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**Article**

## Firms, sorting, and the immigrant–native earnings gap

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## Firms, sorting, and the immigrant–native earnings gap

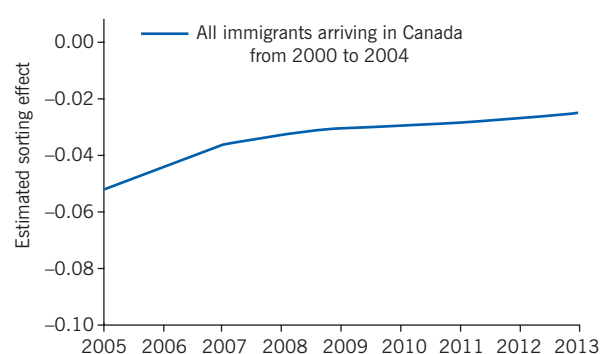
The immigrant–native earnings gap is due in part to firm-specific factors resulting from differential sorting of workers into firms

Keywords: immigrants, earnings, workers, firms, sorting, human capital

### ELEVATOR PITCH

Recent research has tried to quantify how firms contribute to the immigrant–native earnings gap. Findings from several countries show that around 20% of the gap is due to firm policies that lead to a systematic underrepresentation of immigrants at higher-paying firms. Results also show that some of the closing of the gap over time is attributable to the reallocation of immigrants toward higher-paying employers. This pattern is especially pronounced for immigrants coming from disadvantaged countries, who face several barriers at initial entry, including language difficulties and lack of recognition of their educational credentials.

Immigrant–native gap in (log)earnings growth due to moves into higher paying firms



Source: Based on Figure 1.

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### KEY FINDINGS

#### Pros

- ⊕ The immigrant–native earnings gap is due in part to firm-specific factors.
- ⊕ Most firm-specific factors stem from immigrants sorting into low-pay firms rather than high-pay firms.
- ⊕ Immigrants with higher levels of education can assimilate more quickly through mobility from low- to high-pay employers.
- ⊕ Immigrants who remain in the host country longer have greater success finding jobs with high-pay employers.

#### Cons

- ⊖ Some immigrants are stuck in low-pay firms, particularly those with low levels of education, poor literacy, and poor language skills.
- ⊖ Even with high education levels, unfavorable sorting is also due to poorly recognized education credentials.
- ⊖ Poor recognition of education credentials of immigrants could be due to lower educational quality or unequal treatment of similarly productive workers.
- ⊖ There is a lack of research on the role of firms explaining the native–immigrants earnings gap due to the non-availability of suitable data.

### AUTHOR'S MAIN MESSAGE

Firms' hiring policies tend to magnify earnings differences between natives and immigrants. At initial arrival many immigrants—especially those from disadvantaged home countries—face difficulties in obtaining jobs at higher-paying firms. As they remain in the country longer some immigrants are able to climb the career ladder to high-pay firms, with most of the gains for highly educated immigrants from disadvantaged home countries. Policies that favor labor market mobility by removing search frictions, promoting language skills, or acquiring additional education in the home country could help assimilation.

## MOTIVATION

Average earnings of immigrants differ from those of natives due to productivity differences associated with such factors as language skills, literacy, and the quality of schooling. However, a growing body of literature suggests that firms' pay-setting policies tend to magnify differences between groups and widen overall inequality. In the presence of firm-specific pay premiums, the immigrant–native gap will depend on the relative fraction of immigrants hired at high-wage firms and on the size of pay premiums offered by firms to immigrants versus natives.

Recent literature finds that firm policies contribute to the immigrant–native earnings gap and seeks to identify the separate roles of firms' hiring and pay-setting policies. This literature finds that it is almost entirely due to differential sorting characterized by hiring or job mobility patterns that make it harder for immigrants to get entry-level jobs or transit to high-wage firms.

Policies that facilitate mobility and that reduce barriers to entry into those high-wage firms will thus promote easier assimilation for immigrants.

## DISCUSSION OF PROS AND CONS

### Can immigrants ever earn as much as natives?

There is a large body of literature documenting that immigrants earn less than natives at entry to the host country, and that the gap falls over time and does so differently for different immigrant groups. Many factors can help or hinder the assimilation of immigrants in their host country. In particular, one recent review from 2019 notes that assimilation for immigrants with higher levels of education is usually faster than for immigrants with lower levels of education, and that origin country education is often less valued than education in the host country. It concludes that policies to increase skills in the host country—especially language skills—can promote employment assimilation.

It is also the case that in the US and Europe immigrants with low levels of education are more likely to fill jobs that require manual labor, whereas immigrants with higher education levels are more likely to sort into mathematics/analytical jobs than natives. The same 2019 study notes that policies that reduce mobility also reduce wage assimilation. Or put differently, policies that remove barriers to entry into jobs or that help formally recognize academic qualifications will favour assimilation.

However, like the vast majority of the literature on earnings assimilation of immigrants, the 2019 study spends very little time explicitly considering the role of heterogeneous firms as a possible channel mediating the process of assimilation.

### Firms and earnings differentials

A fast-developing literature suggests that firms' hiring and wage-setting policies tend to magnify differences between groups and widen overall inequality. This literature shows that firms offer systematic and quantitatively important pay premiums. The distribution of these premiums across groups is non-random, and in many settings tends to be skewed toward workers who would earn more even in the absence of the premiums, contributing to inequality.

Recent research suggests that firm policies are quantitatively important for understanding gender and race-related wage differences. In the case of gender wage differentials for example, one study finds that these firm-specific pay premiums explain one-fifth of the gap in Portugal [1]. However, there is scant evidence on the role of firms in explaining the native–immigrant earnings gap.

Firm-specific differences in hiring and wage setting of immigrant workers could stem from many sources [2]. The most obvious is that employers discriminate against immigrants on the basis of something other than their productivity. Another possibility is that employers systematically undervalue equivalent foreign educational credentials. A third possibility is that immigrant–native wage disparities reflect heterogeneity in firms' productivity, combined with information frictions about wages.

The role of job search frictions could be important as there are many reasons to expect new immigrants to face different search environments than natives due to lack of knowledge of local job search practices, difficulties in having education credentials recognized, poor language skills in the job search and interview process, or differences in the composition and use of networks. Therefore, it can take many years for immigrants to assimilate and acquire the same skills in job search as natives. Accordingly, some search models are consistent with this idea that job search assimilation accounts for the vast majority of earnings growth immigrants experience after migration [3].

### **How much do firms contribute to explaining immigrant–native earning differences?**

As mentioned previously, not much is known about the precise role of employers in the native–immigrant earnings gap. This lack of knowledge mostly reflects the fact that identifying this role relies on the use of longitudinal linked employer–employee data in which immigrants comprise a sizable share of workers in order for the relevant methodologies (described in [1]) to be used.

Despite the relative dearth of such data, two recent studies estimate the contribution of firms to the native–immigrant earnings gap using such longitudinal linked employer–employee data [4], [5]. They find that firm-specific pay is a significant contributor to the native–immigrant earnings gap, similar to other previously mentioned earnings differences between other demographic groups.

The first of these studies uses Canadian linked employer–employee tax data to estimate the contribution of firms to the native–immigrant earning premium using the so-called AKM framework. Canada is perfect for such applications with its high levels of per capita immigration. The authors find that one-fifth of the earnings gap is attributed to firm-specific effects [4]. Using administrative linked employer–employee data from Israel, the second study finds that firm-specific pay premiums account for slightly over 10% of the immigrant–native salary differential in the first ten years since arrival, and also explain close to 30% of the rise in immigrants' salaries in the 25 years after arrival [5].

In both cases there is evidence that firms contribute to the labor market disadvantage of immigrants compared to natives. In the presence of such firm-specific premiums, the

immigrant–native pay gap will depend on the relative fractions of immigrants hired at high-wage firms (a between-firm sorting effect) and on the size of pay premiums offered by firms to immigrants versus natives (a relative pay-setting effect). It is worth noting the different policy implications associated with the two channels. Pay equity policies are likely to be more useful in mitigating pay-setting differences, while affirmative action policies are more likely to help narrow between-firm sorting effects.

### **What is the evidence for a pay-setting effect?**

Two different approaches have been used in the literature to investigate whether pay-setting effects are the main explanation for the aforementioned role of firm-specific pay premiums in the immigrant–native pay gap. The first method aims to compare wage to productivity differentials, noting that mismatch between wages and productivity may arise for different reasons, like statistical or preference-based discrimination. However, differences in productivity between the two groups could be intrinsic or reflect segregation into categories with different productivity, as well as institutional factors. Intrinsic productivity differences refer to the value of the human capital or ability of immigrants (including language abilities). Finally, productivity differentials could also result from differences in career dynamics between the two groups.

For example, differences in within-firm career dynamics are observed in a study that finds that among Canadian workers with fewer than ten years of potential experience, visible minority immigrants were significantly less likely to have been promoted by their initial employers than similar white natives [6]. The authors consider three potential explanations for such differences in within-firm mobility patterns: unobserved productivity differences, taste-based discrimination on the part of employers, and information asymmetries and other search frictions. They find more evidence for the existence of information asymmetries or other search frictions, but the evidence is not conclusive.

The second method relies on longitudinal linked employer–employee data and uses so-called Oaxaca-type methods to decompose the contribution of the firm effects into pay-setting and sorting components, as described in one study of the gender wage gap in Portugal [1]. In the case of the immigrant–native earnings gap, the pay-setting component is a weighted average of the differences in pay premiums (weighted by the share of immigrants employed at each firm). The sorting component is a weighted average of the differences in employment shares of the two groups (weighted by the pay premiums for natives at each workplace). While the first component measures the contribution of differential pay-setting for natives versus immigrants, the second one measures the contribution of differential sorting of natives and immigrants across employers.

One study applies the first method to linked employer–employee data from Belgium to compare productivity and wage differentials for both women and immigrants [7]. The empirical results suggest significant wage discrimination for women, but less so for immigrants. Overall, the results suggest that while wage discrimination against immigrants remains an issue in the Belgian labor market, the magnitude of this discrimination is relatively small compared to the discrimination against women.

Two recent studies use the Oaxaca decomposition approach to quantify the contributions of firm-specific pay premiums: both studies find a negligible contribution from the pay-

setting effect [4], [5]. This means that the predominant channel through which firm-specific pay premiums affect the native–immigrant earnings gap is differential sorting among employers, with immigrants sorting predominantly into low-pay firms while having difficulties accessing jobs in high-pay firms.

### **How does differential sorting contribute to the immigrant–native wage gap?**

There are a number of potential explanations for the fact that immigrants tend to find jobs predominantly in low-pay firms. On the supply side, immigrants are likely to have less information than natives about which are the good and bad employers, or where to look for good job opportunities. On the demand side, high-paying firms may not have enough information about immigrants' productivity potential to make informed decisions about their hiring.

For example, one study shows that employers in Canada are less likely to call back job applicants with foreign names, particularly those with limited work experience in the host country [8]. A standard explanation for this callback gap is the possibility that employers do not value foreign education as much as they value Canadian education. The study mentions the possibility that employers justify name and immigrant discrimination based on language skill concerns, but incorrectly overemphasize these concerns without taking into account offsetting listed characteristics [8].

### **Moving up the job ladder**

#### ***Evidence from survey data***

After spending more time in the labor market, immigrants may move to better-paying firms. But once immigrants find their first jobs, it can be difficult to move up the job ladder to better employers. Numerous studies use survey data from Canada to document differential sorting of immigrants into employers with lower pay premiums [2], [9]. Other studies find similar patterns in Portugal and Norway, respectively [10], [11].

One study finds strong evidence of negative sorting across establishments in Canada, with immigrants sorting predominantly into low-pay employers [9]. This could reflect immigrants' search behavior or employers' recruiting methods. On the one hand, immigrants may be less productive, or have more difficulty signaling their productivity, than natives with equivalent levels of schooling and experience. On the other hand, immigrants are also more likely than natives to live in ethnic areas in which low-wage employers may be more likely to be located. The authors note that immigrants also have had less time than natives to acquire the social capital deemed necessary to obtain jobs with high-wage employers, thus diminishing access to high-wage firms.

One final study uses monthly labor force data from Canada to analyze transitions between higher- and lower-paying jobs; it shows that immigrants have lower upward-mobility rates than natives [2]. The authors find that the disparity in immigrant job quality, which does not appear to diminish with years since arrival, reflects a combination of relatively low transitions into high-wage jobs and high transitions out of these jobs. The former result appears to be due equally to difficulties obtaining high-wage jobs directly out of unemployment and to using low-wage jobs as stepping stones. The study finds little or no evidence, however, that immigrant job-seekers face barriers to low-wage jobs.

These results are consistent with a model in which immigrants have low reservation wages and get stuck in low-quality but high-persistence jobs. They also suggest that immigrant assistance policies directed exclusively at the unemployed or underemployed will ultimately fall short in their attempt to further the labor market integration of immigrants. Policies helping labor market mobility out of low-pay firms and into high-pay firms also need to be implemented.

Outside of Canada, one study accesses longitudinal administrative employer–employee data from Portugal but does not use the AKM framework [10]. Still, the study is able to show that non-random sorting across workplaces has a significant negative effect on immigrants' wages. In fact, the results show the penalty on immigrants' wages is fully explained by non-random sorting across workplaces: the higher the proportion of immigrants in a workplace, the lower the wage that migrants receive. Since it finds that this result also holds for natives, this means that migrants cluster in the low-pay sector of the economy. As a result, the study concludes that immigrants' lower wages are also due to selection into low-pay establishments.

Through the lens of segregation and using repeated cross-sectional linked employer–employee data, another study shows that 40% of the native–immigrant wage gap is explained by differential sorting across establishments [11]. It finds that the inferior wage growth of immigrants primarily results from failure to advance to higher-paying establishments over time. However, the lack of longitudinal data means that it cannot control for worker unobserved heterogeneity.

### ***Evidence from longitudinal linked employer–employee data***

Previous evidence on the role of employers could not take advantage of the AKM framework because of the lack of longitudinal employer–employee data. A very recent study takes advantage of exactly that kind of data from Portugal, Canada, and Israel to estimate AKM models of earnings determination, and some go further by applying the methods described in [1] for decomposing the firm-specific effects into pay-setting and sorting components.

The first example of this literature estimates immigrant–native wage catch-up in Portugal using data from Portugal and the AKM framework [12]. It shows that moving to firms with higher wage premiums accounts for approximately 30% of the immigrant wage catch-up in the first years after migrating. It also shows that changing occupations and moving to different industries is not the main factor driving immigrants' wage assimilation. Rather, the driver is mobility to firms in the same industry that pay higher wages to all workers.

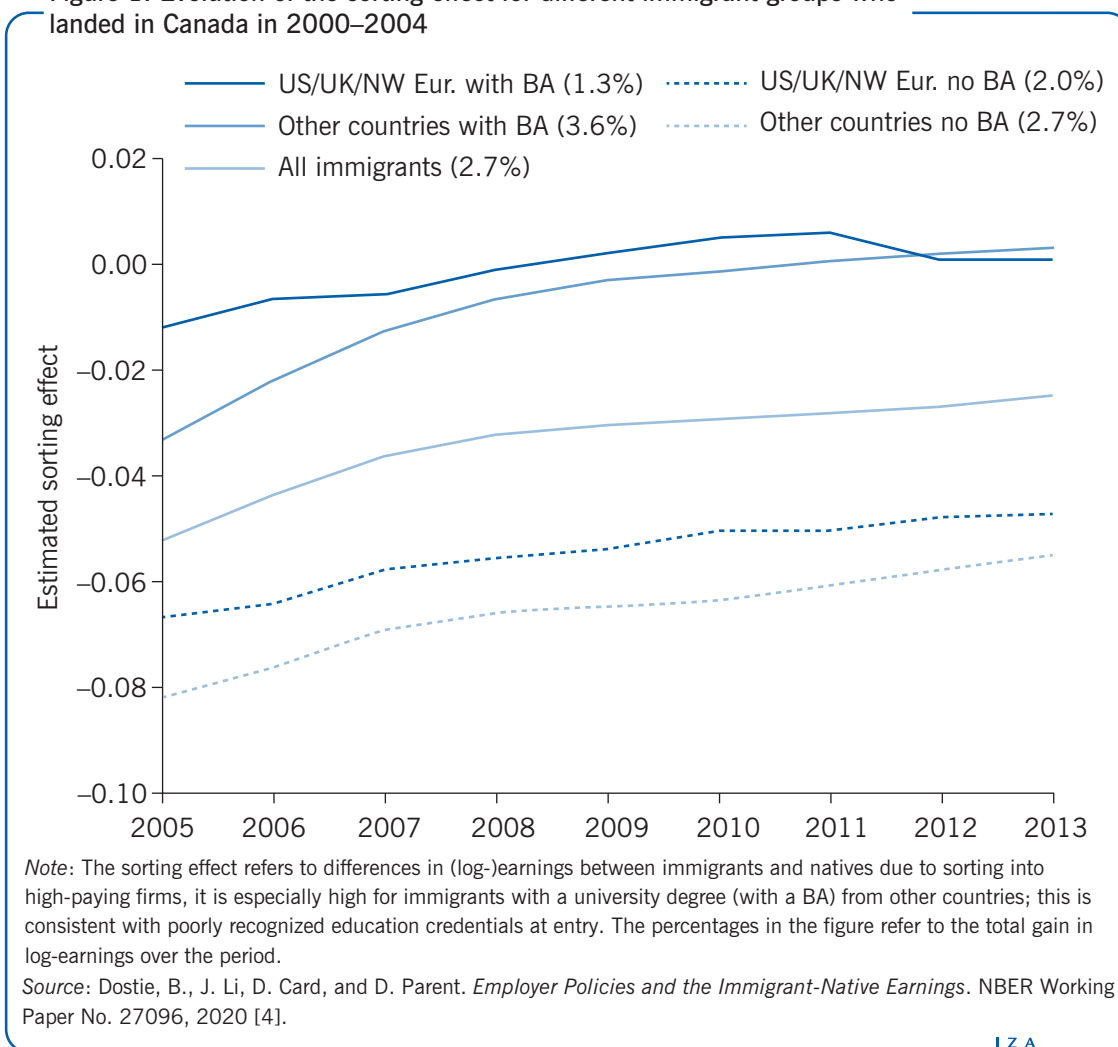
One related study finds that in Canada the effect of firms works entirely through the sorting channel, meaning that immigrants earn lower wages because of jobs they find in low-pay firms [4]. Focusing on immigrants from disadvantaged countries, defined as countries that do not speak English or French commonly, it finds that one-sixth of their earnings assimilation works by moving from lower- to higher-paying firms. One explanation is that, although the credentials of those immigrants are discounted upon arrival, their productivity is eventually revealed and recognized by employers, thus characterizing the process by which foreign credentials are valued in the labor market.

Looking within immigrant subgroups, a previously mentioned study also finds differences in the contribution of firm hiring policies, with the largest magnitude for immigrants from

non-advantaged countries who lack university education [4]. Relative to natives (and better-educated immigrants) these workers are much less likely to be hired by high-wage firms—a gap that accounts for seven percentage points of their 40-point earnings gap relative to natives.

On average the growth in the sorting effect in Canada accounts for just under one-fifth of the 15% composition-adjusted gain in earnings for the 2000–2004 arrival cohort between 2005 and 2013 (Figure 1) [4]. Interestingly, the gains in relative wages attributable to moves up the job ladder are largest for university-educated immigrants from disadvantaged countries—a group who are often “over-educated” for the jobs they hold. In contrast, university-educated immigrants from advantaged countries tend to work at high-paying firms when they first arrive and make little further progress over the next decade. These patterns are consistent with simple learning models in which higher-paying firms can readily evaluate the degrees of immigrants from advanced countries but tend to downgrade the education credentials of immigrants from less advantaged countries, and only hire those who are revealed to be more productive over time.

Figure 1. Evolution of the sorting effect for different immigrant groups who landed in Canada in 2000–2004





Finally, another study from 2020 also finds that gradual access to higher-paying firms explains a significant fraction of immigrants' labor market assimilation in the context of a large and sudden international migration shock: the arrival of nearly one million former Soviet Union Jews to Israel in the 1990s [5]. It finds that a significant fraction of the immigrant–native wage gap was due to immigrants finding jobs disproportionately in low-paying firms. As time in Israel increased, immigrants gradually accessed higher-paying firms.

## LIMITATIONS AND GAPS

Research on this important topic is limited by the fact that quantifying the importance of firms, or where a person works, on the immigrant–native earnings gap or wage differential requires observing firms in which both immigrants and natives work at the same time. Thus, identification of such models is very difficult in countries with a low percentage of immigrants in the workforce or with highly segregated labor markets. This data requirement also makes it difficult to study this phenomenon in middle- to low-income countries with high degrees of immigration and a poorly developed statistical system.

Additionally, more work is needed in quantifying the relative contribution of language skills, recognition of education credentials, networks, discrimination, and search behavior to native–immigrant differences. In particular, poorly recognized education credentials could reflect unequal treatment of workers with equivalent skills or differences in educational quality.

Finally, it could be that transition into self-employment is one way for immigrants to assimilate in the host country. More studies are needed on the exact role self-employment plays in this setting: is it a stepping stone to high-wage employers, or is it a way out of low-pay employers or bad employment matches.

## SUMMARY AND POLICY ADVICE

Immigrants earn less than natives and a sizable share of the immigrant–native earnings gap is due to firm-specific pay policies. After decomposing this contribution into a pay-setting effect, by which immigrants receive a lesser share of the firm-specific surplus, and a sorting effect, by which immigrants are less represented in high-wage firms and over-represented in low-wage firms, it is clear that the predominant contributor is the sorting effect.

If pay equity policies are considered to be more useful when the relative pay-setting effect is predominant, but affirmative action policies are more so when the sorting effect dominates, the above result clearly favors affirmative action policies.

However, the sorting effect appears to be much stronger for some immigrant subgroups, with levels of education prior to migration and home country playing significant roles.

The role of sorting also puts the focus on policies promoting labor market mobility. In this setting, policies that promote language skills, better recognition of foreign education credentials, or acquiring additional education or training in the host country could help assimilation.

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## Competing interests

The IZA World of Labor project is committed to the IZA Code of Conduct. The author declares to have observed the principles outlined in the code.

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