

**Institute for International Economic Policy Working Paper Series
Elliott School of International Affairs
The George Washington University**

**Online Job Search and Migration Intentions Across EU Member
States**

IIEP-WP-2016-5

**Tara M. Sinclair
George Washington University
and Indeed Hiring Lab**

**Mariano Mamertino
Indeed Hiring Lab**

April 2016

Institute for International Economic Policy
1957 E St. NW, Suite 502
Voice: (202) 994-5320
Fax: (202) 994-5477
Email: iiep@gwu.edu
Web: www.gwu.edu/~iiep

Online Job Search and Migration Intentions Across EU Member States

Mariano Mamertino¹
Indeed Hiring Lab

Tara M. Sinclair
The George Washington University
and Indeed Hiring Lab

Keywords: international migration, labor mobility, online labor markets,
EU labor markets, natural experiments, Greece, brain drain

JEL Codes: J6, J4, F22

This Draft
April 11, 2016

Abstract

Most studies of migration focus on realized migration. In this study we instead focus on revealed preference of job seekers actively searching for a job in a country other than their current home. The advance of internet job search allows job seekers to explore employment options across the globe before making a decision to move. We characterize job seeker interest across national borders by looking at job search behavior on a major job search website. We focus on the 15 countries of the EU where job seekers in our sample could use the same medium to search at home or abroad. Some of these job seekers may be currently living abroad and are looking to return home. Many are likely responding to information they have about economic conditions both at home and abroad. We find that a small number of countries attract most of the interest of cross-border EU-15 job seekers: approximately 75% of within EU-15 cross-border traffic is going to the UK, France, Germany, Netherlands and Belgium combined - and another 16% is almost evenly split between Spain, Italy and Ireland. But smaller EU economies actually show the highest concentration of EU15 job search inflows. Overall the UK is the big winner in terms of attracting job seekers from outside its borders: almost 4 out of every 10 job searches of Europeans looking for opportunities outside their home country, but in one of the other EU15 countries, ends up on indeed.co.uk. In addition, we show that the UK also receives significant interest from Commonwealth countries and US. Our results suggest that, while language/cultural affinity together with availability of visas play a role in determining job search behaviors, cross-border job search traffic also mirrors jobseekers' evaluation of the health of the labor market in the 'origin' and 'destination' countries. A case study on the impact of a major political event on international job search in Greece provides empirical evidence in support of this argument.

¹ Corresponding author: mariano@indeed.com; Indeed Ireland Operations Ltd., 124 Saint Stephen's Green, Dublin, Ireland.

The authors thank Daniel Culbertson, Eleanor Hooker, Daniel Humphries, Aidan McLaughlin, and Valerie Rodden for helpful comments and feedback on this research.

Introduction

The European Union (EU) has been an experiment in international cooperation in many dimensions, but one of the key benefits has been the removal of labor market restrictions as part of the Schengen Agreement (OECD, 2012) and its expansion to new countries with the successive EU enlargements (among others, Constant and Zimmermann, 2013). While movement of temporary “guest workers” across the borders of the European Economic Community (EEC) was common in the years of booming economic growth between 1958 and 1972, the oil crisis that started in 1973 threatened the open-doors policy regarding migrant workers, who were welcomed when the economy needed them but were expected to leave when times were hard. A period of restricted migration within the EEC member states -- which was constantly challenged throughout the 1970s and 1980s -- came to an end with the expansion of the Schengen agreements and the establishment of the freedom of movement principle for all nationals of Member States. This was finalized with the signing of the Maastricht Treaty in 1992, which created the European Union and introduced the concept of a common European citizenship.

At this point in history, mobility across European countries was already on the rise. Recchi (2009) points to a constant expansion of the cross-state mobile population within the EU in the two decades preceding the 2004 enlargement. According to more recent data from Eurostat, about 46% of total immigration to the EU member states in 2013 was made of EU citizens from another EU country, with significant variation across countries. In the same year, 40% of all intra-EU permanent migration (and 48 for people aged 15-64) was made of individuals coming from another EU15 country (different than the reporting country)². Some of this movement would likely have occurred without the free flows of labor, but this expansion is puzzling in the light of the economic growth and the decline of income differentials in the EU15 over the same period. According to Recchi (2009), pro-mobility policies and the rise of non-labor migration have countered the diminishing appeal of intra-EU mobility that might be expected on the basis of purely economic conditions -- income convergence above all. Rather than exploring realized migration, in this paper we focus on revealed interest in work-related migration based on job searches on a major job search website. The benefits of this data source include its timeliness, the comprehensiveness of its coverage, and collecting information based on observing behavior rather than on survey questions.

It is difficult to study mobility in Europe due to a general lack of timely and detailed data. In fact, international migration cannot be measured by country surveys which only capture individuals before or after migration, while transnational surveys are missing. Even the definition of a migrant is not always clear. Finally, no updated and consistently gathered data sets are maintained which are sufficiently appropriate for examination of labor migration. In order to overcome some of these drawbacks, a number of studies have looked at potential migration using surveys of migration intentions (Fassmann/Hintermann 1997; Wallace, 1998; Krieger 2003; Fassmann and Münz, 2002; see also Fouarge and Ester, 2007). Surveys such as the Eurobarometer Labour Mobility Survey have been repeatedly used in this literature, but they also come with a number of caveats. For example, Boeri et al. (2002) acknowledges that little is known about whether somebody who indicates a general propensity to migrate in an opinion poll has serious intentions to move.

²Eurostat database. “Migration and migrant population statistics.” Last modified May 2015.
http://ec.europa.eu/eurostat/statistics-explained/index.php/Migration_and_migrant_population_statistics

Migration preferences based on job search, however, have the advantage of being more timely and of being based on revealed preferences rather than self-reported ones. Measuring migration intentions through revealed job search preferences may be a valuable step ahead, although these measures may overestimate the scale of mobility and focus primarily on the supply side. They may still provide valuable information on the cross-border job search preferences of potential migrants. Obviously, there exists a gap between labor migration intentions and their realizations that will be larger the larger the barriers are to enter the host countries. To some extent, these indicators suffer from some of the same caveats that affect surveys of migration intentions, especially when it comes to the interaction between revealed preferences and actual moves.

Our data come from job search site Indeed, which has separate websites for 15 EU countries and more than 35 other countries around the world. With over 180 million unique visitors per month globally we have a large sample of job seekers to work with. By limiting our study only to countries which have an Indeed site we ensure that people can either search for jobs at home or abroad to limit potential bias. We minimize the divide between jobseekers' intentions and realizations by focusing on flows of job search within the EU 15 where free movement of labor is established.

Throughout the study our unit of analysis will be the single 'job search' which involves an active search on one of the Indeed websites from a distinct mobile/desktop device or user account³. To avoid systematic double-counting and bias coming from heterogeneity in search intensity (e.g., average searches per user) across countries, users performing more than one search from the same device or user account will be counted only once.

This study also aims to contribute to the growing literature on online labor markets and job search (see the seminal contribution from Stevenson, 2008), and their relevance as a source of real-time data to study the labor market. According to Kurekova et al (2015) this is a particular area of increasing interest and one that has a strong potential to widen our knowledge about various socio-economic issues. Many aspects of job search have been transformed due to the availability of online tools for job search, candidate search and job matching (European Commission and ECORYS 2012). A Harris Poll commissioned by the Indeed Hiring Lab in 2015 revealed that labor markets in advanced countries are increasingly moving online. Worldwide 78% of workers who were hired in the year prior to the survey took place and took some action to find a job in the six months before used online resources in their job search (Indeed Hiring Lab, 2015). In a recent report Boston Consulting Group and Recruit Works Institute (Kazumasa and Okubo, 2015) conducted a survey of 13.000 individuals across 13 countries and found that, globally, internet job sites were the most frequently used channel by job seekers as 55% of all respondents stated that they had used such sites during their most recent job search.

Therefore it should not come as a surprise that innovative data sources and analytical methods based on online sources have been used for the study of the labor market (among the most recent contributions: Amuri and Marcucci 2010; Fabo and Tijdens, 2014; Askitas and Zimmermann, 2015; Helleseter et al., 2015; Hershbein and Kahn, 2015; Gee, 2015 Marinescu and Rathelot, 2015; Villena and Banfi, 2015).

³ Job searches associated with one or more keywords and a location, only a keyword(s) or a location, or blank are part of our sample.

Our analysis of job search behaviors within the EU15 returned a number of interesting insights on the nature and scope of cross-border job search flows. First of all, we found that about 95% of job searches originating in EU15 countries stay within EU15 borders. If we only look at people looking for a job outside of the country in which they are currently located (about 10% of the overall dataset) - 1 out of every 3 people (34%) living in an EU 15 country searching for a job abroad on Indeed are looking in another EU15 country. Looking at the absolute numbers of searches, we find that job search flows tend to be concentrated. Approximately 75% of the cross-border EU15 traffic is going to UK, France, Germany, Netherlands and Belgium combined - and another 16% is almost evenly split between Spain, Italy and Ireland. Interestingly, smaller EU economies actually show the highest concentration of EU15 job search inflows. In this group of countries a job search from abroad is much more likely to be coming from another EU15 country than from any other country.

The concentrated nature of intra-EU15 job search flows is also clear when we look at our indicator of 'net' job searches⁴ -- the UK turns out to be the only big European country with a markedly larger number of people located abroad looking for jobs in the UK than people located in the UK looking out of their country. Almost 4 out of every 10 job searches of European job seekers looking for opportunity in one of the EU15 countries ends up on the British website (i.e. www.indeed.co.uk). But the UK also receives significant interest from Commonwealth countries and the US, suggesting that language/cultural affinity together with availability of visas play a role in determining job search behaviors, as suggested by previous research (Ipshording, 2013; Adserà and Pytliková, 2015). Interestingly, the rather high number of job seekers coming from non-English speaking countries and looking for a job in the UK seems to support Adserà and Pytliková (2015) finding that linguistic proximity matters more for migrants moving into non-English speaking destinations than to English-speaking countries.

We also find that countries struggling with high unemployment rates - such as Greece, Spain, Portugal and Italy - tend to show a higher than average share of EU-oriented job seekers. This is in line with a theoretical framework in which job search traffic acts as a signal of the health of the economy today. We argue that, when choosing if and where to look for a job in a different country, job seekers are providing an "evaluation" of their origin and destination country's economic and labor market status quo. Bringing the argument further, job seekers' evaluations can actually become a self-fulfilling prophecy when intentions to move as captured by job searches translate into actual moves. Those economies that are healthier today will be healthier in the future thanks to the brain gain they enjoy from positive net migration inflows and vice-versa. It could even be argued then that restrictive migration policies which get in the way of the self-fulfilling prophecy -- breaking the reinforcement circle between job seekers' perceptions on the destination country's economy and its future performance -- will be detrimental to growth.

Previous literature on geographic mobility show that people move to places with better economic conditions (Greenwood et al., 1986; Bound and Holzer, 2000; Wozniak, 2010; Adserà and Pytliková, 2012). At the same time however, research on the response of migrants to economic crisis has found that "crisis- related increases in the outflows of nationals have been rather small" (OECD, 2012a, p. 44) and that the direct effects of economic turmoil on bilateral migration flows appear to be limited (Elsner and Zimmermann, 2013). Following Burda (1995) it could be argued that economic uncertainty may increase the option value of waiting for potential migrants, but we cannot fail to

⁴ $\text{Inflows} - \text{Outflows} / (\text{Inflows} + \text{Outflows})$

observe that the asymmetric impact of the recent crisis in Europe has actually deeply changed the distribution of migration flows across countries. Elsner and Zimmermann (2013) found relevant migration-diversion effects as a result of the changing economic landscape in Europe in the aftermath of the global financial crisis. They argue that while destination countries -- such as Germany -- received larger migration inflows after the crisis, thanks to increased relative attractiveness vis-à-vis other potential destinations, countries like Spain experienced bigger outflows and a deterioration in their relative attractiveness. They also estimate that diversion effect accounted for 78 percent of the observed increase in flows from the EEA origin countries to Germany between 2007 and 2012 (Elsner and Zimmermann, 2013). While our findings do not necessarily go against the “value of waiting” argument, they would seem to support the argument that cross-border job search behaviors do respond to shocks and changed economic conditions, and can be seen as a signal of job seekers’ evaluation of labor market health.

In the following sections we first discuss the recent trends in realized mobility within the EU. Then we carefully describe the Indeed data we use in this study. We next detail the findings of our analysis of revealed interest and then we show the impact of a major political event on international job search in the form of a case study in Greece. Lastly we conclude.

1. Realized Mobility within Europe

Today a significant amount of cross-border job search in Europe is performed within the borders of the European Union, where free movement of people is established as one of the main pillars of the Union itself. If we exclude former migrants coming back to their home country, about 46% of total immigration to the European Union (EU) member states in 2013 was made of other EU citizens from another EU country, according to Eurostat. If we look at working-age immigrants - those aged between 15 and 64 - the share goes up to 47%. This equals to roughly 1.2 million people - with citizenship of a different EU Member State from the one to which they permanently immigrated - moving within EU borders in 2013 only. About half of these flows were made of intra-EU15 movement only. This number is likely to be just a conservative estimate as long as it does not include people who moved but who are for some reason not (or not yet) registered as immigrants in the country.

The average number for the EU also hides some significant variation across countries. The share of registered foreign immigrants coming from within the EU in 2013 goes from a minimum of 6% in Romania to a maximum of 78% in Luxembourg, with a country like the United Kingdom being just below the median value at 45% (see Table 1). The Benelux region (Belgium, Netherlands, and Luxembourg), along with the two German-speaking member countries - Germany and Austria - and Denmark, were all associated with a share of EU28 permanent migrants higher than 50%. Interestingly, with the exception of Italy and Portugal, all the original EU 15 member states⁵ can be found in the first half of the ranking with a share of EU working-age immigrants always higher than 30%. To some extent, this highlights the mostly East-West and South-North nature of within-EU migration patterns.

⁵ Austria, Belgium, Germany, Denmark, Spain, Finland, France, United Kingdom, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal and Sweden

Table1. Working-age (15-64) EU28 immigrants as a share of total foreign immigration⁶ to EU15 countries, 2013

Luxembourg	78.2%
Austria	66.0%
Belgium	61.2%
Germany	59.3%
Netherlands	58.0%
Denmark	54.0%
Ireland	49.6%
Greece	47.7%
United Kingdom	45.2%
Finland	43.5%
France	40.1%
Spain	35.8%
Sweden	32.7%
Portugal	29.2%
Italy	28.2%
EU15	47.5%

Source: Eurostat (May 2015).

A recent study conducted by the Boston Consulting Group and The Network (Stack et al., 2014) analyzed data from a survey of more than 200,000 people from 189 countries with the aim of shedding light, among other things, on what would prompt individuals to move to another country for work. Not surprisingly, factors related to personal development, professional experience, job opportunities and salary consistently ranked as the top five triggers in the decision to relocate abroad for more than 50% of the people surveyed (see Table 2). In socio-psychological theory actions depend on the intentions to perform them, which in turn are functions of attitudes towards that behaviour and the perceived subjective norms about performing that behaviour (Fishbein and Ajzen, 1975; Ajzen, 2005). It follows that international job search activities that help the prospective mover in finding and assessing possible professional opportunities abroad become an integral stage in the decision-making process that may eventually lead to the action of moving abroad.

More relevant to us, however, is the role that online job search may play in such a scenario. As Stevenson (2008) points out “For workers, the Internet may reduce the cost of acquiring information about jobs both by impacting how workers learn about job openings and how they respond to openings. Job posting boards are one of the clearest ways in which the Internet has increased information about available jobs”. And it may be even more so for those individuals who are considering to move to another country for work-related reasons. Thanks to the presence of labor

⁶ Excluding return migration to the country of citizenship

market information online, job seekers looking for a job in a different country can not only learn that a job opening exists, but it is also possible for these job seekers to glean information about the characteristics of the job and the firm. At least to some extent this has affected the role that labor market information plays in individual migration decisions

This is in line with traditional theories of migration decision that look at international migration as the outcome of forward-looking decisions by individuals (Sjaastad, 1962). According to Bertoli et al. (2013) individuals or households compare expected utility streams net of all moving costs across different locations when considering a move to another country. Potential migrants will not only choose among alternative destinations, but they will also form expectations -- based on available information -- on the evolution of economic conditions and other factors relevant for migration both at origin and across potential destinations. More interestingly, shocks that undermine macroeconomic stability, as the ones currently experienced by some European countries for example, could increase the incentives for individuals to move abroad (Bertoli et al., 2013).

Previous studies have found that factors such as the size of the migrant community and the quality of the network are important determinants of migration outcomes. For example, Elsner et al. (2013) argues that networks that are more integrated in the society of the host country can give more accurate information about job prospects to future migrants and that migrants with access to a better network are more likely to make better informed migration decisions. We argue that online labor markets can work in a similar fashion by lowering the transaction costs associated with migration though the increase in the amount of information available to potential migrants. This suggests that changes in migration intentions in response to shocks, changed expectations or changed economic conditions may be the results of complex interactions between changes in conditions in more than just a pair of countries. We argue that through the use of high-frequency timely data on cross-border job search coming from job search websites like Indeed, we can contribute to better identifying the channels through which changes in economic conditions translate into shifts in migration intentions.

Official figures such as those in Table 1 only capture flows of people who permanently moved to another country two years ago. By complementing this data with up-to-date information on searches from job seekers looking for opportunities on Indeed outside of their country, we can better understand how intentions to move abroad evolve over time and eventually translate into actual moves.

Table 2. Top reasons for considering a foreign work assignment

Broaden personal experiences	65%
Acquire work experience	65%
Better career opportunities	59%
An overall attractive job offer	58%
Improved salary prospect	56%
Better standard of living	55%
Ability to live in a different culture	54%
For the challenge	53%
Learn a new challenge	47%
Meet people/build new networks	45%

Source: 2014 BCG / The Network proprietary web survey and analysis

2. Job search in Europe

While all kinds of people may want to live and work in another country, only some will be able to translate their intentions into actions. This means that a job search across borders does not always translate into a move across borders, especially when legal barriers related to the need of work permits and visas are in place. This is one of the reasons why the EU represents an interesting case study. Within the borders of the EU 28 member countries, in fact, people face virtually no legal barriers to moving from one country to another. It follows that intentions data -- even if revealed -- provide very valuable information, but are only imperfectly correlated with future behaviour and have to be treated with caution (Manski, 1990, Bertrand and Mullainathan, 2001; Zaiceva and Zimmermann; 2008). Though even in the absence of legal barriers to move, online job search data alone only provides information on the supply side -- as a proxy of the propensity of workers to apply for a job abroad -- and not on the demand side -- the capacity of labor markets to absorb additional workers. In addition, little is known about whether somebody who shows a general propensity to conduct job search activity in a country different than its own has serious intentions to move. Given the volume of workers that move within the border of the EU every year however, it is fair to assume that at least some proportion of the individuals involved in cross-border online job search activity will move to another country at some stage.

Several studies confirm that migration intentions are indeed closely related to the subsequent move. Gordon and Molho (1995) find that around 90% of British respondents who expressed an intention to migrate, did move within five years. Böheim and Taylor (2002) using panel data for Britain show that those who expressed a preference for moving experience three times higher probability of moving. Dustmann (2003) using panel data for Germany reports that of those immigrants who returned to their countries of origin from Germany during 1984-1997, 84% indicated in 1984 that they have the intention to return. In such a context, Indeed job search data from country to country while, on one hand, is still a measure of job seeker interest in migrating to and from countries to find work, on the

other it is also an interest that could be translated into an actual move, as long as it represents a manifestation of migration intentions.

Using data from Indeed on job search we analyzed the flows of international searches⁷ taking place across the fluid borders of the group of core EU 15 countries. The aim of this analysis is to better understand to what extent European job seekers look for jobs in other EU countries and whether there are countries that receive more or less interest from a group of job seekers that can easily move across borders. Diving into data on job searches flows from country to country for the period covering January to September 2015, we uncovered a number of insights on where people search for jobs in Europe today. First of all, we found that about 95% of job searches originating in EU15 countries stay within EU15 borders, if we include job seekers that do not look abroad. Outside of Europe, only the United States receives sizable flows of job searches from most countries in the old continent. On average, about 4% of all EU15 searches are directed to the US, with peaks of 13.2%, 10.7%, 9.8% and 9.7% in Denmark, Luxembourg, Greece and Ireland. Within European borders, however, the most popular destination countries for job seekers looking abroad are the United Kingdom, France and Germany (see Table 3). The UK appears to be the real winner however with significant flows of job seekers coming to the island from virtually all other EU 15 countries. Interestingly, this could be seen as a piece of evidence in support of the argument according to which linguistic proximity matters more for migrants moving into non-English speaking destinations than to English-speaking countries. According to Adserà and Pytliková (2015), the likely higher proficiency of the average migrant in English rather than in other languages may diminish the relevance of the linguistic proximity indicators to English speaking destinations.

⁷ The terms 'search', 'job search' and 'job seeker' are used interchangeably throughout this analysis. They all refer to a job search performed on the Indeed website from a distinct mobile/desktop device or user account. This means that users performing more than one search from the same device or user account will be counted only once.

Table 3. Job searches as a share of total searches in the country of origin - EU15 (Jan-Sept 2015)

	Origin														
	at	be	de	dk	es	fi	fr	gb	gr	ie	it	lu	nl	pt	se
at	83.50%	0.03%	0.50%	0.13%	0.04%	0.08%	0.02%	0.02%	0.18%	0.04%	0.08%	0.49%	0.03%	0.04%	0.07%
be	0.10%	89.34%	0.09%	0.23%	0.12%	0.07%	0.51%	0.06%	0.22%	0.06%	0.07%	6.20%	1.05%	0.17%	0.15%
de	12.56%	0.46%	96.56%	2.19%	0.47%	0.73%	0.24%	0.20%	1.49%	0.43%	0.41%	7.73%	0.53%	0.44%	0.84%
dk	0.03%	0.01%	0.03%	85.74%	0.02%	0.07%	0.01%	0.01%	0.08%	0.02%	0.02%	0.09%	0.01%	0.04%	0.38%
D es	0.19%	0.21%	0.18%	0.32%	94.35%	0.24%	0.23%	0.18%	0.15%	0.29%	0.31%	0.69%	0.11%	0.80%	0.25%
e s	0.02%	0.01%	0.01%	0.20%	0.02%	92.96%	0.00%	0.01%	0.04%	0.01%	0.01%	0.08%	0.01%	0.02%	0.22%
t i	0.34%	3.89%	0.37%	0.87%	0.78%	0.44%	97.02%	0.31%	0.57%	0.38%	0.42%	17.79%	0.21%	1.13%	0.56%
n gb	1.89%	1.24%	1.22%	7.10%	3.23%	3.68%	1.29%	98.52%	9.47%	12.71%	1.57%	6.12%	1.22%	4.45%	3.72%
a gr	0.03%	0.01%	0.04%	0.03%	0.01%	0.01%	0.00%	0.01%	86.16%	0.01%	0.01%	0.07%	0.01%	0.01%	0.03%
i ie	0.12%	0.09%	0.08%	0.32%	0.23%	0.20%	0.08%	0.31%	0.26%	85.61%	0.12%	0.48%	0.06%	0.29%	0.18%
o n	0.50%	0.42%	0.29%	0.46%	0.30%	0.23%	0.17%	0.17%	0.49%	0.22%	96.82%	1.23%	0.11%	0.15%	0.25%
lu	0.05%	0.31%	0.14%	0.05%	0.02%	0.02%	0.19%	0.01%	0.07%	0.02%	0.02%	55.97%	0.01%	0.06%	0.02%
nl	0.58%	3.87%	0.39%	0.74%	0.24%	0.24%	0.11%	0.15%	0.56%	0.11%	0.11%	1.23%	96.57%	0.28%	0.44%
pt	0.04%	0.09%	0.04%	0.08%	0.13%	0.04%	0.09%	0.04%	0.03%	0.05%	0.02%	1.66%	0.03%	92.09%	0.04%
se	0.07%	0.02%	0.05%	1.55%	0.06%	0.99%	0.02%	0.02%	0.24%	0.03%	0.03%	0.18%	0.03%	0.05%	92.83%

Source: Indeed

2.1 Inflows of EU 15 job seekers

If we exclude traffic staying within the borders of the country where it originated, we can get an idea of which job seekers who are more likely to look for a job in another EU15 country. Overall 1 out of every 3 people (i.e. 34%) in our sample searching for a job abroad are looking in another EU15 country. Roughly 75% of this traffic is going to the UK, France, Germany, Netherlands and Belgium combined - and another 16% is almost evenly split between Spain, Italy and Ireland (see Table 4). This should not come as a surprise since larger economies are expected to draw larger numbers of workers and potential migrants. Given that these are raw numbers, however, it is of particular relevance the ranking achieved by relatively smaller countries - such as the Netherlands, Belgium and Ireland. These countries received in the first ten months of 2015 as much interest as countries of a much bigger size such as Italy and Spain, for example.

Table 4. Distribution of EU15 cross-border job searches across destination countries

United Kingdom	37.2%
France	12.1%
Germany	11.7%
Netherlands	8.0%
Belgium	6.2%
Spain	5.7%
Italy	5.3%
Ireland	5.3%
Austria	2.8%
Luxembourg	1.9%
Portugal	1.5%
Sweden	1.2%
Denmark	0.6%
Greece	0.4%
Finland	0.3%

Source: Indeed.com

When we looked at the number of inbound searches coming from other EU15 countries while controlling for the size of the overall inflows as well, we found that some smaller EU economies actually show the highest concentration of EU15 job search inflows. Luxembourg, Belgium and the Netherlands are the three countries with the highest concentration of EU15-originated inbound traffic (see Table 5).

Table 5. Share of EU15 inbound job searches by destination country

Luxembourg	85.0%
Belgium	70.8%
Netherlands	59.0%
Denmark	48.6%
Ireland	48.0%
Sweden	46.5%
Austria	46.4%
Greece	44.2%
Germany	40.3%
Italy	38.2%
Finland	37.2%
Portugal	36.9%
France	32.9%
Spain	29.3%
United Kingdom	25.8%

Source: Indeed.com

It should not come as a surprise that countries such as Belgium and the Netherlands exchange flows of job search traffic of significant and similar sizes. While Dutch job seekers make up 34% of the Belgian incoming job search traffic from other EU15 countries, Belgian job searches share stands at 37% of EU15 incoming traffic for the Netherlands. Belgium also receives a significant share of inbound traffic from France, but the Netherlands does not, as we might have expected based on their official languages. German and British job seekers are the other two main origin countries for job search inflows in the Netherlands. Perhaps more unexpectedly, the Netherlands is also among the top five destinations for Danish (4th) and Swedish (5th) job seekers something that might be explained by the high levels of English proficiency that these countries show. Just as migration rates, online job search flows also increase with linguistic proximity. As argued by Adserà and Pytliková (2012), this suggests that the ability to learn and speak a foreign language might be an important factor in the migration decision and it becomes even more important in a context of labor migration. Similarly, previous studies have shown that linguistically distant immigrants face significant initial disadvantages that exceed existing differentials across wage distributions and between employed and unemployed subpopulations (Isphording, 2013). A disadvantage that might have long-lasting effects on economic outcome for the individual.

2.2 Outflows of EU 15 job seekers

When we look at job seekers looking for a job in another EU 15 country as a share of all those looking abroad in the country, we find somewhat similar results. Interestingly, while smaller open economies - such as Luxembourg and Belgium - top the ranking of countries with the highest share of EU-oriented job seekers, also larger countries struggling with high unemployment rates - such as Greece, Spain,

Portugal and Italy - show up in the top ten (see Table 6). This is in line with Adserà and Pytliková (2012) that found that emigration rates are significantly higher from countries with relatively high unemployment rates and lower to destinations with high unemployment, other things being the same.

Table 6. Share of EU15 outbound job searches by origin country

Luxembourg	71.1%
Belgium	66.5%
Austria	64.1%
Greece	49.8%
Ireland	49.6%
Spain	48.4%
Portugal	46.3%
Netherlands	45.9%
Italy	43.4%
Denmark	40.4%
Finland	37.7%
Sweden	37.5%
France	37.1%
Germany	35.9%
United Kingdom	15.3%

Source: Indeed.com

What all this tells us is that, while small open economies - that often share language and cultural ties - show among the highest share of both inbound and outbound EU-oriented job seekers, crisis-stricken southern European job seekers also seem to be very attracted to possible opportunities in other EU countries. To the contrary, job seekers located in countries with healthy labor markets with low unemployment - Germany and the UK above all - do not seem too interested in looking for opportunities in other EU countries and show a lower likelihood of searching in another EU15 country.

Our evidence seems to be in line with previous research suggesting that international migration -- or migration intention, at least -- does respond to asymmetric economic conditions. For example, Elsner and Zimmermann (2013) looked at EU flows after 2009 and found that workers from crisis-hit European countries moved to countries with more favorable economic conditions. What they also found, however, is that these outflows are often too small to substantially reduce the pressure on the labor markets in the source distressed countries. Given the transaction costs involved in the migration decision, the flow would have probably been lower in the absence of asymmetric shocks. What our evidence on online job search patterns tells us, is that individuals seem to respond to changed economic conditions and adjust their behaviors accordingly. Whether cross-border job search reduces the transaction costs associated with migration and eventually translate into actual moves for a significant share of job seekers remains an open question.

2.3 Net interest in EU 15 countries

The inflows of interest to a country is only one half of the revealed labor migration intention picture. We must also consider the outflows. The net interest index we developed combines a measure of how many people are looking for a job in a country and how many people in that same country are looking for a job abroad. The EU15 net interest index calculates effective interest from European job seekers inside and outside a country as a share of all incoming and outgoing job search originating in any other EU15 country. This measure is similar to a normalized foreign trade balance. Those markets with a positive reading have more EU15 job searches flowing into the country than out (to another EU15 country), while countries with a negative reading have more interest flowing out of the country. Since the measure is calculated as a share of all inflows and outflows, countries at the top of the list are receiving the most interest from people located in another EU15 country and looking abroad while countries at the bottom have larger outflows to EU15 countries than inflows from EU15.

Table 7. Indeed EU15 Net Interest Index (Inflows-Outflows/Inflows+Outflows); Jan - Sept 2015

	Index
United Kingdom	0.39
Luxembourg	0.32
Netherlands	0.08
France	-0.06
Germany	-0.06
Belgium	-0.14
Ireland	-0.2
Spain	-0.21
Italy	-0.25
Austria	-0.27
Sweden	-0.29
Portugal	-0.31
Denmark	-0.46
Finland	-0.52
Greece	-0.78

Source: Indeed.com

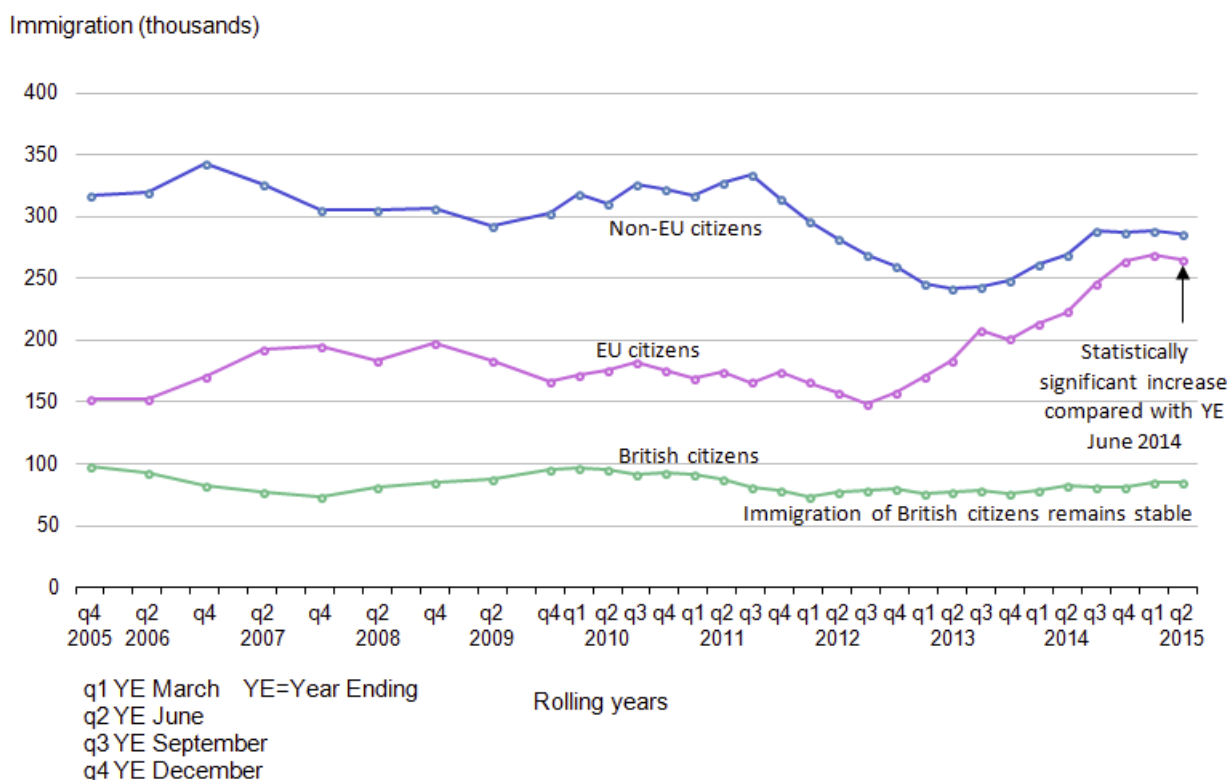
The UK turns out to be the only big European country with a markedly positive EU15 net interest index (see Table 7). If we expand the indicator to cover also traffic going to and originating from any other country in which Indeed has a national website, we actually find similar results. The UK enjoys a net inflow of interest from job seekers located both in Europe and across the globe; an 'excess' interest that is equal to about 39% of all inbound and outbound job search traffic in the country. This means that a significantly greater number of job seekers would be potentially interested in moving to the UK than to leave it. In a way the UK acts as a 'magnet' for people looking for jobs outside of the country in which they are located in Europe and beyond.

3. United Kingdom: the promised land of EU job seekers?

Almost 4 out of every 10 job searches of European job seekers looking for opportunity in one of the EU15 countries ends up on indeed.co.uk . As it turns out, Great Britain receives about 3 times as much interest from EU job seekers than the other two most popular destinations - Germany and France. The popularity of the UK as a destination for European workers is also reflected in the official statistics on immigration published by the Office for National Statistics (ONS) (see Figure 1). The data released in November - covering the year ending in June 2015 - showed a statistically significant increase of 19% in long-term international immigration to the UK for EU citizens over the year. Of those coming for work related reasons, 55% were EU citizens.

It should be noted that, since 2012, the UK has experienced a marked increase in the inflows of EU citizens at the expense of immigration originating from outside of the EU. This was partly due to an immigration policy that made it relatively harder for non-EU citizens to migrate into the UK and to the enlargement of the EU to new member states in Eastern Europe.

Figure 1. Immigration to the UK by citizenship, 2005 to 2015 (year ending June 2015)



Source: ONS Migration Statistics Quarterly Report, November 2015

Interestingly, even if the UK is the most popular destination when we look at EU15 outflows volumes, inflows of EU15 job seekers only make up about 26% of all job searches coming into the UK from abroad. Another 28% is made of job searches originating in the United States and India - two countries that share strong linguistic and cultural ties with Britain. Interestingly, Indian and US nationals were also the second and third groups with the highest number of UK visas granted in the year ending in September 2015, according to the British Home Office statistics.

Looking at the country of origin of the top twenty job search inflows coming to the UK, we also find seven Commonwealth countries - namely India, Australia, South Africa, Canada, Malaysia, Pakistan and New Zealand. In the same top twenty we find also eight EU 15 countries and two other EU 28 countries - Poland and Romania (see Table 8). If we combine the numbers, we actually find that the top twenty sources of talent for the UK account for 71.5% of all the job search inflows coming into the country. Seventeen out these twenty countries are either members of the Commonwealth or of the European Union, while the remaining three are US, UAE and the Philippines. It is interesting to note that the seven Commonwealth countries and the ten EU28 countries that are in the top 20 sources of talent for the UK account respectively for 26% and 27% of all inbound job search traffic on indeed.co.uk. This means that together they provide more than half (i.e. 53.4%) of all inbound traffic. This highlights the importance of lower barriers to entry - in terms of weaker or no visa requirements - in the determination of job search flows across countries. In line with previous literature, it also highlights the role played by linguistic and cultural affinity.

Table 8. Global top 20 job search inflows origin countries for the UK

1	United States
2	India
3	Ireland
4	France
5	Australia
6	Spain
7	Germany
8	South Africa
9	Italy
10	Poland
11	Canada
12	United Arab Emirates
13	Romania
14	Netherlands
15	Malaysia
16	Greece
17	Philippines
18	Pakistan
19	Portugal
20	New Zealand

Source: Indeed.com

In addition, job search flows coming into the UK reflect the reliance of its economy on foreign workers, especially if skilled. The latest Home Office statistics on work visas recorded a rise in the numbers of

skilled work visas (tier 2) - with the largest increases registered in the Human Health and Social Work sector - reflecting the growth in the UK economy and continuing demand for migrant workers. This is in line with the top twenty keywords used by job seekers on Indeed from US, India, Ireland, France and Australia - the top five sources of foreign job seekers looking in the UK - searching for jobs on indeed.co.uk. These include keywords such as “care assistant”, “nurse” or “NHS” that are associated with sectors that are experiencing talent shortages, higher skill jobs such as “marketing”, “project manager” or “software engineer” and other widely in-demand roles such as “sales assistant” and “driver”.

It follows that any policies implemented by the authorities aimed at making it more difficult for foreign workers from Europe and other countries to obtain visas and work in the UK might have negative consequences on the firms that often rely on this source of talent to fill their open positions. Given the relevance that immigration from other EU countries today has for Britain and the patterns shown by revealed labor migration intention data, debates about whether or not the UK should stay in the EU should not only ask what would the immigration status of the roughly 3 million EU citizens currently residing in the country would be, but also how this would affect migration inflows in the future.

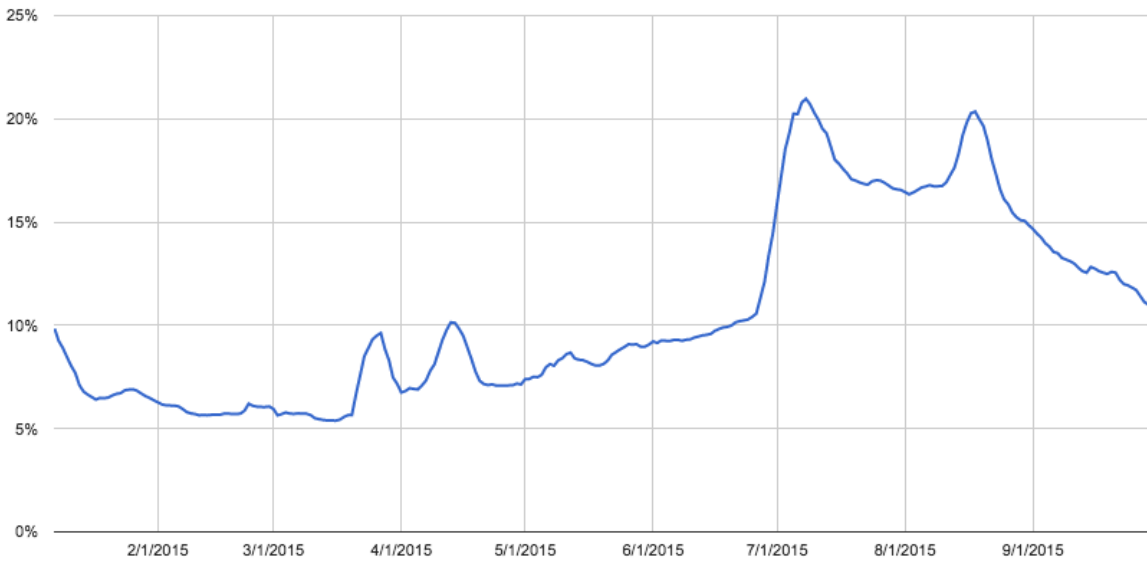
4. A Case Study of the Impact of the Greek Referendum on Job Search

Although overall job search is remarkably stable over time, we do see behaviors change quickly in response to major events. As an example, we consider the international job search of residents in Greece around the time of the Greek referendum in the summer of 2015. We found that in the first half of July 2015 an average of 20% of unique searches were for jobs outside of Greece and in another EU15 country, almost twice the share of our overall sample period (see Figure 2), January through September 2015 as shown in Table 3.⁸ What is most troubling about the exodus of job seekers from Greece, especially for the long-term future of the country, is the type of workers who are looking overseas, namely: computer scientists, mathematicians, architects, educators, and other high-skilled laborers. Many of the occupations associated with above-average levels of education, training, and experience saw an even higher elevation looking out of country than the average. This potential loss of some of the most productive workers in the labor market could have long-reaching effects on the Greek economy and could mean lower economic growth well after the debt crisis is over if these workers do not return. It could also mean substantial skills shortages and additional challenges for employers trying to fill key positions.

Another troubling feature of the labor market response to the political upheaval in Greece is its persistence. Although there was a decline in the share of external searches shortly after the referendum, there was another spike in mid-August amid further concerns about a potential default and then a relatively slow run back to a bit above 10% by the end of September 2015. This is still quite a bit elevated given that in March it was only a bit above 5%. This persistence suggests that temporary political events could have persistent economic effects, particularly if some of the highly skilled that wouldn't have otherwise left the country found work when they searched around the referendum.

⁸ Note that if we use all searches rather than distinct searches we find a higher percentage of searches outside of Greece but about the same size gain associated with the referendum. Previous analysis also looked at all external search by residents of Greece, not just ones looking in another EU15 country.

Figure 2. Job searches going outside of Greece to EU15 countries (7-day MA); Jan-Sep 2015.



Source: Indeed.com

5. Conclusion

Even though today's job search behaviors are increasingly taking a global breath, migration policies still limit the ability of many job seekers to move across borders. Within the EU, however, job seekers face virtually no legal barriers to migration. This makes EU cross-border job search flows an interesting case study for people interested in understanding how job search activities translate into actual moves.

Our analysis of job search behaviors within the EU15 returned a number of interesting insights on the nature and scope of cross-border job search flows. First of all, we found that about 95% of job searches originating in EU15 countries stay within EU15 borders. If we only look at people looking for a job outside of the country in which they are currently located (about 10% of the overall dataset) - 1 out of every 3 people (34%) living in an EU 15 country searching for a job abroad on Indeed are looking in another EU15 country. We also found that job search flows tend to be concentrated. Approximately 75% of the cross-border EU15 traffic is going to UK, France, Germany, Netherlands and Belgium combined - and another 16% is almost evenly split between Spain, Italy and Ireland. Interestingly, smaller EU economies actually show the highest concentration of EU15 job search inflows. The concentrated nature of intra-EU15 job search flows is also clear when we look at our indicator of 'net' job searches -- the UK turns out to be the only big European country with a markedly larger number of people located abroad looking for jobs in the UK than people located in the UK looking out of their country. But the UK also receives significant interest from Commonwealth countries and the US, suggesting that language and cultural affinity together with availability of visas play a role in determining job search behaviors, as suggested by previous research (Ipshording, 2013; Adserà and Pytliková, 2015).

We also find that countries struggling with high unemployment rates tend to show a higher than average share of EU-oriented job seekers. While previous literature on geographic mobility show that people move to places with better economic conditions (Greenwood et al., 1986; Bound and Holzer, 2000; Wozniak, 2010; Adserà and Pytliková, 2012) and that the asymmetric impact of the recent crisis in Europe has changed the distribution of migration flows across countries (Elsner and Zimmermann, 2013), evidence on whether economic uncertainty increases or not the option value of waiting for potential migrants is mixed. While our findings do not necessarily go against the “value of waiting” argument, they would seem to support the argument that cross-border job search behaviors do respond to shocks and changed economic conditions, and they can act as a signal of job seekers’ evaluation of the labor market health.

This is in line with a theoretical framework in which job search traffic acts as a signal of the health of the economy today. We argue that, when choosing if and where to look for a job in a different country, job seekers are providing an “evaluation” of their origin and destination country’s economic and labor market status quo. These evaluations can actually become a self-fulfilling prophecy when intentions to move, as captured by job searches, translate into actual moves. Thanks to such a mechanism, economies that are healthier today may also be healthier in the future thanks to the brain gain they enjoy from positive net migration inflows and vice-versa. This is supported also by our case study on the Greek referendum where we find a spike in job searches going outside of Greece in the days that followed the announcement of the in July 2015 on Greece’s exit from the EU. In future research, we plan to include a theoretical model to further investigate the impact of net migration inflows on growth performance and potential in the destination country. The role that online job search plays in shaping migration intentions can be seen in the framework of models that look at international migration as the outcome of forward-looking decisions by individuals (Sjaastad, 1962; Bertoli et al., 2013). Linking to previous studies arguing that prospect migrants with access to integrated migrant communities can gather better information on job prospects and are more likely to make better informed decisions (Elener et al., 2013), we argue that online labor markets can work in a similar fashion by lowering the transaction costs associated with migration though the increase in the amount of information available to potential migrants.

Overall our preliminary findings seems to be in line with previous research suggesting that international migration -- or migration intention, at least -- does respond to asymmetric economic conditions. Building on the literature on surveys of migration intentions, we argue that job search data from country to country can be seen as a measure of revealed job seeker intentions in migrating to and from countries to find work. This interest of individuals in labor migration - we argue - will to some extent translate into actual moves, as long as it represents a manifestation of their migration intentions. In future research we will further examine the determinants of cross country job search by connecting the data from the private sector with data from other sources to build a more complete model of the labor market. We will also explore other natural experiments in the data with the goal of developing new approaches to evaluate policy effectiveness. There are many other opportunities to use private sector data to enhance our understanding of labor market migration.

References

- Adserà, Alícia, and Mariola Pytliková. "The Role of Language in Shaping International Migration." *The Economic Journal* 125, no. 586 (August 1, 2015): F49–81. doi:10.1111/eoj.12231.
- Ajzen, Icek. *Attitudes, Personality, and Behavior*. McGraw-Hill Education (UK), 2005.
- Bertoli, Simone, Herbert Brücker, and Jesus Fernández-Huertas Moraga. "The European Crisis and Migration to Germany: Expectations and the Diversion of Migration Flows." Working Paper. FEDEA, 2013. <https://ideas.repec.org/p/fda/fdaddt/2013-03.html>.
- Bertrand, Marianne, and Sendhil Mullainathan. "Do People Mean What They Say? Implications For Subjective Survey Data." SSRN Scholarly Paper. Rochester, NY: Social Science Research Network, January 1, 2001. <http://papers.ssrn.com/abstract=260131>.
- Boeri, T., Bertola, G., Brucker, H., Coricelli, F., Dolado, J., FitzGerald, J., de la Fuente, A., Garibaldi, P., Hanson, G., Jimeno, J., Portes, R., Saint-Paul, G., and Spilimbergo, A. (2002), Who's Afraid of the Big Enlargement? Centre for Economic Policy Research, London.
- Böheim, René, and Mark P. Taylor. "Job Search Methods, Intensity and Success in Britain in the 1990s." Economics working paper. Department of Economics, Johannes Kepler University Linz, Austria, 2002. https://ideas.repec.org/p/jku/econwp/2002_06.html.
- Bound, John, and Harry J. Holzer. "Demand Shifts, Population Adjustments, and Labor Market Outcomes during the 1980s." *Journal of Labor Economics* 18, no. 1 (2000): 20–54.
- Burda, Michael C. "Migration and the Option Value of Waiting." *Economic & Social Review*, 1995. <http://www.tara.tcd.ie/handle/2262/64775>.
- Constant, Amelie F., and Klaus F. Zimmermann. *International Handbook on the Economics of Migration*. Edward Elgar Publishing, 2013.
- Dustmann, Christian. "Return Migration, Wage Differentials, and the Optimal Migration Duration." IZA Discussion Paper. Institute for the Study of Labor (IZA), 2001. <https://ideas.repec.org/p/iza/izadps/dp264.html>.
- Elsner, Benjamin, and Klaus F. Zimmermann. "10 Years After: EU Enlargement, Closed Borders, and Migration to Germany." IZA Discussion Paper. Institute for the Study of Labor (IZA), 2013. <https://ideas.repec.org/p/iza/izadps/dp7130.html>.
- European Commission, ECORYS (2012) European Vacancy and Recruitment Report 2012. Publications Office of the EU, Luxembourg

- Eurostat. 2015a. "Migration and migrant population statistics." Last modified May 2015. http://ec.europa.eu/eurostat/statistics-explained/index.php/Migration_and_migrant_population_statistics.
- Eurostat. 2015b. "Immigration by five year age group, sex and citizenship." Last modified August 28, 2015. <http://appsso.eurostat.ec.europa.eu/nui/show.do>.
- Fabo, Brian, and Kea Tijdens. "Using Web Data to Measure the Demand for Skills." Discussion Paper. Central European Labour Studies Institute (CELSI), 2014. <https://ideas.repec.org/p/cel/dpaper/21.html>.
- Fassmann, R., and Hintermann, C. (1997), "Migrationspotential Ostmitteleuropa. Struktur und Motivation potentieller Migranten aus Polen, der Slowakei, Tschechien und Ungarn", ISR-Scientific Report 15, Innsbruck.
- Fassmann, R., and Münz, R. (2002), EU-Enlargement and the future of East-West migration, in: IOM (ed.), New challenges for migration policy in Central and Eastern Europe, Geneva, IOM.
- Fishbein, M., & Ajzen, I. (1975). *Belief, Attitude, Intention, and Behavior: An Introduction to Theory and Research*. Reading, MA: Addison-Wesley.
- Fouarge, D., and Ester, P. (2007), Mapping migration intentions in Europe: Perceived costs and benefits, Institute for Labour Studies, Tilburg University.
- Gee, Laura K. "The More You Know: Information Effects in Job Application Rates by Gender in a Large Field Experiment." SSRN Scholarly Paper. Rochester, NY: Social Science Research Network, June 1, 2015. <http://papers.ssrn.com/abstract=2612979>.
- Gordon, I. R., and Ian Molho. "Duration Dependence in Migration Behaviour: Cumulative Inertia versus Stochastic Change." *Environment and Planning A* 27 (1995): 1961–76.
- GOV.UK. 2015. "Home Office National Statistics: Visas." Last modified November 26, 2015. <https://www.gov.uk/government/publications/immigration-statistics-july-to-september-2015/visas>.
- Greenwood, M. J., G. L. Hunt, and J. M. Mcdowell. "Migration and Employment Change: Empirical Evidence on the Spatial and Temporal Dimensions of the Linkage." *Journal of Regional Science* 26, no. 2 (May 1986): 223–34.
- Helleseer, Miguel Delgado, Kuhn, Peter, and Shen Kailing. "Age and Gender Profiling in the Chinese and Mexican Labor Markets: Evidence from Four Job Boards" December 30, 2015
- Hershbein, Brad; Kahn, Lisal; "Is Technological Change Exacerbated in Recessions? Evidence from Vacancy Postings"
- Indeed Hiring Lab. "The Science of Talent Attraction". October 2015 <http://blog.indeed.com/2015/10/22/science-behind-job-search/>

- Isphording, Ingo. "Disadvantages of Linguistic Origin – Evidence from Immigrant Literacy Scores." Ruhr Economic Paper. Rheinisch-Westfälisches Institut für Wirtschaftsforschung, Ruhr-Universität Bochum, Universität Dortmund, Universität Duisburg-Essen, 2013. <https://ideas.repec.org/p/rwi/repape/0397.html>.
- Kazumasa, Sakurai and Okubo, Yukio. 2015. "Job Seeker Trends 2015: Channels, Search Time, and Income Change." BCG Perspectives. <https://www.bcgperspectives.com/content/articles/human-resources-media-entertainment-job-seeker-trends-2015/>.
- Krieger, T. (2003), Migration trends in an enlarged EU, European Foundation for the Improvement of Working and Living Conditions, Dublin.
- Kureková, Lucia, Miroslav Beblavý, and Anna Elisabeth Thum. "Using Online Vacancies and Web Surveys to Analyse the Labour Market: A Methodological Inquiry." *IZA Journal of Labor Economics* 4, no. 1 (2015): 1–20.
- Manski, Charles F. "The Use of Intentions Data to Predict Behavior: A Best-Case Analysis." *Journal of the American Statistical Association* 85, no. 412 (1990): 934–40. doi:10.2307/2289590.
- Marinescu, Ioana Elena, and Ronald P. Wolthoff. "Opening the Black Box of the Matching Function: The Power of Words." SSRN Scholarly Paper. Rochester, NY: Social Science Research Network, June 1, 2015. <http://papers.ssrn.com/abstract=2612323>.
- Marinescu I, Rathelot R (2015) "Mismatch unemployment and the geography of job search". Working paper. http://www.marinescu.eu/MarinescuRathelot_geomismatch.pdf
- OECD. *Free Movement of Workers and Labour Market Adjustment*. Paris: Organisation for Economic Co-operation and Development, 2012. <http://www.oecd-ilibrary.org/content/book/9789264177185-en>.
- OECD. *International Migration Outlook 2012*. Paris: Organisation for Economic Co-operation and Development, 2012. http://www.oecd-ilibrary.org/content/book/migr_outlook-2012-en.
- ONS. 2015. "Migration Statistics Quarterly Report, November 2015." Last modified November 26, 2015. <http://www.ons.gov.uk/ons/rel/migration1/migration-statistics-quarterly-report/november-2015/stb-msqr-november-2015.html>.
- Recchi, Ettore. "Cross-State Mobility in the Eu." *European Societies* 10, no. 2 (May 1, 2008): 197–224. doi:10.1080/14616690701835287.
- Sjaastad, Larry A. "The Costs and Returns of Human Migration." *Journal of Political Economy* 70, no. 5 (1962): 80–93.
- Stevenson, Betsey. "The Internet and Job Search." Working Paper. National Bureau of Economic Research, March 2008. <http://www.nber.org/papers/w13886>.
- Strack, Rainer, Carsten von der Linden, Mike Booker and Andrea Strohmayr. 2014. "Decoding Global Talent: 200,000 Survey Responses on Global Mobility and Employment Preferences." BCG

Perspectives.

https://www.bcgperspectives.com/content/articles/human_resources_leadership_decoding_global_talent/#chapter1.

Villena, Benjamin; Banfi, Stefano; “ Do High-Wage Jobs Attract More Applicants? Directed Search Evidence from the Online Labor Market”

Wallace, C. (1998), “Migration Potential in Central and Eastern Europe”, IOM Cooperation Centre for Europe and Central Asia, Geneva.

Wozniak, Abigail. “Are College Graduates More Responsive to Distant Labor Market Opportunities?” *Journal of Human Resources* 45, no. 4 (2010): 944–70.

Zaiceva, Anzelika, and Klaus F. Zimmermann. “Scale, Diversity, and Determinants of Labour Migration in Europe.” IZA Discussion Paper. Institute for the Study of Labor (IZA), 2008. <https://ideas.repec.org/p/iza/izadps/dp3595.html>.