence suggests that tighter borders deter applications. Specific examples where policy radically reduced unauthorised entry are Spain's international cooperation across the Western Mediterranean after 2006, the policies implemented by Australia in 2001 and 2013, and the recent agreement between the EU and Turkey. However, it is also clear that borders must be tightened all round, not

just in a few locations. Otherwise migrants will simply be displaced to other crossing points where access is easier, with modest effects on the overall flow. The process of toughening border controls is being implemented, partly by the transformation of the largely ineffective Frontex system into a new European Border and Coast Guard. This agency is invested with the power to intervene directly and deploy teams to member states where border control has broken down. It remains to be seen if, and by how much, unauthorised entry by land and sea declines in the longer term. That is certainly what Europeans want to see. But there is also a big drawback: such a policy will inevitably deny access to genuine refugees as well as to those less likely to gain refugee status.

It is therefore important to provide much more generous support to genuine refugees. Most refugees (86%) are located in relatively poor countries, often just across the border from the country from which they have fled. About 30% of these are marooned in squalid refugee camps facing extreme hardship, disease, insecurity and sometimes violence. Others subsist in shanty towns with little access to the means of livelihood and to health services and education. While the 3 million Syrians in Turkey have attracted most of the attention, there are 10 million others, often facing worse conditions and in dire need of protection, notably in sub-Saharan Africa.

They need more support *in situ* but, above all, a reasonable prospect of one of the durable solutions set out by the United Nations High Commissioner for Refugees: local integration, repatriation or resettlement. A pitifully small number of about 80,000 are resettled each year, mainly facilitated by the UNHCR to meet quotas set by developed countries. Yet in 2015 the UNHCR identified 1.15 million as in need of resettlement. Europe offers about 10,000 resettlement places per annum, shared among 18 European countries, most of which have tiny quotas. While there is an overt commitment to resettlement, the numbers need to be increased by orders of magnitude in order to make a serious contribution.

In order to meet such aspirations, the capacity of developed countries to host refugees must be increased. As shown in Figure 3, the number of asylum applications per capita is very unequal across EU member states. EU asylum policy has focused on partially harmonising policies and procedures and not on burden sharing – that is, until the distribution plan of August 2015. This plan was intended to redistribute asylum seekers that had accumulated in Greece and Italy and were unable to move on. The

negative reaction by some countries, notably Hungary, appears to suggest that such a scheme would never work. But it is worth noting that Hungary received 174,000 asylum applications in 2015, thirteen times the average of the previous five years. It seems unlikely agreement can be reached on expanding the commitment to resettlement while individual countries face a large and fluctuating number of spontaneous asylum applications. Hence the importance of strengthening border controls.

Hosting refugees satisfies humanitarian motives, and so it can be interpreted as a public good. The population of a host country benefits from the knowledge that refugees have found a safe haven in their own country and in others. Thus the benefit is non-rival and non-excludable, but if the costs fall only on the host country then the public good will be underprovided (Hatton 2015). A social planner would set a higher number (and probably a more even distribution), but there is an incentive to free ride. If policy were set by a supra-national authority such as the EU, with an appropriate distribution mechanism, burdens could be made more equal and total capacity could be increased. A more centralised policy would evidently also command public support.

Conclusion

The current crisis has cast into sharp relief the inadequacies of the present asylum system. In the long term, it needs to shift away from spontaneous asylum migration towards a substantial resettlement programme that would target those that most need our help. Such a policy would be politically feasible because it would work *with* the grain of public opinion rather than *against* it. Yet a radical shift towards resettlement is unlikely while the Syrian crisis continues at its current intensity. On one hand, the crisis has galvanised the EU into taking some steps in the right direction. On the other hand, the sheer magnitude of the crisis is an impediment to creating the resettlement places that are so badly needed.

References

Hatton, T.J. (2015), "Asylum Policy in the EU: The Case for Deeper Integration", *CESifo Economic Studies* 61: 605–637 .

Hatton, T.J. (2016a), "Refugees, Asylum Seekers and Policy in OECD Countries", *American Economic Review (Papers and Proceedings)* 106: 441–445.

Hatton, T.J. (2016b), "Refugees and Asylum Seekers, the Crisis in Europe and the Future of Policy", CEPR Discussion Paper No. 11271.

UNHCR (2015), *Global Trends: Forced Displacement in 2014*, Geneva: United Nations High Commissioner for Refugees.

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2 Efficient solidarity mechanisms in asylum policy

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Introduction

Asylum applications to the EU exceeded 600,000 in 2014 for the first time since the peak of the Balkan Wars in 1992 (see Figure 1 in Hatton's chapter – ADD CHAPTER NUMBER HERE). Between 2014 and 2015, arrivals to the EU more than doubled, going beyond 1.3 million in one year. Most of these asylum seekers crossed European borders irregularly – that is, without any official documents that would explicitly authorise them to do so – through Greece (close to 900,000) and Italy (more than 150,000). According to EU asylum policy (under the Dublin Convention),[1] this would have made Greece and Italy, as the countries of first arrival, responsible for taking care of these asylum applications.

In May 2015, the European Commission decided that the Dublin Convention might place unduly heavy burdens on 'frontline' countries and, within its European Agenda on Migration, established that some of the asylum seekers in Italy and Greece (an eventual total of 160,000) should be relocated to other EU countries according to a system of quotas depending on the 'objective' ability of these countries to host refugees. These quotas depended on total GDP (with a 40% weighting), total population (40%), unemployment rate (10%) and number of refugees and asylum seekers received over

1 The Dublin Convention establishes that the country where asylum seekers lodge their application for the first time should be responsible for processing that application. The objective is to prevent 'asylum shopping', i.e. asylum seekers trying different countries until they obtain approval. The first convention was signed in 1990 and entered into force in 1997. The current regulation, Dublin III, was approved in 2013.

the past four years (10%). In addition, it was decided that 20,000 refugees should be resettled from outside the EU to according to the same distribution key, implying a total 180,000 arrivals outside of the usual Dublin Convention system of attribution of responsibilities.

In September 2015, the EU approved the start of the relocation process by qualified majority – close to 180,000 asylum seekers should be relocated and resettled within two years. Each country would receive €6,000 per relocated refugee, to come from the EU budget (specifically, the Asylum, Migration and Integration Fund). As of 11 July 2016, however, only 9,605 relocations and resettlements had taken place in the EU,[2] little more than 5% of the total in nine months. At this rate, it would take more than 14 years to reach the two-year objective.

Spain, for example, was assigned close to 22,000 asylum seekers. In November 2015, the first 12 asylum seekers landed in Madrid. The Italian authorities had selected 50 individuals for resettlement in Spain; 31 of these were refused by the Spanish government for unknown reasons, and seven of the remaining 19 refused to board the plane. Finally, 11 Eritreans and one Syrian arrived in Madrid and were distributed across several Spanish cities. Most of them reported not knowing where they were.[3]

Is this an efficient way of providing asylum? Could solidarity be offered differently? Does economic theory give an answer to these questions?

Proposed reforms of the asylum system

Many authors (e.g. Bubb et al. 2011, Fernández-Huertas Moraga and Rapoport 2014) have argued for the need to coordinate asylum policies with the objective of preventing races to the bottom in refugee protection standards, whereby one country worsens the accession conditions of refugees so as to divert future flows to neighbouring countries, prompting neighbouring countries to worsen their own conditions in turn. In particular,

2 The total was 11,324 if we include associated countries (Iceland, Liechtenstein, Norway and Switzerland) (see http://ec.europa.eu/dgs/home-affairs/what-we-do/policies/european-agenda-migration/background-information/docs/20160713/factsheet_relocation_and_resettlement_-_state_of_play_en.pdf).

3 http://www.eldiario.es/desalambre/Llegan-Madrid-Italia-refugiados-Espana_0_450055436.html

Hatton (2015) has shown that harmonisation – which was the focus of the Common European Asylum System before 2015 – is not enough to obtain efficient solutions; some type of responsibility-sharing mechanism should be adopted.

In the aftermath of the Balkan Wars, Schuck (1997) proposed that an efficient way of sharing responsibilities would be to distribute refugee quotas across countries and then let them trade these quotas in order to equate the marginal cost of hosting one additional refugee for each destination country. Fernández-Huertas Moraga and Rapoport (2014) added the explicit consideration of refugee and host countries' preferences through a matching algorithm. They showed how the combination of this algorithm with tradable quotas was still efficient in terms of minimising the cost of resettling refugees across a group of countries while respecting refugees' rights not to be moved to undesired destinations.

More recently, Blocher and Gulati (2016) argued that one way to make the reception of refugees attractive from the perspective of receiving countries was to endow the refugees with an asset (i.e. a subsidy), which would eventually be paid by the countries creating the refugee flight. Similarly, Talbot et al. (2016) advocated the creation of a Humanitarian Investment Fund for Refugees, which would finance the initial subsidy for resettling refugees in destination countries.

All of these proposals have the common element of establishing a compensation mechanism whereby countries receiving refugees are incentivised to do so. What is lacking is either a way of setting the optimal subsidy (in the subsidy proposals) or a way of optimally attributing initial responsibilities to encourage participation (in the case of the tradable quotas proposals). Both issues have to do with who ends up paying the perceived cost of hosting the refugees. In the proposal by Blocher and Gulati (2016), conflict countries would have to pay and while that payment might materialise at the end of the conflict, an international institution, such the UN Refugee Agency (UNHCR), could borrow against this claim. In the case of the Humanitarian Investment Fund for Refugees proposed by Talbot et al. (2016), traditional donor countries would pay the bill. In both cases, enforcing these new payments would be problematic.

Tradable refugee admission quotas? [4]

In a series of papers (Fernández-Huertas Moraga and Rapoport, 2014, 2015a, 2015b), Hillel Rapoport (of the Paris School of Economics) and I went from adding the matching element to the idea of tradable refugee quotas advanced by Schuck (1997) to explaining how such a system would work in the institutional context of the Common European Asylum System, in particular with an application to the refugee flows generated by the Syrian civil war.

We argue that the quota system suggested by the European Commission is a good first step towards the attribution of responsibilities, but it should be complemented by two additional measures, both of which are solidly grounded in economic theory. While market mechanisms cannot 'solve' Europe's refugee crisis, they can provide more flexibility by ensuring that costs are efficiently distributed. At the same time, it is not only feasible to respect refugees' basic rights, their location preferences can also be taken into account. All of this can be achieved in three stages.

Stage 1: Initial allocation of quotas

The quotas approved by the European Commission are just one way of assigning responsibility for providing refugee protection, which is an international public good. Rather than charging the state to which the asylum seekers first arrived with this responsibility (as under the Dublin Convention), the allocation of quotas ensures that the potential costs of hosting refugees are fairly distributed.

Stage 2: Compensation mechanism

Given the distribution of responsibilities through quotas, some countries may perceive the marginal cost of receiving additional refugees as too high for them. If they had the opportunity, these countries would be willing to pay another member state to receive some of their refugees. If the perceived marginal cost of this other member state is

4 Parts of this section first appeared in Fernández-Huertas Moraga (2016).

lower, there will be an opportunity to exchange responsibilities; this opportunity to trade is our second stage. Countries with a high marginal cost of hosting refugees would compensate countries with a low marginal cost in exchange for fulfilling part of their quotas.

Stage 3: Matching mechanism

What is the role of refugees in this proposal? Alvin Roth famously argued that "[m]igrants aren't widgets […]. They are people trying to make choices in their best interest" (Roth 2015). The third stage is needed to ensure that no refugee is relocated to a destination to which she has refused to move. This is accomplished through the matching mechanism. Roth himself is one of many proponents of matching mechanisms to assign students to colleges and doctors to hospitals (Roth 2002). In this case, the matching mechanism can be used to assign refugees to destination countries.

To this end, refugees would sort potential destinations into an order of preference, while also specifying those locations to which they would be absolutely unwilling to move. These preferences can then be introduced into any of the matching algorithms proposed by the literature, such as the college (country) proposing deferred acceptance algorithm (Fernández-Huertas Moraga and Rapoport 2014), which can also take into account the preferences of countries over types of refugees (by skill or citizenship, for example). The algorithm would then produce the final distribution of refugees.

The collection of refugee preferences does not imply that all refugees will be able to select their most preferred destination; some would end up in their first option, some in their second, some in their third, and so on. There is even a possibility that some refugees could not be relocated if the only free slots are destinations to which they are unwilling to move. In this case, the countries with unfilled quotas would be penalised and their compensation would end up with the original location, where the refugee remains. In this sense, the matching mechanism is integrated with the compensation scheme and it disciplines refugee-unfriendly countries into offering good reception conditions so as to avoid these potential penalties, which would nonetheless be an off-equilibrium outcome.

In addition to respecting refugees' rights to choose their destination, the matching mechanism would prevent situations such as the Spanish case described in the introduction from occurring. It is extremely inefficient to organise a flight for 50 refugees and then have only 12 of them actually take the plane.

Policy implications and conclusion

The European Commission proposed the relocation or resettlement of up to 180,000 refugees and asylum seekers over two years.[5] While this is less than 14% of the total number of asylum applications lodged in the EU in 2015 (see Figure 1), only 9,605 relocations and resettlements had taken place as of June 2016.[6] The first step in the sharing of responsibilities was approved, but the implementation was sluggish.

Part of this slow implementation may have to do with the lack of flexibility in the European Agenda on Migration. The second stage of the proposal – the compensation mechanism – could alleviate this lack of flexibility. While countries might be reluctant to trade obligations to provide refugee protection for fear of being accused of putting a price tag on refugees, it must be recognised that this trade already takes place at regulated prices. The Asylum, Migration and Integration Fund (AMIF), part of the overall European budget, already pays €6,000 per refugee resettled to receiving countries, and the European Commission has even proposed an opt-out mechanism by which countries could refuse to receive their quotas as long as they pay a penalty of €250,000 per refused asylum seeker.[7] As a result, some of the elements of the compensating mechanism are already present, albeit in an inefficient way.

5 http://ec.europa.eu/dgs/home-affairs/what-we-do/policies/european-agenda-migration/background-information/docs/communication_on_the_european_agenda_on_migration_en.pdf and http://ec.europa.eu/dgs/home-affairs/what-we-do/policies/european-agenda-migration/proposal-implementation-package/docs/proposal_for_regulation_of_ep_and_council_establishing_a_crisis_relocation_mechanism_en.pdf.

6 Comprised of 3,056 (relocations) – 34 (Switzerland) + 8,268 (resettlements) – 1,098 (Norway) – 20 (Liechtenstein) – 519 (Switzerland) – 48 (Iceland). Note that 796 of these correspond to the 2016 EU-Turkey agreement. Source: http://ec.europa.eu/dgs/home-affairs/what-we-do/policies/european-agenda-migration/background-information/docs/20160713/factsheet_relocation_and_resettlement_-_state_of_play_en.pdf).

7 http://ec.europa.eu/dgs/home-affairs/what-we-do/policies/european-agenda-migration/proposal-implementation-package/docs/20160504/dublin_reform_proposal_en.pdf.

Finally, the third stage – the matching mechanism – was already recognised as a priority by the European Parliament,[8] which argued that the preferences of refugees should be taken into consideration before relocating them. The proposal outlined here simply goes one step further and outlines how these preferences should be taken into account.

The decision to offer protection to individuals fleeing persecution in their origin countries – asylum seekers that can become proper refugees – that is, refugees with their status recognised and protected by the Geneva Convention – generates externalities. If one country offers this protection, a neighbouring one need not do so. As a result, one way to coordinate the provision of this international public good is the establishment of rules that allow for sharing responsibility. In the EU, the European Agenda on Migration represented an attempt to change the existing rules, which attributed responsibility depending on the first country of arrival of refugees. This attempt has appeared to be insufficient empirically, but we also have reasons to believe it was insufficient theoretically. The attribution of fixed quotas for refugee admissions by countries is needlessly rigid, and a compensation mechanism could be designed to promote flexibility while alleviating countries' participation constraints. Moreover, the most basic rights of refugees to choose their destination can be respected in the process by combining the compensation mechanism – by which high marginal cost countries would pay low marginal cost countries for settling refugees – with a matching algorithm whereby refugees would have the opportunity to rank their preferred destinations and veto their undesired ones.

References

Blocher, J. and M. Gulati (2016), "Competing for Refugees: A Market-Based Solution to a Humanitarian Crisis", Working Paper, Duke Law.

Bubb, R., M. Kremer and D.I. and Levine (2011), "The economics of international refugee law," *Journal of Legal Studies* 40(2): 367–404.

8 http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//NONSGML+TA+P8-TA-2015-0306+0+DOC+PDF+V0//EN.

Fernández-Huertas Moraga, J. (2016), "Can Market Mechanisms Solve the European Union Refugee Crisis?", IEB Report 1/2016, pp. 12–14.

Fernández-Huertas Moraga, J. and H. Rapoport (2014), "Tradable Immigration Quotas", *Journal of Public Economic*s 115: 94–108.

Fernández-Huertas Moraga, J. and H. Rapoport (2015a), "Tradable Refugee-admission Quotas and EU Asylum Policy", *CESifo Economic Studies* 61 (3-4): 638–672.

Fernández-Huertas Moraga, J. and H. Rapoport (2015b), "Tradable Refugee-admission Quotas (TRAQs), the Syrian Crisis and the new European Agenda on Migration", *IZA Journal of European Labor Studies* 4:23.

Hatton, T.J. (2015), "Asylum Policy in the EU: The Case for Deeper Integration", *CESifo Economic Studies* 61 (3-4): 605–637.

Roth, A.E. (2002).,"The Economist as an Engineer: Game Theory, Experimental Economics and Computation as Tools of Design Economics," *Econometrica* 70(4): 1341– 1378.

Roth, A.E. (2015), "Migrants aren't widgets", *Politco*, 3 September.

Schuck, P. (1997), "Refugee Buden Sharing: A Modest Proposal", *Yale Journal of International Law* 22: 243–297.

Talbot, T., H. Postel and O. Barder (2016), "Humanitarian Investment Fund for Refugees – How to Turn Ordeal into Opportunity for All", Centre for Global Development blog, 13 May.

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3 Labour market integration of refugees in Norway

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Introduction

The historically large refugee flows to Europe in 2015 have spurred debates on both immigration and integration policies in many countries, as evidenced by the Brexit debate, which has also reminded us that immigration can shape public opinion on political structures and support for supranationalism. The long-run economic consequences of large refugee inflows are intimately linked to the labour force participation and employment of refugees over time. Prior research on labour market performance of immigrants has revealed substantial heterogeneity across arrival cohorts, origin countries and admission classes. Research has also highlighted that such heterogeneity has important implications for how we provide evidence on expected labour market performance. In particular, cross-section-based evidence will confound the impact of years of residence (and assimilation and integration processes) with arrival cohort heterogeneity, business cycle effects and selective outmigration. If we want to learn from history – or more precisely, how previous refugee cohorts have performed – there is need for a longitudinal perspective whereby we track arrival groups over time. Multi-country surveys are often too small to capture minority groups or lack the longitudinal

1 We are grateful to Francesco Fasani for helpful comments. We also acknowledge funding from the Norwegian Research Council (under the European Strains project) and NORFACE Welfare State Futures (under the Globalisation, Institutions and the Welfare State project). This chapter is part of the research activities of the Centre of Equality, Social Organization, and Performance at the University of Oslo. Data made available by Statistics Norway have been essential to this research.

dimension such that cohorts can be observed over longer periods. The emergence of administrative data in many European countries offers better opportunities to provide such evidence.

Relative to its population, Norway ranks among the major destination countries for refugees.[2] In this chapter, we examine how past refugee cohorts to Norway have performed in the labour market. We document a pattern of rapid labour market integration during the initial period upon settlement, but show that the integration process typically comes to a halt after just a few years and with employment rates still more than 20 percentage points below those of similarly aged natives. More disturbingly, we uncover a conspicuous tendency for the employment differential to widen after five to ten years of residence. Our interpretation of these findings is that the Norwegian labour market has not been able to take full advantage of the potential embedded in the productive resources of refugee immigrants, and hence there is scope for policy improvement. We argue that there is a case for increased early human capital investments in order to improve language skills and provide marketable qualifications. We also advocate a more activity-oriented social insurance system, with a focus on finding and offering suitable paid work rather than merely securing family income.

Refugees' economic integration: Evidence from the United States and Europe

Research from the United States documents rapid economic progress of refugee immigrants. Borjas (1982) and Cortes (2004) find that labour market outcomes of refugees improve at a faster rate upon arrival than for other immigrants, with refugee outcomes even surpassing those of economic immigrants over time. Both authors attribute the higher rate of labour market assimilation to refugee investments in human capital, in particular in education and language acquisition. Both authors also emphasise that the observed patterns are consistent with human capital accumulation increasing with the time horizon in the United States, with refugees facing higher return migration

2 As an illustration, between 1992 and 2006 the annual count of asylum seekers per 100,000 of the population was 196, compared to 95 in the United Kingdom, 146 in Germany and 270 in Sweden (Hatton 2011). During the refugee crisis of 2015, the figures were 602 in Norway, compared with 60 in the United Kingdom, 587 in Germany, and 1 667 in Sweden (BBC 2016).

costs and lower prospects for outmigration. Dustmann (1999) uncovers a similar link between intended duration of stay and human capital investments among (primarily labour) immigrants in Germany.

European research on the economic progress of refugee immigrants offers a less optimistic picture. Damas de Matos and Liebig (2014) study immigrant employment broken down by reason for migration using data from the 2008 European Labour Force Surveys. The authors find that outcomes of humanitarian immigrants (refugees) and family immigrants are well below those of other immigrant groups, with estimated employment gaps up to 30 percentage points when accounting for differences in education, gender, age and country. Drawing on Nordic administrative register data, Husted et al. (2001) and Sarvimäki (2011) find low rates of labour market assimilation among refugees when compared to other immigrants in Denmark and Finland. Lundborg (2013) shows that refugee employment lags that of natives in Sweden, but finds signs of moderate convergence after twenty years in the country. The European literature also uncovers considerable heterogeneity in outcomes within the refugee population. Hartog and Zorlu (2009) show that schooling acquired in the Netherlands improves refugee labour market outcomes and document very low returns to homeland schooling. Exploring Swedish refugee placement policies, Edin et al. (2003) conclude that settlement in areas with a high ethnic concentration improves labour market outcomes of low-skilled refugees. Sarvimäki and Hämäläinen (2016) show that active labour market programmes with individualised integration plans can greatly improve the earnings of refugees.

In two papers, we have shown that refugees, as well as labour immigrants from low-income source countries, tend to have worryingly short labour market careers in Norway, and that they become disproportionally dependent on social insurance transfers over time (Bratsberg et al. 2010, 2014). Although it has been difficult to identify and quantify the causal mechanisms behind this pattern, it is clear that business cycle fluctuations have played an important role, as immigrants' labour market performance behaves much more cyclically than that of natives with shared characteristics. This suggests that to some extent, immigrants have been used as 'reserve labour' as a result of both their limited human capital (which restricts their job options) and the 'last-in, first-out' principle that often governs workplace downsizing processes. It is also likely that social insurance programmes have been of some importance, as benefit replacement ratios

have been much higher in practice for immigrants than for natives. This has resulted from a combination of the progressivity of these programmes – with higher replacement ratios inversely correlated with labour earnings – and relatively generous allowances for claimants with responsibility for (many) children and homemaker spouses.

Refugee labour market performance in Norway

Administrative register data enable us to track employment profiles of refugee arrival cohorts over time. Table 1 describes cohort sizes and major origin countries of refugee admissions in Norway between 1990 and 2015, reflecting conflicts and crises both outside and within Europe. Annual refugee admissions have varied between 2,000 and 11,000. Somalia stands out as a major source country throughout the 26-year period; Vietnam and Iran were major origin countries in the early 1990s; while Bosnia dominated refugee admissions from 1992 to 1996. In the late 1990s, Iraq and Kosovo accounted for the majority of admissions. From 2000 onwards, Afghanistan has been in the top three most years, with Eritrea and, for a short period, Myanmar (Burma) emerging as major countries after 2005. Russians, mainly from Chechnya, constituted a major group in the mid-2000s. Syria appears as the major source country towards the end of the period.

Our use of the term "refugee" covers both resettlement refugees (typically through the United Nations High Commissioner for Refugees resettlement programme) and those admitted following asylum application (who reached Norway by independent means before seeking asylum). Since the turn of the century, the proportion admitted after asylum application has been about 80%, compared to 30% during the mid-1990s (see column 4). Sixty percent are men (column 5) and the average age at the time of admission is 25 (column 6). Next, we turn to labour market outcomes and focus on the analyses of those aged 18 to 47 at admission. For this group, the average age at admission is almost 30 (see column 8).

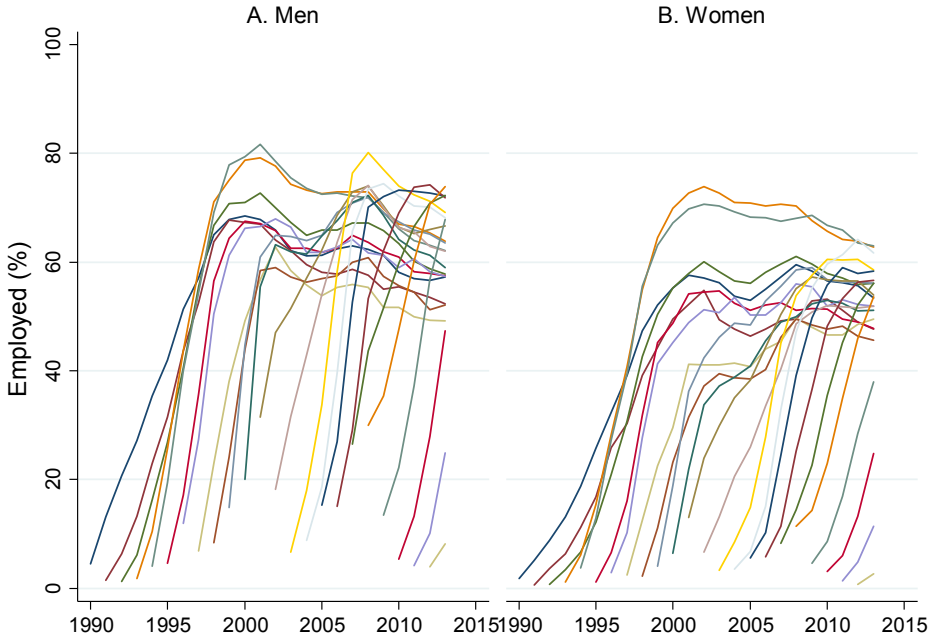
Table 1 Refugee admissions, 1990-2015

Year (1)	Count (2)	Three main source countries (%) (3)	Asylum (%) (4)	Men (%) (5)	Age at admission (6)	Count, age 18-47 at admission (7)	Mean age, 18-47 at admission (8)
1990	3,826	VNM (22), IRN (15), RKS (9)	64.8	60.8	23.5	2,565	27.3
1991	4,391	VNM (13), SOM (13), IRN (13)	67.6	63.8	22.8	2,947	28.1
1992	4,993	RKS (26), IRQ (12), BIH (11)	63.9	60.9	22.4	3,174	28.2
1993	9,608	BIH (66), RKS (11), IRQ (4)	26.0	52.7	25.4	5,296	30.9
1994	4,583	BIH (68), RKS (11), SOM (4)	21.4	51.8	28.1	2,429	32.0
1995	3,068	BIH (53), RKS (12), IRQ (9)	31.5	50.8	29.9	1,510	31.1
1996	1,974	BIH (47), IRQ (15), SOM (9)	31.8	50.2	31.3	938	31.3
1997	2,125	IRQ (30) , BIH (20), IRN (17)	34.0	54.6	28.4	1,080	29.6
1998	3,119	IRQ (27), SOM (23), IRN (13)	60.4	60.6	27.0	1,889	30.1
1999	10,619	RKS (54), IRQ (14), HRV (7)	48.7	57.0	24.3	6,073	30.1
2000	7,129	IRQ (50), SOM (16), AFG (6)	78.4	72.4	26.8	5,272	29.6
2001	4,256	AFG (16), SOM (15), IRN (14)	64.8	59.1	25.7	2,744	30.2
2002	4,485	SOM (21), IRQ (17), AFG (13)	71.3	62.9	26.3	3,133	29.9
2003	5,502	SOM (18), AFG (18), RUS (15)	70.0	64.5	24.3	3,658	29.3
2004	5,075	RUS (18), SOM (16), AFG (9)	76.9	56.2	22.5	2,932	29.5
2005	3,927	RUS (15), SOM (11), AFG (10)	80.7	53.3	23.4	2,280	30.5
2006	3,149	SOM (14), MMR (12), RUS (10)	68.6	53.4	23.7	1,857	30.2
2007	5,245	SOM (17), IRQ (13), RUS (11)	78.0	59.1	24.6	3,287	30.1
2008	4,428	IRQ (17), ERI (15), AFG (11)	85.0	62.2	24.3	2,807	30.1
2009	6,439	ERI (22), AFG (16), IRQ (12)	78.3	59.5	24.0	3,861	29.4
2010	6,401	ERI (24), SOM (18), AFG (18)	83.3	60.3	23.8	3,954	28.8
2011	5,355	ERI (24), SOM (22), AFG (13)	80.1	54.9	25.0	3,626	29.0
2012	7,193	SOM (30), ERI (18), AFG (9)	77.2	55.8	25.5	5,066	29.0
2013	7,377	ERI (26), SOM (20), SYR (13)	86.1	60.2	25.6	5,318	28.7
2014	7,026	SYR (31), ERI (29), SOM (9)	81.2	67.1	25.1	4,757	28.9
2015	9,221	SYR (38), ERI (27), AFG (9)	74.2	68.1	24.8	6,021	28.9
Total	*140,514*	*SOM (13), IRQ (10), BIH (10)*	*66.3*	*59.7*	*25.0*	*88,474*	*29.5*

Country codes: AFG=Afghanistan, BIH=Bosnia and Herzegovina, ERI=Eritrea, IRN=Iran, IRQ=Iraq, MMR=Myanmar, RKS=Kosovo, RUS=Russia, SOM=Somalia, SYR=Syria, VNM=Vietnam.

The employment profiles for each of the cohorts admitted between 1990 and 2013 are displayed in Figure 1 (data availability limits the study of labour market outcomes to 1990-2013). Employment is defined from annual earnings, and we consider a person employed in a given year if annual earnings from work exceed the amount required for accumulation of pension points in the public pension system (set to NOK84,204, or €10,782, in 2013, our final observation year; the definition leads to aggregate employment rates that closely track those of the labour force survey).

Figure 1 Trends in employment 1990-2013, by refugee admission cohort and gender



Note: Samples are restricted to those 18-47 years of age at admission and in the country at the end of each calendar year.

The figure reveals several features worth emphasising. First, employment rates rise sharply during the first years after admission as many refugees enter the labour market relatively quickly. However, integration into employment comes to a halt after a short period (six to eight years), and most cohorts reach a maximum employment rate of around 70% for men and 60% for women. This is clearly below native employment, which was 90% for men and 85% for women of similar ages during the observation window (not shown in the figure).

Second, there is a cyclical pattern in the initial integration process. Especially for men, the figure indicates delayed labour market entry in years with high unemployment, such as the early 1990s, the period from 2003 to 2005, and after the financial crisis in 2009. The better the economic situation, the less time it takes for refuges to find work reflecting the fact that employment opportunities of immigrants in general are significantly more cyclical than those of natives (Barth et al. 2004, Dustmann et al. 2010). Third, the employment profiles begin to decline after six to eight years in the country, particularly for men. This reversed assimilation pattern is surprising, as we expect disadvantages associated with lack of language skills and limited cultural understanding to fade and become less important with time in the country. The average age at the turning point is well below 40, clearly below the age we normally associate with a high risk of labour market withdrawal. Fourth, we find considerable employment differentials across admission cohorts that cannot be attributed to the macroeconomic cycle. As we discuss below, these differences relate to such factors as the country of origin mix, educational attainment and the fraction of resettlement refugees in each cohort.

The decline in employment after six to eight years depicted in Figure 1 calls for a more detailed study. Does the decline reflect additional years in the country, or is it merely the result of ageing? Would we observe a similar decline in employment were we instead to track natives over the same age interval? To address these questions, we assemble data for refugees and natives over the 1990-2013 observation period and estimate a regression model where we account for factors such as age, educational attainment, county of residence, local unemployment, and observation year. In addition, for refugees we control for age at admission, country of birth, and resettlement versus asylum-seeker status, and we allow for different effects of local unemployment and educational attainment from natives, as well as differential effects of education depending on whether or not the refugee acquired schooling in Norway. In Figure 2, we plot how the predicted employment differential between refugees and similarly aged natives evolves with years in Norway. For men, refugee employment (relative to natives) peaks at five years with a negative differential of 20 percentage points, while female employment assimilation is slower and reaches a somewhat lower peak (with a differential of 25 percentage points) after nine years. The grey shaded fields display 95% confidence intervals relative to the minimum differential, confirming that the

decline in employment after five or nine years is statistically significant for both men and women. Compared to their lowest point, 15 years after admission the employment differential has widened by 11.2 percentage points for males and 5.2 percentage points for female refugees.

Figure 2 Predicted employment and log earnings gap between refugees and natives, by gender and years since admission

Note: See note to Table 2 for description of regression model and samples. The dashed lines indicate the minimum differential relative to natives, occurring five (panel A), nine (B), ten (C) and 11 (D) years after admission, controlling for age, observation year and county of residence. The shaded areas show the 95% confidence intervals around the coefficient estimate under the null hypothesis that the point estimate equals the minimum differential.

The lower panels of Figure 2 plot the refugee–native differential in log earnings among those employed, based on similar regression models. As the figure reveals, there is strong earnings assimilation during the first seven years for men and ten years for women. The earnings gap stabilises at -0.40 log points for men and -0.23 log points for women, or refugee earnings that are 67% and 79% of those of native men and women with shared characteristics, respectively. The stability of the earnings gap indicates that there is no further assimilation effect on wages and hours worked after the initial period of convergence. In other words, the implication is that the employment decline

observed in the top panels reflects adjustment at the extensive margin, with refugees leaving employment rather than reducing their hours worked. Interestingly, earnings of female refugees are closer to their native peers than those of male refugees. Still, the average earnings differential is substantial for both genders. (Not shown in the figure, among natives there is a substantial gender differential in earnings of 0.37 log points, with female earnings at 69% of male earnings.)

The profiles in Figure 2 are drawn for refugees with average values of other explanatory variables, but the refugee population is quite heterogeneous along several dimensions, including educational attainment, country of origin and resettlement status. In Table 2, we show how such characteristics shift the profiles in Figure 2 and reduce or widen the labour market differential relative to natives.

The evidence reveals large employment differentials by education, both in terms of attainment and whether or not the education was acquired in Norway. A majority of the refugees in our data did not complete upper secondary schooling (i.e. high school), and three out of four obtained their highest qualification abroad. (Note that these are year–person averages in the regression sample; the fraction with Norwegian schooling rises with years since admission.) Focusing first on the results for males in column (2), more education goes hand in hand with higher employment rates. When compared to foreign primary education, the impact of completed upper secondary education from abroad (higher employment of 0.044) is comparable to that of Norwegian primary education (0.059). Refugees with a tertiary education acquired in Norway have the highest employment rates, with a differential relative to those with primary education from abroad of 29 percentage points (0.079+0.059+0.152). For refugees, employment differentials by attainment are smaller than for natives if education is acquired abroad, but much larger if it is acquired in Norway. Among female refugees, employment differentials by educational attainment are even larger than those uncovered for men (see column 5). Finally, some refugees acquire education in Norway at a level below that which they have already acquired abroad, for example through language courses or introductory computer courses. As columns (2) and (5) show, such education is associated with five (men) and 11 (women) percentage points higher employment.

Table 2 Determinants of employment and log earnings, regression results

	Men			Women		
	Mean (1)	Employed (2)	ln(earn) (3)	Mean (4)	Employed (5)	ln(earn) (6)
Immigrant educ (ref=comp)						
Secondary	0.244	0.044***	0.018***	0.221	0.077***	0.031***
		(0.006)	(0.007)		(0.007)	(0.009)
Tertiary	0.222	0.079***	0.091***	0.177	0.159***	0.184***
		(0.005)	(0.007)		(0.007)	(0.011)
Highest degree acquired	0.256	0.059***	-0.044***	0.238	0.145***	0.001
in Norway		(0.005)	(0.006)		(0.007)	(0.009)
Norw educ*secondary	0.051	0.070***	0.128***	0.051	0.118***	0.168***
		(0.006)	(0.011)		(0.012)	(0.013)
Norw educ*tertiary	0.025	0.152***	0.379***	0.024	0.116***	0.312***
		(0.011)	(0.030)		(0.013)	(0.022)
Norw schooling below	0.123	0.049***	-0.025***	0.094	0.108***	-0.013
highest degree		(0.006)	(0.007)		(0.008)	(0.010)
Native education (ref=comp)						
Secondary	0.364	0.112***	0.167***	0.250	0.153***	0.154***
		(0.002)	(0.002)		(0.002)	(0.003)
Tertiary	0.252	0.135***	0.356***	0.300	0.210***	0.362***
		(0.002)	(0.003)		(0.002)	(0.002)
Asylum (ref=resettled)	0.671	0.094***	0.029***	0.548	0.044***	0.011
		(0.005)	(0.007)		(0.006)	(0.008)
Local unemployment rate						
Immigrant*unempl rate	0.024	-5.704***	-3.153***	0.024	-4.910***	-2.007***
		(0.151)	(0.227)		(0.184)	(0.305)
Native*unempl rate	0.026	-0.958***	-0.478***	0.026	-1.396***	0.045
		(0.072)	(0.113)		(0.095)	(0.111)
Country (ref= weighted avg)						
Afghanistan	0.057	0.056***	-0.020	0.035	-0.089***	-0.162***
		(0.010)	(0.016)		(0.013)	(0.022)
Bosnia and Herzegovina	0.142	0.143***	0.101***	0.215	0.150***	0.091***
		(0.009)	(0.012)		(0.011)	(0.014)
Iran	0.076	-0.052***	-0.047***	0.072	-0.070***	-0.097***
		(0.010)	(0.014)		(0.012)	(0.018)
Iraq	0.196	-0.079***	-0.068***	0.077	-0.139***	-0.109***
		(0.010)	(0.013)		(0.012)	(0.020)

	Men			Women		
	Mean (1)	Employed (2)	ln(earn) (3)	Mean (4)	Employed (5)	ln(earn) (6)
Somalia	0.127	-0.117***	-0.185***	0.141	-0.165***	-0.233***
		(0.010)	(0.014)		(0.012)	(0.018)
Kosovo	0.078	0.017	0.009	0.047	-0.034***	-0.058***
		(0.011)	(0.014)		(0.013)	(0.017)
Observations						
Immigrants		380,904	217,015		249,701	106,749
Natives		2,186,306	1,941,680		2,071,914	1,689,627

Notes: */**/*** Statistically significant at the 10/5/1 percent level. Standard errors, clustered within individual, are reported in parentheses. Regression samples are restricted to those aged 20-62, not in education, and in the country at the end of the data period (i.e. 31 December 2013). Refugee samples are further restricted to those aged 18-47 years at the time of admission. Native samples are 10% random population extracts. Regressions control for years since admission, age, observation year, county of residence, age at admission, education missing, and country of birth (for a total of 256 regressors).

Turning to earnings differentials among those employed, we again uncover a pattern where differentials by educational attainment are *smaller* for refugees than for natives when schooling is from abroad, but *higher* if it is acquired in Norway (see columns 3 and 6). The estimated earnings differentials between those with a tertiary and primary education are 0.091 log points for male refugees with foreign schooling, 0.356 for native men, and 0.470 (0.091+0.379) for male refugees with Norwegian schooling.

Refugees admitted following asylum application perform better in the labour market than resettled refugees. A plausible explanation is that this reflects selection. In the selection of refugees for resettlement, Norwegian agencies have emphasised special needs for help (Kavli and Svensen 2001). It is also probable that resettled refugees have fewer resources (e.g. poorer health; see Djuve and Kavli 2000) than those who travelled to Norway on their own before applying for political asylum.

Origin country differentials are substantial. Refugees from Bosnia and Hercegovina stand out with high employment rates and earnings. Iraq and Somalia are the origin countries with the least successful labour market integration. For Afghani refugees, we find a distinct gender differential whereby men have relatively high employment rates, while women have low participation and earnings.

Finally, labour market outcomes of refugees are highly sensitive to fluctuations in local labour market conditions. As the table reveals, both employment and log earnings of male refugees are six times as responsive to changes in the local unemployment rate as those of native men. Similarly, employment and earnings of female refugees vary greatly with local employment conditions. In other words, the relative economic position of refugees depends heavily on the state of the economy.

The regression samples underlying the results presented in Figure 2 are restricted to those who remained in the country until the end of the observation window. This methodological feature ensures that our estimates are not driven by compositional change caused by selective outmigration. As it turns out, 15% of the admitted refugees in our data had left the country by 2014, with outmigration rates about one third for the cohorts of the early 1990s. When we re-estimate the regression models ignoring outmigration, the estimates indicate slightly less employment decline over time than is revealed by Figure 2. The indication is that outmigrants, on balance, have lower employment rates than those who stay in Norway over the long haul, and that their inclusion in the regression sample conceals some of the widening employment gap between refugees and natives.

Policy implications and conclusion

The findings presented and discussed in this chapter indicate that the integration of refugees in the Norwegian labour market has not been as successful as one could wish for. It must be acknowledged, however, that full integration – i.e. labour market outcomes on a par with natives – is unrealistic, as war and conflict can be expected to cause both physical and psychological harm, leaving refugees at a health disadvantage. Moreover, a lack of basic education and language skills obviously implies that it will take time to acquire productive skills consistent with the requirements of employers. When we nevertheless view the 'Norwegian experience' as unsatisfactory, it is because we observe a considerable *decline* in employment after just five to ten years of residence. This is a clear indication that the potential for higher employment is there. Poor health and low levels of human capital may explain why the employment rate is low at the

outset, and probably also why we cannot expect refugee employment to equal that of natives. However, such factors are unlikely to explain the decline in employment after just a few years of labour market participation.

This suggests that there is scope for policy improvement. In particular, our findings indicate that it is *not* sufficient to help refugees into a first job through some kind of introductory programme. Jobs may be short-lived, and particularly so for refugees. Our regression analysis has highlighted education as a key success factor, even if outcome differentials may reflect unobserved heterogeneity correlated with attainment. Education acquired in Norway is associated with a sharp increase in employment, and additional years of schooling bring high returns in the form of earnings gains. A probable explanation is that Norwegian schooling – as opposed to education from abroad – ensures that qualifications are understood and valued in the Norwegian labour market. Moreover, education acquired in Norway signals a command of the majority language.

Despite the potential for better results through human capital investments, we believe it is important to recognise the limitations of such policies. Many refugees will inevitably have difficulties matching the high productivity requirements that characterise the competitive labour market in Norway. If policymakers wish to ensure employment rates close to native levels, it will probably be necessary to permit more flexible combinations of social insurance and labour earnings – for example, in the form of graded insurance and in-work support – and also to expand the number of sheltered workplaces.

References

Barth, E., B. Bratsberg, B. and O. Raaum (2004), "Identifying Earnings Assimilation of Immigrants under Changing Macroeconomic Conditions", *Scandinavian Journal of Economics* 106 (1): 1–22.

BBC (2016), "Migrant crisis: Migration to Europe explained in seven charts", BBC News, 4 March.

Borjas, G.J. (1982), "The Earnings of Male Hispanic Immigrants in the United States", *ILR Review* 35(3): 343-353.

Bratsberg, B., O. Raaum and K. Røed (2010), "When Minority Labor Migrants Meet the Welfare State", *Journal of Labor Economics* 28(3): 633–676.

Bratsberg, B., O. Raaum and K. Røed (2014), "Immigrants, Labour Market Performance, and Social Insurance", *The Economic Journal* 124(580): F644–F683.

Cortes, K.E. (2004), "Are Refugees Different from Economic Immigrants? Some Empirical Evidence on the Heterogeneity of Immigrant Groups in the United States", *Review of Economics and Statistics* 86(2): 465–480.

Damas de Matos, A. and T. Liebig (2014), "The qualifications of immigrants and their value in the labour market: A comparison of Europe and the United States", in *Matching Economic Migration with Labour Market Needs*, Paris: OECD Publishing.

Djuve, A.B. and H. Kavli (2000), "Styring over eget liv. Levekår og flytteaktivitet blant flyktninger i lys av myndighetenes bosettingsstrategier", Fafo-rapport 344, Oslo.

Dustmann, C. (1999), "Temporary Migration, Human Capital, and Language Fluency of Migrants", *The Scandinavian Journal of Economics* 101(2): 297–314.

Dustmann, C., A. Glitz and T. Vogel (2010), "Employment, Wages, and the Economic Cycle: Differences between Immigrants and Natives", *European Economic Review* 54(1): 1–17.

Edin, P-A., P. Fredriksson and O. Åslund (2003), "Ethnic Enclaves and the Economic Success of Immigrants: Evidence from a Natural Experiment", *Quarterly Journal of Economics* 118(1): 329–357.

Hartog, J. and A. Zorlu (2009), "How important is homeland education for refugees' economic position in The Netherlands?", *Journal of Population Economics* 22(1): 219–246.

Hatton, T. (2011), *Seeking Asylum: Trends and Policies in the OECD*, London: CEPR.

Husted, L., H.S. Nielsen, M. Rosholm and N. Smith (2001), "Employment and Wage Assimilation of Male First-Generation Immigrants in Denmark", *International Journal of Manpower* 22(1/2): 39–68.

Kavli, H.C. and E. Svensen (2001), "Overføringsflyktninger – uttak og integrering", Fafo-notat 2001:8, Oslo.

Lundborg, P. (2013), "Refugees' Employment Integration in Sweden: Cultural Distance and Labor Market Performance", *Review of International Economics* 21(2): 219–232.

Sarvimäki, M. (2011), "Assimilation to a Welfare State: Labor Market Performance and Use of Social Benefits by Immigrants to Finland", *The Scandinavian Journal of Economics* 113(3): 665–688.

Sarvimäki, M. K. and Hämäläinen (2016), "Integrating Immigrants: The Impact of Restructuring Active Labor Market Programs", *Journal of Labor Economics* 34(2): 479–508.

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Part II

Economic migrants and their impact on hosting societies

4 Immigration and the UK: Reflections after Brexit

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Introduction

The recent referendum in the UK on membership of the EU has sent shockwaves across the political establishment not just in the UK itself and throughout Europe, but also around the world. In the run-up to the referendum, economists were (perhaps for the first time) united in pointing out that the economic case for Brexit is rather slim, that hardly any well-argued reason could be given by the Brexit camp as to why it may be a good idea to leave the EU, and that the economic consequences could be severe.

That lack of economic argument in favour of Brexit, which should have been the key battleground in the run up to the referendum, led the debate to focus on one particular issue –immigration. Like the free movement of goods, capital, and services, a fundamental pillar of the EU, and a non-negotiable requirement for any new member state, is the free movement of people. It was this particular aspect of EU membership that became the strongest single assertion of the Brexit camp. The inability to control immigration from within the EU was made a symbol for everything else Brexit stood for (such as the idea of 'sovereignty' or the pain of being subjugated to 'rules made in Brussels and not the UK'), but – again – fact-based arguments against free mobility on economic or welfare grounds were hard to find. Nevertheless, free mobility within the EU quickly became the scapegoat for the economic and social woes that had distressed the country since the Great Recession, and perhaps even earlier, such as crime, real wage decline, inequality, unemployment, access to social services, health provision, and benefits and transfers. 'Immigration' and everything people associated with it and

were encouraged to believe by a relentless campaign of the majority of the tabloid press contributed decisively to the decision that the UK took on 23 June 2016. Immigration and free mobility will likely again be central in the negotiations between the UK and its European partners in developing a model for Brexit that minimises the economic costs for both the UK and the EU.

In this chapter, we reassess the case of migration as a reason for the UK to leave the EU. We provide evidence that relates to some of the claims made in the run up to the referendum, and that will certainly matter again in Brexit negotiations. Much of the material we provide in this chapter draws on previous research by us and others.

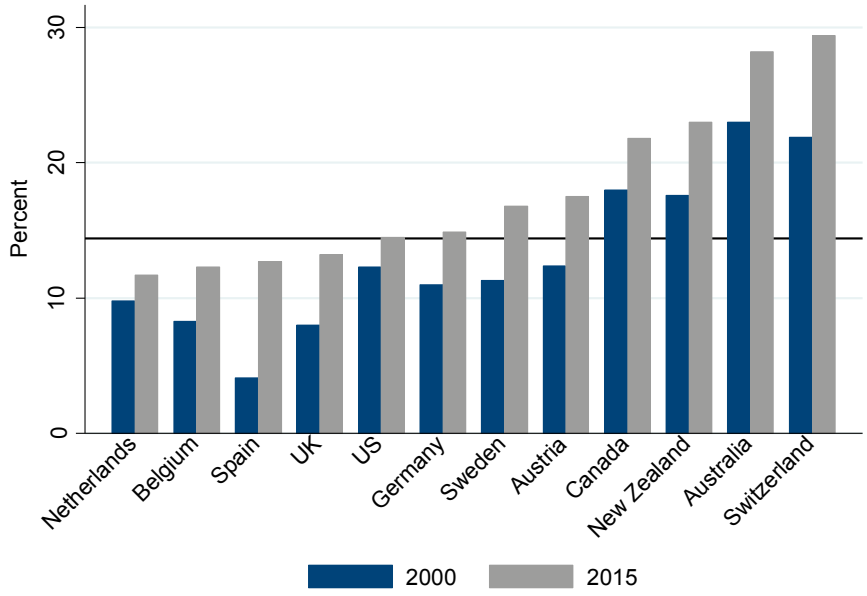
The structure of the chapter is as follows. In the next section, we describe some key features of immigration in the UK, and put it into perspective with the experience of other advanced economies. In the third section, we review the existing evidence of the effects of immigration on the UK labour market and public finances, and the fourth section concludes.

Immigration to the UK

Overall trends

The movement of people across national borders has increased rapidly over the past two decades. According to United Nations estimates, while in 1995 the world stock of international migrants amounted to about 161 million people (2.8% of the world population), by 2015 the global migrant stock reached almost 244 million (3.3% of the world population) (United Nations 2015). These figures exclude migration within countries, which for China alone amounts to 120 million rural immigrants in cities population (United Nations 2011), and the figures also certainly undercount illegal immigrants. The increase has been substantial, especially in the more developed countries. The 1995 stock of immigrants in Europe, Northern America, Australia/New Zealand and Japan was 92 million (7.9% of the population), but increased to more than 140 million (11.2% of the population) by 2015 (United Nations 2015).

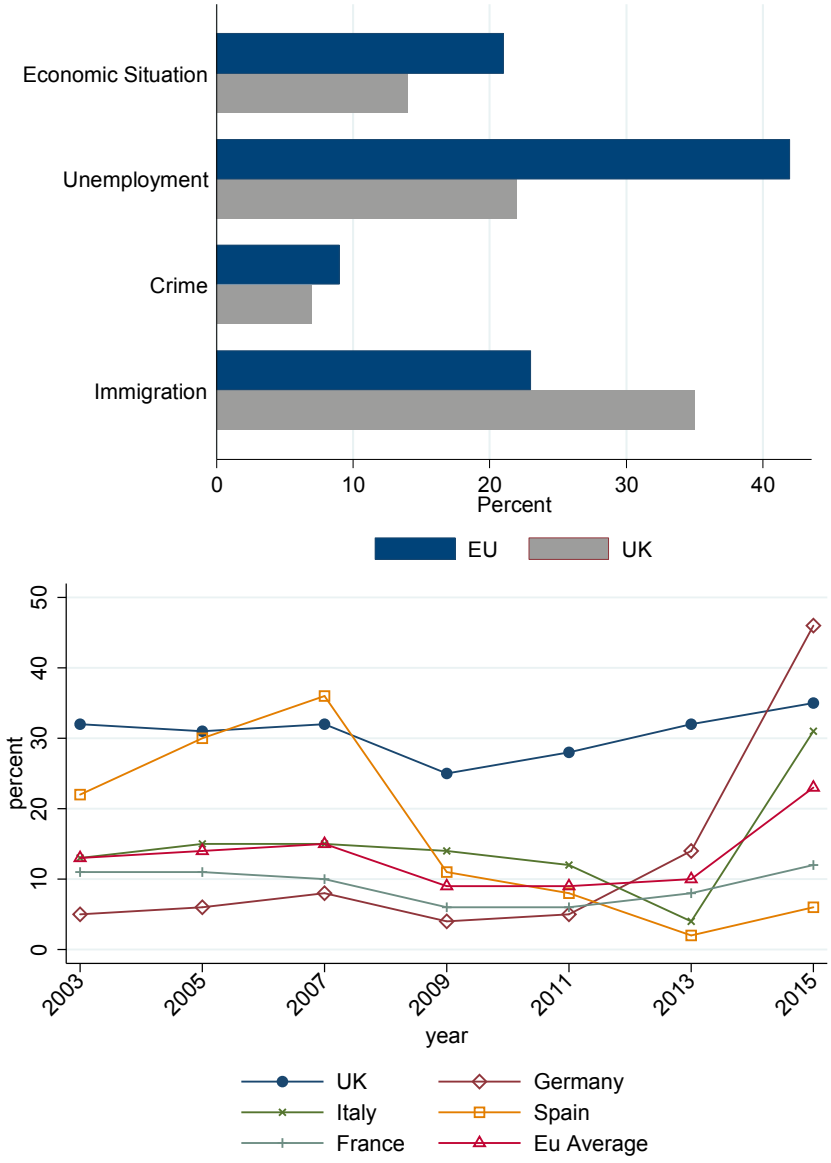
Figure 1 Share of foreign born population in selected countries, 2000 and 2015



Note: The horizontal line is the 2015 average for the countries shown on the figure weighted by their total population.
Source: Our elaboration on United Nations, Trends in International Migrant Stock.

Figure 1 displays the share of foreign born in the population for a selected number of countries and for the years 2000 and 2015. Two things stand out from this figure. First, the percentage of foreign born in the populations of many European countries – including Germany, Austria and Switzerland – is by now higher than that in the US. Second, the percentage of foreign born in the population has been increasing in every country, and in some by a large margin. The UK is neither among the displayed countries with the highest share of foreign born in 2015 (in fact, it is in the low-to-medium range), nor is it among the countries with the highest increase in its foreign born population, although the importance that has been attached to immigration in the UK debate would seem to suggest just that, as we will show next.

Figure 2 Most important issues facing the country



Notes: The top panel shows the share of respondents who believe that one of the two most important issues facing their country is the economic situation, unemployment, crime, or immigration, respectively, on average across the EU (blue bars) and in the UK (grey bars) in 2015. The bottom panel displays the evolution of the share of respondents claiming that one of the two most important issues facing their country is immigration between 2003 and 2015, in the UK, Germany, Italy, Spain, France, and the average across the EU.

Source: Authors' elaboration on data from Eurobarometer.

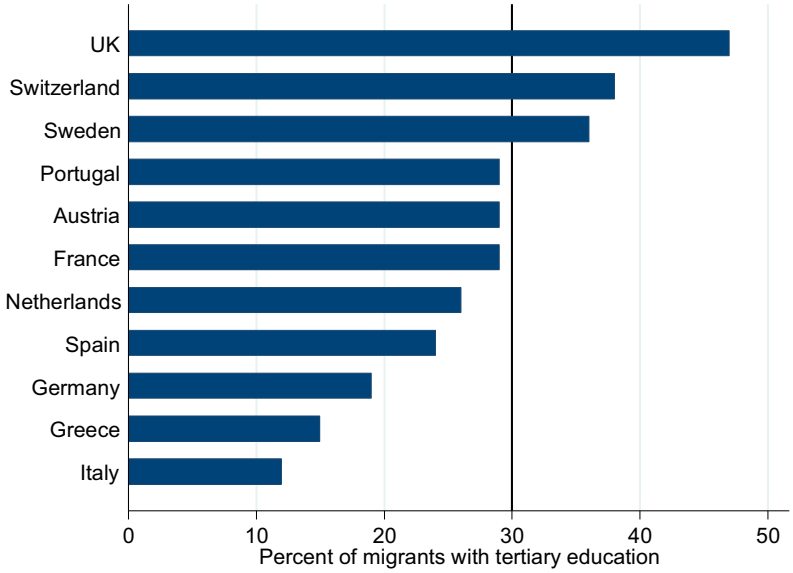
In Figure 2, we display – from the European Barometer – the importance individuals attach to immigration and to three other issues: crime, unemployment, and the economy. The top panel displays this for the UK for 2015, and contrasts it with the EU average. While 35% of UK citizens believe that immigration is one of the two most important issues facing their country, this is the case for only 23% on average across the EU. While at the EU level unemployment is the primary source of concern, with more than 40% of EU citizens indicating it as one of the two most important issues facing their country, in the UK this share is just above 20%. Immigration ranks first among the concerns of British citizens.

The bottom panel displays how concerns over immigration have evolved over time in the UK and in other EU countries. The vertical axis carries the percentage of individuals who considered immigration to be one of the two most important issues facing their country, whereas on the horizontal axis we display the year in which the respective question was asked. The UK is the country where, compared to other concerns, concern about immigration is consistently highest. The only exceptions are in 2007, when relative concerns over immigration are higher in Spain (a country that was experiencing an extraordinarily rapid growth of its immigrant population), and in 2015, when, compared to other concerns, immigration is a stronger concern in Germany (which followed around 1 million refugees being accommodated by the country in that year alone). In 2015 concerns about immigration also became stronger, relative to other concerns, in Italy and in the EU as a whole, as a consequence of the refugee crisis (which did not affect the UK).

How do the immigrants who arrive in the UK compare to immigrant populations in other countries? Figure 3 shows that the share of highly educated among immigrants in the UK is substantially higher than in any other EU country. According to Eurostat data, in 2015, 47% of immigrants in the UK in the 15-64 age range had achieved a tertiary education, which contrasts starkly not only with Italy (12%) and Greece (15%), but also with countries such as Germany (19%), France (29%) and even Sweden (36%) and Switzerland (38%). Across the EU27, the average share of immigrants with a tertiary

education is 30%. Only Poland (50%) and Ireland (48%) (not reported in Figure 3) have a higher share of tertiary-educated immigrants than the UK, but in the case of Poland, the foreign born population constitutes only 1.7% of the total population in 2013.[1]

Figure 3 Share of immigrants with tertiary education in selected EU countries, 2015



Notes: The figure shows the share of immigrants with tertiary education (ISCED levels 5-8) out of total immigrants in each country, and on average across the EU 28 (vertical line), in 2015. Immigrants are defined as foreign born, except for Germany where they are defined as foreign nationals.

Source: EUROSTAT.

To summarise, the share of foreign born among the overall population is smaller in the UK than in many other European countries, and the inflow of immigrants into the UK over the past one and a half decades has been more modest than that experienced by some other European countries. On the other hand, migration has consistently been a larger concern for UK citizens than for citizens of the EU, and topped the issues of concern in the year before the referendum. This is surprising as immigrants to the UK

1 Source: OECD International Migration Database 2015.

are highly skilled and have high employment rates compared to immigrants in other European countries.[2] We now turn in more detail to the different aspects of immigration to the UK.

Recent immigration to the UK: Key facts

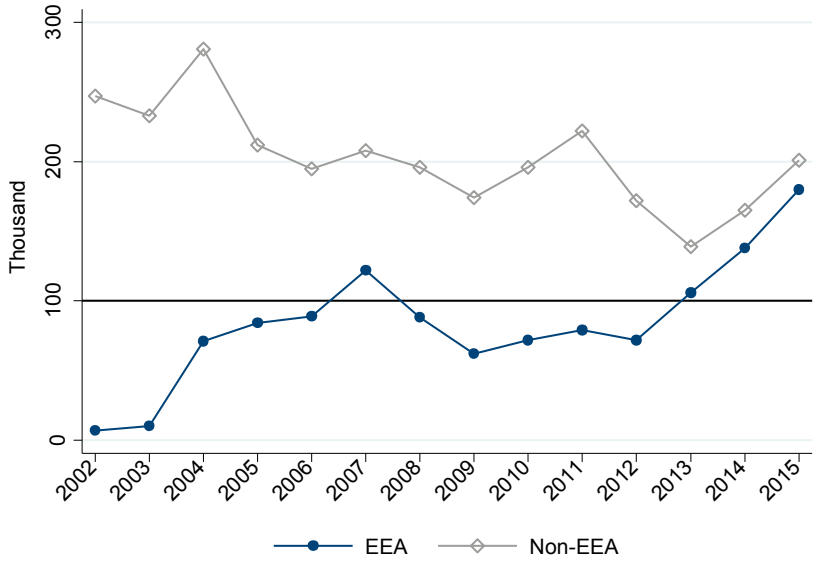
Over the past 15 years, the UK has experienced a sizable growth in its foreign-born population – although, as illustrated above, not out of line compared to other countries. According to the UK Labour Force Survey (LFS), between 2002 and 2015, the immigrant population in the UK increased by 3.7 million individuals, from 4.9 million to 8.6 million (a 76% increase).[3] As a result of this growth, immigrants accounted for 13.3% of the total UK population in 2015.

In the public perception, this rapid growth has been typically associated with the two rounds of EU eastern enlargement that took place in 2004 and 2007. However, according to the LFS, non-European immigrants still form the majority of the UK immigrant population, with 5.4 million individuals living in the UK who were born in a country outside of the European Economic Area (EEA) in 2015, compared with 3.1 million immigrants from EEA countries. Furthermore, non-European immigrants accounted for most of the inflow over the period: according to the LFS, between 2002 and 2015 the net immigration from non-EEA countries stood at just over 2 million, whereas net immigration from EEA countries was only 1.6 million.

2 In 2015, the employment rate of foreign citizens in the UK was 74% compared to an EU average of 64% (http://ec.europa.eu/eurostat/statistics-explained/index.php/Migrant_integration_statistics_-_employment#Employment, accessed on 26/9/2016).

3 Our main data source for statistics on migrants is the UK Labour Force Survey (LFS). The LFS is the largest household survey in the UK, consisting of interviews with around 40,000 households and 100,000 individuals. The survey is intended to be representative of the UK population and provides the official measures for employment and unemployment.

Figure 4 Net annual immigrant inflows, 2002-2015



Note: The figure reports the net annual inflow of EEA (full dots) and non-EEA (empty diamonds), for each year 2002-2015.
Source: LTIM.

In Figure 4, we provide estimates of the net inflow of EEA and non-EEA immigrants to the UK in each year between 2002 and 2015, based on the Long-Term International Migration Estimates (LTIM) of the Office of National Statistics (ONS).[4] According to these figures, net EEA inflows were substantially smaller than non-EEA inflows in all years.[5] Additionally, over this period, non-EEA net immigration has *always* been above 100,000 thousand net entries per year. Therefore, the promise of the last government in April 2011 to bring net migration down below 100,000 has not even been fulfilled

4 These estimates are drawn from a number of sources, but they are based mainly on the International Passenger Survey (IPS). The IPS is a voluntary sample based survey collecting information about passengers entering and leaving the UK, and thus provides information on both migrant inflows and outflows. The ONS complements the IPS data with information drawn from the LFS, Home Office immigration administrative systems, and data from the Northern Ireland Statistics and Research Agency. Estimates of net flows based on the LFS show a similar trend, but differ somewhat in magnitude. This illustrates that the measurement of net migration inflows is challenging, and subject to considerable measurement problems.

5 According to the LFS, net EEA inflows were substantially smaller than non-EEA inflows until 2009, while there is some variability in subsequent years.

for non-EEA immigration, which in principle can be controlled.[6] According to ONS figures, the 100,000 limit has been consistently breached with non-EEA inflows alone. Thus, the perception that was created during the Brexit campaign that EEA migration is responsible for not achieving the government's target of 100,000 is certainly incorrect. The fact that, despite the political pressure on the government to bring down migration over the past few years, the target has not even been reached for non-EEA immigrants suggests very strong economic reasons for immigration – something that we will take up below.

Table 1 Natives' and immigrants' selected characteristics, 2015

	Natives	Migrants		
		All	EEA	Non-EEA
Age				
Mean	39.6	39.8	37.3	41.1
% age 23-65	53.3	72.0	71.4	72.3
% above 65	18.5	11.8	10.7	12.3
Education				
Low (16 or under)	44.5	17.5	12.5	20.0
Medium (17-20)	29.6	32.9	39.4	29.7
High (21 or older)	23.9	41.7	42.6	41.2
Labour market				
Employment rate 23-65	77.5	74.1	82.8	69.8
Mean weekly wages	478	490	452	514

Notes: The table reports selected summary characteristics of natives and immigrants living in the UK in 2015. Columns 3 and 4 break down the immigrant population in immigrants from the European Economic Area (EEA) and from outside the European Economic Area (non EEA). Low education: left full time education aged 16 or younger; medium education: left full time education between 17 and 20; high education: left full time education at age 21 or above. Employment rate 23-65 is defined as the ratio of employed individuals in the age range 23-65 to total population in the same age range. Source: Authors' elaboration on UK LFS.

Source: Our elaboration on United Nations, Trends in International Migrant Stock

Table 1 describes in more detail the UK's immigrants – their age and education structure, their wages and employment rates, and how they compare to natives, based on the LFS for the year 2015. Whilst the average age of immigrants and natives is similar, at around

6 See http://www.bbc.co.uk/news/uk-politics-13083781 for a summary of David Cameron's speech.

40 years, immigrants from the EEA tend to be slightly younger (around 37 years) and immigrants from outside the EEA slightly older (around 41 years). The proportion of individuals of working age is considerably higher among immigrants – around 53% of the native population is aged 23 to 65, whereas 72% of migrants fall within this age range. By contrast, 19% of natives are aged 65 or above, compared to only 12% of migrants.

In Figure 3 we have already illustrated that migrants to the UK are better educated than those to other European countries. Table 1 shows that this is also the case when we compare the UK's immigrant populations with the native born population. On average, migrants report higher educational attainments compared to natives. We measure educational attainment by the age at which individuals left full-time education, and define individuals who ended full-time education aged 16 or younger as 'low education' individuals. While 45% of UK-born individuals fall into this category, the figure for immigrants is only 18%. The corresponding percentage is lower for immigrants from the EEA (13%) than for immigrants from outside the EEA (20%). The percentage of individuals classified as 'medium education' – i.e. individuals who left-full time education between the ages of 17 and 20 – is 30% for natives and 33% for migrants. Finally, we classify individuals who left full time education aged 21 or older as 'high education' individuals. This figure is considerably higher for immigrants than for natives – 42% for the former compared with 24% for the latter. The corresponding percentage is similar for migrants from the EEA (43%) and from outside the EEA (41%).

The labour market outcomes of natives and immigrants differ considerably. Table 1 shows that the employment rate (defined as the ratio of employed individuals aged 23–65 to total population in the same age range) is around 78% for UK-born individuals, compared with 74% for immigrants. However, this average masks considerable differences. Immigrants from the EEA have considerably higher employment rates (around 83%) compared with immigrants from outside the EEA (70%). The average weekly earnings of immigrants (£490) exceeds that of natives (£478). The weekly earnings for immigrants from outside the EEA are particularly high at around £514, whereas earnings of immigrants from inside the EEA are slightly lower than natives at around £452.

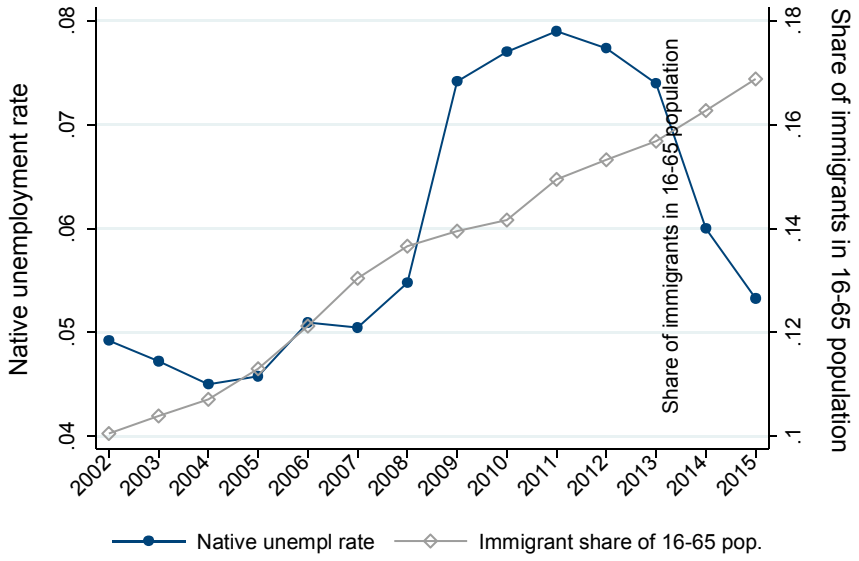
Overall, these figures suggest that immigrants from the EEA are better educated than natives and have higher employment rates, both in comparison to natives and non-EEA immigrants. Despite their higher education, the wages of EEA immigrants are below those of the other groups – something we take up below.

The economic impact of immigration to the UK

Jobs and immigrant employment

Does immigration affect native employment? The issue is controversial and has been the subject of several empirical studies. Early work by Dustmann et al. (2005) did not detect any statistically significant employment effects of immigration to the UK over the period 1983 to 2000. Likewise, Lemos and Portes (2008) do not find any effect of A8 immigration (i.e. immigration from Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia and Slovenia) on the number of unemployment claimants in 2004-2005. More recent work on the employment effects of immigration to the UK confirms these findings for later years. Lucchino et al. (2012) find no association between migrant inflows and unemployment claimants over the years 2002 to 2011, and no evidence of a more adverse impact of immigration during the recent recession. The Migration Advisory Committee conducted an extensive analysis of the association between immigration and native employment in the UK between 1975 and 2010 (Migration Advisory Committee 2012), which does not provide causal estimates, however, but simple correlations. Their analysis shows that, over the whole period, there is no systematic association between overall immigration and native employment. However, they do detect a negative correlation between non-European migration and native employment in more recent years (1995-2010) and during economic downturns. Importantly, the study does not find any correlation between EU immigration and native employment in any period.

Figure 5 Native unemployment and working age immigration



Notes: The figure reports the native unemployment rate and the share of immigrants in working age population. The native unemployment rate (full dots) is reported on the left-hand axis, and the proportion of 16 to 65 year olds that are foreign born (empty diamonds) is reported on the right-hand axis.

Source: our elaboration on the UK Labour Force Survey.

There is therefore a consensus among most of the literature that immigration did not affect the employment prospects of the UK-born population. Here, we will inspect the recent trends in the UK (see Wadsworth et al. 2016 for a similar analysis). In Figure 5, based on the LFS, we plot the evolution of the share of immigrants in the population aged 16-65 (i.e. the potential labour force) on the right-hand axis, and the evolution of the unemployment rate of UK natives (defined as the ratio of unemployed to the labour force) between 2002 and 2015 on the left-hand axis. The figure illustrates that there is no systematic correlation between immigration and native unemployment. While the stock of immigrants in the UK increases at a steady pace over the entire observation window, unemployment also increases between 2002 and 2008, jumps up in 2009 and 2010 by more than two percentage points as a result of the Great Recession, and then declines from 2011 onwards. The increases in both immigration and unemployment between 2002 and 2008 in no way suggest that immigration *causes* unemployment, only that the two series are correlated over that period. Neither do the contrasting trends for both after 2011 suggest that immigration was the cause for the

drop in unemployment. However, the two series clearly show that unemployment has dropped quite dramatically over the past years, despite an increase in immigration. That must mean that more jobs have been created than those that went to new arrivals. Two observations are remarkable in that series. The first is the fact that the stock of immigrants continued to grow throughout the Great Recession at basically the same pace as before and afterwards. The second is the extraordinary ability of the British economy to create jobs after the Great Recession.

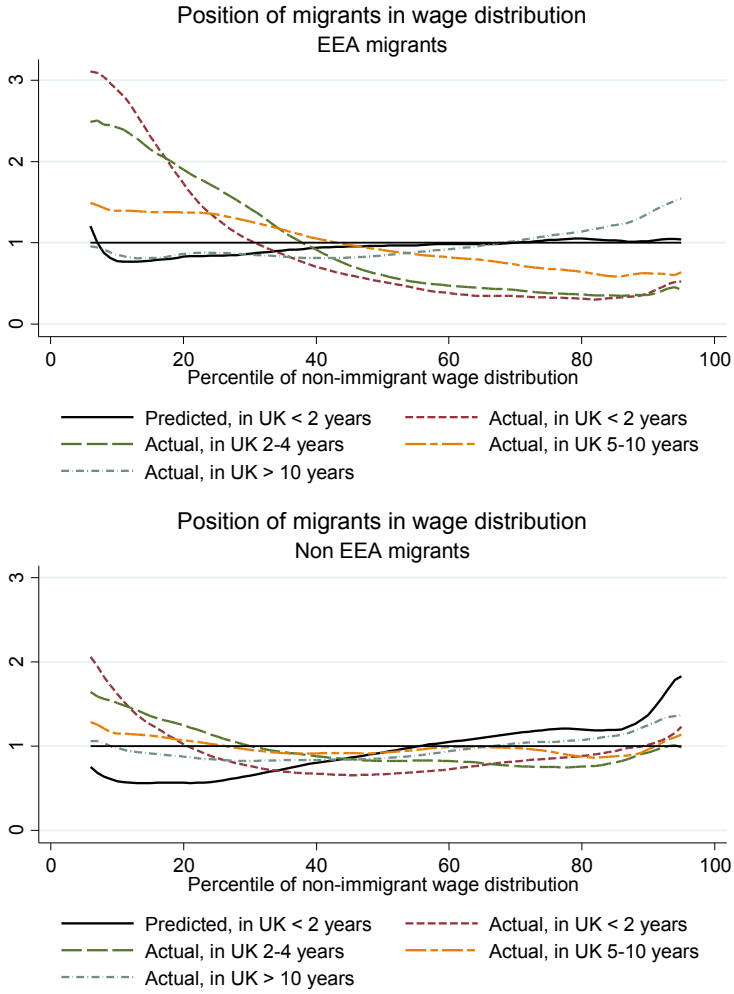
Wages

Another common, labour market-related fear regarding immigration is that it may depress the wages of native workers. Economic reasoning suggests that immigration may hold back wage growth of natives who compete with immigrants, while at the same time increasing wage growth for native workers whose skills are complementary to those of natives (see Dustmann et al. 2008 for the simplest possible model). In order to assess the wage effects of immigration, it is therefore important to understand the types of natives that immigrants compete with. This is not always an easy task, since immigrants downgrade upon arrival, thus making it difficult to predict who they will compete with. Dustmann et al. (2013) circumvent this problem by defining immigrants' skill group in terms of their position in the native wage distribution.[7] They first demonstrate that immigrants to the UK between 1997 and 2005 are, on average, much better educated than natives. However, due to occupational downgrading, recent immigrants are located at the lower end of the native wage distribution, and it is here that they put competitive pressure – if they do so at all – on native wages. Dustmann et al. (2013) find that immigration over the period from 1997 to 2005 has held back wage growth below the 20th percentile, but only by a very small amount. Over that period, the real hourly wage increased by 4.28% per year in the 1st decile, and immigration held wage growth back by only 0.21%. On the other hand, immigration has increased wages above the 20th percentile quite substantially so that overall, immigration to the UK over the period considered has had a positive impact on average native wages. In a related

7 See also Dustmann et al. (2016) for a refined methodology.

paper based on data for the years 1975- 2005, Manacorda et al. (2012) argue that the group whose wages has been slightly depressed by immigration is previous immigrants now living in the UK.

Figure 6 Position of EEA and non-EEA immigrants in wage distribution, by years since migration



Notes: The figures show kernel estimates of the predicted (solid line) and actual (dashed lines) density of EEA (top figure) and non-EEA (bottom figure) immigrants in the non-immigrant wage distribution, distinguishing by years since migration. The horizontal line shows as a reference the non-immigrant wage distribution. The kernel estimates are above the horizontal line at wages where immigrants are more concentrated than natives, and below the horizontal line at wages where immigrants are less concentrated than natives. The estimates for the actual distribution distinguish between migrants who have been in the country for less than 2, between 2 and 4 years, between 5 and 10 years and more than 10 years.

Source: Authors' elaboration on LFS data, years 2002 to 2015.

The overall pattern of where more recent immigrants are likely to be found in the native wage distribution is similar to that for the period considered in the study by Dustmann et al. (2013). In Figure 6, we display the actual and predicted distribution of immigrants along the wage distribution of native workers over the period 2002-2015, distinguishing between EEA and non-EEA immigrants (in the top and the bottom panels) and between immigrants who have been in the country for less than 2 years, for 2 to 4 years, for 5 to 10 years, and for more than 10 years. The horizontal line shows as a reference the native wage distribution. The estimates of immigrant densities are above the horizontal line in those parts of the native wage distribution where immigrants are more concentrated than natives, and below the horizontal line in the parts of the distribution where immigrants are less concentrated than natives.[8]

The density of immigrants that arrived within the previous two years is given by the dashed red lines in the figure. It is higher than that of natives everywhere below the 25th percentile of the wage distribution, regardless of their origin. On the other hand, it is lower between the 25th and the 90th percentiles, and – for non-EEA immigrants only – higher again beyond the 90th percentile. This seems surprising, given the higher educational attainment of immigrants, as we have illustrated in Table 1. Indeed, if we were to predict the position of recent immigrants in the native wage distribution based on their observed characteristics (age, gender and education), their density would be illustrated by the black solid line – EEA immigrants' distribution would closely resemble that of natives, whereas non-EEA immigrants would more concentrated in the upper part and less concentrated in the bottom part of the distribution. The reason is that immigrants *downgrade* upon arrival, i.e. they initially work in jobs that are below their educational level, due to a lack of skills such as language that make them equally productive to natives with the same level of education. Over time, however, immigrants acquire these skills and climb up the job ladder, so can found in areas of the wage distribution that are more in line with their skills. This can be seen in the other lines in the two figures, which refer to immigrant populations with longer durations in the

8 The figures are not corrected for return migration. However, what matters for the wage impact of immigration is where immigrants who are in the UK are located along the wage distribution, not where they would have been located had they not left the country.

UK. The immigrant densities become increasingly similar to those predicted based on their age-education profiles - for both EEA and non-EEA immigrants – the longer they spend in the UK.

This indicates that, as time spent in the UK increases, immigrants affect the relative supply of different types of labour less and less, thus easing the pressure exercised on the wages of natives at the bottom of the distribution, but also the positive effect on wages higher up.

Public resources

Another frequently held concern about immigration is that it puts excessive demand on public services, which are unable to cope with the increased population. This view is often expressed by pundits and politicians, including members of the current and former government. For instance, Prime Minister Theresa May said in her speech at the Conservative Party conference in May 2015 that *"when immigration is too high, when the pace of change is too fast, it's impossible to build a cohesive society. It's difficult for schools and hospitals and core infrastructure like housing and transport to cope"*[9] and former prime minister David Cameron, in his speech on immigration on 21 May 2015 said "*if you have uncontrolled immigration, you have uncontrolled pressure on public services*".[10]

It is certainly true that population changes – whether declines or increases – change the demand for public services. However, the key questions when it comes to immigration are whether those who arrive and demand services pay for them in terms of taxes, and whether the tax payments actually result in the redirection of resources towards the areas where the services are demanded. In recent work (Dustmann et al. 2010 and Dustmann and Frattini 2014; see also Preston 2014 for a general discussion), we address the first question, showing that in particular immigrants from the EEA have paid far more in taxes than they received in the form of transfers and benefits. Our results show that over the period 2001-2011, immigrants who came to the UK since

9 http://www.bbc.com/news/uk-politics-34450887

10 https://www.gov.uk/government/speeches/pm-speech-on-immigration

2000 were 43% (17 percentage points) less likely to receive state benefits or tax credits. These differences are partly attributable to the more favourable age-gender composition of immigrants. However, even when compared with natives of the same age, gender composition and education, recent immigrants are still 39% less likely than natives to receive benefits. Distinguishing between the different immigrant groups, immigrants from the ten Central and Eastern European countries that joined the EU since 2004 (A10) and non-EEA immigrants have about a 16 percentage point lower probability of receiving transfers and tax credits than natives, and the probabilities are even smaller (by about 23 percentage points) for immigrants from the other EEA countries. Recent immigrants overall are also 1.2 percentage points less likely than natives to live in social housing, a probability gap that increases to 6 percentage points for recent A10 immigrants and to more than 9 percentage points for recent immigrants from the rest of the EEA. Recent non-EEA immigrants, in contrast, are 1.7 percentage points more likely than natives to live in social housing.

Table 2 Fiscal contributions of immigrants, 2001-2011

	Net fiscal contributions (£ million) (1)	Revenues/ expenditures ratio (2)	Revenues/ expenditures ratio, relative to natives (3)	Cost of home-country education (4)
Recent EEA	20,215	1.311	1.464	6,902
of which				
recent A10	4,961	1.120	1.252	4,338
recent other EEA	15,255	1.640	1.833	2,564
recent non-EEA	5,207	1.033	1.154	11,412

Notes: The table reports, for EEA immigrants arrived since 2000, and broken down into immigrants from the ten Central and Eastern European countries that joined the EU since 2004 (A10) and from Western Europe (other EEA), and for non-EEA immigrants arrived since 2000, and cumulated over fiscal years 2001-2011: column (1) the overall net fiscal contribution, expressed in 2011 equivalent GBP; column (2) the ratio of revenues contributed to expenditures received; column (3) the revenues/expenditures ratio for the respective immigrant group relative to natives; column (4) reports the cumulated annual cost that the UK should have borne if employed immigrants had been educated domestically.

Source: data from Dustmann and Frattini (2014)

These figures make it clear that European immigrants to the UK are less likely than natives and non-European immigrants to rely on social assistance. Yet, to evaluate the overall fiscal stance of the newly arrived cohorts of immigrants, we need to assess the difference between the amount they paid in taxes and the amount of transfers they received. Table 2 (based on Dustmann and Frattini 2014) does just that and shows that between 2001 and 2011, both EEA and non-EEA immigrants who came to the UK since 2000 paid more in taxes than they received in public spending. Column (1) of the table reports the cumulated net fiscal contributions made by each immigrant group over those 11 years. The positive contribution is particularly evident for UK immigrants from the EEA – over the period 2001-2011, EEA immigrants paid (through taxes) over £20 billion (in 2011 terms) more into the fiscal system than they took out. Importantly, even immigrants from the ten Central and Eastern European countries that joined the EU since 2004 (A10) made positive contribution to the British public finances a £5 billion, with the remaining £15 billion being contributed by western European immigrants (i.e. other EEA). At the same time, non-European immigrants who entered the UK since 2000, and who constituted the vast majority of new arrivals (as shown in Figure 4), made a positive fiscal contribution of about £5 billion. Column (2) displays the revenues/expenditures ratio (i.e. the ratio between the amount paid in and the amount taken out in transfers and public services) for each immigrant group. The figures show that overall, recent EEA immigrants overall paid in 31% more than they took out. The figure stands at 12% for A10 immigrants, and for other European immigrants was even higher at 64%. Remarkably, the revenues/expenditures ratio of all immigrant groups was higher than that of UK natives, as indicated in column (3). All immigrant groups contributed (in relative terms) more than natives. In fact, the revenues/expenditures ratio of natives was below one – suggested by all values in column (3) being higher than in column (2) – indicating that the net fiscal contribution of natives over the period was negative.[11]

11 This in turn sums up to the overall deficit the UK was running over the period (see Dustmann and Frattini 2014 for more detail. In that paper), we also provide many different robustness checks.

These estimates show that recent immigration to the UK had a positive effect on public finances, yet they are likely to underestimate the total fiscal benefits from immigration. In fact, they do not account for at least two such additional benefits. First, immigration helps in sharing the cost of fixed public expenditures (which account for over 20% of total public expenditure) among a larger pool of people, thus reducing the per capita financial burden for UK natives. Second, immigrants arrive educated, with their education having been paid by someone else.

Dustmann and Frattini (2014) show that accounting for the first type of implicit savings increases the overall positive fiscal contribution of recent immigrants by almost £24 billion over the period between 2001 and 2011 (£2.2 billion per year, on average). To assess the implicit savings from immigrants arriving in the UK after completing their education abroad (and thus at a point in their lifetime when the discounted net value of their future net fiscal payments is likely to be positive), Dustmann and Frattini (2014) compute the annuity of each worker's education cost per year, and sum this cost up over the period between 2001 and 2011. As the reported level of education would be misleading due to downgrading (discussed above), they assign to each immigrant worker the average years of education of natives working in the same occupation. They then compute how much it would have cost to provide that level of education domestically, rather than importing it from abroad. Based on these numbers, they can compute the total annual cost that an equivalently educated number of UK-born workers would have cost the UK taxpayer. The results of these calculations, reported in column (4) of Table 2, are the implicit savings to the UK taxpayer of immigrants obtaining their education abroad. Over the period 2001 to 2011, the sum of the annuities of the cost of education would have been about £4.3 billion for recent A10 immigrants, £2.6 billion for immigrants from other EEA countries, and £11.4 billion for immigrants from outside the EEA.

Discussion and conclusions

Immigration was a core issue in the run-up to the recent referendum on EU membership in the UK, and it will likely be as important in the upcoming exit negotiations with the EU. In this chapter, we review the issue of immigration by describing not only the particular features of UK immigration, but by also putting immigration to the UK into a wider international context.

The share of foreign-born individuals over the past two decades has increased not just in the UK, but in most industrialised countries, and this trend is likely to continue in the future. Migration of workers across national boundaries is driven by both demand and supply factors – in an increasingly globalised world economy, the competitiveness of national industries depends importantly on their ability to draw on skill pools from around the world. At the same time, the cost of migration has substantially decreased due to huge advances in information and communication technologies and means of travel.

In the international context, the UK has been very fortunate in terms of the type of immigrants it has received, with immigrants to the UK far better educated (on average) in comparison to those to other countries and to natives, and exhibiting high employment and participation rates. Moreover, little evidence exists that the inflow of immigrants over the past two decades has severely harmed native workers' wages and employment possibilities. On the other hand, it is true that many of the newly arrived immigrants do not work in occupations that correspond to their qualifications – a process known as 'downgrading'. However, not only do immigrants – when acquiring complementary skills – rapidly move into occupations that correspond to their skills, they are also likely to be far more productive in jobs for which they are overqualified, which in turn may impact on firms' productivity.

We illustrate that immigrants who arrived in the UK, and particularly those who come from EU countries, made a substantial net contribution to the fiscal coffers, not only by paying more in taxes than they receive in benefits, but also by bringing skills with them that have been financed by their home countries and by contributing to the costs of fixed public goods such as defence and foreign services.

It seems unclear that the ability to control immigration from the EU will lead to a dramatic reduction in immigration. One piece of evidence that points in this direction is that net immigration from non-EU countries (i.e. immigration that is 'controllable' by the government) has been above 100,000 for the entire period of the last government. Economic requirements are likely to be the primary reason for these figures being consistently high, and these may not be affected by Brexit. The same needs may well lead to continued immigration from Europe, with many core workers in industry, the NHS, and the education sector being EU nationals. Reductions may be achieved at the lower end of the labour market, though. However, these may be accompanied by economic costs, for instance, by making it harder for the agricultural or retail industries to hire workers. The abolishment of free movement for European workers to the UK will naturally introduce red tape by depriving industry of free access to a potential pool of workers from across the EU, and by regulations and quotas that regulate hiring. Any such restrictions will clearly lead to economic inefficiencies.

What, then, will be the benefits of restricting free movement? To the extent that it will reduce the number of EU workers who arrive in the UK, it will naturally reduce demand for public services such as schools and NHS services, as well as transfers and benefit payments. But, of course, it will also reduce tax receipts. Whether this leads to an economic gain or an economic loss depends on the net fiscal contribution of those who will be restricted from coming to the UK. The work we review in this chapter very clearly shows that, on average, EU workers' fiscal contributions are far higher than the costs they induce by demanding public services and by receiving benefits. But not all EU workers contribute equally, and cutting out the least productive may create some overall fiscal gain. However, any such gain has to be weighed against the cost induced by depriving the public and private sector of access to such workers. Also, the careers of immigrants are dynamic, and many who arrive and start off at very low wages have impressive career paths over their migration histories. In some cases, small family businesses started by immigrants have grown over time to become established high-street names. For instance, Marks & Spencer developed out of a market stall opened in Leeds in 1884 by the Polish refugee Michael Marks, who successively expanded his business by teaming up with Thomas Spencer in 1894.

Will it benefit native workers if they compete with fewer immigrants for the same jobs? There has been little evidence that immigration has held back native wage growth except for those at the bottom of the wage distribution, and the effects here are very small. Furthermore, many immigrants – in particular those at the bottom of the wage distribution – work in jobs that produce goods that are tradable. One example is the agricultural industry, which is very labour intensive and where the cost of labour is an essential part of the final output price. Consider the case of asparagus, which is picked by hand, and where the wages of workers will be importantly reflected in the final output price. At present this type of work is done almost exclusively by immigrants,[12] as natives are not willing to work for the wages on offer. Reducing immigration may lead to higher wages, and to more natives being willing to work in the sector, but also to an increase in the price of asparagus. This new price may be too high for the UK retail sector in comparison to asparagus that can be sourced from other countries where labour is cheaper. This may in turn lead to a reduction in demand in the British asparagus sector, which, rather than employing British workers at higher wages, may be forced to reduce production or to stop production altogether, hurting British workers that have jobs further up the production chain, such as truck drivers, machine operators, or office workers in the asparagus industry. This simple example carries over to many sectors of the economy.

To conclude, it is altogether unclear whether the possibility for the UK government to control immigration from the EU after Brexit will indeed lead to a substantial reduction of overall immigration. Severe restrictions, if imposed, are unlikely to lead to overall economic gains. They may benefit the wages of some particular groups of natives, but these effects are small and likely to be far outweighed by the economic costs discussed above.

References

Dustmann, C., F. Fabbri and I. Preston (2005), 'The Impact of Immigration on the UK Labour Market', *Economic Journal,* 115: F324-41.

12 https://www.theguardian.com/business/2013/may/25/migrant-jobs-fruit-farms-kent.

Dustmann, C., T. Frattini and C. Halls, C. (2010). "Assessing the fiscal costs and benefits of A8 migration to the UK", *Fiscal Studies* 31(1): 1–41.

Dustmann, C. and T. Frattini (2014), "The Fiscal Effects of Immigration to the UK", *Economic Journal* 124: F593-643.

Dustmann, C., T. Frattini and I. Preston (2013), "The Effect of Immigration along the Distribution of Wages", *Review of Economic Studies* 80(1): 145-173.

Dustmann, C., A. Glitz and T. Frattini (2008), "The Labour Market Impact of Immigration", *Oxford Review of Economic Policy* 24(3).

Dustmann, C., U. Schönberg and J. Stuhler (2016), The Impact of Immigration: Reconciling Theory and Evidence, *mimeo*, University College London.

Lemos, S. and J. Portes (2008), "New Labour? The Impact of Migration from Central and Eastern European Countries on the UK Labour Market", IZA Discussion Paper No. 3756.

Lucchino, P., C. Rosazza-Bondibene and J. Portes (2012), "Examining the Relationship between Immigration and Unemployment using National Insurance Number Registration Data", NIESR Discussion Paper No. 386.

Manacorda, M., A. Manning and J. Wadsworth (2012), 'The Impact of Immigration on the Structure of Male Wages: Theory and Evidence from Britain', *Journal of the European Economic Association* 10: 120-51.

Migration Advisory Committee (2012), "Analysis of the Impacts of Migration", London.

Preston, I. (2014), "The effect of immigration on public finances", *Economic Journal*, vol. 124(580), pp. F569–92.

United Nations (2011), *Population Distribution, Urbanization, Internal Migration and Development, An international Perspective*, New York: United Nations Department of Economic and Social Affairs.

United Nations (2015), *Trends in International Migrant Stock: The 2015 revision,* POP/DB/MIG/Stock/Rev.2015, New York: United Nations Department of Economic and Social Affairs.

Wadsworth, J., S. Dhingra, G. Ottaviano and J. Van Reenen (2016), "Brexit and the Impact of Immigration on the UK", CEP Brexit Analysis No. 5.

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5 Skilled immigrants: Economic contribution and policy implications

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Introduction

Firms compete globally to attract skilled workers – particularly in the fields of science and technology – and many countries have adopted immigration policies or programmes favouring skilled foreign labour. Proponents of such policies argue that skills are scarce and, as a result, employers have difficulty finding qualified workers using domestic supply alone, which limits innovation and growth that would benefit large swaths of the economy. Opponents argue that no domestic skill shortage exists, and that employers simply want to hire cheap foreign labour that will undermine the wages and employment opportunities of native-born workers.

Many economic analyses of the costs and benefits of skilled immigration focus on the United States and its H-1B programme. H-1B permits are aimed at filling positions in specialty occupations that typically require a bachelor's degree. Permits are valid for three years and can be renewed for a total of six years, after which point workers must acquire an alternative legal status or leave the country. The US limits new H-1B issuances to employees of for-profit firms to 85,000 per year.[1] Firms would clearly

1 The annual cap has been 65,000 permits for general applications since fiscal year 2004. An additional 20,000 permits have been available for workers with advanced degrees from US institutions since 2005. New employees of institutions of primary, secondary or higher education; non-profit organizations affiliated to institutions of higher education; and research agencies at government or non-profit institutions are exempt from caps.

like to hire more H-1B workers – in some years, all available permits are allocated within the first week of the application period. However, critics note that less than half of science, technology, engineering, and mathematics (STEM) graduates in the United States work in STEM fields. Moreover, there are high-profile cases in which US workers have been required to train H-1B workers only to be later replaced by them.[2]

This chapter provides a review of the literature on the economic effects of highly skilled immigrants, with a focus on the US experience.

US trends

Skilled foreign-born workers have become increasingly important to the US economy. As shown in Table 1, the foreign-born share of employment rose from 6.2% in 1980 to 16.4% in 2010. The trends and levels of the foreign-born share of employed college graduates follow very similar patterns. Foreign workers comprise a disproportionate share of college graduates employed in STEM fields – the foreign-born share of STEM employment is approximately twice as large as the values for overall and college-graduate employment, growing from 11.1% to 27.2% over this period.

Table 1 Percent of foreign-born in US employment

	Employment total (%)	Employed college graduates (%)	Employed college graduates in STEM (%)
1980	6.2	6.8	11.1
1990	8.8	9.0	14.2
2000	13.3	12.8	22.7
2010	16.4	15.5	27.2

Notes: This table reports a fragment of Table 1 in Peri, Shih and Sparber (2015). The figures are obtained by the authors' calculations using IPUMS Census data from 1980-2010.

2 See Preston (2015), for example.

The H-1B programme is rather large. In 2014, the United States issued 315,857 H-1B permits, 40% of which were for initial employment and the rest for renewals (USCIS 2015).[3] Permit allocation is highly concentrated, with Indian (70%) and Chinese (8%) workers accounting for over three-quarters of issuances. Canadians receive the third most permits, but account for just 2.2% of the total. Among occupations, 65% of permits are awarded to computer-related occupations, with an additional 9% going to workers in architecture, engineering and surveying.

It is interesting to compare these data to the corresponding figures from a decade earlier. The United States issued a quantitatively similar 287,418 permits in 2004. However, the distribution of permits was substantially less concentrated. Indians (43%), Chinese (9%), and Canadian (4.7%) citizens were the most common recipients, but accounted for just 57% of the total; 44.5% were allocated to computer-related workers; and 12.1% went to employees in architecture, engineering, and surveying.

The effects of skilled immigration

Labour market outcomes

To best understand the labour market effects of skilled immigration, one must take into account specialisation, comparative advantage, and spillover effects driven by entrepreneurship and innovation.

Specialisation and comparative advantage

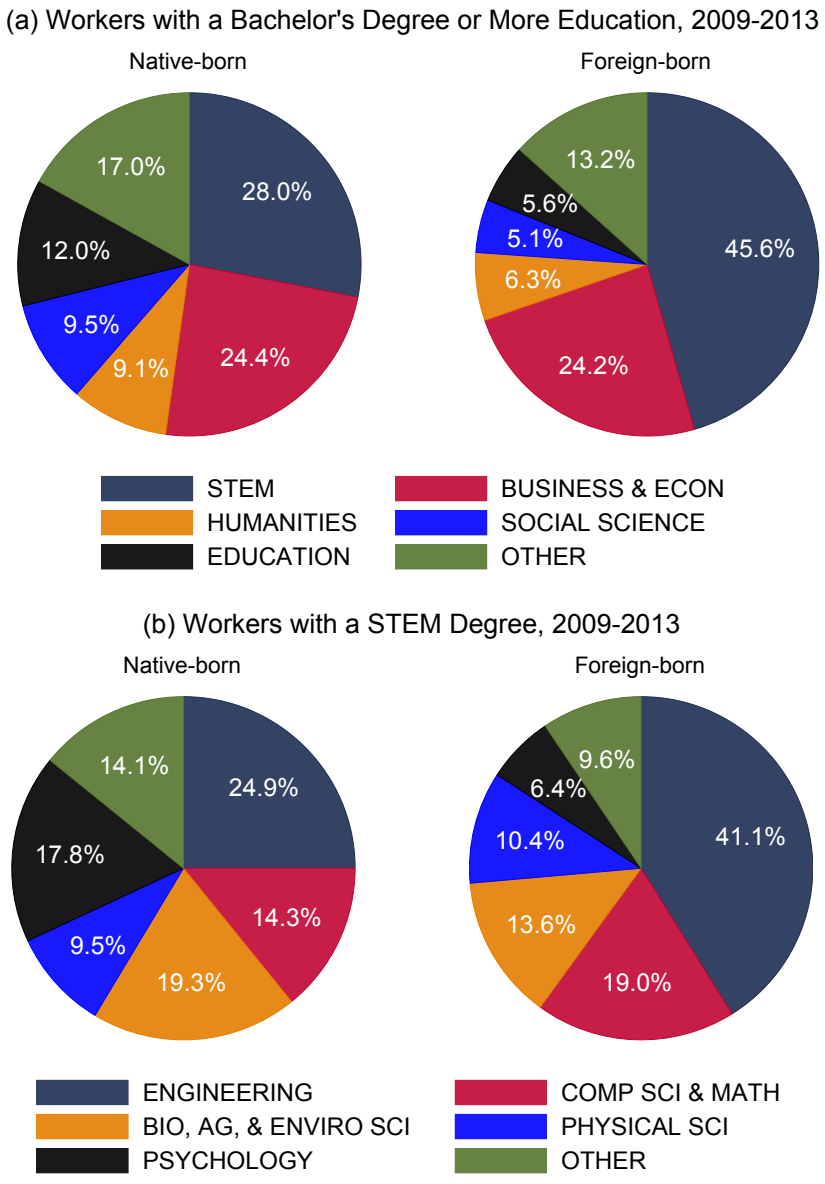
Among college-educated workers, foreign labour has a comparative advantage in STEM work. Potential causes of this phenomenon include international differences in education systems, transferability of STEM skills across national borders, and policy-induced selection biases.[4] In any case, 46% of college-educated foreign workers majored in a STEM field, whereas only 28% of native college graduates did. Even among STEM

3 Note that not all new permits count toward the 85,000 limit.

4 See Orrenius and Zavodny (2015), Amuedo-Dorantes and Furtado (2016), and Shih (2016) for recent work related to skilled immigration and schooling issues.

graduates, foreign workers are far more likely to have acquired a degree in engineering, computer science, mathematics or physics, whereas natives more commonly pursue biological sciences and psychology (Figure 1).

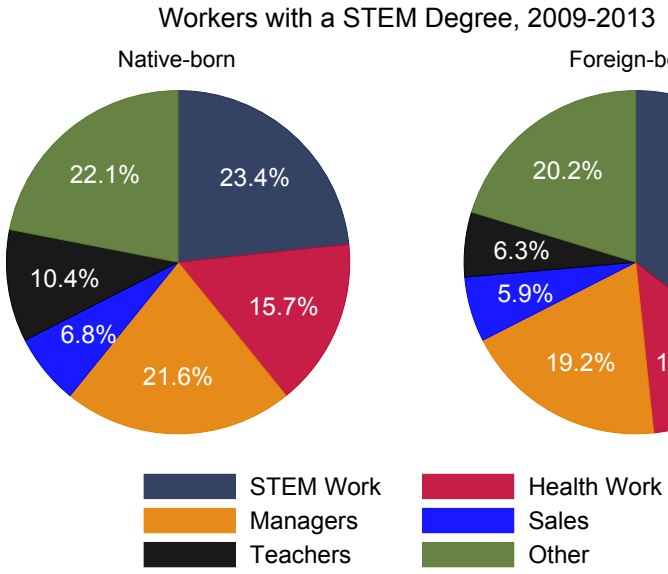
Figure 1 Primary degree share by nativity



Source: ACS.

Specialisation is important because it implies that native-born workers can respond to immigration by moving into occupations in which they have a comparative advantage. Such movement might not be dictated by degree alone. Using American Community Survey (ACS) data, Figure 2 shows it is common for both native and foreign-born STEM graduates to work in non-STEM occupations, though natives are more heavily represented in non-STEM jobs.

Figure 2 Occupation shares by nativity



Source: ACS.

Though some observers might refer to this as displacement, others would instead call it a rational and optimal response that helps protect native-born workers from direct labour market competition with immigrants. Peri and Sparber (2011) argue that highly educated native-born workers respond to inflows of foreign-labour by moving into occupations requiring more language and communication skills relative to quantitative skills. Measured changes occur over the course of a year, implying that the response is unlikely to arise after the acquisition of additional schooling. A native worker might move from being a computer programmer to the manager of a software firm, for example. The authors do not, however, study the wage implications of this reallocation.

Importantly, comparative advantage might also offer insights into why some studies focusing on narrower sets of skills and labour markets find that immigration reduces native labour market opportunities. If the analysis is limited to a specific occupation, it will not capture labour movements into other occupations. And if workers have limited transferability of skills across occupations, losses might be particularly severe.

Borjas and Doran (2012) provide an example of this type of work. They analyse the post-1992 influx of Soviet mathematicians to the United States and find that it led to displacement of American mathematicians, pushing them to lower quality institutions and presumably harming their career prospects. Their results suggest that the net increase in mathematical output in these Soviet-dominated fields was essentially awash. If Ph.D. mathematicians have less job market mobility than the average college-educated worker, or if the methodology cannot measure movements into alternative careers, then it would not be surprising to estimate severely negative effects of the Soviet influx.

Similarly, Cortes and Pan (2014, 2015) focus on the market for registered nurses.[5] The United States and several European countries could be experiencing a shortage of nurses, partly due to bottlenecks in supply and partly to sustained growth in healthcare demand stemming from an ageing population. The authors' 2014 study examines the effects of nurse importation on the supply of US-born nurses. They find evidence for displacement (or specialisation) both at the city and state level, and argue that natives who would have gone into nursing now choose to become teachers.[6] In their 2015 follow-up study, they show that Filipino nurses in the United States enjoy a wage premium that is not explained by observed differences in worker or job characteristics. They conclude that these nurses are highly positively selected compared to native nurses. Taken together, these studies suggest that nurse importation does not seem to be a very effective way to increase the overall supply of nurses, though it does seem to increase the quality of the average nurse, which may translate into better health outcomes for patients.

5 The typical education level at entry for this occupation is a bachelor's degree.

6 These results are also consistent with the negative effects of (low-skilled) immigration on wages in the household services sector and the prices of low-skilled services more generally (Cortes 2008, Farre et al. 2011, Frattini 2014, Furtado 2016).

In sum, much of the literature has identified comparative advantages between native and foreign-born labour. Empirical methodologies differ in their ability to measure increased specialisation in response to immigration. Those that can do find evidence that natives respond optimally, mitigating direct competition with immigrants.

Innovation

Further insight into the relationship between inflows of foreign STEM workers and the labour market outcomes of their native counterparts requires an understanding of technology. Simply put, immigrants specialise in science and engineering work. Scientists and engineers are responsible for most of the technological progress in recent decades. Technology creates gains that spill over to many sectors of the economy, and is the key to generating long-term, sustained economic growth. Given these important links, it is not surprising that economists interested in the economic effects of skilled immigration have analysed how these inflows have influenced innovation, including patenting and publishing activity.

Hunt and Gauthier-Loiselle (2010) exploit variation across US states and over time and find that patent rates among immigrants are twice as large as among natives. This patenting advantage is fully explained by immigrants' higher concentration in science and engineering, as opposed to reflecting higher innovation productivity among immigrants. They do not find crowding out of native inventors either. In fact, their findings suggest that there may be small positive spillovers in research productivity. Hunt (2011) adds an important policy insight by examining innovation activity among immigrants on the basis of the type of permit at the time of their first entry into the United States. She finds that those who entered on a student/trainee visa or a temporary work permit (such as an H-1B) exhibit a large advantage over natives in wages, patenting, publishing, and in the likelihood of starting companies than similar natives.

Kerr and Lincoln (2010) find that increases in the stock of H-1B workers in a city are associated with increases in patents by inventors with Indian and Chinese surnames. Once again, they do not find evidence of displacement in native patenting rates.[7] Rather, their results suggest that growth in the national stock of H-1B workers leads to an increase in the employment of immigrant scientists and engineers in more dependent cities, with no evidence of native displacement or detrimental wage effects.

Not all patents are created equal. The majority of patents concern innovations with limited impact on production; only a small fraction develop into innovations with a large impact on productivity. Kerr and Kerr (2015) analyse the effects of skilled immigration on the production of high-quality patents. Specifically, they focus on global collaborative patents, defined as patents where at least one of the inventors is located in the United States and at least another is not. After arguing that these patents tend to be more relevant than patents where all investors are located in the United States, they document that collaborative patents are more likely to originate in US firms with more inventors with ethnic surnames.[8] They also provide evidence of links between the ethnicity of the inventors and the countries where their surnames originated.

Historical analysis by Moser et al. (2014) finds that Jewish emigres from Nazi Germany "revolutionized US science" and increased patenting by US inventors in emigres' fields by 31%. Similarly, Borjas and Doran (2012) find that interactions with "superstar scientists" generate positive peer effects that enhance research productivity, providing further confirmation of the findings in Azoulay et al. (2010).

Peri et al. (2015) assess the labour market implications of skilled foreign-labour flows by employing an identification strategy based on the 1980 geographic distribution of foreign-born STEM workers interacted with variation over time in the annual H-1B cap between 1990 and 2010. They argue that immigrants were responsible for 80% of the growth of the STEM workforce between 1990 and 2010, and about 40% of the

7 The authors provide further confirmation for this finding using firm-level analysis based on a sample of 77 firms with high patenting activity.

8 Their patents data do not identify the nationality or country of birth of the inventors. Thus they focus on the ethnic origin of the inventors' surnames.

productivity growth of the US economy over the same period. This activity caused positive spillovers that increased the wage of native college graduates and, to a lesser extent, also the wage of non-college graduates.

The innovation channel described in the papers above helps to explain why most economists are especially sanguine about the effects of university-educated immigrants. Whereas comparative advantage and specialisation characterise the labour market of low- and high-education workers alike, innovation tends to be more concentrated among workers with a college degree. Innovations by highly educated immigrants create positive externalities that generate gains throughout the economy.

Entrepreneurship

In addition to productivity-enhancing peer effects, another potential positive effect of skilled immigration on skilled natives' labour market outcomes is that immigrants become entrepreneurs. By creating new firms with differentiated products, skilled immigrants may generate increased demand for skilled native workers.[9]

The key questions in this literature are whether entrepreneurship rates among immigrants are higher or lower than among natives, and whether immigrant businesses generate income and employment or are instead simply the response to insurmountable barriers to employment. While the higher rates of entrepreneurship among immigrants have been documented for several countries (Fairlie and Lofstrom 2015), evidence on the other questions is still sparse due to data limitations.

In a widely cited analysis, Wadhwa et al. (2007) built a large sample of engineering and technology companies founded between 1995 and 2005. They found that about one in four companies had at least one key foreign-born founder. These immigrant startups generated $52 billion in sales and employed close to half a million workers. Further progress along this line of inquiry is being made by Kerr and Kerr (2016). Their study makes a large data contribution by creating a large employer–employee dataset

9 H-1B holders are unlikely to play much of a role as business owners given that these permits are tied to a specific employer-employee relationship. However, H-1B permits allow for "dual intent", that is, they do not rule out transitions to permanent residency. Most likely, it is at that point that these workers may consider founding their own businesses.

containing information on sources of corporate financing, as well as firm and worker characteristics, for the period 1995-2008.[10] Confirming the results in Wadhwa et al. (2007), they find that about one in four entrepreneurs are immigrants. They also argue that immigrant firms (i) are more likely to receive financing from venture capital than native-led businesses; (ii) tend to engage in more risky ventures by concentrating in high-wage, high-tech sectors; and (iii) perform better than native businesses in terms of employment growth, even controlling for city, industry and cohort. Businesses founded by immigrants who came to the United States by age 18 display stronger growth patterns than those founded by individuals who migrated as adults.

Besides their role as entrepreneurs, skilled immigrants may also affect firm creation indirectly. Di Giovanni et al. (2015) build a large-scale model of international trade where the number of firms and products is endogenous and determined, in part, by the size of the workforce. In their setup, skilled immigrants have a larger effect than unskilled ones because the former embody more units of efficiency of labour. Their simulations suggest that natives in countries of net immigration are better off due to increased product variety available for consumption and as intermediate inputs. Additionally, remittances compensate most origin countries for their labour loss. Thus, almost all countries in the world are better off than in the absence of migration.

In conclusion, the evidence suggests that immigrants have higher entrepreneurship rates than natives, and that immigrant-led businesses are important sources of income and employment. The creation of businesses induced – directly or indirectly – by immigration appears to generate significant welfare gains that also benefit the countries of origin. Taken together, these studies provide support to the idea that immigrants with advanced training in science and engineering improve, or at least do not harm,

10 The employer–employee data are drawn from the Longitudinal Employer Household Dynamics (LEHD) database. These data have many strengths, but also some limitations. For instance, the identity of the founders is not explicitly included and needs to be inferred. Specifically, the top three initial earners are assumed to be the founders. In addition, the data only include firms with employees, leaving out the self-employed. Some states were included from 1995, but some others were added to the LEHD later in the period.

the labour market outcomes of natives with similar skills. These empirical findings suggest that skilled labour in STEM may be an important ingredient for innovation and economic growth.

Firm productivity, growth and profitability

Motivated by the positive association between skilled immigration and innovation, a series of recent studies has sought to examine whether this has translated into productivity gains at the firm level.[11]

Paserman (2013) studies the migration of skilled workers from the former USSR to Israel, focusing on the consequences for firm-level productivity, measured as output per worker. His results point toward differential effects across industries. He finds a negative correlation between the immigrant share and output per worker in low-tech industries, but a positive association in high-tech industries. Ghosh et al. (2014) exploit the sharp reduction in the annual H-1B cap that took place in 2004 to try to identify the effects of foreign-born skilled workers on firm-level outcomes. Their estimates imply that if the cap on H-1B permits were relaxed, a subset of firms – particularly research and development firms that rely heavily on H-1B workers – would experience gains in productivity, firm size, and profits.

Compared to the previous studies, the analysis in Doran et al. (2014) benefits from a cleaner identification strategy. H-1B applications received on the last date of receipt in fiscal years 2006 and 2007 were subject to a random lottery to determine which workers would receive permits. These authors find that firms that effectively won the lottery (because the workers they wish to hire were able to secure a permit) experience substantial crowding out of native employees, at most modest effects on patenting activity, reduced wages, and higher profits. These results are in stark contrast with several studies reviewed above. While this may be driven by their cleaner identification strategy, it is also possible that the differences arise from the fact that in the two years in their sample, only the applications received on the last receipt day were subject to

11 Note that the firm-level analysis is likely to provide a lower bound for the (potential) effects of skilled immigration on productivity because it will fail to account for spillovers to other firms (Greenstone et al. 2010).

random assignment. It is difficult to rule out that the marginal contribution of skilled workers to these firms may be below that of firms hiring H-1B workers earlier in the year.

Open questions and policy implications

Most analyses find that skilled immigrants improve outcomes for the macroeconomy, but several open questions remain that are worth exploring. Answers to these questions should inform prudent policymaking.

As with any economic study, causality is a concern. Do foreign skilled workers enhance the labour market opportunities of native-born workers, or do strong economic conditions attract foreign labour? The existing literature has used a mix of instrumental variable strategies, natural experiments, difference-in-difference estimation, and randomisation to address these issues. To the extent that disparities in conclusions remain, further work should be done to reconcile them.

If robust evidence for aggregate gains exists, it will not necessarily imply that a limitless number of guest worker permits is optimal. The current H-1B limit is 85,000 per year, but the annual cap was 195,000 in 2001-2003. The cap likely should be raised, but to what number? Perhaps the system can be made more flexible, instituting a cap that varies over time to accommodate fluctuations in economic activity or in the sectoral composition of the economy.

If limits to skilled immigration continue, policymakers should consider alternative allocation mechanisms. The current assignment of H-1B permits is determined on a first-come, first-served basis, combined with the use of lotteries when the number of cap-bound petitions exceeds the cap. While this system may work well in years where H-1B demand is low relative to the cap, in years of high demand most permits end up being randomly allocated. While this system is ostensibly fair, it is unlikely to be efficient. Sparber (2015) estimates large potential gains (of about $4 billion annually) from moving to a system that keeps the cap constant but matches foreign workers to the companies with the highest marginal product of foreign skilled labour.

Critics in the popular press and elsewhere often cite concerns that foreign guest workers are underpaid relative to natives. Moreover, concentration of H-1B permits fuels concern that the programme is over-used by Indian-owned technology companies that intend to outsource US jobs overseas.[12] However, more systematic analyses fail to find evidence of net job loss, although distributional effects could occur. If segments of the labour force are hurt by foreign labour flows, economists should work to identify those groups and propose possible redistribution schemes so that displaced workers can be compensated or retrained, and aggregate economic gains are distributed more evenly.

References

Amuedo-Dorantes, C. and D. Furtado (2016), "Settling for Academia? H-1B Visas and the Career Choices of Foreign-born U.S. Graduates", mimeo.

Azoulay, P., J.S. Graff Zivin and J. Wang (2010), "Superstar Extinction", *Quarterly Journal of Economics* 125(2): 549– 589.

Borjas, G. J. and K.B. Doran (2012), "The Collapse of the Soviet Union and the Productivity of American Mathematicians", *The Quarterly Journal of Economics* 127(3): 1143-1203.

Cortés, P. (2008), "The Effect of Low-skilled Immigration on US Prices: Evidence from CPI Data", *Journal of Political Economy* 116(3): 381-422.

Cortés, P. and J. Pan (2014), "Foreign nurse importation and the supply of native nurses", *Journal of Health Economics,*37(C): 164-180.

Cortés, P. and J. Pan (2015), "The Relative Quality of Foreign-Educated Nurses in the United States", *Journal of Human Resources* 50(4): 1009-1050.

Di Giovanni, J., A. Levchenko and F. Ortega (2015), "A Global View of Cross-border Migration", *Journal of the European Economic Association* 13(1).

12 The U.S. Department of Labor (2014) reports that seven of the top ten firms receiving certified H-1B positions in 2014 have Indian headquarters or major operation: Cognizant, Wipro, Tata, Infosys, iGate, Mphasis, and Syntel. See Hira (2007, 2010), Machils and Thibodeau (2014), or Matloff (2008, 2013) for further comment.

Doran, K., A. Gelber and A. Isen (2014), "The Effects of High-Skilled Immigration Policy on Firms: Evidence from H-1B Visa Lotteries", NBER Working Paper No. 20668, Cambridge, MA.

Fairlie, R.W. and M. Lofstrom (2015), "Immigration and Entrepreneurship", in B. Chiswick and P. Miller (eds), *Handbook on the Economics of International Immigration*, Amsterdam: North Holland.

Farré, L., L. González and F. Ortega (2011), "Immigration, Family Responsibilities and the Labor Supply of Skilled Native Women", *The B.E. Journal of Economic Analysis & Policy* 11(1).

Frattini, T. (2014), *Impact of migration on UK consumer prices*, London: Migration Advisory Committee.

Furtado, D. (2016), "Fertility Responses of High-Skilled Native Women to Immigrant Inflows", *Demography* 53(1): 27-53.

Ghosh, A., A.M. Mayda and F. Ortega (2014), "The Impact of Skilled Foreign Workers on Firms: an Investigation of Publicly Traded U.S. Firms", IZA Discussion Paper No. 8684, Bonn.

Greenstone, M., R. Hornbeck and E. Moretti (2010), "Identifying Agglomeration Spillovers: Evidence from Winners and Losers of Large Plant Openings", *Journal of Political Economy* 118(3).

Hira, R. (2007), "Outsourcing America's Technology and Knowledge Jobs", Economic Policy Institute Briefing Paper No. 187, Washington, DC.

Hira, R. (2010), "The H-1B and L-1 Visa Programs: Out of Control", Economic Policy Institute Briefing Paper No. 280, Washington, DC.

Hunt, J. and M. Gauthier-Loiselle (2010), "How Much Does Immigration Boost Innovation?", *American Economic Journal: Macroeconomics* 2(2): 31-56.

Hunt, J. (2011), "Which Immigrants Are Most Innovative and Entrepreneurial? Distinctions by Entry Visa", *Journal of Labor Economics* 29(3): 417-457.

Kerr, S.K. and W.R. Kerr (2015), "Global Collaborative Patents", NBER Working Paper No. 21735, Cambridge, MA.

Kerr, W.R. and S.K. Kerr (2016), "Immigrant Entrepreneurship", NBER Working Paper No. 22385, Cambridge, MA.

Kerr, W.R. and W.F. Lincoln (2010), "The Supply Side of Innovation: H-1B Visa Reforms and U.S. Ethnic Invention", *Journal of Labor Economics* 28(3): 473-508.

Machils, S. and P. Thibodeau (2014), "Offshore Firms Took 50% of H-1B Visas in 2013", *Computerworld*, 1 April.

Matloff, N. (2008), "H-1Bs: Still Not the Best and the Brightest", Center for Immigration Studies Backgrounder, Washington, DC.

Matloff, N. (2013), "Immigration and the Tech Industry: As a Labour Shortage Remedy, for Innovation, or for Cost Savings?", *Migration Letters* 10(2): 211-228.

Moser, P., A. Voena and F. Waldinger (2014), "German Jewish Emigres and US Invention", *American Economic Review* 104(10): 3222-3255.

Orrenius, P.M. and M. Zavodny (2015), "Does Immigration affect Whether US Natives Major in Science and Engineering?", *Journal of Labor Economics* 33(S1): S79-S108.

Paserman, M.D. (2013), "Do high-skill immigrants raise productivity? Evidence from Israeli manufacturing firms, 1990-1999*", IZA Journal of Migration* 2(1): 1-31.

Peri, G., K. Shih and C. Sparber (2015), "STEM Workers, H-1B Visas, and Productivity in US Cities", *Journal of Labor Economics* 33(S1): S225-S255.

Peri, G. and C. Sparber (2011), "Highly-Educated Immigrants and Native Occupational Choice", *Industrial Relations* 50(3): 385-411.

Preston, J. (2015), "Toys 'R' Us Brings Temporary Foreign Workers to U.S. to Move Jobs Overseas", *New York Times*, 29 September 29.

Shih, K. (2016), "Labor Market Openness, H-1B Visa Policy, and the Scale of International Student Enrollment in the United States", *Economic Inquiry* 54(1): 121-138.

Sparber, C. (2015), "Building a Better H-1B Program", CReAM Discussion Paper No, 1513, University College London.

USCIS (2015), *Characteristics of H-1B Specialty Occupation Workers. Fiscal Year 2014 Annual Report to Congress October 1, 2013 – September 30, 2014*, Washington, DC: U.S. Citizenship and Immigration Services.

United States Department of Labor (2014), *Office of Foreign Labor Certification Annual Report*, Washington, DC.

Wadhwa, V., A. Saxenian, B. Rissing and G. Gereff (2007), *America's new immigrant entrepreneurs*, Durham, NC: Duke University.

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6 The impact of immigration on health and health care: Evidence from the United Kingdom

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Introduction

In the public debate there is a general concern that immigrants may negatively affect access to and quality of health care services because of increased demand and the limited capacity of health care systems. While the effects of immigration on labour market outcomes have been widely studied, we know less about the impact of immigration on the health care systems of receiving countries.

In theory, immigration can affect both the demand and the supply of health care services. An increase in the immigrant population will increase the demand for health care services, but we also know that migrant health workers comprise an important share of the health care workforce in many OECD countries. In addition, the impact of immigration on the labour market may induce a reallocation of tasks and work-related risks, which may affect the demand for health care (Giuntella and Mazzonna 2015). Furthermore, by paying taxes, immigrants contribute to government revenues and thus to the financing of government health expenditure (Dustman and Frattini 2014).

Empirical evidence from advanced economies suggests that recent immigrants, if anything, tend to use health care services less than their native counterparts. Recent immigrants are less likely to visit a doctor or to use hospital services, and are also less likely to take up public health insurance programmes (Gee and Giuntella 2011, Stevenson and Bardsley 2011, Wadsworth 2013). This is partially explained by the

'healthy immigrant effect' – recent immigrants score better than natives on multiple health indicators (including longevity, infant health, BMI and mental health) despite a worse socioeconomic status (Jasso et al. 2004, McDonald and Kennedy 2004, Farré et al. 2015). These studies suggest that immigrants do not represent a random sample of their population of origin, but tend to be positively selected based on health. However, studies also show that this initial advantage erodes over time because of a natural process of regression toward the average population health (Giuntella 2013), unhealthy assimilation (Antecol and Bedard 2006), and a higher likelihood of working in hazardous jobs (Orrenius and Zavodny 2013, Giuntella and Mazzonna 2015). Consistent with these facts, it is not surprising that older cohorts of immigrants tend to use health care services more than natives in their same age group (Wadsworth 2013). Lack of information, insecurity related to legal status and legal barriers could also contribute to explaining the limited use of health care services by immigrants (Watson 2014).

Overall, there is scarce evidence of negative effects of immigration on the provision and quality of health care services. As migrants are typically younger than natives and have, on average, higher fertility rates (Waller et al. 2014), one may expect immigration to have large effects on the demand for maternity services and the quality of publicly funded maternity services. Stoye (2016), for instance, documents an increase in demand for maternity services in areas with a higher immigrant concentration in the United Kingdom, but finds only mixed evidence that these increases in demand result in a deterioration in the observable quality of maternity services. Two possible explanations are that immigration may induce native internal mobility and the use of private health care. While these effects remain understudied, some evidence suggests that internal mobility plays an important role in determining the impact of immigration on the provision of health care services at the local level (Giuntella et al. 2015).

As mentioned above, in many OECD countries migrant health workers contribute to reducing the shortage of physicians and health care personnel, as well as to containing their costs. Over the last two decades, the number and share of foreign-trained doctors has increased significantly in many OECD countries. Based on OECD data, the share of foreign-trained doctors in the United Kingdom, Switzerland, the United States, Sweden and Canada ranges between 23% and 30%, and is above 30% in Australia,

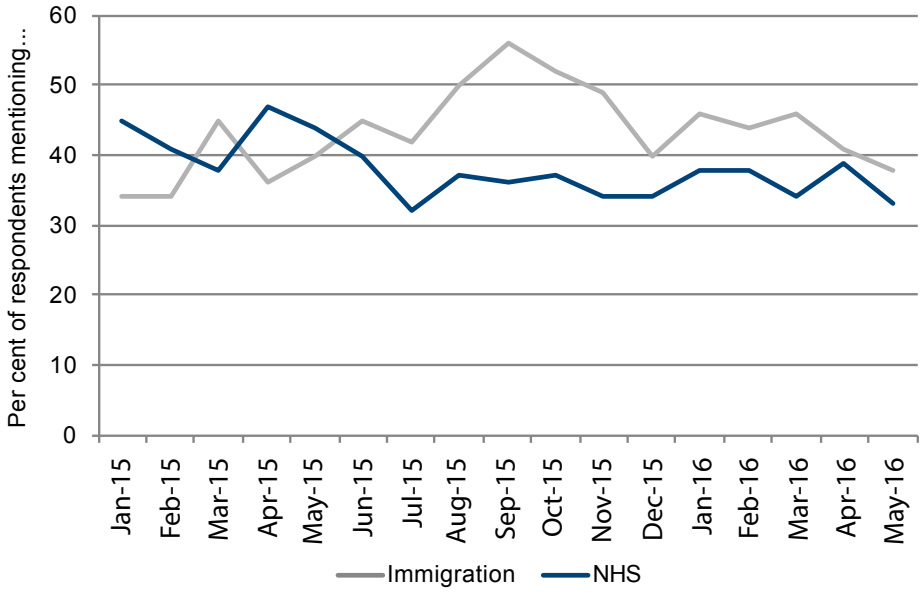
Ireland, Israel, New Zealand and Norway (OECD 2015). By increasing the supply of health care workers, immigration can significantly affect access to and the quality of care (Shutes 2014, Jayaweera, 2015). Furtado and Ortega (2016) find evidence that larger immigrant shares are associated with fewer falls among nursing home residents. Their results suggest that immigrant inflows are associated with improvements in the productivity of nurses. Despite growing interest, research on the effects of immigration on the demand and supply of health care services is still in its infancy. Because of the public nature of its healthcare system and the large inflows of immigrants, the United Kingdom represents an ideal case study.

Immigration and health care in the United Kingdom

Between 1993 and 2014, the foreign-born population in the United Kingdom more than doubled from 3.8 million to around 8.3 million (Rienzo and Vargas-Silva 2014). One benefit that residents of the UK, including immigrants, have is free access to the National Health Service (NHS). This access has resulted in speculation that immigrants may increase the demand for NHS services disproportionately and that some immigrants move to the UK with the explicit purpose of taking advantage of the health care system. These arguments and the health care costs associated with immigration have resulted in the introduction of an NHS surcharge for non-EU citizens applying for a UK visa.

The NHS and immigration are consistently mentioned in public opinion surveys as two of the most important issues faced by the country. Close to 40% of respondents cited these two issues as top concerns in monthly surveys during 2015-2016 (Figure 1). Unsurprisingly, there has been a substantial political debate about the net impact of immigration on the NHS budget. Immigrants can increase NHS spending by increasing the demand for health care services, but they also contribute to public finances by paying taxes. Existing analyses do not provide conclusive evidence of the net impact of immigration on NHS finances (Dayan 2016). In addition, the United Kingdom ranks 24th out of 27 in the EU for number of doctors per capita, and foreign doctors and healthcare workers can contribute significantly to reducing this shortage.

Figure 1 Most important issue facing Britain today



Notes: Data are drawn from Ipsos MORI (2016).

The focus on NHS finances often ignores other potential impacts of immigration. We know almost nothing about the impact on quality indicators such as waiting times, re-admissions, hospital mortality ratios and emergency admissions. Waiting times, for instance, are an important measure of the quality and productivity of the NHS (Castelli et al. 2007, Propper et al. 2008a, 2008b, Gaynor et al. 2012, Siciliani and Iversen 2012) and a leading factor in patients' dissatisfaction with the health care system (Propper 1995, Sitzia and Wood 1997, Appleby 2012). Politicians have blamed immigration for the recent increase in NHS waiting times despite evidence that immigrants are healthier than natives and are less likely to use health care services (Steventon and Bardsley 2011; Wadsworth, 2013, Giuntella et al. 2015).

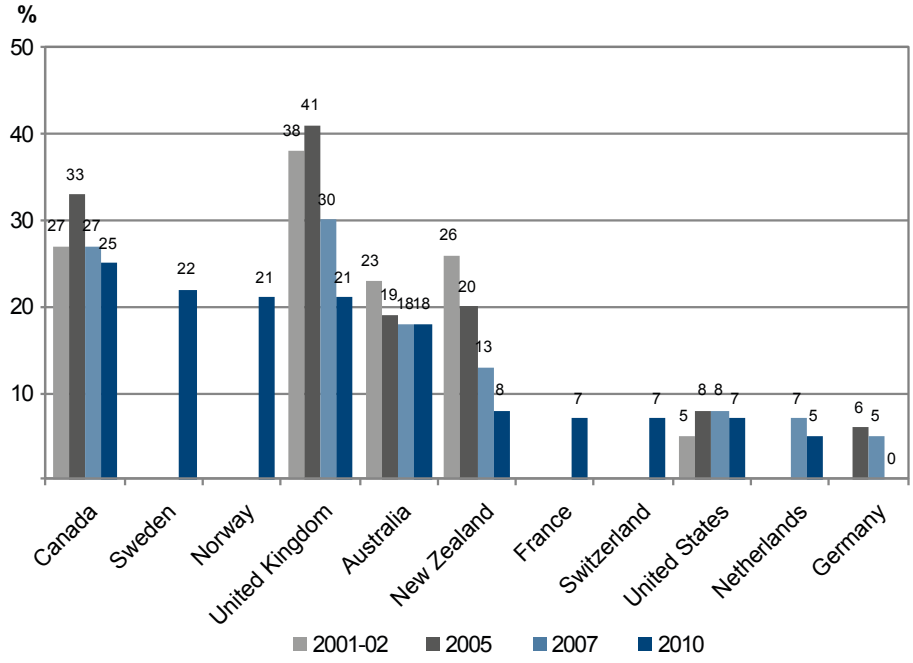
The current debate also ignores indirect ways in which immigration could affect the demand for NHS services. Recent evidence suggests that inflows of low-skilled immigrants push native workers into more complex occupations which require better cultural knowledge and are less physically intensive (Peri and Sparber 2009, D'Amuri

and Peri 2014). One consequence of this impact is an improvement in the working conditions of many natives, which could lead to better health outcomes and less use of health facilities (Giuntella and Mazzonna 2015, Giuntella et al. 2016).

We present evidence on these issues by discussing the impact of immigration on NHS waiting times and the health of UK-born workers.

Immigration and NHS waiting times

Figure 2 Waiting time of four months or more for elective surgery



Source: OECD (2011), based on the Commonwealth Fund Survey (Schoen et al. 2010).

We explore the effect of immigration on NHS waiting times by combining information on immigration in local authorities from the UK Labour Force Survey (LFS) and data on waiting times from the Hospital Episodes Statistics (HES) database between 2003 and 2012 (for further details, see Giuntella et al. 2015). We consider waiting times for outpatients (i.e. referrals to a specialist), elective care (i.e. planned treatments) and

accident and emergency departments (A&E).[1] Between 2003 and 2012, the average waiting time for outpatients in the NHS was 47 days, patients waited on average 70 days for elective care, and they waited 55 minutes in A&E. Thanks to target schemes and incentive mechanisms, NHS waiting times were substantially reduced over the last decade. However, they remain high compared to other OECD countries (see Figure 2). Furthermore, the negative trend has reversed in recent years (Siciliani et al. 2013).

We find that an increase in the stock of immigrants equal to 10% of the local authority's initial population reduces the average waiting time for outpatients by approximately nine days (or 19% relative to the mean of the dependent variable; see column 1 of Table 1).[2] Propper (1995) estimated that patients would be willing to pay £80 (in 1991 prices; roughly £150 in 2013 prices) for a reduction in waiting times of one month. If disutility from the waiting list were linear, one could estimate that a nine day reduction in outpatient waiting time would be equivalent to £45 in 2013 prices. On the other hand, we find no significant relationship between immigration and waiting times for elective care and A&E. The fact that elective care was subject to performance management that lowered waiting times across England may explain the lack of significant effects of immigration on waiting times for elective care (Appleby et al. 2015). The non-significant effect on A&E waiting times may be partially explained by the fact that A&E admission rates are largest among those aged over 65 and under 20, and are lowest among individuals aged 20-34 year old (Wittenberg et al. 2015). It is also worth noting that measurement error in waiting times for A&E may be very large, as they are measured in hours and minutes.

1 In the 2014-15 financial year, there were 107.2 million referrals (79.9% of these appointments were attended), 13 million records detailing episodes of admitted patient care (elective), and 5.6 millions of emergency admissions at NHS hospitals in England or performed in the independent sector and commissioned by the English NHS (Source: Hospital Episode Statistics, Health and Social Care Information Center).

2 For all estimations presented in the chapter, we used the traditional immigration 'shift share' instrumental variable (Altonji and Card 1991) to address endogeneity concerns.

Table 1 Immigration and waiting times for outpatients, 2003-2012 (2SLS estimates)

Sample	All	Outside London	Outside London: More deprived areas (7-10Q)
Period	2003-2012	2003-2007	2003-2007
Share of foreign born	-0.935** (0.461)	0.479 (0.350)	2.085* (1.143)
PCT f.e	YES	YES	YES
Year f.e.	YES	YES	YES
LSOA time-varying characteristics	YES	YES	YES
LSOA	YES	YES	YES
Population			
Observations	287,093	122,067	44,964
Mean of dep. var.	47.12	51.49	52.01
Std. dev. of dep. var.	16.65	15.4	16.27
IV-Fstat	16.05	54.54	14.09

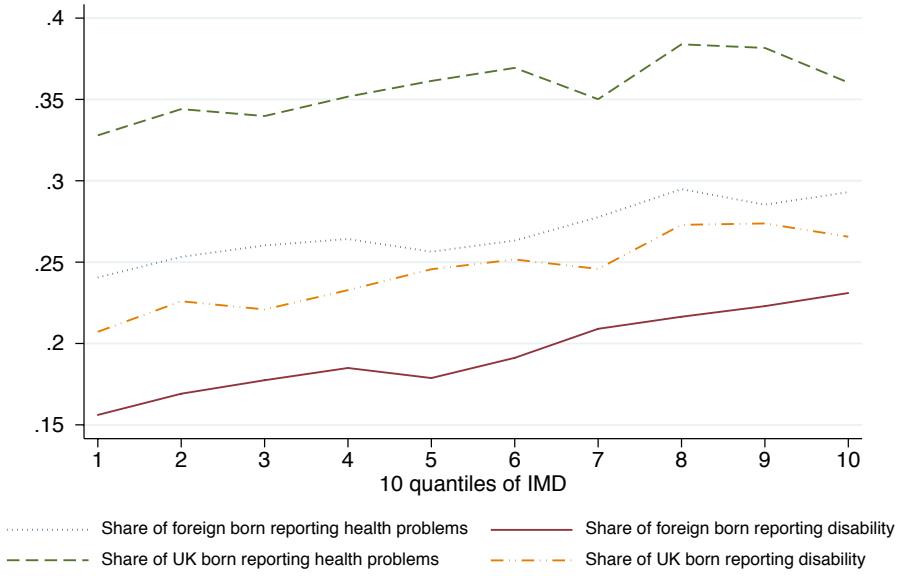
Notes: Data on average waiting times for outpatient services are drawn from the Hospital Episodes Statistics. Data on immigrant distribution across Local Authorities are drawn from the UK Labour Force Survey. Time-varying LSOA characteristics include an Index of Deprivation (we use dummies for each decile of the index) and an indicator for rural status, the share of women, and the share of over 65 in the LSOA population. PCT time-varying characteristics include ratio of occupied hospital beds to population, number of GPs per capita, number of GP practice per capita, number of health consultants per capita, health expenditure per capita, incidence of most common diseases.

We look at two alternative explanations for the negative impact of immigration on outpatient waiting times. First, we confirm that immigrants, particularly recent ones, are young and healthy and are less likely to use hospital services compared to the UK-born population. Second, we find that higher levels of immigration increase the likelihood of UK-born individuals moving from an area and accessing health services in a different local authority. This means that the effects of immigration on the demand for health care services are dispersed throughout the country via internal migration, and we indeed find that waiting times increased in areas that natives moved into. Patients may also seek care in the private sector. However, we find that the availability of a private alternative does not affect our main findings significantly.

We find no significant relationship between the share of immigrants living in a local authority and different measures of NHS supply. While the NHS is strongly dependent on foreign-trained doctors and foreign health care professionals, the lack of a significant association between immigration and the supply of health care may have several explanations. First, the large majority of immigrants do not work in the NHS, and this could affect the correlation between the share of immigrants and the staff size across local authorities. Indeed, using LFS data (for 2003-2012), we estimate that only 7% of the working-age immigrant population works in professional health care occupations (including medical doctors, dentists, pharmacists, nurses and midwives). Second, the vast majority of foreign-born health care professionals are concentrated in a few areas (including London and Oxford), as local authorities with the highest provision of doctors and nurses are also those with major cities/urban centres along with medical schools and teaching hospitals. Third, many new immigrants working in the NHS could be substituting for natives or other immigrants and may not necessarily increase the overall supply of NHS staff. It is also important to note that an increase in the number of GPs or practitioners may not necessarily reduce waiting times. Previous studies analysing the association between waiting lists and supply measures such as the number of consultants, the number of beds and hospital expenditure have found no clear pattern (Cullis et al. 2000). Finally, there is evidence that while the number of qualified doctors and nurses in the NHS increased during the period 2002-2012, the productivity of consultant specialists decreased over this period (Bohmer and Imison 2013).

However, the impact of immigration is conditional on location and the period of analysis. In particular, we find that immigration increased the average waiting time for outpatients living in deprived areas outside of London in the period immediately following the 2004 EU enlargement (see column 2 of Table 1). Our findings suggest that the short-term increase in outpatient waiting times in deprived areas in response to immigration can be explained by both the lower mobility of incumbent residents in these areas and the higher morbidity observed among immigrants in more deprived areas (Figure 3). Again, the results for elective care and A&E are not significant.

Figure 2 Health by migrant status and Index of Multiple Deprivation (IMD) in England



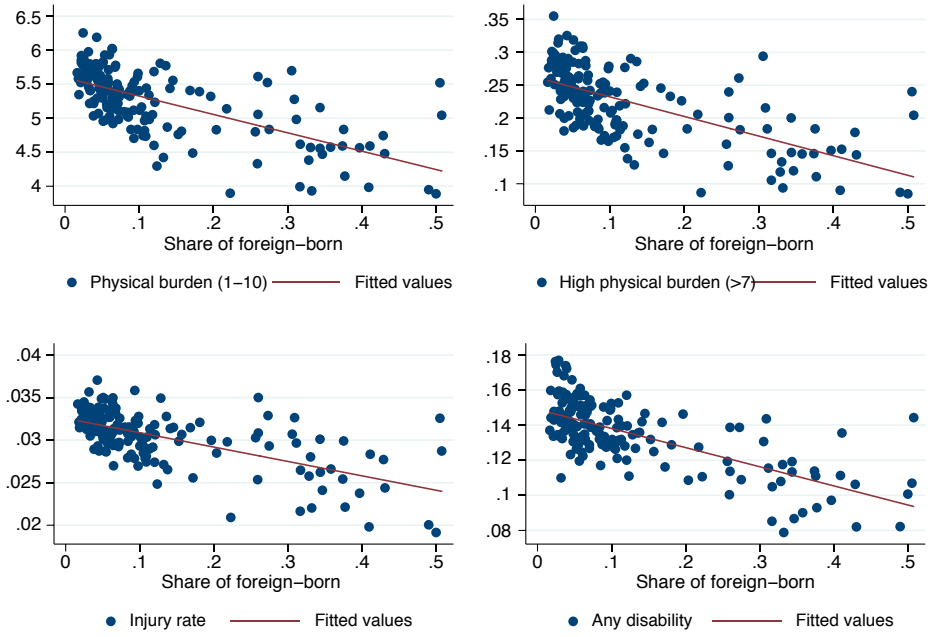
Notes: Data are drawn from the UK Labour Force Survey (2013-2012).

Immigration and the health of natives

Using LFS data from 2003 to 2013, we study the impact of immigration on the physical intensity (i.e. the burden) of natives' jobs and their health (for further details, see Giuntella et al. 2016). We use the ISCO classification and the General Index for Job Demands in Occupations (Kroll 2011) to measure the average physical intensity of a given job (on a 1 to 10 metric). As shown in Figure 4, immigration is negatively correlated with the average physical burden of natives' jobs.

Our analysis finds that immigration affects natives' health positively by reducing the average physical burden of work, the likelihood of working in occupations with high injury rates, and the incidence of work-related disability (see columns 1 to 3 of Table 2). In particular, column 1 shows that a one standard deviation increase in the share of immigrants in a local authority (0.1) reduces the average physical burden of native males by 0.2 points, approximately a 0.08 standard deviation (or 5% of the mean of the dependent variable).

Figure 4 Immigration, physical burden, and work-related health risks



Notes: Data are drawn from the UK Labour Force Survey (2010). The figure describes the correlation between the share of foreign-born across local authorities and measures of physical burden (upper panel) and work-related health risks (bottom panel).

Table 2 Immigration, physical burden, and work-related health risks (men)

	Physical intensity (1-10) (1)	Physical intensity > 7 (2)	High occupational risk (above median injury rate) (3)	Any disability (4)
Share of foreign born	-2.492*** (1.134)	0.450*** (0.132)	-0.376* (0.208)	-0.098*** (0.034)
Observations	717,999	717,999	573,925	546,278
Mean of dep. var.	5.54	0.3	0.532	0.0806
Std. dev. of dep. var.	2.896	0.458	0.499	0.272
F-Test of IV	15.02	15.02	13.12	12.81

Notes: Data are drawn from the England Labour Force Survey (2003-2013). All the estimates include controls for education (dummies), a quartic in age, marital status, and number of children.The estimations only include men.

Conclusion

Until now, much of the debate on the impact of immigration on the NHS has focused on whether immigrants contribute to the financial pressure on the system. This is understandable, as the NHS is under considerable financial strain and was running a deficit of close to £2.5 billion in the fiscal year 2015-2016 (Alexander and O'Mahony 2016). However, this narrow focus misses other important impacts of immigration on the NHS. For instance, there is scarce evidence on the quality of NHS services and the overall demand for health care in the country. The discussion in this chapter has provided evidence on these issues.

Using data from local authorities in England, merged with hospitals' administrative information, we have provided evidence that immigration has no impact on waiting times in A&E and for elective care. Moreover, we found that higher immigration in an area actually reduces waiting times for outpatients. However, there was a short-term increase in waiting times after the 2004 EU enlargement in the most deprived areas outside of London as a result of immigration. We also show that immigration pushes native workers into less physically intensive tasks and leads to a reduction in work-related health risks.

Our results suggest that if funding mechanisms do not fully reflect changes in population needs, and less healthy immigrants are more concentrated in areas where the natives are less healthy and less mobile, then any negative impact of immigration will be concentrated in these areas. This may further increase existing inequalities in health care (Siciliani and Iversen 2012). Proving adequate support for these areas should be a priority for government policies directed at reducing these inequalities.

There remains much that we do not know about the impact of immigration on the NHS. Before considering new policies related to immigration and the NHS (including an NHS surcharge for non-EU citizens), it is important to have more empirical evidence on key factors such as the impact of immigration on re-admissions, GP consultations, hospital mortality ratios, and emergency admissions. The availability of better information on the use of health services by immigration status and by different types of immigrants (e.g. students, workers, family) would facilitate this research.

References

Alexander, B. and E. O'Mahony (2016), "Performance of the NHS provider sector: year ended 31 March 2016", NHS Improvement.

Altonji, J.G. and D. Card (1991), "The effects of immigration on the labor market outcomes of less skilled natives", in *Immigration, Trade and the Labor Market*, Chicago: University of Chicago Press, pp. 201–234.

Antecol, H. and K. Bedard (2006), "Unhealthy assimilation: why do immigrants converge to American health status levels?", *Demography* 43(2): 337–360.

Appleby, J. (2012), *Public satisfaction with the NHS and its services. Headlines from the British Social Attitudes Survey*, London: The King's Fund.

Appleby, J., J. Thompson and J. Jabbal (2015), "How is the NHS performing?", The King's Fund Quarterly Monitoring Report, London.

Bohmer, R.M. and C. Imison (2013), "Lessons from England's health care workforce redesign: no quick fixes", *Health Affairs 3*2(11): 2025–2031.

Castelli, A., D. Dawson, H. Gravelle, R. Jacobs, P. Kind, P. Loveridge, S. Martin, M. O'Mahony, P.A. Stevens, L. Stokes et al. (2007), "A new approach to measuring health system output and productivity", *National Institute Economic Review* 200(1): 105–117.

Cullis, J. G., P.R. Jones and C. Propper (2000), "Waiting lists and medical treatment: analysis and policies", in *Handbook of Health Economics* 1: 1201–1249.

D'Amuri, F. and G. Peri (2014), "Immigration, jobs and employment protection: Evidence from Europe before and during the Great Recession", *Journal of the European Economic Association* 12(2): 432–464.

Dayan, M. (2016), "EU immigration and pressure on the NHS", FullFact briefing.

Dustmann, C. and T. Frattini (2014), "The fiscal effects of immigration to the UK", *The Economic Journal* 124(580): F593–F643.

Farré, L. (2016), "New evidence on the healthy immigrant effect", *Journal of Population Economics* 29(2): 365–394.

Furtado D. and F. Ortega (2016), "Do Immigrant Inflows Improve Quality of Care in Nursing Homes?", mimeo, University of Connecticut.

Gaynor, M., M. Laudicella and C. Propper (2012), "Can governments do it better? Merger mania and hospital outcomes in the English NHS", *Journal of Health Economics* 31(3): 528–543.

Gee, E.R., and G.O. Giuntella (2011), "Medicaid and ethnic networks", *The BE Journal of Economic Analysis & Policy* 11(1).

Giuntella, O. (2013), "Why does the health of immigrants deteriorate? Evidence from birth records" IZA Discussion Paper No. 7588, Bonn.

Giuntella, O., C. Nicodemo and C. Vargas-Silva (2015), "The effects of immigration on NHS waiting times", Blavatnik School of Government Working Paper No. BSG-WP-2015/005, University of Oxford.

Giuntella, O. and F. Mazzonna (2015), "Do immigrants improve the health of natives?", *Journal of Health Economics* 43: 140–153.

Giuntella, O., F. Mazzonna, C. Nicodemo and C. and Vargas-Silva (2016), "Immigration and the Reallocation of Work-Related Health Risk", CHSEO Working Paper, University of Oxford.

Ipsos MORI (2016), *The Most Important Issues Facing Britain Today*, London.

Jasso, G., D.S. Massey, M.R. Rosenzweig and J.P. Smith (2004), "Immigrant health: selectivity and acculturation", in N. Anderson, R. Bulatao and B. Cohen (eds.), *Critical Perspectives on Racial and Ethnic Differences in Health in Late Life*, Washington, DC: National Academies Press, pp. 227-266.

Jayaweera, H. (2015), "Migrant Workers in the UK Healthcare Sector", WORK→INT National Background Report, FIERI, Turin.

Kroll, L.E. (2011), "Construction and validation of a general index for job demands in occupations based on ISCO-88 and KldB-92", *Methoden Daten Analysen* 5: 63–90.

McDonald, J.T. and S. Kennedy (2004), "Insights into the 'healthy immigrant effect': health status and health service use of immigrants to Canada", *Social Science & Medicine* 59(8): 1613–1627.

OECD (2011), *Health at a Glance 2011*, Paris: OECD Publishing.

OECD (2015), "International migration of doctors", in *Health at a Glance 2015: OECD Indicators*, Paris: OECD Publishing.

Orrenius, P.M. and M. Zavodny (2013), "Immigrants in risky occupations", in A. Constant and K. Zimmermann (eds), *International Handbook on the Economics of Migration*, Cheltenham, UK: Edward Elgar.

Peri, G. and C. Sparber (2009), "Task specialization, immigration, and wages", *American Economic Journal: Applied Economics* 1(3): 135–169.

Propper, C. (1995), "The disutility of time spent on the United Kingdom's National Health Service waiting lists", *Journal of Human Resources* 30(4): 677–700.

Propper, C., S. Burgess and D. Gossage (2008a), "Competition and quality: Evidence from the NHS internal market 1991–9", *The Economic Journal* 118(525): 138–170.

Propper, C., M. Sutton, C. Whitnall and F. Windmeijer (2008b), "Did targets and terror reduce waiting times in England for hospital care?", *The BE Journal of Economic Analysis & Policy* 8(2).

Rienzo, C. and C. Vargas-Silva (2014), "Migrants in the UK: An overview", Migration Observatory Briefing, COMPAS, University of Oxford.

Schoen, C. and R. Osborn (2010), "The commonwealth fund 2010 international health policy survey in eleven countries", London: Commonwealth Fund.

Shutes, I. (2014), "Divisions of Care Labour: Care for Older People and Migrant Workers in England", in M. Leon (ed.), *The Transformation of Care in European Societies*, Basingstoke, UK: Palgrave Macmillan, pp. 301–323.

Siciliani, L. and T. Iversen (2012), "Waiting times and waiting lists", in A. Jones (ed.), *The Elgar Companion to Health Economics*, Cheltenham, UK: Edward Elgar.

Siciliani, L., M. Borowitz, V. Moran and H. Dixon (2013), "Measuring waiting times across OECD countries", in *Waiting Time Policies in the Health Sector: What Works?*, Paris: OECD Publishing, pp. 33–47.

Sitzia, J. and N. Wood (1997), "Patient satisfaction: a review of issues and concepts", *Social Science & Medicine* 45(12): 1829–1843.

Steventon, A. and M. Bardsley (2011), "Use of secondary care in England by international immigrants", *Journal of Health Services Research & Policy* 16(2): 90–94.

Stoye, G. (2016), "Immigration and the use of public maternity services in England", mimeo, University College London.

Wadsworth, J. (2013), "Mustn't grumble: Immigration, health and health service use in the UK and Germany", *Fiscal Studies* 34(1): 55–82.

Waller, L., A. Berrington and J. Raymer (2014), "New insights into the fertility patterns of recent Polish migrants in the United Kingdom", *Journal of Population Research* 31(2): 131–150.

Watson, T. (2014), "Inside the Refrigerator: Immigration Enforcement and Chilling Effects in Medicaid Participation", *American Economic Journal: Economic Policy* 6(3): 313–338.

Wittenberg R., C. Nicodemo, B. McCormick and B. Redding (2015), "Analysis of trends in emergency and elective hospital admissions and hospital bed days 1997-98 to 2014-2015", CHSEO Working Paper No. 23, Oxford.

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7 Immigrants and crime

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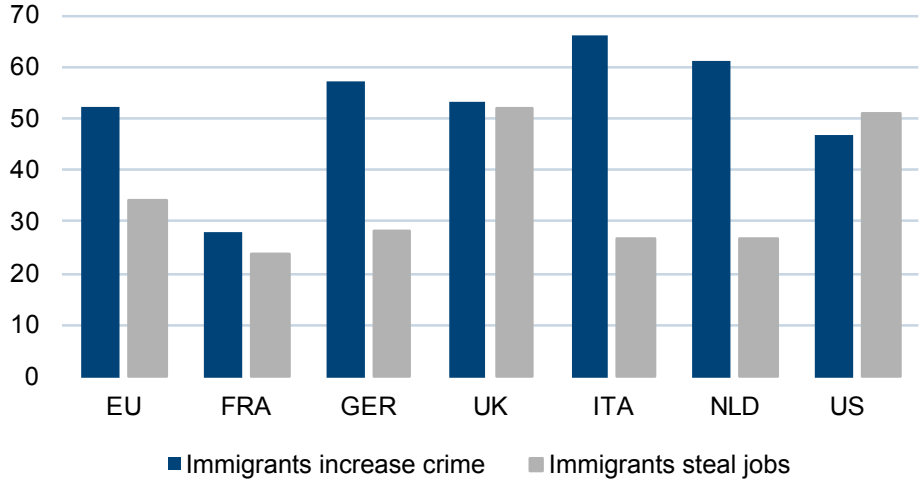
According to a survey conducted in 2009, the majority of Europeans believe that "immigrants increase crime"; in comparison, only one third are concerned that "immigrants take jobs away from the native born" (see Figure 1). However, the economics literature has focused almost exclusively on the labour market impacts of migration, largely neglecting its effects on crime. It is only very recently that a body of evidence has emerged regarding the relationship between immigration and crime. In this chapter, after a brief review of the theoretical underpinnings of this research agenda, I establish some empirical facts about immigrants' involvement in criminal behaviour, focusing in particular on the role of immigrants' legal status. I conclude with some implications for the current debate on refugee and asylum policy in Europe.

Figure 1 Share of people concerned about the impact of immigration on crime and jobs



Source: Transatlantic Trends survey, 2009

A Beckerian perspective on immigration and crime

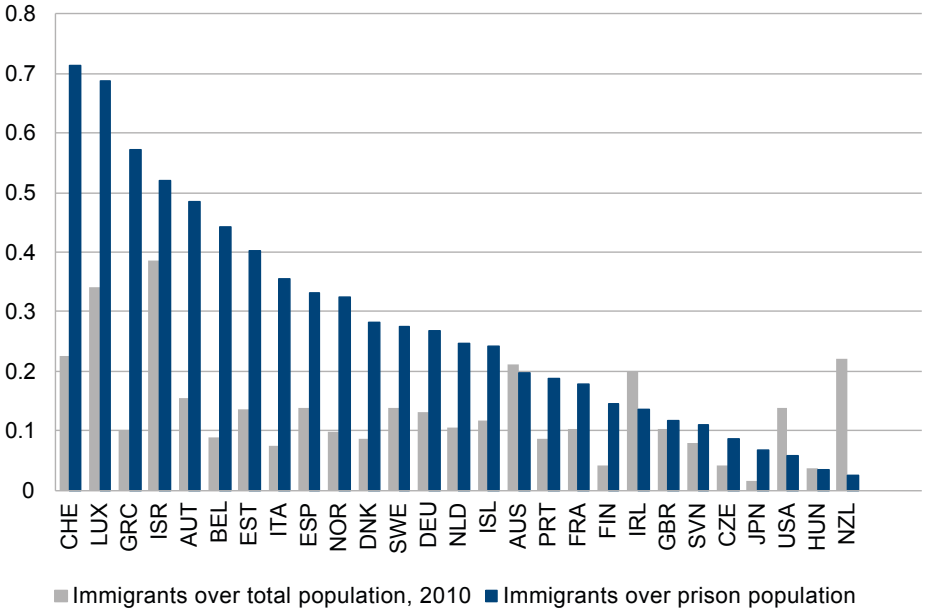
In Becker's (1968) economic model of crime, the decision to engage in crime weighs the relative returns of licit and illicit activities. There are several reasons why such returns may differ between immigrants and natives. On the one hand, immigrants typically have lower income than natives, which should increase their propensity to engage in crime. This is particularly true for undocumented immigrants, who do not have access to employment in the official economy. On the other hand, immigrants may face additional sanctions in case of arrest. They may lose their work permit, for instance, and/or they can be expelled. In light of these (opposite) effects, it is unclear whether we should expect immigrants to have a higher or lower propensity to commit crimes – this is ultimately an empirical question.

Empirical fact 1: Immigrants are over-represented among prison inmates

Figure 2 compares the share of foreigners among prison inmates and among (official) residents in a number of destination countries.[1] In the greatest majority of destination countries – especially in continental Europe – immigrants are greatly over-represented among criminal offenders. For instance, in 2010 immigrants in Italy represented 35.6% of the prison population but just 7.4% of residents. By contrast, immigrants in the United States have a lower probability of being incarcerated compared to natives. A potential explanation for this fact is that the flexible labour market in the United States offers better employment opportunities to immigrants, lowering their propensity to engage in crime while at the same time increasing competition between native and immigrant workers. Although purely speculative, this explanation would also be consistent with the fact that the United States is the only country in which people are more worried about competition in the labour market than about crimes by immigrants (Figure 1).

1 Data on official residents are from the OECD and refer to the year 2010; data on prison inmates are from the International Centre for Prison Studies (http://www.prisonstudies.org/) and refer to the last available year.

Figure 2 Percentage of foreigners over prison inmates and residents



Source: OECD and International Centre for Prison Studies

However, drawing conclusions from incarceration rates may be problematic for at least two reasons. First, data on prison inmates count both legal and undocumented immigrants, whereas data on residents count only legal residents. Therefore, the comparison in Figure 2 understates the share of immigrants in the total population and thus overstates their probability of incarceration relative to natives. Second, conditional on having committed a crime, immigrants may be more likely than natives to be imprisoned. This is particularly true for undocumented immigrants, who may receive harsher prison sentences due to their illegal status and, in addition, do not have access to alternative measures to incarceration (e.g. home detention).

Empirical fact 2: Undocumented migrants have higher propensity to engage in crime

An official report by the Italian Ministry of Interior (2010) presents arrest data by citizenship and legal status. In particular, the report provides the percentage of legal and undocumented immigrants among individuals arrested by the police in 2009 for

having committed (different types of) crimes.[2] Table 1 reproduces this information, together with the relative size of the each group in the total resident population and, in square brackets, the ratio between the percentage among offenders and among total residents, respectively.[3]

Table 1 Residents and arrests, by citizenship and legal status (percentages)

	Natives	Immigrants		
		All	Legal	Illegal
Percentage of over total resident population	91	9	7	2
Percentage arrested for:				
Murder	67	33	10	23
Ratio over presence in the population	[0.7]	[3.7]	[1.5]	[11.4]
Assault	72	28	11	17
Ratio over presence in the population	[0.8]	[3.1]	[1.5]	[8.7]
Auto theft	66	59	7	27
Ratio over presence in the population	[0.7]	[6.6]	[1.0]	[13.3]
Burglaries	41	34	9	50
Ratio over presence in the population	[0.5]	[3.8]	[1.3]	[25.1]
Racketeering	74	26	8	18
Ratio over presence in the population	[0.8]	[2.9]	[1.2]	[8.8]

Source: Italian Ministry of Interior (2010), ISTAT and ISMU Foundation

Immigrants are also over-represented among arrested individuals, although to a lesser extent than among prison inmates. However, the higher offending rate relative to natives is entirely due to undocumented immigrants. Compared to natives, undocumented immigrants are about ten times more likely to be arrested for violent crimes and racketeering, and 25 times more likely to be arrested for auto theft and burglary. By contrast, the offending rate of legal immigrants is much closer to that of natives – though still larger.

2 Unfortunately, I could not find analogous information for other countries and years.

3 The share of undocumented immigrants is estimated by the ISMU Foundation (www.ismu.org).

The lower crime rate of legal immigrants is consistent with the predictions of the economic model of crime. By giving access to employment opportunities in the official economy, legal status increases the opportunity cost of committing crimes for legal immigrants, which in turn would reduce their propensity to engage in crime – a causal effect. However, the stark difference in criminal behaviour between legal and undocumented immigrants may also depend on differences in other determinants of criminal behaviour across the two groups. Specifically, undocumented immigrants are disproportionately male, young, single, and low-skilled compared to legal immigrants (e.g. Caponi and Plesca 2014, Mastrobuoni and Pinotti 2015). In light of these differences, undocumented immigrants should have a higher crime rate than legal immigrants to start with (i.e. independently of any effect of legal status) – a selection effect.

Distinguishing between causality and selection is crucial from a policy perspective. If legal status actually reduces immigrants' crime rate, restrictive migration policies – possibly motivated by crime concerns – could backfire, further increasing the crime rate of immigrants already present in the country. However, the evidence in Table 1 does not allow causality to be separately identified from selection. In order to do that, one needs a source of exogenous variation in legal status.

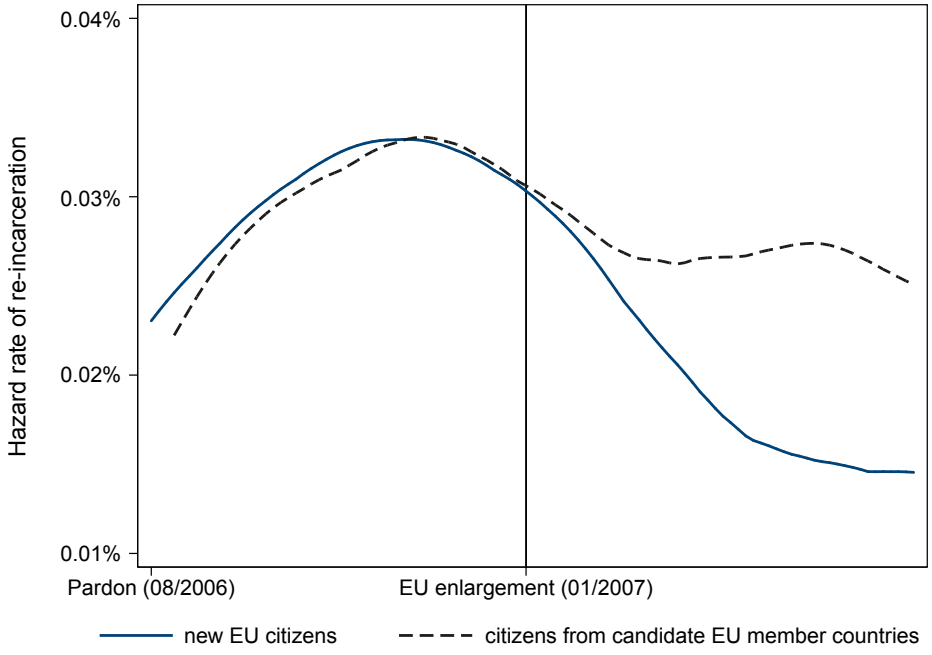
Empirical fact 3: Legal status reduces immigrants' crime

In August 2006, a collective clemency bill (*indulto*) released 25,000 inmates from Italian prisons, including 9,000 foreigners. Five months later, on 1 January 2007, Romania and Bulgaria entered the EU. As a consequence, their citizens obtained legal status in the rest of the EU.[4] In Mastrobuoni and Pinotti (2015), my co-author and I compare the recidivism of pardoned inmates from new EU member countries with a group of pardoned inmates (with comparable characteristics) from EU candidate member countries (Albania, Croatia, etc.). Figure 3 plots the hazard rate of re-incarceration of the two groups, before and after the enlargement. While both groups exhibit the same

4 Some countries maintained limitations to work and residence permits, others – including Italy – granted free mobility to new EU citizens.

recidivism before the enlargement (5.7-5.8 over a five-month period), the recidivism of new EU citizens declines by about 50% over the following months. This effect is driven by economically motivated crimes (i.e. property crimes and drug-dealing) and it is stronger in northern Italian regions, which offer better employment opportunities to legal immigrants. Due to the similarity of the two groups before the enlargement, the decline in recidivism can be attributed to the causal effect of legal status, as opposed to other differences between the two groups.[5]

Figure 3 Recidivism of former prison inmates from new EU member and candidate member countries, before and after enlargement



Source: Italian Ministry of Justice, Department of Prison Administration

5 As discussed before, the probability of re-incarceration (conditional on having committed a crime) would differ, in general, between legalised and non-legalised immigrants. In this particular case, however, pardoned prison inmates do not have access to alternative measures to incarceration.

The 2007 EU enlargement was clearly an exceptional event. In a subsequent paper (Pinotti 2016), I exploit exogenous variation in legal status routinely induced by Italian migration policy – fixed quotas of residence permits are available each year, applicants submit applications electronically on specific 'click days', and applications are processed on a first-come, first-served basis until the available quotas are exhausted. This mechanism generates a discontinuity in the probability of obtaining a residence permit between immigrants – already present in Italy – that applied just before and just after the cut-off. Comparing the criminal records of applicants in these two groups in the year before and after 'click days', I estimate a 50% reduction in the probability of committing crimes (on a baseline crime rate of 1%). The effect is driven primarily by a reduction in economically motivated crimes.

The results obtained exploiting these two natural experiments – the EU enlargement and a policy-induced rationing of residence permits – are very similar, even in terms of magnitude. They are also in line with the findings of other recent papers using aggregate data and exploiting generalised amnesties as a source of variation in legal status (Fasani 2016 on Italy; Freedman et al. 2013 and Baker 2015 on the United States).

Lessons for refugee and asylum policy in Europe

In most European countries, refugees and asylum seekers cannot access the labour market for a given period upon entry into the country. The rationale behind such ban, which reaches one year in France and the United Kingdom., is to discourage economic migrants from entering the country disguised as asylum seekers. In light of the evidence discussed above, however, such ban potentially increases the risk that asylum applicants turn to crime. Indeed, Bell et al. (2013) find that asylum-seeker inflows during the 1990s and 2000s caused an increase in property crime in the United Kingdom, whereas post-2004 inflows of economic migrants from EU accession countries had no significant impact on crime. Of course, asylum seekers and new EU citizens may differ on many dimensions. Still, this finding is in line with the evidence discussed above on the crucial role of legitimate income opportunities in immigrants' criminal behaviour. Therefore, the duration of employment bans should remain as short as possible. In addition, national

and EU policies should favour as much as possible the match between migrant workers and domestic employers. The social payoff of such policies may be considerable, even in terms of crime prevention.

References

Baker, S.R. (2015), "Effects of Immigrant Legalization on Crime", *American Economic Review (Papers & Proceedings)* 105(5): 210–13.

Becker, G.S. (1968), "Crime and Punishment: An Economic Approach", *The Journal of Political Economy* 76(2): 169–217.

Bell, B., S. Machin and F. Fasani (2013), "Crime and Immigration: Evidence from Large Immigrant Waves", *Review of Economics and Statistics* 95(4): 1278–1290.

Caponi, V. and M. Plesca (2014), "Empirical Characteristics of Legal and Illegal Immigrants in the USA", *Journal of Population Economics* 27(4): 923–960.

Fasani, F. (2016), "Immigrant Crime and Legal Status: Evidence from Repeated Amnesty Programs", working paper.

Freedman, M., E. Owens and S. Bohn (2013), "Immigration, Employment Opportunities, and Criminal Behavior", working paper.

Italian Ministry of Interior (2010), *Rapporto sulla criminalità e la sicurezza in Italia*, Rome.

Mastrobuoni, G. and P. Pinotti (2015), "Legal Status and the Criminal Activity of Immigrants", *American Economic Journal: Applied Economics* 7(2): 175–206.

Pinotti, P. (2016), "Clicking on Heaven's Door: The Effect of Immigrant Legalization on Crime", *American Economic Review*, forthcoming.

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8 Education policy and migration

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Introduction

Countries invest in education to foster economic growth, enhance productivity, reduce socioeconomic inequalities and contribute to personal and social development. In most countries, compulsory education – primary, secondary and post-secondary non-tertiary – is mainly financed with public funds. However, in some countries – such as Australia, Mexico and Chile – the share of funds coming from private sources, mostly from households, is above 15%. For comparison, this share is less than 1% in Finland and around 8-9% percent in Spain and the US. Accordingly, the share of students enrolled in private and public institutions shows large variation across countries (Table 1).

This chapter analyses the implications of large migration flows for the sustainability of the public education system in the receiving country. The location decision of migrants may be motivated not only by economic reasons but also by the characteristics of the welfare state at destination – mainly the quality of the education and the health system (Borjas 1999, De Giorgi and Pellizari 2009). The family members who follow and the higher fertility rates among immigrants may have been important factors for the increase in the ethnic diversity of classrooms observed in some countries.

Table 1 Percentage of public and private expenditure on education (2011) and share of students enrolled in public schools (2012)

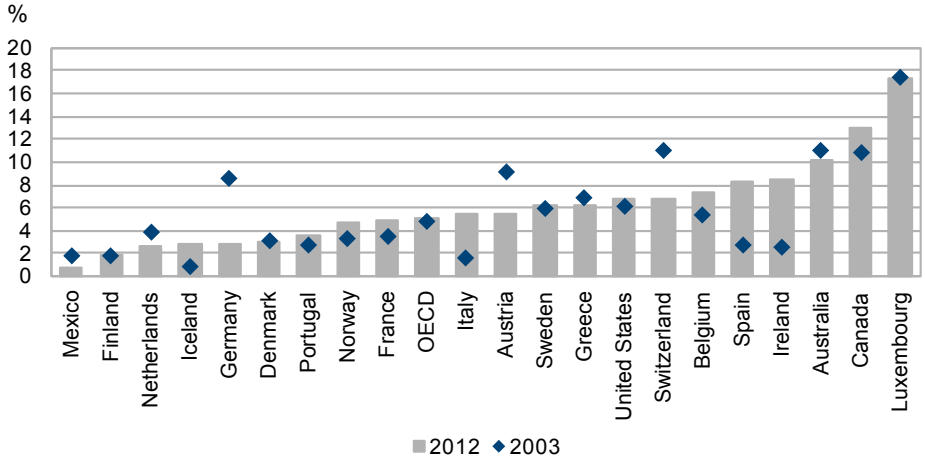
Countries	Public sources	Private sources	Share of students in public schools
Australia	83.6	16.4	69
Canada	89.7	10.3	94
Chile	78.3	21.7	40
Denmark	97.2	2.8	85
Finland	99.3	0.7	98
Germany	87.9	12.1	96
Mexico	82.6	17.4	92
Spain	91.1	8.9	68
Sweden	100.0	0	91
United Kingdom	85.7	14.3	93
United States	91.6	8.4	92
OECD average	91.4	8.6	90

Note: Table shows the relative proportions of public and private expenditure on educational institutions in primary, secondary and post-secondary non-tertiary level and enrolment rates in public schools. Private sources include household expenditures and expenditures of other private entities. Household expenditures represents the bulk of private sources in all countries.

Source: OECD (2014).

Figure 1 shows the percentage of 15-year-old foreign-born students enrolled at school in different OECD countries in 2003 (dots) and 2012 (bars). While the share of foreign-born students grew by an average of only around 0.4 percentage points across OECD countries between 2003 and 2012, the share increased by as much as 6 percentage points in Ireland, 5.6 percentage points in Spain and 3.8 percentage points in Italy. How to sustain their public education system with the ethnic diversity of classrooms is therefore a hotly debated topic in popular immigrant-receiving countries.

Figure 1 Share of 15-year-old foreign-born students enrolled at school, 2003 and 2012



Source: PISA data 2003 and 2012 (OECD).

In developed countries, immigrants tend to have lower levels of income than the average native population and are disproportionately enrolled in public schools. In Spain, for instance, 81% of foreign-born students were enrolled in a public institution in 2014. Moreover, within schools they are also highly segregated. In most countries, the large majority of immigrants are concentrated in schools where at least half of the students are immigrants.[1] As has been identified in the urban economic literature, the high concentration of immigrants in certain schools may result, among other reasons, from their own preference to settle close to their compatriots or from a 'native flight' towards tuition-based private schools with fewer immigrants (Betts and Fairlie 2003).

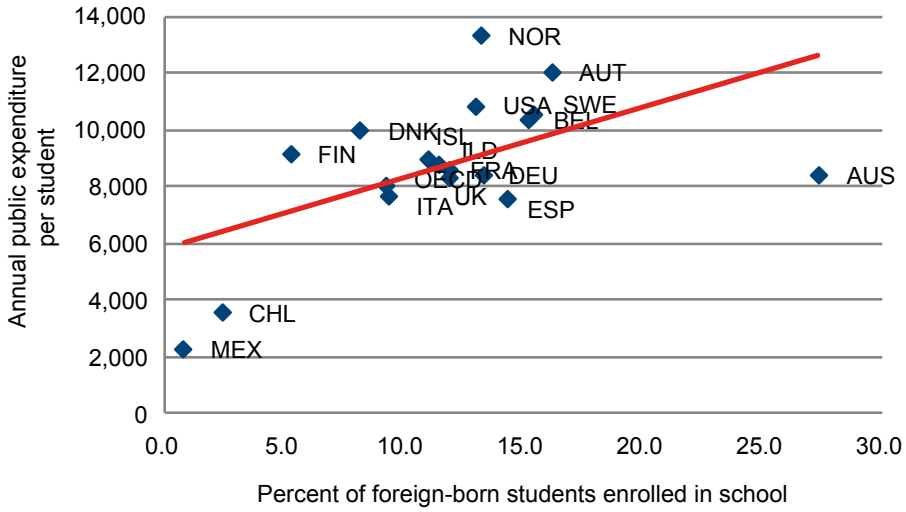
If natives respond to the increase of immigrants by enrolling their children in private institutions, the support for public education may be at risk. Figure 2 correlates the annual public expenditure on education per student and the share of 15-year-old foreign-born students enrolled at school in OECD countries. The figure suggests a positive correlation between public spending on education and the share of immigrants. The sign of this relationship could reflect the 'welfare magnet' hypothesis (i.e. the fact that

1 Source: OECD PISA 2012 database (https://www.oecd.org/pisa/pisaproducts/pisa2012database-downloadabledata.htm).

migrants choose their destination on the basis of the generosity of welfare) or efforts by governments to maintain the quality of public education and promote social cohesion among diverse populations.

In the next section, we review the theoretical and empirical literature on the relationship between immigration and the size of public education. We also summarise previous studies on the effects of immigration on the school choices and educational outcomes of natives. The subsequent section summarises our contributions to the analysis of education policy and migration in the presence of heterogeneous preferences for education and a heavily subsided private school system. We conclude by providing some policy recommendations.

Figure 2 Public spending on education and share of students enrolled at school, 2011



Source: OECD (2014) and OECD PISA 2012 Database.

Review of the literature

The optimal amount of investment in education depends on the preferences of various public and private agents. While in most countries compulsory education is currently financed predominantly by public funds, there has been substantial variation across countries and over time in the amount of public resources devoted to it.

Scholars have suggested that large migration inflows may affect public spending on education through alternative channels. Some have argued that education – in particular, compulsory schooling – is a public good and that population diversity may lead to an inability to agree on the optimal amount to be provided due to diverging preferences (Alesina and La Ferrara 2005). Some empirical studies have documented a negative correlation between ethnic diversity and the provision of public education in Africa (Miguel and Gugerty 2005) and in US cities (Alesina et al. 1999), while Speciale (2012) estimates a negative elasticity of education spending with respect to the share of the foreign-born population of -0.15 in EU15 countries.[2]

The relationship between public education and migration has also been analysed from a political economy perspective. In Coen-Pirani's (2011) model, an inflow of low-skilled immigrants makes public education more costly for native families. The reason is that immigrant households have, on average, lower average incomes and a larger number of children than native households. Since immigrant families disproportionately send their children to public schools, the quality of public education (measured by spending per student) falls and this leads to a native flight out of public and towards private schools. As a result, the support for public education among native families decreases. Coen-Pirani's model is calibrated to the economy of California between 1970 and 2000. In a counterfactual exercise, he shows that education spending per student would have been 24% higher in 2000 if US immigration had been restricted to its 1970 level. The exercise also illustrates that public school attendance would have been substantially higher among the native students (about one in three students).

2 The EU15 consists of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden and the United Kingdom.

Other studies also using data for California have documented a native flight from public to private schools (Betts and Fairlie 2003) or to public schools in districts with fewer immigrants (Cascio and Lewis 2012). There is also evidence of native displacement to private schools in Germany (Kristen 2008), Denmark (Gerdes 2010) and Spain (Farre et al. 2015).

Native displacement to private schools may be determined by at least two alternative and complementary explanations. First, immigrants originate from very different countries and may face high linguistic and cultural barriers at destination. This may slow down integration and represent a cost for the public education system. Second, even in the absence of this cost, natives may prefer to enrol their children in schools with fewer immigrants, in an effect similar in nature to residential sorting (Card et al. 2008).

Some authors have quantified the effects of immigration on the quality of education. Using pooled 1980 and 1990 US Census data, Betts (1998) finds a negative and significant impact of immigration on the probability of completing high school for native-born blacks and Hispanics. In contrast, Hunt (2012), using panel data for the US for the period 1940-2010, documents a positive effect on the high school completion rates of natives. She argues that this result is driven by the anticipated competition with immigrants in the labour market, which compensates for the negative effect of competition for school resources.

The evidence for Europe is also mixed. Using aggregate multi-country data from the PISA study, Brunello and Rocco (2013) report a negative effect of migration on test scores. At the country level, negative effects of immigration have also been documented for Denmark in terms of reading and math test scores (Jensen and Rasmussen 2011). In contrast, there has been found to be no association between the percentage of immigrants and school outcomes for the UK (Geay et al. 2013), Austria (Schneeweis 2013) or the Netherlands (Ohinata and van Ours 2013). Taken together, the above-mentioned studies do not suggest strong evidence of negative effects from the presence of immigrant children in the classroom on the academic performance of natives.

Heterogeneous preferences for education and subsidised private schools

One dimension that has been overlooked in previous studies is the heterogeneous nature of the immigrant population. Immigrants originate from different countries and may follow different selection patterns in terms of productive skills (Chiquiar and Hanson 2005, Orrenius and Zavodny 2005, McKenzie and Rapoport 2007) and preferences for education (Albornoz-Crespo et al. 2011). Low-skilled immigrants from Mexico to the United States, for example, may have very different implications for the sustainability of the public education system than the large inflow of immigrants from diverse origins to the United Kingdom or Spain.

In addition, we observe sizeable cross-country heterogeneity in the supply of public and private education. Private education is much more popular in some countries than in others. In Spain, for example, about one third of primary and secondary school students attend private schools, compared to less than 10% in the United States, Norway or Finland. The reason is that private schools in Spain are heavily subsidised and families have to pay only a complementary fee. Table 1 shows that while in most of the selected countries, more than 85% of the expenditure on compulsory education comes from public funds, the enrolment rate in private institutions differs substantially. In Spain, almost 32% of students are enrolled in private, government-dependent schools (24.4%) or private schools (7.4%). This share is 8% in the US and only 2% in Finland.

Tanaka et al. (2014) use the Spanish experience to evaluate the effect of migration on the education system. The share of foreign-born population in Spain increased from less than 3% in the late 1990s to about 14% in 2012. Immigrants to Spain arrived from very different countries, with the most popular origins being Romania, Ecuador and Morocco. Tanaka et al. (2014) extend the political economy model of Coen-Pirani (2011) to accommodate the heterogeneity in preference for education across different immigrant groups and the presence of a largely subsidised private education sector.

Their analysis produces two main findings. First, the combined effects of immigration and naturalisation lead to a small increase in the size of public education (measured by the number of students in public schools). This small increase results from two forces operating in opposite directions: on the one hand, the large increase in the enrolment

rate of immigrants in public schools; and on the other, the non-negligible native flight to private schools. Second, the model predicts a decrease in the quality of public education (measured by public spending per student) resulting from the lack of political support for public education. The model predicts that, depending on the degree of economic and cultural assimilation, these effects will be greatly intensified or mitigated once immigrants naturalise and gain the right to vote.

In a companion paper. Farre et al. (2015) empirically analyse the effect of immigration on the schooling decisions of Spanish households between 2000 and 2012. The authors use household expenditure data on educational expenditures to identify changes in school choices, both at the extensive margin (i.e. between public and private schools) and the intensive margin (i.e. changes in tuition expenditures within private schools). The effect of immigration on schooling decisions is identified by exploiting the regional variation in migration flows instrumented with previous immigrant settlements across the country. The analysis in Farre et al. (2014) delivers several interesting findings. First, migration led to an increase in tuition expenditures by Spanish households. This increase was fundamentally due to a native flight towards private schools (i.e. the extensive margin of households' educational expenditures), but not to an upgrading within private schools (i.e. the intensive margin of households' educational expenditures). The magnitude of the effect was quantitatively very large, with immigration leading to a 7 percentage point increase in the share of households using private schools. In comparison, the Great Recession and the subsequent austerity measures were responsible for only a 3 percentage point drop. Furthermore, they show that immigration led to increases in student-teacher ratios in public schools, which may have led to a deterioration in the quality of instruction. Finally, they also find evidence of a heterogeneous response in the school choices of the native population. In particular, they report strong evidence of 'cream skimming' – in other words, it was primarily high socioeconomic-status households that switched to private schools, in line with the findings of Cascio and Lewis (2012) for the United States.

On the whole, the evidence for Spain is consistent with the results reported for other countries – increasing ethnic diversity in classrooms leads to a native flight towards private institutions with fewer immigrants. This effect is magnified in the presence of subsidised private schools. In the next section, we provide some policy recommendations for making public education sustainable in the presence of large migration flows.

Policy implications and conclusion

This chapter reviews recent work regarding the relationship between immigration and public education. While the existing literature is not conclusive about the effects of immigration on the educational outcomes of natives, there is consistent evidence that the drastic increase in the share of foreign-born students in top destination countries has pushed natives towards tuition-based private schools. This native flight may jeopardise the quality and sustainability of the public education system in the receiving countries.

In the current context of growing inequality and ethnic diversity, there is a need to implement measures that promote high-quality education that is accessible to all children. First, receiving countries should favour and promote the integration and assimilation of immigrants at schools. The provision of sustained language support within regular classrooms, for example, has proved successful in improving immigrants' educational outcomes (OECD 2015b). Second, the quality of teachers is an important variable in shaping educational outcomes. Attractive payment schemes and working conditions should be offered to reduce teacher turnover rates and recruit high-quality professionals to serve disadvantaged neighbourhoods, immigrants and ethnic minority students.

To mitigate the native flight to private schools and avoid the segregation of immigrants in more disadvantaged schools, there are alternative routes. One extreme solution would be to ban private schools and force all students to attend public schools. This is the route chosen by countries such as Norway, Finland, Israel, Turkey and Iceland. A less extreme alternative is to fix a quota on the number of immigrant students accepted in both public and private schools. Finally, to reduce the concentration of students at the school level, the allocation of students should not be based on geographical proximity. As school capacity is limited, schools perceived to be of the highest quality are likely to attract more applicants than available places. An allocation mechanism that gives

priority to students living near the school will reinforce segregation (Calsamiglia and Güell 2014). Instead, a simple lottery to select among the applicants for oversubscribed schools would promote a more diverse population.

Summing up, it seems that interventions at the school level to favour the integration of immigrants and a revision of the school allocation mechanisms may be promising policy instruments to reduce segregation and guarantee a high-quality public education that is accessible to all children.

References

Albornoz-Crespo, F., A. Cabrales and E. Hauk (2011), "Immigration and the school system", CEPR Discussion Paper No. 8653.

Alesina, A. and E. La Ferrara (2005), "Ethnic diversity and economic performance", *Journal of Economic Literature* 43(3): 762–800.

Alesina, A., R. Baqir and W. Easterly (1999), "Public Goods and Ethnic Divisions", *Quarterly Journal of Economics* 114: 1234–84.

Betts, J. (1998), "Educational Crowding Out: Do Immigrants Affect the Educational Attainment of American Minorities?" University of California at San Diego Economics Discussion Paper No. 98-04.

Betts, J. and R. Fairlie (2003), "Does immigration induce 'native flight' from public schools into private schools?", *Journal of Public Economics* 87(5-6): 987–1012.

Borjas, G.J. (1999), "Immigration and welfare magnets", *Journal of Labor Economics* 17(4): 607–637

Brunello, G. and L. Rocco (2013), "The effect of immigration on the school performance of natives: Cross country evidence using PISA test scores", *Economics of Education Review* 32(C): 234–246.

Calsamiglia, C and M. Güell (2014), "The Illusion of School Choice: Empirical Evidence from Barcelona", CEPR Discussion Paper No. 10011.

Card, D., A. Mas and J. Rothstein (200), "Tipping and the Dynamics of Segregation", *Quarterly Journal of Economics* 123(1): 177–218.

Cascio, E. and E. Lewis (2012), "Cracks in the Melting Pot: Immigration, School Choice, and Segregation", *American Economic Journal: Economic Policy* 4(3): 91–117.

Chiquiar, D. and G.H. Hanson (2005), "International Migration, Self-Selection, and the Distribution of Wages: Evidence from Mexico and the United States", *Journal of Political Economy* 113(2): 239–281.

Coen-Pirani, D. (2011), "Immigration and Spending on Public Education: California, 1970-2000", *Journal of Public Economics* 95(11).

De Giorgi, G. and M. Pellizzari (2009), "Welfare migration in Europe", *Labor Economics* 16(4): 353–363.

Farre, L., F. Ortega and R. Tanaka (2015), "Immigration and School Choice in the midst of the Great Recession", IZA Working Paper No. 9234.

Gerdes, C. (2013), "Does Immigration Induce 'Native Flight' from Public Schools? Evidence from a Large Scale Voucher Program", *The Annals of Regional Science* 50(2): 645–666.

Geay, C., S. McNally and S. Telhaj (2013), "Non-native Speakers of English in the Classroom: What are the effects on pupil performance", *Economic Journal* 123: F281–F307

Hunt, J. (2012), "The Impact of Immigration on the Educational Attainment of Natives", NBER Working Paper No. 18047.

Jensen, P. and A.W. Rasmussen (2011), "The effect of immigrant concentration in schools on native and immigrant children's reading and math skills", *Economics of Education Review* 30(6): 1503–1515

Kristen, C. (2008), "Primary School Choice and Ethnic School Segregation in German Elementary Schools", *European Sociological Review* 24(4): 495–510.

McKenzie, D.J. and H. Rapoport (2007), "Network Effects and the Dynamics of Migration and Inequality: Theory and Evidence from Mexico", *Journal of Development Economics* 84(1): 1–24

Miguel, E. and M.K. Gugerty (2005), "Ethnic diversity, social sanctions, and public goods in Kenya", *Journal of Public Economics* 89(11-12): 2325–2368.

OECD (2014), *Education at a Glance 2014: OECD Indicators*, Paris: OECD Publishing

OECD (2015a), *Indicators of Immigrant Integration 2015: Settling In*, Paris: OECD Publishing.

OECD (2015b), *Immigrant Students at School: Easing the Journey towards Integration*, Paris: OECD Publishing.

Ohinata, A. and J.C. van Ours (2013), "How Immigrant Children Affect the Academic Achievement of Native Dutch Children", *Economic Journal* 123: F308–F331

Orrenius, P.M. and M. Zavodny (2005), "Self-Selection among Undocumented Immigrants from Mexico", *Journal of Development Economics* 78: 215–240.

Speciale, B. (2012), "Does immigration affect public education expenditure? Quasi-experimental evidence", *Journal of Public Economics* 96: 773–783.

Schneeweis, N. (2013), "Immigrant Concentration in School: Consequences for Native and Migrant Students", *Labour Economics* 35: 63–76.

Tanaka, R., L. Farre and F. Ortega (2014), "Immigration, Assimilation and the Future of Public Education", IZA Discussion Paper No. 8342.

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Part III

Migrants' gains and global gains from migration

9 The short- and long-run returns to international migration: Evidence from a lottery

John Gibson, David McKenzie and Steven Stillman
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Introduction

Over four million people around the globe emigrate every year in search of better economic and social opportunities. World Bank calculations suggest that restrictions on these flows of people have larger welfare costs than the more widely studied restrictions on international trade. Income differences between developed and developing countries are massive – in 2014, GDP per capita in high-income OECD countries was nine times that in middle-income countries, and 68 times the per capita income in low-income countries. These differences hold even within very narrowly defined occupations, with Ashenfelter (2012) showing that wages of workers at McDonald's differ by as much as a factor of ten across countries.

How much of this difference can someone migrating from a poorer to a richer country hope to gain? The answer depends on the sources of these income differentials. If better institutions, higher quality capital and other factors raise the productivity of all workers, then the same worker will immediately be vastly more productive working in a rich country than in a poorer one, and so should earn more as soon as they move. In contrast, if benefiting from these factors requires language skills, country-specific knowledge and other attributes that are embedded in native workers, immigrants may initially be no more productive abroad than they were at home, and their short-term income gains may be limited. In the longer term, any income gains will then only occur if immigrants can assimilate and gain these country-specific skills.

Determining either short-term or long-term gains from migration is complicated by the fact that migrants are self-selected, differing in skills, ambition and other attributes from those who do not migrate. To determine the costs and benefits to migration, we ideally want to compare the experiences that a migrant has had after they arrive in new country to the experiences that they would have had if they remained in their country of birth. Unfortunately, it is not possible to know the latter, as that state of the world never occurs. One approach is to try to control for as many observable differences as possible between migrants and non-migrants, and then argue that the self-selection on unobserved factors needed to overturn the measured gains is too extreme to be likely. Using such an approach, Clemens et al. (2009) document that a typical individual from the average developing country should expect to earn 2.5 to 3 times their income upon moving to the United States.

This approach will only reveal the true impact of migration if all differences between migrants and non-migrants can be measured and accounted for. Most researchers suspect it is unlikely that survey data can capture all the things that make migrants different from people who remain in their country of birth, as migration is a rare event and many complicated factors come into the decision to move to a new country. Hence, there are good reasons to be sceptical of these sorts of estimates. An ideal way to calculate the impact of migration would be to conduct an experiment where a random sample of individuals are selected in one country and then dropped into another. The impact of migration could then be calculated by comparing outcomes for individuals randomly selected to be migrants to those of individuals who were not selected.

Evidence from a migration lottery: New Zealand's Pacific Access Category

This type of experiment may seem very difficult to implement. But in fact, New Zealand has an immigration policy in place which nearly does this. The Pacific Access Category (PAC) was established in 2001 and allows an annual quota of 650 individuals in Pacific Island nations to migrate as permanent residents to New Zealand without going through the usual migration categories used for groups such as skilled migrants and business investors. Specifically, any citizens from these countries aged 18-45 who meet certain basic English language, health, and character requirements can register for the PAC. For Tonga, many more applications are received than the quota allows, so

a ballot is used by the New Zealand government to randomly select from amongst the registrations. Thus, this policy creates a situation where there is a group of migrants and a comparison group who are otherwise identical to the migrants, but remain in Tonga only because they were not successful in a random ballot.

In the first study of the PAC (McKenzie et al. 2010), we examined the short-run impact of migrating from Tonga to New Zealand. We found that migrants from Tonga to New Zealand are positively self-selected, that they have larger returns to unobservable attributes in New Zealand than in Tonga, and that migration leads to a 263% gain in income in the first year after migration. While this is a large impact, it was just half of the six-fold gap in per capita incomes between the two countries, and even the best-performing non-experimental methods based on observable characteristics overstated the actual gains to these migrants by at least 20%.

Other studies of lottery-selected migrants and their extended families in the sending countries followed this first study, but mostly focused on short-term impacts. A key question for understanding the sources of international income differences is whether migrants gain more of the cross-country income gap over time. But a competing hypothesis is that the gains may weaken over time if migrants have given up occupations at home with rising income trajectories to work in occupations abroad that offer higher immediate incomes but less prospect of career growth. For example, migrants working as teachers, public servants or doctors in their home countries may face wage structures determined strongly by seniority, and earn more abroad as cleaners, shop assistants and agricultural workers, but with less scope for wage growth.

It is complex and costly to track immigrants and a comparison group of non-migrant lottery applicants over a decade, and this is unlikely to be feasible elsewhere. It would be much easier if one could just take an unbiased estimate of the short-run impact of migration and add an assimilation profile from either the same migrant group or a more general group of migrants in the destination country. However, this approach has two problems. First, as noted by Borjas (1985) and Abramitzky and Boustan (2016), if the quality of each immigrant cohort differs, the experience of previous cohorts will give a biased picture of the true assimilation path for current migrants. Second, even if longitudinal data for an immigrant group are available, without a counterfactual group of non-migrants in the origin country, one must use destination-country natives to

estimate the extent to which any changes in income over time reflect actual assimilation versus returns to work experience, life-cycle effects or general business cycle effects, and hence one must assume that these effects are the same for migrants and natives. It is thus unsurprising that Abramitzky et al. (2014) find that changes over time for natives provide a poor counterfactual for estimating assimilation among immigrants.

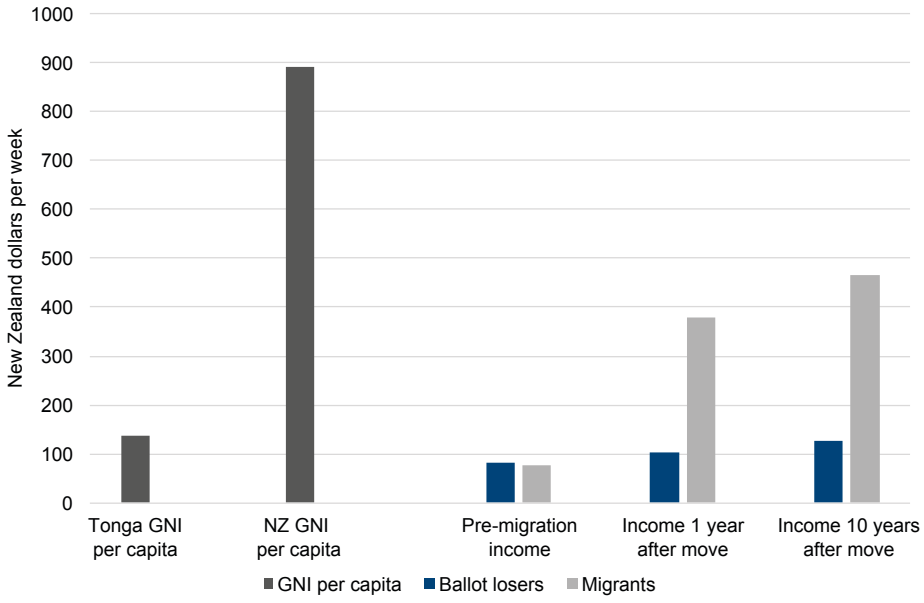
Our main findings

In a recent paper, we try to answer the question of whether gains from migration increase as migrants assimilate (Gibson et al. 2015). We study long-term impacts by comparing Tongans who had successful applications in the PAC lottery, and who immigrated to New Zealand almost a decade ago, with unsuccessful applicants in this same lottery. We deal with issues that arise from using a long horizon, including individuals who on-migrate to other countries, individuals who had not moved at the time of earlier follow-ups but have now moved ('slow compliers' rather than 'non-compliers') and lottery losers who migrate via substitute pathways. We also consider locational changes within New Zealand that were less prevalent when the immigrants were first studied, along with (associated) occupational changes.

The results suggest that the economic payoff to migrating to a richer country comes immediately, and then hardly grows. Specifically, between late 2013 and early 2015, we tracked and surveyed applicants to the 2002-2005 PAC lotteries who were in New Zealand, Tonga and elsewhere (for those who had on-migrated). The wages of principal applicants were NZD$340 (US$260) per week higher due to the impact of migration (controlling for *ex ante* characteristics, the lotteries entered and the type of survey). The weekly wages for the control group (i.e. lottery losers in Tonga) were NZD$126, so the gain from migrating represents a 271% increase in weekly earnings. This was very similar to the 263% gain estimated in McKenzie et al. (2010) in the first year after migrating. Note that, while the absolute gain is higher over this longer period (NZ$340 per week versus NZ$274 over the first year), the incomes of the ballot losers grow 21% over the ten years, which is a similar gain relative to the ballot loser mean in the short-run. Figure 1 shows these short- and long-term gains, and compares them to the difference in per-capita incomes.

The estimated weekly wage gain due to migration rises slightly – to NZD $360 (a 284% rise) – if we account for lower living costs (due to cheaper rents) that result from substantial internal mobility in New Zealand; 86% of the migrants were in Auckland when surveyed a year after arriving, but only 61% were in Auckland by 2013/14, with the rest having dispersed to secondary towns and rural areas. This estimate of a NZD$360 gain in weekly wages also accounts for a New Zealand dollar–Tonga pa'anga PPP exchange rate that we calculated from our own price surveys.

Figure 1 Short- and long-term gains from migrating from Tonga to New Zealand



Note: GNI per capita data are from the 2015 Human Development Report, and are converted into current weekly New Zealand dollars using a PPP to local currency exchange rate of 1.42 and dividing by 52 weeks.

Sources: Pre-migration income from 2002-2004, and income 1 year after move are from McKenzie et al. (2010); income ten years after move is from Gibson et al. (2015).

The stability of the wage impacts of migration over a decade is despite a variety of investments in further education and occupational change (linked to locational change) by the migrants. We find that the lottery principal applicant is 10% more likely to be currently studying, 20% more likely to have tertiary education (the supply of which is very limited in Tonga), and 13% more likely to have changed occupation in the last five years, than equivalent lottery losers. Despite changing occupations more than non-migrants, the average occupational status of migrants never returns to what it was pre-

migration. The impacts of migration on monetary welfare for the nuclear households of the migrants are of similar magnitude to the wage effects on the principal applicants – income is 216% higher and household expenditures 299% higher among migrant households.

Since the impact of migration appears to be stable over time, and because we observed no return migration after a decade, the lifetime income gain from winning the PAC lottery and migrating is straightforward to estimate. The average PAC migrant moves to New Zealand aged around 32. We assume they work for 33 years thereafter (the public pension in New Zealand is available from age 65), so the lifetime earnings gain is NZD$583,440. A further expected benefit in retirement of NZD$186,760 accrues because the New Zealand pension is more generous than that in Tonga. In net present value terms, with a 5% discount rate, the lifetime gain due to migration is at least NZD$315,000 (USD$237,000), even before we allow for non-monetary benefits and wealth accumulation effects.

Conclusions

A long-term follow-up survey of Tongans who applied to migrate to New Zealand through a visa lottery enables us to measure the impact of international migration after a decade. We find that the long-term income gain for migrants is similar to that found in the first years after migration. That the income gain occurs immediately upon migrating to a richer country suggests that the same labour and skills can be vastly more productive when used with the institutions and complementary physical and human capital present in a developed country rather than in a developing country. However, the gain in income is less than the per-capita income gap between countries, and does not appear to grow further despite various post-migration investments made by the immigrants. Even if the income gain is reasonably static, it is so large that the lifetime benefit from migrating for the migrant and his or her accompanying spouse and children is enormous.

Recent work by Hendricks and Schoellman (2016) uses information on the wage gains from migration to estimate the role of human capital differences in accounting for cross-country wage differences. They find that immigrants from poor countries to the US experience wage gains that are around 40% of the GDP per worker gap. They argue

that this implies that human capital accounts for the remaining 60% difference in GDP between the US and the average source country. As discussed previously, the short-run estimates from our lottery are fairly similar, with Tongan migrants only experiencing wage gains that are around 50% of the GDP per capita gap between Tonga and New Zealand.

However, our finding that this gap remains the same after ten years of assimilation that includes substantial human capital upgrades suggests that more than human capital differences between Tongan and New Zealand explain the remaining 50% of the GDP gap. For example, migrants typically have very limited access to the type of resources (such as liquidity and/or physical capital) that would allow them to take advantage of the better institutions and investment opportunities that exist in New Zealand compared to Tonga. Hence, it is quite likely that if the same migrant were born in New Zealand with the same human capital skills, their incomes would be higher than those that we observe.

Overall, our research suggests that, while human capital differences are likely to play some role in accounting for cross-country wage differences, country-specific factors – such as institutions and physical capital – that increase the returns to human capital are more important for explaining differences in development across the globe. This is particularly true if one considers the dynamic impacts of poor institutions. For example, individuals in countries with poor returns to human capital will be less likely to invest in human capital, especially if few opportunities exist to use it in a higher return environment. Consistent with this type of story, Chand and Clemens (2008) find that push factors that increased migration amongst Fijian-Indians also led to increased human capital investments for this group relative to other Fijians.

References

Abramitzky, R. and L. P. Boustan (2016), "Immigration in American Economic History", mimeo, Department of Economics, Stanford University.

Abramitzky, R., L. P. Boustan and K. Eriksson (2014), "A Nation of Immigrants: Assimilation and Economic Outcomes in the Age of Mass Migration", *Journal of Political Economy* 122 (3): 467-506.

Ashenfelter, O. (2012), "Comparing Real Wages", *American Economic Review* 102(2): 617-42.

Borjas, G. (1985), "Assimilation, Changes in Cohort Quality, and the Earnings of Immigrants", *Journal of Labor Economics* 3(4): 463-89.

Clemens, M., C. Montenegro and L. Pritchett (2009), "The Place Premium: Wage Differences for Identical Workers across the U.S. Border", Center for Global Development Working Paper No. 148, Washington, DC.

Chand, S. and M. Clemens (2008), "Skilled Emigration and Skill Creation: A quasi-experiment", Center for Global Development Working Paper Number No. 152, Washington, DC.

Gibson, J., D. McKenzie, H. Rohorua and S. Stillman (2015), "The Long-Term Impacts of International Migration: Evidence from a Lottery", World Bank Policy Research Working Paper No. 7495, Washington, DC.

Hendricks, L. and T. Schoellman (2016), "Human Capital and Development Accounting: New Evidence from Wage Gains at Migration", mimeo, February.

McKenzie, D., J. Gibson and S. Stillman (2010), "How Important is Selection? Experimental vs Non-experimental Measures of the Income Gains from Migration", *Journal of the European Economic Association* 8(4): 913-45.

Özden, Ç., C. Parsons, M. Schiff and T. Walmsley (2011), "Where on earth is everybody? The evolution of global bilateral migration 1960–2000", *World Bank Economic Review* 25(1): 12-56.

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10 The global costs from migration barriers

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Over the last decade, economic research on international migration and development has grown rapidly. In particular, the debate on the global efficiency and inequality implications of migration restrictions has been revived in the academic literature. Searching for a better life, candidates to migration have to overcome tremendous barriers, and many of them are unable to realise their migration aspirations. Some development economists argue that legal migration restrictions are responsible for large social welfare losses. They carry considerable economic costs for poor countries and prevent global inequality from declining. Even though a liberalisation of international migration is clearly not on the political agenda, it is important for economists and policymakers to understand the effects that migration barriers have on the world allocation of the labour force, on the world production frontier, and on the world distribution of income. How many additional migrants would move if migration barriers were abolished? Where would they go? What would be the short-run and long-run effects on the world distribution of income? Relying on two recent studies (Docquier et al. 2015, Delogu et al. 2016), this chapter offers an alternative vision of the global costs from migration barriers.

Prevailing view

Many studies have investigated the global benefits from removing immigration restrictions. A summary of the existing literature is provided in Clemens (2011), and more recent studies include Iranzo and Peri (2009), Klein and Ventura (2007, 2009), and Kennan (2013). Most of them argue that liberalising migration displaces billions of people, mainly from developing to industrialised countries. They find that

liberalising labour mobility induces an increase in the world income in the range of 50 to 150%, making labour mobility the greatest source of efficiency gains to expect from globalisation. Without further intervention, these benefits would mainly accrue to the emigrants originating from poor countries. Aggregate gains can also be obtained for the host population through the immigration surplus, although the latter are unequally distributed among capitalists and workers, or among categories of workers. Gains are also expected for the non-migrant population in poor countries through migrants' remittances. In any case, if the aggregate gains from liberalisation were so large, it is very likely that an appropriate redistributive policy could make everybody much better off in the world.

A few recent contributions questioned the realism of the above-mentioned gains. In particular, Collier (2013) and Borjas (2015) provide a *culture-based critique* to the above results. They emphasise the social and cultural challenges that such large movements of people may induce. The reasoning is the following: by importing their dysfunctioning cultural, social and institutional models, migrants may contaminate the entire set of institutions in their country of adoption, levelling downwards the world distribution of technological capacity. Removing migration barriers can reduce the worldwide level of income per capita if such contagion spillovers are large enough. At the current level of migration, however, there is no evidence that such contagion effects are important and unidirectional. On the contrary, many studies evidence a positive transfer of technological, political and behavioural norms from rich to poor countries (e.g. Spilimbergo 2009). And other empirical studies identify a positive effect of cultural diversity on the productivity of receiving regions, using aggregate data by country (Alesina et al. 2016) or US metropolitan areas (Ottaviano and Peri 2006). It is however legitimate to foresee that displacing billions of workers from the South to the North could induce large spillovers of a different nature.

A demographic critique

I develop here another argument why the global consequences of migration barriers might have been overestimated. Most existing studies assume that a complete liberalisation would lead to (real) wage equalisation across countries. They predict that about 50% of the world's population would live in a foreign country after a complete liberalisation.

Private (or non-visa) migration costs are disregarded or treated in a simple way. This is an important problem, as the empirical literature on the determinants of migration has long emphasised the role of geographic, linguistic and cultural distances. Private moving costs explain why within-EU migration flows have been limited despite large income differences between EU member states and a free mobility agreement, or why large regional disparities exist within countries.

The use of Gallup data allows approximating the number of people who could respond to a complete abolition of visa restrictions. For each country of origin and education level, the Gallup surveys identify the proportion of non-migrants expressing a desire to emigrate (permanently or temporarily) to another country "if they had the opportunity", and document their preferred destination. Although the use of contingent valuation surveys to assess migration preferences is open to criticisms (Clemens and Pritchett 2016), there are reasons to believe that the Gallup surveys provide reasonable estimates of the short-run response to a liberalisation, at least before general equilibrium and network effects operate. First, Gallup is the most comprehensive source of data on migration aspirations. Second, empirical studies reveal that the reported aspirations are nicely correlated with the traditional determinants of migration (see, among others, Docquier et al. 2014, Dustman and Okatenko 2014, Manchin et al. 2014). Third, there is a high correlation between migration aspirations at year t and actual migration flows at year $t+1$ (Bertoli and Ruyssen 2016), although the size of actual flows is smaller.

For the year 2000, census data identify about 200 million international migrants, including 112 million migrants aged 25 and over; this represents about 3.5% of the world adult population. Table 1 documents the number of desiring and potential migrants. Gallup data identify 274 million individuals aged 25 and over who would like to leave their country and who have not yet migrated. Adding them to the actual migrant stock gives a total stock of 386 million potential migrants aged 25 and over, i.e. 12.1% of the adult population. This is 3.5 times larger than actual migration flows, but 6 times smaller than what is predicted by the wage-equalisation models. This illustrates the importance of private costs in shaping migration behaviours. Most of the would-be migrants originate in poor countries and want to relocate to rich countries. The main regions of origin are Asia (30% of the total, including China and India), sub-Saharan Africa (17%), Latin America (14%), and the Middle East and Northern Africa (8%).

Table 1 Data on actual, desiring and potential migration by region, year 2000

	Emigration				Immigration			
Selected regions	Actual[a]	Desiring[b]	Potential[c]	Potential[d]	Actual[a]	Desiring[b]	Potential[c]	Potential[e]
	×10E6	×10E6	×10E6	As %	×10E6	×10E6	×10E6	As %
World	111.6	274.5	386.1	0.121	111.6	274.5	386.1	0.121
United States	0.9	6.2	7.2	0.045	24.2	73.9	98.0	0.390
EU15	15.6	22.7	38.2	0.145	19.9	70.5	90.5	0.286
Canada, Australia, New Zealand	1.5	2.2	3.6	0.128	8.6	44.7	53.3	0.683
Gulf Cooperation Council	0.6	0.5	1.1	0.123	5.7	23.3	29.0	0.785
MENA	9.1	21.9	31.0	0.227	5.6	5.8	11.4	0.098
Sub-Saharan Africa	10.5	45.8	56.3	0.249	8.7	9.7	18.4	0.098
CIS	19.1	15.0	34.1	0.194	16.7	1.9	18.7	0.117
China-India	10.0	43.7	53.7	0.043	5.2	3.8	9.0	0.008
Rest of Asia	20.0	65.4	85.4	0.149	9.0	21.2	30.2	0.058
Latin America	15.5	38.6	54.1	0.205	2.6	8.9	11.5	0.052
Others	8.7	12.7	21.5	0.216	5.3	10.8	16.1	0.171

Note: [a] Stock of migrants aged 25 and over in 2000 (Source: Artuc et al. 2015); [b] Stock of non-migrants aged 25 and over who would like to leave their country if they had the opportunity (Source: Gallup 2012); [c] Potential migration = Actual migration + Desired migration; [d] Share of emigrants in the native labour force; e Share of immigrants in the labour force of the country of residence.

In terms of destinations, a vast majority want to emigrate to an OECD, high-income country (27% to the United States, 26% to Europe, and 16% to Canada, Australia or New Zealand). Other important destinations are Japan, Singapore, Saudi Arabia and the United Arab Emirates. On average, prospective migrants are slightly more educated than those left behind (i.e. there is a positive selection in emigration), but less educated than non-migrants in the host countries (i.e. there is a negative selection in immigration).

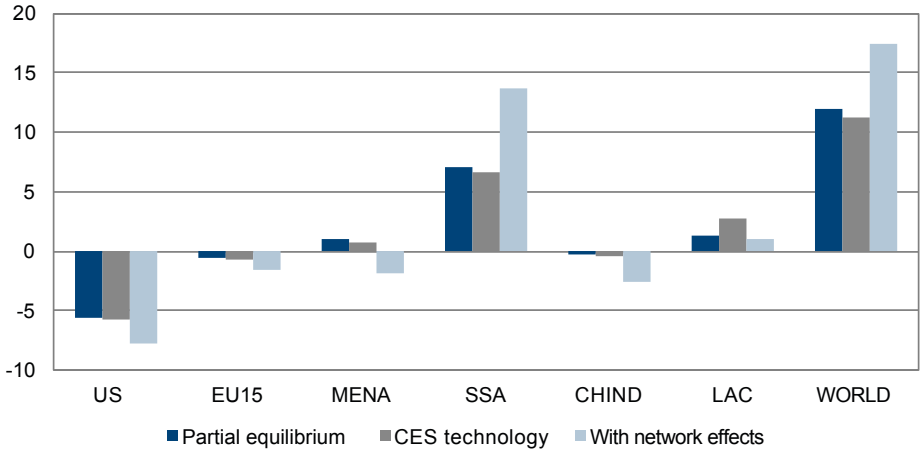
Short-run costs from migration barriers

I now discuss the short-run economic gains from removing legal restrictions (or equivalently, the short-run costs of keeping migration barriers). This counterfactual experiment is simulated using a simple static model that endogenises interdependencies between migration decisions and economic performance (see Docquier et al. 2015). Using migration aspiration data to proxy the momentum of the migration response to a liberalisation, the global cost of migration barriers is computed by taking into account, for the first time, people's desire to emigrate and the existence of private moving costs. Results for selected regions and for the year 2000 are reported in Figure 1 under three scenarios. First, I consider a benchmark framework with exogenous wage rates (partial equilibrium). Second, I endogenise wages using a standard, constant elasticity of substitution (CES) technology calibrated to match data on GDP and wage inequality. Third, I allow the incompressible migration costs to decrease with the size of the bilateral stock of migrants at destination (network externality), in which case the worldwide proportion of international migrants reaches 18.5%.

In the partial equilibrium framework, the worldwide cost of migration barriers is estimated at 11.9% of the current world income. This is 5 times smaller than in the least optimistic studies assuming wage equalisation. The smallness of these costs is totally driven by the fact that people's desire to emigrate is accounted for. Very similar results are obtained in the CES case. More optimistic results – a 17.4% increase in the world income – are obtained when migration network externalities are factored in, due to a larger migration response. Migration barriers also affect inequality between rich and poor countries. In the partial equilibrium case, their abolition decreases income per workers by 5.6% and 0.6% in the United States and in the EU15, respectively; it increases income per worker by 7.0% in sub-Saharan Africa and has a much smaller

effect in the other developing regions. These effects are rather limited, suggesting that the short-run costs of migration barriers have been overestimated in the existing literature.[1]

Figure 1 Short-run effects of removing migration barriers on income per worker, year 2000



Note: Effect on the average level of income per worker by region/country, in deviation from the no-liberalization baseline equilibrium. The liberalization shock occurs in the year 2000. On the horizontal axis: USA = United States; EU15 = 15 core members of European Union, MENA = Middle East and Northern Africa, SSA =sub-Saharan Africa, CHIND = China and India, LAC = Latin America and the Caribbean.

Long-run costs from migration barriers

The literature on the economic consequences of migration restrictions has adopted a short-run perspective, assuming a constant population. It disregards the interdependencies between migration decisions, and the evolution of size and structure of the world population. There are at least two mechanisms through which changes in migration flows affect education and fertility decisions. First, policies towards basic education in the rich countries (mandatory education, generous subsidies, greater quality of education, etc.) make basic education much more accessible for the migrants'

1 Smaller efficiency effects are obtained when total factor productivity is an increasing function of the proportion of college graduates in the country's labour force (schooling externality).

offspring. Exposed to a new environment and to different norms, migrants also change their fertility decisions. Hence, additional migrants usually move from poor to rich countries and (partly) assimilate in terms of fertility and education. This increases the pool of young adults who become eligible for higher education in the future generation. Second, the recent literature has shown that emigration prospects stimulate incentives to acquire higher education in developing countries. This link between emigration prospects and human capital formation has been empirically identified in the micro and macro literatures.

In Delogu et al. (2016), we build a micro-founded model that encompasses all these channels, and simulate the effects of a permanent abolition of migration barriers on the trajectory of the world economy over the 21st century. Partial equilibrium results are provided in Table 2. Very similar results are obtained when a CES technology is used.

Table 2 Dynamic effects of removing migration barriers on income per worker

Selected regions	2000	2025	2050	2075	2100
World	+13.1	+27.4	+38.6	+46.9	+53.8
United States	-6.1	-4.9	-3.5	-2.5	-2.0
EU15	-0.5	-0.5	-0.2	-0.1	+0.0
Can, Aus, N-Zealand	-3.3	-2.6	-2.3	-2.0	-1.8
Gulf Coop. Council	-7.1	-5.5	-5.1	-4.4	-3.6
MENA	+2.8	+3.8	+4.1	+4.0	+3.6
Sub-Saharan Africa	+10.2	+17.9	+25.7	+34.1	+40.8
CIS	+0.6	+0.9	+1.2	+1.4	+1.4
China-India	+0.6	+0.6	+0.8	+0.9	+1.0
Rest of Asia	+4.0	+8.6	+13.6	+18.2	+21.9
Latin America	+2.4	+3.9	+5.0	+6.0	+6.8
Others	+19.2	+35.6	+49.7	+61.3	+69.5

Note. Effect on the average level of income per worker by region/country, in deviation from the no-liberalisation baseline trajectory. The liberalization shock is permanent and starts in the year 2000.

It comes out that the long-run impact of migration restrictions exceeds by far the short-run impact. This is because liberalising labour mobility reduces population growth and improves the skill structure of the world labour force. In the partial equilibrium case, the world average level of income per worker increases by 13.1% when the shock occurs. It is slightly greater than the level obtained in the static framework (+11.9% in Figure 1). This is because here, better migration prospects stimulate the expected return to higher education and the investments in college education of the new high-school graduates. As explained above, additional migrants from poor to rich countries also face a new institutional environment which favours investments in the basic education of their offspring. This increases the pool of young adults who can access the higher education system among the next generation. Consequently, the rise in educational attainment and the changes in the world distribution of income are gradual and cumulative. By the year 2100, the effects are four times larger than in the short run (+53.8% in the worldwide level of GDP per capita). Large efficiency gains can be expected from removing migration barriers, but these large gains mostly arise in the long run and impact the welfare of future generations.[2] Due to larger investments in human capital, the gains are greater in developing countries. In sub-Saharan Africa, the average level of income per non-migrant worker now increases by 10.2% in the short run, and by 40.8% in the long run. Similarly, although the massive inflows of less educated immigrants reduce human capital in the richest countries, the long-run income responses are less negative than the short-run ones.

Conclusion

Assuming legal migration costs are totally responsible for limited migration flows, the existing literature has identified huge global welfare costs of

2 Overall, these conclusions are very robust to the identifying strategy and to assumptions about the technological environment. More pessimistic results are only found when schooling externalities are factored in, or when the baseline (pre-liberalisation) trajectory of the world economy involves a rapid takeoff of sub-Saharan Africa or emerging countries.

migration barriers. Taking private migration costs into account reduces the short-run effects in the range of 10 to 17% of the world income. Larger effects, in the range of 50% of the world income, are obtained in the long run (after one century). This is due to the gradual fertility and education responses to migration shocks. This means that the global gains from liberalising migration mostly impact the welfare of future generations. It makes it much more difficult to find redistributive policies to compensate the losers, mainly the current cohorts of low-skilled nationals residing in high-income countries.

References

Alesina, A., J. Harnoss and H. Rapoport (2016), "Birthplace diversity and economic prosperity", *Journal of Economic Growth* 21: 101-138.

Artuç, E., F. Docquier, Ç. Özden and C. Parsons (2015), "A global assessment of human capital mobility: the role of non-OECD destinations", *World Development* 65: 6-26.

Bertoli, S. and I. Ruyssen (2016), "Networks and migrants› intended destination", manuscript, CERDI, Université d'Aurvergne.

Borjas, G.J. (2015), "Immigration and globalization: A review essay", *Journal of Economic Literature* 53(4): 961-974.

Clemens, M.A. (2011), "Economics and emigration: Trillion-dollar bills on the sidewalk?", *The Journal of Economic Perspectives* 25(3): 83-106.

Clemens, M.A. and L. Pritchett (2016), "The new economic case for migration restrictions: an assessment", Working Paper No. 423, Center for Global Development.

Collier, P. (2013), *Exodus: How migration is changing our world*, Oxford: Oxford University Press.

Delogu, M., F. Docquier and J. Machado (2016), "Globalizing labor and the world economy: the role of human capital", working paper, IRES, Université Catholique de Louvain.

Docquier, F., J. Machado and K. Sekkat (2015), "Efficiency gains from liberalizing labor mobility", *The Scandinavian Journal of Economics* 117(2): 303-346.

Docquier, F., G. Peri and I. Ruyssen (2014), "The Cross-country Determinants of Potential and Actual Migration", *International Migration Review* 48: S37-S99.

Dustmann, C. & A. Okatenko (2014), "Out-migration, wealth constraints, and the quality of local amenities", *Journal of Development Economics* 110: 52-63.

Iranzo, S. and G. Peri (2009), "Migration and trade: Theory with an application to the eastern-western European integration", *Journal of International Economics* 79(1): 1-19.

Kennan, J. (2013), "Open borders", *Review of Economic Dynamics* 16(2): L1-L13.

Klein, P. and G. Ventura (2009), "Productivity differences and the dynamic effects of labor movements", *Journal of Monetary Economics* 56(8): 1059-1073.

Klein, P. and G. Ventura (2007), "TFP differences and the aggregate effects of labor mobility in the long run", *The BE Journal of Macroeconomics* 7(1).

Manchin, M., R. Manchin and S. Orazbayev (2014), "Desire to Migrate Internationally and Locally and the Importance of Satisfaction with Amenities", paper presented at the FIW-wiiw Seminars in International Economics, Vienna, 10 April

Ottaviano, G. I. and G. Peri (2006), "The economic value of cultural diversity: evidence from US cities", *Journal of Economic Geography* 6(1): 9-44.

Spilimbergo, A. (2009), "Foreign students and democracy", *American Economic Review* 99(1): 528-43.

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Part IV

Migration policy and politics

11 Is a points system the best immigration policy?

Jennifer Hunt[1]
Rutgers University and CEPR

A points system for immigration to the United Kingdom was much discussed during the debate leading up to the referendum on whether to leave the EU,[2] and was a component of the immigration reform bill S.744 passed by the United States Senate in 2013 (American Immigration Council 2013). The core of a points system is that the government draws up a set of desirable characteristics for immigrants, weights the characteristics by assigning differing numbers of points to each, and chooses a threshold number of total points. It then admits or prioritizes prospective immigrants with points higher than the threshold. Australia, New Zealand and Canada have long used some form of points system, while other countries have established one more recently – the United Kingdom used one for non-European immigrants from 2008 to 2015. Proponents of a points system promote it as a technocratic approach to choosing immigrants that enhances a country's economy in a way less dirigiste systems do not.

I argue that if the goal is for immigration to have the most beneficial impact on the host economy, there can in practice be neither any scientific basis for establishing the optimal points system nor for determining if a given points system is better than another non-points based system. On the other hand, if the goal is to admit the immigrants who will earn most in the host labour market, a points system can be effective, and can be evaluated scientifically. These two goals are not equivalent, although an advantage of

1 I thank Charles Beach, George Borjas, Pia Orrenius, Giovanni Peri, Arthur Sweetman, Casey Warman, Christopher Worswick and Madeline Zavodny for their input.

2 See, for example, "Migrants must have good English in post-Brexit UK, says leave campaign", *The Guardian*, 1 June 2016 (available at www.theguardian.com/world/2016/may/31/migrants-will-need-good-english-in-post-brexit-uk-says-leave-campaign).

pursuing the second goal is that it may make immigration more popular by maximising the net contribution of immigrants to the government budget. Both goals can be advanced within a points system by empowering employers with a role in selecting immigrants. However, neither goal is advanced by giving state or provincial-level governments a role in selecting points system immigrants if that selection process leads immigrants to settle in regions they would not otherwise have chosen. A points system is consistent with either high or low immigration, and its effectiveness in shaping the type of immigrants admitted depends on the share of prospective immigrants who must apply through the points system.

What guidance does economic theory provide for immigration policy?

Economics is in practice surprisingly ineffective in ranking immigration systems according to their benefit to the host economy. Economic theory is clear that the best immigration system is no system; the world as a whole, as well as each individual country, is best off when unlimited migration is permitted, with workers moving to countries where they are more productive and countries becoming more efficient as workers specialise increasingly in the tasks they do best.[3] This theory does ignore, however, the presence of welfare systems in the host countries, which distort the economic decisions of prospective migrants.[4] For these reasons, some economists have coupled calls for reducing barriers to migration with the suggestion that immigrants be excluded from the host country welfare system (Sinn 2005: 508-514), or with the observation that immigrants could be made to pay a tax surcharge or admission fee (Caplan 2012, Orrenius and Zavodny 2010). Indeed, non-European immigrants to the United Kingdom pay an application fee and a fee to cover access to the health care system, and may be excluded from most public benefits.[5]

3 See Clemens (2001) in support of open borders. Borjas (2014, 2015) on the other hand, finds it implausible that rich country economies could make the large adjustments to capital and infrastructure theory predicts.

4 Immigration could also erode support for the welfare system, which affects the calculation of the optimal amount of immigration (Roemer 2006).

5 www.gov.uk/tier-2-general (accessed 10 July 2016).

Open borders, whatever their merits, are not currently a policy option in high-income countries, leaving economists the difficult task of choosing among second-best solutions. If the number of immigrants must be limited, economists do have a preferred way of allocating the visas: by auction, with employers bidding. Auctions allocate goods to the bidders who value them most (and who have the incentive and ability to inform themselves fully about the goods), which is efficient. The efficiency of auctioning visas may be slightly less clear than the efficiency of auctioning goods, as employers would not take into account certain economy-wide effects of their hiring and may not be sufficiently focused on long-term benefits, but no other visa allocation method is likely to be more efficient (Zavodny 2015). The government, for example, though perhaps considering economy-wide effects and the long term, has less information than employers, and a points system may be a blunt instrument for using the information it does have. However, if pressed to specify the number of visas that should be auctioned, economists could only assume that more is better, as a larger number more closely reproduces the open borders outcome. To date, no country has auctioned visas.

To choose among existing policies, which vary according to the type and number of immigrants admitted, economists would have to simulate each policy and calculate the state of the economy under each. This is difficult in practice as the data requirements and the sophistication of understanding of the economy required are great. Furthermore, often the objections to unlimited migration are not simply that there are too many immigrants, but that there are too many of a particular type. Although immigration is beneficial to natives as a whole, some natives are made better off and some worse off. Unskilled immigration appears to lower the wages of unskilled natives (National Academies of Science, Engineering and Medicine 2016), which may cause objections on distributional grounds. Taking into account the desire to balance efficiency with equity would require economists to assign different, subjective weights to the welfare of different types of natives in the simulations. It would be difficult to do this in a way that appropriately reflected the subjective views of the public. Thus, economists are not in a position to propose comprehensive immigration systems that can genuinely be justified on economic grounds.

Economic theory and points systems

Some observations and recommendations may nevertheless be made about points systems. Points systems vary according to whether they aim simply to select workers who can be expected to find a job quickly and earn high wages, or whether they have points allocations that vary according to which workers are perceived to contribute most to the economy in a given year. It is not self-evident that an immigrant's contribution to the economy rises in proportion to his or her skill and earning power. It is when the skills of immigrants and natives differ that natives in the economy benefit from workers' increased specialisation in tasks they are best at. Immigrants with very few skills have been shown to be beneficial to the US labour market – their arrival causes less-skilled US natives to specialise in more language-intensive tasks, making the economy more efficient (Peri and Sparber 2009), and allows skilled immigrants to work more efficiently thanks to cheaper unskilled services such as child care (Cortés and Tessada 2011). While a points system that is successful in admitting immigrants even more skilled than natives would clearly benefit the host country, a system admitting immigrants with a similar distribution of skills would merely expand the size of the economy, bringing less benefit than a system that admitted some unskilled immigrants.[6,7]

The classic Canadian points system

The 1993 reforms to the points system in Canada (excluding Quebec) introduced a simple framework aimed at maximising long-run immigrant labour market performance. Despite recent increases in the programme's complexity, the framework is still reflected in the 2016 allocation of points: up to 25 points for education; up to 28 points for French or English ability; up to 15 points for experience in the applicant's stated occupation; 12 points for being aged 18-35 with fewer points for being older (which partly negates the advantage of experience); 10 points for a job offer in Canada and up

6 In part for this reason, the auction-based reform proposals for the United States of Orrenius and Zavodny (2010) and Peri (2012) involve separate auctions for skilled and unskilled labor. Even the auction system, therefore, is complex.

7 This argument must be amended somewhat if skilled immigrants devise new technologies that boost economic growth, which has the potential to benefit all. This is discussed further below.

to 10 points for adaptability (measured by whether the applicant has family in Canada, has previously worked in Canada on a temporary visa, and other criteria).[8] The passing threshold is 67 points out of the maximum possible 100, and is not adjusted according to the state of the economy. Under the simple system, applicants who passed received permanent residence. This system has been studied in detail.[9] The increased weight given to education (and the higher share of immigrants admitted under the points system) greatly increased the share of immigrants with at least a university degree (Beach et al. 2007). Immigrants with higher points earned more and were more likely to be employed, and points system immigrants earned more than immigrants admitted for family reunification (Sweetman and Warman 2013).[10]

There are signs that the simple Canadian focus on high wages and low unemployment did not provide the greatest possible benefits of immigration. An assessment of the system on its own terms shows that Canadian immigrants with a university degree have earnings similar to natives with a high school degree. This is in contrast to the United States, where immigrants with a university degree earn considerably more than native high school graduates (Bonikowska et al. 2011). Furthermore, while Hunt and Gauthier-Loiselle (2010) find that skilled immigrants to the United States increase innovation, Blit et al. (2016) find that skilled immigrants to Canada have no such effect. Though this may partly be explained by the lesser importance of high tech in Canada, it is telling that immigrants to Canada trained in science and engineering are less likely to work in science and engineering than their native counterparts, which may reflect the lack of employer role in the simple points system. Relatedly, McDonald et al. (2015) show that while in the United States, immigrants trained as physicians are as likely to work as physicians as natives who are so trained, there is a considerable gap between immigrants and natives in Canada. All these results suggest the possibility

8 www.cic.gc.ca/english/immigrate/skilled/apply-factors.asp (accessed 10 July 2016). Since 1993, the points allocation has been amended to reflect research showing that immigrants arriving young earn more, and that experience abroad is not valued in the host country; see the recommendations in Beach et al. (2009).

9 See Orrenius and Zavodny (2014) for an assessment of the more complicated features introduced in the 2000s, including a re-introduction of the consideration of occupations.

10 In a paper studying a period when the points system put less emphasis on education and more on occupation, Borjas (1993) found on the contrary that the points system seemed to have little impact, explaining little of the difference in skills between immigrants to Canada and the United States.

that immigrants in Canada are less well matched with employers than immigrants in the United States, which would reduce immigrant productivity and wages as well as the efficiency of the economy. This could be due to the minor role of employers in the simple system – while employers could find workers and have them apply through the points system, these applications were not prioritised and could languish for years in the approval process.[11]

Moving beyond the classic points system

Reforms to the Australian points system in 2012, modelled on a change in New Zealand in 2004, have introduced a welcome greater role for employers.[12] Applications of prospective immigrants to Australia who pass the points test are entered into a pool for selection by an employer. Selected applications are then given priority for admission. A prospective points system immigrant who wishes to be able to move to any location in Australia must now apply through this channel. If he or she is willing to move to particular areas designated by states, then a match with an employer is not necessary. Canada added a similar employer-selected channel to the existing system in 2015. Theory suggests these reforms should be beneficial.

The current Australian points system differs from the simple Canadian system more generally, in that it explicitly attempts to admit immigrants who contribute the most to the economy in a given year, rather than those who meet with the greatest personal success in the labour market in the long run. This is good in principle, but difficult to achieve in practice. The main tool is the requirement that points system applicants must practice an occupation deemed a shortage occupation by a state or the federal government. The difficulty is that the notion of a shortage is not a scientific one, and efforts by economists to establish occupations in which demand is rising faster than supply have shown only that there is no rigorous way to do this (Cappelli 2015, Veneri 1999). The ability of states to prioritise applicants who are willing to live in their state

11 Hunt (2011) finds that immigrants who study in the United States and those chosen by employers have higher wages, patenting and publishing rates than immigrants joining family members.

12 See www.border.gov.au/Trav/Work for a description of the Australian visa system, and www.cic.gc.ca/englIsh/immigrate/index.asp for a description of the current, similar Canadian system (accessed 10 July 2016).

or its remote areas may also reflect the philosophy of picking applicants who will most benefit the country. This is unlikely to be a good policy because there is no economic justification for subsidising areas that are inefficient due to location. If a location were a productive one for immigrants, immigrants would go there voluntarily – in this case, there is no reason to think the government has additional information or broader economic objectives than individuals.[13]

For the reasons already discussed, it is difficult to assess the degree to which the current Australian points system benefits the economy compared to the system in place in earlier years, or in place in Canada until recently. However, it has been assessed in terms of the earnings and unemployment of the immigrants admitted. Clarke and Skuterud (2013) find that Australian immigrants perform better in the labour market than Canadian immigrants, and conclude that the English language tests introduced by Australia in 1999 played an important role. On the other hand, Jasso and Rosenzweig (2008) compare the outcomes of immigrants chosen via the points system in Australia and by employers (for permanent residence) in the United States. They conclude that differences are caused by the countries' labour markets and geographic locations, rather than different immigration policies.

The importance of the scope of the points system

The scope of the points system is a crucial factor in the degree to which it affects the host economy. When the UK points system was in place, all non-European immigrants had to pass through it, receiving temporary visas that could lead eventually to permanent residence. Conversely, the Canadian points system only awards permanent residence, and the increasing number of temporary visas is evolving outside the points system. Australia awards both temporary visas and permanent residence through the points systems, but there are parallel channels allowing both family reunification and

13 Canadian Provincial Nominees have high earnings and employment immediately after receiving permanent residence, but lose this advantage within two years (Sweetman and Warman 2013). The initial advantage may reflect the fact that many were chosen directly by employers.

employer hiring on both temporary visas and permanent residence. Across countries, spouses are generally not assessed separately, and contribute little or nothing to the principal applicant's points (for Canada, see Sweetman and Warman 2010).

Conclusion

The evidence is clear that a points system, particularly if broad in scope, can be used to influence the labour market performance of immigrants. It is likely that immigrants' contribution to the host country will be greater under a system with a major role for employers and no role for states or provinces. It is not clear on either theoretical or empirical grounds that even strong employer involvement can deliver a better economy than a system where employers choose workers without the constraint of a points system.

References

American Immigration Council (2013), A Guide to S.744: Understanding the 2013 Senate Immigration Bill, Washington, DC.

Beach, C.M., A.G. Green and C. Worswick (2007), "Impacts of the Point System and Immigration Policy Levers on Skill Characteristics of Canadian Immigrants", *Research in Labor Economics* 27: 349–401.

Beach, C.M., A.G. Green and C. Worswick (2009), "Improving Canada's Immigration Policy", C.D. Howe Institute e-brief, Toronto.

Bonikowska, A., F. Hou and C. Picot (2011), "A Canada-US Comparison of Labour Market Outcomes among Highly Educated Immigrants", *Canadian Public Policy* 37(1): 25–48.

Borjas, G.J. (1993), "Immigration Policy, National Origin, and Immigrant Skills: A Comparison of Canada and the United States", in D. Card and R.B. Freeman (eds), *Small Differences that Matter: Labor Markets and Income Maintenance in Canada and the United States*, Chicago: University of Chicago Press.

Borjas, G.J. (2014), *Immigration Economics*, Cambridge, MA: Harvard University Press.

Borjas, G.J. (2015), "Immigration and Globalization: A Review Essay", *Journal of Economics Literature* 53(4): 961–974.

Caplan, B. (2012), "Why Should We Restrict Immigration?", *CATO Journal* 32(1): 5–24.

Cappelli, P.H. (2015), "Skill Gaps, Skill Shortages, and Skill Mismatches Evidence and Arguments for the United States", *Industrial and Labor Relations Review* 68(20): 251–290.

Clarke, A. and M. Skuterud (2013), "Why do immigrant workers in Australia perform better than those in Canada? Is it the immigrants or their labour markets?", *Canadian Journal of Economics* 46(4): 1431–1462.

Clemens, M. (2011), "Economics and Emigration: Trillion-Dollar Bills on the Sidewalk?" *Journal of Economics Perspectives* 25(3): 83–106.

Cortés, P. and J. Tessada (2011), "Low-Skilled Immigration and the Labor Supply of Highly Skilled Women", *American Economic Journal: Applied Economics* 3(3): 88–123.

Hunt, J. and M. Gauthier-Loiselle (2010), "How Much Does Innovation Boost Innovation?", *American Economic Journal: Macroeconomics* 2(2): 31–56.

Hunt, J. (2011), "Which Immigrants Are Most Innovative and Entrepreneurial? Distinctions by Entry Visa", *Journal of Labor Economics* 29(3): 417–457.

Jasso, G. and M.R. Rosenweig (2008), "Selection Criteria and the Skill Composition of Immigrants: A Comparative Analysis of Australian and U.S. Employment Immigration", in J. Bhagwati and G.H. Hanson (eds), *Skilled Migration Today: Phenomenon, Prospects, Problems, Policies*, New York: Oxford University Press.

McDonald, J.T., C. Warman and C. Worswick (2015), "Immigrant Selection Systems and Occupational Outcomes of International Medical Graduates in Canada and the United States", *Canadian Public Policy* 41(1): S115–137.

National Academies of Science, Engineering and Medicine (2016), *The Economic and Fiscal Consequences of Immigration*, Washington, DC.

Orrenius, P.M. and M. Zavodny (2010), *Beside the Golden Door: U.S. Immigration Reform in a New Era of Globalization*, Washington, DC: American Enterprise Institute for Public Policy.

Orrenius, P.M. and M. Zavodny (2014), "A Comparison of the U.S. and Canadian Immigration Systems", report for National Academy of Sciences, Board on Science, Technology and Economic Policy.

Peri, G. (2012). "Rationalizing US Immigration Policy: Reforms for Simplicity, Fairness and Growth", The Hamilton Project Discussion Paper No. 2012-01.

Peri, G. and C. Sparber (2009), "Task Specialization, Immigration, and Wages", *American Economic Journal: Applied Economics, American Economic Association* 1(3): 135–169.

Roemer, J. (2006), "The global welfare economics of immigration", *Social Choice Welfare* 27: 311–325.

Sinn, H.-W. (2005), *Ist Deutschland noch zu retten?,* Berlin: Ullstein Buchverlage.

Sweetman, A. and C. Warman (2010), "How Far Does the Points System Stretch? The Spouses of Skilled Worker Principal Applicants", in T. McDonald, E. Ruddick, A. Sweetman and C. Worswick (eds), *Canadian Immigration: Economic Evidence for a Dynamic Policy Environment*, Montreal and Kingston: McGill-Queen's University Press.

Sweetman, A. and C. Warman (2013), "Canada's Immigration Selection System and Labor Market Outcomes", *Canadian Public Policy* 39: S141–164.

Sweetman, A. and C. Warman (2014), "Former Temporary Foreign Workers and International Students as Source of Permanent Immigration", *Canadian Public Policy* 40(4): 391–407.

Veneri, C.M. (1999), "Can occupational labor shortages be identified using available data?", *Monthly Labor Review*, March: 15–21.

Zavodny, M. (2015), "Should countries auction immigrant visas?", *IZA World of Labor*.

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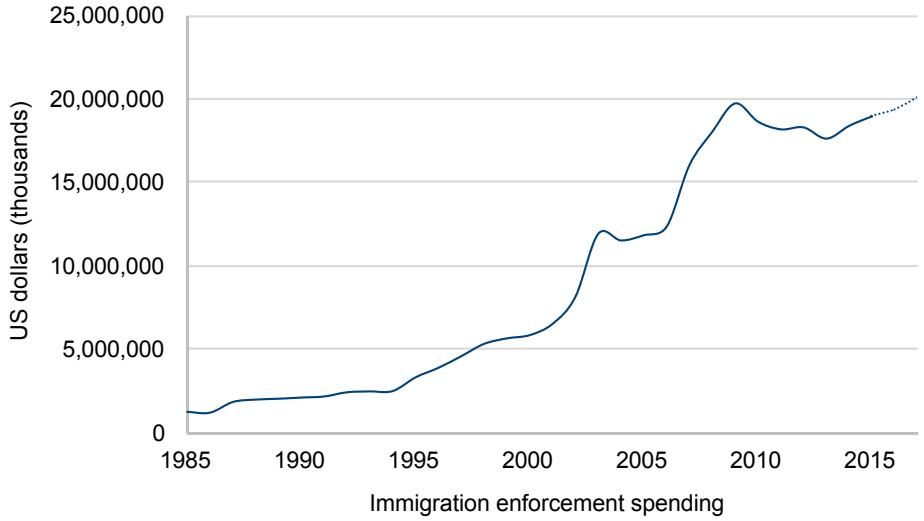
12 On the piecemeal approach to immigration enforcement: Evidence from the United States

Catalina Amuedo-Dorantes and Esther Arenas-Arroyo
San Diego State University; Queen Mary University of London

Introduction

Since 9/11, the United States had witnessed an unprecedented increase in spending on immigration enforcement, which has more than quadrupled over the period (see Figure 1). The intensification in immigration enforcement has occurred at all levels: federal, state and local. At the federal level, border programme operations such as Operation Streamline significantly raised the cost of being apprehended by adopting a 'zero-tolerance' approach that criminally prosecuted all illegal border-crossers. However, it was the inability of Congress to enact a Comprehensive Immigration Reform, in particular, that led a number of states and localities to take immigration matters into their own hands and adopt an increasingly tougher set of immigration measures. These measures have ranged from employment verification mandates requiring employers to verify the work eligibility of all hires, to a number of initiatives that engage local and state law enforcement personnel in immigration enforcement, including the 287(g) agreements, the Secure Communities programme and omnibus immigration laws (OILs), each of which is discussed below.

Figure 1 Immigration enforcement spending adjusted to 2015 dollars, 1985-2017



Notes: Data for the fiscal years between 1985-2002 were obtained from the budgets of the U.S. Immigration and Naturalization Service (INS) (https://www.justice.gov/archive/jmd/1975_2002/2002/html/page104-108.htm). The spending for the fiscal years 2003 to 2015 was obtained from the budgets of its succesor agencies – US Customs and Border Protection (CBP), US Immigration and Customs Enforcement (ICE) (we exclude the U.S. Visitor and Immigrant Status Indicator Tecnology (US-VISIT) programme since it is not possible to identify consistently over the last time period). To obtain the most accurate statistics, figures were taken from the Department of Homeland Security (DHS) Budgets in Brief two years after the application year. The figures for 2016 and 2017 are the enacted and budget amount from the last Budget in Brief available (2017) (https://www.dhs.gov/sites/default/files/publications/FY2017_BIB-MASTER.pdf).

In sum, what was typically the purview of the federal government suddenly fell into state and local hands. What have been some of the consequences of this piecemeal approach to immigration enforcement? What have we learned thus far from the adoption of a fragmented approach to immigration policy? Understanding the implications of such a policy tactic is critical for a number of reasons; for brevity, we will highlight a sample of these. First, these measures have, if anything, expanded over time, making the need to understand their impact only more salient. Second, the measures impact a sizeable share of the population and an even larger share of the workforce. The undocumented make up 5.1% of the US labour force (Krogstad and Passel 2015) – a percentage that is larger than their share of the population, as they are mostly working-age adults.[1] Third, approximately 8% of all US citizen children (that is, 4.5 million children) have at least

1 http://www.pewresearch.org/2013/04/17/unauthorized-immigrants-how-pew-research-counts-them-and-what-we-know-about-them/

one undocumented parent, which is twice as many as in 2002 (Passel et al. 2014). This implies that intensified enforcement is having a direct impact on a non-negligible share of US citizen children. Finally, even though undocumented immigrants are not eligible for welfare benefits, social security or healthcare services, they still paid $11.6 billion in state and local taxes in 2013 according to the Institute on Taxation and Economic Policy (Gee et al. 2016).

In what follows, we first review the most notable immigration enforcement initiatives at the local and state levels, then discuss what we have learned and are learning about their impacts. We then conclude with a discussion of policy implications and challenges.

Background on local and state level immigration enforcement

Before discussing some of the consequences of intensified immigration enforcement at the local and state levels, it is worth describing the various enforcement initiatives included under the umbrella of *interior* immigration enforcement.

At the *state* level, a number of states (starting with Colorado in 2006) have mandated the use of E-Verify – now an online electronic programme – by prospective employers to verify the work eligibility of new hires. Sometimes, employment verification mandates only require public employers, public agencies or contractors serving public institutions to adjust to the new hiring requirements. Other times, however, the employment verification mandates extend to all employers, including those in the private sector. The overall use of E-Verify has expanded rapidly over the past 15 years, with the number of employers enrolled in the programme rising by more than 500% from 1,064 in 2001 to 602,621 in 2016. In 2013, approximately 8% of employers in the United States were enrolled in E-Verify. [2,3]

2 https://www.uscis.gov/e-verify/about-program/history-and-milestones

3 According to the statistics of U.S. Businesses (SUSB) from the U.S. Census Bureau, there were 5,775,055 firms in 2013, and 482,694 employers were enrolled in E-verify.

In a more aggressive move, some states have enacted omnibus immigration laws (OIL) aimed not only at the identification of undocumented immigrants ineligible to work (as in the case of E-Verify mandates, which are often included as part of an omnibus immigration law), but also at the apprehension and deportation following a lawful stop by the police on the street and at school. The first OIL was enacted by the state of Arizona in 2010 (SB 1070). It became well-known for its 'show me your papers' clause, which authorised law enforcement personnel to stop any person under reasonable suspicion and request proper identification. Lack of documentation could lead to a fine and even jail time. Even more extreme was HB 56 in Alabama, which required schools to record the immigration status of students in order to identify undocumented immigrants. Several such clauses were later barred from implementation after being found unconstitutional.

But what has possibly yielded the largest number of apprehensions of undocumented immigrants has been the intensification of immigration enforcement at the local (e.g. county or city) level. A number of initiatives have engaged local law enforcement personnel in immigration enforcement, including the initial 287(g) agreements between Immigration Customs Enforcement (ICE) and local/state law enforcement, the Secure Communities programme and, more recently, the Priorities Enforcement Program.

The first of these programmes consisted of the 287(g) agreements signed between the local/state police and Immigration Customs Enforcement (ICE). Originally regulated in the 1996 Illegal Immigration Reform and Immigrant Responsibility Act (IIRIRA), the 287(g) agreements provided state and local officers with the authority to interrogate any immigrant, arrest him without warrant, and begin the process of his removal. This was the only programme that, through prior training by ICE, allowed state and local

law enforcement officials to enforce federal immigration law directly. The first 287(g) agreement was signed by the State of Florida in 2002, and the programme quickly expanded under its multiple types: jail, task and hybrid 287(g) agreements.[4]

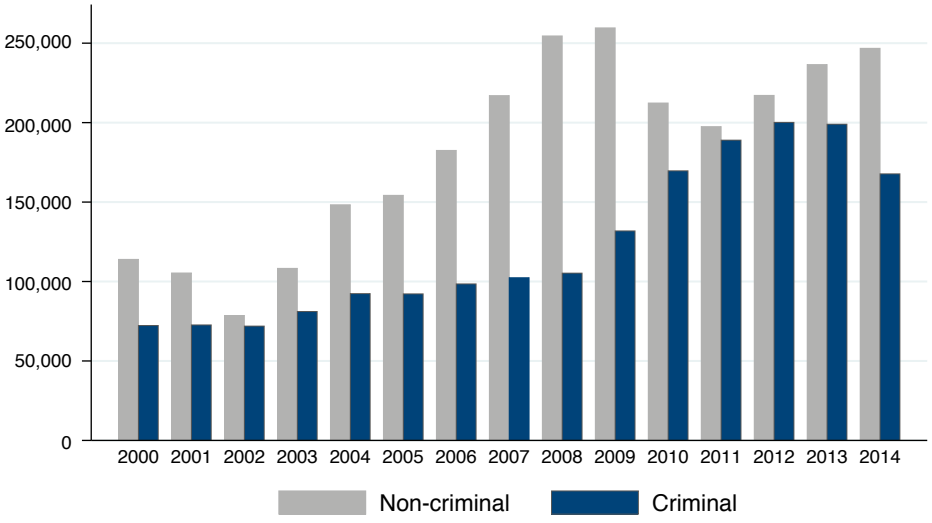
Owing in part to an escalating number of racial profiling complaints, along with rising costs of training local and state police, the Department of Homeland Security (DHS) started the Secure Communities programme in 2008. The programme, which came to substitute the old 287(g) agreements and was adopted by almost every county by 2014, was designed to empower ICE to prioritise the use of enforcement resources to target non-citizens who had committed a serious crime – as does its federal counterpart, the Criminal Alien Program (CAP). The Secure Communities programme attempted to identify non-citizens who had committed crimes by checking their fingerprints against the Federal Bureau of Investigation (FBI) dataset for criminal arrest and convictions, and the DHS dataset for immigration records. During the life of the programme, the number of fingerprints submitted increased from 828,119 (in 2009) to 6.9 million (in 2011) (Meissner *et al*. 2013). The Secure Communities programme was replaced by the Priority Enforcement Program (PEP) in July 2015.[5]

With the intensification of interior immigration enforcement, apprehensions and deportations have risen to record levels (see Figure 2). During President Obama's Administration alone, more than 1.8 million immigrants have been deported (out of an estimated total of 11 to 12 million immigrants since 2008) (Vaughan 2013, Passel and Cohn 2009). And while the number of criminal deportations has risen since 2009 following the Administration's emphasis on this group, non-criminal deportations continue to far exceed those of criminal aliens. This has raised concerns regarding the costs versus the benefits of such a piecemeal approach to immigration policy, as we shall note in what follows.

4 There are three types of 287(g) agreement: 'task force', 'jail enforcement' and a 'hybrid' programme. The 'task force' allows local and state officers to interrogate and arrest non-citizens during their regular duties in law enforcement operations. The 'jail enforcement' model permits local officers to question immigrants who have been arrested on state and local charges about their immigration status. Finally, some state and local agencies implement both types of programmes simultaneously (the 'hybrid' model).

5 https://www.ice.gov/secure-communities#tab1

Figure 2 Aliens removed by the U.S. Department of Homeland Security by criminal status, 2000-2014



Source: U.S. Department of Homeland Security (2004, 2014). U.S. Department of Homeland Security: Yearbook of Immigration Statistics: 2004 and 2014

Consequences of intensified interior immigration enforcement

For some time now, the literature has examined the consequences of intensified border enforcement by focusing on investments in border patrol manpower or special border patrolling operations (including, for example, Operation Streamline in 2005). The literature on state and local immigration enforcement, however, is much more recent. Early studies primarily focused on understanding how newly adopted measures – in particular, employment verification mandates, 287(g) agreements and OILs – impacted the residential location, employment and earnings of undocumented immigrants. For the most part, the studies showed that intensified enforcement measures were accompanied by the relocation of undocumented immigrants to areas with lesser enforcement (e.g. Good 2013, Watson 2013, Bohn *et al.* 2014, Amuedo-Dorantes and Lozano 2015, Orrenius and Zavodny 2016) and by worse labour market outcomes (e.g. Amuedo-Dorantes and Bansak 2012, Bohn and Lofstrom 2013, Kostandini *et al.* 2013). The drop in earnings of undocumented immigrants curtailed remittance flows (Amuedo-

Dorantes and Puttitanun 2014) as well as foreign direct investment in the United States (Amuedo-Dorantes *et al*. 2015). However, although they were supposed to target the apprehension and deportation of criminals in particular, the measures did not help reduce the crime rate (Miles and Cox 2014).

Because intensified immigration enforcement inevitably translated into exacerbated fear of deportation (Amuedo-Dorantes *et al*. 2013), researchers naturally began to worry about other unintended consequences of this policy approach, which not only negatively impacted the typically deported male head of a household, but also his extended US family. Some studies have shown how intensified immigration enforcement has impacted access by undocumented immigrants to Medicaid (Watson 2014) and other public services (Amuedo-Dorantes *et al*. 2013), even when their children are eligible.

In addition, since 23% of youths under the age of 18 resided in an immigrant household in 2009, and 29% of those children had at least one undocumented parent (Passel and Cohn 2011), the literature has started to focus on the collateral damage of intensified immigration enforcement on this demographic group. Attention to this group is crucial for various reasons. Close to 80% percent of these children are US born, accounting for 8% percent of all US citizen children (or 4.5 million children) in 2012. This is twice as high as the figure for 2002 (Passel *et al*. 2014). The deportation of mostly fathers and heads of households (Capps *et al*. 2016)[6] has resulted in single-headed households struggling to make ends meet (Dreby 2012). The children find themselves overburdened with adult responsibilities that interfere with their schooling progression (Menjivar 2006) and adversely impact their health (Brooks-Gunn *et al*. 1997, Brabeck and Xu 2010, Hagan *et al*. 2010, Delva *et al*. 2013). Amuedo-Dorantes *et al*. (2016) find that the intensification of interior immigration enforcement raised the likelihood of living in poverty by 4%, while Amuedo-Dorantes and Lopez (2015) find that it interfered with the school progression of Hispanic youths with likely unauthorised parents by

6 Using a small survey on children whose parents were arrested in three different worksite raids, Capps et al. (2007) provide descriptive evidence of how the deportation of a parent can result in children being left behind in the care of a single parent, an older sibling or other relatives. In a similar vein, Landale et al. (2011) provide descriptive statistics on the living arrangements of various groups of immigrants according to their race and ethnicity.

raising the likelihood of their repeating a grade between Kindergarten and 8th grade by approximately 14% percent, and raising the probability of older youths (aged 14 to 17) dropping out of school by 19%.

Policy discussion

One of the most contentious issues in the 2016 presidential election is whether immigration reform should include a path to citizenship for unauthorized immigrants in the United States, along with a *quid pro quo* toughening of immigration enforcement. Since 9/11, the United States has engaged in an unparalleled intensification of immigration enforcement at the local and state levels that has, inevitably, yielded a record number of deportations. Many of these deportations have involved youths who had migrated at a young age and their parents. In an attempt to address the negative consequences of family separations, President Obama issued temporary authorisation programmes that granted a renewable two-year reprieve from deportation proceedings and work authorisation to many of these youths (through the 2012 Deferred Action for Childhood Arrivals, or DACA) and their parents (through the 2014 Deferred Action for Parents of Americans and Lawful Permanent Residents, or DAPA, which is currently blocked from implementation).

Despite its short time in existence, DACA has been shown to lower the likelihood of a life in poverty for households headed by eligible individuals by 38%, hinting at the potential gains from even temporary authorisation programmes (Amuedo-Dorantes and Antman 2016). The question remains whether the DACA programme will continue after the upcoming presidential election and, if it does, whether its long-run impacts will differ. This is not a question we will be able to answer any time soon. In June 2016, the Supreme Court of the United States failed to revive DAPA and the extended DACA programmes announced by President Obama back in November 2014. The Supreme Court's inability to rule on the case only underscores the importance of the upcoming elections and the changing electorate. The new president will be responsible for the new Supreme Court's appointments, which may result in the court's ideological balance and the future of immigration policy being significantly altered. In addition, the stark divide in the immigration positions of the Democratic and Republican nominees is likely to influence an increasingly diverse electorate. It has been estimated that 2.25 million of

the 6.3 million US citizens living in the same household as a DAPA-eligible relative will be eligible to vote by 2020. Because this is one of the fastest growing segments of the electorate, and one that is likely to be responsive to immigration policy,[7] these citizens will inevitably constitute a rapidly rising influential and critical political force in future elections and, in turn, in a much awaited comprehensive immigration reform.

References

Amuedo-Dorantes, C. and F. Antman (2016), "Schooling and Labor Market Effects of Temporary Authorization: Evidence from DACA", forthcoming in the *Journal of Population Economics.*

Amuedo-Dorantes, C. and C. Bansak (2012), "The Labor Market Impact of Mandated Employment", *American Economic Review: Papers & Proceedings* 102 (3): 543–48.

Amuedo-Dorantes, C. and M.J. Lopez (2015), "Falling Through the Cracks? Grade Retention and School Dropout among Children of Likely Unauthorized Immigrants", *American Economic Review: Papers & Proceedings* 105(5): 598–603.

Amuedo-Dorantes, C. and F. Lozano (2015), "On the Effectiveness of SB1070 in Arizona", *Economic Inquiry* 53(1): 335–51. doi:10.1111/ecin.12138.

Amuedo-Dorantes, C. and T. Puttitanun (2014), "Remittances and Immigration Enforcement", *IZA Journal of Migration* 3:6. doi:10.1186/2193-9039-3-6.

Amuedo-Dorantes, C., T. Puttitanun and A.P. Martinez-Donate (2013), "How Do Tougher Immigration Measures Affect Unauthorized Immigrants?", *Demography* 50(3): 1067–1091. doi:10.1007/s13524-013-0200-x.

Amuedo-Dorantes, C., C. Bansak and A.A. Zebedee (2015), "The Impact of Mandated Employment Verification Systems on State-Level Employment by Foreign Affiliates", *Southern Economic Journal* 81(4): 928–946. doi:10.1002/soej.12042.

7 In 2016, second-generation Latinos will make up about one-third (32%) of eligible Latino voters, up from 27% in 2008 and 26% in 2000 (http://www.pewhispanic.org/2016/01/19/looking-forward-to-2016-the-changing-latino-electorate/).

Amuedo-Dorantes, C., E. Arenas-Arroyo and A. Sevilla (2016), "Interior Immigration Enforcement and Childhood Poverty in the United States", IZA Discussion Paper No. 10030. doi:10.1890/15-1217.1.

Bohn, S. and M. Lofstrom (2013), "Employment Effects of State Legislation against the Hiring of Unauthorized Immigrant Workers", in C. Card and S. Raphael (eds), *Immigration, Poverty and Socioeconomic Inequality*, New York: Russell Sage.

Bohn, S., M. Lofstrom and R. Steven (2014), "Did the 2007 Legal Arizona Workers Act Reduce the States Unauthorized Immigrants?", *The Review of Economics and Statistics* 96(2): 258–269.

Brabeck, K. and Q. Xu (2010), "The Impact of Detention and Deportation on Latino Immigrant Children and Families: A Quantitative Exploration", *Hispanic Journal of Behavioral Sciences* 32(3): 341–361. doi:10.1177/0739986310374053.

Brooks-Gunn, J., G.J. Duncan and N. Maritato (1997) "Poor Families, Poor Outcomes: The Well-Being of Children and Youth", in G.J. Duncan and J. Brooks-Gunn (eds), *Consequences of Growing Up Poor*, New York: Russell Sage Foundation.

Capps, R., H. Koball, J.D. Bachmeier, A.G. Ruiz Soto, J. Zong and J. Gelatt (2016), *Deferred Action for Unauthorized Immigrants Parents: Analysis of DAPA's Potential Effects on Families and Children*, Washington, DC: Migration Policy Institute and Urban Institute.

Capps, R., R.M. Castaneda, A. Chaudry and R. Santos (2007), *Paying the Price: The Impact of Immigration Raids on America's Children*, Washington, DC: The Urban Institute. doi:10.1017/CBO9781107415324.004.

Delva, J., P. Horner, R. Martinez, L. Sanders, W.D. Lopez and J. Doering-White (2013), "Mental Health Problems of Children of Undocumented Parents in the United States: A Hidden Crisis", *Journal of Community Positive Practices* 13(3): 25–35.

Dreby, J. (2012), "The Burden of Deportation on Children in Mexican Immigrant Families", *Journal of Marriage and Family* 74(4): 829–845. doi:10.1111/j.1741-3737.2012.00989.x.

Gee, L.G., M. Gardner and M. Wiehe (2016), *Undocumented Immigrants ' State and Local Tax Contributions*, Washington, DC: The Institute on Taxation and Economic Policy.

Good, M. (2013), "Do Immigrant Outflows Lead to Native Inflows? An Empirical Analysis of the Migratory Responses", *Applied Economics* 45(30): 4275–4397.

Hagan, J., B. Castro and N. Rodriguez (2010), "The Effects of U.S. Deportation Policies on Immigrant Families and Communities: Cross-Border Perspectives", *North Carolina Law Review* 88: 1799–1824.

Kostandini, G., E. Mykerezi and C. Escalante (2013), "The Impact of Immigration Enforcement on the U.S. Farming Sector", American Journal of Agricultural Economics 96(1): 172–192. doi:10.1093/ajae/aat081.

Krogstad, J.M. and J.S. Passel (2015), "5 Facts about Illegal Immigration in the U.S. | Pew Research Center", Fact Tank, Pew Research Center, 19 November (www.pewresearch.org/fact-tank/2014/11/18/5-facts-about-illegal-immigration-in-the-u-s/).

Landale, N.S., K.J. Thomas and J. Van Hook (2011), "The Living Arrangements of Children of Immigrants", The Future of Children 21(1): 43–70.

Meissner, D., D.M Kerwin, M. Chishti and C. Bergeron (2013), Immigration Enforcement in the United States : The Rise of a Formidable Machinery, Technical Report, Washington, DC: Migration Policy Institute.

Menjivar, C. (2006), "Liminal Legality: Salvadoran and Guatemalan Immigrants' Lives in the United States", American Journal of Sociology 111(4): 999–1037. doi:10.1086/499509.

Miles, T.J. and A.B. Cox (2014), "Does Immigration Enforcement Reduce Crime? Evidence from Secure Communities", Journal of Law and Economics 57(4).

Orrenius, P.M. and M. Zavodny (2016), "Do State Work Eligibility Verification Laws Reduce Unauthorized Immigration?", IZA Journal of Migration 5(1). doi:10.1186/s40176-016-0053-3.

Passel, J.S and D'V. Cohn (2009), "A Portrait of Unauthorized Immigrants in the United States", Hispanic Trends, Pew Research Center, Washington, DC.

Passel, J.S. and D'V. Cohn (2011), "Unauthorized Immigrant Population: National and State Trends , 2010", Pew Research Center, Washington, DC.

Passel, J.S, M.H. Lopez, D'V. Cohn and M. Rohal (2014), "As Growth Stalls, Unauthorized Immigrant Population Becomes More Settled", Pew Research Center, Washington, DC.

U.S. Department of Homeland Security (2004), *2004 Yearbook of Immigration Statistics*, Washington, DC.

U.S. Department of Homeland Security (2014), *2014 Yearbook of Immigration Statistics*, Washington, DC.

Vaughan, J.M (2013), "Deportation Numbers Unwrapped: Raw Statistics Reveal the Real Story of ICE Enforcement in Decline", Center for Immigration Studies, Washington, DC, October.

Watson, T. (2013), "Enforcement and Immigrant Location Choice", NBER Working Paper No. 19626, Cambridge, MA.

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13 Media exposure and international policymaking

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In a recent interview,[1] Barack Obama pointed out that globalisation is a fact that "we're not going to be able to build a wall around". His need to emphasise this point was the result of the protectionist stance taken by several of the candidates in the ongoing presidential campaign. Donald Trump's pledge to build a wall along the Mexican border and have it paid for by Mexico[2] will be remembered for years to come and has helped to propel him to the Republican nomination. Bernie Sanders' emphasis on how trade has led to gains concentrated among individuals at the very top of the income distribution, and to economic decline among large swaths of the US population, has put trade back on the agenda of Hilary Clinton, the Democratic nominee. To what extent do the arguments pursued in the recent campaign resonate with the broader public opinion on globalisation?

Much work has been done on understanding the determinants of individual preferences towards immigration and trade. The economics and political science literatures have emphasised the role of two main sets of determinants, which we can label as economic and non-economic factors. On the one hand, economic drivers have been shown to affect attitudes. In particular, labour market competition, together with welfare state considerations, have been analysed in detail in a large number of studies (e.g. Scheve and Slaughter 2001a,b, Mayda and Rodrik 2005, Mayda 2006, Facchini and Mayda 2009). The typical finding in this literature is that individuals whose jobs are more

1 "Obama Says U.S. Cannot Wall Itself Off From Economic Globalization", *The New York Times*, 22 July 2016.

2 "What Would It Take for Donald Trump to Deport 11 Million and Build a Wall?", *The New York Times*, 19 May 2016.

closely threatened by the winds of globalisation are more likely to oppose it. At the same time, competition for welfare state services plays a role in shaping preferences towards migration, but it is much less important when it comes to attitudes towards trade. As for the impact of non-economic determinants, several papers (e.g. Hainmueller and Hiscox 2006, 2007) have emphasised how group-related attitudes, national identity and cosmopolitanism play a key role in shaping views towards globalisation. A more recent literature has also highlighted the effect of amenities, at least on preferences towards immigration (Card et al. 2012).

As pointed out by Rodrik (1995), in a modern democracy public opinions are a key determinant of the 'demand' for economic policies, and they are expected to affect – together with other factors such as pressure group activities and intrinsic preferences of the policymaker – the equilibrium policy outcome. While some attempts taking a macro, cross-country perspective have been made to link public opinions to actual policy outcomes on migration (e.g. Facchini and Mayda 2008, 2010) and on trade (Kono 2008), much less is known about how public opinion directly affects actual policymaking behaviour within countries, and about the role that the media can play in shaping the responsiveness of politicians to the electorate. We tackle exactly this question in a recent paper, focusing on the US experience (Facchini et al. 2016).

Representatives are accountable on migration, not trade

Our analysis is carried out using 13 trade- and migration-related bills that have seen action on the floor of the US House of Representatives between 1986 and 2004. The trade bills cover a range of important measures introduced in this period, including the implementation of the Uruguay Round of the GATT and of significant preferential trade agreements such as the Canada-US Free Trade Area and the North American Free Trade Area. On migration, the bills included in our sample contain initiatives that have a potential impact on labour supply, such as the Illegal Immigration Reform and Responsibility Act of 1996 and the 1998 American Competitiveness and Workforce Improvement Act. We have collected data on individual representatives' roll call votes on these initiatives, which have then been matched with constituency-level indicators of public opinion on trade and migration from the American National Election Survey (ANES). To obtain an exogenous measure of the media coverage received by a local

representative's activities, we followed Snyder and Stromberg (2010) and used an indicator of the 'congruence' between a congressional district and the local media market. Congruence is defined using information both on the importance of the district as a market for a local media, and the importance of the local media as a supplier of information in the district. To understand Snyder and Stromberg's idea, consider two districts, A and B. In district A, the boundaries of the political unit coincide exactly with those of the market of the only local media serving it. District B is instead covered by two local outlets, and its audience is split equally between them. Moreover, district B represents half of the total sales of each of the two media outlets. Congruence in the case of district A takes a value of 1, whereas in the case of district B it takes a value of 0.5. Intuitively, given the same amount of space allocated to a local politician's activities, there will be greater coverage of the activities of district A's representative than of those of district B's representative.

As argued by Hess (1991) and Vinson (2003), local television and radio provide substantially less coverage of Congressmen's and Congresswomen's activities than local newspapers, and for this reason Snyder and Stromberg (2010) focus on local newspapers in their analysis. The basic idea behind their research design is that the 'economic geography' factors that shape the media market are different from the 'political geography' factors that determine congressional district boundaries. This is likely to be the case as congressional district barriers are drawn such that all districts in each state have the same population, representation is guaranteed to different racial groups, and so on. The boundaries of local newspapers markets are instead driven by other factors, such as distance from the newspaper's headquarters and the socioeconomic characteristics of the area's residents. Snyder and Stromberg show that as congruence increases, more information about the representative is made available to a district's resident.

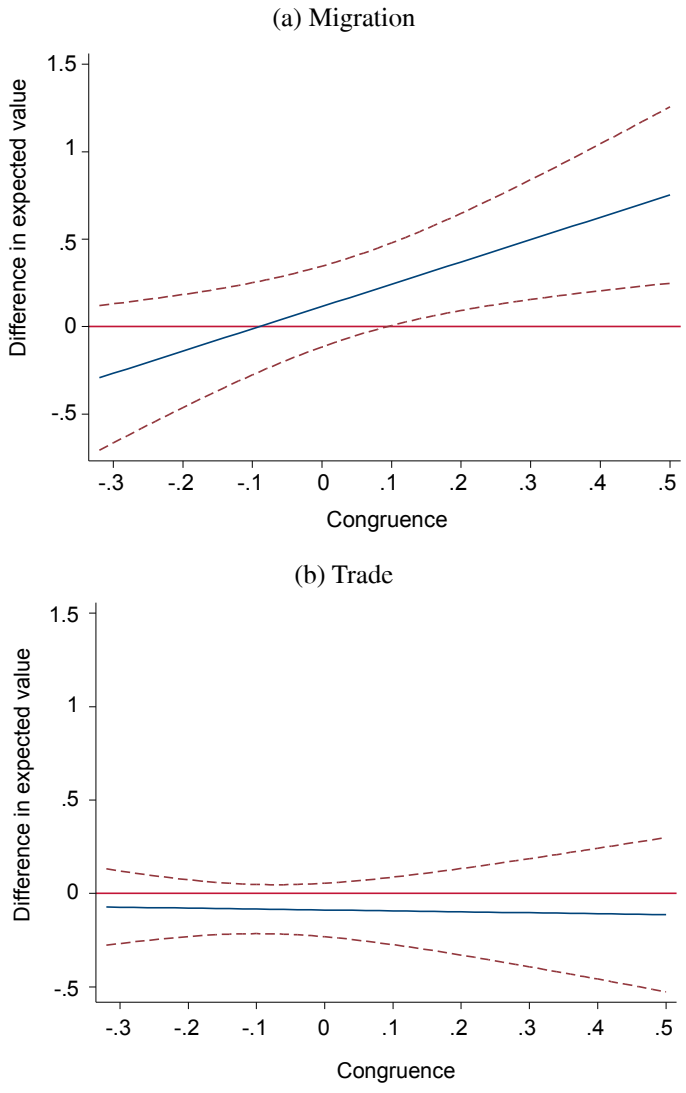
If agency models of electoral accountability are correct (Besley 2006), greater congruence will then lead, other things being equal, to greater responsiveness of the representative to the electorate's preferences. In other words, in the presence of greater information flows, a lobby or pressure group's attempts to influence policy will become more evident. Thus, if the lobby's interests are at odds with those of the district's majority, pandering to the lobby will become more costly from an electoral perspective.

We take this idea to the data, studying whether public opinion on migration and trade has a differential impact on the voting behaviour of the elected representative, depending on the congruence between the representative's district and local newspaper's market.

Our analysis delivers a very stark message. Members of the US House of Representatives respond to their electorate's preferences when it comes to migration policy, but not when it comes to trade policy. This result is robust and holds under a variety of specifications in which we include a rich array of district-level characteristics and state-specific trends. Our main findings are illustrated in Figure 1, in which we show how the marginal effect of public opinion on the representative's voting behaviour changes with congruence (the mean congruence is normalised to zero in the figure). Panel (a) focuses on migration, whereas Panel (b) illustrates the effect for trade.

As we can see, the marginal impact of a district's average opinion on support for migration is not statistically significant for low levels of congruence. For values of congruence about 0.1 points above the mean (i.e. for values of congruence around 0.46) – as in the case of Florida's 4th district in 1996 – the effect becomes positive and significant at the 5% level. As a result, a 10 percentage point increase in the share of the population that favours pro-migration policies would lead to a 2.4 percentage point increase in the probability of the representative casting a pro-migration vote. At the same time, for a congressional district with a congruence score of 0.34 above the mean (at the 90th percentile of the congruence distribution) – such as Pennsylvania's 5th congressional district in 1998 – the same increase in the share of the pro-migrant population would lead to a 5.5 percentage point increase in the probability of a pro-migration vote. On the other hand, it is apparent from panel (b) of the figure that, even for very high levels of congruence, public opinion does not significantly affect a representative's voting behaviour on trade policy.

Figure 1 Marginal effect of opinion on vote



Source: Facchini et al. (2016).

What drives this result?

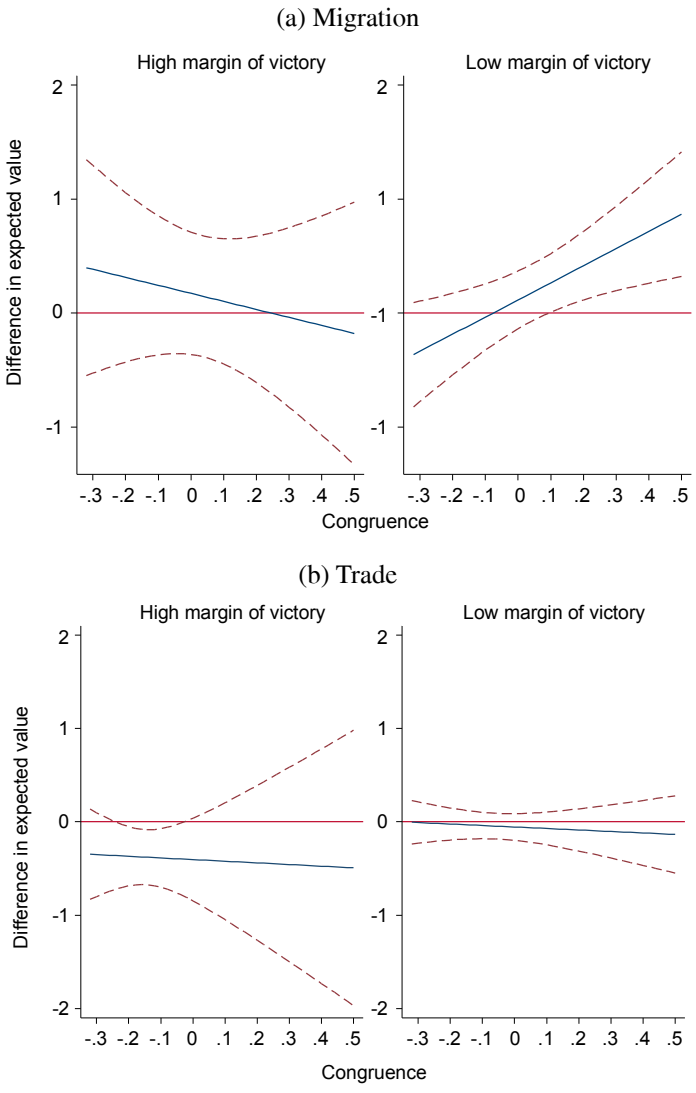
Our analysis so far has shown that officials elected in more congruent districts are more likely to follow the district's preferences on migration. What is the mechanism behind this finding? In light of existing models of political agency discussed above, electoral considerations are potentially very important. To investigate their role, we exploit the idea that if representatives respond to electoral pressures, they should adhere more strictly to the preferences of their constituents whenever they won their seat in a more closely contested election (Mian et al. 2010). To empirically assess this hypothesis, we allow for the effect of congruence to be heterogeneous across more and less competitive districts. We measure a district's electoral 'competitiveness' in two ways. First, we focus on the margin by which the politician won the seat, with a competitive district defined as one in which the representative in office has been elected with a 'small' margin of victory.[3] Second, we consider the frequency with which the winning party has changed over time in a given district. Specifically, we expect elections in 'swing' districts to be more competitive relative to congressional districts that are firmly Democratic or firmly Republican.[4] Our results are reported in Figures 2 and 3.

In Figure 2a, we illustrate the marginal effect of congruence for votes on migration, in districts with high (left panel) and low (right panel) margins of victory, respectively. As we can immediately see, opinion does not have any effect on the voting behaviour of representatives for any value of congruence when the past election was not close. On the other hand, in competitive districts, higher congruence leads to greater responsiveness of politicians to the preferences of their electorate. These results indicate that the average effect we have uncovered in Figure 1 is driven by competitive districts. Turning now to votes on trade, Figure 2b shows that constituents' opinions do not have an impact on politicians' voting behaviour in either competitive or non-competitive districts for any value of congruence.

3 In our benchmark analysis, the margin of victory is defined as small if it is less than one standard deviation higher than the average in that congressional election.

4 In our benchmark model, a swing district is defined as one in which the winning party has changed at least once in the last four congressional elections.

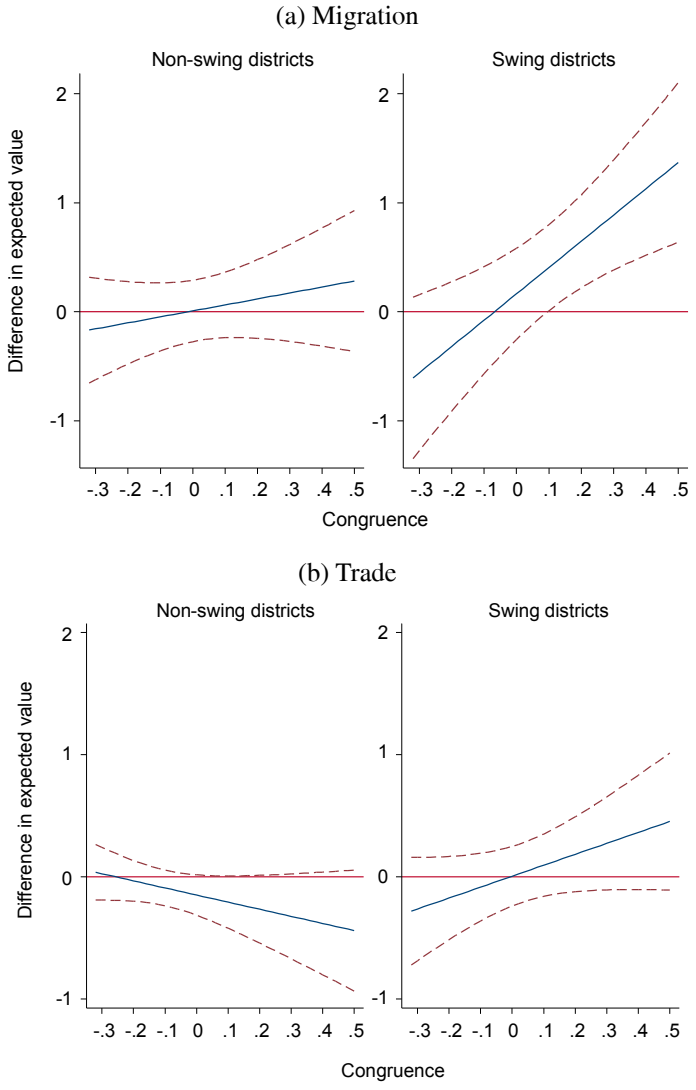
Figure 2 Marginal effects of opinion on vote, by margin of victory



Source: Facchini et al. (2016).

Figures 3a and 3b report the same results using our definition of 'swing' district. The patterns we uncover are broadly similar.

Figure 3 Marginal effects of opinion on vote, swing districts



Source: Facchini et al. (2016).

Why are representatives more accountable on migration than on trade?

Donald Trump's emphasis on limiting migration and the upheaval he has created in the past few months indicate that migration continues to be perceived as salient by the electorate. At the same time, a large literature suggests that trade has been a much less important issue in the period considered in our analysis. In fact, in a recent contribution using a survey carried out in 2006, Guisinger (2009) finds "...trade policy salience to be relatively low in terms of stated importance, in voters' knowledge of their representatives' policy positions...". Importantly, this pattern is confirmed if we use information from the ANES for the time period covered by our analysis. In particular, our data highlight that very few respondents did not have a well-defined opinion on migration (between 1% and 3% of the total), whereas the corresponding figure was between 25% and 45% for trade. Thus, one possible explanation for our findings is that media exposure can succeed in making a politician accountable to her electorate, but only if the issue is perceived to be important enough. If the renewed focus on international trade that has characterised the recent US presidential campaign persists, our results suggest that politicians might also be held accountable on this dimension in the future.

References

Besley, T. (2006), *Principled Agents? The Political Economy of Good Government*, The Lindahl Lectures, Oxford: Oxford University Press.

Card, D. C. Dustmann and I. Preston (2012), "Immigration, wages and compositional amenities", *Journal of the European Economic Association* 10: 78–119.

Facchini, G. and A.M. Mayda (2008), "From individual attitudes to immigration policy: Theory and Evidence", *Economic Policy* 56: 651–713.

Facchini, G. and A.M. Mayda (2009), "Individual attitudes towards immigrants: Welfare- state determinants across countries", *Review of Economics and Statistics* 91: 295–314.

Facchini, G. and A.M. Mayda (2010) "What drives immigration policy? Evidence from a survey of government officials", in I. Gang and G. S. Epstein (eds.), *Culture and Migration,* Frontiers of Economics and Globalization Volume 8, Singapore: World Scientific, pp. 605–648.

Facchini, G., T. Frattini and C. Signorotto (2016), "Mind what your voters read: Media exposure and international economic policy making", CEPR Discussion Paper No. 11282, London.

Guisinger, A. (2009), "Determining trade policies: Do voters hold politicians accountable?", *International Organization* 63: 533–557.

Hainmueller J. and M.J. Hiscox (2006), "Learning to Love Globalization: Education and Individual Attitudes Toward International Trade", *International Organization* 60: 469–498.

Hainmueller J. and M.J. Hiscox (2007), "Educated Preferences: Explaining Attitudes Toward Immigration in Europe", *International Organization* 61: 399–442.

Hess, S. (1991), *Live from Capitol Hill!*, Washington, DC: Brookings Institution.

Kono, D.Y. (2008), "Does public opinion affect trade policy?", *Business and Politics* 10(2).

Mayda, A.M. (2006), "Who is against immigration? A cross country investigation of individual attitudes towards immigrants", *Review of Economics and Statistics* 88: 510–530.

Mayda, A.M. and D. Rodrik (2005), "Why are some people (and countries) more protectionist than others?", *European Economic Review* 49: 1393–1430.

Mian A., A. Sufi and F. Trebbi (2010), "The political economy of the US mortgage default crisis", *American Economic Review* 100: 1967–1998.

Rodrik, D. (1995), "The Political Economy of Trade Policy", in G. Grossman and K. Rogoff (eds.), *Handbook of International Economics* (Volume 3), Amsterdam: North-Holland, pp. 1457-1494.

Scheve, K.F. and M.J. Slaughter (2001a), "Labor market competition and individual preferences over immigration policy", *Review of Economics and Statistics* 83: 133–145.

Scheve, K.F. and M.J. Slaughter (2001b), "What determines individual trade-policy preferences?", *Journal of International Economics* 54:267–292.

Snyder J.M. and D. Stromberg (2010), "Press coverage and political accountability", *Journal of Political Economy* 118: 355–408.

Vinson, D.C. (2003), *Local Media Coverage of Congress and its members*, Cresskill, NJ: Hampton.

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14 A democratic dividend from emigration?

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Introduction

Emigration can affect the political and institutional evolution of developing countries in many ways, starting from the self-selection of migrants' on political views (Hirshman's 'exit' effect) and ending in diasporas' involvement in domestic politics, for good or bad.[1] Another channel through which migrants can affect home country institutions is through 'political remittances', that is, the transfer of political norms and attitudes (regarding democracy, corruption, etc.) from host to home countries. The term 'political remittances' is the transposition to the political realm of the concept of social remittances (Levitt 1998). The general idea borrowed from the social remittances literature is that while abroad, migrants absorb new information and are exposed to new political institutions, attitudes and practices that can transform their own political views (e.g. Barr and Serra 2010, Cain et al. 1991, Luttmer and Singhal 2011),[2] which they then diffuse to their home communities through direct and indirect contacts with relatives, friends and other members of their home-based social networks (Levitt 1998, Shain 1999).

1 See Lodigiani (2016) for an overview of this literature.

2 Careja and Emmenegger (2012) and Doyle and Fidrmuc (2004) study migrant assimilation with regard to political attitudes in the context of Eastern Europe.

The notion has inspired a large body of research in demography, political science and economics. There is a rich qualitative and descriptive socio-political literature documenting the phenomenon, but the quantitative evidence is both scarce and weak. Still, this socio-political literature has a few important insights that can guide empirical research. First, 'destination matters' – if migrants are to transfer the political attitudes and institutional norms of their host countries, then depending on where they are they will remit different norms and values. Note that if migrants from countries with high overall demand for democracy choose to go to democratic destinations, then this creates an identification problem (reverse causality) that will be discussed below. Second, 'timing matters' – it takes time for individual preferences to evolve, and even more time for these preferences to be transferred and digested by the recipients in the home countries. The recent economic literature includes both cross-country comparisons and a number of country case studies. They converge in suggesting that emigration entails a significant democratic dividend when it is directed toward democratic countries (i.e. destination matters); careful country case studies moreover suggest that a good deal of the effect can be attributed to the transfer of political attitudes and preferences that after some time (i.e. time matters) also translate into political outcomes (in elections, for example) at home.

Emigration and democracy: Cross-country comparisons

In an influential paper, Spilimbergo (2009) used cross-country comparisons in a panel setting to show that foreign-trained individuals promote democracy in their home countries, but only if their foreign education was acquired in a democratic destination. While he does not identify the mechanisms at work, he suggests a number of possible channels (access to foreign media, acquisition of norms and values while abroad that diffuse at home upon return, willingness to preserve the quality of one's network abroad, etc.) that can be generalised to other migration experiences as well. This is precisely what Docquier et al. (2016) do – they estimate the effect of emigration on home-country institutions for all migrants, not just foreign students, and find that openness to migration as measured by the total emigration rate contributes to improved institutional quality; at the same time, and like Spilimbergo (2009), they show that all of the effect uncovered is due to emigration to democratic countries.

Both papers investigate the *overall impact* of emigration on home-country institutions. This overall effect is composed of the direct (or exit) effect of emigration – that is, the fact that emigrants may be positively self-selected in terms of education and preferences for democracy (which should translate into a negative impact on democracy at home) – and indirect effects such as political remittances or the role of diasporas. The two papers are similar in terms of methodology – they use dynamic panel regressions and similar dependent variables (i.e. indices of democracy such as the Polity IV index or the indices of Civil Liberties and Political Rights published yearly by the Freedom House), and try to confront the obvious endogeneity issue arising from the fact that bad political institutions can generate either more emigration (due to stronger push factors) or less emigration (due to repressive policies), creating a spurious correlation between the level of emigration and the quality of institutions. Beyond their focus on different emigrant populations (foreign students versus all migrants), the two papers differ in many other respects.

First, Spilimbergo (2009) uses data on the number of people with foreign training living either abroad or at home, making it impossible to know whether the effect uncovered is due to those staying abroad or to those who returned. In terms of analogy with monetary remittances, this is similar to trying to make a distinction between remittances *per se* (that is, money sent by migrants residing abroad) and repatriated savings upon return. Docquier et al. (2016), in contrast, use an emigration variable which consists of the lagged accumulated stock of individuals (aged 25 and over) born in the home country and living abroad, which would seem to exclude return migration as the main channel for the effect.[3]

Second, Spilimbergo's main result is the identification of destination-specific effects, with a positive coefficient obtained only when foreign education comes from a democratic country. In Docquier et al. (2016), the panel specifications use immigration

3 The migration data are taken from Bruecker et al. (2013). Focusing on 20 OECD destination countries, they computed emigration stocks and rates of the population aged 25 years and older by gender and educational attainment in five-year intervals from 1980 to 2010. The data are obtained by harmonising national censuses and population registers statistics from the receiving countries. On the whole, the 20 destination countries covered represent more than 90% of the OECD total immigration stock. A limitation of these data sets, however, is that they are silent on return migration; return migrants are simply part of the domestic population.

data to OECD destinations only, and given that these destination countries are very homogenous in terms of democratic performance, it makes it impossible to test for the effect of emigration to democratic versus non-democratic countries. However, in their cross-sectional specifications, they are able to use immigration data for the full sample of world countries and confirm that all of the positive effect of emigration on democracy is due to emigration to the democratic countries.

Finally, and most importantly, the main robust result in Spilimbergo (2009) is the positive coefficient of the 'democratic norm at destination' variable – a weighted average of democratic scores at destination which captures whether emigration is directed toward more or less democratic countries. The interpretation is that what matters for democratisation is whether students study in a democratic country, not how many of them do so. For this, one must interact this 'democratic norm at destination' variable with the number of foreign students; however, in all of Spilimbergo's specifications but one, this interaction term is not significant. In contrast, the main results in Docquier et al. (2016) are for the volume of migration, suggesting that whether a country has a 1% or 20% percent emigration rate makes a difference, not just whether its emigration is directed toward destinations with high or low democracy scores. In all of their specifications, emigration consistently turns positive and very significant. The long-run effect of emigration estimated in 2SLS cross-sectional and panel regressions stands between 1.2 and 1.5, depending on the specification.[4] These results are shown to be also robust across sub-samples (excluding oil countries, sub-Saharan African countries, or former Communist countries) and estimation methods. Interestingly, there is no apparent additional effect for skilled emigration.

Lodigiani and Salomone (2016) analyse another, more specific dimension of democracy: the role of women in politics as measured by the share of female members of the national parliament. In the spirit of the political remittances literature above, they hypothesise that international migration to countries where the share of women in the parliament is higher is likely to increase female parliamentary participation in the source country.

4 This means that a 10 percentage-point change in the emigration rate increases the standardized democracy indices (which range between – 1 and +1) by .12 to .15.

The authors' main variable of interest is the index of female parliamentary share, which is constructed as the difference in female parliamentary participation between host and home countries, weighted by the share of migrants to that host country on the overall population (as in Spilimbergo 2009). They include country of origin and time fixed effects, control for important economic and socio-political covariates such as female education, the type of electoral system or general wealth in the society, and address reverse causality using a gravity-based model to predict bilateral migration stocks (as in Alesina et al. 2016, Docquier et al. 2016 and Ortega and Peri 2014). Lodigiani and Salomone use information on the gender composition of national parliaments between 1960 and 2003 and bilateral migration data between 1960 and 2000, which they combine with other databases to construct a panel data set of 170 countries over five decades.

Their results suggest that international migration to countries with higher female parliamentary participation has a positive and significant effect on the female parliamentary share at origin (of about 1.7 percentage points for a 10-percentage point increase in migration). This holds under all specifications and is robust towards to excluding certain subsamples (such as post-communist, Muslim, and sub-Saharan African countries).

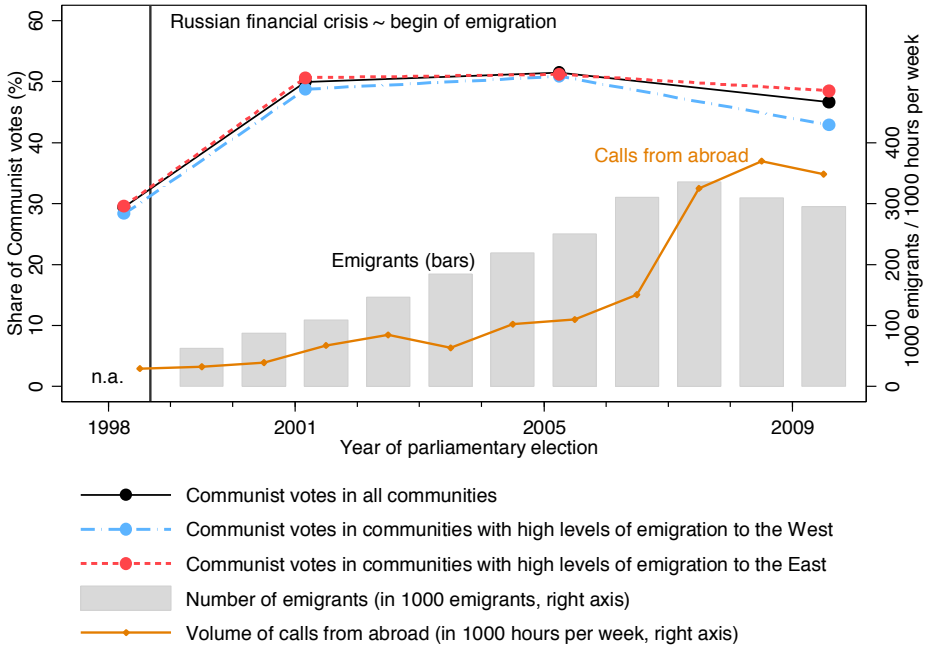
Overall, this cross-country literature demonstrates a total positive impact of emigration on home-country institutions. While the generality of the results is important in its own right, the main limitation of these studies is that they cannot disentangle the contribution to the overall effect of the potentially many channels involved. In particular, they cannot isolate the diffusion of democratic norms (namely, political remittances) from other candidate explanations. For this, more detailed analysis is required, at a more disaggregated level.

Country case studies

Country case studies generally use administrative or individual data (or both). The fact that they focus on smaller entities for which richer information is available allows for exploring alternative channels more deeply. The micro literature includes a number of country case studies. For example, Batista and Vincente (2011) document that households in Cape Verde with a migrant abroad, particularly those with a migrant to the United States, have a higher demand for political accountability. Pérez-Armendáriz and Crow (2010) find that individuals in Mexico in households with a migrant in the United States or Canada are more likely to vote. Chauvet and Mercier (2014) also focus on voter turnout and report a similar result for Mali. Pfutze (2012) studies Mexico's local elections of 2000 and shows that municipalities with many migrants in the United States are more likely to vote for opposition parties. These papers are all interesting and carefully executed, but they all suffer from one (or both) of the following issues: they study a country with a single foreign destination (as is the case for Mexico), making it impossible to analyse destination-specific effects; or they concern countries with very long migration traditions, making it impossible to control for pre-migration political preferences and outcomes.

These issues are addressed in Barsbai et al. (2016) in the case of Moldova. They take advantage of the natural experiment constituted by the Russian crisis of 1998, which sparked emigration out of Moldova, a country with previously no ties to the West and very little emigration even to other former Soviet Union republics, as it was highly specialised in agriculture and dependent on agricultural exports to Russia. This lack of export diversification is precisely why Moldova was hit hard by the crisis (much more than Russia). In the few years after the crisis, more than 20% of the workforce emigrated either 'east' to Russia (two thirds), or 'west' to the EU (one third). Interestingly, while certain Moldovan communities had predominantly westward emigration during that period and others had predominantly eastward emigration, politically these communities behaved in similar ways, that is, they had similar electoral behaviours. In particular, the share of votes for the Communist Party, which was in power between 2001 and 2009, were very close in the elections of 1998, 2001 and 2005, and it is only in the 2009 and 2010 elections that the two types of communities (from an emigration viewpoint) started to diverge politically, as shown of Figure 1.

Figure 1 Communist votes, number of emigrants in stocks, and volume of calls from abroad to Moldova, 1998-2009



Notes: The black line shows the unweighted average share of Communist votes across all communities. The blue and red lines show how communities with high levels of emigration to the West and communities with high levels of emigration to the East deviate from the overall trend. We plot residual shares of Communist votes controlling for the same set of pre-migration community-level variables as our baseline specification (see column 3 of Table A5) apart from the 1998 election results. Communities with high levels emigration to the West (East) are defined as having an above median prevalence of westward (eastward) migration and above 50 percent share of westward (eastward) migrants among all migrants. Bars show the overall number of emigrants in stocks (in 1000). Data come from yearly waves of the Moldovan Labor Force Survey. Pre-2006 numbers of emigrants are adjusted to account for a change in the sampling method of the Moldovan Labor Force Survey. Data on emigration from Moldova before 1999 are not available. The first wave of the Moldovan Labor Force Survey was conducted in 1999, just after the unexpected Russian financial crisis hit Moldova in late 1998 and triggered the first big wave of emigration. Information on destination countries is not available in pre-2006 waves. The same trend in the number of migrants is observable using data on Moldova immigrants from major destination countries. In 1998, for example, only 15 Moldovan immigrants were registered in Italy. This number increased to 40,000 by 2004. A similar development occurred in other destination countries such as Greece, Portugal and Spain (see footnote 10 for sources and more details). The orange line shows the volume of international calls to Moldova (in 1000 hours per week). Data come the International Traffic Database compiled by Telegeography.

Source: Figure 1 in Barsbai et al. (2016).

Barsbai et al. (2016) explore the reasons behind this divergence and show that it can be 'causally' explained by the differential effects of eastward versus westward emigration. They show that emigration to Western Europe in the late 1990s and early 2000s substantially affected electoral outcomes in the Moldovan national elections of 2009 and 2010, increasing the share of votes for democratic parties and reducing that of the then-ruling Communist Party (and vice versa for emigration to Russia and other

Eastern European destinations). The effect was strong enough to overturn the election results (which were won by a coalition of democratic, pro-European parties by a short margin). They also provide suggestive evidence that the observed effects likely work through the diffusion of information and of norms from abroad.

Note that the above results cannot be explained by the self-selection of liberal individuals into emigration to the West; such bias would work the other way round, that is, it should increase, not decrease, the share of votes for the communists where there is more westward emigration (as liberal-minded voters would have voted against the communists had they stayed instead of emigrating). However, at the community level this bias may still exist, meaning that individuals living in more liberal communities tend to emigrate more to the West. In order to tackle this problem, the authors control for pre-emigration electoral outcomes and thus measure the change in electoral outcomes driven by emigration. They also control for a rich set of geographic and demographic (including ethnic composition) community characteristics, the intensity of the economic shock following the Russian crisis, and a district fixed effect.

Table 1 summarises the main results from their analysis. The first three columns investigate the relationship between migration patterns and Communist votes in the parliamentary election of July 2009. The columns gradually expand the set of control variables and check the robustness of the results against potentially important confounders.

The interpretation of the coefficients is straightforward as both migration prevalence and share of votes are measured in percentages: a one percentage point increase in the community prevalence of westward migration reduces the Communist vote share by about 0.6 percentage points. The stepwise inclusion of district fixed effects using smaller (grid-generated) geographical units slightly lowers the magnitudes, but does not affect the significance of the coefficients of interest. Additionally, the authors find that electoral divergence across communities only sets in with a time lag, supporting their hypothesis about the diffusion of values channel. This is further supported by the fact that the effect on electoral outcomes is strongest for communities with a large share poorly educated and growing up under the Soviet regime, where the transmission of values has the largest informational value.

Table 1 East/west migration and general election results in Moldova, July 2009

	Share of votes for the Communist Party (%)			Share of votes for opposition parties (%)			
	Basic controls (1)	Plus pre-migration election results (2)	Plus night-time light (full model) (3)	Liberal Democratic Party (4)	Liberal Party (5)	Democratic Party (6)	Party Alliance Our Moldova (7)
Prevalence of emigration to the West (%)	-0.70***	-0.63***	-0.63***	0.40***	0.24**	0.08	-0.16
	(0.20)	(0.18)	(0.18)	(0.13)	(0.11)	(0.12)	(0.15)
Prevalence of emigration to the East (%)	0.44**	0.39**	0.39**	-0.07	-0.17**	-0.07	-0.01
	(0.17)	(0.16)	(0.16)	(0.09)	(0.07)	(0.08)	(0.11)
Basic controls	yes	yes	yes	yes	yes	yes	yes
Pre-migration election results	-	yes	yes	yes	yes	yes	yes
Night-time light	-	-	yes	yes	yes	yes	yes
District fixed effects	yes	yes	yes	yes	yes	yes	yes
Number of observations	848	848	848	848	848	848	848
R^2	0.78	0.82	0.82	0.56	0.66	0.42	0.37

Notes: The table reports OLS estimates for 848 Moldovan communities. The dependent variables are the vote shares of different parties in the July 2009 parliamentary election at the community level (in percent). Standard errors clustered at the district level in parentheses. *** denotes statistical significance at the 1 percent level, ** at the 5 percent level, and * at the 10 percent level.

Conclusion

The main conclusion to draw from the literature on political remittances reviewed above is that there is a democratic dividend from emigration. This has strong policy implications for sending and receiving countries. For sending countries' governments, this democratic dividend may be welcome, or not. In the latter case, an autocratic government may well be inspired to prevent communication between emigrants with their relatives, discourage return, or prevent emigration in the first place. And indeed, countries such as China (mostly until the 1990s), the Soviet Union, Cuba, North Korea, Iran or (nowadays) Venezuela have experienced various combinations of such restrictive policies. From the perspective of receiving countries, the main implication is that immigration policy also has a diplomatic dimension. This has not yet been recognised by most governments, but has long been recognised by others. For example, the US government created a number of visiting and exchange programmes – such as the Fulbright Program and the Exchange Visitors Program (the J-1 visa) – with the explicit objective of using these as part of the US public diplomacy efforts, bringing people (even temporarily) to the United States, exposing them to US institutions, and then counting on this transformative experience to disseminate American values and democracy throughout the world. According to the literature reviewed here, this would seem a good use of US taxpayer money.

This being said, it will take more than simply bringing migrants from Libya, the Donbass or Syria to the West and exposing them to Western institutions and political culture for democracy to flourish in the Middle East or Eastern Ukraine. Exposure to democratic institutions, and the ability to transfer them through communication and return migration are necessary for political remittances to take place. But it could also be that bilateral variables such as geographic and cultural proximity between home and host countries, the degree of integration of immigrants, or the circumstances that drove migration in the first place (civil war, revolution, economic drivers, etc.) matter as well. It will be an important task for future research to inform us on the conditions required for a democratic dividend from emigration to materialise.

References

Alesina, A., J. Harnoss and H. Rapoport (2016), "Birthplace diversity and Economic Prosperity", *Journal of Economic Growth* 21: 101–138.

Barsbai, T., H. Rapoport, A. Steinmayr and C. Trebesch (2016), "The effect of labor migration on the diffusion of democracy: evidence from a former Soviet Republic", *American Economic Journal: Applied Economics*, forthcoming.

Barr, A. and D. Serra (2010), "Corruption and culture: An experimental analysis", *Journal of Public Economics* 94(11): 862–869.

Batista, C. and P.C. Vicente (2011), "Do migrants improve governance at home? Evidence from a voting experiment", *The World Bank Economic Review* 25(1): 77–104.

Bruecker, H., S. Capuano and A. Marfouk (2013), "Education, gender and international migration: insights from a panel dataset 1980-2010", mimeo, IAB Nuremberg.

Cain, B., R. Kiewiet, C. Uhlaner (1991), "The Acquisition of Partisanship by Latinos and Asian Americans", *American Journal of Political Science* 35(2): 390–422.

Careja, R. and P. Emmenegger (2012), "Making Democratic Citizens The Effects of Migration Experience on Political Attitudes in Central and Eastern Europe", *Comparative Political Studies* 45(7): 875–902.

Chauvet, L. and M. Mercier (2014), "Do return migrants transfer political norms to their origin country? Evidence from Mali", *Journal of Comparative Economics* 42(3): 630–651.

Docquier, F., E. Lodigiani, H. Rapoport and M. Schiff (2016), "Emigration and Democracy", *Journal of Development Economics* 120: 209–223.

Doyle, O. and J. Fidrmuc (2006), "Who favors enlargement?: Determinants of support for EU membership in the candidate countries' referenda", *European Journal of Political Economy* 22(2): 520–543.

Levitt, P. (1998), "Social remittances: Migration driven local-level forms of cultural diffusion", *International Migration Review* 32(4): 926–948.

Lodigiani, E. (2016), "The effect of emigration on home-country political institutions", *IZA World of Labor*, forthcoming.

Lodigiani, E. and S. Salomone (2015), "Migration-Induced Transfers of Norms: The Case of Female Political Empowerment", Department of Economics Working Paper No. 19, Ca' Foscari University of Venice.

Luttmer, E.F.P. and M. Singhal (2011), "Culture, Context and the Taste for Redistribution", *American Economic Journal: Economic Policy* 3(1): 157–179.

Ortega, F. and G. Peri (2014), "Openness and income: the role of trade and migration", Journal of International Economics 92(2): 231–251.

Pérez-Armendariz, C. and D. Crow (2010), "Do Migrants Remit Democracy? International Migration, Political Beliefs, and Behavior in Mexico", *Comparative Political Studies* 43(1): 119–148.

Pfutze, T. (2012), "Does migration promote democratization? Evidence from the Mexican transition", *Journal of Comparative Economics* 40(2): 159–175.

Shain, Y. (1999), *Marketing the American creed abroad: Diasporas in the US and their homelands,* Cambridge, UK: Cambridge University Press.

Spilimbergo, A. (2009), "Democracy and Foreign Education", *American Economic Review* 99(1): 528–543.

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15 Does immigration affect election outcomes? Evidence from the United States

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Introduction

The topic of international migration increasingly occupies the headlines of newspapers and television news shows – one recent example being the refugee crisis in Europe. Political leaders take note of that and often use it to their political advantage. In the United States, the aggressive stance of Republican candidates towards (undocumented) immigrants characterised the debates in the 2016 presidential primaries. In Europe, the recent success of far-right parties[1] has been linked to the belligerent positions of their politicians against refugees. That migration has a defining effect on political outcomes has been pointed out in the literature (Ortega 2005) and, as noted above, politicians are certainly aware of that. Yet, only recently has the empirical literature in economics and political science started to look systematically at the impact of immigration on the electoral success of different political parties.

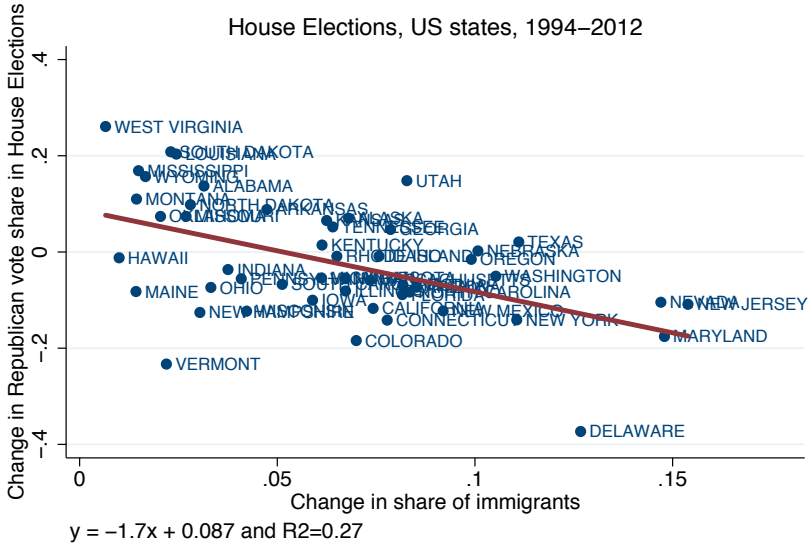
Four recent papers focus on Italy (Barone et al. 2014), Austria (Halla et al. 2012, Steinmayr 2016) and the city of Hamburg in Germany (Otto and Steinhardt 2014) and find that far-right parties stand to gain votes from more immigration. The anti-immigration stance of those parties, it appears, has become more appealing to voters

1 For example, in the first round of regional elections in France in 2015 and in presidential elections in Austria in 2016, the far-right parties (Front National and FPOE, respectively) obtained the highest national vote share with 27.7% and 35.1%, respectively.

as immigrants have grown to be a larger local presence. But is this true in the United States? Are voters in a country built on successive generations of immigrants, driven to vote Republican because of increasing immigrant pressure? In a recent paper, we analyse the link between migration to the United States and the share of votes for the Republican and Democratic parties in every election between 1994 and 2012 (Mayda et al. 2016). To that end, we exploit the large variation of immigrant flows across states and years and the corresponding electoral outcomes. We use data from the Current Population Survey merged with the National Library of Congress Election data and estimate the causal effect of immigrants on the share of votes for the two parties. We show that, on average, immigration to a US state *decreases* the electoral success of the Republican Party, especially in the House elections.

Figure 1 plots the simple correlation between the change in the share of Republican votes between 1994 and 2012 and the change in total immigrants as a fraction of the adult population during the same period across US states. The visual impression is clear and confirmed by the statistical significance of the regression coefficient: there is a negative and high correlation between the growth in the immigrant share of the population of a state and its share of Republican votes.

Figure 1 Correlation between the change in the Republican vote share and the change in the immigrant population share



Citizen and non-citizen immigrants

One crucial element to understand the effect of immigrants is to decompose their impact on votes into two channels, each captured by a specific group of immigrants. The first channel is related to the direct political role of immigrants as voters. As they become naturalised, immigrants affect elections to the extent that they vote differently from natives. The second channel, instead, captures the indirect political effect of immigration working through its impact on existing voters' political preferences. It is likely that voters' perception of immigration is made more acute by inflows of non-citizen immigrants, given that their socioeconomic characteristics differ markedly from those of voters. Immigration, therefore, may have different impacts depending on the balance of immigrant citizens and non-citizens and on how strong the voting response of citizens is to their presence.

In the United States, the media and political analysts have focused mainly on the direct effect, pointing out the potential adverse impact that migrants can have on the electoral success of the Republican Party, as immigrants seem more likely to vote for the Democratic Party. Some political commentators even see an inevitable demise of the Republican Party, also known as the Grand Old Party, in the long run, as first-generation immigrants become more numerous and vote for the Democrats. We confirm this prediction by showing that, *on average*, immigration to the United States has a significant and negative impact on the Republican vote share. In addition, when we distinguish between the effect of naturalised and non-naturalised immigrants, we find a negative and significant effect of those naturalised on the share of Republican votes in House elections.

An important aspect of the political effect of migration, which has received less attention in the US debate, is that native votes also can be affected by the increase in the share of immigrants, through the indirect channel described above. Our empirical analysis shows that this is indeed the case. We find that Republicans gain in House elections when the share of non-citizen migrants increases *and* this share is initially large.[2]

2 This is consistent with Baerg et al. (2014), who estimate a negative impact of unauthorised workers on votes to the Democrats in the US state of Georgia, using variation across counties.

Table 1 Republican vote share, citizen and non-citizen immigrants

OLS, House Elections, 1994-2012

	(1)	(2)	(3)	(4)	(5)
Variables	All election types	HE	HE-seats	HE - quad	HE seats - quad
Share of non-citizen immigrants	-0.100	-0.483	-1.584	-1.815***	-5.252***
	[0.329]	[0.390]	[1.140]	[0.568]	[1.601]
Share of non-citizen immigrants				6.838***	18.83***
squared				[1.968]	[6.231]
Share of citizen immigrants in	-0.740***	-0.975***	-2.652***	-1.119***	-3.049***
voting population	[0.256]	[0.255]	[0.787]	[0.271]	[0.766]
Constant	0.206	-0.0480	-1.186	0.0219	-0.994
	[0.277]	[0.309]	[0.729]	[0.307]	[0.705]
Control variables	yes	yes	yes	yes	yes
Election fixed effects	yes	no	no	no	no
State fixed effects	yes	yes	yes	yes	yes
Year fixed effects	yes	yes	yes	yes	yes
Observations	1,277	490	490	490	490
R-squared	0.508	0.804	0.723	0.808	0.728

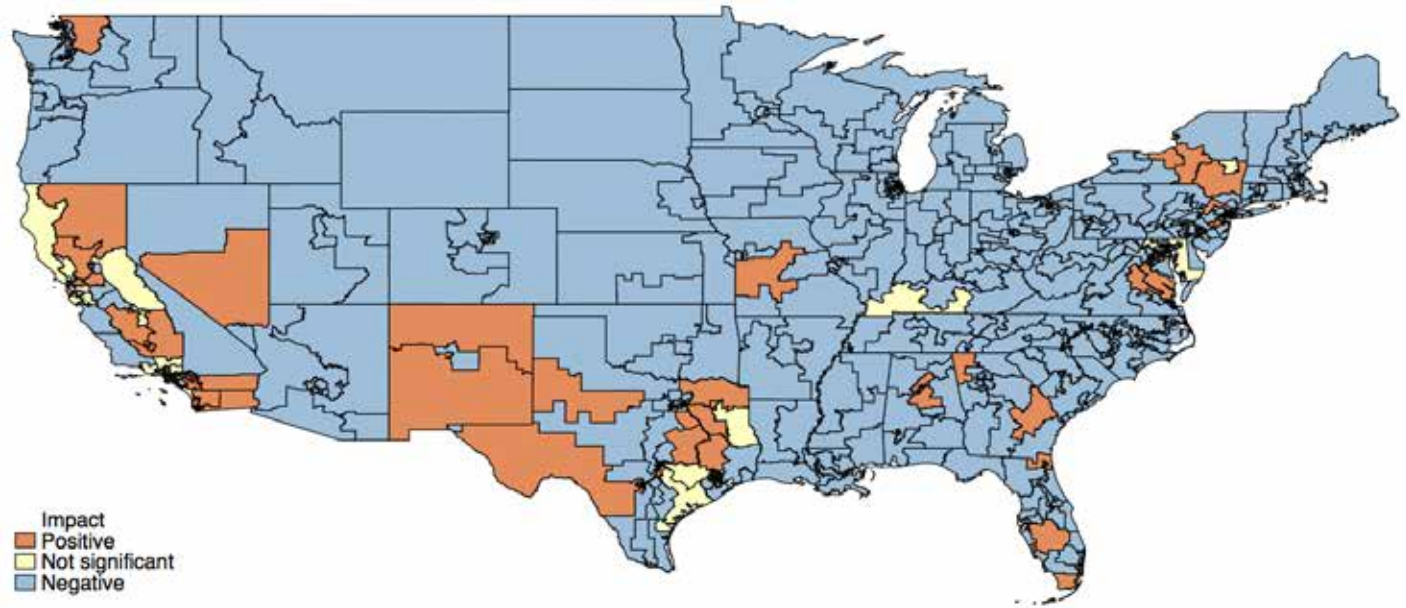
Note: The dependent variable is the Republican vote share. We distinguish between four types of elections: Presidential election (PE), Senate elections (SE), House elections (HE) – where we distinguish between vote percentage (HE-perc.) and percentage of seats (HE-seats) – and Gubernatorial elections (GE). The sample period is 1994 to 2012. Each regression is weighted by the population of the state. All regressions include state as well as year fixed effects. Standard errors in parentheses (clustered by state): ***, **, * indicate the statistically significant difference from zero at the 1%, 5% and 10% levels, respectively.

Overall, our results (see Table 1) are consistent with naturalised migrants being less likely to vote for the Republican Party than native voters, and with native voters' political preferences moving in favour of the Republican Party when the share of non-citizen immigrants grows (but only in areas with a *high* initial non-citizen immigrant share of at least 13%).[3] According to Current Population Survey (CPS) data as of 2012, only in five US states (California, Nevada, New Jersey, New York and Texas) was this share was sufficiently high to push natives towards the Republican Party. For the other states, the share of non-naturalised immigrants in the population was less than 13% in 2012 (and it still is), and the corresponding impact on Republican votes of non-citizen immigrants was null to negative. At a more disaggregated level, using estimates of the non-citizen immigrant share based on the American Community Survey for the 114th Congress, we find that only 55 out of 434 Congressional districts (fewer than 13%) had a large enough share of non-citizens to produce a positive impact on votes received by Republicans (see Figure 2).

3 Note that in the period we analyse (1994-2012), the non-citizen migrant share ranges across states from 0 and 0.224. The average across states in the same period is 0.054.

Figure 2 Marginal effect of an increase in non-citizen immigrants on the Republican vote share across congressional districts, 2012

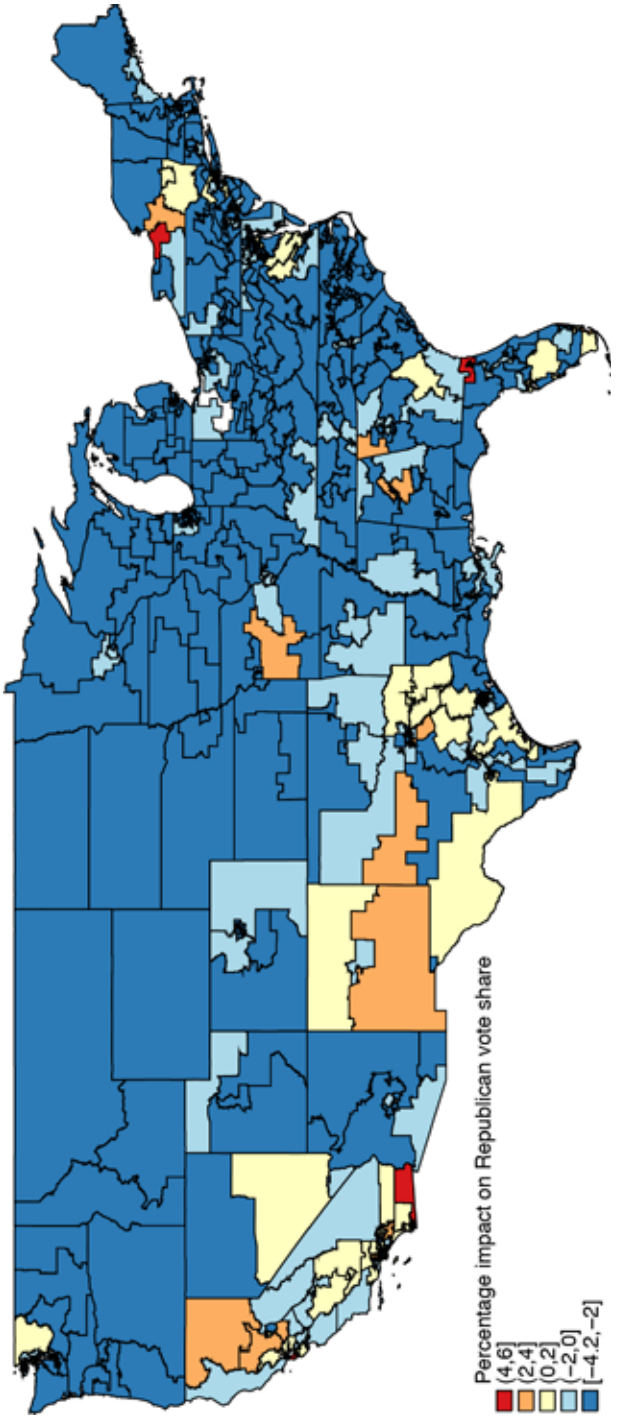
(a) Impact of non-citizen immigrants on the Republican vote share (95% confidence)



Note: This map shows whether the impact of an increase of non-citizen immigrants by one percent of the population on the percentage of republican vote is significantly positive, not significant or significantly negative.

Figure 2 (contd.)

(b) Continuous impact of non-citizen immigrants on the Republican vote share at point estimate



Note: This map shows the estimated impact of an increase of non-citizen immigrants by one percent of the population on the percentage of republican vote.

Channels of the effect of non-citizen immigrants on native voting

The voting preferences of the electorate can be affected by (non-citizen) migrants through several channels. The first channel works though the labour market and is related to the impact of (non-citizen) immigrants on native workers' perceived earning opportunities. Our results show that an increase in the (non-citizen) immigrant share favours Republicans in states with a large population of unskilled voters, which is consistent with non-citizen immigrants competing more directly with such voters. The second (welfare state) channel captures the idea that immigrants impact the destination country's government budget by paying taxes, receiving welfare transfers and using public goods. Consistent with this channel, we find evidence that in states where voters are richer, an increase in the share of non-citizen immigrants favours Republicans. This is in line with the fact that non-citizen immigrants are, on average, poorer than voters, so their arrival may push up tax rates, which hurts rich voters the most. Finally, the non-economic channel relates to the social effects of immigration on culture, social norms, crime and security. We find that an increase in the non-citizen migrant share favours Republicans when cultural dissimilarity between voters and (non-citizen) immigrants is high.

Reconciling the evidence from Europe

As mentioned above, we find that, on average, immigration to the United States has a negative and significant impact on the Republican vote share. Yet, empirical evidence from some European countries shows exactly the opposite, i.e. that immigrant inflows *improve* the electoral success of right-wing parties (Halla et al. 2012, Barone et al. 2014, Otto and Steinhardt 2014). Our results suggest one possible explanation for the difference between the European and US findings. Differentiating between citizen and non-citizen migrants, we show that the political effect of immigration crucially depends on the extent to which immigrants can participate in the political process. In Europe, naturalisation rates and immigrant political participation are low and slow to achieve, hence the indirect political effect of immigration working through voters'

preferences prevails. In the United States, however, where the naturalisation rate is high and integration in the political system is faster, the direct effect of immigrants is sizable and dominates.[4]

Implications for the political landscape in the US

Looking at the debate surrounding immigration policy reform in the United States, one message is clear. For the most part, Republicans are opposed to reforms, especially if they include a path to citizenship for currently undocumented immigrants. In addition, during elections, the tendency among Republicans is to talk 'tough' about the presence of undocumented immigrants. Our results shed light on both these issues. First, naturalised immigrants are a liability for conservative politicians, as they tend to vote for liberal parties. Republicans therefore have little incentive to turn 11 million undocumented immigrants into (potential) voters for the Democratic Party. At the same time, the presence of undocumented immigrants and blaming them for negative economic and social outcomes is the *raison d'être* of some conservative politicians. The empirical evidence discussed in this chapter shows that vocal anti-immigration Republicans in the United States flourish in localities and times characterised by a high non-citizen immigrant share. However, the political returns of making undocumented immigration a salient issue may be limited – according to our calculations, the non-citizen immigrant share is only high enough to help Republicans in a handful of states.

References

Baerg, N., J.L. Hotchkiss and M. Quispe-Agnoli (2014), "Unauthorized Immigration and Electoral Outcomes", Andrew Young School of Policy Studies Research Paper, Georgia State University.

4 According to the American Community Survey (ACS), in 2008 the US naturalisation rate was 43%. Naturalisation rates for the same year were lower in many European countries (14% in Italy and 34% in Austria, for example) (Reichel 2012).

Barone, G., G. De Blasio and P. Naticchioni (2016), "Mr. Rossi, Mr. Hu and Politics: The Role of Immigration in Shaping Natives' Political Preferences", *Journal of Public Economics* 136: 1–13.

Halla, M., A.F. Wagner and J. Zweimuller (2012) "Does Immigration into Their Neighborhoods Incline Voters Toward the Extreme Right? The Case of the Freedom Party of Austria", IZA Discussion Paper No. 6575, Bonn.

Mayda, A.M., G. Peri and W. Steingress (2015) "Immigration to the U.S.: A problem for the Republicans or the Democrats?", CEPR Discussion Paper No. 11001, London.

Ortega, F. (2005), "Immigration quotas and skill upgrading", *Journal of Public Economics* 89: 1841–1863.

Otto, A. H. and M.F. Steinhardt (2014), "Immigration and election outcomes: Evidence from city districts in Hamburg", *Regional Science and Urban Economics* 45: 67–79.

Reichel, D. (2012), "Regulating Political Incorporation of Immigrants – Naturalisation Rates in Europe", ICMPD Working Paper No. 4, Vienna.

Steinmayr, A. (2016), "Exposure to Refugees and Voting for the Far-Right: (Unexpected) Results from Austria", IZA Discussion Paper No. 9790, Bonn.

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The refugee crisis in Europe, the campaign that led to the vote for the 'Brexit' of the UK from the EU, and the latest presidential race in the US are just three examples of the role played by migration in the current political and media debate.

The debate is often harsh and polarised. It oscillates from calls for more open borders to promises to build new fences, contrasting the views of those who emphasise the advantages and benefits from migration flows with those who consider migrants to impose an unnecessary strain on hosting societies.

Although the economic analysis of migration is a relatively recent field, a solid, rigorous and insightful body of research has been developed in recent years. Important empirical and theoretical results have been produced in many areas, from the impact of immigration on receiving and sending countries to the process of conceiving and implementing migration policies. However, these findings still need to be fully disseminated among policymakers and the general public.

Written by some of the leading scholars in the field, this eBook offers a brief summary of what economists have learnt about migration in several crucial areas of policymaking, and identifies most of the important questions that still remain to be answered.

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