

The Effect of Low-Skilled Labor Migration on the Host Economy

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Abstract

Migration of low-skilled workers into advanced countries remains a highly contentious issue, despite high demand for such workers to carry out a range of essential tasks, especially services. This systematic survey of the empirical literature on the effect of low-skilled migration on host countries suggests that fears of an adverse impact on the wages, unemployment and living standards of native low-skilled workers are largely misplaced, while the positive effects on the broad economy are significant and typically underestimated. The empirical literature is underpinned by a robust theoretical framework which suggests that migration will spur investment, induce task specialization of natives and, under certain plausible conditions, ultimately raise the demand for all workers. Host countries should recognize that they need low-skilled migrants and adjust their policies accordingly. Because migrants respond to demand, opening up new avenues for legal migration of low-skilled workers need not necessarily result in increased total immigration provided they are combined with enforcement of labor regulations among employers.

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1. Introduction

Migration into the U.S. and Europe has increased sharply in the postwar period and the moderation of the trend during the Great Recession¹ is expected to be temporary ([Shierholz 2011](#)). In the United States (U.S.), for instance, legal immigration more than quintupled from roughly 200,000 per year in the 1950s to over a million per year during the last decade.

Labor market competition from immigrants is most intense for natives with the lowest levels of education. For example, while immigrants in the U. S. comprised only 13 percent of the working age population in 2000, they made up 28 percent of the population with less than a high school diploma, and over half of all those with less than 8 years of schooling. According to the OECD (2010), the advanced countries are home to 88 million migrants who have no tertiary educations, accounting for 76percent of their total foreign-born population. In countries such as the U.S. and Canada, undocumented migrants from countries such as Mexico, Central America and the Philippines account for a large part of the unskilled immigration flow (Goldin et al, 2011). Undocumented migration is also a prominent phenomenon in France, the UK, Italy and Spain.

Among the general public, the perception that migrants, especially low-skilled migrants, are a major cause of stagnant wages and high unemployment in advanced countries is widespread. These worries escalated significantly with the outbreak of the Great Recession, despite the fact that the economic downturn coincided with a marked moderation of the net inflow of migrants that was only partly due to tougher migration restrictions. For this reason, most studies of immigrant impact have focused on the effects on low-skilled natives. Influential research – most notably by Borjas ([1985](#), [1995](#), 1999, [2003](#)) and by [Borjas, Freeman and Katz \(1997\)](#) – has reinforced the popular view, finding that the wages of low-skilled natives in the U.S. may have been depressed by several percentage points by the contemporary migration wave.

This is a major shift from earlier studies that generally concluded that immigrants had little effect on native wages and employment, and, according to [Card \(2005\)](#), the shift in perception coincided with a persistent stagnation in US wages as well as changes in the national origin of U.S. immigrants, often attributed to the 1965 Immigration Reform Act, from Europeans to Mexicans and other Central American nationalities. In Europe, where wages have held up better than in the U.S. but unemployment has been higher, the surge in migration from North Africa and Sub-Saharan Africa and more recently from Eastern Europe and South America prompted similar concerns.

Dozens of recent studies have rebutted the findings of Borjas and others, yet the perception that the influx of low-skilled workers hurts natives persists. Despite the reality that low-skilled

¹ It officially lasted from December 2007 to June 2009.

migrants perform jobs that employers often struggle to fill with native workers, it has become an article of faith that if one has to have migration, it should be of the skilled variety. Unskilled immigration should be deterred, if necessary, according to some politicians, by extending and reinforcing the existing patchwork of border fences—which collectively stretches for 700 miles— along the 2,000-mile US-Mexico border.

This paper surveys selectively and critically the recent literature on the effects of unskilled migration on advanced economies. Although the main focus is on the wages of the unskilled, the review looks more broadly at the effects on economic growth, employment, and the government budget.

The main points that emerge are as follows:

1. The vast majority of studies conclude that the initial net effect of unskilled labor migration on wages of native workers is small. The large adverse effects of migration on wages are to be found among prior cohorts of unskilled immigrants. In the long run, all these effects become smaller still if investment picks up, the economy adjusts, and immigrants and their offspring build human and social capital.
2. The fiscal impact of unskilled immigration is small and may be positive or negative depending on the characteristics of migrants; younger migrants who are employed tend to be net fiscal contributors.
3. Immigrants and their descendants may add to the cohort of low-skilled workers but need not form a permanent underclass. In countries with a long tradition of immigration, e.g., the U.S. and Canada, the scholastic achievement of the children of migrants and their labor market outcomes are not significantly different than that of the children of natives after controlling for socio-economic characteristics.
4. As is evident in the deep divisions surrounding migration policies in the U. S. and Europe, any reform of migration regimes has to confront a clash of special interests and perceptions. There is, however, no shortage of ideas about how the current regimes can be made more responsive to shifting labor demand in host countries, enhancing its efficiency, and fairer to the migrant.

The rest of the paper is organized as follows. In the next section, following the example of [Brucker \(2011\)](#), we begin with a brief description of the basic theory of the effects of an inflow of immigrants on native wages and employment. A simple theoretical framework helps identify the key assumptions that determine the effects of migration on natives and helps the reader navigate the many studies that have become available in recent years. In Section 3, we review five families of empirical studies of the effects of low-skilled labor migrants in rough chronological order. Section 4 reviews studies on the impact of migration on unemployment in

inflexible labor markets. Section 5 discusses how migrants have responded to the business cycle. Section 6 reviews the available literature on the fiscal impact of migration on the host economy. We consider the overall implications for low-skilled labor migration policies in Section 7.

2. Theory of Migration and Native Wages: the Key Assumptions

If native workers and immigrants are perfect substitutes, the labor market is flexible, and the investment climate is supportive, theory predicts that the influx of migrants will have the same effect on the economy as a one-time increase of the domestic labor force; it raises the return to capital, stimulates investment, and in the longer run, leads the economy to return to the same capital-labor ratio and initial wage ([Solow 1956](#)). The inflow of migrants temporarily lowers the wages of incumbents as it reduces the capital-labor ratio. It must also, in the short run, reduce the numbers of employed natives as lower wages will lead some of them to prefer not to work. Unemployment is ruled out by the assumption that labor markets are sufficiently flexible (we discuss the effect of releasing this assumption in Section 4 of this paper).

In a world where, as a first approximation, returns to scale are constant, a large one-time influx of migrants simply scales up the economy proportionately to the increase in the labor force associated with migration, and wages decline only temporarily while the adjustment takes place but are unchanged in the steady state. The adjustment to the new equilibrium will occur faster in an open economy which can import capital to accompany the larger labor force and where labor-intensive industries can expand to absorb the additional labor. Flexible and buoyant economies with a conducive investment climate and efficient capital markets will adjust faster to a migration shock - as to any shock - than economies that do not display those characteristics.

Now consider the case where native workers and immigrants are “different” (imperfect substitutes) because, for example, migrants do not speak English, lack social networks, are discriminated against, or simply have lower expectations. In that case, the initial effect on native worker wages and employment depends on how “different” the native worker is from the migrants. Migrants will compete with natives similar to them, putting downward pressure on their wages initially, but they may also increase the wages of more skilled workers with whom they are complementary. However, as in the pure case discussed above, the influx of migrants will reduce the capital-labor ratio, raise the rate of return to capital, and as investment picks up, the demand for all workers will rise. In the short and long run, the net effect of low-skilled migration on a native group that is complementary with migrants is bound to be positive, while the net effect on a native group that competes with migrants is a priori indeterminate in the short run as it will depend on the speed at which investment responds.

The skill mix of native workers matters greatly. If migrants are predominantly unskilled, and natives are predominantly skilled (as is increasingly the case in advanced countries), there is no

major disagreement in the literature that the wages and employment opportunities of native workers will expand upon the arrival of migrants because of the complementarity between natives and the unskilled migrants and because of increased investment. An extreme example of natives and low-skilled migrants being “different” and complementary is the United Arab Emirates, where migrants represent a very large share of the population (over 80 percent in some cases) and where natives are for the most part, a separate, Arabic speaking, wealthy and family-connected group which occupies a selected number of strategic jobs or sinecures. There is little direct competition between unskilled migrants and natives, and the latter benefit greatly from the lower-cost services the former provide and the economic expansion they help induce.

The big difference of opinion is with respect to the effects on the wages of low-skilled natives who compete with low-skilled migrants, and who, depending on definition can represent a very large share of the working population in Europe and the United States. Nonetheless, it is clear that all native workers, whether skilled or unskilled will benefit to varying degrees from lower prices of non-traded services such as domestic help, depending on their consumption of these services.

The previous discussion makes clear that the theory that unskilled migration must depress the wages of unskilled natives rests crucially on two assumptions: that migrants and natives are substitutes and that the stimulus to investment and growth of increased migration is too small or takes too long to make a significant difference to the wages of native unskilled workers.

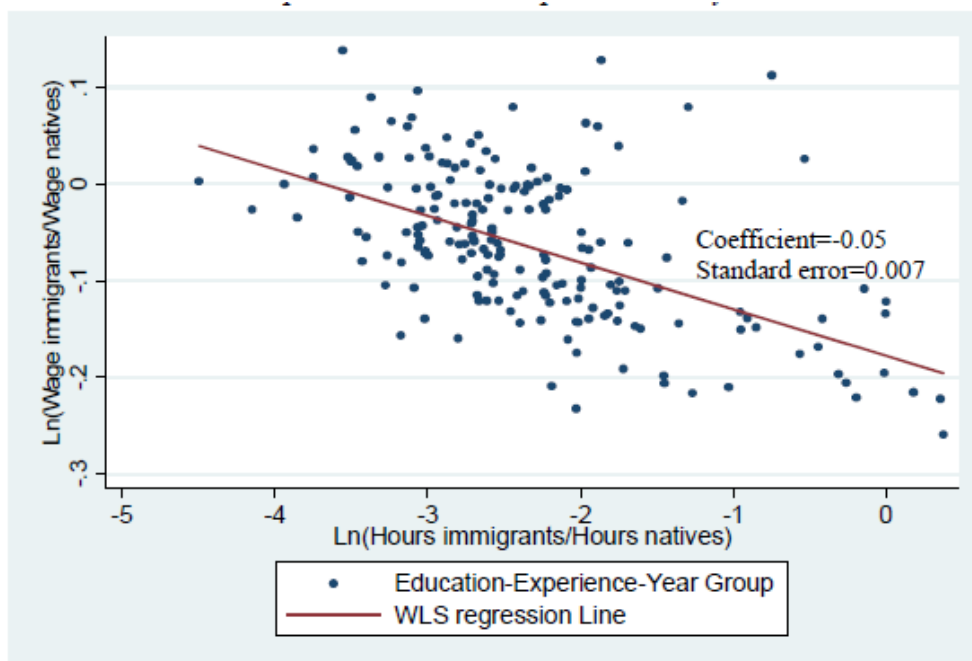
However, the available empirical evidence rejects both assumptions. The degree to which native and migrant unskilled workers are imperfect substitutes has been extensively studied. By estimating a production function including groups of workers classified by education, experience, gender and origin, [Ottaviano and Peri \(2008\)](#) for the U.S., Manacorda et al. ([2006](#), 2011) for the UK, and for Germany by Brucker and Jahn (2011), D’Amuri and Peri (2011) and [Felbermayr et al. \(2010\)](#), reach the conclusion that they are imperfect substitutes.

Ottaviano and Peri (2008) show a highly significant negative correlation between the relative earnings of natives and immigrants in different occupations and the incidence of migrants (figure 1). Though other interpretations are possible, the relationship can be taken as suggestive of imperfect substitution: if migrants and natives were perfect substitutes, one would not expect the wages of migrants to be systematically much lower than those of natives in professions where migrants provide the highest share of hours worked.

The constancy of the capital-output ratio, and the *pari passu* growth of capital and labor force over very long periods, are widely documented empirical regularities (Harrod, 1926). The fact that domestic investment is quite quickly stimulated by a migration surge, so that within about a few years the capital-labor ratio tends to return to its prior level in the face of a labor market

shock, is supported by studies such as Ottaviano and Peri (2008) for the US, Brucker and Jahn (2011) for Germany, [Cohen and Hsieh \(2000\)](#) for Israel, and [Ortega and Peri \(2009\)](#) in a study of 14 OECD countries. Although there are instances of migration surges as well as cyclical effects on migration flows, migration is for the most part a regular and fairly steady feature in advanced economies, the annual flow typically amounting to 0.3- 0.6percent of population, and one can presume that an expanding labor force caused by migration is built into business plans, and investment responds continuously and smoothly to it as it does to natural growth of the domestic labor force.

Figure 1. Correlation between relative immigrant-native wages and hours worked (Education-Experience-Year groups, Males only, 1960-2006)



Note: Each observation corresponds to an education-experience group in one of the considered years (1960, 1970, 1980, 1990, 2000, 2006) The horizontal axis measures the logarithm of the relative hours worked in the group by male immigrants/ natives and the vertical axis measure the logarithm of the relative weekly wage paid to male immigrants/ natives.

Source: Ottaviano and Peri, 2008, Figure 5, p. 48.

The fact that the two crucial assumptions underpinning “unskilled-migration-pessimism” are largely refuted in the literature means neither that the political debate is settled nor even that academia has reached consensus on the issue. We now review the main studies that have tried to answer the question of the effects of unskilled migration directly.

3. Empirical Studies of the Effect of Low-skilled Migrants on Domestic Labor Markets

This section identifies five families of studies that looked at the issue in rough chronological order: traditional area studies, the Mariel boatlift and Soviet Jews case studies, the Borjas' critique of both area studies and the Mariel boatlift studies, the Ottaviano and Peri rejection of Borjas' results, and recent general equilibrium studies that aim to look broadly at the impact of migration on the economy in the long term.

3.1. Traditional Area Studies

The traditional literature on the effects of migration on wages find very small effects, such that a 1 percent increase in the immigrant share in the population causes no decline in wages or a decline of 0.1 percent. These studies are so called "area studies", as they try to exploit the variation in migration incidence across countries, or more typically, across localities in the United States. A partial list of these studies includes Altonji and Card (1991), Butcher and Card (1991), LaLonde and Topel (1991), and Schoeni (1997).

These area studies have to contend with a serious endogeneity problem, since the intensity of migrants in a specific locality is itself influenced by wage and employment opportunities, tending to bias the estimated effect of migration on wages downwards. Ordinary least squares (OLS) regression of wages on migration intensity wages may yield a spurious positive sign even if the actual effect of migration is to reduce wages.

Estimation difficulties remain even when using instruments, variables that are known to be correlated with migration intensity but are unlikely to be affected by employment and wage opportunities in the estimation period, and so are uncorrelated with them. The typical instrument - lagged migration intensity - is quite imperfect, since past migration patterns may have responded to the same factors that underlie current wage and employment opportunities.

It turns out that the econometric difficulties in getting around the endogeneity problem play a large role in the debate on the effects of migration since area studies that find a small effect of migration on wages are questioned on the ground that they failed to eliminate the downward bias in their estimates (Borjas 2003). The additional criticism on studies that correlate the variation in immigration intensity across localities in the United States with wages, is that natives (and other migrants) compensate for increased migration by moving elsewhere. This critique is prominent in the literature even though there is little direct evidence that these compensatory movements are large (Borjas 1999, Card and Lewis 2007).

3.2. The Mariel Boatlift case, and Soviet Jews in Israel

Another solution to the endogeneity problem is to examine instances of mass migration which are prompted by political or other external events and therefore are not plausibly in response to labor market conditions in the receiving country. In 1990, David Card published his [classic analysis](#) of the influx of Cuban migrants to Miami during the 1980 Mariel Boatlift (named after the port in Cuba where the boatlift took place).

Card (1990) finds that, although the Mariel immigrants increased the labor force of the Miami metropolitan area by 7 percent, they had virtually no effect on the wage rates or unemployment levels of less-skilled non-Cuban workers, including blacks and other Hispanics. Effects on previously resident Cuban workers were also very small. Instead, Card's study finds that the Miami labor force was able to rapidly absorb the flood of predominantly low-skilled, Cuban immigrants. He speculates that two factors may help account for the rapid absorption of the Mariel immigrants: presence of industries in Miami, such as garments, able to expand and employ unskilled migrants, and a compensatory reduction in the rate of migration into Miami from the rest of the United States following the influx of the Mariel immigrants.

[Lewis \(2005\)](#) presented the adoption of advanced technologies as an additional explanation of why the effect of unskilled migrants on the wages of unskilled natives is found to be small. Using data on the number of advanced technologies adopted by manufacturing plants in the late 1980s and early 1990s, he finds that controlling for very detailed (4 digit) industry effects, the adoption of advanced technologies by individual plants is significantly reduced by the presence of a greater relative supply of unskilled labor in the local labor market. Even de-adoption was not uncommon. Employers responded to an increase in the supply of unskilled labor by shifting to more labor-intensive technologies. In this and subsequent papers, he finds that unskilled migrants tend to be absorbed by expansion within industry rather than by a change in the industry mix (See also Card [2005](#) and [Card and Lewis 2007](#)). Following Card, other instances of sudden migration surges have been analyzed and yielded similar results (see Hunt 1992 and Carrington and de Lima 1996).

Even though they appeared much later (and well after the Borjas' critique of area studies discussed below), it is now appropriate to look at two studies of the Soviet Jews' immigration to Israel over the period of 1989-1997, which we believe yield particularly strong conclusions.

Coinciding with the political upheavals that led to the collapse of communist regimes and the fall of the Berlin Wall, from 1989 to 1997, some 710,000 Soviet Jews emigrated to Israel, increasing Israel's working-age population by 15 percent over the 8 year period. To put this in perspective, in a given year, an influx of this magnitude is about 3 to 6 times as large a proportion of the native population as is typical in the United States or Europe.

The following two features demand careful examination of the effect on the Israeli labor market of this enormous influx of immigrants. First, unlike for example, the Mariel boatlift, where the effects on Miami could be dissipated into the broader American labor market, Israel is a single labor market in a relatively small space. Second, Soviet Jews that immigrated to Israel were disproportionately skilled so the Israeli case provides a very different perspective, and, by the way, one where academic positions are not so entrenched.

[Rachel Friedberg \(2001\) examined](#) the effect on wages across Israeli professions, so that the endogeneity problem is less severe than in area studies (it is more difficult for an immigrant to change profession than to go to a different city in response to demand). Using simple OLS, she found large negative correlation with the wages of natives, which she interpreted as a result of Soviet migrants taking any job they could get, i.e. effectively being forced into low wage, and low wage growth occupations for the lack of an alternative. Even though many Soviet immigrants held advanced degrees, very few of them could speak or write Hebrew or had the connections and specific qualifications needed to break through into higher-paid professions so they took on jobs for which they were overqualified, another example of migrants and natives not being directly competitive.

To reduce this kind of endogeneity bias in the selection of occupations, Friedberg regressed the wages of natives not on migrant intensity in occupations in Israel but on the migrants' occupation in the Soviet Union as an instrument, since this variable is correlated with their choice of profession in Israel but cannot be said to have been affected by conditions in the Israeli labor market. She finds that there is no significant observed relation between wage levels (and wage growth) across professions and migrant influx. In discussing why there was so little impact on the levels of wages of skilled-native Israeli workers despite the influx of large numbers on skilled migrants, Friedberg relays anecdotes of cases where migrant doctors or engineers (which may have about doubled the labor stock in Israel of their respective professions) took on the more mundane tasks in hospitals and factories, complementing the work of Israeli native doctors and engineers who were able to carry out more specialized and higher paid tasks.

The Israeli case also presents a natural experiment to test the predictions of a simple one-sector growth model, such as by Solow. As discussed earlier in the theory section above, the simple one sector growth model predicts that a large one time influx of migrants can be assumed to depress wages in the short run, raise the rate of return to capital, prompt foreign borrowing, and boost investment and aggregate GDP for a while, until the economy returns to a steady state where the capital-labor ratio and wages return to the initial level.

Consistent with the model, Cohen and Hsieh (2000) find that *average* effective wages of native Israelis fell and the return to capital increased during the height of the Soviet immigrant influx in 1990 and 1991. An investment boom partly financed by foreign borrowing followed. By 1997

however, both average wages and the return to capital had returned to pre-immigration levels. Furthermore, despite the high skills of Russian immigrants, Cohen and Hsieh find no evidence that the skill-premia of native Israelis declined. They also conclude that this was due to Russian immigrants suffering from substantial occupational downgrading in Israel, implying – as concluded by Friedberg - that they were very imperfect substitutes to Israeli high-skilled workers.

3.3. The Borjas Critique

The methodological problems associated with area studies, namely endogeneity and compensatory movement by other workers, were brought to the fore in an influential article by Borjas (2003). He used the variance in migrant share across education and work experience groups in the United States instead of regional variation to evaluate the impact of migrants on wages. Migrants are less able and less likely to change professions in response to wage and employment opportunities than they are to choose a different city, and so the endogeneity problem is less acute. Moreover, while native unskilled workers may move from New York to Cleveland in response to a large influx of immigrants into New York, they are less likely to leave the United States.

Applying simple regression, Borjas finds much larger effects of migrant intensity across education/experience groups on wages than the traditional area studies identifies, so that a 1 percent increase in the migrant share of the population reduces the wages of unskilled workers by 0.3-0.4 percent. Borjas found effects of similar magnitude by estimation of a production function with workers of varying experience and education as its arguments. The partial substitution elasticities derived from the estimation were applied to the migrant share differences across education/experience groups to evaluate the wage impact. Since the proportional increase of the group with less than a high school education due to migration was very large, and Borjas assumed that migrants and native workers of similar age and experience are close substitutes, so the effects on wages in that group were proportionally large. Moreover, in Borjas (2003), the capital stock is assumed to remain constant in response to migration.

[Borjas and Katz \(2005\)](#) examined the impact of the 1980-2000 migrant influx (and particularly Mexican-origin migration) on U.S. wages. They found that immigration lowered the wage of native workers by 3 percent for the average worker and by 8 percent for high school dropouts, in the short run. In the long run, the average worker is not affected by migration, but the wage of high school dropouts still fell by 5 percent. They also calculated what the wage effects would have been, had there been no Mexican migration from 1980 to 2000. They found that Mexican migration (primarily low-skill) accounts for all of the adverse impact of migration on low-skill natives.

[Jaeger \(2007\)](#) estimated that immigration accounted for 15 to 25 percent of the increase in the wage gap between low- and high-skilled workers during the 1980s. The impact on native high school dropouts was even more substantial, with migration accounting for as much as 3 percent of the decline in their real wages. The wage level effects on other skill groups were relatively smaller.

3.4. Ottaviano and Peri's Rejection of Borjas' results

In a widely cited contribution that exemplifies the broader economy-wide approach of the most recent literature, Peri and Ottaviano (2008) refute Borjas' findings that the effects of migration on the wages of unskilled workers are large. Like Borjas, they examine the effects of migration of different age/education cohorts and their impact on the national labor market in the United States, but, applying a standard production function model, they find instead that immigration over 1990-2006 had small negative effects in the short run on native workers with no high school degree (-0.7 percent) and on average wages (-0.4 percent), while it had small positive effects on native workers with no high school degree (+0.3 percent) and on average native wages (+0.6 percent) in the long run. They also find a wage effect of new migrants on previous migrants on the order of negative 6 percent.

Ottaviano and Peri's conclusions differ so markedly from Borjas' for three reasons: they find (modestly) imperfect substitution between migrants and natives; they evaluate the cross-elasticities among all types of workers instead of just the partial effect of unskilled migrants on unskilled natives, and in particular they evaluate the effect of unskilled migration on the whole population of workers with high school or less instead of the much smaller group of workers with less than high school, as Borjas' did, because they find that workers with exactly high school and those with less than high school are close to perfect substitutes; and, crucially, they include the effects of expanding investment.

3.5. Effects on the Broader Economy and in the Long Term

While Ottaviano and Peri's work represents an important step forward in the analysis of the effects of unskilled migration, more recently a number of studies have looked at the effects of migration, both skilled and unskilled, on total factor productivity (TFP), which is exogenous in Ottaviano and Peri's model. Some of these studies have also examined the effects of unskilled migration on growth and productivity over the very long run, as first generation migrants and then their offspring accumulate human capital and become more like native workers. Finally, an important contribution by Cortes has examined a largely overlooked benefit of unskilled migration, namely the lowering of prices of non-traded services that use unskilled migrants intensively.

[Orefice \(2010\)](#) examines the effect of skilled and unskilled migration on per capita income (as distinct from wages) and on TFP, using bilateral migrant flows from 86 developing countries to 24 OECD countries from 1998 to 2007, and predicted migration as an instrument (based on a regression of migration on bilateral aid flows, past migration and geographic variables such as distance). He notes that the overwhelming preoccupation of the literature on the effects of migration on the wages of native workers, and especially on unskilled workers is too limiting. Not only does immigration generate investment opportunities, migrants can affect TFP in host countries in many ways, such as boosting entrepreneurship and flexibility, providing specialization and complementarities, and reinforcing agglomeration economies, raising the returns to capital as well as wages across the economy. In this view, the skill level of migrants matters a lot. If migrants are high-skilled, they will tend to raise per capita income and prompt a long-term increase in the economy's capital-labor ratio; if, on the other hand, they are predominantly low-skilled, they will reduce average income per capita in the short run and promote the adoption of less productive, more labor-intensive technologies.

He finds that, on average, a 1 percent increase in migrant inflow results in a 0.69 percent decline in per capita GDP in the short run, reflecting lower labor force participation by migrants as well as the decline in the capital-labor ratio. He also finds that a 1 percent increase in the share of skilled migrants raises per capita income in the host country, but by less than the negative effect on the same of migration overall. The capacity of high-skilled migrants to boost per capita GDP, even in the short run, is one of the few points of relative consensus in the literature. Orefice (2010) also finds that, when per capita income is regressed by lagged migration variables, the negative effects on per capita income diminish and a smaller increase in the share of skilled migrants is needed to offset the aggregate effect, interpreting this to be the result of increased investment in response to migration and of migrants becoming more like native workers as time passes.

Ortega and Peri (2009) built a new dataset of bilateral migration from 74 sending countries to 14 receiving countries over 1980 to 2005 and find that migration responds strongly and positively to gaps in per capita income and negatively to migration restrictions. Using predicted migration from a “pseudo-gravity” model which uses only origin country variables and geographic variables as instruments, they estimate the effect of migration on GDP and other variables. They find that migration increases GDP and employment one-to-one, thus having no significant effect on productivity or income per capita. The response of investment is rapid, and the capital-labor ratio adjusts within a year. They attribute this high speed of adjustment to the fact that migration is, for the most part, a regular phenomenon.

Carrying out a similarly structured analysis of the effects of migration on US states, [Peri 2009](#) and Peri and Sparber (2008) found that migration has no significant effect on the employment of natives either in the short or long run, indicating that the economy absorbs migrants by creating

new job opportunities rather than by displacing incumbents. Moreover, at the state level, migration is associated with increased output per worker in the long run, a reflection of increased investment and specialization effects as typically natives take on different tasks, leading to efficiency gains through specialization. For example, in states with influx of unskilled migration, natives take on an increased share of communications-intensive jobs. Over the long run (10 years), a net inflow of migrants equal to a 1 percent of employment increases income per worker by 0.6 - 0.9 percent. This implies that total immigration to the United States from 1990 to 2007 was associated with a 6.6 - 9.9 percent increase in real income per worker, equaling an increase of about \$5,100 in the yearly income of the average U.S. worker in constant 2005 dollars.

In the same spirit of economy-wide and multi-period approach as Ottaviano and Peri, [Aleksynska and Tritah \(2009\)](#) carry out a comprehensive analysis of 20 OECD countries over 1960 to 2005, examining the effect on national income, labor productivity, and TFP of the share of migrants in the total population, and find a significant effect of migration on TFP but no effect in the aggregate on income and labor productivity. The positive effect on TFP is likely to reflect the opportunities created for specialization, complementarity, and flexibility reflecting increased diversity.

When account is taken of the composition of migrants by age and education levels, the effect of specific migration groups on income, productivity and TFP emerges as highly significant, even though in the aggregate the effects of specific migration groups on income and productivity tend to offset each other. Thus, an increased share of skilled workers increases per capita income, labor productivity and TFP, while the effect of unskilled workers is the opposite. Note that the effect on native workers is not identified in this analysis and may be different than these averages which reflect compositional effects.

Moreover, a high share of young migrants, who tend to be disproportionately unskilled, reduces labor productivity, but this is fully offset by the presence of middle-aged migrants. The presence of older migrants is associated with a higher share of investment and has no effect on labor productivity. The authors interpret these results as reflective of a process where young migrants accumulate skills as they enter middle age and also prompt increased investment. Thus, they estimate that doubling the ratio of unskilled migrants increases productivity by 12 percent in the long term, a result of increased savings and investment in countries that received large inflows of unskilled workers in the past.

Recent studies have found that while unskilled immigrants may initially lower average incomes and wages in the host country, in the longer term they and their offspring can help accelerate the growth of income per capita, provided they become integrated. In an attempt to evaluate the long-term impact of unskilled migration, Card (2005) examines the earnings of first generation immigrants over time and also the educational attainment of their children. He finds that first

generation migrants close only about a quarter of the 40 percent-gap in earnings with respect to natives, but their children tend to do slightly better than the children of natives. There is a strong correlation between the education levels of children and those of their parents, but even the children of Mexican immigrants, whose parents have very little education on average, close a very large part of the education gap with respect to the children of natives. A recent cross-country study by the OECD (2009) found a marked difference in the achievement of children of migrants in the United States and other traditional immigration countries, which matched that of the children of natives, and those of children of migrants in Europe where they underperformed by a wide margin, after controlling for socio-economic differences. Results consistent with these findings were reported by Dustmann (2011) and by Hao and Woo (2012).

An important benefit that natives derive from unskilled migrants, and one that until recently was largely neglected, is that they help reduce the prices of non-traded goods and services that natives use intensively, such as home care, food preparation, gardening, and construction. [Cortes \(2008\)](#) finds that the surge in immigration during 1980-2000 may have reduced the prices of these services by about 10 percent. At current U.S. immigration levels, Cortes finds that a 10 percent increase in the average city's share of low-skilled migrants in the labor force lowers the price of migrant-intensive services by 2 percent. These results suggest that the low-skilled migration wave of the period 1980-2000 increased the purchasing power of high-skilled workers living in the 30 largest cities by an average of 0.32 percent. Declining prices helped only partly offset the small negative impact on wages of low-skilled migration on native high school dropouts, which may have declined by as much as 1 percent. The decline in the price of non-traded services occurred because of the downward pressure on the wages of Hispanic low-skilled workers caused by immigration. The purchasing power of this group may have declined by 4.2 percent due to the immigration surge.

4. Inflexible Labor Markets and Unemployment

The theoretical discussion at the start of this paper assumed perfect labor markets where unemployment is ruled out by definition. However, many advanced countries, most notably in Europe, experience high and persistent unemployment over many years, even when growth is near or above long-term potential. Especially at a time of prolonged high unemployment like today, the worry that increased immigration will simply make the structural or cyclical unemployment problem worse resonates widely.

Brucker and Jahn (2011) find that migration can increase unemployment in the rigid sector. They consider an economy where collective bargaining predominates in some "rigid" sectors and where the labor market is very flexible in others. The labor market equilibrium in the rigid sectors is determined in a widely used wage bargaining model, where unions set the wage in function of the level of unemployment and firms are free to determine employment in function of

the prevailing wage. Increased migration with the same education and experience distribution as existing migrants will then contribute to raise unemployment in the rigid sectors (as some of the migrants will demand to work in those sectors) while having a relatively small negative effect on wages in the rigid sector, and reduce the wage in the flexible sector where unemployment remains low by definition. In the long run, these effects will dissipate as investment responds in a way similar to the perfect labor market case. Calibrating the model to reflect the situation in Germany, the authors conclude that a 1 percent increase in the German labor force through migration increases unemployment in the short term by 0.32 percent and lowers wages by 0.18 percent, approximately two-third of the estimated effect of migration in the perfect labor market case. In the long term, the effect on unemployment remains but is only about half as large, while the effect on wages is zero. Thus, the model which assumes perfect labor markets tends to overestimate the impact of migration on average wages and to underestimate the effect on unemployment. [Brucker \(2011\)](#) conducted a meta-analysis of studies examining the effect of immigration on unemployment in the U.S. and Europe and found that in general an increase in immigration by 1 percent of the population leads to an increase in unemployment of no more than 0.3 percent.

Studies of the U.S. labor market, which is among the most flexible, have found no significant effect of immigration on employment opportunities for native workers ([Peri 2009](#)), including low-skilled native workers, between 1990 and 2007.

[Peri and Sparber \(2008\)](#) report that migrants induce task specialization of natives. They found that, among less-educated workers, those born in the United States tend to have jobs in manufacturing or mining, while migrants tend to have jobs in personal services and agriculture, providing an explanation for why low-skilled migration has a limited impact on employment. In fact, the share of migrants among the less-educated is strongly correlated with the extent of U.S.-born worker specialization in communication tasks. In states with a heavy concentration of less-educated migrants, U.S.-born workers have shifted toward more communication-intensive occupations. Those jobs pay higher wages than manual jobs, and thus such a mechanism has stimulated the productivity of workers born in the United States and generated new employment opportunities.

This task specialization takes some years to be fully realized, as it may involve adoption of different techniques or managerial procedures and the renovation or replacement of capital equipment.

5. Migrants and the Business Cycle

Although the analysis of the effects of migration is typically cast in models that assume away economic fluctuations to focus on structural features of the economy, it is evident in the midst of a slow recovery from the Great Recession that the business cycle is alive and well, and, moreover, migration flows have long been known to respond to the business cycle. Evidence from the United States, for example, shows a close correlation between changes in the US-Mexico wage gap and illegal migration. When the wage (and opportunity) gap changes, apprehensions on the southwest border were found to respond within the current month. There was no significant growth in illegal migration to the United States at the outbreak of the Great Recession in 2007-2008.

It is clear that if migrants tend to delay their arrival or return home during recessions and conversely respond quickly to economic upturns, they help stabilize both product and labor markets, acting as a cushion for native workers in the face of economic fluctuations. Moreover, this benefit is likely to be most pronounced for unskilled natives who tend to be disproportionately employed in cyclical sectors such as construction and basic manufacturing. Firms also derive advantages from the fact that migrants are a more flexible and responsive source of labor (Borjas, 2001). This feature is important spatially as well as over time, since firms can more easily attract migrants in expanding location and contract employment more easily where needed.

Malchow-møller and Skaksen (2013) develop a general equilibrium model which they calibrate to German data to find that the welfare consequences of migration for native workers and for the economy as a whole in the presence of business cycles are significant. With business cycles, immigration helps moderate wages of native workers in upturns, but it also raises the incentives for firms to invest, which benefits natives in the medium term. Migrants return home (or do not come) during downturns, and this helps mitigate the downward impact on wages and employment of native workers. Thus, migrants act as a cushion for native workers and help “grease the wheels of the economy” (Borjas, 2001). However, these features depend crucially on the return rate of migrants in downturns and on the costs of recruiting migrants during upturns. Migrants will not return home during downturns if they fear that they cannot come back during upturns.

[Orrenius and Zavodny \(2010\)](#) use data from the Current Population Survey of the U.S. to study the behavior of migrants during downturns, and find that immigrants’ labor market outcomes began deteriorating even before the Great Recession was officially underway, largely as a result of the housing bust. Moreover, using data from 1994 through the first half of 2009, they find that migrants’ employment and unemployment rates display excess cyclicity relative to natives. The greater cyclicity of migrants’ employment and unemployment is concentrated among less-

educated migrants, but college-educated migrants nonetheless have more cyclically-sensitive employment outcomes than college-educated natives. The effect of real GDP growth on employment is more than three times as large among all immigrants as among all natives. The effect of GDP growth on unemployment is almost twice as large on all immigrants as on all natives. Among people who do not have a high school diploma, the effect of stronger GDP growth on employment is more than five times as large among immigrants as among natives.

Thus, the stabilizing effect of migrants on the employment of low-skilled natives is much greater than on that of the average worker. Similar results are reported in Dustmann et al (2010) analyze differences in the cyclical pattern of employment and wages of immigrants and natives for two large immigrant receiving countries, Germany and the UK. They show that, despite large differences in their migrant populations, there are similar and significant differences in cyclical responses between migrants and natives in both countries, even conditional on education, age, and location. They find significantly larger unemployment responses to economic shocks for low-skilled workers relative to high-skilled workers and for migrants relative to natives within the same skill group. They find little evidence in both countries that wage responses of migrants to shocks are different from those of natives within skill groups.

[Papademetriou et al \(2009\)](#) argue that since immigrants are overrepresented in low-skilled occupations that are typically hit hardest during downturns, and since some migrants (such as the unauthorized population) are ineligible for welfare benefits, they may suffer particular hardship during the recession. Even though illegal migration is thought to be quite responsive to economic cycles in host and source countries, tight border enforcement may deter migrants from returning home, since workers fear they will not be able to come back to the host country after the recession. While the recession may well reduce the inflows of undocumented migrants, it may also have a smaller impact on low-skilled migrants' outflows from host countries owing to the equally bleak prospects for them in their home countries.

6. Fiscal Impact of Immigration

A commonly held belief is that unskilled immigrants come to “live off” the welfare state in advanced countries, and it is true that recently arrived immigrants generally have a less favorable net fiscal profile than natives. However, this is mainly because they contribute less to taxes and social security than natives, and their labor force participation rates are lower, not because they use social services more intensively.

Three approaches are employed in the literature to measure the fiscal impact of immigration: the accounting approach, which examines the fiscal impact of resident immigrants in any given year; dynamic models, which examine the fiscal impact of additional migration on future public budget balances; and macroeconomic models, which examine the fiscal implications that flow

from the overall impact of immigration on the economy. Assumptions regarding the extent to which immigrants should bear the cost of public goods such as defense, infrastructure, and administration significantly affect findings.

A general conclusion is that immigration generally has a minimal fiscal impact on developed economies over time, though the impact can be negative and pronounced at the state and local level, in particular in localities where migrants concentrate. State and local governments tend to carry the burden of providing public services and welfare support. A [recent OECD study \(2013\)](#) provides an overview of the literature on the fiscal impact of immigration on OECD countries. Most studies indicate a small fiscal impact (less than +/-1 percent of GDP), subject to methodological approaches and key assumptions. In many European OECD countries, raising immigrants' employment rate relative to natives would entail significant fiscal gains; in Belgium, France, and Sweden, this would have a budget impact of more than 0.5 percent of GDP.

Factors which affect the fiscal impact include characteristics of the immigrant population such as age and reason for migration. The available literature suggests that young unskilled migrants who come to work, and who are, moreover, employed, can be expected to be net fiscal contributors, with the turning point being between the age of 40 and 45. Labor migrants generally have a more positive fiscal impact on their host countries than migrants who emigrate for family or humanitarian reasons.

Employment is the most important factor affecting the net fiscal profile of immigrants, especially in countries with generous welfare states. Raising migrants' employment rate to those of natives would boost public budget balances significantly, in some countries by as much as 0.5 percent of GDP. Still, as described below, the OECD study (2013) affirms, "in the long run for most countries, the overall conclusion [is that immigration] is neither a major burden nor a major panacea for the public purse." (p.161).

From the fiscal perspective, the big difference between immigrants and natives is not in benefits received, but rather in taxes paid. In part because immigrants on average have less education, at each age they earn less and pay substantially lower taxes of all kinds and to all levels of government.

OECD (2013) also examined the fiscal impact of immigration on 27 OECD countries using pooled data over 2007-2009 and employing an accounting approach (measuring the impact of the immigrant population that has emerged over the past few decades) and concluded that it was generally minimal—less than 0.5 percent of GDP in either positive or negative terms. Net contributions are negative in a few eastern European countries with small immigrant populations, as well as in Germany, France, and Ireland. They are positive in the U.S., Canada, Australia, the Scandinavian countries, and most of Western Europe. Immigrants tend to have a less favorable

net fiscal position than the native-born, but this is almost exclusively driven by the fact that immigrant households contribute less in taxes and social security than the native-born and not by a greater dependence on benefits.

The [National Academy of Sciences \(1997\)](#) completed a landmark study examining the fiscal impact of immigrant-headed households in the U.S. on native households in the mid-1990s, extrapolating from data for California and New Jersey—both states with high immigration. It concluded that the fiscal burden ranges from about four-tenths of 1 percent to half of 1 percent of the average U.S. household income of \$45,000 in 1996. The positive fiscal impact of most immigrant households at the federal level arises because they are assumed to impose no additional burden on the federal budget for national defense, specified in the study as a “pure” public good. An important exception to this pattern is the immigrant-headed households from Latin America, who were a fiscal burden even at the federal level.

Nevertheless, the average immigrant pays nearly \$1,800 more in taxes than he or she costs in benefits, as the immigrant population is heavily concentrated in the working years, with relatively few foreign-born children and elderly. However, the average immigrant with children pays nearly \$370 less in taxes than he imposes in costs, in sharp contrast with the average native, who pays \$2,030 more in taxes than he imposes in costs. Because federal government programs assist the elderly, and there are relatively few elderly immigrants, the average immigrant (including native-born children under 20) has a positive federal balance of taxes and benefit costs of nearly \$550. Because state and local governments provide for public education, the balance at this level is -\$920.

In sum, low-skilled migrants cannot all be painted with the same brush as an unmitigated drain on public finances. Static analyses, which examine the net fiscal impact of immigrants over a relatively short period of time (a year, for example), highlight the importance of several characteristics, including age, level of education, reason for migration, and—most significant—whether or not an immigrant is employed. Net fiscal impact also varies depending on whether one is examining public finances at the federal level, where the effect of immigration is generally small, or the state and local level of government where in some instances the effect of immigration can be significantly negative. An unskilled migrant who is young, single, and employed may well be a net fiscal contributor at all three levels. Dynamic analyses, moreover, indicate that over an immigrant’s lifetime, and over successive generations, the differences between immigrants and natives shrink, with the result that any given immigrant’s net fiscal impact much more closely resembles that of a native.

7. Reflections on Policy

In few realms of public discourse is the gap between policy and the empirical and theoretical evidence found in the literature as wide as it is in migration of low-skilled workers. Advanced countries go to great lengths to restrict the migration of low-skilled workers. Yet, because low-skilled migrants (and it would appear skilled migrants, too) are imperfect substitutes to their native counterparts, and because the capital stock and the economy tend to expand roughly in line with the expanding population, the long-term impact on wages and employment of natives overall is almost certainly positive.

Low-skilled migration is not without cost. Low-skilled migrants compete directly with recently arrived low-skilled immigrants, who are already among the most disadvantaged groups in the population, and who typically have less access to social safety nets and services than natives. In this way, unskilled migration could contribute to increased inequality. Unskilled migrants also compete to a degree with the least skilled of the native unskilled population although the impact on their wage and employment opportunities is found to be small. In some local and state jurisdictions the fiscal impact of immigrants can be significantly negative, even if it is small at the federal level.

But, on the positive side of the ledger, the list of benefits of unskilled migration is long: unskilled migrants complement native skilled workers and many unskilled native workers enabling them to specialize in more highly paid jobs; they benefit owners of capital; they raise demand in key sectors such as housing, health care, travel; they reduce the cost of providing non-traded services enabling, for example, the highly educated to participate in the labor force instead of carrying out household chores or caring for children and the elderly; they are essential to firms competing in labor intensive activities such as agriculture and garments; they appear to boost economy-wide productivity in the long term because of the scale, specialization, and flexibility they contribute to production. Most arrive young, single, and eager to work, and become net contributors to the government budget over decades, and though most stay, many return to their home country, often without benefiting from pensions available to native workers.

The preceding discussion has, by design focused only on the effects of low-skilled migration on host countries, even though, for global welfare, the biggest gains accrue to the migrants themselves – who can treble their wages or more – and to their home countries who are recipients of large remittance flows, estimated to exceed \$400 billion to developing countries in 2013 by the World Bank.

There is plenty of evidence that migrants respond not only to wage and income differentials but also to the availability of jobs. Still, a world of nation states where the wage gap between the North and South is so large, and where there is in effect an almost unlimited supply of unskilled

workers ready to respond to rising demand for them, may not be ready to return to the unrestricted migration regimes of past centuries. But nor are extremely restrictive immigration policies which result in large numbers of undocumented workers a realistic response.

The public dialogue on unskilled migration remains dominated by prejudice and fear, and this means that policies that can maximize the benefits from unskilled migration and minimize its costs receive too little attention.

Such policies should begin by the understanding that advanced countries need large numbers of unskilled migrants and that there is a considerable amount of self-regulation in immigration – so that migrants respond not just to the lack of prospects in their home country but also to the availability of job opportunities in host countries. This means that expanding the number of migrants that can enter legally combined with effective regulation of employers to ensure that they apply work permit, minimum wage and safety and social regulations, are measures likely to result in a drastic reduction in undocumented migration as well as an adequate supply of unskilled workers and their increased participation in the labor force.

Provided employers are compelled to apply regulations, moderately raising the minimum wage can, up to a certain level, be an effective way to contain total migration (by reducing the total demand for labor), reducing undocumented migration, and enticing more native unskilled workers to participate in the labor force. The latter is to be expected in instances where the prevailing wage has fallen below the reservation wage of natives. The effect of a higher minimum wage and enforcement of regulations at the employer level can be to replace undocumented migrants with native workers and documented migrants (Hui, 2013). Such measures will be resisted by some employers whose viability depends on the low wages paid to undocumented migrants.

The legalization of labor migrants will greatly increase the likelihood that migrants will be net contributors to the budget and also that they move back and forth in response to the business cycle. Policies to integrate migrants and bring them and their offspring rapidly into the mainstream will also help boost productivity and contain social disparities in the long run. Several of these policy features appear in the immigration bill recently passed by the US Senate but which remains stalled in the House of Representatives.

Those in advanced countries who argue that immigration is already too high and can hurt economic performance because it threatens “social cohesion” (Collier, 2013) must contend with the fact that many of their most productive and lively cities – such as New York, London or Toronto- have an immigrant incidence which is at least twice the national average.

Many of the steps required to facilitate the adjustment to a larger immigrant population are policies that should be pursued to enhance growth and productivity anyway. These include policies that strengthen the investment climate and the flexibility of the economy as well as investments in the education to improve the communication and networking skills of the population most likely to compete with unskilled immigrants.

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