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DISCUSSION PAPER SERIES

IZA DP No. 13755

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ABSTRACT

An Introduction to the Economics of Immigration in OECD Countries

The share of the foreign-born in OECD countries is increasing, and this article summarizes economics research on the effects of immigration in those nations. Four broad topics are addressed: labor market issues, fiscal questions, the political economy of immigration, and productivity/international trade. Extreme concerns about deleterious labour market and fiscal impacts following from new immigrants are not found to be warranted. However, it is also clear that government policies and practices regarding the selection and integration of new migrants affect labour market, fiscal and social/cultural outcomes. Policies that are well informed, well crafted, and well executed beneficially improve population welfare.

JEL Classification: F22, J15, J61

Keywords: immigration, labor market and fiscal effects of immigration, integration, diversity and productivity, trade and migration, political economy of immigration, refugees

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1. Introduction¹

International migration has grown more or less at the same pace as the world's population in the last fifty years and today nearly 300 million people (3.5% of the world's population) reside in a country that is not their birth country. However, net permanent migration flows have been directed disproportionately to richer countries. This, combined with lower natural demographic growth in those countries, explains why the share of foreign-born in OECD countries increased from seven percent in 1990 to more than 12 percent in 2020. Countries such as Germany and the USA have immigrant populations accounting for more than 15 percent of their labor-force, and this number is about 25 percent for Australia, Canada and New Zealand.

In this context, many OECD countries are seeing debates about immigration's economic impacts with participants taking strongly divergent positions. On one side, some are concerned that immigrants could take away natives' jobs, put downward pressure on wages and negatively affect public finances. Beyond that, there are concerns about non-economic factors such as cultural change and the potential for increased crime (e.g., National Academies of Sciences, Engineering, and Medicine 2016, Richwine 2020). On the other hand, immigration supporters see immigrants as economic assets in a global marketplace, and maintain that increasing cultural diversity adds to the richness of society. For some policymakers on the latter side of the issue, immigration is looked to as a mechanism to stimulate economic growth through avenues such as increased productivity and international trade (e.g., Orrenius et al. 2019, Advisory Council on Economic Growth 2016). The aspiration is to develop government policy and manage the immigration process so that immigration serves as a mechanism to increase economic welfare, sometimes crudely proxied by gross domestic product (GDP) per capita – as opposed to immigration-induced GDP growth being at a rate proportionate to, or even less than, the rate of immigration-induced population growth. Of course, increasing GDP per capita is only one input to increasing welfare, since utility has many determinants. A third view (economic policy frequently involves more than two, or even three, perspectives) is that refugee flows should not be subject to economic analysis. But the nature of settlement service provision is seen to markedly affect labour market outcomes in the receiving country, showing that refugees can benefit from economic research. In all these contexts it is essential to support evidence-based debates, and government policy development and implementation, with credible research and balanced knowledge dissemination.

This review article summarizes economics research on the effects of immigration in OECD countries. It does not pretend to be exhaustive, but does address a broad array of issues. In sections 2 and 3 we study the labor market effects of immigration. Section 2 looks at how immigration affects the wages and employment of native workers, and section 3 focuses on the labour market integration of new migrants. We present theoretical frameworks that allow us to think systematically about the mechanisms through which migration can affect labor markets, and also document empirical findings. In section 4, we study the net fiscal effects of immigration. We first outline the so-called “welfare magnet” hypothesis and then turn to static and dynamic approaches to the analysis of the impact of immigrants on government finances. In section 5, we analyze the social and political consequences of immigration. Specifically, we report recent studies that try to disentangle economic and cultural motivations for the preferences expressed. We then look at the link between immigration and attitudes towards immigrants,

¹ In addition to standing alone as a survey, this article introduces a special issue of the *Canadian Journal of Economics* on immigration in OECD countries. This essay builds in part on Edo et al. (2018).

preferences for redistribution, voting behavior, and social capital. Section 6 addresses connections between immigration, international trade and productivity growth. Section 7 concludes.

2. Economic impacts of new immigration on wages and employment

Understanding the economic impact of new immigration on the existing population is challenging since it requires, implicitly or explicitly, comparing the observed outcomes to an estimated counterfactual. What would outcomes have been like for the existing population if immigration had been higher or lower than that actually experienced? And/or, what if the new immigration flows had a different skill, or age, distribution?

In the literature, various approaches are taken to estimating counterfactuals but no approach is without criticism. With this caveat, overall, economic studies indicate that the impact of immigration on the average wage and employment of native workers is zero or slightly positive in the medium to long term. However, because adjustments take time, the immediate labor market effects of unexpected migration episodes (as opposed to expected ones) can be detrimental. Immigration can also have distributional consequences following from the skill composition of immigrants. An inflow of new immigrants tends to reduce the wages of competing workers, e.g., previous cohorts of immigrants and others who have skills similar to the new migrants, and increase the wages of workers who have skills that complement those of the new immigrants. By affecting the skill composition of the workforce, new immigration can thus create winners and losers among existing workers via changes in the wage structure.

2.1. Theoretical insights

The most basic economic models assume that capital is fixed (or evolves very slowly). They therefore predict that an increase in labor supply from new immigration reduces the level of physical capital per worker and negatively affects labor productivity. As a result, immigration reduces the average wage of workers (Borjas 2013). Although total employment increases, employment among existing workers may decline depending on its labor supply elasticity and the flexibility of wages (Angrist and Kugler 2003, Edo and Rapoport 2019). The limitations of these static models, however, underline the importance of distinguishing between the short-run impact of immigration on wages and the longer-run impact as governments (e.g., public infrastructure investments) and firms (e.g., investments in plant and equipment) respond to the increased number of workers through capital accumulation (Lewis and Peri 2015, Peri 2016). The ensuing increase in the capital stock should increase labor productivity/wages and labor demand. If immigration does not change the skill/demographic structure of the workforce, then in the long run the economy is simply bigger and the average wage is the same as it was prior to the new immigration.

Somewhat more sophisticated models understand that immigration does more than increase the aggregate number of workers. It also changes the skill (or age etc.) composition of the workforce; hence, it affects the structure of wages across groups even after capital adjustment has taken place (Borjas 2003, Ottaviano and Peri 2012). For instance, an inflow of low-skilled immigrants should decrease the relative wage of low-skilled workers despite the rise in the capital stock. In this context, by affecting the relative supply of skills these theories predict that immigration will have a persistent effect on the structure of wages across skill groups.

Recent studies have also extended the theoretical framework to show that labor markets can absorb immigration in a relatively short period without experiencing persistent changes in relative wages. The ability of firms to change their production techniques (by “investing” or “disinvesting” in capital) in response to immigration is an important mechanism that can mitigate the initial negative wage effects. Lewis (2011, 2013) allows for capital-skill complementarity, implying that capital and high-skilled labor are complements while capital and low-skilled labor are substitutes. Under this assumption, once capital has fully adjusted, all wages return to their pre-immigration levels. Clemens et al. (2018) applies these ideas to show how changing production techniques were crucial to explaining why the exclusion of almost half a million Mexican seasonal farm workers from the United States between 1962 and 1965 did not improve relevant labor market conditions. Of course, the degree of capital-labour substitutability will vary across technologies and labour markets.

Another determinant of how immigration affects the existing population’s wages and employment depends on the degree of substitutability between immigrants and natives. If immigrants and natives of similar education differ in terms of their language abilities, quantitative and relational skills, they will specialize in differentiated production tasks, thus reducing downward wage pressure for non-immigrant intensive tasks. Peri and Sparber (2009) show for the United States that, among less skilled workers, immigrants specialize in manual-intensive jobs for which they have comparative advantages, while natives of similar education pursue jobs more intensive in communication tasks. As a result, immigration tends to push native workers of comparable education into more cognitively-oriented and communication-intensive jobs that are relatively better paid and more suited for their skills. To complement these results, Peri and Sparber (2011) focus on the high-skilled segment of the US labor market and find evidence of imperfect substitutability between highly educated immigrants and natives. More specifically, they find that immigrants with graduate degrees specialize in occupations demanding quantitative and analytical skills, whereas their native-born counterparts specialize in occupations requiring interactive and communication skills.

In related work, Manuel and Plesca (2020) address skill transferability by comparing immigrant bachelor’s degree holders who obtained their education in Canada versus elsewhere. Of particular concern is the long documented lower rate of return to education of the foreign-educated compared to the domestic-educated. In a two-step process, they look at the concordance between skills and occupations, and then between occupations and bachelor’s level detailed fields of study using the U.S. National Center for Education Statistics’ O*NET to assign skills. Since this measure of skills is not a function of realized labour market outcomes, they interpret it as an estimate of *ex-ante* skill levels, and they thereby estimate the extent to which foreign educated immigrants are able to transfer their skills to the Canadian labour market relative to Canadian educated immigrants. Foreign educated immigrants receive significantly lower returns to their expression skills, but the gap in the rate of return to logical and technical skills is much smaller. This is part of a literature attempting to document the content of credentials, such as Truong and Sweetman (2018) who use the OECD’s Programme for the International Assessment of Adult Competencies (PIAAC) to examine basic Information and Communication Technology (ICT) skills, especially among those employed in the ICT sector. Within education levels, immigrants have lower measured skill levels and are more likely to report computer skills deficiencies detrimentally affecting their career trajectory. This speaks to substitutability.

2.2. Empirical findings

There are two main families of empirical studies of the labor market impacts of immigration: structural and non-structural. Structural studies run simulations (frequently calibrated using data) where identification normally derives from theoretical models requiring (sometimes strong) functional form assumptions. In contrast, non-structural studies focus more on data and estimate the impact of immigration where identification most commonly relies on exploiting two types of exogenous variation: the clustering of immigrants across geographical areas and/or skill groups with the exogenous portion of the clustering extracted using instrumental variables, and naturally occurring exogenous variation in immigration flows.² The credibility of each analysis depends on the plausibility of the source(s) of identification employed.

2.2.1. Structural studies

Structural studies have been implemented for various countries, including Canada (Aydemir and Borjas 2007), Denmark (Brücker et al. 2014), France (Edo and Toubal 2015), Germany (D'amuri et al. 2010), the United Kingdom (Manacorda et al. 2012), the United States (Borjas 2003, Aydemir and Borjas 2007, Ottaviano and Peri 2012) and Switzerland (Gerfin and Kaiser 2010). Two key findings emerge. In the long-run, the average effect of immigration on native wages is either zero or slightly positive, depending on the degree of substitution between natives and immigrants. If immigrants and natives of similar education and experience are found to be imperfect substitutes (Ottaviano and Peri 2012, Manacorda et al. 2012, D'amuri et al. 2010, Brücker et al. 2014), immigration has a slightly positive impact on the average wage of native workers.

Secondly, the skill composition of immigrants matters in determining their long-run impact on the wages of domestic workers. By increasing the relative supply of some groups of workers, immigration will affect their relative wages, creating winners and losers among the native-born via changes in the wage structure. In Australia, Canada, France, Germany and Switzerland, immigration has disproportionately increased the number of highly skilled workers since the 1990s, contributing to a reduction in wage inequality between highly and poorly educated native workers. For the United Kingdom, the wage effects are very modest, but they also tend to be negative and larger for university-educated workers. In Denmark and the US, however, immigration has increased the supply of low-skilled workers by more than it has increased the supply of highly skilled workers, thereby contributing to increase the wage gap between highly and poorly educated native workers (Borjas 2014, Brücker et al. 2014).

As mentioned, it is important to note that these simulation results are theory-driven and rely on stylized economic theories that effectively constrain the average impact of immigration on wages to be negative in the short-run and slightly positive or zero in the long-run.

2.2.2. Non-Structural Studies: Spatial and skill-cell studies

Spatial and skill studies correlate wages and some measure of immigrant penetration across geographical areas (i.e. cities, states, regions). Skill-cell studies divide the national labor market into different skill groups (or cells) to estimate the relationship between immigration and worker outcomes. Of course, this approach relies on specific identification assumptions, for example regarding the assignment of workers to cells (Card et al. 2009, Dustmann et al. 2016). Li and

² For extensive reviews of the literature on the labor market impact of immigration, see Lewis and Peri (2015), Dustmann et al. (2016) and Edo (2019), and articles in Part IV of Chiswick and Miller (2015).

Sweetman (2014) show appreciable heterogeneity across source countries in how skills are valued in the receiving labour market raising questions about simple uniform adjustments for immigrant credentials.

Another fundamental limitation of spatial and skill-cell identification strategies is that immigrants generally decide when and where to migrate. As a result, each immigrant is likely to be attracted to geographic areas where wages and employment are relatively high for individuals with her/his skill set. This endogenous sorting would create a positive correlation between immigration and economic opportunities, thereby contaminating the “average causal” measured effects of immigration on native wages and employment. Of course, the so-called contamination is actually part of the beneficial effect as immigrants flow to areas where their skills and numbers are most needed so as to maximize the rate of increase of GDP per capita. The magnitude and empirical importance of immigrants’ selection of a target receiving country is addressed directly by Beine et al. (2020). Looking at 38 mainly OECD receiving countries and over 140 sending ones, they look at how a receiving country’s stance on migrant rights affects migrants’ preferences over destinations. Countries that are more open to immigrants are preferred, but in particular they observe that increased labour market access and better labour market conditions are very attractive to migrants. Self-selection matters.

In principle, this identification issue can be addressed if an instrumental variable (i.e. a source of exogenous variation) can be found that isolates the variation in immigrant inflows across areas that is not determined by wages or other factors that influence wages. In practice, however, it is difficult to find such a variable. Another way to deal with this problem is to exploit a large, sudden and unanticipated increase in immigration which is not driven by economic concerns – i.e., a natural experiment (see below). But, these are not common and while such instances allow reasonably high levels of internal validity, they lack external validity for understanding more typical migration flows.

Spatial studies have been implemented for various countries and they generally document negligible or small positive average effects on wages and employment. For instance, the studies by Winter-Ebmer and Zweimüller (1996) for Austria, Pischke and Velling (1997) for Germany, Zorlu and Hartog (2005) for the Netherlands, Norway and the United Kingdom, Basso and Peri (2015) for the United States do not detect any negative or positive impact of immigration at the local level. Other studies find that immigration has a positive impact on the average wage of native workers as in Dustmann et al. (2012) for Great Britain, Mitaritonna et al. (2017) for France and Card et al. (2007) for the United States.

A further limitation of spatial studies is that local labor markets are not closed. Even if immigrants arrive exogenously, native workers and firms can respond to an immigrant supply shock by moving across areas (Borjas et al. 1997, Borjas 2006, Monras 2020). For instance, some native workers could react by migrating away from high- to low-immigration areas in order to avoid any potential wage losses. These internal migration flows equalize wages across areas and, therefore, diffuse the impact of immigration from the affected local labor markets to the country as a whole. As a result, cross-area comparisons could deliver misleading interpretations on how immigration affects the labor market.

To overcome the geographic selection issue, Borjas (2003) estimates the labor market effects of immigration at the national level across skill groups defined in terms of both education and years of work experience. Although this approach neutralizes local labor market adjustments, it only

estimates the effect of a particular immigrant influx on the wage of native workers within the same skill group, without capturing the cross-group effects on the wage of other natives (Ottaviano and Peri 2012). Borjas (2003) finds a significant negative correlation between the wage growth of specific skill groups and the size of the immigration-induced supply shock into those groups. Similar results are found for the United States (Borjas et al. 2010, Borjas 2014, Llull 2017) and for Canada (Aydemir and Borjas 2007). Several studies have replicated the analysis in the European context. For Germany, studies report a significant, though weaker, negative correlation between immigration and the wage growth of specific skill groups (Bonin 2005, Steinhardt 2011). For France, Edo (2015) shows that immigration has no detrimental impact on the wages of native workers with similar education and experience, but induces adverse employment effects. The weaker wage response for Germany and France may be due to the fact that European wages are more rigid than those in the United States (Card et al. 1997).

Using some of the ideas from the spatial skill-cell approach, Basso et al. (2020) examine U.S. immigrants' outcomes in light of technological change that has displaced workers in routine-jobs and endogenous immigrant migration. They show that low-skilled immigrants typically perform manual-labour intensive jobs that have not been much affected by routinization. Such workers are drawn to high technology intensity locations, as are highly skilled immigrants. They argue that this attenuates wage polarization and also encourages native workers displaced by technological change to upgrade their skills. Overall, they suggest that this is productivity enhancing.

2.2.3. Non-Structural Studies: Natural experiments

To address the identification issue arising from the non-random allocation of immigrants across labor markets, some studies take advantage of massive, rapid and unexpected immigration episodes driven by political factors. Indeed, political migrants often base their location decisions on non-economic factors, reducing the bias arising from the selection of high-wage destinations. In addition, the suddenness of these unexpected episodes may limit the migration of natives in the short run. Exploiting natural experiments can therefore provide a framework to identify the labor market effects of an immigration-induced increase in labor.

The first study that exploits a natural experiment is Card (1990). He uses the Mariel boatlift that occurred in 1980 when Fidel Castro decided that Cubans who wished to emigrate could leave from the port of Mariel. More than 100,000 Cubans decided to move to Miami because of its proximity to Cuba, increasing the labor force of the city by 7% in a short time. These Cubans were mostly low-skilled: around 60% lacked high-school degrees, and just 10% were college graduates. To estimate the labor market impact of this particular supply shock, Card (1990) compares the evolution of wages and employment in the period immediately following the supply shock to those in a set of control (and a priori similar) cities. He finds that the influx of Cubans in Miami did not affect the average wage and employment levels of non-Cubans.

The recent reappraisal of the Mariel evidence by Borjas (2017) indicates, however, that this particular supply shock significantly decreased the wage of (non-Hispanic male) high school dropouts. This result is consistent with the fact that the Cuban migrants were disproportionately low-skilled. It is also in line with Borjas and Monras (2017) who correlate wages and immigration across area-education groups and find a negative relationship. However, Peri and Yasenov (2017) show that these results are sensitive to the sample of workers used to define wages, while Clemens and Hunt (2019) observe that Borjas's (2017) finding is due to a sharp increase in the number of black workers with less than high school education randomly sampled in the U.S. government wage surveys between the pre- and post-Boatlift.

Another influential study is Hunt (1992). She exploits the large influx of repatriates from Algeria to France after the Algerian independence war in 1962 to investigate the labor market consequences of immigration. The end of the war generated a massive, sudden and unexpected exodus of around 600,000. This influx increased the pre-existing workforce in France by 1.6% on average and up to 7% in some southern regions. Hunt (1992) exploits the geographic clustering of repatriates and uses differences across local labor markets to identify their impact on the change in unemployment and wages between 1962 and 1968. She finds that the inflow increased the unemployment rate of non-repatriates and decreased the average level of French wages. Edo (2019) extends Hunt (1992)'s analysis and shows that the regional average wage of native workers indeed declined between 1962 and 1968 but fully recovered by 1976. This result is consistent with Jaeger et al. (2018) who exploit non-experimental U.S. data to investigate the wage impact of immigration and find that local-level wages initially decreased but returned to their pre-shock level after a decade.

The wage dynamic identified in Edo (2019) is close to the one identified by Cohen-Goldner and Paserman (2011) who investigate the adjustment of skill-specific wages (rather than local wages) in response to the massive flows of Jews from the former Soviet Union to Israel after the loosening of emigration restrictions in 1990 following the fall of communism. They show that occupational-level wages declined in the first year in response to the increase in the supply of workers, before returning to their pre-immigration levels after 4 to 7 years. These results are consistent with Monras (2020) who shows that the large increase in low-skilled immigration into the United States that resulted from the 1995 Mexico peso crisis and led to a reduction of low-skilled native wages at the state and metropolitan area levels.

Additional studies for Portugal, Turkey and Germany provide further evidence that massive and unexpected immigrant inflows generally induce adverse labor market effects. First, Mäkelä (2017) finds negative wage effects exploiting the 'retornados' who immigrated to Portugal in the mid-1970s following the independence of Portugal's African colonies Angola and Mozambique. Second, Tumen (2016) exploits the massive inflow of Syrian refugees in Turkey in response to the Syrian war and finds negative employment effects. Third, Dustmann et al. (2017) take advantage of a commuting policy allowing Czech workers to seek employment in eligible German border municipalities and find that this particular influx decreased local wage and employment levels between 1990 and 1993.

Demirci (2020) examines the potential displacement of native-born workers by similarly educated international students who study in the U.S. He exploits a change in visa policy that generated an increase in the supply of master's level international students in science, technology, engineering and mathematics (STEM) fields. He observes that the positive supply shock induced both a decline in employment for native graduates and an increase in earnings for more experienced workers in the same fields. This supports the idea that in the short-run direct competitors and complements experience the effects proposed by basic theory.

Although an important policy parameter, one issue not often addressed is the effect of arrival cohort size on the members of that cohort themselves. While only suggestive, using administrative data for Canada from 1982–2010 and controlling for skill levels, Hou and Picot (2014) exploit a series of policy changes affecting intake targets and observe that a 10 percent increase in the size of an entering cohort is associated with a 0.8 percent decline in entry earnings among men, and a 0.3 percent decline for women, in that cohort. Unlike most sources of exogenous variation examined in this section, this one can be interpreted as supporting an effect on the margin of "normal" Canadian immigration rates as opposed to more extreme shocks.

In general, natural experiments provide a relevant setting to understand how labor markets respond to supply shocks, especially in the short-run, just after immigration has taken place. It is not clear, however, whether some of these estimates can be generalized to contexts where migration occurs at slower and more predictable rates, and are largely driven by economic motivations (Peri 2016).

3. The Economic Integration of New Immigrants

A large literature exploring the economic integration of new immigrants commonly traces its origins to Chiswick (1978) who studied the single US census cross-section available at the time, and Borjas (1985, 1995) who extended this to two and then three census cross-sections. Chiswick observed that immigrants have an initial earnings deficit relative to comparable native-born workers, but this gap reduces with years since migration since immigrants' earnings increase more rapidly over time than those of the native born. He termed this "economic assimilation". Using multiple censuses allowed Borjas to also notice that more recent cohorts of immigrants experienced increasingly large earnings deficits at entry. As reflected in his 1985 title, "... assimilation, [and] changes in cohort quality", Borjas attributed the decline in entry earnings entirely to the supply side of the labour market whereas elements of the decline may reflect demand issues such as racial/ethnic discrimination; see audit studies such as Oreopoulos (2011) and Carlsson and Rooth (2007), and intergenerational studies such as Skuterud (2010). Patterns similar to Borjas's have been observed in other immigrant receiving OECD nations, as surveyed in the essays in Chiswick and Miller (2015a).

Much subsequent research has sought to understand predictors of post-migration labour market success with a focus on the transferability of skills, and host-country skill/knowledge investments including both government settlement service provision and actions taken by immigrants themselves. Surveys of relevant issues can be found in Chiswick and Miller (2015a). Studies of European settlement service provision are discussed by Butschek and Walter (2014). Some of this research has usefully fed into immigrant selection and integration policy in several countries.

Among the various factors associated with positive immigrant labour market outcomes, receiving country language skills appear to be essential (Chiswick and Miller 2015b). Studying the predictors of earnings, Warman et al. (2015) illustrate the complex interactions between receiving country language skills, and pre-migration labour market experience and education. They observe for Canada that all three interact and immigrants lacking receiving country language skills have low (or zero) returns to occupational and educational skills. Language skills to some extent determine/facilitate the productivity of other skills. Addressing the endogeneity of language course participation, Orlov (2018) suggests that a new immigrant attending a language course full-time for six months leads, on average, to a wage increase of 11.3%. Interestingly, he decomposes this into a 6.1% wage increase resulting from the language training allowing pre-migration skills (esp. education) to be useful in the host economy, and 5.2% as the direct result of the new language skills themselves. In the context of France, Lochmann et al. (2019) take advantage of the fact that new immigrants to France are assigned to a language-training program based on their score to a language test. Using a regression discontinuity design, they show a positive impact of language training sessions on labor market participation, mostly for relatively more skilled immigrants whose native languages are linguistically not too distant from French. Interestingly, the main mechanisms supported by the data relate not so much to language

acquisition properly speaking but, rather, to soft skills and information acquired during the training sessions.

Many other predictors have been studied, but we focus on two. First, age-at-arrival is seen to be a remarkable predictor with, at one extreme, child immigrants having remarkably good average educational and labour market outcomes, and receiving country labour market outcomes declining for arrival ages beyond the mid-thirty's (Schaafsma and Sweetman 2001, Sweetman and van Ours 2015). Second, immigration class/visa category (McDonald and Worswick 2015, Chin and Cortes 2015) tautologically has predictive power since it represents a selected bundle of underlying characteristics, but even with controls for commonly assessed individual attributes it seems to continue to predict outcomes, though to a more limited extent. Many visa categories exist in various countries, but three broad groupings can usually be discerned: those admitted for economic reasons, those who enter because of family unification, and refugees/humanitarian migrants/asylum seekers. The first commonly has superior labour market outcomes, but, perhaps surprisingly, there need not be much difference between the latter two.

One useful branch of the literature addresses government policies and operations in selecting, admitting and settling migrants. The actions of governments on these fronts can have appreciable impacts on outcomes, though immigrant self-selection can matter just as much. Focusing on skilled immigration selection systems, Clarke et al. (2019) compare labour market outcomes for new immigrants in Australia, Canada and the U.S. They observe improvements associated with policy reforms in each country, and note that these countries' screening policies are increasingly similar. Nevertheless, they observe a quantitatively important U.S. performance advantage that they interpret as resulting from positive immigrant self-selection. Damas de Matos and Parent (2019) focus on high-skilled immigrants who initially arrive in Canada on the basis of a points system and then transit to the U.S. They observe that these immigrants are more highly educated than immigrants from the same source country who go directly to the U.S., and they have better labour market outcomes once in the U.S. This two-step process affects a substantial proportion of young high-skilled immigrants in Canada, and the U.S. transition happens relatively quickly after arriving in Canada. Both results emphasize the effects of selection policy, and the simultaneous role of self-selection. They also illustrate that analytical results from immigration research in one country, and especially the U.S., are not always applicable in other jurisdictions.

Turning from selection to refugee processing, Ukrayinchuk and Havrylchuk (2020) provide another important illustration of how the operation of government immigrant processing affects outcomes. They study France, focusing on the period of "living in limbo" while asylum seekers wait for their claims to be adjudicated. They observe that longer durations in limbo are associated with reductions in various aspects of socioeconomic integration for those who are ultimately deemed to be refugees and have low levels of education. In contrast, refugees with a university degree do not experience these negative effects.

The impact of legal status is also observed by Adamopoulou and Kaya (2020) using Italian data. They focus on the 2007 European Union enlargement and on consumption as opposed to earnings, behaviour among immigrants, observing an appreciable increase for both previously documented and undocumented immigrants from new member states in the short-and medium-run. The probability of previously undocumented immigrants working in the formal sector increased while those who had been working legally had increased probabilities of obtaining permanent contracts.

Using data from Finland, Sarvimäki and Hämäläinen (2016) point to the substantial efficiency gains in settlement service delivery when active labour market programs for new immigrants are targeted, as opposed to being common with programs for the established population. Giesecke and Schuss (2019) estimate marginal treatment effects for the distribution of participants in German immigrant reception/training programs using the availability of training slots as an instrumental variable. They observe substantial heterogeneity across participants sorted according to their probability of participating in the treatment. On average, those who are treated experience a modest 2.5% increase in wages in the long-run, while the impacts of the program for those near the median are not statistically different from zero. However, those who are in the top 20% or so of the distribution experience increases of 15% for employment, and 13% for wages. And, in contrast, those immigrants who are most resistant to treatment have returns that are equally large, but negative. Addressing this heterogeneity is an important challenge in program delivery.

In Europe new immigrants who do not meet certain criteria are frequently required to undertake specific training or face sanctions--usually a reduction in state benefits. In contrast, programs tend to be voluntary in Anglosphere receiving countries. Ci et al. (2020) analyze immigrants' voluntary enrollment in postsecondary education in Canada using administrative data that allow up to 14 years of follow-up. They observe that approximately 11% of male immigrants, and 13% to 14% of females, enroll. In a fixed effect model making before-after comparisons, those who enroll full-time are estimated to have remarkably large subsequent average increases in annual earnings: 21.9% and 32.8% for men and women, respectively. While self-selection is playing a role in these extremely large average rates of return, and post-migration education is likely serving to complement/activate/validate pre-migration skills, this points to the tremendous value of formal education to a subset of new immigrants.

Another branch of the literature focusing on immigrant outcomes addresses non-labour market integration. Helliwell et al. (2020) look at immigrant life satisfaction in the United Kingdom and Canada. Life satisfaction scores for immigrants from a large and diverse set of source countries are seen to mimic those of the populations in their destinations, as opposed to those immigrants' source country populations. They view this as a test of the set point hypothesis, which posits that individuals will return to their natural level of happiness after a shock, but their analysis could also be interpreted as according with Chiswick's assimilation model.

4. The Fiscal Impact of Immigration

Compared to the extensive literature on the labour market impact of immigration, studies looking at the relationship between immigration and public finances are less common, with the main hindrance being the lack of reliable data. But, the issue has grown in prominence given population aging and increasing public pension expenditures. Studies addressing immigration and public finances use three distinct methodologies. Firstly, they explore the welfare magnet hypothesis, which posits that immigration decisions are made, in part, on the basis of the relative generosity of the receiving nation's social benefits. Secondly, they evaluate the net contribution of immigration to the public finances using a static accounting approach and cross-sectional data. Thirdly, they adopt a dynamic and intertemporal framework to measure the fiscal impact of migrants considering their entire life cycle.

4.1. Immigration and the Welfare Magnet Hypothesis

The first methodology evaluates the probability of immigrants and natives resorting to social protection schemes. The main goal of this approach is to assess the existence of welfare dependence with and without considering observable attributes (age, gender, marital status, level of qualification, etc.). Borjas (1999) suggests that dependence may reflect the generosity of social protection systems in the destination countries inducing adverse selection mechanisms: net beneficiaries are attracted while net contributors are repelled (a magnet effect). Studies that adopt this approach obtain different results depending on the country considered, reflecting heterogeneity in social protection systems.

In the United States, immigrants depend on social assistance disproportionately compared to natives (Borjas 1999). Although earlier US studies show that immigrant families used social benefits less frequently than similar American families (Tienda and Jensen 1986, Jensen 1988), if we take into account in-kind aid (e.g., free medical assistance) in addition to monetary assistance, a greater dependence of migrants is observed (Borjas and Hilton 1996) and persists regardless of the duration of an immigrant's stay (Borjas and Trejo 1992). More specifically, Borjas and Hilton (1996) highlight different levels of dependence according to the type of welfare program involved. Borjas and Trejo (1992), focus on potential cohort and assimilation effects. They find that (i) the cost for the welfare system of an average immigrant family is 1.7 times higher than that of a native family, (ii) 1980 immigrants used the welfare system more intensively than 1970 immigrants, and (iii) the intensity of benefits increases with the duration of an immigrant's stay. This last finding of assimilation into the welfare system was also highlighted by Hu (1998). It can be explained by a better understanding of social institutions and the prevalence of legal restrictions to access to social programmes during the initial years of an immigrant's stay.

Using longitudinal administrative data from 1993 to 2007 for Canada, Ostrovsky (2012) observes a complex pattern of social benefit use in his contrast of immigrants resident in Canada for 15 years or less with a comparison group comprising the native born and immigrants in Canada for 15 years or more (administrative data limitations mean that immigrants prior to 1980 cannot be distinguished from the native born). He segregates social programs into three categories: employment/ unemployment insurance, social assistance, and transfers to low-income families with children. The latter transfer programs extend further up the income distribution than does social assistance. Immigrants in all cohorts make less use of unemployment insurance and greater use of social assistance, and have substantially higher transfers to families with children. This trend appears to be a function of both family composition and the decline in new immigrant labor market earnings discussed in 2.2.

In Europe, the first significant study on the impact of immigrants on public finance is Brücker et al. (2002). The authors identify two groups of countries: Germany, Greece, Portugal, Spain and the UK in which no differences in the welfare dependency rates are observed; and Austria, Belgium, France, Netherlands and Nordic countries where immigrant welfare benefits are higher than those of natives even after controlling for socio-economic factors. More recent studies depart from this initial result. Boeri (2010) finds no empirical evidence of welfare dependency of immigrants in EU countries. Huber and Oberdabernig (2016), who study 16 EU countries, show that immigrants tend to receive fewer social benefits than natives. For Germany, Riphahn (2004) and Castronova et al. (2001) show that the higher welfare participation rates among immigrants result from socio-demographic characteristics and are not related to immigrant status. The

findings are equally clear in the case of Ireland and the United Kingdom, where immigrant populations appear to be less dependent on social protection (Barrett and McCarthy 2008, Dustmann and Frattini 2014). An important insight from Razin and Wahba (2015) is that detecting welfare magnets or not may depend on the nature of the migration regime: their evidence supports the welfare magnet hypothesis when international mobility is free (as is the case within EU countries) but reject it in restricted (i.e., skill-selective) migration regimes.

4.2. The Static Accounting Approach of Fiscal Impact

The second branch of the literature investigates the fiscal impact of immigration by using a static accounting framework. The aim is to compare the benefits that immigrants derive from the public sector with their contribution to compulsory levies. Much like Chiswick (1978), and subject to some of the same critiques raised by Borjas (1985, 1995), this static approach evaluates the fiscal impact at a given point in time (usually a year) of the entire immigrant population. Taxes and public benefits are very sensitive to individuals' age and education. As a result, the decomposition of the population is not limited to distinguishing immigrants from natives by age, level of education and origin. Subtracting the total amount of taxes paid by each subpopulation from their total public benefits leads to a net contribution to public finances. Individual net contributions are very sensitive to immigrants' education levels. This result can explain the adoption of selective migration policies for highly skilled migrants in many countries. A key issue in these analyses is the particular items included in lists of benefits received and taxes paid. They are rarely comprehensive.

Overall, the accounting methodology suggests that immigrants are fiscally neutral (Preston 2014). Focusing on immigrants and their descendants in the US in 1994 and applying this static accounting approach, Lee and Miller (1998) assess their total net fiscal contribution at +0.35% of GDP. Using the same methodology, Bonin (2006) for Germany, and Rowthorn (2008) for the United Kingdom also find that immigrants had a moderate but positive impact on public finances. For 2006, Chojnicki (2013) shows that the total net contribution of immigrants to French public finances was not negative (+0.2% of GDP), despite their over-representation in some segments of social protection. In accordance with previous national studies, Rowthorn (2008) points out that in developed countries the total net contribution of immigrants to public finances generally varies between $\pm 1\%$ of GDP, depending on assumptions and economic conditions. Using data for the years 2007-2009, the OECD (2013) finds an even smaller range of $\pm 0.5\%$ of GDP for most of its member countries. The relative fiscal neutrality of immigrants in these cross-sectional studies can largely be explained by significant differences in the native and immigrant age structures. Immigrants are overrepresented in the working-age population, during which individuals irrespective of origin (native or immigrant) pay more taxes, levies and contributions than they receive in the form of benefits and public transfers. Longitudinal data are required to answer the key questions of interest.

Dustmann and Frattini (2014) measure immigrant contributions to public finances in the United Kingdom from 1995-2011. They infer individual contributions using a preliminary econometric step that estimates differential probabilities (native vs. immigrant) of receiving public subsidies and paying taxes and levies. They made an explicit distinction between European immigrants and those from a third country. They show that over the period examined, immigrants from the European Economic Area (EEA) made a positive net contribution, unlike those from non-European countries. In the same spirit, the U.S. National Academies of Sciences, Engineering, and Medicine (2016) conducted an exercise for 1994-2013 revealing that, at all ages, the net

fiscal contribution of the first generation of immigrants was, on average, less favourable than that of the second generation and natives (i.e. third-plus generations). Controlling for education and ethnicity eliminates a significant part of the difference between first and third-plus generation net contributions. This reduced net fiscal contribution of immigrants explains why, in 2013, their contribution to the total deficit (22.4%) was greater than their weight to the total population (17.6%).

Chojnicki et. al. (2018), using the same static approach, quantify the fraction of public revenues and expenditure that can be attributed to immigrants in France over the 1979-2011 period. They show that the net contribution of immigrants is negative overall for the entire period, but remains relatively low, contained within $\pm 0.5\%$ of GDP (reduced to $\pm 0.2\%$, if we exclude 2011). This finding is explained by a favourable demographic structure, which offsets lower net individual contributions. After the 2008 crisis, this demographic compensation no longer operates due to the huge deterioration in the individual net fiscal contribution of immigrants. Applying this approach to Denmark, Martinsen and Pons Rotger (2017) refute the welfare burden thesis associated with European immigration in this country over the years 2002-2013.

4.3. The Dynamic Approach of Fiscal Impact

The third, more ambitious, approach abandons the static dimension of the accounting method in order to adopt a dynamic and intertemporal framework. The static accounting method shows that public benefits and taxes vary greatly by stage of life, which is a key limitation suggesting the value of a dynamic approach. However, in some contexts modeling assumptions are needed to make up for longitudinal data limitations and the ensuing findings can be quite sensitive to those assumptions. This approach was at first carried out by calculating a long horizon net present value (NPV). This dynamic approach was followed by generational accounting analyses, and more recently by the development of dynamic applied general equilibrium models. Like the static approach, this method relies on the treatment of the particular list of tax and transfer/expenditure system elements, which is almost always incomplete.

4.3.1. The Net Present Value Approach

This methodology expands the static accounting approach over time by projecting the net fiscal impact of immigrants, and sometimes their descendants, over their lifetimes in the host country. The results of such forward-looking analysis are sensitive to assumptions made about uncertain future variables (the amount of taxes immigrants will pay over their lifetime, the public benefits that they will receive, how long they will live in the host country, the number of children they will have, etc.). They are also highly sensitive to the discount rate. Generally, these uncertainties are taken into account by examining the robustness of the results across a set of alternative scenarios. Lee and Miller (2000) conclude that immigrants in the US have a negative initial fiscal impact (due to lower earnings compared to natives and schooling costs of their children). It is necessary to wait 16 years before this fiscal impact turns positive.

According to Storesletten (2003), the average new immigrant in Sweden makes a negative net present contribution. His results are very sensitive to the assimilation of immigrants into the host-country labour market. He estimates the “break-even” employment rate (rate for which the net contribution would be zero) to 60% (below the empirical rate for new immigrants). Monso (2008) finds also a negative net fiscal impact of new entrants in France.

Chardon et al. (2020) takes a related approach for Canada. Using longitudinal tax data for 1982 to 2016, they follow all immigrants who arrive between 1980 and 2016 tracing out arrival-cohort-specific income and social security tax payments (but not address property taxes, valued added taxes and the like) from which they subtract direct fiscal expenditures such as unemployment insurance and public pension payments (but no attribution is made for public goods, nor for costs that are difficult to attribute to individuals such as healthcare and education -- although they address healthcare in a limited aggregate manner in an extension). A lifecycle net direct fiscal contribution results, which they then use to calculate a NPV at arrival and in turn the NPV is analyzed as a function of immigrant age-at-arrival, year of arrival and visa category. Although the scope of costs and benefits is limited, a useful interpretation arises through contrasts to a comparison group comprising the native born and immigrants who arrived prior to 1980. On average, the net direct fiscal contribution of immigrants is always lower (less positive) during their working lives because of lower taxes and social contributions; but given the minimum residency requirements and prorated benefits of public pensions it is higher (less negative) in retirement. This pattern is reasonably stable across entry cohorts, but strongly affected by age-at-arrival. NPVs of the lifecycle net direct fiscal contribution are negative or zero at all arrival ages for refugees and family reunification immigrants, much below that for economic class migrants who for some arrival ages have positive NPVs.

4.3.2. Generational Accounting Analysis

The Generational Accounting approach was carried out in order to study the impact of a change in migration policy on the average fiscal burden borne by different cohorts. It is based on the NPV methodology, to which it adds the government's intertemporal budget constraint (a deficit ultimately needs to be paid for by resident taxpayers). The fiscal impact of immigrants is measured by how the fiscal burden of future natives is modified by the arrival of new immigrants (and their descendants).

This approach, applied to the fiscal contribution of immigrants, was pioneered by Auerbach and Oreopoulos (2000). This initial study simulates a scenario in which no additional immigration takes place after 2000 in the USA and shows that this massive change in immigration policy has only small fiscal effects. The strength and signs of the fiscal impact depend on the extent to which the existing fiscal imbalance will be divided between recent and future generations. Bonin et al. (2000) find that immigrants yield a small positive net contribution to German public finances. Collado et al. (2004) also conclude that immigration has a positive and significant impact on the Spanish welfare system. The fiscal burden on future natives is dramatically reduced by an increase in the inflow of immigrants: in a scenario with 200,000 immigrants per year, this per capita burden is reduced by 18.7% compared to a scenario with 60,000 immigrants. Mayr (2005), under the assumption of unchanged structure by age and fiscal characteristics of future immigrants, finds a positive fiscal effect of immigration for Austria. Chojnicki (2011, 2013), with a similar set of assumptions, concludes that new immigrants make a negative average life cycle contribution in France in 2005.

Although results vary, for the most part studies for European countries suggest that immigration has a positive effect on the intertemporal public budget, while its impact is relatively weak for the US. The reason for such seemingly contradictory results across countries is essentially the far more pronounced process of demographic ageing in Europe than in the US. Much more work is needed to understand how immigrant selection and settlement policies affect public budgets.

4.3.3. Dynamic Applied General Equilibrium Models

Evaluation results regarding the fiscal consequences of immigration depend on the scope of the fiscal contributions and costs attributed to new immigrants. All the previous studies focus on the direct fiscal impact of immigration and neglect indirect impacts. As described for the labour market effects of immigration, the entry of new workers may affect productivity, and hence wages and the returns on physical capital. In most European countries immigrants are generally less skilled than natives; their arrival may cause downward pressure on the wages earned by low-skilled native workers (redistribution between workers) and increases the pressure on them to acquire new skills. In some traditional immigrant receiving nations with strong selection policies the reverse is the case.

Through its impact on wages, interest rates and taxation, immigration induces indirect effects on natives' choice of labour supply, human capital investment and saving. All these general equilibrium effects involve perturbations on the demand and supply of factors that can reinforce or attenuate the direct fiscal impact. NPV and general equilibrium studies to date have only included demographic changes, not other induced economic changes. Dynamic applied general equilibrium models, in contrast, simultaneously address direct and indirect effects looking forward. These studies have also extended their analysis to question of the potential role of immigration policies given the challenges posed by demographic ageing. Of course, results from these studies are sensitive to a wide variety of modeling choices and more research is needed to better understand the implications of alternatives.

Storesletten (2000) extends Auerbach and Kotlikoff's (1987) modelling approach to investigate the fiscal impact of immigration policies in the US. He takes into account the heterogeneity of skills among immigrants. He shows that although immigrants initially represent a net cost to US public finances, this cost is smaller than the initial cost of a newborn native and concludes that immigrants aged between 20 and 40 years old have a beneficial impact from a fiscal perspective. His model suggests that a selective immigration policy, involving an annual increase of 1.6 million 40-44-year-old highly skilled immigrants, could resolve the fiscal problems associated with the ageing of the baby boom generation in the US. Oddly, this studies' optimal age for new immigrants is appreciably older than that found by others to maximize either the net fiscal direct fiscal contributions (Chardon et al. 2020) or earnings (Sweetman and van Ours 2015).

Using a three-region (US, Japan and EU) dynamic overlapping generations general equilibrium model, Fehr et al. (2004) reach a broadly similar conclusion. Only a massive increase in highly skilled immigration can have a significant positive effect on public finances. Chojnicki et al. (2011) look at post-war (1945-2000) immigration to the US. They find that these flows of migrants were beneficial for all cohorts of natives and for all skill categories. But, these results mostly derive from immigration's estimated large positive fiscal impacts and moderate labour market impacts. It is, therefore, not clear how relevant these results are going forward since the early years of the analysis period saw relatively high taxes when the war debt was being paid off, and the U.S. immigration rate was modest compared to traditional immigrant receiving nations and the current U.S. rate. For example, Aydemir and Sweetman (2008) show the Canadian immigration rate being roughly five times higher in the 1950s and 1960s. However, the U.S. rate increased so that by the early 2000s the Canadian immigration rate was only about 2.5 times higher. As discussed in 2.2.3, the size of the arrival cohort likely has implications for outcomes.

Chojnicki and Ragot (2015) show that immigration positively affects French social protection finances in the short-run. These benefits from immigration are mainly explained by the immigrant age structure, which is younger than the French population as a whole, affecting net flows. An immigration policy favouring highly skilled workers can magnify those gains in the short- and medium-term, while reducing demographic changes, but in relatively low proportions. Most importantly, this improvement is only temporary. In the long term, demographic changes associated with a more selective immigration policy outweigh its positive effects compared to a non-selective policy due to skilled migrants having lower fertility rates and a longer life expectancy. Of course, the skill level of new immigrants affects more than demographics, illustrating one of many trade-offs in immigration policy.

5. Immigration, Attitudes and Political Preferences

This section gives a broad overview of the economic literature on diversity, immigration and preferences. We first present evidence on the balance between economic versus cultural concerns about immigration and then turn to the literature about diversity and preferences for redistribution before outlining how economic and cultural concerns may translate into voting behavior. We emphasize the importance of the type of exposure to immigrants (direct, interpersonal contact versus “segregated” exposure) in shaping natives’ preferences, and also how different migrant characteristics (source country, educational background, migration status) can substantially alter the political response of voters.

Overall, causal inference in the case of immigration and attitudinal outcomes is difficult because selection and sorting into and out of diverse regions cannot be ruled out in most cases. We review papers that carefully address these endogeneity issues with various approaches. A few analyses use an instrumental variable approach to account for a potential selection of immigrants into and out of certain neighborhoods. These analyses typically use past migrant networks (past settlements) as predictors for future migration flows. Despite its limits, this so called “shift-share” instrument is a popular (but imperfect) tool among migration researchers to establish a causal link between migration and the outcome of interest (Goldsmith-Pinkham et al. 2020). Many papers reviewed in this section exploit natural experiments, such as the extension of the Schengen space or migration allocation policies in various countries, or controlled experiments in the form of survey experiments to account for drawbacks in instrumental variable estimation. Considered jointly, all of these papers shed light onto the interplay between migration, political preferences and attitudes.

5.1. Disentangling Cultural v. Economic Factors in Attitudes towards Immigration

When immigrants enter a country, they change the composition of the population and may impose externalities (positive and/or negative) on the host society. Migration affects the cultural, racial, religious or ethnic composition of the host country, which impacts natives’ preferences for “cultural amenities” of their neighborhood or co-workers (Card et al. 2012). In a study about racial and economic factors’ associations with attitudes to immigration, Dustmann and Preston (2007) differentiate between three channels: i) labour market, ii) fiscal and iii) racial or cultural. Using the British Social Survey, the authors observe that in the economic domain fiscal concerns are more important in determining attitudes to immigration than labor market ones. They assess cultural concerns about immigration by looking at the “cultural distance” between origin and host countries and conclude that racial or cultural prejudice is an important determinant of

attitudes. However, this is restricted to immigration from countries with ethnically different populations. Consequently, preferences over culture/amenities become more salient than fiscal concerns when considering migrants that are ethnically different from the host population.

In a subsequent study, Card et al. (2012) attempt to measure the relative importance of economic and cultural concerns in driving opinions about immigration policy in a cross-country setting. They use European Social Survey questions on the perceived labor market and social impacts of immigration, as well as on the desirability of increasing or reducing immigrant inflows. Compositional concerns are 2–5 times more important in explaining variation in individual attitudes than concerns over wages and taxes. Likewise, most of the difference in opinion between more- and less-educated respondents is attributable to heightened compositional concerns among people with lower education. Müller and Tai (2020) pursue this line of inquiry and build a structural model of attitudes across 20 European countries. Their results line up with those of Card et al.. Economic issues are important determinants of attitudes, but non-economic factors play a more decisive role especially for less educated receiving country natives.

A standard approach to measuring the influence of economic factors in attitudes towards migration is to look at natives for whom immigrants are more likely to be substitutes in the labor market. In a world where employees compete over jobs and wages, and workers are well informed and find relevant economic analyses credible, low-skilled workers should be worried about low-skilled immigrants and high-skilled workers should be worried about high-skilled immigrants. Consequently, in the absence of preferences over cultural amenities, low-skilled workers should not oppose high-skilled immigrants and vice versa. However, this is not the finding of the literature. For instance, using data of the German Socio-Economic Panel, Poutvaara and Steinhardt (2015) find that bitterness in life is strongly associated with worries about immigration. They show that this effect cannot be explained solely by labor market concerns. Instead, it appears that people who feel that they have not got what they deserve in life oppose immigration.

Studies Hainmueller et al. (2007), Hainmueller et al. (2015), and Davis and Deole (2015) all confirm that the labor market competition hypothesis is not the main determining factor in attitudes towards immigration. Rather, a large component of the link between education and attitudes toward immigrants is driven by differences in cultural values. This observation has also been confirmed in the historical context of the Great Migration in the United States (Tabellini 2020). Overall, more educated respondents are less racist and place greater value on cultural diversity than do their counterparts; they are also more likely to believe that immigration generates benefits for the host economy as a whole (Hainmüller et al. 2007).

Another strand of the literature uses survey experiments to elicit natives' attitudes towards migrants with various characteristics. In particular, they experimentally manipulate reports of refugees' characteristics and reasons for migration. Bansak et al. (2016) are one of the first to conduct a survey in 15 European countries to analyze what types of asylum seekers Europeans are willing to accept. Generally, voters strongly oppose the acceptance of refugees who migrate for economic reasons. But they are very likely to be favorable towards the acceptance of a refugee who has been a victim of torture in her/his origin country or is very vulnerable on other dimensions (such as handicapped or no surviving family). Nevertheless, asylum seekers who have higher employability are preferred over asylum seekers with an otherwise identical profile. In the German context, Stöhr and Wichardt (2019) also highlight the importance of context, identity and individual characteristics for host populations' attitudes towards refugees.

In the popular media a connection is sometimes made between immigration and terror attacks. Dreher et al. (2020) address the issue of whether there is an increased probability of such an event in a receiving country as a function of the country's immigrant population. Using data from 1980 to 2010 for 20 OECD receiving countries and 183 origin countries, they observe that the probability of a terrorist attack increases as the number of non-native born residents in a receiving country increases. However, they observe that the magnitude of the effect is comparable to that for the native population. That is, immigrants are not disproportionately likely to undertake such crimes. In a second step, they examine the effect of stricter immigration and integration policies on the prevalence of such attacks. In contrast to some expectations, they find that the repression of migrants living in a country serves to alienate appreciable proportions of affected populations. Finally, they find no evidence that immigrants from Muslim majority countries, or countries with recognized terrorist networks, are more likely to undertake such attacks than others.

5.2. Immigration and Preferences for Redistribution

Immigration can affect preferences for redistribution through both cultural and fiscal channels. On the one hand, the most obvious cultural channel relates to group loyalties: one hypothesis is that the willingness to redistribute increases with the share of an individual's own ethnic or cultural group in a community and decreases when other groups grow in size (this holds in particular for groups of welfare recipients). This is also a long standing area of study outside of economics (Banting and Kymlicka 2006). On the other hand, natives may have fiscal or labor market concerns. When immigrants enter the labor force and compete with native workers, native workers' perceived risk of downward income mobility may increase. Native workers likely demand more redistribution to insure against this risk. Also, motivated by welfare magnet concerns, discussed above, native workers may want to restrict new immigrants' access to social programs (Alesina et al. 2018).

Focusing on the European context, Alesina et al. (2019) show for 140 regions across 16 Western European countries that natives' support for redistributive policies decreases with the share of immigrants in their region of residence. Their results hold while accounting for factors driving the location choices of migrants such as national welfare policies (given the inclusion of country-time fixed effects) or regional economic prospects and are robust to instrumenting immigration using a standard shift-share methodology. The authors find that this negative association is driven by respondents positioning themselves at the center-right, holding negative views about immigrants,³ and living in countries with relatively large welfare states. Moreover, this result is amplified when immigrants originate from Middle-Eastern countries or from Eastern Europe, are less skilled, and are residentially more segregated from the native population. Moving from survey data to electoral data and information on party voting across 126 parties in Europe during 28 elections between 2007 and 2016, Moriconi et al. (2018) find a positive association between high skilled immigration and support for parties with an expansionist welfare agenda and the reverse for low skilled immigration. In the context of a large survey experiment in six countries, Alesina et al. (2019) provide evidence that respondents who were primed to think about migration before being surveyed on their preferences for redistribution are less likely to support a generous welfare state. While most respondents carry large misperceptions about the number and characteristics of immigrants (they think of them as more culturally distant, less educated, poorer

³ Arguably, political views and attitudes toward immigration themselves depend on the size and composition of immigration. Therefore, Alesina et al. (2019) also use "exogeneous" proxies such as age or religiosity.

and more dependent on the social transfer schemes), rectifying those misperceptions does not alter their general stance on the welfare state.

Moving beyond cross-country analyses and relying on a natural experiment in Sweden, Dahlberg et al. (2012) aim to establish a causal link between ethnic diversity and Swedish preferences for redistribution. The authors exploit a nationwide program for placing refugees in municipalities throughout Sweden during 1985–94 and find that increased immigration has significant negative effects on support for redistribution. The effect is especially pronounced among high-income earners, since they are net-contributors to the social welfare system and care more about who this money goes to once the ethnic diversity in their community increases. However, the results found in Dahlberg et al. (2012) were contested in Nekby and Pettersson-lidbom (2017).

5.3. Immigration and Extreme-Voting

The analysis of attitudes towards migration and preferences for redistribution relies on survey data which are subject to the usual pitfalls that come with self-reported outcomes. Using electoral outcomes as a measure for policy preferences and attitudes is a useful complement to the existing literature and has recently been applied to various local and national contexts.

Three studies look at the impact of immigration on election outcomes in Danish municipalities (Dustmann et al. 2019, Gerdes and Wadensjö 2010, Harmon 2018). Each of these studies employs a different empirical strategy, ranging from the shift-share instrument mentioned above to exploiting the quasi-random assignment of refugees to different municipalities in Denmark. All of these studies posit a positive causal link between immigrant shares and votes for anti-immigration parties. In contrast, Dustmann et al. (2019) find heterogeneity in the sense that a larger share of refugees increases the vote share of anti-immigration parties in rural municipalities but has the opposite effect in urban municipalities. They also find that anti-immigration parties base their decision on where to run in municipal elections on the refugee allocation, thus providing some evidence that migration not only influences political demand but also supply.

Other studies about the effect of a higher share of immigrants in a municipality on the vote shares for parties at the political fringes, such as the center-right coalition in Italy (Barone et al. 2016), the Front National's Party in France (Edo et al. 2019), the Swiss People's Party (SVP) in Switzerland (Brunner and Kuhn 2014), and the Freedom Party (FPÖ) in Austria (Halla et al. 2017) confirm previous findings that municipalities with higher immigrant shares also show higher support for right-wing parties. Halla et al. (2017) suggest that voters worry about adverse labour market effects of immigration, as well as about the "quality" of their neighbourhood.

The literature on the effects of refugees on voting behavior expanded markedly following the European refugee crisis in 2015. A first set of papers studies how exposure to transiting refugees affects natives' attitudes and voting behavior. Hangartner et al. (2019) exploit a natural experiment in the Aegean Sea, where Greek islands close to the Turkish coast experienced a sudden and massive increase in refugee arrivals while similar islands slightly farther away did not. The immediate exposure to large-scale refugee arrivals induced: sizeable and lasting increases in natives' hostility toward refugee, immigrant and Muslim minorities; support for restrictive asylum and immigration policies; and political engagement to affect such policies. Dinas et al. (2019) show that the same exposure also increased support for the extremist Golden Dawn Party. Steinmayr (2020) studies the effects of different types of exposure to refugees on voting in Austria's 2015 state elections. Municipalities at the German border experienced the

crossing of large numbers of refugees on their way to Germany and this increased voting for the far-right Freedom Party of Austria. Ajzenman et al. (2020) also study exposure to refugees on their journey from Turkey to countries in Northern Europe. Entrepreneurial activity of natives fell considerably in localities that were more exposed to mass transit migration compared to those located further away. These results are likely to be explained by a decrease in the willingness to take risks as well as in confidence in institutions. Exposure also increased anti-migrant sentiments while attitudes towards other minorities remained unchanged.

A second set of papers studies the effects of the local housing of asylum seekers and refugees. Steinmayr (2020) studies Austrian state elections in September 2015 when the number of asylum seekers coming from the Middle-East and Africa to Austria were peaking and the public debate around the refugee situation overshadowed all other issues. While some voters in this setting were exposed to transiting refugees, others were exposed to asylum seekers housed in their municipality. The author uses pre-existing accommodations suitable to host larger groups (e.g., retirement homes or student housing) as an instrumental variable to address potential endogeneity. In contrast to exposure to transiting refugees that increased far-right support, hosting refugees in a municipality reduced support for the far-right. The author proposes that intergroup contact theory put forward by Allport (1954) may drive these results. In the Austrian setting, the situation in municipalities that accommodated refugees to some extent resembles the features of the Allport intergroup contact theory. Local authorities and NGOs actively facilitated interactions between natives and refugees. Many municipalities introduced the refugees to the population in local papers and held welcome events to introduce refugees and natives to each other.

These findings have two implications. First, the type of exposure to immigrants is a major determinant in the formation of attitudes towards migrants and subsequent extreme voting. The importance of salience in exposure to immigrants is illustrated in Colussi et al. (2016) who, with results that may be interpreted as being somewhat at odds with Allport's hypothesis, record higher levels of extreme voting in communities that have Mosques and where election dates are closer to Muslim holidays. Second, and similar to the literature on immigration and preferences for redistribution, there may be differences across migrant characteristics (e.g. asylum seekers versus migrants from previous generations, more or less skilled migrants, and migrants from different origin countries). For instance, less skilled migrants seem to prompt a more extreme political backlash by natives in the United States and Europe (Halla et al. 2017, Mayda et al. 2018, Moriconi et al. 2018). Finally, Mayda et al. (2020) find that low-skill immigration to the U.S. boosts votes for the Republican Party in counties where low-skilled immigrants compete more with native workers.

6. Immigration, Trade and Productivity

Among economic growth issues, international trade is perhaps the most thoroughly researched; see Rapoport (2018) for a survey. Immigrants may promote trade by: i) reducing transactions costs associated with language, culture and local knowledge, ii) knowledge diffusion, iii) facilitating networks of trust that replace or facilitate markets, and iv) exercising their preferences for purchases (Figueiredo et al. 2020). A classic paper is by Head and Ries (1998). They find that a 10 percent increase in immigration to Canada is associated with a 1% increase in exports to the immigrant's home country while imports increase 3%. Economic immigrants tend

to have a greater influence on trade, although immigrants in specialized “entrepreneur/business” classes have relatively little effect. Wagner et al. (2002), extend the analysis and find diminishing marginal trade volumes with increasing numbers from an average source country, with volumes tapering off more quickly for exports than imports. Partridge and Furtan (2008) extend it further and notice a timing issue: imports increase shortly after arrival, but exports take 20 years to reach full impact. Peri and Requena-Silvente (2010) examine the issue for Spain with recent data, but restrict their attention to exports, with findings very similar to Head and Ries. Combes et al. (2005) find an even more substantial effect of internal migration and social networks for intraregional trade in France.

In terms of mechanisms, the transaction cost/information channel is strongly supported in cross-country comparisons showing stronger results for heterogeneous goods (e.g., Rauch and Trindade 2002, Felbermayr et al. 2010). More recently, Parsons and Vezina (2018) or Steingress (2018) make a significant advance: they address the endogenous geographic distribution of immigrants by exploiting plausibly exogenous variation in the allocation of refugees across U.S. states. They find that a 10% increase in the size of migration networks increases US exports to origin countries by 0.8% to 1.5 per cent, again higher (actually, significant only) for trade in heterogeneous goods.

Interestingly, the literature on migration and financial investments follows the same evolution (with some time lag) and finds qualitatively similar results (Kugler and Rapoport 2007, Javorcik et al. 2011, Leblang 2010, Burchardi et al. 2019, Kugler et al. 2018, Mayda et al. 2020). While in the above literature, exports and FDI are treated independently, this need not be the case. Indeed, these are joint decisions whereby a firm chooses its mode of entry to a foreign market from a menu which also includes outsourcing (Helpman 2006). Hence, a recent strand of literature looks at how the presence of immigrants affects firms’ mode of entry. Aubry et al. (2020) explore the FDI/exports margin while Ottaviano et al. (2013) investigate how the presence of immigrants hinges on firms’ offshoring decisions in the US (ultimately serving the domestic market). Finally, Moriconi et al. (2020) study Danish firms offshoring decisions. They observe that offshoring is a function of institutional frictions in the destination country, but that these are mitigated by strong bilateral immigrant worker networks. Moreover, the probability of offshoring to a particular country increases with the share of immigrants from that destination country at the Danish firm.

Immigration, particularly of high-skilled workers, can also affect productivity and wages through contributions to human capital formation and innovation in receiving economies. The studies by Hunt and Gauthier-Loiselle (2010) and Kerr and Lincoln (2010) show, for instance, that high-skilled immigrants who are concentrated in STEM (science, technology, engineering and math) occupations contribute positively to patenting and innovation in the United States. Moreover, immigrant inventors and scientists bring with them the knowledge and technologies that made their home countries powerhouses in their fields. Famous historical examples include the onset of the textile industry in Germany, which can be linked to the arrival of the French Protestants (the Huguenots) after their expulsion from France in the late 17th century (Hornung 2014); or the expansion of patenting in certain fields of chemistry in the US that relate to the pattern of specialization of Jewish scientists expelled by the Nazis who immigrated to the US around WWII (Moser et al. 2014). Bahar et al. (2020) provide cross-country evidence of knowledge diffusion in innovation along the same lines. They show in cross-country regressions that host countries are significantly more likely to patent in a certain field when their immigrant inventors

come from countries with strong specialization in those fields. However, Blit et al. (2018, 2020) find both mixed and less optimistic results for Canada, illustrating the difficulties in transferring findings from one national context to another and the need to approach questions with multiple methodologies and datasets.

Finally, immigrants affect productivity and economic performance by bringing new knowledge and skills that complement domestic ones. Knowledge diffusion from home countries shapes the dynamic comparative advantage of the host nations (Bahar and Rapoport 2018). They can, in some circumstances, induce efficiency gains through improved matching of firms and workers (Orefice and Peri 2020). Diversity in ethnicity or birthplaces generates cost and benefits. While the literature is mixed, the costs seem to outweigh the benefits in contexts of conflict (Hjort 2014). However, the opposite holds in better institutional environments, more complex production processes and structures, and for more aggregated outcomes, suggesting positive externalities from diversity beyond the boundaries of the firm (e.g., Alesina et al. 2016, Ager and Brückner 2013, Ortega and Peri 2014, Docquier et al. 2020, Bahar et al. 2021).

7. Discussion and Conclusion

Immigration in OECD countries is an increasingly relevant economic issue as immigration rates increase and immigrants comprise increasingly large shares of host country populations. Economic research on immigration has a long history of addressing labour market and fiscal issues, and this work is ongoing with new and sometimes surprising results emerging regularly. New data sources, particularly administrative data covering long periods of time, are allowing important questions to be addressed that were infeasible previously. Moreover, as can be seen from the body of studies surveyed, the scope of economic analyses encompasses a much broader set of issues including the impacts of diversity on dimensions of social cohesion, such as trust, public goods provision, preferences for redistributive policies, political polarization and, especially for refugees, settlement service provision. Interest in understanding relationships between immigration and economic growth -- through mechanisms such as international trade, investment/capital flows, and innovation/productivity -- are also high on many policy-makers' agendas.

This review of the literature suggests that those wanting simple and unalloyed answers will, however, not be happy. The very real headway researchers are making shows that national experiences vary, and highlights the complexity of the interactions between the composition of immigration flows, receiving country institutions and other factors all of which lead to heterogeneity, sometimes quite predictable variation, in labor market, fiscal and social/cultural outcomes. Economic and social/cultural issues are also seen to play out in tandem. Nevertheless, some overarching patterns are evident. Extreme concerns about deleterious labour market, fiscal and social/cultural impacts following from new immigration are not warranted, and large increases in GDP per capita are also not generally observed. It is, however, clear that government policies and practices regarding the selection and integration of new migrants affect labour market, fiscal and social/cultural outcomes. Immigration policies that are well informed, well crafted, and well executed can beneficially improve population welfare.

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