The Labor Market Impact of Immigration and its Policy Consequences

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Executive summary

The Migration Policy Centre (MPC)

Mission statement

The Migration Policy Centre at the European University Institute, Florence, conducts advanced research on global migration to serve migration governance needs at European level, from developing, implementing and monitoring migration-related policies to assessing their impact on the wider economy and society.

Rationale

Migration represents both an opportunity and a challenge. While well-managed migration may foster progress and welfare in origin- as well as destination countries, its mismanagement may put social cohesion, security and national sovereignty at risk. Sound policy-making on migration and related matters must be based on knowledge, but the construction of knowledge must in turn address policy priorities. Because migration is rapidly evolving, knowledge thereof needs to be constantly updated. Given that migration links each individual country with the rest of the world, its study requires innovative cooperation between scholars around the world.

The MPC conducts field as well as archival research, both of which are scientifically robust and policy-relevant, not only at European level, but also globally, targeting policy-makers as well as politicians. This research provides tools for addressing migration challenges, by: 1) producing policy-oriented research on aspects of migration, asylum and mobility in Europe and in countries located along migration routes to Europe, that are regarded as priorities; 2) bridging research with action by providing policy-makers and other stakeholders with results required by evidence-based policy-making, as well as necessary methodologies that address migration governance needs; 3) pooling scholars, experts, policy makers, and influential thinkers in order to identify problems, research their causes and consequences, and devise policy solutions.

The MPC’s research includes a core programme and several projects, most of them co-financed by the European Union.

Results of the above activities are made available for public consultation through the website of the project: www.migrationpolicycentre.eu

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Abstract
Concerns that immigrants take jobs away from natives and reduce their wages are widespread and have a substantial impact on immigration policies. The financial crisis and the subsequent economic down-turn in most OECD countries have further fanned these fears. Albeit not uncontroversial, the overwhelming share of the recent empirical literature finds, however, that immigration has only moderate effects on wages and employment. More specifically, the empirical findings indicate that i. the aggregate effects of immigration on wages and unemployment are small, ii. most native workers tend to benefit from immigration in terms of higher wages and lower unemployment risks, iii. the already existing immigrant workforce suffers substantially from further immigration, iv. high skilled and older workers tend to benefit more from immigration than less skilled and younger workers. Immigration and integration policies can improve the welfare effects and mitigate adverse distributional effects by pursuing skill-selective immigration policies and policies which increases the competitiveness of immigrants in the labor market: e.g. via language courses, the acknowledgement of occupational and other professional degrees.
I. Introduction

Concerns that immigrants take jobs away from natives and reduce their wages are widespread and affect immigration policies in most receiving countries. As an example, Germany cancelled the recruitment of guestworkers and other migrants in the aftermath of the first oil price shock in 1973 and the subsequent increase in unemployment that has carried through to the present. Similarly, we can observe that many receiving countries on both sides of the Atlantic have tightened their immigration policies in the course of the financial crisis and the economic down-turn.

Figure 1 displays the development of the net immigration rates in the EU and the US from 1960 until 2010. As can be seen there, net immigration rates have converged in the EU to those of the US, which has been for decades one of the most attractive destinations for immigrants in the world. Immigration rates have, however, decreased in the US since September 11, 2011, and furthermore in the course of the Great Recession starting in 2008. Similarly, the growth of immigration has ceased in the EU in the course of the global recession and is likely to decrease further as a consequence of the ongoing Euro crisis which particularly affects main destination countries in Southern Europe. The declining immigration rates reflect changes in the economic fundamentals, but also tighter immigration policies which have been implemented in the course of the crisis in many countries.

Fig. 1. US and EU: net immigration rates per 1,000 (5-year averages), 1960-2010

Sources: World Bank (2012), own calculations.

These changes in immigration policies can affect the demographic structure of our societies and the quality of our workforce on both sides of the Atlantic. Policies which claim to protect labor markets by reducing the labor supply might have unintended side effects: They increase incentives for non-registered immigration and yield a more intense use of channels which are not designed for labor migration, for example, those channels employed for family reunification and humanitarian migration. This in turn reduces average skill levels of the immigrant population. Thus, protective immigration policies might not only reduce labor supply and the number of immigrants in the short-term, they...
might also yield lower skill levels of immigrants and lower participation rates over the regular labor market over the medium and longer term.

Policies which claim to protect labor markets against immigrant workers might have adverse side effects on the demographic structure of societies and the skill structure of the immigrant workforce.

It is, thus, worthwhile looking at the labor market effects of immigration in detail before implementing far-reaching policy changes which claim to protect labor markets against the influx of immigrant workers. The research on the labor market effects of immigration has experienced a surge during the last decade, which helps to improve our understanding of the wage and employment effects of immigration. Albeit not uncontroversial, the findings of this research provide new insights both on the aggregate labor market effects of immigration as well as on its impact on specific groups in the labor market. This Policy Brief analyzes key findings from this new research on the labor market effects of immigration and discusses their implications for immigration and integration policies.

II. How does immigration affect labor markets?

At first glance, it seems reasonable that an increasing supply of labor through immigration reduces wages, and, if wages are not flexible, raises unemployment. However, as we will see below, large parts of the empirical literature find immigration has only had slight if any effects on wages and unemployment. Before turning to this empirical literature, we look therefore at the mechanisms by which immigration can affect wages and employment.

In the simple case of a closed economy with a fixed capital stock and a fixed labor supply of natives the immigration of labor would indeed reduce wages and increase the income of capital owners. If labor markets are furthermore imperfect such that wages do not completely adjust to the labor supply change the unemployment rate would increase as well. However, neither is the capital stock fixed nor are economies closed. If immigration increases the rate of return on capital, profit-maximizing firms increase their investment until the capital to labor ratio eventually achieves the same level as before. International capital mobility can speed up this process. This has far-reaching consequences for the labor market effects of immigration: wages remain unchanged at the aggregate level, at least in the long-run when the capital stock adjusts to the labor supply change.

If capital stocks or international goods markets adjust completely to immigration, wages remain unchanged, at least at the aggregate level.

Similarly, the adjustment of goods markets and production structures can neutralize the wage and employment effects of immigration in open economies. Consider the case of an economy which produces a capital intensive good and a labor intensive good. The influx of immigrant labor would increase production in the labor intensive sector, reduce imports of labor intensive goods and exports of capital intensive goods. As long as this economy is not large enough to change prices on international goods markets, and if it still produces both types of goods, the influx of labor does not change prices on goods markets and, as a consequence, wages and the returns to capital remain the same. Even if this were not the case, the adjustment of goods markets and production structures would at least mitigate the labor market effects of immigration in an open economy.

We can thus conclude that immigration does not necessarily affect wages and employment opportunities at the aggregate level. But does this also hold true for all groups in the labor market? In fact, labor markets consist of many groups which we can distinguish by education, work experience,
national or ethnic origin and many other characteristics. These groups are not perfect substitutes in the labor market: e.g. it might not be possible for example to replace engineers with unskilled workers in the production process. As a consequence, even if the aggregate level of wages and the aggregate unemployment rate remains constant, the influx of unskilled workers may reduce wages and employment opportunities for other unskilled workers but increase labor demand and wages for engineers. Thus, depending on the structure of the migrant workforce, immigration creates winners and losers in the labor market even if wages remain constant at the aggregate level.

Depending on the skill structure of the immigrant labor force, immigration can nevertheless create winners and losers in the labor market and affect the unemployment rate.

The structure of the immigrant workforce is, therefore, highly relevant for the impact of migration on the distribution of earnings and employment opportunities. It can also affect the unemployment rate at the aggregate level. Consider a labor market with two segments: the first segment is characterized by a high level of wage flexibility and no unemployment, while the second by rigid wages and a high level of unemployment. An influx of immigrants into the first segment reduces wages there, increases overall production and, hence, labor demand in the second segment. An increasing labor demand in a segment with relatively rigid wages increases, however, employment, such that the aggregate unemployment rate declines. The inverse holds true in case of an increasing labor supply through immigration in the inflexible segment of the labor market.

There are also other channels by which immigration can affect welfare and incomes of natives and immigrants. An important aspect is that a higher diversity of labor can, following the law of comparative advantage, increase productivity and technological progress. Immigration and a higher diversity of the workforce can enhance the pool of knowledge and ideas and, as a consequence, the rate of technological progress. The surge in high-skilled immigration in the US and many OECD nations may thus have contributed to innovation and technological progress. Nevertheless, it is not only high skilled immigration which might contribute to technological progress and growth. The immigration of less skilled workers might result in a higher share of natives who invest in human capital and who increase the domestic rate of innovation and growth.

To sum up, the adjustment of capital stocks and international goods markets mitigates the wage and employment effects of immigration. Moreover, immigration can raise the rate of innovation and technological progress which in turn would increase the rate of economic growth. Nevertheless, immigration affects wages and the employment opportunities of different groups in the labor market in different ways. An assessment of the wage and employment effects of immigration remains, therefore, essentially an empirically question and cannot be derived by simply assuming that an additional labor supply reduces wages and increases unemployment in receiving countries.

III. What does the recent empirical evidence say

In the 1990s, a large literature began to emerge which attempts to analyze the wage and employment effects of immigration empirically. The overwhelming share of this literature uses the variance of the foreigner share across regions or municipalities in receiving countries for estimating the wage and employment effects of immigration. Meanwhile there exist several hundred studies which have been mainly carried out in the US, many European countries and in Israel. Meta-studies of this literature find pretty small effects of immigration: increasing the foreigner share in the labor force by one

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1 For a recent survey of the literature see Brücker (2011).
percent reduces the wages of natives in receiving countries by less than 0.1 percent and their employment rate by 0.026 percentage points.\(^2\)

This literature is, however, subject to increasing levels of criticism. Two aspects might affect the results: First, if immigrants move into prosperous regions where wages and employment opportunities are above the country average, a naive regression might find that immigration raises wages and employment rates although the converse is true. The traditional literature has invested much methodological efforts in addressing this problem, but concerns remain that the rather small effects of immigration are based on spurious regression results. Second, if regions are not closed entities, the movement of workers across regions as well as trade and capital flows might spill-over the immigration effects to other regions. As an example, the immigration of foreigners might trigger the emigration of natives out of the affected regions or reduce the immigration of natives from poorer regions in the same country.\(^3\) In this case the regional regression approach would systematically underestimate the impact of immigration on wages and employment opportunities.\(^4\)

\[\text{The traditional literature finds only very small effects of immigration on wages and employment, but it is controversial whether these findings are spurious.}\]

As a consequence of this criticism, a new literature has emerged which uses the variance of the foreigner share across education and work experience segments of the labor market for the identification of the wage and employment effects of immigration.\(^5\) As long as relative differences in wages across education and work experience cells do not affect the scale and structure of the immigrant influx into a country, this approach allows scholars to assess the wage and employment effects of immigration properly. The findings of this literature are, however, not unambiguous.

Two key differences characterize the literature. First, the findings depend on whether the adjustment of capital stocks is considered or not. Second, the wage and employment effects depend on the question of whether natives and immigrants are perfect substitutes in the labor market, whether they have the same education and work experience or whether they have not.

Let's start with the first aspect. If the capital stock is assumed to be fixed, a one percent increase in the labor force through immigration would reduce the aggregate wage level in a range between 0.2 and 0.3 per cent.\(^6\) If capital stocks adjust completely, the aggregate wage effect disappears. Indeed, empirical evidence proves for the US, but also for Germany and many other European economies that changes in labor supply do not affect the capital to labor ratio over the long-run.\(^7\) Moreover, the adjustment in capital stocks is fast: evidence for the US shows that the half-life of the adjustment

\(^2\) See Longhi et al. (2005) and (2008).

\(^3\) While Card (2011) and Card and Di Nardo (2001) find no evidence that immigration triggers natives outflows, Brücker et al. (2011) show that immigration has reduced South-North migration of natives in Italy.

\(^4\) See the criticism of the traditional literature by Borjas (2003) and Borjas et al. (1997), for a defense of the regional level literature Card (2009).

\(^5\) See the seminal contribution by Borjas (2003) and for the following literature in particular Ottaviano/Peri (2012), Manacorda et al. (2012), D’Amuri et al. (2010) and Brücker/Jahn (2011).

\(^6\) See the estimates of Aydemir/Borjas (2006) and Borjas (2003), which ignore the capital stock adjustment completely, and the short-term estimates by Brücker/Jahn (2011).

\(^7\) More specifically, it is proved that the capital-output ratio remains constant, which implies that, after adjusting for technological progress, the capital-labor ratio remains constant as well. This was first shown by Nicholas Kaldor (1961) and has been confirmed by many studies since then.
numbers stands at around six years, in Germany the adjustment is even faster if not immediate. Note that immigration can be considered in many countries as a steady flow rather than an unexpected shock. In this case it is reasonable to assume that domestic and international investors anticipate the changes in labor supply, such that there are no or only small time lags in the adjustment of capital stocks. Although the empirical evidence is here ambiguous, the bottom line is that the aggregate wage effects of immigration disappear, at least over the medium or long term.

The bottom line is that the aggregate wage effects of immigration disappear due to the adjustment of capital stocks, at least over the medium and long term. Capital stock adjustment also reduces the effects of immigration on unemployment.

Similarly, the adjustment of capital stocks reduces the adverse effects of immigration on unemployment. However, immigration may increase unemployment slightly over the longer term, if they increase labor supply in segments with higher unemployment risks. Recent findings suggest though that these long-term effects are, even under pessimistic assumptions on the skill structure of immigrants, comparatively small.

The second aspect which is controversial in the new literature is whether natives and immigrants are perfect substitutes in the labor market, i.e. whether they compete completely if they have the same skill level and work experience, or whether they do not. This has far-reaching consequences on the distribution of immigration on wages and employment opportunities across different groups in the labor market. Numerous papers in the US, Germany, the United Kingdom and Denmark provide evidence that natives and immigrants are, indeed, imperfect substitutes. This can be explained by the fact that native and immigrant workers differ in language proficiency, cultural and ethnic backgrounds and are, as a consequence, not in the same way integrated in the production process in the same way as natives, even if they have the same skill level and work experience.

This has important consequences. The effects of immigration are not evenly spread across the entire workforce, but heavily concentrated in the immigrant labor force, i.e. a relatively small group. Most studies considering the imperfect substitution of natives and immigrants find that either all groups of native workers benefit from immigration or that only less skilled natives suffer. In contrast, they find large adverse effects on the immigrant workforce. As an example, empirical findings from Germany indicate that a one percent increase in the labor force through immigration increases the unemployment rate of immigrants by 1.16 percentage points and reduces their wages by 1.09 percent, while the wages of the native workforce tend to increase and their unemployment rate tends to fall. Note that a one percent increase in the labor force increases the immigrant labor supply by about 10 percent in Germany. Similarly, a study for the US finds that native wages increase by about 0.06-0.07 percent at 1% immigration in the labor force, while the wages of foreign workers decline by 0.6 to 0.7 percent.

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8 See for the US Ottaviano/Peri (2012) and their 2006 NBER discussion paper version and for Germany Brücker/Jahn (2011) and their 2008 IZA discussion paper version.
9 Brücker/Jahn (2011) find that a one percent increase in the labor force through immigration increases the long-term unemployment rate by 0.08 percentage points at the given skill structure of foreign workforce in Germany.
12 Manacorda et al. (2012), Brücker et al. (2012).
13 Brücker et al. (2012).
14 Ottaviano/Peri (2012). Similar results for the UK and Denmark obtain Brücker et al. (2012) and Manacorda et al. (2012).
New findings indicate that native workers benefit from immigration, while any adverse wage and employment effects are heavily concentrated on the immigrant workforce.

However, this evidence has not remained undisputed. Some authors argue that the findings are empirically not very robust and that they vary with the classification of the data and the specification of the estimation model. Although this debate has not yet been concluded, the evidence from many studies based on different estimation techniques gives strong hints that the wage and employment effects of immigration are not evenly distributed across the native and the immigrant labor force. As a rule of the thumb, (i) native workers tend to benefit and foreigners tend to lose, (ii) high skilled workers tend to benefit more than less skilled workers, and (iii) older workers tend to benefit more than younger workers, since most newly arrived immigrants are concentrated in the 25 to 35 age brackets.

These findings highlight the main policy challenges for labor immigration: The effects seem to be heavily concentrated on rather small segments of the labor market, which consist mainly of immigrants with similar human capital characteristics. In these segments immigration can trigger large effects on wages and unemployment. Thus, while labor migration might be beneficial for native workers and neutral from an aggregate perspective, it is likely that it increases inequality in terms of wages and unemployment risks between natives and immigrants.

Finally, there exist few empirical studies in the literature which have addressed the impact of immigration on growth and innovation: Brücker et al. (2012) find in a cross-country study evidence that immigration increases output per worker, but no significant effect on total factor productivity growth. In contrast, Peri (2009) finds, in an analysis which uses the variance across US States for identification that immigration, has a highly significant and robust impact on total factor productivity. Altogether, this new and important strand of literature has so far produced only a few robust results, such that further research is needed to assess the impact of immigration on technological progress and economic growth in receiving countries.

IV. Policies to improve the beneficial effects of labor immigration

The empirical evidence indicates that policies which tempt to protect labor markets by curbing the immigration of workers might be misguided. The available evidence suggests that immigration is rather neutral for wages and employment at the aggregate level since capital stocks and goods markets adjust to labor supply changes. In particular, the native workforce tends to win in most segments of the labor market. Curbing labor immigration can, however, have a number of negative side effects. It reduces the labor force and hence the tax basis which has particularly an adverse impact on countries which are affected by demographic change and ageing and it reduces average skill levels and labor market participation of the immigrant workforce by increasing incentives for irregular migration, family reunification and humanitarian migration. However, the available empirical evidence also indicates that labor migration can affect specific groups in the labor market adversely: the negative wage and employment effects of immigration are heavily concentrated on immigrants already residing in receiving countries.

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15 See the criticism of the Ottaviano/Peri (2012) study by Borjas et al. (2012). The debate focuses on rather technical issues referring to the classification of the data and the robustness of the estimates with respect to control variables.
Policies which tempt to protect labor markets by curbing labor migration are misguided, since they tend to increase incentives for irregular migration, family reunification and humanitarian immigration, i.e. channels which are not designed for labor migration. This reduces eventually average skill levels of the immigrant workforce.

Immigration policies and policies facilitating the integration of immigrants into host labor markets and the society of the receiving countries can, therefore, contribute to improved labor markets effects from immigration.

First, skill-selective immigration policies can contribute to channel immigrants into labor market segments where labor demand is high and wages adjust flexibly to labor supply changes. Note that immigration can reduce aggregate unemployment even in countries with inflexible labor markets if immigrants are channeled into labor market segments where wages are relatively flexible and labor demand is high. These need not necessarily be the high-skilled segments of the labor market. Empirical evidence shows that wage flexibility is particularly high in segments for younger workers and both at the higher and the lower end of the skill spectrum. While, as a rule of the thumb, employment prospects are better for high skilled immigrants, immigration policies have to address carefully the individual labor market segments where labor demand is high.

Skill-selective immigration policies and policies which improve the competitiveness of immigrants in the labor market can reduce unemployment and mitigate adverse distributional effects from labor immigration in host countries.

Second, the finding that natives and immigrants are imperfect substitutes is a strong hint that immigrants are poorly integrated into host labor markets. Immigration policies can contribute to improve the competitiveness of immigrant workers by considering specific skills which facilitate labor market integration such as language proficiency, work experience in the destination country and so forth. Point systems and hybrid immigration policies which combine point systems with employer-driven systems can contribute to select immigrants who can integrate smoothly into host country labor markets and adjust their human capital to the needs of host country employers. These policies can mitigate the adverse effects on the immigrant workforce and the risks for welfare dependency of immigrants and for social cohesion. However, while raising the overall income of the economy and welfare, these same policies can slightly reduce the favorable effects of immigration on native workers.

Third, policies supporting the integration of immigrants into host labor markets and the education system e.g. by acknowledging education degrees acquired abroad, improving language proficiency, increasing the transparency in the labor markets and reducing the discrimination of immigrants can also contribute to increase the competitiveness of immigrants and, hence, reduce the adverse impact on the immigrant workforce: for example, by acknowledging education degrees acquired abroad,

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16 See Papademetriou/Sumption (2011) for a detailed discussion of different immigration policies which tempt to channel immigrants according to the needs of the labor market.
17 See the evidence for Germany in Brücker/Jahn (2011).
18 See McHugh/Challinor (2011) for policies which improve work-related language proficiency.
improving language proficiency\textsuperscript{19}, increasing the transparency in labor markets and reducing the discrimination of immigrants.

Fourth, labor market institutions affect not only the impact of immigration on unemployment and wages but also the integration of immigrants into labor markets. In labor markets with a high labor turnover, i.e. higher rates of hirings and firings, immigrants seem to compete more with natives than in labor markets with a lower labor turnover.\textsuperscript{20} Changing labor market institutions has many other aspects and is, therefore, in many cases not a realistic policy option for immigration and integration policies. However, it is important to reflect that certain labor market institutions such as strong employment protection also impair the integration of immigrants into labor markets and, hence, the distribution of the labor market effects of immigration in host countries when labor market reforms are carried out.

\textsuperscript{19} See McHugh/Challinor (2011) for policies which improve work-related language proficiency.

\textsuperscript{20} As an example, Brücker et al. (2012) find that the elasticity of substitution between immigrant and native workers is much higher in the UK than in Germany and Denmark. The wage and employment effects of immigration are more evenly spread across the workforce in the UK compared to the other countries.
Works Cited


World Bank (2012), World Development Indicators 2012, World Bank Data Base, Washington D.C.
About the Author

Herbert Brücker is Full Professor for Economics at the University of Bamberg and the Head of Department for International Comparisons and European Integration at the Institute for Employment Research in Nuremberg. He holds a PhD in economics from the University in Frankfurt a.M. and a Habilitation degree from the Technical University of Berlin. His research interests cover international migration, labor markets, European integration and international economics.

Herbert Brücker has coordinated studies on the EU’s Eastern Enlargement, on the economics of the ‘Brain Gain and Brain Drain’, on migration and the welfare state and on temporary migration for the European Commission, the EU framework programs and national governments and science foundations. He also acts as policy advisor for the European Commission and the German government on migration issues and EU enlargement. He is German delegate at the Working Party of Employment of the OECD.

Herbert Brücker has published more than 130 articles, books, monographs and research reports on migration, labor markets and international economic topics. His academic articles have been published in prestigious journals such as Economic Policy, Economics Letters, the Journal of Comparative Economics, the Scandinavian Journal of Economics and World Economy.