
Supplementary information

Immigrant–native pay gap driven by lack of access to high-paying jobs

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Supplementary Information for

Immigrant–native pay gap driven by lack of access to high-paying jobs

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1 Background literature

This study uses linked employer–employee administrative records (i.e., records that link individual employees directly to their employers and coworkers) to investigate the extent to which immigrant–native earnings differentials arise from immigrants, children of immigrants, and native-born workers differential access to high-paying jobs. Specifically, this study examines whether immigrants, the native-born children of immigrants, and native-born non-migrant populations receive different pay when doing the same work for the same employer, or whether pay differences arise from the processes sorting them into different industries, occupations, establishments, and jobs (i.e., unique establishment–occupation units). The key empirical task is to quantify the relative contribution of differential labor market sorting versus within-job pay inequality by immigrant background. In this section, we outline the theoretical framework guiding our empirical analysis and provide a brief overview of relevant previous studies.

1.1 Sources of between-job segregation and within-job pay inequality

There are several mechanisms that can generate differences in earnings between immigrants and natives. Further, differences in pay can arise from either between-job segregation, including differences in sorting across industry, occupation, and establishment, or differential pay setting when immigrants and natives do the same work for the same employer. We focus on four main sources of the immigrant–native pay gaps: (1) country-specific human capital; (2) skill-based worker sorting; (3) access to job-related information and social networks; and (4) employer bias during hiring, promotions, and within-job pay setting.

Country-specific human capital. A key explanation of the immigrant–native pay gap focuses on differences in human capital and its limited international transferability^{1,2}. Human capital refers to the knowledge, skills, and abilities acquired through education, training, and work experience, which enhance individuals’ productivity and earnings potential³. More specifically, country-specific human capital refers to skills and knowledge, such as language proficiency, cultural knowledge, and familiarity with local institutions, that enhance productivity and earnings within a specific country⁴.

Foreign-born workers often lack proficiency in the destination-country language and are often unfamiliar with the societal context, thereby constraining their productivity and earnings potential^{2,5,6}. In particular, language barriers impede immigrants’ access to higher-paying jobs and hinder performance in roles that require advanced communication skills^{7,8}. Furthermore, educational qualifications acquired abroad are often less valued in destination-country labor markets, not only due to potential differences in quality of schooling but also because of their lower signaling value to employers and limited formal recognition by government agencies^{9–11}. As such, even after controlling for education levels, important differences may remain in how foreign and domestic degrees are perceived in the labor market. Moreover, immigrants’ incentives to invest in destination-country human capital may also be reduced by sojourner orientations and plans for return migration¹². Over time, immigrants typically experience a gradual earnings improvement and assimilation towards the labor market outcomes of natives, which is consistent with increased accumulation of country-specific human capital with longer duration of stay in the destination country^{13–15}. Policies that expand access to domestic education for adult immigrants may therefore improve the signaling value and economic returns to their skills, and help reduce the job-sorting penalties linked to foreign education. The lack of country-specific human capital can be a source of both between-job segregation through skill-based worker sorting (as outlined below) and within-job inequality between immigrants and natives due to

productivity differences (e.g., the lack of native-level language skills crucial to productivity within a particular job).

For the native-born children of immigrants, lack of country-specific human capital should be less central as an explanation of differences in pay relative to natives. Having been born and raised in their parents' country of immigration, children of immigrants typically acquire native-level language proficiency, develop a broader familiarity with the destination-country society and institutional context, and obtain education and formal qualifications in the destination country¹⁶⁻¹⁸. As a result, their productivity-related skills, the signaling quality of their degrees, and the formal recognition of their educational qualifications should resemble similarly qualified children of native-born parents. Consequently, after adjusting for observed human capital factors, differences in both between-job segregation and within-job inequality relative to comparable natives that are attributable to these factors should be substantially reduced.

Skill-based worker sorting. Beyond standard human capital-based explanations, the immigrant–native pay gap may be driven differential skill-based worker sorting. Recent studies have documented increasing workplace sorting across by cognitive and non-cognitive skills, and skill-based sorting is a key driver of rising between-firm earnings inequality in high-income countries¹⁹⁻²². Employers' demand for specific skills, whether for low-skilled routine tasks or high-skilled roles, reinforces this process and intensifies segregation when workers are hired based on similar skill profiles. Moreover, immigrants' lack native-level language proficiency and other forms of country-specific human capital will typically be source of skill-based worker sorting²³. For example, employers may be more inclined to hire foreign-born workers who share similar language skills or national origins, as this alignment can improve productivity and help overcome communication challenges in the workplace²⁴⁻²⁸. Consequently, skill differentials between immigrants, children of immigrants, and natives can lead to concentration of minority workers in specific industries, occupations, workplaces, and types of jobs. Skill-based worker sorting can contribute to between-job sorting, but this mechanism should not result in within-job inequality.

Social networks and information flow. Between-job segregation can also arise due to immigrants' and natives' differential access to information and location in job-related social networks²⁹⁻³¹. Network-based theories emphasize how information flow within social networks matches workers to jobs³²⁻³⁴. Prior studies document how social networks sort workers across firms³⁵ and also report a strong reliance on personal contacts and coethnic referral networks among immigrant workers^{26,36,37}. Immigrant and minority managers also often recruit employees of the same national origin or ethnoracial group^{26,28,38,39}. Moreover, residential segregation structures the diffusion of information and access to jobs, and since immigrants tend to concentrate geographically, their (immigrant) neighbors are likely to be key providers of job referrals^{30,40}. Studies using linked employer–employee data show that living in the same census tract is strongly associated with working in the same establishment among immigrants and, in the US, among native-born Hispanics with limited English proficiency^{25,41-43}. Ethnic segregation in access to employment-related information and social networks can contribute to the differential sorting of immigrants and natives across jobs, including more aggregate levels of labor market sorting (i.e., between industries, occupations, and workplaces), but should not affect within-job inequality.

Employer bias and discrimination. Employer bias and discrimination can affect the immigrant–native pay gap both through the allocation to jobs and within-job inequality in pay setting. Employer discrimination can be defined as unequal treatment of individuals with equal qualifications and productive capacities based on ascribed traits and perceived group membership⁴⁴. In this context, standard theories of discrimination—whether arising from the tastes of employers, coworkers, or

consumers, employers' statistical judgments, or unconscious cognitive biases⁴⁵⁻⁴⁷—attribute central decision-making power to employers and their agents. To better understand the proximate mechanisms behind discrimination, it is useful to make a distinction between forms of allocative discrimination (i.e., differential allocation of workers to jobs, especially through differences in hiring, initial job placement, and promotion rates) and discrimination in the pay setting of workers in the same job (i.e., unequal pay for the same work)⁴⁸. A large literature of experimental research from many countries document widespread employer discrimination against immigrants and other ethnoracial minorities at different stages of the hiring process⁴⁹⁻⁵².

Much less is known about the role of employers' pay-setting practices at the job-level for the immigrant–native pay gap. Employers may be able to suppress wages for immigrant employees if, for example, immigrants have lower reservation wages and less bargaining power than comparable native coworkers, due constrained job mobility or information asymmetries^{53,54}. From a theoretical framework, employers' opportunities for discrimination are, however, likely to be greatest at the point of hire, and therefore most widespread, due to lack of transparency and ambiguity in assembling evidence of unequal treatment for job applicants⁴⁸. By contrast, employers should be most constrained from discrimination in pay setting because these processes are more transparent and easier to document. Although theory suggests that rational employers seeking to discriminate will be less likely to engage in within-job discrimination in pay setting because it is easier to challenge through legal and organizational actions⁴⁸, employers who are discriminating may not be acting rationally, and so it is unclear how widespread this type of discrimination might be.

For our analysis, employers' allocative discrimination will contribute to the immigrant–native pay gap by contributing to between-job segregation. In contrast, discrimination in pay setting will contribute to the immigrant–native pay gap through the within-job inequality component. A key contribution of this study is our ability to provide upper-bound estimates of the size of employers' within-job direct pay discrimination relative to processes generating between-job segregation across nine high-income countries with different legal, institutional, and demographic contexts.

1.2 Previous research using linked employer–employee data

A vast literature has document how immigrants from lower-income regions who move to high-income countries generally experience significant employment and earnings disadvantages upon arrival and, although immigrant–native pay gaps tend to narrow over time, they often persist to some extent throughout their careers^{4,13-15,18,55,56}. By contrast, the native-born children of immigrants often experience considerable labor market progress compared to the immigrant generation, although many second-generation minorities experience remaining earnings disparities relative to natives^{16-18,57}. Despite this, due to data limitations, much less is known about the relative role of differential sorting across employers and jobs relative to differences in employers' pay-setting policies, and how these processes vary across immigrant generations.

Our study focuses on identifying the relative weight of the mechanisms that sort immigrants, children of immigrants, and natives into different jobs (between-job segregation) and those that generate difference in pay between workers doing the same, or very similar, work for the same employer (within-job inequality). Below we situate the contribution of the present study relative to the recent literature that use linked employer–employee data to study labor market inequality between immigrants and natives.

First, several studies document that immigrants are disproportionately concentrated in workplaces with high shares of immigrant coworkers compared to natives^{24,25,27,28,58}. A key finding is that this overexposure is often driven by immigrants working alongside coworkers from the same country of origin or who speak the same language, highlighting the likely role of language-based complementarities and coethnic referral networks for workplace segregation. Factors such as workers' education, occupation, and language skills, industry of employment, immigrant managers, and the share of immigrant neighbors, account for a large share of immigrants' workplace concentration, especially their overexposure to immigrants from other origin countries. For example, focusing on the United States, Andersson et al.²⁵ found that immigrants' overexposure to immigrant coworkers from *other* origin countries was fully accounted for by workers' observable characteristics, and that skill-based worker sorting, labor market segmentation, and residential segregation were key drivers of this overexposure. In contrast, overexposure to immigrants from the *same* origin country in large part remained unexplained, which suggests that unobserved country-specific factors, such as coethnic networks and language barriers, are central to immigrants' job search behavior and workplace sorting. However, other studies find that immigrants' overexposure to coworkers from all origins is only partially explained by extensive controls for employee, workplace, and residential characteristics, suggesting that unobserved mechanisms, such as ethnic discrimination in hiring, are also likely important factors. While segregation across workplaces is of central importance to our topic, this literature does not address the more fine-grained sorting of immigrants and natives into different jobs within the same organizations.

Second, another set of recent studies focus on how workplace segregation between immigrants and natives contributes to the immigrant–native pay gap. These studies typically find that differential sorting into firms or establishments with low earnings levels explain a substantial part of foreign-born workers' pay disparities⁵⁹⁻⁶³. However, nontrivial immigrant–native pay gaps often remain between workers employed in the same firm or establishment⁵⁹⁻⁶³. Studies using longitudinal data show that immigrants' initial sorting into low-paying firms, often with immigrant managers and high concentrations of coethnic immigrant coworkers, is a key source of disparities in pay upon arrival, and that gradual shifts into higher-paying workplaces is a key driver of improved earnings over time⁶²⁻⁶⁷. A subset of these longitudinal studies use so-called firm ladder AKM models that account for unobserved worker heterogeneity⁶⁸, documenting that between-firm sorting explains a significant share of the immigrant–native pay gap because of differences in firm-specific pay premia^{63,65-67}. Using this methodology, Dostie et al.⁶³ find that approximately one-fifth of average immigrant–native earnings differences reflect differential access to firm-specific pay premia in Canada, since immigrants are less likely to work in firms that offer higher wages to all employees. In a similar recent study from Israel, Arellano-Bover and San⁶⁶ follow immigrants from the former Soviet Union over three decades and find that differential sorting across firms and differential wage-setting within firms both shape the initial immigrant–native pay gaps, but high rates of firm-to-firm mobility facilitate immigrants' rapid earnings convergence toward natives. While this literature provides important insights on the role of firms for the immigrant–native pay gap, their focus on firm-level dynamics does not include within-job comparisons of immigrants and natives. As such, these studies do not address differential wage-setting at the job level, which is where differences in pay are typically determined, and is therefore also not able to assess the contribution of detailed sorting into specific jobs.

Third, an additional strand of recent studies focuses on how differences in organizational characteristics are linked to variation in within-workplace immigrant–native pay gaps. After adjustment for human capital, within-workplace earnings disparities between immigrants and natives have been found to be higher in private sector workplaces, organizational contexts where minority workers are concentrated in lower-rank positions, and organizations where immigrant representation in management is low^{69,70}. In

contrast, public sector workplaces, often with formalized pay scales, and workplaces covered by collective agreements have been found to have smaller immigrant–native pay gaps^{70,71}. In a recent study from Norway, Drange, Helland, and Hermansen⁷² show that workplaces with higher union coverage have smaller immigrant–native pay gaps, although these smaller differences primarily apply to immigrant employees who themselves are unionized⁷². These studies address the organizational conditions that are conducive to reducing disparities in pay between immigrants and natives, but their focus is on processes that play at the workplace-wide level, and they do not make granular comparisons of within-job pay gaps between foreign-born and native-born worker.

Our study builds on this prior work by quantifying the contribution of within-job differential pay between immigrants, children of immigrants, and natives, relative to between-job segregation using linked employer–employee administrative records from nine high-income countries in Europe and North America. Although prior studies have assessed the role of between-workplace sorting for the immigrant–pay gap, our analysis reveals a substantial additional contribution of sorting into specific jobs (i.e., unique combinations of occupations and establishments) across a broad set of institutionally and demographically diverse destination countries. By doing so, our central contribution is to show that lack of access to high-paying jobs is the key driver of the immigrant–native pay gap, compared to within-job pay inequality, across these highly different countries.

Future research should use linked employer–employee data to build on our cross-national findings by extending the insights from previous linked employer–employee studies (e.g., the importance of co-ethnic networks and managers in firm-level sorting; or the salience of union membership for immigrants) and examining how they apply at the job level within particular countries. Tracing such pathways is beyond the scope of this study, as the salient processes in any given country are complex and it is unclear that policies being implemented are comparable across countries. Han and Hermansen⁷³ provide a useful example of how future research might combine these insights by showing how sorting across jobs varies between different segments of the Norwegian labor market—as defined by the private versus the public sector, the size of organizations, occupational fields, and educational qualification levels—where immigrant–native differences in pay while doing the same work are strikingly similar across market segments.

2 Results from the main analysis and alternative meta-analyses

This section presents supporting information for estimates presented in the main analysis. First, we report the coefficients and standard errors for the results presented in Figs. 1 and 2 in the main text (Section 2.1). Second, we report results from a meta-analysis of country-specific estimates from the countries where we have information on both immigrants and children of immigrants (Section 2.2.), in order to assess whether the average pattern reported for immigrants summarized in Figs. 1a and 2a are robust to exclusion of the three countries where information on children of immigrants is not available (France, Spain, and the United States). Third, we report estimates from fixed-effect meta-regression models for the same set of countries used in the main analysis (Section 2.3).

2.1 Detailed estimates from main results

Supplementary Tables 2–5 report the estimated coefficients, standard errors, confidence intervals, *t*-statistics and *P*-values from two-sided *t*-tests, and other information from Figs. 1 and 2 in the main text. In Supplementary Tables 2–4, column 6 in each table shows the proportion of the immigrant–native difference in earnings found within jobs compared to the earnings difference after basic adjustments, column 7 and 8 shows the estimated immigrant–native earnings differences transformed to percentage gaps following the standard procedure of exponentiating the logged coefficients, and column 9 the proportion of the immigrant–native difference in earnings found within jobs compared to the earnings difference after basic adjustments using the percentage-gap estimates.

2.2 Meta-regression restricted to countries with children of immigrants

In this section, we report summary estimates using the random-effects meta-regression models described in Eq. (6) and Eq. (7) in the Methods section using estimates for immigrants which is constrained only to the countries where we also have information on children of immigrants. Thus, we assess whether the pattern of smaller earnings differences relative to natives among children of immigrants compared to the corresponding earnings differences among immigrants is consistent with the main results in the subsample of countries where we have information on both immigrant generations.

Supplementary Figure 1 provides a graphical overview of the estimates from the meta-analysis corresponding to those reported in Figs. 1a and 2a in the main text but restricted to only countries where information of both immigrants and children of immigrants is available (Canada, Denmark, Germany, Norway, Netherlands, and Sweden). Thus, the estimates for immigrants in this figure differs from those reported in the main text, but the estimates for children of immigrants are identical. Supplementary Tables 6 and 7 report the exact coefficients and standard errors for the estimates reported in Supplementary Figure 1.

The results from the meta-analysis using the restricted sample of countries are very similar to the results in the main analysis and support our main conclusions.

2.3 Meta-regression using fixed-effects specification

We also report meta-analysis estimates using an alternate fixed effects meta-regression specification to test the robustness of our main analysis to an alternative model specification of the meta-regressions⁷⁴. The general form of the two alternate meta-regression models we estimate are:

$$y_i = \alpha + \mu_i + \varepsilon_i, \text{ where } \varepsilon_i \sim N(0, \sigma_i^2) \quad (8)$$

$$y_k = \beta x_k + \mu_k + \varepsilon_k, \text{ where } \varepsilon_k \sim N(0, \sigma_k^2). \quad (9)$$

These equations are similar to the equations described in the Methods section (i.e., Eq. 6 and Eq. 7), but without the random effect describing the country-specific (i.e., μ_i in Eq. 8) or country-by-region-specific (i.e., μ_k in Eq. 9) deviation from the distribution mean. These models, often called fixed-effect meta-regressions, could be appropriate in our case because the setup of the country-specific regression is identical in the analyses from all countries (i.e., all of the estimates are functionally equivalent), our goal is to summarize only the country-specific estimates from our sample of estimates (i.e., we compute a common effect size for the identified population of estimates and do not generalize beyond this), and the small number of estimates summarized using the country-specific regression models (i.e., Models 1–5 described in Eqs. 1–5 in the Methods section) are less susceptible to small-sample bias in this model (see ⁷⁴, p. 83–84). Nevertheless, we still believe that the random effects model is more appropriate due to the assumed heterogeneity in the estimated immigrant–native earnings differences across countries and groups with different world regions of origin within countries.

In Supplementary Fig. 2 and Supplementary Tables 8 and 9, we report results from the fixed-effects specification of the meta-analysis of the country-specific estimates used in the main analysis. The estimates from the fixed-effects meta-analysis are comparable to those reported in the main analysis although there are some discrepancies. For example, the estimated earnings differences relative to natives for immigrants from Asia in the basic adjustments model is slightly larger than the corresponding estimate in the main analysis, but the within-job gap for Asian immigrants is very similar in the fixed-effect meta-analysis and the main analysis (i.e., the random-effects meta-analysis).

The main pattern in the results from the fixed-effects meta-regression models generally support the conclusions reached in the main analysis.

3 Heterogeneity analyses

3.1 Immigrant–native differences in annual earnings by duration of stay

Immigrants typically improve their earnings and labor market positions relative to natives as they spend more time in the destination country, which is often attributed to improved country-specific human and social capital^{5,13–15,55}. This includes factors such as improved language skills, better cultural and institutional understanding of the destination society, acquisition of education and training in the destination society, and better access to job-relevant social networks^{4,5,75}. Thus, adult immigrants with longer durations of stay in the destination country are expected to fare better in the labor market compared to recently arrived immigrants with shorter durations of stay. Furthermore, immigrants who arrived during childhood are an important transitional group since they were born abroad but had parts of their childhood and adolescence in the destination country. Thus, childhood immigrants (sometimes referred to as the 1.5 generation) are more likely to have achieved native-level fluency in the destination-country language and have received educational degrees in the destination country. Thus, an important question is whether childhood immigrants' labor market sorting patterns are more similar to those of immigrants who arrived as adults or to those of native-born children of immigrants⁷⁶.

To assess heterogeneity by immigrants' duration of stay, we conduct supplementary analyses like those reported in the main analyses where we differentiate foreign-born immigrants into three separate subpopulations: (i) recent adult immigrants, defined as those who arrived as adults (at age 18 or older) and have been in the destination country for less than 10 years; (ii) established adult immigrants, who arrived as adults (at age 18 or older) and have lived in the destination country for 10 or more years; and (iii) childhood immigrants, all immigrants who arrived in the destination country between age zero and 17. Below, we report results for immigrants in each of these subpopulations using estimates from the seven countries where we have information on immigrants' year of arrival (Canada, Denmark, France, Germany, Norway, Sweden, and the United States). These estimates are presented in Extended Data Fig. 1 and Supplementary Tables 10–12.

3.1.1 Duration of stay heterogeneity: Average pattern across countries

Extended Data Fig. 1a summarizes the overall pattern of duration of stay heterogeneity in immigrant pay gaps and the relative contribution of within-job pay inequality versus industry, occupation, establishment, and job segregation using the country-specific estimates (see Supplementary Table 10 for detailed estimates). We find that recent immigrants have the largest average total earnings difference relative to natives (–.280 log points), whereas the total earnings difference is markedly smaller among established immigrants (–.193 log points), and childhood immigrants experience considerably smaller gaps (–.074 log points). However, for all three subpopulations of immigrants we see a clear pattern where immigrant–native earnings differences arise primarily from differential sorting into lower-paying industries, occupations, establishments, and jobs. Turning to the within-job earnings differences to natives, we see that these are considerably larger among recent immigrants (–.103 log points) compared to established immigrants (–.037 log points) and childhood immigrants (–.012 log points).

Thus, the recent immigrants earn, on average, about 10% less than observably comparable natives in the same job, which is substantial, and the within-job earnings difference constitute slightly more than one-third of the total earnings difference to natives. In contrast, established immigrants and childhood immigrants experience considerably smaller within-job earnings differences relative to natives and earn, on average, 4% and 1%, respectively, less than native coworkers in the same job. For established immigrants and childhood immigrants, the within-job earnings differences make up 16–19% of the total

earnings differences with the remaining 81–84% attributable to differential sorting into lower-paying jobs.

Overall, Extended Data Fig. 1a shows that both total and within-job earnings differences are largest among recently arrived immigrants (i.e., immigrants with less than 10 years since arrival). Although established immigrants experience substantially larger total earnings disparities than childhood immigrants, the within-job earnings differences of established immigrants and childhood immigrants are both relatively small, particularly compared to recent immigrants. For childhood immigrants, both the total and within-job earnings differences to natives are relatively modest and the size of these immigrant–native gaps are broadly comparable to those reported for native-born children of immigrants in the main analysis (see Fig. 1a and Supplementary Table 2).

3.1.2 Duration of stay heterogeneity: By region of origin

Extended Data Fig. 1b presents estimated earnings differences separately for recent immigrants, established immigrants, and childhood immigrants from each of the five world regions of origin using the country–origin specific estimates, when averaged across the seven countries using our meta-analytic approach (see Supplementary Table 11 for detailed estimates). For all world regions, the immigrant–native earnings differences are largest among recently arrived immigrants, smaller among established immigrants, and smallest for childhood immigrants. This pattern is apparent for both the total immigrant–native earnings differences and for the within-industry, within-occupation, within-establishment, and within-job levels. For all world regions of origin, the total earnings differences to natives primarily reflect sorting into lower-paying industries, occupations, establishments, and jobs, rather than within-job earnings differences, and this is true for recent immigrants, established immigrants, and childhood immigrants.

Turning to variation between origin regions, Extended Data Fig. 1b shows that the largest total and within-job immigrant native differences among recently arrived immigrants is found among the groups with background from Sub-Saharan Africa and the Middle East and North Africa, followed by Latin America and Asia, and, finally, those from Europe, North America, and other Western origin countries. For established immigrants, variation across world regions of origin is similar. The largest immigrant–native earnings differences are observed in the Sub-Saharan African and Middle Eastern and North African regions and the smallest immigrant–native earnings differences observed among immigrants from Western origin countries. For childhood immigrants, variation across origin regions in both total and within immigrant–native earnings differences is less pronounced, although the largest total earnings difference relative to natives is again found in the Sub-Saharan African origin region and the smallest earnings differences are found among those from Western origin countries.

Extended Data Fig. 1b further shows that not only are within-job earnings differences largest among recent immigrants, but that within-job earnings differences also constitute a larger part of the total immigrant–native earnings differences in this group. For recent immigrants, within-job earnings differences account for between 36% (Sub-Saharan Africa) and 48% (Latin America) of the total earnings differences. For established immigrants and childhood immigrants, within-job earnings differences constitute a smaller share of the total earnings differences to natives. Within-job earnings differences account for between 11% (Europe, North America, and other Western) and 28% (Latin America) of the total earnings differences relative to natives among established immigrants. For childhood immigrants, the corresponding contribution of within-job earnings differences ranges from 13% (Europe, North America, and other Western) to 26% (Latin America). Although sorting into lower-

paying jobs is the main driver of the earnings disparities relative to natives in all subpopulations of immigrants, within-job earnings differences relative to natives seem to matter more, both in absolute and relative terms, among recently arrived immigrants.

3.1.3 Duration of stay heterogeneity: By destination country

Extended Data Fig. 1c reports the estimated total and within-industry, within-occupation, within-establishment, and within-job immigrant–native earnings differences separately by immigrants’ duration of stay for each of the seven countries (see Supplementary Table 12 for detailed estimates). The largest total immigrant–native earnings differences among recent immigrants are found in Canada (–.552 log points), Germany (–.325 log points), and Norway (–.312 log points), whereas the smallest is found in Denmark (–.086 log points). In all countries, the total immigrant–native earnings differences are much lower among established immigrants and even further reduced among childhood immigrants. In Canada, for example, the total earnings difference to natives among established immigrants is –.320 log points and among childhood immigrants it is –.079 log points. Similarly, the within-job earnings differences to natives tend to be considerably larger among recent immigrants compared to established immigrants and childhood immigrants in all countries. The largest within-job earnings difference among recent immigrants is found in Canada (–.214 log points), which is followed by the United States (–.135 log points), Germany (–.105 log points), France (–.087 log points), Norway (–.085 log points), Sweden (–.050 log points), and Denmark (–.044 log points). For established immigrants, the largest within-job earnings difference is again found in Canada (–.084 log points), which is followed by France (–.074 log points), and in the remaining countries the within-job earnings differences to natives are –.037 log points (Germany) or lower (Denmark, Norway, Sweden, and the United States). The within-job differences for childhood immigrants are further reduced, with the largest gaps again found in Canada (–.036 log points) and is –.037 log points (France) or lower in the remaining countries (Denmark, Germany, Norway, Sweden, and the United States).

Overall, Extended Data Fig. 1c shows that the main tendency across all seven destination countries is that the total earnings differences relative to natives among both recent immigrants, established immigrants, and childhood immigrants in large part reflects sorting into lower-paying industries, occupations, establishments, and jobs, and to a lesser degree reflects within-job earnings differences between immigrants-background and native coworkers. Nonetheless, the within-job earnings differences relative to natives among recent immigrants can be nontrivial in many countries. Finally, we see broadly comparable contributions of between-job segregation and within-job pay inequality across all three immigrant subpopulations, although the total and within-job earnings differences are considerably smaller among established immigrants and childhood immigrants than they are among recent immigrants.

3.2 Immigrant–native differences in annual earnings for men and women

There are many reasons that male and female immigrants (and male and female children of immigrants) could face different obstacles in the labor market that could produce sex differences in immigrant–native pay gaps. For example, field experiments of ethnoracial discrimination in hiring often find the level of discrimination against immigrant men to be higher than for immigrant women⁴⁹. In this section, we summarize the results from analyses examining men (Extended Data Fig. 2) and women (Extended Data Fig. 3) separately. For both men and women, we report estimates for immigrant–native pay differentials for log annual earnings when (a) averaged across all countries using the country-specific estimates, (b) averaged across regions of origin using the country–origin-specific estimates, and (c) separately for each country using the country-specific estimates. Supplementary Tables 13–15 (men) and Supplementary

Tables 16–18 (women) report estimates and standard errors for all five model specifications in the panels in Extended Data Figs. 2 and 3.

3.2.1 Sex heterogeneity: Average pattern across countries

Extended Figs 2a (men) and 3a (women) show the overall pattern of immigrant pay gaps in total earnings, alongside the relative contributions of within-job pay inequality and segregation across industries, occupations, establishments, and jobs separately by sex (Supplementary Tables 13 and 16). The average total earnings gap relative to natives after basic adjustments is $-.220$ log points for male immigrants, while the corresponding total earnings gap for female immigrants is -0.169 log points. For both men and women, the primary driver of earnings disparities is differential sorting into lower-paying jobs, while within-job earnings gaps are substantially smaller. Male immigrants earn, on average, 5% less than comparable natives in the same job ($-.049$ log points), a gap that accounts for slightly less than one-third of their total earnings disparity. For female immigrants, the within-job earnings gap is similar, at $-.046$ log points.

For children of immigrants of immigrants, the size of the immigrant–native earnings differences are considerably smaller at all levels for both sexes, but the relative contribution of between-job segregation and within-job inequality is comparable to that found for immigrants. For men, the average total earnings gap after basic adjustments is $-.086$ log points and the within-job earnings gap is $-.017$ log points. For women, the average total earnings gap after basic adjustments is $-.032$ log points and the within-job earnings gap is $-.006$ log points.

These findings indicate that for male and female immigrants, within-job differences account for 22% and 27%, respectively, of the total earnings gaps, while the remaining 78% and 73%, respectively, are attributable to between-job segregation. Although the size of the gaps at all levels is considerably smaller among children of immigrants, the relative importance of within-job inequality (men: 20%; women: 18%) versus between-job segregation (men: 80%; women: 82%) is comparable for both sexes.

Overall, these findings show that male immigrants and children of immigrants face larger total earnings disadvantages relative to natives, but sex differences in the within-job immigrant–native pay gaps are modest. For both sexes, sorting into lower-paying jobs is the primary driver of the immigrant–native pay gaps in both immigrant generations.

3.2.2 Sex heterogeneity: By region of origin

Extended Figs 2b (men) and 3b (women) present estimated earnings differences separately by sex for immigrants and children immigrants from each of the five world regions of origin (see Supplementary Tables 14 and 17 for detailed estimates). For all world regions, the total immigrant–native earnings differences tend to larger among immigrant men compared to immigrant women. However, the sex differences in the within-job immigrant–native earnings differences less pronounced when estimates are broken down by region of origin.

For children of immigrants, the total immigrant–native earnings differences in all origin groups are considerably larger among men (Sub-Saharan Africa: $-.193$; Middle East: $-.096$; Asia: $-.108$; Latin America: $-.178$; Europe, North America, and other Western: $-.038$) compared to women (Sub-Saharan Africa: $-.049$; Middle East: $-.068$; Asia: $-.010$; Latin America: $-.049$; Europe, North America, and other Western: $-.010$). The within-job earnings differences are considerably smaller for both sexes, but men

(ranging between $-.060$ and $-.007$ log points) still tend to face larger disadvantages than women (ranging between $-.017$ and $-.001$ log points) across the different regions of origin. Despite larger within-job pay gaps among men, the total immigrant–native earnings gaps are nevertheless primarily driven by sorting into lower-paying jobs for both sexes.

3.2.3 Sex heterogeneity: By destination country

Extended Figs 2c (men) and 3c (women) show that in most countries immigrant men experience somewhat larger total pay gaps (Model 1) than women. However, the total immigrant–native pay gaps are similar for men and women in Denmark and the United States. In contrast there is no systematic sex difference in the size of the within-job immigrant–native pay gaps (Model 5) across countries except in the Netherlands, where immigrant men experience considerably larger within-job gaps than immigrant women.

For children of immigrants, there is also a systematic pattern of larger total immigrant–native pay gaps in the basic adjustments model among men compared to women in all countries. The sex differences in within-job pay gaps are, however, very small in all countries and there is no pattern of a larger male disadvantage.

For both immigrants and children of immigrants, the larger total earnings gaps observed among men in most countries is due to the stronger sorting of immigrant men into lower-paying jobs than women, and not due to men having larger differences in pay relative to non-migrant natives when doing the same work for the same employer. Nonetheless, for both women and men in both immigrant generations, the immigrant-native differences in earnings that we observe in are driven by sorting processes, and not by differences in within-job inequality.

3.3 Immigrant–native differences in annual earnings by education

Educational heterogeneity in immigrant-native pay differences could take several forms. On the one hand, the labor market for highly-educated professionals is often assumed to be characterized by more meritocratic reward structures, where ascriptive characteristics should matter less for pay since higher qualifications are powerful signals to employers and leave less room for non-productive factors^{72,77,78}. For children of immigrants, with domestic educational degrees, completion of higher education could reduce pay gaps relative to natives. However, employers' room for differential pay setting at the job level can be larger in high-skill jobs where individual productivity assessments and merit-based wage bargaining is more prevalent^{69,79,80}. Moreover, high-skilled immigrants (and children of immigrants) can also face discrimination in hiring^{81,82} and those who do not get their foreign educational qualifications recognized often experience occupational downgrading^{83,84}.

In this section, we summarize the results from the supplementary analyses where we analyze earnings differences separately for highly educated workers (postsecondary education and higher) and less-educated workers (upper secondary education or less, including missing). Extended Data Figs. 4 (highly educated workers) and 5 (less-educated workers) present the results when (a) averaged across all countries using the country-specific estimates, (b) averaged across regions of origin using the country–origin-specific estimates, and (c) separately for each country using the country-specific estimates. Supplementary Tables 19–21 (highly educated workers) and Supplementary Tables 22–24 (less-educated workers) report estimates and standard errors for all five model specifications in the panels in Extended Data Figs. 4 and 5.

3.3.1 Educational heterogeneity: Average pattern across countries

Extended Figs. 4a (highly educated workers) and 5a (less-educated workers) show the overall pattern of immigrant pay gaps in total earnings, alongside the relative contributions of within-job pay inequality and segregation across industries, occupations, establishments, and jobs separately by educational attainment level (Supplementary Tables 19 and 22). The figures show that the differences in the immigrant–native pay gaps between highly educated and less-educated workers differ considerably by immigrant generation.

For immigrants, the total immigrant–native earnings differences are comparable across education levels. In the basic adjustments model, the highly-educated immigrants earn $-.203$ log points relative to comparable natives while the corresponding earnings gap relative to natives among less-educated is $-.190$ log points. However, at the within industry, occupation, establishment, and job levels the immigrant–native earnings differences tend to be slightly larger among the highly educated immigrants. This difference is most pronounced for the within-job pay gaps, where highly-educated immigrants, on average, earn approximately 7% ($-.069$ log points) less than natives in the same job, while less-educated immigrants, on average, earn only 2% ($-.020$ log points) less than natives.

Despite substantially larger within-job pay gaps among highly-educated immigrants, sorting into lower-paying jobs is the primary driver of the total immigrant–native earnings differences in both educational groups. Between-job segregation account for 66% and 89% of the total pay gaps for highly-education and less-educated immigrants, respectively.

For children of immigrants, we find that the immigrant–native earnings differences at all levels are considerably smaller among highly-educated workers compared to those with less education. For children of immigrants with high levels of education, the total immigrant–native earnings difference after basic adjustments is, on average, only 3% ($-.025$ log points) and there is, on average, no within-job earnings difference ($-.001$ log points). For less-educated children of immigrants, the total immigrant–native earnings difference is, on average, approximately 8% ($-.081$ log points) and the within-job pay gap is, on average, 2% ($-.016$ log points).

These findings show that highly educated children of immigrants tend to experience substantially smaller earnings differences relative to natives, when compared to less-educated children of immigrants, and no differences at the job level. Although the earnings differences relative to natives are considerably smaller than among immigrants for low-educated children of immigrants, the overall pattern for this group is more comparable to that found among immigrants. Despite these differences by educational attainment level, sorting into lower-paid jobs is the main source of earnings disadvantages in both groups of workers.

3.3.2 Educational heterogeneity: By region of origin

Extended Figs. 4b (highly educated workers) and 5b (less-educated workers) report differences separately by educational attainment level for immigrants and children immigrants from each of the five world regions of origin, when averaged across countries using our meta-analytic approach (see Supplementary Tables 20 and 23 for detailed estimates).

For immigrants, the pattern across all world regions of origin is relatively comparable to the patterns presented in Extended Figs. 4a and 5a. The total immigrant–native earnings differences after basic adjustments tend to be comparable between highly educated and less-educated workers for the different regions of origin. However, the within-job immigrant–native earnings differences consistently tend to be larger among the highly educated immigrants compared to the less-educated. Across regions of origin, the total immigrant–native earnings differences are primarily attributable to sorting into lower-paid jobs for both highly-educated immigrants (between-job segregation: 60–72%; within-job inequality: 28–40%) and less-educated immigrants (between-job segregation: 79–94%; within-job inequality: 6–21%).

For children of immigrants, we also see that the pattern across the different world regions of origin is comparable to the overall pattern revealed in Extended Figs. 4a and 5a. Highly educated children of immigrants tend to face considerably smaller immigrant–native disadvantages at all levels compared to less-educated children of immigrants. Except for Latin America (–.085 log points), the total immigrant–native earnings difference net of basic adjustments ranges between –.022 log points (Europe, North America, and other Western) and –.034 log points (Sub-Saharan Africa) for highly educated children of immigrants. For the highly educated, the within-job immigrant–native earnings differences are very small for all origin regions and range between –.018 and .007 log points.

For the less educated children of immigrants, the total immigrant–native earnings differences net of basic adjustments are considerably larger. Except for children of European, North American, and other Western immigrants (–.024 log points), the total immigrant–native earnings range between –.102 log points (Asia) and –.195 log points (Sub-Saharan Africa). Except for children of European, North American, and other Western immigrants (–.008 log points), the within-job immigrant–native earnings differences range between –.024 log points (Middle East and North Africa) and –.066 log points (Sub-Saharan Africa). While less-educated children of immigrants face larger pay gaps than the highly educated, it is sorting into lower-paying jobs that accounts for most of these gaps (between-job segregation: 59–80%; within-job inequality: 20–41%).

3.3.3 Educational heterogeneity: By destination country

Extended Figs 4c (highly educated workers) and 5c (less-educated workers) presents the country-specific estimates of the immigrant–native earnings differences separately for each destination country, without distinguishing between different world regions of origin (see Supplementary Tables 21 and 24 for detailed estimates).

For immigrants, the pattern of between-country variation in the immigrant–native earnings differences at all levels resembles that documented in our main analysis (Fig. 1a) for both highly educated and less-educated immigrants. Although the size of the immigrant–native earnings differences tend to larger among the highly educated immigrants, between-job sorting processes drive the immigrant pay differences among immigrants with both high and low levels of education across all countries.

For children of immigrants, the immigrant–native earnings differences among the highly educated are smaller than among the less-educated in all countries except Canada. These relatively small gaps among highly educated immigrants are (except for the small total gap in Canada) primarily (Germany) or entirely (Denmark, Netherlands, Norway, and Sweden) driven by sorting into lower-paid jobs. The larger overall gaps among the less-educated children of immigrants are also driven by sorting, and the

within-job pay gaps tend to be very small. Thus, the larger total immigrant–native earnings differences observed among the less-educated children of immigrants and the smaller gaps observed among the more educated children of immigrants are both primarily driven by between-job segregation instead of within-job inequality.

4 Sensitivity analyses

This section provides estimates for the immigrant–native earnings gaps using alternative sample and job definitions, as well as with alternative sets of covariates in our country-specific regression models. These analyses serve both to assess the sensitivity of our results to changing model specification for single countries and to inform comparability of our estimates across the countries in our study, since the definition of some of our variables (e.g., the detail of our occupational measures) differs between countries. These analyses are informed by recent work on model uncertainty in the social sciences and the framework of multimodel estimation and specification curve analyses^{85,86}.

4.1 Sensitivity analyses using hourly wages as alternative outcome

This section provides additional analyses where we analyze differences in hourly wages (or in some cases, hourly earnings) for the countries where this information is available (Denmark, France, the Netherlands, Norway, Spain, and the United States). The distinction between wages and earnings is important: analyses of wages provide insight into inequality from the employer’s perspective (the price employers pay for labor); analyses of earnings capture the perspective of what employees receive, including potential differences in overtime, performance bonuses, and other components affecting take home pay, and how work contributes to employees’ broader economic well-being.

The ability to isolate hourly wage varies across countries, and as such in our primary analyses we focus on earnings differences, as we have earnings information in all nine countries. However, since hourly wages provide a more direct measure of the price employers pay for each amount of labor, we present results for hourly wages for the countries where this information is available. Information on hourly wage on contractual hours is available in Denmark, Netherlands, and Norway, while we use information on hourly earnings for France, Spain, and the United States. Below, we refer to both measures as hourly wages for ease of exposition. The results are presented in Extended Data Fig. 6 and Supplementary Tables 25–27.

4.1.1 Average pattern across countries

Extended Fig. 6a presents the estimated immigrant–native differences in hourly wages for immigrants and children immigrants (see Supplementary Tables 25 for detailed estimates). The overall pattern is very similar to what we find when using annual earnings as our outcome, but the immigrant–native pay gaps in hourly wages are smaller in size.

For immigrants, the total immigrant–native difference in hourly wages after basic adjustments is approximately 13% (–.133 log points). The gaps are gradually reduced when we compare immigrants and natives working in the same industry (–.100 log points), occupation (–.066 log points), establishment (–.066 log points), and job (–.034 log points). These results indicate that immigrants, on average, earn about 3% lower wages than natives with the same occupation and employer. Overall, we find that sorting into lower-paying jobs account for three-quarters of the total immigrant–native gap in hourly wages (between-job segregation: 75%; within-job inequality: 25%).

For children of immigrants, the gaps relative to natives in hourly wages are considerably smaller than those found for immigrants. The total difference in hourly wages relative to natives, after basic adjustments, is approximately 5% (–.049 log points). The gaps are gradually reduced when we compare children of immigrants and natives working in the same industry (–.035 log points), occupation (–.029

log points), establishment ($-.021$ log points), and job ($-.009$ log points). These results indicate that immigrants, on average, earn just under 1% less than natives working in the same occupation for the same employer. Overall, we find that sorting into lower-paying jobs accounts for about four-fifths of the total immigrant–native gap in hourly wages (between-job segregation: 81%; within-job inequality: 19%).

Overall, the results using hourly wages support the conclusions and robustness of our findings from our main analysis. Although immigrant-native differences in hourly wages are smaller than the differences in annual earnings, in both cases the gaps are primarily driven by lack of access to high-paying jobs and not within-job pay inequality.

4.1.2 By region of origin

Extended Fig. 6b summarizes the estimated gap in hourly wages relative to natives for immigrants and children of immigrants from each of the five world regions of origin (see Supplementary Tables 26 for detailed estimates). For both immigrants and children of immigrants, the patterns of variation between the different regions of origin are comparable to that shown in the results from our main analysis (Fig. 2a in the main text) although the size of the gaps at all levels tend to be smaller. As for the immigrant–native earnings differences, we see that there is much less variation between regions of origin in the within-job gaps in hourly wages compared to the total immigrant–native gaps in annual earnings.

For immigrants, the total immigrant–native gap in hourly wages after basic adjustments are considerably larger than the within-job gaps for immigrants from all world regions: Sub-Saharan Africa (basic adjustments gap: $-.202$ log points; within-job gap: $-.046$ log points), Middle East and North Africa (basic adjustments gap: $-.182$ log points; within-job gap: $-.046$ log points), Asia (basic adjustments gap: $-.154$ log points; within-job gap: $-.042$ log points), Latin America (basic adjustments gap: $-.150$ log points; within-job gap: $-.048$ log points), and Europe, North America, and other Western (basic adjustments gap: $-.065$ log points; within-job gap: $-.015$ log points). This implies that the total immigrant–native pay gaps are primarily attributable to sorting into lower-paying jobs for all world regions of origin, where the contribution of the between-job segregation ranges between 77–68% and within-job inequality ranges between 32–23%.

For children of immigrants, the overall pattern is similar although the pay gaps relative to natives at all levels are considerably lower than among immigrants from the same region of origin. Thus, the total immigrant–native gaps in hourly wages after basic adjustments are considerably larger than the within-job gaps for children of immigrants from all world regions: Sub-Saharan Africa (basic adjustments gap: $-.082$ log points; within-job gap: $-.012$ log points), Middle East and North Africa (basic adjustments gap: $-.058$ log points; within-job gap: $-.006$ log points), Asia (basic adjustments gap: $-.048$ log points; within-job gap: $-.027$ log points), Latin America (basic adjustments gap: $-.077$ log points; within-job gap: $-.021$ log points), and Europe, North America, and other Western (basic adjustments gap: $-.025$ log points; within-job gap: $-.004$ log points).

4.1.3 By destination country

Extended Fig. 6c presents the country-specific estimates of the immigrant–native gap in hourly wages separately for each destination country, without distinguishing between different world regions of origin (see Supplementary Table 27 for detailed estimates).

For immigrants, we see that the total immigrant–native pay gaps after basic adjustments are comparable in Spain (–.159 log points), Norway (–.165 log points), France (–.165 log points), and the Netherlands (–.164 log points), while they are smaller in the United States (–.076 log points) and Denmark (–.072 log points). There is also some variation in the size of the within-job immigrant–native pay gaps between countries, with the largest gap found at –.060 log points (Netherlands) and the smallest at –.007 (United States). Across all destination countries, sorting into lower-paying jobs is the main driver of the total immigrant–native pay gaps (between-job segregation: 64–91%; within-job inequality: 9–36%).

For children of immigrants, the total immigrant–native gaps in hourly wages after basic adjustments are considerably smaller than among immigrants in all countries where the necessary information is available (Norway: –.059 log points; Netherlands: –.058 log points; Denmark: –.032 log points). In all countries, we see a clear sorting gradient and the within-job gaps in hourly wages among children of immigrants are close to zero in all countries. In log points, the contribution of between-job segregation to the total immigrant–native gap in hourly wages range between 77% in Norway, 83% in Denmark, and 100% in the Netherlands, while the contribution of within-job inequality correspondingly is 0% in the Netherlands, 17% in Denmark, and 23% in Norway.

4.2 Sensitivity analyses using the integrated job sample

Sorting processes that lead immigrant and native background employees to disproportionately work in different jobs might in some cases also lead to complete segregation at the job level (i.e., some jobs are occupied only by immigrants or children of immigrants while other jobs are only occupied by natives). In this section, we test whether our estimates of the relative role of sorting into industries, occupations, and establishments versus within-job pay inequality change if we restrict our sample only to individuals working in immigrant–native integrated job cells. More specifically, to assess whether part of the contribution of between-job segregation to the total immigrant–native earnings gaps (i.e., basic adjustments, Model 1) reflects the sorting of immigrant and native background into jobs where only immigrants or natives are employed, we estimate all the models on samples that are restricted to immigrant–native-integrated jobs (i.e., at least one worker of both immigrant and native background is present at the job level). Supplementary Fig. 3 presents the estimates from basic adjustments model and the within-job model for the integrated job cell sample. Supplementary Table 28 reports the full set of estimates using the immigrant–native job-integrated sample and compares this to the results from the main analysis.

Supplementary Fig. 3 shows that the basic adjustments estimates for immigrants tend to be slightly smaller than the estimated immigrant–native earnings differentials. This implies that a small part of the basic adjustments gaps in our main models reflect that immigrants in part are sorted into lower-paying job cells without any native coworkers and natives into job cells with no immigrant-background coworkers. The within-job pay gaps are identical in the main model and for the job-integrated sample, since the samples in the main within-job model specification are also restricted to workers in immigrant–native integrated job cells. These results suggests that sorting into lower-paying jobs is slightly less important when restricting the sample to job-integrated cells but the overall pattern is qualitatively similar to that reported from the main analysis.

4.3 Sensitivity analyses for alternative job definitions

In this section, we first assess how the estimates for within-job pay gaps differ if we define job cells (occupation–establishment) using more coarsened measures of occupation since our countries vary in

the level of granularity in occupational codes. Second, for countries where we have information on both establishments and firms (Denmark, France, Norway, Netherlands, Sweden, Spain), we estimate alternative models defining jobs as occupation-firm cells since only information on firms is available in Canada and the United States.

Extended Data Fig. 7 summarizes the relevant estimates using the basic adjustments model (Model 1) and the within-job model (Model 5) for each country where the relevant sensitivity analysis can be tested. We discuss the results for each of our sensitivity tests separately below. Supplementary Tables 29–32 report coefficients and standard errors for the basic adjustment and the within-occupation and within-job specifications compared to the results from the main analysis.

4.3.1 Job definitions using coarsened occupational measures

In our primary specification, we follow standard conventions from the literature on within-job pay gaps in referring to the within occupation–establishment unit estimate as the “within-job” estimate⁸⁷⁻⁸⁹. As noted above, the conceptualization of jobs as falling at the intersection of occupations and establishments assumes coworkers in the same occupation–establishment unit are hired to do “particular task[s] within a particular work group in a particular company or establishment” (⁹⁰, p. 9). However, as noted by Petersen et al.⁹¹: “There is a question as to what is the appropriate level of detail for occupational or job titles, because if they get too detailed, the titles may just be indicators of wage levels rather than distinguishing the content of work performed” (p. 203).

In our main analyses, the level of granularity varies between the different countries in our sample. We use detailed three or four digit occupational classification schemes in six out of our nine countries (4-digit: Canada, Denmark, Germany, Norway, and Sweden; 3-digit occupational codes: the United States); in the three remaining countries we use less precise measures since we only have a sample of individuals observed within a particular establishment (for France and the Netherlands we use two-digit occupational codes) or other data constraints (Spain). To assess whether differences in the granularity of our occupational measurements are driving our results we estimate models using coarsened one-, two-, or three-digit occupational codes for the countries where our main model specification relies on a more detailed measure of occupational codes.

Extended Data Fig. 7 (Occupation, 1-digit; Occupation, 2-digit; Occupation 3-digit) summarizes the estimates defining jobs at different levels of granularity, where the occupation–establishment cells are defined using occupational codes at one-, two-, or three-digit level. The overall patterns indicate that there are small differences in the estimated within-job estimates of immigrant–native pay differences when jobs are measured using either coarsened one-digit or two-digit measures of occupation in the occupation–establishment cells compared to when jobs (occupation–establishment cells) are defined using the finer-grained (i.e., three-digit or four-digit) occupational codes. The overall results indicate that there are relatively small differences in the estimated within-job estimates of immigrant–native pay differences when jobs are measured using either coarsened occupational measures or more finer-grained (e.g., four-digit) occupational codes. For Norway, Germany, the Netherlands, the United States, Denmark, and Sweden, the differences in the within-job estimates tend to be small for immigrants. However, the within-job gaps using one-digit occupational measures are slightly larger in Germany and the United States. In Canada, the within-job gap using one-digit occupations is considerably larger, but the within-job estimates for the two-digit occupational job definition differ considerably less compared to the three-digit occupational measure used in the main model specification.

In France and the Netherlands, where we use a two-digit measure of occupations when defining job cells, there are small differences in the estimates using one-digit occupations in the job cell definitions. Within-job pay gaps may be upwardly biased due to the coarsened measures of occupations in these countries. For the Netherlands, we obtained estimates based on a three-digit occupational measure and they are close to identical to the estimates based on the two-digit measure (these estimates are not reported here, but available upon request). In Spain, where we only have a one-digit measure of occupations available we are not able to assess the sensitivity of occupational granularity. As a result, our estimates of within-job pay gaps are likely to represent an upper-bound measure of within-job pay differences.

For children of immigrants, there are very small differences in the within-job pay differences relative to natives regardless of whether job cells are defined using one-, two-, three- or four-digit measures of occupational codes.

Taken together, these results indicate that the estimated size of within-job pay gaps for both immigrants and children of immigrants are relatively stable regardless of the level granularity of the occupational measure used. Moreover, as also shown in Supplementary Tables 29–31, this indicates that differences or the lack of differences in the estimated contribution of sorting across jobs and within-job pay gaps to immigrant–native pay differences across countries does not reflect differences in the granularity of our occupational measures in selected countries.

4.3.2 Adjustment for firms instead of establishments

In Canada and the United States our measure of employers relies on information on firms, which can contain many separate establishments, whereas in the remaining seven countries we use information on establishments (i.e., the actual sites of work). To explore the sensitivity of our estimates to the use of firm identifiers instead of establishment identifiers, we re-estimated our main model specifications using firm identifiers for the countries where information on both firms and establishments was available (Denmark, France, Norway, Netherlands, Sweden, Spain) and compared the within-job estimates using firm identifiers (i.e., occupation-firm cells) to our preferred estimates using job definitions based on occupation–establishment cells.

Extended Data Fig. 7 (Occupation–firm job cells) summarizes the estimated within-job pay gaps for the occupation-firm job cells for immigrants and children of immigrants in Denmark, France, Norway, Netherlands, Sweden, Spain, as well as for Canada and the United States, where these are identical to the results from the main model specification. Supplementary Table 32 reports the exact coefficients, standard errors, and comparisons with the main analysis.

For both immigrants and children of immigrants in Denmark, Norway, and Sweden, we see that the within-job estimates using occupation-firm cells are almost identical to those obtained when defining jobs using occupation–establishment cells. These estimates indicate that the within-job immigrant–native pay gaps using occupation-firm cells are not upwardly biased compared to the within-job estimates using occupational–establishment job cell definition. Although the actual patterns might differ in Canada and the United States, the results from Denmark, France, Norway, Netherlands, Sweden, and Spain suggest that the differences between the within-job pay gaps using occupation–establishment and

occupation–firm fixed effects may be relatively similar in size. Nonetheless, the within-job immigrant–native pay gaps in Canada and the United States should be treated as upper-bound estimates.

4.4 Sensitivity analyses for covariate adjustment and age restrictions

From a theoretical perspective, our preferred model is the main specification, which adjusts for sex, human capital controls (age and education), and local labor market characteristics (captured by geographic region of employment). This model accounts for differences in standard proxies of productivity and experience between immigrants, children of immigrants, and natives, while ensuring comparisons within similar labor market contexts. In this section, however, we present results where we explore the extent to which our estimates are sensitive to the exclusion of these controls. In addition, we also assess changes in the estimates when we use a broader age range (18–70 years old). Moreover, we also address the sensitivity of our results to the inclusion of additional controls that capture on-the-job experience (i.e., seniority) or employment status (i.e., part-time versus full-time employment).

In Extended Data Fig. 8, we summarize estimates for the basic adjustments model (Model 1) and the within-job model (Model 5) where we exclude adjustment for (a) educational attainment level, (b) geographic region, (c) both educational attainment level and geographic region, or (d) age; include workers in (e) a broader age, spanning from 18 to 70 years old; or include additional adjustment for (f) seniority with the current employer or (g) whether the individual is employed in a full-time or part-time contract. Exact coefficients and standard errors for all model specifications, as well as comparisons of estimates with the main analysis, are reported in Supplementary Tables 33–39.

Extended Data Fig. 8 documents that the within-job estimates of immigrant–native pay differentials (Model 5) do not vary substantially across the various model specifications. By contrast, we see some degree of variation in the estimates for the total immigrant–native pay differentials (basic adjustments model, Model 1) for immigrants and children of immigrants depending on covariate adjustments and the sample age restriction. The specific controls that matter (and how they matter) vary by country (e.g., models without controls for education and geography yield smaller gaps in the USA and France, but larger gaps in Spain and Germany), but it is clear across the various model specifications sorting into jobs (and not within-job inequality) drives the total differences that we observe. In the following, we comment on the estimates from each of the sensitivity analyses.

4.4.1 No adjustment for education

For immigrants, Extended Data Fig. 8 (No education) shows that the total immigrant–native differences in annual earnings are larger in the basic adjustments models where differences in educational attainment level are not adjusted for (full results are reported in Supplementary Table 33). This is the case for all countries except in Canada and implies that part of the immigrant–native earnings gaps reflect that immigrants, on average, have less education than natives in the remaining countries (Spain, Norway, Germany, France, the Netherlands, the United States, Denmark and Sweden). For the within-job models controlling for education makes little difference in the immigrant–native earnings gaps, suggesting that the role of education is primarily to sort immigrants and natives into different jobs.

For children of immigrants, we see a similar but less pronounced pattern of larger immigrant–native earnings gaps in the basic adjustments model that do not include controls for education. As with immigrants, this pattern is found for all countries (Norway, Germany, Netherlands, Denmark, and Sweden) except for Canada, where the immigrant–native gap is reversed to a small immigrant advantage

when the model does not adjust for education. For the within-job models we again see that the immigrant–native differences in annual earnings are very similar with and without adjustments for education.

4.4.2 No adjustment for geographic region

Our estimates in the main analysis adjust for geographic region in order to compare immigrants and children of immigrants to native workers in the same local labor market. As immigrants, children of immigrants, and natives may be differentially sorted across regions with different average levels of earnings (e.g., central urban areas with higher average earnings versus rural areas with lower earnings levels), we assess the sensitivity of our results to this issue in Extended Data Fig. 8 (No geography) and Supplementary Table 34. These models allow us to compare the immigrant–native earnings gaps from models that do and do not include controls for the geographic region of employment.

For immigrants, Extended Data Fig. 8 (No geography) shows slightly smaller immigrant–native differences in annual earnings in the basic adjustments model where we adjust for geographic region. This suggests that immigrants, on average, concentrate in geographic regions with higher earnings levels compared to natives. In contrast, the within-job differences in earnings between immigrants and natives are identical or very similar to the main analysis when there is no adjustment for geographic region. The largest differences between the within-job estimates with and without control for geographic region are found for Canada and the United States, where employers are measured using firm identifiers and not establishments. Since firms, except for single-establishment firms, include several establishments, this implies that jobs can refer to employees with the same occupation working in different establishments at different geographic locations, and it is therefore not surprising that adjustment for geographic region will reduce the within-job immigrant–native difference in earnings.

For children of immigrants, Extended Data Fig. 8 (No geography) shows a similar pattern, with smaller gaps in annual earnings relative to natives in the basic adjustments model without control for geographic region. As above, this implies that on average children of immigrants are located in areas with higher levels of earnings than natives. For the within-job gaps, the estimated immigrant–native differences in annual earnings are more or less identical in the models with and without geographic adjustments. This is also the case for children of immigrants in Canada, where jobs are defined as occupation-firm cells.

4.4.3 No adjustment for education and geographic region

Since the estimates from models that separately do not adjust for education and geography differ in opposite directions relative to our main results, we also present results where we do not adjust for both educational attainment and geographic region. Extended Data Fig. 8 (No education or geography) presents these results for the basic adjustments model and the within-job model. Supplementary Table 35 presents the full set of results from all model specifications.

For immigrants, Extended Data Fig. 8 (No education or geography) shows a less consistent pattern across countries for the basic adjustments model. For Norway, France, the Netherlands, and Sweden, the basic adjustments model that does not control for education and geography provides results that are similar to those from the model specification that do control for education and geography (i.e., in these countries differences are up to about .01 log point). For Spain, Germany, Denmark, and the United States, the model specification without adjustment for education and geography provides estimates that are between .04 and .08 log points larger than the estimates in the main results. In Canada, the

immigrant–native differences in annual earnings in the basic adjustments model without controls for education and geography are considerably smaller (about .15 log points) than the corresponding estimates with adjustment for education and geography.

For the within-job estimates, the differences between the model specifications with and without adjustment for education and geography tend to be very small for Spain, Norway, Germany, France, the Netherlands, and Sweden (i.e., the differences in estimates range from zero to .007 log points). For Denmark, the within-job immigrant–native gap in the model specification without adjustments is .015 log points larger than main results. For Canada and the United States, not adjusting for geography and education has a nontrivial influence on the estimated within-job immigrant–native gaps, producing gaps that are .035 (Canada) and .050 (United States) log points smaller than the estimates reported in the main model.

For children of immigrants, Extended Data Fig. 8 (No education or geography) also shows a less consistent pattern across countries for the basic adjustments model. For Germany, the Netherlands, Denmark and Sweden, the differences in the estimated immigrant–native gaps in annual earnings in the basic adjustments are relatively small and range between .005 (Germany) and .024 (Denmark). For Canada, there is .129 log point difference in the models with and without adjustment for education and geography, and the model without adjustments shows that children of immigrants have .11 log points higher annual earnings compared to non-migrant natives. For Norway, the immigrant–native gap in annual earnings is .05 log points smaller in the model without control for geography and education compared to the estimates in the main results with adjustments for education and geography. Examining the within-job estimates, we find that the differences in the estimated immigrant–native differences in annual earnings in the models with or without adjustment for education and geography are very small—ranging between zero (Germany) and .013 (Canada) log points.

Overall, these estimates show that the estimates from the basic adjustments model are relatively sensitive to whether or not adjustments for education and geography are included. However, at the within-job level, where we compare immigrants, children of immigrants, and natives with the same occupation working for the same employer, accounting for education and geography makes little difference in most countries, and in the two cases where they do—immigrants in Canada and the United States—they show that the within-job estimates from our main analysis constitute upper-bound estimates of the immigrant–native differences in earnings. This is likely due to correction for geographic differences between workers in the same firm who are employed in establishments in different geographic locations.

4.4.4 No adjustment for age

Extended Data Fig. 8 (No age) presents results for the prime-age worker sample (i.e., workers aged 25–60 years) used in the main analysis without linear and quadratic adjustment for age. Supplementary Table 36 provides the full set of estimates from this sensitivity analysis.

For immigrants, the estimated immigrant–native gaps are larger in the basic adjustments model without control for age than in the main analysis for some countries (Spain, Germany, Denmark, and Sweden), similar in other countries (Norway, France, Netherlands), and smaller for some countries (Canada and the United States). For the within-job gaps, the differences between the estimates from the main analysis and the models without age adjustments are considerably smaller. However, the largest gaps are once

again found for Canada and the United States, where the gaps are about .03–.04 log points smaller in the models not adjusting for age.

For children of immigrants, the estimated earnings gaps are substantially larger (ranging between .06 to .17 log points larger) in the models not adjusting for education in Norway, the Netherlands, Denmark, and Sweden. For Canada and Germany there are small differences between the estimated gaps from the main analysis and the estimates from models without age adjustments. For the within-job estimates, the estimated immigrant–native gaps also tend to be considerably larger (ranging between .02 to .12 log points larger) than the estimated gaps in the main analysis in Denmark, the Netherlands, Norway, and Sweden. In the Canada and Germany, there are very small differences between the within-job immigrant–native gaps with and without adjustment for age.

The substantial differences between the results from the main analysis and the models that do not adjust for age among children of immigrants are likely to reflect the young age distribution found in the populations of native-born children of immigrants in many destination countries. If we then do not adjust for age differences relative to natives, we will compare children of immigrants to natives that, on average, are older workers and who have higher earnings due to increasing earnings levels with lifecycle career progression.

4.4.5 Sample with broader age range

Extended Data Fig. 8 (Broader age range) presents results for the sample including workers in a broader age range (18–70 years). This model includes the same linear and quadratic adjustment for age as in the main analysis. Supplementary Table 37 presents the full set of results for the models using this broader age sample. Overall, the estimated immigrant–native earnings gaps in the sample with the broader age range is relatively comparable to those reported in the main analysis.

For immigrants, the estimated immigrant–native gaps in annual earnings in the basic adjustments model are very similar or slightly smaller than the estimates from the main analysis for all countries. The largest differences in the estimated immigrant–native gaps are .03–.04 log points (Canada and Spain). For the within-job estimates, the estimated immigrant–native gaps using the sample with the broader age range tend to be similar to the estimates from the main analysis. The largest differences are found for the Netherlands and Spain, where the estimated within-job earnings gaps are .028 and .014 log points, respectively, smaller than the estimates reported in the main analysis.

For children of immigrants, the differences in the estimated immigrant–native gaps in annual earnings for the basic adjustments model using the broader age range and the main analysis are relatively modest, ranging from about .03 log points larger in Norway to about .02 log points smaller in the Netherlands. For the within-job estimates, the estimated earnings gaps relative to natives for the broader age range differ by up to .01 log points for Canada, Denmark, Germany, the Netherlands, Norway, and Sweden.

4.4.6 Adjustment for seniority

Our main analysis does not control for workplace seniority, but a concern is that differences in seniority between immigrants and children of immigrants relative to native workers can upwardly bias the estimated immigrant–native earnings gaps. To address this concern, we estimated models adjusting for seniority (number of years employed in the current establishment or firm) for all countries. Extended Data Fig. 8 (Seniority) presents the results where we include adjustment for seniority using a categorical

measure of employment (first year of employment, 2–5 years of employment, 6–10 years of employment, and 11 or more years of employment). Supplementary Table 38 presents the full set of estimates from all model specifications.

For immigrants, the results from the basic adjustments model show that controlling for workplace seniority reduces the immigrant–native earnings gaps substantially in Spain (.166 log points), Canada (.085 log points), and Germany (.069 log points) when compared to the main analysis. There are smaller reductions (e.g., from .010 to about .042 log points) in Denmark, France, Netherlands, Norway, Sweden, and the United States. For the within-job model, the differences in the estimated immigrant–native earnings gaps between the main analysis and the models adjusting for seniority are considerably smaller. However, in Canada, the Netherlands, and Spain, there are still nontrivial reductions in the within-job gap estimates (e.g., from about .04 to .06 log points) after adjustment for seniority. For the remaining countries, the within-job immigrant–native earnings gaps are reduced by about .01 log point or less.

For children of immigrants, there are considerably smaller differences between models that do and do not adjust for workplace seniority. The differences in the earnings gaps from the basic adjustment models with and without seniority range from zero to about .02 log points. For the within-job gaps, the differences are even smaller and the largest differences between the main analysis and the models with control for seniority is found for the Netherlands (.015 log points) and is close to zero for most of the remaining countries.

4.4.7 Adjustment for part-time versus full-time employment status

Differential access to employment in full-time and part-time jobs may be an important source of immigrant–native differences in annual earnings. To address sensitivity to this issue, we estimate models where the basic adjustments model controls for binary indicator of part-time versus full-time work. For the within-job model, we interact this binary indicator with each occupation–establishment unit. This implies that we include separate fixed effects for workers in part-time and full-time employment for each job cell. Extended Data Fig. 8 (Fulltime) summarizes the results from the basic adjustments and within-job models after adjusting for parttime versus fulltime employment. Supplementary Table 39 reports the full results after adjusting for part- and full-time employment states, where we include separate fixed effects for workers in parttime and fulltime employment also for each industry, occupation, and establishment.

For immigrants, the basic adjustments models have relatively similar immigrant–native earnings gaps (e.g., changes ranging from approximately .01–.02 log points) regardless of whether or not a control for full-time employment is included in the model in most countries (Canada, Denmark, Germany, France, the Netherlands, and the United States). In Norway and Spain, the difference is somewhat larger at about .04 log points. For Sweden, we lack information on part-time and full-time work in the administrative records used in the main analysis. For the within-job pay gaps, adjusting for part- vs full-time jobs matters less in all countries, with changes in coefficients ranging from about zero log points (Germany, Norway and the United States) to .011 log points (the Netherlands).

For children of immigrants, adjusting for full-time employment results in relatively small changes in the estimated gaps for both the basic adjustments and the within-job models. For the basic adjustments model, the estimate of the immigrant–native earnings gaps changes between .003 log points (Germany) and .020 log points (Norway). For the within-job model, changes in the estimated immigrant–native

earnings gaps are very small and, except the Netherlands, below .01 log points. For the Netherlands, however, the within-job estimate from the full-time analysis differs by .072 log points from the main analysis, so that once we account for differences in part- vs full-time work, there are large within-job earnings advantage for children of immigrants (.079 log points) relative to natives.

5 Longitudinal panel data analysis

5.1 Two-way fixed effects panel estimation and decomposition

Our main results show that immigrant–native pay gaps primarily reflect between-job segregation, where immigrants and children of immigrants work in jobs with lower average wages than natives, while within-job inequality in pay between workers of immigrant and native background in the same workplace is small. Correspondingly, within-job pay gaps are small compared to the baseline (adjusted) immigrant–native pay gaps. In this section, we present results from panel data analyses that strengthen our interpretation of immigrant–native pay gaps as being driven by immigrants’ lack of access to high-paying jobs, in terms of both (a) skill-based between-job segregation (i.e., lack of access to jobs with highly-skilled workforces) and (b) segregation with respect to job-level employer pay premia (i.e. jobs’ wage level net of the skill composition of workers in that job).

The between-job segregation driving the immigrant–native pay gaps is a composite of two related but analytically distinct mechanisms. First, immigrants can sort into jobs (i.e., unique combinations of occupations and establishments) that have a low job-specific pay premia (i.e., jobs that systematically pay lower wages to *all* of their workers, cf. ¹⁹) after accounting for all time-invariant (unobserved) productivity-related characteristics of individual workers. This phenomena is often referred to as *sorting* (with respect to firm wage premia) in the literature ^{92,93}, although the term *segregation* is also used ⁹⁴. We refer to this component as *between-job pay premia segregation*, to differentiate it from another component that we introduce below. This effect captures the role of differential sorting by immigrant background into high or low wage jobs over and above what is assumed under random allocation net of individual productivity. *Between-job pay premia segregation* effects can reflect mechanisms such as lack of access to employment-related social networks or discrimination at the point of hire or in promotion decisions^{92,93}.

Second, the jobs where immigrants work may have low average wage levels because all workers (i.e., including native workers) occupying these jobs tend to earn low wages (due to low earnings potential and lack of skills). This effect captures the tendency of low-wage workers (as well as high wage workers) to concentrate in the same jobs due to having similar productivity-related characteristics, and segregation effects can reflect that low-wage workers are not able to access higher paid positions because they lack productivity-related skills. If immigrants tend to work with other low-skill workers due to segregation, that will also increase the between-job wage differences, while not increasing (or even decreasing) within-job pay gaps. Following Song et al.²⁰, we refer to this phenomenon as *between-job skill segregation*.

In analyses of cross-sectional linked employer–employee administrative records, like those used in our main analysis, *between-job pay premia segregation* and *between-job skill segregation* cannot be disentangled, as the job fixed effects capture both components. However, using longitudinal data we can disentangle the role of *between-job pay premia segregation* from that of *between-job skill segregation*. Specifically, because these administrative records allow us to follow workers who change jobs across time, separate job-specific and worker-specific (fixed) effects can be identified. Finally, these models also allow us to identify the remaining *within-job gap* in pay between workers, which—as in the main analysis—capture differences in the pay that employers offer to immigrants, children of immigrants, and natives working in the same occupation in the same establishment. Taken together, the panel data analyses allow us to better disentangle the processes that generate immigrant–native pay gaps by limiting immigrants’ access to higher paying jobs, and, in turn, also provide more precise policy implications.

The exercise presented below builds on a literature using linked employer–employee panel data to distinguish between the individual worker, establishment, and occupational channels of wage differences by, e.g., sex⁹⁴ or education⁹⁵. We start by estimating two-way fixed effects models for countries where administrative records follow workers, establishments, and occupations across years (Denmark, France, Norway, Spain, and Sweden). Compared to our main approach, this panel data analysis specifically adds person fixed effects to account for time-invariant productivity-related worker characteristics. We then use the estimated person fixed effects and job fixed effects, together with information on the distributions of immigrants, children of immigrants, and native workers across jobs, to conduct decompositions that identify the contributions of within-job pay gaps, between-job skill segregation, and between-job pay premia segregation on immigrant–native pay gaps.

To conceptualize our approach, let us start with a standard so-called AKM (i.e., Abowd, Kramarz, and Margolis⁶⁸) panel model with person and establishment fixed effects:

$$\ln w_{ijt} = X_{ijt}\beta + \theta_i + \psi_j + \varepsilon_{ijt} . \quad (10)$$

This model assumes that wages of individual i , working at establishment j in year t can be decomposed into the log-additive effects of time-varying observable controls, such as age (X_{ijt}), time-invariant worker heterogeneity capturing the earnings potential of individuals (θ_i), and time-invariant firm pay-premia (ψ_j) capturing the general wage setting behavior of firms after controlling for workforce composition. Using information on occupations the model could be extended either by including an additive term for time-invariant occupation heterogeneity (λ_k) in wages⁹⁵ or by allowing for joint occupation–establishment (job) effects (ξ_{jk}) instead of the additive terms⁹⁵. For keeping the discussion simple, we adapt the latter approach. Hence, the corresponding equation to estimate is then:

$$\ln w_{ijt} = X_{ijt}\beta + \theta_i + \xi_{jk} + \varepsilon_{ijt} . \quad (11)$$

In these models the wage returns of being an immigrant, as a time-invariant person trait, is (initially) absorbed by the individual worker effects. The identification of such two-way fixed effects model relies on mobility of workers between jobs (occupation–establishment units). After forming a panel on individuals, we further restricted the samples to the largest connected set in the mobility network of workers. We use the connected set calculated on the full sample (i.e., including native and immigrant workers) in each country as we do not assume a separate firm premium based on worker origin⁹³. In this model, the job (occupation–establishment unit) fixed effects will represent the relative wage premia of the job (compared to the average, benchmark job) and will allow for a decomposition of differences between groups (i.e., immigrants, children of immigrants, and natives).

Gelbach’s⁹⁶ decomposition implies, that holding observable characteristics constant, wage differences between any two groups, G_i , can be unambiguously decomposed into differences in the fixed effects from the above models⁹⁴. In our most simple setting, G_i is immigrant status – which we can then further differentiate based on region of origin, or immigrant generation. When looking at differences between immigrants and natives for instance, we would still like to control for sex and education, as these characteristics could confound the differences between the two groups. This can be achieved by

controlling for these time-invariant person characteristics, Y_i , such as sex and education as well (e.g, by also including such controls in a regression of log annual earnings, or the estimated person and job effects, on immigrant status). That is, the following identity holds:

$$\left. \frac{\partial \ln w_{ijt}}{\partial G_i} \right|_{X_{ijt}, Y_i} = \left. \frac{\partial \theta_i}{\partial G_i} \right|_{X_{ijt}, Y_i} + \left. \frac{\partial \xi_{jk}}{\partial G_i} \right|_{X_{ijt}, Y_i}. \quad (12)$$

In the right-hand side of the equation, the first term captures differences in the general earnings potential of immigrants versus natives (i.e., a low worker effect suggests that the given worker will earn relatively low wages in any given job). The second term captures allocation mechanisms, that is whether immigrants systematically end up in lower or higher wage workplaces, potentially reflecting a limited access to higher paying firms or jobs^{92,93,95}.

To utilize this approach with our main results, we follow the proposition of Boza⁹⁷, who build on Song et al.²⁰ to differentiate between the within-job pay differences in worker effects and an additional segregation channel related to worker skill segregation. We propose that the difference in worker effects could be further decomposed into two terms. First, a difference in the job-level average worker effects in the jobs where immigrants work compared to where natives tend to work (average worker quality in the job). Second, the differences in the relative worker effect of individuals within these jobs. Considering a job model, we consider the following decomposition:

$$\left. \frac{\partial \theta_i}{\partial G_i} \right|_{X_{ijt}, Y_i} = \left. \frac{\partial (\theta_i - \bar{\theta}_{jk})}{\partial G_i} \right|_{X_{ijt}, Y_i} + \left. \frac{\partial \bar{\theta}_{jk}}{\partial G_i} \right|_{X_{ijt}, Y_i}. \quad (13)$$

As immigrant status is a time-invariant trait, the first term, the within-job gap in worker effects will be the same as the within-job gap in earnings that we report in the main text of the paper. The second term, however, will capture the segregation component that arises due to the fact that workers of different unobservable skills are not distributed randomly across workplaces. Immigrants, for instance, may systematically end up in workplaces where even independent of their own skills, the average earnings potential, and hence average wages of co-workers could be lower than that of a randomly chosen native worker (in another workplace). Taken together, we present the following decomposition:

$$\underbrace{\left. \frac{\partial \ln w_{ijt}}{\partial G_i} \right|_{X_{ijt}, Y_i}}_{\text{Immigrant-native pay gap}} = \underbrace{\left. \frac{\partial (\theta_i - \bar{\theta}_{jk})}{\partial G_i} \right|_{X_{ijt}, Y_i}}_{\text{Within-job gap}} + \underbrace{\left. \frac{\partial \bar{\theta}_{jk}}{\partial G_i} \right|_{X_{ijt}, Y_i}}_{\text{Between-job skill segregation}} + \underbrace{\left. \frac{\partial \xi_{jk}}{\partial G_i} \right|_{X_{ijt}, Y_i}}_{\text{Between-job pay premia segregation}}. \quad (14)$$

This formulation illustrates that, in this approach, we can differentiate between two different channels of between-job pay segregation. One relates to the firms' wage setting policy for specific jobs and the other relates to the workforce (skill) composition within these jobs. The key difference between the two channels becomes relevant when we think about policy implications. If low-wage immigrants tend to work with low-skilled native workers, that will be reflected in a low within-job pay gap. But that may obscure an underlying issue: immigrants (like low-skilled natives) will not have access to high-quality coworker networks, which could help them in getting into better positions. This segregation channel suggests that policies need to address skills that are not captured by our measure of education, for example soft skills⁹⁸⁻¹⁰⁰ and other forms of social capital^{25,29,30,36,37}. In contrast, if the main source of pay segregation is the lack of access to firms that generally pay high wages to all employees (e.g., highly

productive firms), then policies aimed at decreasing the dispersion in firm premia (e.g., minimum wage policies and policies against outsourcing) could begin to reduce the immigrant–native gaps.

5.2 Decomposition of factors contributing to immigrant–native pay gaps

To identify the relative contribution of within-job gaps, between-job skill segregation, and between-job pay premia segregation to immigrant–native pay gaps, we conduct the decomposition of the estimates from the two-way fixed effect panel analyses as described above. This analysis requires longitudinal information on individual workers and their occupations and establishments across years, to follow workers who move between jobs (occupation–establishment units) across years. For immigrants, we can conduct the panel analysis for a subset of five countries (Denmark, France, Norway, Spain, and Sweden). For children of immigrants, we can conduct the panel analysis for three countries (Denmark, Norway, and Sweden). We have information on immigrants’ and children of immigrants’ world region of origin for four of these countries (Denmark, Norway, Spain, and Sweden), whereas for information on world region of origin is missing in the longitudinal panel data from France.

Supplementary Fig. 4 presents the results from the decomposition of the immigrant–native pay gaps for immigrants and children of immigrants from all world regions combined. Supplementary Table 40 shows the detailed figures for the total immigrant–native gaps presented in the figure and the relative contribution of within-job pay gaps, between-job skill segregation, and between-job pay premia segregation.

The largest pay gaps for immigrants relative to natives are found in Spain, followed by France and Norway, then Denmark, while the smallest gaps are found among immigrants in Sweden. Except for France, the between-job pay premia segregation component makes the largest contribution to the immigrant–native pay gaps—ranging from 44 percent in Denmark to 51 percent in Sweden. The contribution of between-job skill segregation is for Denmark, Norway, Spain, and Sweden slightly smaller—ranging between 29 (Norway) to 48 percent (Sweden) than the contribution of the sorting with respect to employer pay premia. In France, between-job pay premia segregation and skill-related segregation makes up 26 percent and 41 percent, respectively, of the total immigrant–native pay gaps. Finally, the within-job gaps make the smallest contribution to the total immigrant–native pay gaps across all countries—ranging from 33 percent in France to 1 percent in Sweden. In absolute size, the within-job gaps in annual earnings range between approximately 2.5 and 5 log points.

For children of immigrants, the total immigrant–native pay gaps are considerably reduced in the three countries where this population can be studied. However, the total immigrant–pay gaps are still largest among children of immigrants in Norway, followed by Denmark, and smallest in Sweden. While the absolute size of the within-job pay gaps are strongly reduced in all three countries—below 2 percent—their relative contribution to the disadvantages that children of immigrants experience relative to natives is comparatively larger—ranging between 47 percent (Norway) and 61 percent (Sweden) in all countries, suggesting that second generation immigrants are much more able to get into workplaces that are similar to those of the native population.

Supplementary Fig. 5 conducts the same decomposition separately for immigrants and children of immigrants from Western (i.e., Europe, North America, and other Western countries) and non-Western (i.e., Asia, Latin America, Middle East and North Africa, and Sub-Saharan Africa) world regions of origin for the countries where this information is available (Denmark, Norway, Spain, and Sweden). Supplementary Table 41 shows the detailed estimates for the total immigrant–native gaps by region

presented in the figure and the relative contribution of within-job pay gaps, between-job skill segregation, and between-job pay premia segregation.

For immigrants, the overall pattern of Supplementary Fig. 5 is comparable to the results for immigrants from all world regions but the total immigrant–native gaps in log annual earnings are larger for immigrants from non-Western world regions in Spain, Norway, and Denmark, whereas the difference between Western and non-Western immigrants is smaller in Sweden. For non-Western immigrants, between-job pay premia segregation makes the largest contribution to the total immigrant–native pay gaps in Denmark, Norway, and Spain. The pattern is similar for Western immigrants, except that the contribution of between-job skill segregation (45 percent) is marginally larger than that of between-job sorting (42 percent) in Spain. Across all countries, the combined contribution of between-job segregation in pay-premia and worker skills to total immigrant–native pay gaps range between 67 percent (Denmark) and accounting for the entire gap (Sweden) for non-Western immigrants and between 69 percent (Norway) and accounting for the entire gap (Denmark and Sweden) for Western immigrants. For all countries, within-job gaps make up the smallest gaps for both non-Western—ranging from zero percent (Sweden) to 33 percent (Denmark)—and Western—ranging from zero percent (Denmark and Sweden) to 31 percent (Norway)—immigrants.

For children of immigrants, the total immigrant–native pay gaps are strongly reduced for both those from Western and non-Western background across all countries. Moreover, the within-job pay gaps tend to be very small, except for children of non-Western immigrants in Denmark—where the within-job pay gap is 3.8 log points and make up about 80 percent of the entire earnings disadvantage relative to natives—and among children of Western immigrants in Norway—where the within-job pay gap is 2.5 log points and make up almost the entire immigrant–native pay gap. In Sweden, children of immigrants of all origins tend to end up in workplaces of relatively high pay premia in average.

Taken together, the results presented in Supplementary Figs. 4–5 and Supplementary Tables 40–41 document how immigrants’ earnings disadvantage is primarily driven by lack of access to high-paying jobs and to a much lesser degree to within-job differences in pay. Immigrants’ lack of access operates via two main channels. First, the largest contribution comes from a pattern where immigrants are sorted into lower-paying jobs than what we would expect under random allocation to jobs based on skill levels. This segregation effect with respect to pay premia can, in turn, reflect mechanisms related to friction in immigrants’ job search compared to natives (e.g., lack of access to job-relevant social networks) or hiring discrimination at the point of hire and in promotions. Second, immigrants also lack access to higher-paying jobs because they lack the skill levels—or stable earnings potential—that is needed to enter these jobs and thus tend to work with other immigrants and natives with similar skill levels. These disadvantages are larger among immigrants from non-Western world regions of origin but are also found for Western immigrants. For children of immigrants, the total immigrant–native pay gaps are considerably smaller than for immigrants. Moreover, within-job pay gaps—which are also smaller in absolute terms compared to those found among immigrants—tend to make a comparatively larger relative contribution to total immigrant–native pay gaps. Correspondingly, since between-job pay premia segregation and between-job skill segregation contribute comparatively less to total pay gaps relative to natives, this indicates that children of immigrants, compared to immigrants, both have more equal access to higher paying jobs.

5.3 Differential sorting across the job-specific pay level distribution

To highlight how immigrants are sorted into jobs with lower job-specific pay levels, we present figures showing the distribution of immigrants, children of immigrants, and natives across deciles in the job-specific earnings distribution based on the estimates from the two-way fixed effect panel analysis. To do so, we use each worker's job fixed effect estimates and rank these into percentiles from the lowest to the highest for the entire workforce regardless of age, sex, and immigrant background. We then divide this percentile rank distribution into deciles, where 10 percent of all workers will be found within each decile. The job-specific pay level deciles refer to the average wage level of each worker's job after accounting the (unobserved) skill composition of the jobs using the person fixed effects in the two-way fixed effect panel analysis. Importantly, if sorting into lower and higher paying jobs is the same for workers in all subpopulations (e.g., immigrants and natives), 10 percent of each subpopulation should be in each decile.

Supplementary Fig. 6 shows how immigrants and children of immigrants from all world regions as well as natives are sorted across the job-specific pay level distribution. The figure shows a clear pattern where immigrants are overrepresented in jobs in the lower deciles of the job-specific pay distribution and underrepresented in jobs in the upper deciles. This pattern is most pronounced in Norway and Spain, followed by France and Denmark, and least pronounced, but clearly still present, in Sweden. This shows a general pattern across countries, where immigrants lack the same degree of access to higher-paying jobs and are sorted into the lowest paying jobs in the labor market. For natives, we see that they are more equally distributed across each decile of the job-specific pay distribution but slightly underrepresented in the bottom deciles in all countries, which reflects that immigrant workers make up a larger share of the workers found in these deciles. In Denmark, Norway, and Sweden, children of immigrants tend to be more similar to natives in their distribution across the different deciles of the job-specific pay distribution although there is some distributional variation (e.g., in Norway, where children of immigrants are overrepresented in the lowest paying jobs).

Supplementary Fig. 7 replicates Supplementary Fig. 6 for the countries where we can distinguish between immigrants and children of immigrants from Western and non-Western world regions of origin (Denmark, Norway, Spain, and Sweden). The figure reveals a similar pattern to that found in Supplementary Fig. 6; however, we see that the concentration of immigrants in the bottom deciles of the job-specific pay distribution is much more pronounced among immigrants from non-Western regions than among immigrants from Western regions in Denmark, Norway, and Sweden. In Spain, by contrast, both Western and non-Western immigrants are strongly overrepresented in low-paying jobs, although the underrepresentation in the higher paying jobs remains more pronounced among non-Western immigrants. In Denmark, Norway, and Sweden, children of immigrants from both Western and non-Western regions of origin are relatively comparable to natives—as shown for all origin regions in Supplementary Fig. 7—in their sorting across the deciles of the job-specific pay level distributions.

Overall, the results in Supplementary Figs. 7 and 8 show a consistent pattern where immigrants—particularly those from non-Western world regions—are overrepresented in low-paying jobs and are underrepresented in high-paying jobs. In contrast, children of immigrants from both Western and non-Western world regions tend to be more equally sorted across lower and higher paying jobs and are thus more comparable to how natives are sorted across the job-specific pay level distribution.

6 Description of country-specific administrative records and immigration context

6.1 Canada

6.1.1 Immigration context

Immigration history. Following Confederation in 1867, Canada actively encouraged immigration to populate its vast territories, particularly the Prairie provinces, using policies such as free land grants to European settlers. In the postwar era, immigration expanded significantly to address labor shortages and support economic growth. In 1962, Canada removed racial criteria from its immigration policies and the introduction of the points-based system in 1967 shifted the focus to assessing applicants based on skills, education, and language proficiency rather than country of origin. During the 1970s and 1980s, Canada diversified its immigration sources, welcoming individuals from Asia, the Caribbean, and Africa. Economic growth in the 1990s prompted higher immigration inflows, with large arrivals from countries such as China, India, and the Philippines. Throughout the 2000s, policies emphasized skilled workers, regional dispersion of immigrants, and vulnerable refugees. In the 2010s, immigration levels rose substantially, and the introduction of the Express Entry system in 2015 streamlined the process for skilled workers.

Immigration policy and immigrant population. Canada's immigration system is built on three key pillars: economic, family, and humanitarian programs. Of the 472,000 permanent residents admitted to Canada in 2023, 58% were economic immigrants, 23% were admitted for family reunification, and 19% were refugees or humanitarian entrants. The top source countries in 2023 were India (30%), China (7%), the Philippines (6%), Afghanistan (4%), and Nigeria (4%). According to the 2021 Census, immigrants and their Canadian-born children made up 41% of Canada's population, including 8.3 million immigrants (23% of the total population) and 6.4 million children of immigrant parents (18% of the total population). While 53% of recent immigrants resided in three gateway cities of Toronto, Montréal, and Vancouver in 2021, this represented a decline from 73% in 2001, as more newcomers have been settling in smaller communities.

Language. Although 69% of recent immigrants reported a language other than English or French as their mother tongue, the vast majority (92%) could hold a conversation in an official language of Canada. Since 2015, all principal applicants in economic immigration programs through the Express Entry selection system must take a standardized English or French test, and only those meeting a minimum proficiency level are invited to apply for permanent residency. The Canadian government offers language training programs at no cost to help new immigrants integrate into Canadian society. Language classes are available at various proficiency levels, and there are also specialized classes for literacy and job-specific language skills.

Nature of migration and educational selectivity. Economic principal applicants, representing just over half of all economic immigrants, are selected based on their potential to succeed in the labor market, with key factors including age, education, official language proficiency, and work experience. In 2021, 59% of working-age recent immigrants held a bachelor's degree or higher, compared with 27% of Canadian-born individuals. Among recent arrivals, economic immigrants had the highest educational attainment, with 72% holding a bachelor's degree or higher, followed by family reunification immigrants at 45% and refugees at 25%.

Labor force participation. Since the early 2010s, employment rates among recent immigrants have grown faster than those of Canadian-born individuals, though they remain lower. In 2023, 82% of prime-age (25 to 54) recent immigrants were employed, compared with 86% of their Canadian-born counterparts. Immigrants educated abroad often face barriers in utilizing their skills, with 26% working in jobs requiring only a high school education or less—more than double the rate for Canadian-born degree holders.

6.1.2 Administrative records

We utilize the linkage between Canadian census long-form files and the Longitudinal Worker File (LWF). Information on individuals' immigration status, educational level and the occupation of their main job comes from the 2016 census (a mandatory census sent to one in four households, with a response rate of 98 percent). The LWF is an administrative file that contains basic demographic characteristics (age, sex and geographic region) and person-job information for all workers who were issued a T4 form (Statement of Remuneration Paid) by their employer in a given year. All employers in Canada are required to complete the T4 forms for their employees on an annual basis. For this study, the LWF provides the annual earnings of a job and the identifier of the employer (firm). The LWF is linked to Census file in the corresponding income year (e.g., the income year for the 2016 census is 2015, so the 2016 census is linked with the 2015 LWF) using the linkage keys developed by Statistics Canada.

Immigration status is based on the country of birth of individuals and their parents. Immigrants are those who are born in a foreign country and admitted to Canada as permanent residents. Children of immigrants refer to individuals born in Canada with two foreign-born parents, and their country of origin refers to their mother's country of birth. Individuals who are born in Canada with at least one Canadian-born parent are assigned to the Canadian-born majority group. Based on country of origin, immigrants and children of immigrants are grouped into different world regions of origin. Additional analyses also use information on year of immigration and year of birth to further differentiate immigrants into childhood immigrants (who immigrated before age 18), established immigrants (10+ years since immigration) and recently arrived immigrants (<10 years since immigration).

Education is based on individuals' highest certificate, diploma or degree. It is coded into five levels: less than high school, high school graduation, non-university certificate or diploma, bachelor's degree, graduate degree. The occupation codes are based on Canada's National Occupational Classification at the three-digit level, with about 140 categories. Industry of the firm is measured using three-digit codes from North American Industrial Classification (NAICS2017), with about 100 categories.

The geographic units for workers' place of work are census metropolitan areas (CMAs, large urban areas) or census agglomerations (CAs, small urban areas) for urban areas, and four zones of rural areas (strong metropolitan influenced zone, moderate metropolitan influenced zone, weak metropolitan influenced zone, and weak metropolitan influenced zone). There were 152 CMAs and CAs in 2016.

The administrative records used to create the meta-analytic dataset utilized in this project can be accessed at Statistics Canada upon receipt of a security check and authorization from Statistics Canada. Supplementary Fig. 8 and Supplementary Table 42 report results from the separate regressions used in the main analysis for Canada for the immigrant–native differences in annual earnings for all world regions of origin combined and separately by world region of origin.

6.2 Denmark

6.2.1 Immigration context

Immigration history. Modern immigration to Denmark began in the 1960s with mainly young male “guest workers” arriving from Turkey, Yugoslavia, and Pakistan to fill labor shortages in high-growth manufacturing industries. In 1970, however, growing unemployment led to a freeze in work permits for migrants coming from outside the European Economic Area (EEA), with only few resident permits given to family members of labor migrants. By 1973, 54,716 labor-related immigrants had arrived on work or residency permit, 10% of which were from Turkey. In the 1980s, like other European countries, Denmark began to receive a significant number of refugee families from lower-income countries outside Europe, notably the Middle East region. The 1990s brought a surge of asylum seekers from the Balkans and the Middle East due to regional conflicts, while the expansion of the European Union in 2004 led to an influx of labor migrants from Eastern Europe, particularly Poland. More recently, Denmark has also received refugees particularly from Afghanistan and Iraq, where Denmark participated in US-led military operations, and Syria due to the civil war. Most recently, Denmark received a significant number of refugees from Ukraine due to the Russian invasion in 2022 and the ensuing armed conflict.

Immigration policy and immigrant population. Denmark’s immigration policies cover labor and educational migration, family reunification, asylum, and EEA free movement, with distinct legal regulations tailored for each pathway into the country. While Denmark for decades was famous for its liberal immigration law passed in parliament in 1983 (e.g. by giving extensive rights to family reunification for refugees), the political climate of the 1990s put this model under pressure. In the ensuing decades, policies were gradually aligned with the more restrictive legal standards practiced in other European countries. For example, to deter and select immigrants, rights and benefits were reduced and stricter entry quotas and conditionalities were put in place (including selective scoring systems around age, financial situation, occupational experience, education, and language). Over time, asylum policies became particularly restrictive, with asylum applications reduced to the minimum international standards. Denmark remains exempt from common EU asylum rules due to the justice opt-out (“Retsforbeholdet”) secured during the 1993 EU referendum. By 2024, 15.9% of the total population were immigrants (12.2%) or Danish-born children of immigrants (3.7%). Among the immigrants, 38.4% were classified as residents under EEA free movement regulation, 26.2% as labor migrants, 14.5% as family reunification, 8.4% as asylum seekers, 7.7% as students, and 4% entered under the “special law” for Ukrainian refugees. The largest immigration groups originate from Turkey, Poland, Ukraine, Romania and Syria, Germany, and Iraq.

Language. Proficiency in Danish is essential for social integration and long-term employment, particularly in rural areas and in lower-skilled or government jobs. Migrants entering through the family reunification program can improve their residency prospects by demonstrating Danish language skills, often assessed through the points-based system. To support language acquisition, the Danish government offers language courses specifically targeted at refugees and select immigrant groups. While many EEA migrants are proficient in English, fluency in Danish is often required for sustained employment and advancement.

Nature of migration and educational selectivity. Labor and EEA migrants typically possess skills and qualifications that meet the demands of the Danish labor market. Over 75% of labor migrants and more than half of EEA migrants hold at least a college degree, reflecting the selective nature of these migration pathways. In contrast, asylum seekers and family reunification migrants generally have lower levels of

formal education, with approximately half of asylum seekers arriving with primary education as their highest level of attainment.

Labor force participation. EEA and labor migrants typically achieve high employment rates and integrate into the Danish workforce. In contrast, refugees and family reunification migrants often have a low rate of employment. To address these disparities, Denmark provides integration programs such as language training, job counseling, and work placements aimed at improving employment outcomes. However, employment rates for immigrants, particularly those from low-income countries, remain lower than those of native-born Danes.

6.2.2 Administrative records

We utilize administrative records from Statistics Denmark's registry-based Labor Force Statistics (RAS, *Den Registerbaserede Arbejdsstyrkestatistik*) and the Integrated Database for Labor Market Research (IDA, *Den Integrerede Database for Arbejdsmarkedsforskning*) for information on earnings, part-versus full-time status, municipality of the establishment, industry, occupations, and establishments. For the main models we use information from 2019. For the supplementary panel analyses (Section S6), we use information from 2010 to 2019, and all relevant variables are consistent across the time series.

Occupation is based on Statistics Denmark's four-digit version of ISCO-08 called DISCO. Establishment municipality refers to the physical location of the establishment. Industry is based on the 4-digit NACE classification linked to establishments. The earnings measure is calculated by taking the total annual earnings (reported directly by employers to tax authorities) excluding fringe benefits. The part- vs. full-time measure is an indicator variable that takes the value 1 if workers are employed at least 27 hours per week. This information is collected once per year in November and provide information on all employment spells in both the public and private sector. Information on employment spells comes from employer-reported tax records, which distinguish primary, secondary, and tertiary jobs. As tertiary and secondary jobs are not well-covered, we exclude them from our analyses and use information on primary jobs with earnings that are greater than one-sixth of the average earnings reported for Denmark by the OECD Labor Force Statistics. Our measure of hourly wages is derived from the LONN variable FORTJ_STAND which is a standardized hourly wage measure excluding wages during holidays and illness as well as overtime. This variable is available for all employees in the public sector but in the private sector reporting is only mandatory for establishments with 10 or more employees and so weights are provided by Statistics Denmark to adjust for this bias.

Information about immigrant status, country of origin, sex, age, and municipality of residence is based on records from the Central Population Register (BEF, *Befolkningsregisteret*). Immigration status is based on the country of birth of individuals and their parents. Immigrants are those who are born in a foreign country. Children of immigrants refer to individuals born in Denmark where neither parent are both (a) a Danish citizen and (b) born in Denmark. Country of origin is defined using mother's information when available, using the mother's country of birth. If this is Denmark, mother's citizenship country is used. When mother's information is unavailable information from non-maternal parent is used. When no parental information is available, country of origin is defined using the individual's own information. If the individual is an immigrant, it is assumed that the country of origin is the country of birth. If the individual is a child of an immigrant, it is assumed that the country of origin is the citizenship country. In additional analyses, we use information on year of immigration and year of birth to further differentiate immigrants into childhood immigrants (who immigrated before age 18), established

immigrants (10+ years since immigration) and recently arrived immigrants (<10 years since immigration).

Information about education refers to each individual's highest level of educational qualifications in each year based on annual records from the National Students Register (KOTRE, *Det Komprimerede Elevregister*). Information on educational level is measured using five categories (less than completed upper-secondary education; completed upper-secondary education; short university degree, BA or equivalent; MA degree or equivalent; PhD degree or equivalent) and a category for missing information.

The administrative records used to create the meta-analytic dataset utilized in this project can be accessed at Statistics Denmark upon receipt of proper authorizations and after paying the relevant fees. Supplementary Fig. 9 and Table 43 report results from the separate regressions used in the main analysis for Denmark for the immigrant–native differences in annual earnings for all world regions of origin combined and separately by world region of origin.

6.3 France

6.3.1 Immigration context

Immigration history. France's long history of immigration has been shaped by industrialization, colonial legacies, and economic demands. At the turn of the 20th century, most immigrants came from neighboring European countries, including Belgium, Italy, Spain, and Poland, to meet industrial labor demands. After World War II, migration patterns shifted as labor shortages and the collapse of the French colonial empire prompted significant immigration from former colonies such as Algeria, Morocco, and Tunisia, alongside continued arrivals from Portugal and Spain during the 1950s and 1960s.

By 1968, immigrants made up 6.5% of the population, with most originating from Europe. The 1974 economic crisis marked a shift toward stricter immigration policies that limited labor migration, although family reunification ensured a steady flow, stabilizing the immigrant population at around 7.5% by 1999. Immigration sources diversified during this period, with increased arrivals from Southeast Asia (Cambodia, Laos, Vietnam) and sub-Saharan Africa. Since the 2000s, immigration from Asia, particularly China and South Asia, has risen significantly. In 2015, during the European refugee crisis, France saw a rise in asylum applications but accepted far fewer refugees (approximately 30,000) compared to countries like Germany and Sweden. By 2022, France hosted 85,000 Ukrainian refugees, reflecting the impact of the war in Ukraine. As of this date, nearly half of all immigrants in France were of African origin, one-third were from Europe, and 14% were from Asia.

Immigration policy and immigrant population. Due to the specificity of French citizenship laws and the complex legacy of colonial history, the definition of immigrants in French public statistics is narrower than in many other countries. In France, the term refers to foreign-born individuals who were non-French at birth. As of 2021, immigrants comprised 10.3% of the French population, with around 35% of them having acquired French nationality. Children of immigrants—defined in public statistics as native-born individuals with at least one immigrant parent—constituted 11.2% of the population. Additionally, due to France's long history of immigration, approximately 10% of the population is third-generation immigrant, with 75% of this group of European origin.

France's immigration policies cover student, family reunification, asylum, labor, and European Union free movement, with distinct pathways and regulations for each category. Since the 1970's, a series of legislative changes aimed to curtail labor migration and restrict the arrival of immigrant families. Despite some variations depending on political parties in power, there has been a general trend of constraining permit access and imposing stricter conditions for asylum seekers.

In 2019, 272,000 immigrants arrived in France: 90,000 from Europe, 112,000 from Africa, 41,000 from Asia, and 30,000 from the Americas or Oceania. Student immigration emerged as the largest category of migration in 2021, with 87,700 student residence permits issued (32.4% of total flows), surpassing family reunification permits (31.7%) for the first time. While family immigration has declined slightly since 2007 (–2%), student migration has grown significantly (+88%). Labor and humanitarian migration, though smaller, are rising. Humanitarian migration surged between 2014 and 2017 and then stabilized reaching a peak of 39,700 permits in 2021 (14.6% of all residence permits). Labor migration accounted for 13.3% of permits in 2021, tripling since 2007.

Language. Language barriers are less significant in France compared to other countries with high immigration. According to recent data from Institut National de la Statistique et des Études Économique (INSEE), 90% of immigrants have a strong understanding of French, and 88% can speak it fluently. Among children of immigrants, language acquisition is high; 90% learned French at home during childhood, with 40% growing up speaking exclusively French. However, immigrants from Asia, often face initial language challenges. INSEE reports that six out of ten Asian immigrants arrive without any knowledge of French.

In 2003, the French government introduced a language and civic integration program targeting all new migrants. This initiative included a language proficiency assessment and mandatory linguistic and civic training sessions. In 2016, the program was revised to emphasize "value integration," adding stricter requirements and potential penalties for migrants failing to meet program expectations within their first five years in the country. This shift reflects a broader trend in French immigration policy toward reinforcing cultural integration.

Nature of migration and educational selectivity. Immigrants in France generally exhibit a polarized level of educational attainment compared to native-born citizens. While they are often positively selected relative to their home countries, about 40% of immigrants in France have no formal educational credentials, in comparison to 16% of non-immigrants. However, the share of immigrants with higher education is comparable to that of the native population, with 25% holding advanced degrees. Educational levels vary significantly by region of origin. Immigrants from Europe are more likely to have higher educational qualifications, while those from Asia tend to have lower levels of formal education upon arrival.

Labor force participation. In 2021, 70% of immigrants aged 15–64 in France participated in the labor market. This rate varies significantly by sex and region of origin: male immigrants from Europe have the highest participation rate (93%), while female immigrants from Africa and Asia have the lowest (61%). Immigrants are concentrated in sectors such as construction, catering, accommodation, and cleaning. Unemployment is notably higher among immigrants (13%) and their French-born children (12%) compared to the native-born population without migratory backgrounds (7%). These disparities are influenced by origin, with European immigrants generally having better employment outcomes. Conversely, immigrants and their children from North and Sub-Saharan Africa experience the highest

unemployment rates, at approximately 15% and research indicates that part of this disparity stems from hiring discrimination.

6.3.2 Administrative records

In France we utilize two sets of administrative records. The first is the BTS (*Base Tous Salariés*) wage dataset based on firms' yearly social security declaration files (*Déclaration Annuelle de Données Sociales* or DADS – hence, BTS was formerly known as DADS). The second is the PTS-EDP (*Panel Tous Salariés - Échantillon Démographique Permanent*), a sample of the population combining the French social security register and the French Census. The BTS consists of population-level observations of private sector workers, plus all hospital and local civil service workers; state civil servants are included beginning 2009. The PTS-EDP consists of a smaller representative sample of the working population working both in the public and the private sectors. For some workers born on some random days of the year, information is selected from the full population registers. This sample represents 4% of the workers after 2002. For the main analysis, we use records from 2018. For the supplementary panel analyses (Section S6), we use records from 2014 to 2018.

In the BTS we only know if the worker was born in France or abroad and we lack information on workers' education. However, the linked Census information in the PTS-EDP Panel details workers' area of birth (in 10 categories) and workers' education (in 7 categories). Information on the country of origin is a good, but not perfect, proxy of migrant origin. We are not able to distinguish French expatriates' children born abroad and French citizens repatriated from former French colonies (mainly, but not always, from Algeria) from the immigrant population. However, these categories represent a relatively small share of the foreign-born population (about 13%). In the PTS-EDP Panel, we combine the country of birth categories to proxy those used in this paper: our native category consists of individuals born in (a) France; our North America and Other Western category combines the categories (b) Spain, Italy, Portugal; (c) Other Western European countries; (d) Eastern Europe and Balkans; and (e) Ex-USSR; our Asia category combines (f) Vietnam, Laos and Cambodia; our Middle East and North Africa category includes (g) Algeria, Morocco, Tunisia, and (h) Other Asian countries, primarily immigrants from the Middle East; our Sub-Saharan Africa category includes (i) Other African countries; and our Latin America category includes (j) America and Oceania. Information on the parents' country of birth is too incomplete and partial for reliable use, thus information on children of immigrants is not used. In additional analyses, we use information on year of immigration and year of birth to further differentiate immigrants into childhood immigrants (who immigrated before age 18), established immigrants (10+ years since immigration) and recently arrived immigrants (<10 years since immigration).

We compute hourly wage using employees' annual gross wages and hours information, taking into account compulsory overtime bonuses. For instance, overtime hours between 35 hours and 43 hours per week get paid at least 25 percent more, and hours above 43 hours per week get paid 50 percent more. Person-job matches that report earnings less than half of the yearly minimum wage are excluded. This leads to the exclusion of approximately 33 percent of job spells and 20 percent of individuals, mostly very short-term job spells.

Our measure of occupation is the four-digit *Nomenclature des Professions et Catégories Socio-Professionnelles* (CSP), which contains approximately 400 unique occupational codes. For the BTS register population level we use the 4-digit occupation codes, and for the smaller PTS-EDP panel we

use the 2-digit occupation codes (30 categories) to avoid issues with data sparsity for our within-job (establishment–occupation) comparisons.

The industry of the establishment is measured using four-digit codes from the Statistical Classification of Economic Activities in the European Community (NACE-08), which differentiates about 400 detailed industries. We also include information on geographic regions using the municipality of the establishment. In the smaller PTS-EDP panel, we aggregate geographical information at the county level (there are 36,000 municipalities and 3,000 counties in France).

To estimate the decomposition from the panel data analysis, we use full population panels based on the BTS. However, BTS population level information is not a full panel since it has an anonymized cross-sectional structure. However, each yearly file, y , contains information on each individual at time t and for the previous year, $t-1$. By matching individuals at both points in time in a single file and then across other files, it is possible to create a panel. By using characteristics about subjects and workplaces at two points in a time in a single file, y , we can match those subjects across year files, y_n . To do this, we follow the methodology proposed by Babet et al.¹⁰¹ which uses a chaining script to match all persons across the files by key characteristics (establishment ID, sex, number of hours worked, start and end dates of the job, municipality of work, residence, wage, and age). This matching technique successfully chains 98% of the workforce. Importantly, while we create a panel artificially (a pseudo-panel) to track employees over time, all subjects remain completely anonymized, and the integrity of the administrative records are therefore preserved. We estimate panel data models, for the five-year period from 2014 through 2018 and this leads to use 88,569,960 population level job spells, in both private and public sectors. The size of the file does not allow us to include more years on our server, due to memory and CPU limitations. Given that the French PTS-EDP is a 4% sample of workers, a significant proportion of small establishments are represented by only one worker in the estimation sample and are dropped when implementing establishment and establishment-occupation fixed effect models. To avoid over-representation of large establishments in these models, following Godechot et al.¹⁰² we use the information on the number of workers in each establishment to reweight our sample in these models according to the formula in the parenthesis ($weight = \frac{1}{1 - (1 - sampling_rate)(nbwrks - 1)}$), where $sampling_rate = 0.04$ and $nbwrks$ corresponding to the information on the number of workers in the establishment.

Access to the DADS can be obtained from the CASD dedicated to researchers authorized by the French *Comité du Secret Statistique*. Supplementary Fig. 10 and Supplementary Table 44 report results from the separate regressions used in the main analysis for France for the immigrant–native differences in annual earnings for all world regions of origin combined and separately by world region of origin (in the PTS-EDP panel sample we use two-digit CSP occupational codes). Supplementary Table 45 report corresponding results for the full DADS social security register (using four-digit CSP occupational codes), where information on country of birth and education is not available.

6.4 Germany

6.4.1 Immigration context

Immigration history. During the 1950s and 1960s, the Federal Republic of Germany experienced a significant economic boom, which led to a substantial expansion of the labor market. To address the resulting shortage of workers, Germany began entering agreements to recruit foreign labor. The first

such agreement was signed with Italy in 1955, followed by similar treaties with Greece and Spain in 1960. Over the next decade, additional agreements were reached with Turkey in 1961, Morocco in 1963, Portugal in 1964, Tunisia in 1965, and Yugoslavia in 1968. Migrant workers typically took on roles requiring little or no formal training, often in industrial production jobs. The fall of the Berlin Wall in 1989 and the collapse of the Eastern Bloc triggered a new wave of migration from Eastern Europe. In 1992, immigration to reunified Germany peaked, with over 1.5 million people arriving. In the subsequent years, immigration rates declined significantly. However, since 2010, migration to Germany has again been steadily increasing, reaching unprecedented levels during certain periods. In 2015, the country experienced the highest immigration numbers in its history, largely driven by a significant influx of asylum seekers. This trend of high migration continued into 2022, when Germany recorded another peak in immigration, primarily due to the large-scale admission of refugees fleeing the war in Ukraine.

Immigration policy and immigrant population. Germany's immigration policy covers migration possibilities for education/training, employment, humanitarian/political interests, subsequent immigration of dependent family members and includes EEA free movement, with distinct pathways and regulations for each.

As of 2022, immigrants and their German-born children (people who themselves or whose parents did not hold German citizenship at birth) constitute 23.8 million people (28.7% of the population), including approximately 15.2 million immigrants (18.3% of the total population) and 8.6 million children of immigrants (10.4% of the total population). In 2022, 611,744 immigrants had an EU citizenship and entered through the EEA free movement pathway (19.9% of total 2022 immigrants [2.7 million]) and 1,932,955 immigrants from non-EU countries (81.1% of total 2022 immigrant population). There were 73,065 labor migrants, 93,960 family reunification migrants, 217,774 asylum seekers and 828,885 immigrants from Ukraine applying for a temporary residence permit under section 24 of the Residence Act.

The largest immigrant groups in 2022 originate from Ukraine, Romania, Poland, Turkey, Bulgaria, and Syria. Labor migrants from the EEA form a significant portion of the workforce in Manufacturing, Transport and Logistics, or Trade; Maintenance and Repair of Motor Vehicles. In 2022, the largest country groups who successfully applied for asylum in Germany (granted asylum, refugee status, or other forms of protection under German and international law) were from Syria, Afghanistan, and Eritrea. Refugees from Ukraine (the largest incoming group in absolute numbers in 2022) were able to enter Germany without a visa and without undergoing an asylum procedure, as they are granted a humanitarian residence status based on Section 24 of the Residence Act (§ 24 AufenthG, "temporary protection"). Native-born children of immigrants, particularly those with origins in Turkey or Poland, form a large and growing demographic group. People with a migration background are especially concentrated in urban areas and in Western Germany, where they represent a substantial share of the population.

Language. Language proficiency is critical for social integration, labor market participation, and employment probabilities as well as occupational choice and earnings. German fluency is essential for employment in regulated fields such as healthcare or education. To facilitate labor market integration, Germany provides free or subsidized language courses for refugees and certain immigrant groups through integration programs. However, language barriers remain a significant influence for employment and wage disparities.

Nature of migration and educational selectivity. Labor migrants from EU countries often possess education and skills aligned with Germany's economic needs, contributing to industries such as manufacturing, transport and logistics, trade, and motor vehicle maintenance and repair. Educational attainment of Western European immigrants often compares favorably to the average attainments in the origin as well as Germany, whereas the backgrounds of Eastern European migrants are more heterogeneous. Refugees and family reunification migrants tend to have more diverse educational profiles. While refugees are often positively selected relative to their countries of origin, they generally have lower education levels than native Germans, creating barriers to high-skill employment.

Labor force participation. Immigrants, particularly from the EU, generally achieve high employment rates, although to a lower degree compared to the German population (63 percent compared to 71 percent). In contrast, non-EU immigrants have a substantially lower (54 percent). Refugees and family migrants often face challenges such as language difficulties or limited recognition of qualifications. Nonetheless, after eight years, almost two thirds of refugees in Germany are employed. Integration programs, including job counseling and language courses have a positive impact.

6.4.2 Administrative records

In Germany we utilize customized administrative records that combine records from the IAB Establishment Panel (IAB BP 9319 v1; which samples around 15,500 establishments across 10 size groups and 19 industries classes each year) with the Integrated Employment Biographies (IEB V15.00.00-201912) of the Federal Employment Agency. For every sampled establishment we merge employees' complete employment and unemployment histories since 1975 for West Germany and 1993 for East Germany of all employees who have worked for at least one day in the establishment during the year it was sampled.

The population of the IAB Establishment Panel consists of all establishments with at least one employee liable to social security contributions as of 30 June of the previous year. The sampling frame is provided quarterly by the Federal Employment Agency (BA establishment file) and includes approximately two million establishments in East and West Germany, which notify the social security agencies of their employees¹⁰³. The sample for the IAB Establishment Panel is drawn from the establishment file for 30 June of the previous year and is stratified by the size of the establishment, sector, and federal state (16 states, 19 sectors, and 10 establishment size classes) according to the principle of optimum stratification¹⁰³ (Fischer et al, 2009). Accordingly, large establishments, small federal states, small industries, and the manufacturing industry in East Germany, are overrepresented¹⁰⁴. We take the sample stratification into account by using cross-sectional weights that are proportional to the numbers of establishments and employees.

We use the 2017 wave of the IAB Establishment Panel and merge individual administrative records (Integrated Employment Biographies, IEB V15.00.00-201912) to the sample. For all establishments in our sample, we obtain the complete employment and unemployment histories of all workers subject to social security contributions who have been employed in one of the sampled establishments for at least one day in 2017. This information comes from the integrated notification procedure for health, pension, and unemployment insurance, which came into effect in 1973 and was extended to cover Eastern Germany in 1991. Employers are required to submit notifications to the responsible social security agencies concerning all their employees covered by social security at least once a year. Thus, these records cover approximately 80 percent of the workforce, but exclude civil servants (*Beamte*) and self-employed¹⁰⁵. The youngest entrants are usually around 16 years old, when they start vocational training.

Any information before (e.g., schooling) is not included. For our analyses, we keep regularly employed and thus for example exclude marginally employed (those earning less than 450 Euros per month in 2017) or people in vocational training. These records contain no information on the hours worked but differentiate between full- and part-time work, with part-time employees defined as those working 18 hours or less.

Occupation is based on a German version of ISCO-08 (*Klassifizierung der Berufe KldB2010*), which is fully aligned with ISCO-08 four-digit occupations. Industry is measured using 3-digit German industry codes that mirror the NACE Rev-2 codes (w08_3). The source of the information is the official classification of the Federal Employment Agency (BA). Geographic region is measured using the county codes of the establishment (ao_kreis).

To improve the quality for the measure of educational qualifications, we implement the “Combined Source Correction” (CSC) method, which uses an individual’s highest schooling and qualification degrees by not allowing educational qualifications to change to a lower degree over time¹⁰⁶ Education is measured using information on the highest obtained degree, which distinguishes between three categories (less than completed upper-secondary education; completed upper-secondary education; university degrees, including BA degrees, MA degrees, and PhD degrees or equivalent), and a category for individuals without information on formal education.

In the IEB, earnings information is top coded according to the social security contributions limits. We use interval regressions to predict the right censored values and add an error term¹⁰⁷. We use sex, age and a non-linear age term, part-time and full-time information, qualification, and nationality to impute the wages. The information does not include hourly wages, but we calculate total yearly earnings by summing the earnings for all employment spells in 2017. The total earnings per spell are calculated by multiplying the daily wages by the number of consecutive days employed in a given establishment. These can be establishments in the BP sample or, if an employee in one of the sampled establishments changes their workplace, can be from a different establishment. For multiple part-time spells within the same establishment or in multiple sampled establishments (.3 percent of the observations), we randomly choose one spell.

As social security records in Germany usually do not include information on migration status, we use different operationalizations to identify immigrants and children of immigrants based on longitudinal information on citizenship status and regional origin classifications estimated from information on first names. Reliable citizenship information is available for all social-security-related reports (e.g., vocational training, employment, or unemployment status) since 1975 for West Germany and since 1993 for East Germany. For our measure of immigrants, we define all employees who hold a non-German citizenship upon their first observation in the German social security records as immigrants. In the German context, nationality has been used before to proxy migration status in research using administrative records because information on country of birth and parental country of birth is not available in the population registers (e.g.,^{61,108-110}). Using nationality as an indicator for first generation immigrants works comparably well in the German context because until 2024, the acquisition of their citizenship via naturalization was dependent on the applicant's release from their previous nationality (although some exceptions apply)¹¹¹.

In 2014, Germany eased the acquisition of dual citizenship for children of immigrants and allowed dual citizenship if they had been living in Germany for at least eight years, attended school in Germany for at least six years, graduated from a German school, or completed vocational training in Germany. Before, children of non-German parents, even when born in Germany, had to decide by the age of 23 whether to retain their German citizenship or the citizenship of their parents' country of origin¹¹¹.

People whose nationality is non-German upon their first observed spell in the social security records could thus theoretically also be second or third generation immigrants. In 2016, approximately 24 percent of second or third generation immigrants did not have a German nationality¹¹². However, this number includes people of all ages and thus persons under the age of 23, at which age residents with dual citizenship had to decide for one or the other nationality prior to December 20, 2014. Moreover, the higher incentives to obtain a German citizenship for employees suggests that this number is smaller in our sample.

For our measure of children of immigrants, we define employees as children of immigrants if either (a) their first name indicates a less than 1 percent probability of being German and they have a German nationality in their first observation in the German social security data (i.e., their name suggests that they are not native and they are not themselves an immigrant) or (b) if they held a German nationality in their first observation in the German social security data, but a non-German nationality in 2017. The latter classification should capture people with dual citizenship, who at some point opt for their non-German nationality. We choose to identify children of immigrants based on their names because this information is not included in the German social security data and research in the German context has shown that the majority of children of immigrants are given names that are common in their parents' countries, but not the destination country¹¹³. We choose the threshold of which origin-probability based on the first name assigns employees to being a child of immigrants so that the size of the group of second-generation immigrants approximately resembles the number of second-generation immigrants based on census data. We apply additional validation checks to assess how our definition of second-generation migrants compares to survey-based definitions when analyzing native-immigrant wage gaps (see below).

To assess the name-based origin, we use an API that provides access to a name-classification algorithm that is based on word-embeddings procedures (NamePrism)¹¹⁴. The algorithm is trained on approximately 70 million names and assigns probabilities of the regional origin to every requested name based on the closeness of the names to the original names and homophily in communication patterns that inform embeddings of names. We implement several measures to guarantee that API requests do not reveal whether first names originated from social security records or from names that we scraped from various online sources. The procedure was accepted by the ethics committee of the Institute for Employment Research.

For both immigrants and children of immigrants, we define similar aggregate regions of origin using nationality upon first entry into the labor market for the former and information on first name using the latter. The basis is set through an aggregate taxonomy provided by NamePrism, which allows us to differentiate between Germany, Greater Middle East, Africa, South Asia and East Asia, Hispanic, Celtic/English, and Other. This grouping of world regions of origin corresponds in large part to the grouping used for the remaining countries in this study, where direct measures of ego country of birth and parental country of birth are available.

The classification of immigrants and children of immigrants described above is based on multiple assumptions as migration status cannot directly be observed in the administrative records. We thus compare the percent of immigrants from our approach to data from the German Mikrozensus. For 2017, the official percentages among those in the labor force are 78.3% natives (85.2% in our sample), 17.9% immigrants (10.4% in our sample), and 3.8% children of immigrants (4.4% in our sample). Identifying immigrants based on their nationality at their first spell seems to underestimate the size of the group of immigrants. This is likely the case because of (a) naturalizations before entering the labor market or (b) naturalizations before 1975 in West Germany or 1993 in East Germany. Indeed, only about 30 percent of the first-generation immigrants in our sample have a German nationality in 2017, whereas the share should be closer to 50 percent based on the Mikrozensus. Because some of the immigrants are falsely categorized as Germans without migration background, the differences between immigrants and Germans without a migration background are likely underestimated.

To additionally check the validity of our approach, we use survey-based information of the German Socio-Economic Panel (IAB-SOEP Migration Sample, retrieved from SOEP-CORE-v39) for the year 2017 and apply weighting factors to arrive at generalizable estimations. Open-answer questions for income from main job are used. Survey-based information on migration status and median daily wages show comparable results in regard to the wage differentials (although we are likely underestimating the wage differentials for second generation immigrants):

- Natives: 95.3 EUR (survey data); 93.4 EUR (administrative records)
- Immigrants (1G): 72.3 EUR (survey data); 68.8 EUR (administrative records)
- Immigrants (2G): 78.9 EUR (survey data); 81.3 EUR (administrative records)
- *Diff Natives-Immigrants 1G: 23 EUR (survey data); 24.6 EUR (administrative records)*
- *Diff Natives-Immigrants 2G: 16.4 EUR (survey data); 12.1 EUR (administrative records)*

The administrative records used to create the meta-analytic dataset utilized in this project (IAB Establishment Panel (IAB BP 9319 v1) and the Integrated Employment Biographies (IEB V15.00.00-201912)) can be accessed at Institute for Employment Research (IAB) of the German Federal Employment Agency (BA) Nuremberg upon receipt of proper authorizations. Supplementary Figure 11 and Supplementary Table 46 report results from the separate regressions used in the main analysis for Germany for the immigrant–native differences in annual earnings for all world regions of origin combined and separately by world region of origin.

6.5 Netherlands

6.5.1 Immigration context

Immigration history. Modern immigration to the Netherlands began after the decolonization of Indonesia in 1949, with the first large influx in the 1950s of migrants with Dutch citizenship and former Indonesian soldiers of the Dutch Indonesian Army, mostly from the Moluccas. Decolonization-related immigration after Suriname's independence led to two major waves of immigration in 1975 and between 1979 and 1980. Growing demand for unskilled labor in the Dutch economy led to organized recruitment of migrant workers to fill shortages in the 1960s and early 1970s, with workers coming primarily from southern Europe, Yugoslavia, Morocco, and Turkey. Although the oil crisis brought recruitment to a halt, immigration, mainly from Turkey and Morocco, continued throughout the 1970s and 1980s in the form of family reunification and later family formation. Due to worsening economic conditions and unemployment in the Dutch Antilles, which are part of the Kingdom of the Netherlands, labor migration of the Caribbean Dutch increased sharply in the 1980s and remained high in the 1990s. The 1990s also

saw a surge in asylum seekers from the Balkans and the Middle East due to regional conflicts, while the 2004 EU enlargement led to an influx of largely seasonal migrant workers from Eastern Europe, mainly from Poland, and later, with the 2007 enlargement, also from Bulgaria and Romania. In recent years, the Netherlands has also received refugees from Afghanistan, Syria, and Eritrea, and more recently from Turkey following the failed coup in 2016 and the conflict with the Kurdish minority.

Immigration policy and immigrant population. Dutch immigration policy covers labor migration, family reunification, asylum, and EEA free movement, with different pathways and regulations for each. In 2022, immigrants and their Norwegian-born children make up 27.1% of the population, including approximately 2,500,000 immigrants (14.5% of the total population) and 2,028,000 native-born children of immigrants (11.6% of the total population). In 2023, among non-EU/EEA citizens, there will be 122,680 labor migrants (11.5% of total 2023 non-EU/EEA immigrants), 378,705 family reunification/formation migrants (35.6% of total 2023 non-EU/EEA immigrants), and 408,340 (temporary) asylum seekers (38.4% of total 2023 non-EU/EEA immigrants). In the same year, the most common migration motives among EU/EEA citizens were work (182,395, 30.2% of total 2023 EU/EEA immigrants), family reunification/formation (225,830, 37.4% of total 2023 EU/EEA immigrants), and education (93,900, 15.5% of total 2023 EU/EEA immigrants). The largest foreign-born immigrant groups are from Turkey, Suriname, and Morocco, but there is a significant Asian-born immigrant population. Neighboring Belgium and Germany, as well as Poland, are the main sending countries from the EU/EEA. Native-born children of immigrants, particularly those from Turkey and Morocco, are a significant demographic group. These children are particularly concentrated in the highly urbanized Randstad area of the Netherlands (i.e., Amsterdam, Rotterdam, and The Hague).

Language. Knowledge of the Dutch language is crucial for social integration and long-term employment. The Netherlands has decentralized its immigrant integration system, where municipalities are responsible for providing integration courses (language and civic) for immigrants. Non-EU/EEA migrants are required to take a civic integration exam (“inburgeringsexamen”) in Dutch in order to obtain a permanent residence permit. While many EEA migrants are proficient in English, fluency in Dutch is often required for sustainable employment and advancement, particularly in professions such as health care and human services.

Nature of migration and educational selectivity. The labor migrants from the European Economic Area (EEA) countries typically possess skills and education that align with the labor market needs of the Netherlands, thereby filling gaps in industries such as construction, agriculture, and services. In contrast, refugees and family reunification migrants have more varied educational backgrounds, with some lacking formal education due to displacement or disrupted schooling. While immigrants tend to be positively selected relative to their countries of origin, they often have lower education levels than native-born Dutch.

Labor force participation. Employment rates for EEA and labor migrants are typically high, particularly for those who are highly skilled or have studied in the Netherlands. These migrants also tend to integrate relatively easily into the workforce. The Netherlands provides equal rights and opportunities for all, but its policies are designed to facilitate the successful short-term integration of foreigners, particularly for labor and study purposes, rather than to encourage long-term settlement. Consequently, refugees and family reunification migrants encounter significant challenges to integration, including lengthy procedures to obtain residence permits, which also constrains access to government programs designed to enhance employment outcomes (e.g., job counseling and work placements). Furthermore, the integration of these groups into the economic sphere is impeded by a number of additional factors,

including the difficulties associated with language acquisition, the lack of recognition accorded to foreign qualifications, and the restricted scope of their professional networks. The employment rate for non-Western immigrants remains lower than that of the native-born Dutch population.

6.5.2 Administrative records

In the Netherlands we utilize the 2019 Dutch Labor Force survey (*Enquete Beroepsbevolking*, EBB) linked to municipal population registers (*Gemeentelijke Basisadministratie*, GBA), educational registers, wage registers (*Polisadministratie*, POLISBUS) and company registers (*Algemeen Bedrijven Register*, ABR) maintained and provided by Statistics Netherlands.

We cannot analyze the full population of the Netherlands in our main analyses as occupation is only available from the EBB surveys. The EBB is sampled from the Dutch population 16 years or older. It has a quarterly rotating panel design: in each quarter, it surveys a roughly one percent sample of the Dutch population and administers a follow-up survey to the respondents who participated in the previous quarter. Each individual stays in the panel for a maximum period of 12 months. The sampling method of the EBB is a two-step stratified household sample: in the first step a stratified sample of municipalities was taken, followed by a systematic random sample of addresses within each municipality. As the Central Bureau of Statistics draws the household sample for the EBB from the municipal registers, almost all members of EBB households are matched to register information (in 2019 the match rate was 94%). Following the exclusion of employees aged younger than 18 and older than 70, and workers with marginal employment, the sample of employees with occupation information was 56,829 (EBB occupation sample). The full sample that contains all our study variables except occupation has 8,140,057 observations (full registry sample).

Wage information is obtained from the wage register that provides information on monthly salaries and contractual working hours for jobs in a given year. Wages are calculated using the contractual yearly wage from a given job excluding bonus payments, cash benefits, and overtime pay, divided by the number of hours worked to arrive at hourly base wage. Earnings are measured with the total cash earnings which include annual bonus payments and overtime pay divided by the number of months employed in a given job to adjust for variation in job spells (e.g., job changes and seasonal work). The wage register also includes information that allows us to identify employers.

The municipal register linked to the EBB contains complete population information on country of birth of residents and their parents, as well as sex and age. Immigration status is based on the country of birth of individuals and their parents. Immigrants are those who are born in a foreign country. Children of immigrants refer to individuals born in the Netherlands with two foreign-born parents, and their country of origin refers to their mother's country of birth. Individuals who are born in the Netherlands with at least one Dutch-born parent are assigned to the Dutch-born majority group.

The EBB measures occupations using ISCO 2008 codes. We used the 2-digit version for our main analyses, as more detailed measures were not feasible due to limited sample sizes within establishments. When individuals have more than one occupation code for a primary job recorded (e.g., they change jobs during the survey window), we use information from their first recorded occupation.

Our measure of education (ISCED 2011) is gathered from the digital administration of educational institutions for recent cohorts of graduates, supplemented by self-reported education from the EBB for

older cohorts. In the occupation sample, we have education information for 99.2% percent of workers. The full sample contains education information for 71 % of all Dutch workers. We coded missing on education with a separate category in the analyses.

The industry of the establishment is obtained from the ABR and measured using four-digit codes from the Statistical Classification of Economic Activities in the European Community (NACE-08), which differentiates about 400 detailed industries. We also include information geographic regions using the municipality of the establishment.

The household-based sample results in the underrepresentation of smaller and relatively segregated establishments by immigration status which could bias the results (see ⁸⁹ for a more detailed discussion on potential biases when estimating within-workplace and within-job pay gaps using household samples). We corrected for this underrepresentation by weighting the sample distribution of workplace composition by immigration status (natives, immigrants, children of immigrants) to match the population-level distribution of workplace composition by immigration status obtained from the register. We created workplace migrant composition quartiles on the total population of workers to calculate weights for our baseline and occupation fixed effects comparisons. To weight our establishment and job fixed effect model estimates, we created the quartile distribution on the universe of integrated workplaces.

The administrative records used to create the meta-analytic dataset utilized in this project can be accessed at Statistics Netherlands upon receipt of proper authorizations. Supplementary Fig. 12 and Supplementary Table 47 report results from the separate regressions used in the main analysis for the Netherlands for the immigrant–native differences in annual earnings for all world regions of origin combined and separately by world region of origin. Supplementary Table 48 reports results after basic adjustments and within industry and establishment for the full population, where information on occupation and occupation–establishment units (i.e., jobs) is not available.

6.6 Norway

6.6.1 Immigration context

Immigration history. During the 19th and early 20th centuries, approximately 850,000 Norwegians emigrated to the United States, making Norway the European country with the second-highest emigration rate to the U.S., after Ireland. However, by 1970, Norway had transitioned into a net immigration country. Between 1970 and 2024, the proportion of immigrants and their native-born children in Norway’s population grew from roughly 1.5% to 21%, largely driven by inflows from lower-income countries outside Western Europe.

Modern immigration to Norway began in the 1960s and early 1970s, when young, unskilled, male labor migrants from Pakistan, Turkey, and Morocco arrived due to shortages in industrial and construction sectors. The 1973 oil crisis led to stricter regulations on labor migration when a moratorium on unskilled labor immigration was introduced in 1975. This legislation, later adopted as a permanent measure, ended unskilled labor immigration from lower-income countries but allowed for immigration according to three main principles: (1) demand for specific skilled labor; (2) entry of refugees and political asylum seekers granted protection on humanitarian reasons; and (3) family-based immigration for kin of immigrants already in Norway (i.e., either through reunification with existing family members or as

family formation through entry into marriage with a foreign-born spouse, typically found in the same origin country).

After 1975, admission to Norway from outside Western Europe was primarily confined to immigration due to humanitarian principles and family-based immigration (i.e., for relatives of the original migrant workers or humanitarian immigrants). Starting in the late 1970s, the number of refugees and asylum seekers arriving from recent conflict areas—such as Vietnam, Chile, Sri Lanka, and Iran (1980s), the Balkans (early 1990s), and Afghanistan, Iraq, and Somalia (late 1990s and 2000s)—grew substantially. Although post-1975 labor immigration from less-developed countries was negligible, the ethnic minorities that initially consisted of the early cohorts of migrant workers kept growing because of family-based chain migration. By 2000, the Pakistani-origin group had become the largest country of origin in the Norwegian immigrant population.

Norway's membership in the European Economic Area (EEA) in 1994 facilitated labor migration from Eastern Europe, particularly Poland, Lithuania, and Latvia, after the expansions of the European Union in 2004 and 2007. Today, Polish immigrants make up the largest national origin group in the Norwegian immigrant population. More recently, the European refugee crisis brought significant numbers of Syrian refugees in 2015–2016, and the war in Ukraine has led to substantial arrivals of Ukrainian refugees since 2022.

Immigration policy and immigrant population. Norway's immigration policies encompass four primary pathways for admission: labor migration, family reunification, asylum, and EEA free movement. Labor migration for EEA citizens is relatively open, while non-EEA labor migrants must meet stringent skill and job requirements. Refugees are admitted through asylum applications or resettlement programs, and family reunification follows strict financial and residency conditions. By 2024, Norway had approximately 931,000 immigrants, making up 16.8% of the total population, and approximately 221,000 Norwegian-born children of immigrants, making up 4.0% of the total population. The large groups originating from Iran, Iraq, Pakistan, Poland, Lithuania, Sweden, Somalia, and Turkey, with recent surges from Syria and Ukraine. Immigrants are concentrated in urban areas, especially Oslo, where over 30% of the population has an immigrant background. Between 1990 and 2024, the distribution of immigrants to Norway according to admission criteria (excluding return migration) was according to Statistics Norway: 32.2% for work; 33.7% for family reunification, 22.5% as refugees; 9.6% as students; and the remaining 2.0% for other or unknown reasons.

Language. Proficiency in Norwegian is vital for social integration and labor market success, particularly for long-term employment. While many EEA migrants can navigate daily life using English, Norwegian fluency is often required for advancement, especially in regulated professions such as healthcare and education. Norway offers free Norwegian language and social studies courses for refugees and certain immigrant groups through its integration programs (e.g., the so-called “Introduksjonsprogrammet”). Participants must meet language proficiency benchmarks to qualify for permanent residency or citizenship. Language acquisition remains a significant challenge for non-EEA migrants, particularly refugees and family migrants with limited educational backgrounds.

Nature of migration and educational selectivity. EEA labor migrants typically possess skills and education aligned with Norway's labor market needs, filling gaps in construction, manufacturing, and healthcare sectors. In contrast, refugees and family migrants exhibit more varied educational backgrounds, with many arriving with low or disrupted education levels due to conflict or displacement. Among recent arrivals, non-European migrants tend to have lower formal education compared to their

European counterparts, although there are exceptions, particularly among refugees selected through resettlement programs.

Labor force participation. EEA and skilled labor migrants achieve high employment rates and integrate relatively smoothly into the workforce, while refugees and family reunification migrants face substantial barriers to employment. Norway's integration programs aim to improve employment outcomes by offering job training, counseling, and work placements. Despite these efforts, labor force participation rates for many immigrant groups, especially among those with national origins from countries in Asia, Africa, and Latin America, remain lower than those of native-born Norwegians. However, employment rates for refugees improve significantly over time but remain below those of EEA migrants even after several years of residency.

6.6.2 Administrative records

In Norway we utilize administrative records from Statistics Norway's wage statistics for information on contractual monthly salaries, contractual hours worked, part- versus full-time status, occupation, and employers. Statistics Norway's wage statistics (based on the *A-ordningen* since 2015) cover all formal jobs, firms, and establishments in the entire private and public sector in the Norwegian labor market. For the main analysis, we use records from 2019. For the supplementary panel data analyses (Section S6), we use records from 2010 to 2019.

We merge the annual earnings information from tax records to the wage statistics sample in order to get information on occupation and on contractual work hours (which we use to create our indicator of full-versus part-time work). The measure of earnings comes from tax records and includes all work-related income (such as parental and sick leave benefits, but not unemployment benefits) for each year and is captured with high accuracy.

Information on occupation is based on Statistics Norway's four-digit Norwegian version of ISCO-88 (i.e., *Standard for yrkesklassifisering, STYRK98*). For individuals who work multiple jobs and thus have multiple job observations per year, we use information from their job observation with the highest contractual monthly salary. The industry of the establishment is measured using four-digit codes from the Statistical Classification of Economic Activities in the European Community (NACE-08), which differentiates about 400 detailed industries. We also include information geographic regions using the municipality of the establishment.

Our measure of hourly wages is based on information on contractual monthly salaries and contractual hours worked at the time of registration each year. Monthly salary information is based on contractual regular earnings per month and does not include bonuses, nonregular extra pay, or overtime pay. In the private sector, hours worked is based on information on contractual hours worked per week. In the public sector, we derive our measure of hours worked from information on the percent of full-time hours of employment (i.e., we compute hours from a measure that provides information about the individual's contractual work hours as the percent of regular full-time work, ranging between zero and 100).

Immigrant background is defined based on information on the country of birth of each individual and their parents. Those with at least one Norwegian-born parent are assigned to the native-born majority group. Immigrants refer to individuals born outside Norway to two foreign-born parents, and country of origin refers to their country of birth. Children of immigrants refer to individuals born in Norway with

two foreign-born parents, and country of origin refers to their mother's country of birth (if the parents have different countries of birth). We group immigrants and children of immigrants into different world regions of origin using information on their country of origin. In additional analyses, we use information on year of immigration and year of birth to further differentiate immigrants into childhood immigrants (who immigrated before age 18), established immigrants (10+ years since immigration) and recently arrived immigrants (<10 years since immigration).

Information about sex and age is based on records from the Central Population Register. Information about education refers to each individual's highest level of educational qualifications in each year based on annual records from the National Education Database (i.e., *Nasjonal utdanningsdatabase, NUDB*). Information on educational level is measured using the eight category NUS2000 scale (i.e., the Norwegian version of ISCED-97), ranging from primary education (1) to doctoral level degree (8). We use this information to create a categorical measure with five levels, and observations registered with no education are included as a separate category in the main analysis.

The administrative records used to create the meta-analytic dataset utilized in this project can be accessed at Statistics Norway upon receipt of proper authorizations. Supplementary Fig. 13 and Supplementary Table 49 report results from the separate regressions used in the main analysis for the Norway for the immigrant–native differences in annual earnings for all world regions of origin combined and separately by world region of origin.

6.7 Spain

6.7.1 Immigration context

Immigration history. Spain transitioned from a country of emigration to one of immigration beginning in the late 20th century. The 1990s and early 2000s marked a significant turning point, with the country experiencing an influx of immigrants driven by rapid economic growth and labor shortages especially in construction, agriculture, and services. Until the 2008 financial crisis, immigration surged, with many migrants arriving from Latin America, North Africa, and Eastern Europe¹¹⁵. Key milestones in Spain's immigration history include six mass regularization programs from 1986 to 2005, granting legal status to over 1.2 million immigrants. These efforts addressed irregular migration, stabilized the population, and facilitated greater economic participation. Since the 2015 economic recovery, net migration rates have remained positive, bolstered by reforms such as the 2022 Regulation on Foreigners, which simplified regularization procedures and introduced new permits for sectors facing labor shortages. By 2023, the foreign-born population accounted for approximately 18% of Spain's total population¹¹⁶.

Immigration policy and immigrant population. Spain's immigration policy is multifaceted, including pathways for labor migration, family reunification, asylum, and regularization of irregular migrants. As of 2023, Spain's population of 48.5 million included approximately 8.8 million foreign-born residents. Among them, 43% originated from Latin America (notably Ecuador, Colombia, and Venezuela), 30% from Europe (including Romania and the UK), 18% from Africa (predominantly Morocco), and 7% from Asia.

Recent reforms emphasize aligning immigration policy with labor market demands. The 2022 Royal Decree introduced measures such as allowing undocumented migrants residing for over two years to apply for work permits if they trained in sectors with labor shortages. Autonomous regions apply different policies to facilitate social inclusion.

Language. Spanish language proficiency is essential for social integration and access to employment opportunities. While Spain's language requirements for naturalization are lenient compared to other EU countries, language barriers remain a challenge, especially for immigrants from non-Spanish-speaking regions. Language acquisition programs are widely available, targeting both recent arrivals and long-term residents seeking improved integration.

Nature of migration and educational selectivity. Spain attracts a diverse immigrant population. Migration patterns are shaped by historical and cultural ties with Latin America and geographic proximity to North Africa. Latin American immigrants benefit from linguistic and cultural similarities, which facilitate integration, while migrants from North Africa often seek better living conditions or escape political instability.

Educational attainment varies significantly; while many immigrants possess low to medium education levels, a substantial number are highly educated, especially those from Latin America. However, overqualification and non-recognition of foreign credentials result in many working in low-skilled sectors, such as agriculture, hospitality, and retail¹¹⁷.

Labor force participation. Despite high unemployment rates among immigrants compared to natives, immigrants are integral to the Spanish labor force, particularly in sectors facing labor shortages, such as construction, agriculture, and domestic services. The 2022 reforms expanded temporary work-related residence permits from two to four years and facilitated sector-specific training programs to address labor market gaps. Immigrants face significant challenges, including precarious employment, limited professional networks, and underemployment relative to their qualifications. Policymakers aim to enhance integration through vocational training, improved credential recognition, and measures to combat job insecurity.

6.7.2 Administrative records

In Spain we utilize administrative records from the Continuous Sample of Working Histories (CSWH) (*Muestra Continua de Vidas Laborales con Datos Fiscales*) from Spain's Social Security Office. The CSWH contains matched anonymized social security, income tax, and census records for a four percent, non-stratified random sample of the population that had any relationship with Spain's Social Security (whether via employment, self-employment, unemployment, or retirement) in that year. The CSWH provides information on individuals' complete labor market histories from 1980 (or the year the individual registers with Social Security) to the year of the sample. The variable definitions are publicly available and can be accessed through the website of the Social Security Office (*Instituto Nacional De La Seguridad Social*). For the main analysis, we use records from 2018. For the supplementary panel data analyses (Section S6), we use records from 2010 to 2018.

Earnings information from Social Security records is censored at both the top and the bottom. Given our inquiry focusing on earnings differentials between immigrants and natives, top-capped earning records might bias the analyses. To overcome this challenge, we merge social security records with the tax records which have info on non-capped earnings from 2006 onwards, for all the individuals that could be tracked with social security records. Our main analysis uses administrative records from 2018, the most recent year available to us, for which we can extract noncapped individual earning records and establishment-level information from the tax records.

For individuals who work at multiple establishments in a year, we only consider the main job, that is the job spell with the highest earnings across firms. In this way, we build a yearly panel that covers employment spells, with a start and end date and tied to a firm identifier. Each spell includes information on individuals (e.g., age, sex, full-time status), establishments, occupations, and industries. Industry is measured using the National Classification of Economic Activities (CNAE-93), which captures the main economic activity of each establishment using 221 three-digit industry codes.

In addition to aggregate earnings, we calculate hourly earnings (our proxy for hourly wages). We calculate hours worked using information on the number of days worked and the percent of employment (e.g., eight hours per day for a full-time worker, four hours per day for a half-time worker, two hours per day for a quarter-time worker). Our measure of occupation comes from the occupation information that employers are required to provide (*grupo de cotización*) to the Social Security office and contains ten occupational categories. We also use four categories of education: 1) less than secondary education, 2) secondary education, 3) tertiary education, and 4) master's degrees and above. Additionally, we include information on geographic regions, using 229 unique municipality IDs where establishments are located.

Immigrant background is defined based on the information on the country of birth of individuals. Using information on the country of birth, we also identify immigrants' country of origin.

The administrative records used to create the meta-analytic dataset utilized in this project can be accessed from the Social Security Office upon receipt of authorizations from the Ministry of Labor, Migrations and Social Security of Spain (*Ministerio de Trabajo, Migraciones y Seguridad Social*). Supplementary Fig. 14 and Supplementary Table 50 report results from the separate regressions used in the main analysis for Spain for the immigrant–native differences in annual earnings for all world regions of origin combined and separately by world region of origin.

6.8 Sweden

6.8.1 Immigration context

Immigration history. Sweden, which had a large emigration to the United States during the 19th century, has been a net immigration country since the 1930s. Between the end of World War II and the mid-1970s, labor migration was dominant, driven by shortages in the manufacturing sector. Most migrants during this period came from Finland and Southern Europe, reflecting Sweden's active recruitment policies and economic needs. From the 1970s, the focus shifted to refugee migration and family reunification, with significant waves of refugees arriving from Iran and Chile in the late 1980s and the former Yugoslavia during the early 1990s, following global and regional conflicts. In the 2000s, immigration levels increased steadily, peaking in 2016 during the European refugee crisis, when Sweden received its highest number of arrivals, primarily from Syria. This marked a significant moment in Sweden's humanitarian approach to migration. Since 2016, immigration levels have declined, largely due to reduced asylum applications and stricter migration policies in Sweden and across the European Union.

Immigration policy and immigrant population. Sweden's immigration policy covers labor migration, family reunification, asylum, and EEA free movement, with distinct pathways and regulations for each. As of 2023, 20% of the population are foreign-born and 27% have a foreign background if children of immigrants are included. The immigrant population is multiethnic coming from very many countries.

Hence, for residential and school segregation, there are few if any ethnic enclaves but rather neighborhoods and schools with high shares of immigrants. The largest country of birth for immigrants residing in Sweden in 2023 is Syria, followed by Iraq, Finland, and then Poland. The largest sending country in 2023 was India, followed by Poland and Germany. Immigration is unevenly spread across municipalities, but immigrant-dense municipalities are found both in metropolitan areas and rural towns. Immigrants made up more than 50% of the population in four municipalities out of 290.

Language. Proficiency in Swedish is critical for social integration and long-term employment, although the majority population has good English proficiency so immigrants with good English skills face little barriers. The government provides free Swedish language courses and social studies for refugees and certain immigrant groups. Swedish fluency is often required for sustained employment and advancement, particularly in regulated professions like government officials, medical doctors, and schoolteachers.

Nature of migration and educational selectivity. Labor migrants from EEA countries typically bring skills and education that align with Sweden's labor market needs, filling gaps in industries such as construction, agriculture, and services. Refugees and family reunification migrants have more varied educational backgrounds, with some lacking formal education due to displacement or disrupted schooling, or low schooling standards in the origin country. What characterizes the immigration population most is the high level of heterogeneity.

Labor force participation. EEA and labor migrants generally achieve high employment rates and integrate relatively easily into the workforce. Refugees and family reunification migrants, however, face significant barriers such as language challenges, non-recognition of foreign credentials, and limited professional networks. Sweden has robust integration programs aimed at improving employment outcomes, offering language training, job counseling, and work placements. Despite these efforts, employment rates for non-Western immigrants remain lower than those of native-born Swedes.

6.8.2 Administrative records

In Sweden we utilize Statistics Sweden's LISA database, which is a collection of administrative records on the population level. For the main analysis, we use the year 2018. For the supplementary panel data analyses (Section 6), we use the years 2008 to 2018.

The measure of earnings comes from tax records and includes all work-related income (such as parental and sick leave benefits; but not unemployment benefits) for each year. Establishment comes from the same source and is a firm located at a specific address (i.e., in firms located at two different addresses, each firm address combination would be considered a unique establishment). Seniority is based on the number of years employed in the same establishment (using a time-stable identifier that takes mergers and splits into account, denoted *FAD* by Statistics Sweden).

Immigration background is coded based on own and parental country of birth. Immigrants refer to those born outside Sweden to non-Swedish born parents and children of immigrants are those born in Sweden where both parents are foreign born. World region of origin is coded based on own country of birth for natives and immigrants, and mother's country of birth for children of immigration. Information on age at immigration comes from immigration records. Industry is measured with the Swedish *SNI* standard, which closely follows the European *NACE*. Following the comparative convention in the paper, we use the three-digit version. Municipality of employment comes from the same tax records as earnings.

For the cross-sectional analysis, occupation is based on Statistics Sweden’s Swedish version of *ISCO-08 (Standard för svensk yrkesklassificering, SSYK2012)*, available at the four-digit level, and comes mainly from employer reports. However, this is not a strict implementation, and one cannot link SSYK2012 to *ISCO-08* or to the prior Swedish version SSYK96. Therefore, for the panel analyses, we have used SSYK96 (which is linkable to *ISCO-88(com)*) from 2008 to 2013, and a version of SSYK2012 keyed back to SSYK96 for the years 2014 and onwards. As the SSYK96 and SSYK2012 are never double coded and there are no source records (due to decisions by Statistics Sweden) we have generated the key based on workers in the same workplaces in 2013 and 2014 who have very similar earnings across the years. We then take the modal category of the 2014 SSYK2012 category for each 2013 SSYK96. However, this limits the granularity in the number of categories, but when we used the keyed version of SSYK96 projected in future years as a basis for occupational scales like SIOPS and ISEI, their means and variances are stable across years and their correlations to other factors such as education are very similar. Occupation is the only factor that differs across the cross-sectional and panel analyses.

Information about sex and age is based on records from the national register. Information about education refers to each individual’s highest level of educational qualifications in each year based on annual records from the Education Register, using the Swedish version of *ISCED-97* named *SUN2000*. We use this information to create a categorical measure with five levels, and observations registered with no education are included as a separate category in the main analysis.

The administrative records used to create the meta-analytic dataset utilized in this project can be accessed at Statistics Sweden upon receipt of the proper authorizations. Supplementary Fig. 15 and Supplementary Table 51 report results from the separate regressions used in the main analysis for Sweden for the immigrant–native differences in annual earnings for all world regions of origin combined and separately by world region of origin.

6.9 United States

6.9.1 Immigration context

Immigration history. Immigration to the United States has been a defining feature since its founding, with distinct waves shaped by economic needs, political developments, and global conflicts. The late 19th and early 20th centuries witnessed mass immigration from Europe, particularly Ireland, Germany, Italy, and Eastern Europe, driven by opportunities in industrialization and escaping political or economic strife. The Immigration and Nationality Act of 1965 marked a turning point by abolishing quotas based on national origins, leading to increased immigration from Latin America, Asia, and Africa. Since the 1980s, the U.S. has experienced significant migration from a variety of countries, including Mexico, Central America, China, India, and the Philippines. Contemporary immigration reflects a blend of family reunification, employment-based migration, and humanitarian admissions.

Immigration policy and immigrant population. U.S. immigration policy encompasses diverse pathways including family-based migration, employment-based visas, the Diversity Visa Lottery, and humanitarian protection. As of 2023, immigrants constituted approximately 14% of the U.S. population, totaling over 47 million people born outside of the United States ([Key findings about U.S. immigrants | Pew Research Center](#)). There are approximately 1 million new long-term permanent residents annually, with the primary categories of admission including approximately 600,000 annual family-based

admissions, over 200,000 employment-based immigrants, and around 70,000 refugees and asylum seekers annually (U.S. Lawful Permanent Residents: 2023). Mexico remains the largest source of immigrants, followed by China, India, and the Philippines (U.S. Lawful Permanent Residents: 2023). The Deferred Action for Childhood Arrivals (DACA) program represents a significant policy for children brought to the U.S. without authorization, highlighting the diversity in legal status among U.S. immigrants.

Language. English proficiency is a key factor in immigrant integration into the U.S. labor market and society. Government programs such as English as a Second Language (ESL) courses are widely available, especially for refugees and new arrivals. Spanish is the most commonly spoken language among immigrants, but there is also significant linguistic diversity with many speaking Chinese, Tagalog, and Arabic. Proficiency in English is crucial for upward mobility, particularly in professional and regulated fields.

Nature of migration and educational selectivity. Immigrants to the U.S. display varied educational backgrounds. Employment-based immigrants often have higher levels of education, especially in science, technology, engineering, and mathematics (STEM) fields, filling critical gaps in the U.S. workforce. By contrast, family-based and humanitarian migrants have a broader range of educational experiences, with some facing challenges due to disrupted schooling. Overall, U.S. immigrants tend to be positively selected in terms of education relative to their origin countries, particularly among high-skilled migrants.

Labor force participation. Immigrants play a vital role in the U.S. economy, comprising a significant share of the labor force, particularly in agriculture, construction, healthcare, and technology sectors. Employment rates vary by immigration category, with employment-based immigrants typically achieving higher labor force participation. Refugees and family-based immigrants may face challenges such as language barriers and credential recognition. Despite these barriers, immigrants contribute to the growth and dynamism of the U.S. economy, with policies and community programs supporting integration and workforce participation.

6.9.2 Administrative records

In the United States we utilize earnings and employer information for each individual's employment spell(s) from Internal Revenue Service (IRS) Form W-2 and cover the tax years 2005-2017. Individuals on this form are identified and linked across records using a unique, anonymized Protected Identification Key (PIK). This form also contains the Employer Identification Number (EIN), which in most cases identifies a firm (see ²⁰ for more details). We take Box 1 from W-2, which reports total annual taxable earnings for each individual at a particular EIN, including salary, wages, and bonuses, but excluding deferred compensation. W-2 reports do not indicate spell duration, or the number of hours worked. We unduplicate by EIN-PIK-year, taking the most recently dated form available. For individuals who work at multiple EINs in a year, we use information from their highest-earning W-2 report.

Because Form W-2 contains no occupational information, we link these forms to the American Community Survey (ACS), a one percent random sample of U.S. households that asks respondents to self-report their current primary or most recent primary occupation at the time of the survey. We link individuals' highest-paid W-2 report to the concurrent ACS year; for example, W-2s from tax year 2017 are linked to respondents in the 2017 ACS. Self-reported occupations are coded by highly trained Census Bureau coders into one of approximately 500 three-digit categories from the Standard Occupation

Classification (SOC) system. Analyses using less granular two-digit occupational codes produce similar patterns, suggesting that changes in this classification system do not affect results.

We additionally derive information on sex, age, immigration background, industry, municipality of work, municipality of residence, hours worked, weeks worked, and education from the ACS. Educational information applies to the current period, and (average) hours worked and weeks worked pertain to the previous 12 months. We multiply hours worked by weeks worked (using interval midpoints for weeks worked) to obtain the total annual number of hours worked. We then divide total W-2 earnings by annual hours worked to arrive at our estimate of hourly wage in a typical week. This assumes individuals are working a similar number of hours in the current year. Unfortunately, the administrative records do not allow us to isolate overtime and bonuses from total compensation in creating this hourly wage variable. To measure part- vs. full-time status, we define individuals as working full-time if their total nominal W-2 earnings surpassed the equivalent of working the federal minimum wage in that year $\times 40$ hours $\times 50$ weeks.

We derive immigration background from reported place of birth. We define individuals reporting a country of birth outside of the United States as first-generation immigrants and those reporting birth in the United States as native. We calculate age at immigration by subtracting the reported year of arrival in the United States from the survey year. We are not able to capture native-born children of immigrants as the ACS lacks information on parental country of birth.

We define the municipality of work as the county of work corresponding to the address that the respondent provided in response to the ACS question on location of work in the previous week. We define municipality of residence and the county of residence corresponding to the address sampled for the ACS at which the respondent lived.

We derive the industry of the respondent's place of work by linking the EIN on the respondent's IRS Form W-2 to the County Business Patterns (CBP) database. CBP variables are extracted from the Business Register (BR), a database of all known single and multi-establishment employer companies maintained by the U.S. Census Bureau. The BR contains the most complete, current, and consistent information for business establishments. CBP records are edited to remove anomalies and validate several measures, including industry classification. Industry classification of businesses in the CBP is according to the 2017 North American Industry Classification System (NAICS), which includes nearly 1,000 industries. More information on the 2017 NAICS codes is available on the NAICS website.

The administrative records used to create the meta-analytic dataset utilized in this project can be accessed at the U.S. Census Bureau upon receipt of proper authorizations. Supplementary Fig. 16 and Supplementary Table 52 report results from the separate regressions used in the main analysis for the United States for the immigrant-native differences in annual earnings for all world regions of origin combined and separately by world region of origin.

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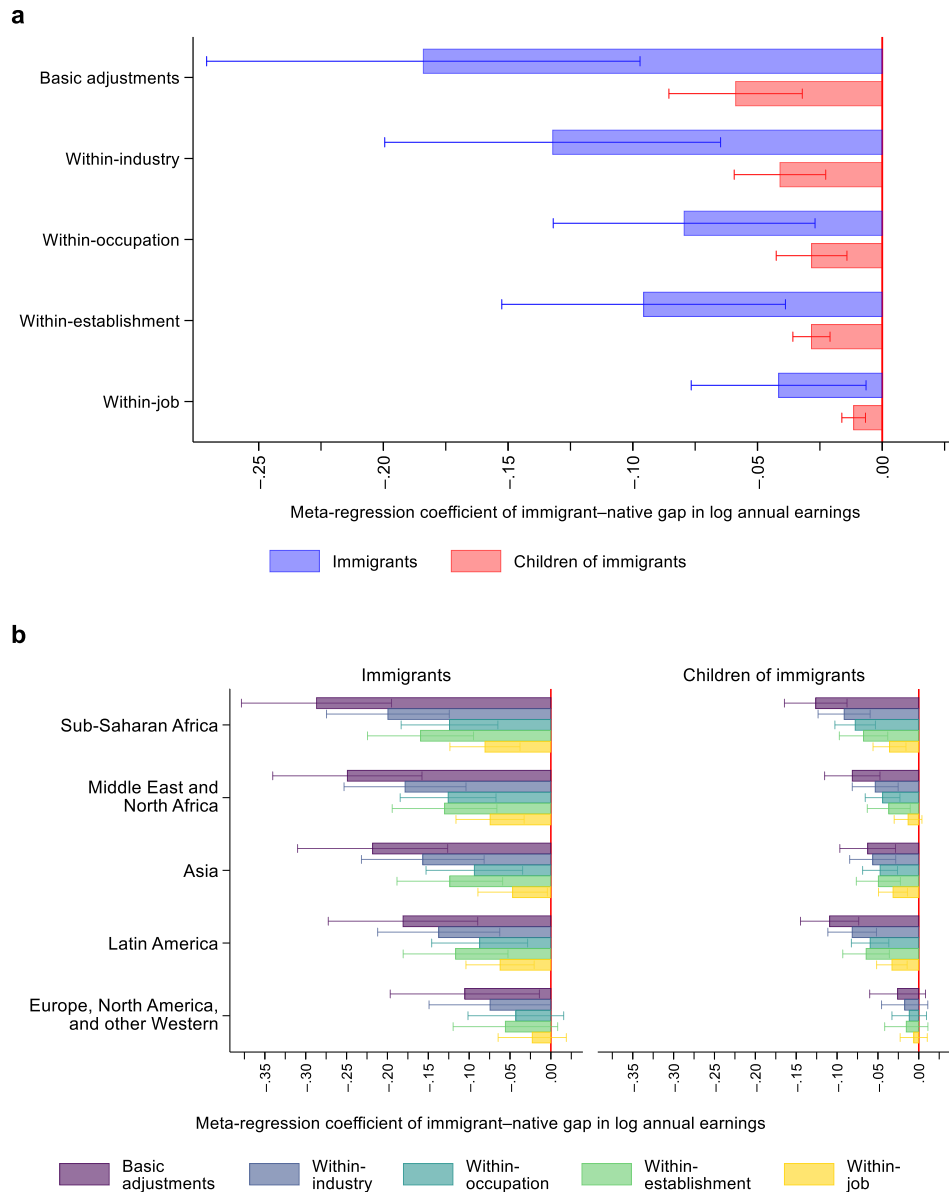
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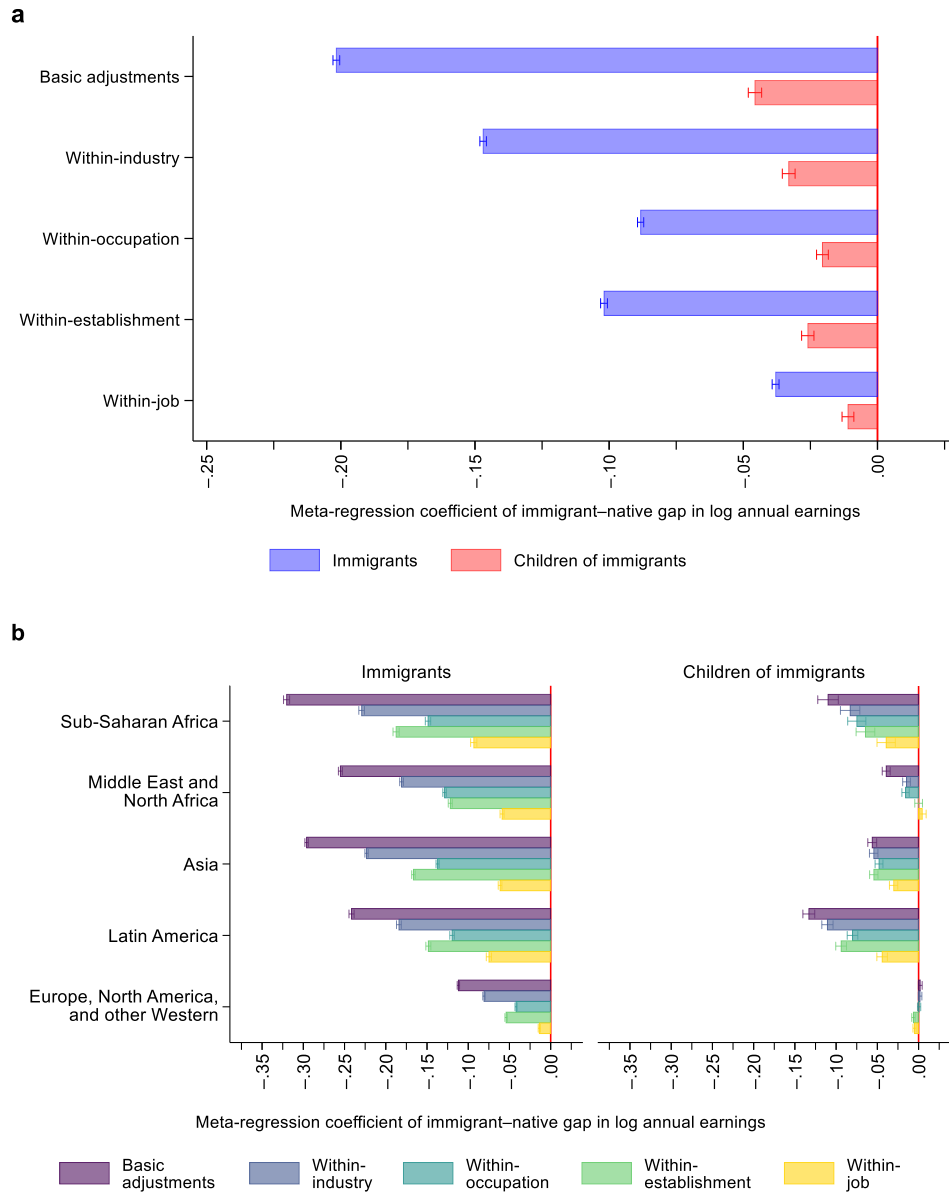
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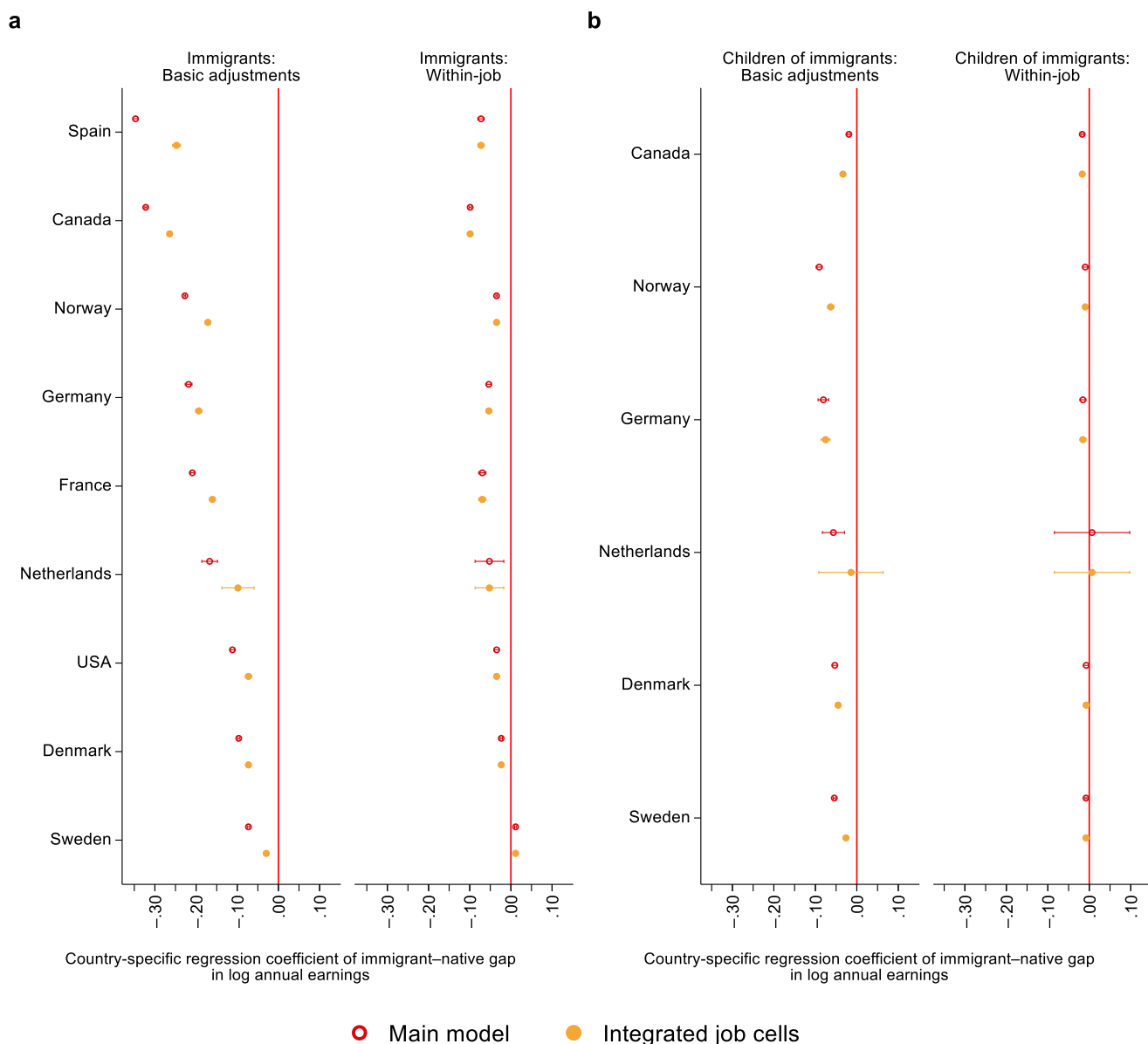
Supplementary Figure 1. Immigrant-native differences in annual earnings after basic adjustments and within industry, occupation, establishment, and job averaged across all countries and averaged separately by world region using random-effects meta-analysis, restricted to countries with information on both immigrants and children of immigrants.

a, Differences in log annual earnings relative to natives after basic adjustments and within industry, occupation, establishment, and job (i.e., occupation-establishment units) for immigrants and children of immigrants from all world regions of origin, averaged across all countries using a random-effects meta-analysis of the pooled country-specific estimates. For each of the five model specifications, the meta-analysis includes country-specific estimates for immigrants ($n = 30$ [6 × 5]; Canada, Denmark, Germany, Netherlands, Norway, and Sweden) and children of immigrants ($n = 6$; Canada, Denmark, Germany, Netherlands, Norway, and Sweden). The error bars indicate the 95% confidence intervals of the pooled average immigrant-native earnings difference from the meta-analysis. Supplementary Table 6 provides additional information. **b**, Differences in log annual earnings relative to natives after basic adjustments and within industry, occupation, establishment, and job (i.e., occupation-establishment units) for immigrants and children of immigrants separately by world region of origin, averaged across all countries using a random-effects meta-analysis of the pooled country-origin-specific estimates. For each of the five model specifications, the meta-analysis includes country-origin-specific estimates for immigrants ($n = 30$ [6 × 5]; Canada, Denmark, Germany, Netherlands, Norway, and Sweden) and children of immigrants ($n = 30$ [6 × 5]; Canada, Denmark, Germany, Netherlands, Norway, and Sweden) from each of the five world regions. The error bars indicate the 95% confidence intervals of the pooled average immigrant-native earnings difference from the meta-analysis. Supplementary Table 7 provides additional information.



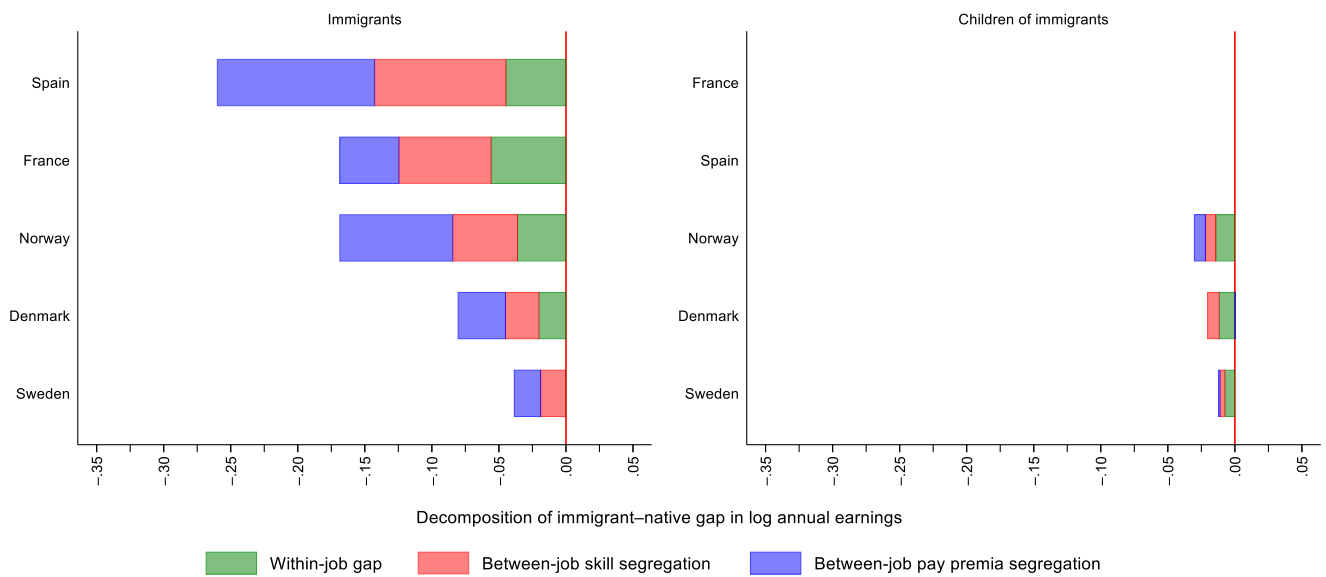
Supplementary Figure 2. Immigrant-native differences in annual earnings after basic adjustments and within industry, occupation, establishment, and job averaged across all countries and averaged separately by world region using fixed-effects meta-analysis.

a, Differences in log annual earnings relative to natives after basic adjustments and within industry, occupation, establishment, and job (i.e., occupation-establishment units) for immigrants and children of immigrants from all world regions of origin, averaged across all countries using a fixed-effects meta-analysis of the pooled country-specific estimates. For each of the five model specifications, the meta-analysis includes country-specific estimates for immigrants ($n = 9$; Canada, Denmark, France, Germany, Netherlands, Norway, Spain, Sweden, and the United States) and children of immigrants ($n = 6$; Canada, Denmark, Germany, Netherlands, Norway, and Sweden). The error bars indicate the 95% confidence intervals of the pooled average immigrant-native earnings difference from the meta-analysis. Supplementary Table 6 provides additional information. **b**, Differences in log annual earnings relative to natives after basic adjustments and within industry, occupation, establishment, and job (i.e., occupation-establishment units) for immigrants and children of immigrants separately by world region of origin, averaged across all countries using a fixed-effects meta-analysis of the pooled country-origin-specific estimates. For each of the five model specifications, the meta-analysis includes country-origin-specific estimates for immigrants ($n = 9$; Canada, Denmark, France, Germany, Netherlands, Norway, Spain, Sweden, and the United States) and children of immigrants ($n = 30$ [6×5]; Canada, Denmark, Germany, Netherlands, Norway, and Sweden) from each of the five world regions. The error bars indicate the 95% confidence intervals of the pooled average immigrant-native earnings difference from the meta-analysis. Supplementary Table 7 provides additional information.



Supplementary Figure 3. Immigrant-native differences in annual earnings for immigrant-native integrated sample at the job level, after basic adjustments and within industry, occupation, establishment, and job separately.

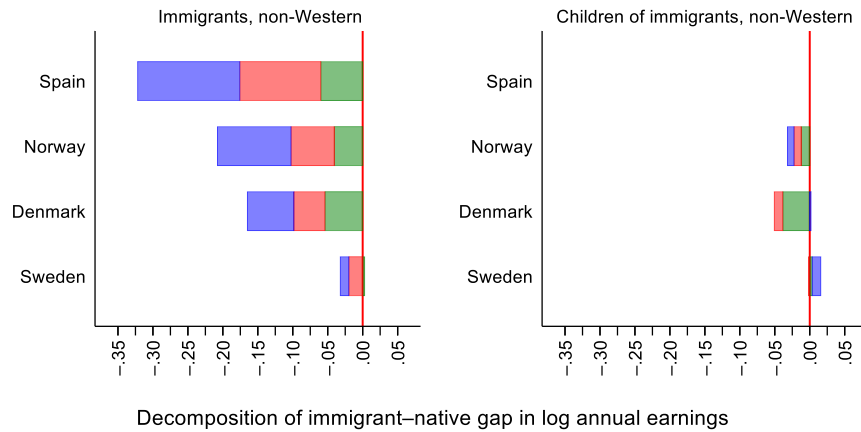
Each estimate represents the coefficient from a separate OLS regression model estimating the difference between the logged annual earnings of immigrants and natives ages 25–60 years, with negative coefficients indicating that immigrants earn less than natives, for all world regions combined and separately by world region of origin. The error bars indicate 95% confidence intervals. Following standard conventions, we interpret these coefficients as the relative difference between the average (children of) immigrant and native earnings, but more formally they indicate the difference in relative geometric means for unlogged earnings (which is the absolute difference in the arithmetic means of logged earnings). The basic adjustments panels report differences from a model that controls for age, age squared, education, sex, and geographic region. The within-job panels provide estimates of within-job (occupation–establishment units) (children of) immigrant–native differences by introducing fixed effects for occupation–establishment units; for details, see Supplementary Table 28. The ‘Main model’ results report estimates from the main country-specific results reported in Figure 1b and ‘Integrated job cells’ results report estimates from models where the sample in the basic adjustments model (and within-job model) is restricted to only include observations which are in immigrant–native integrated cells at the job level (i.e., there is at least one native and one immigrant or child of an immigrant in the same job cell).



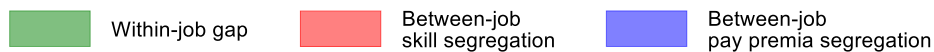
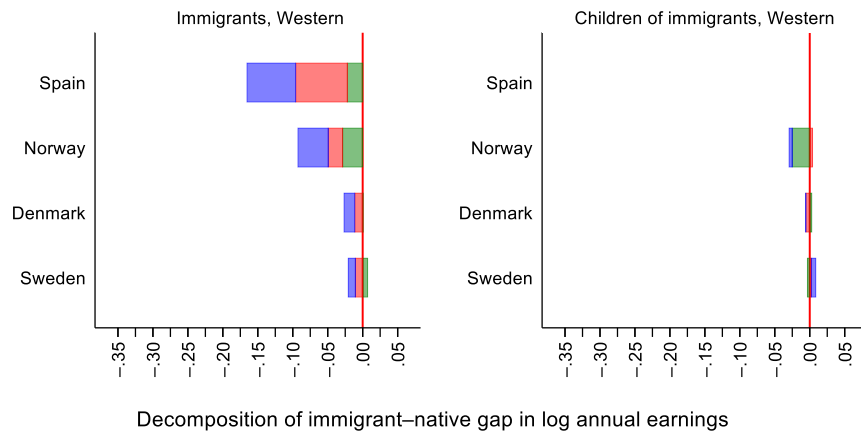
Supplementary Figure 4. Decomposition of immigrant–native difference in annual earnings for all world regions based on two-way (job and worker) fixed effect panel data analysis.

The figure summarizes the results for the decomposition of the immigrant–native difference in logged annual earnings into within-job gaps, between-job skill segregation, and between-job pay premia segregation for immigrants and children of immigrants separately. The estimated total immigrant–native difference is given by the total size of the stacked bars, with negative coefficients indicating that (children of) immigrants earn less than natives. The estimates are derived from a two-way (job and worker) fixed effect model on the largest connected set of workers, ages 25–60 years, separately for each country, with adjustment for age squared, age cubed, and year dummies, with a sex dummy, education categories, and year of birth included in the second stage of the decompositions; for details, see Supplementary Table 40.

a

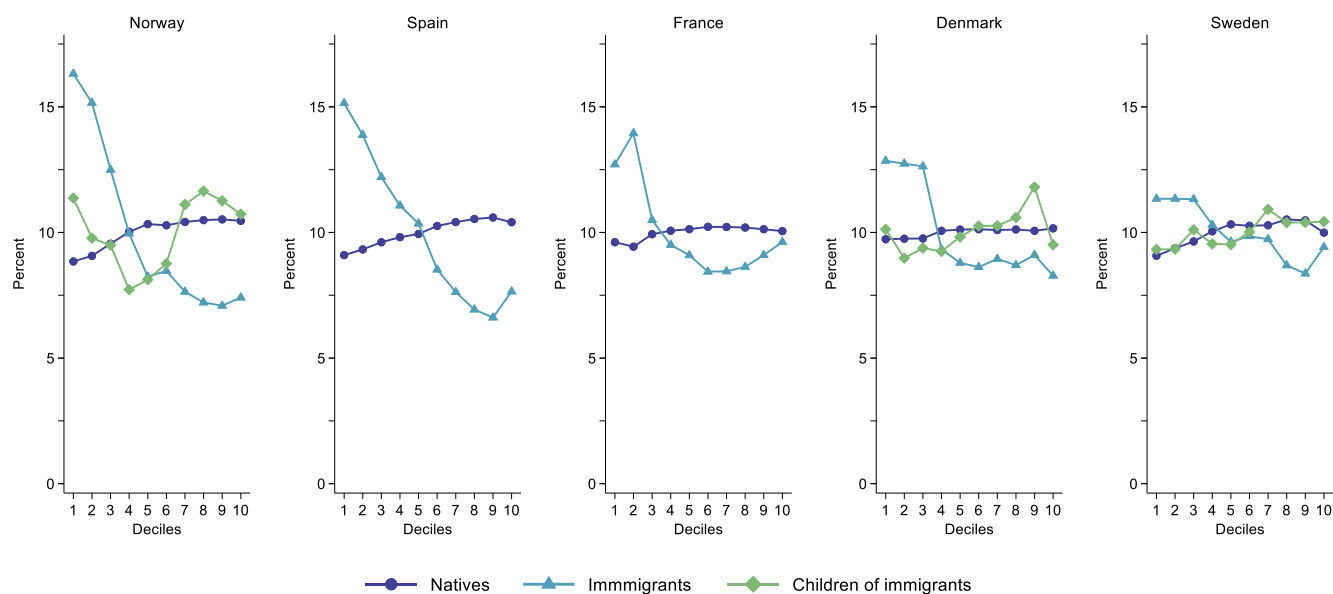


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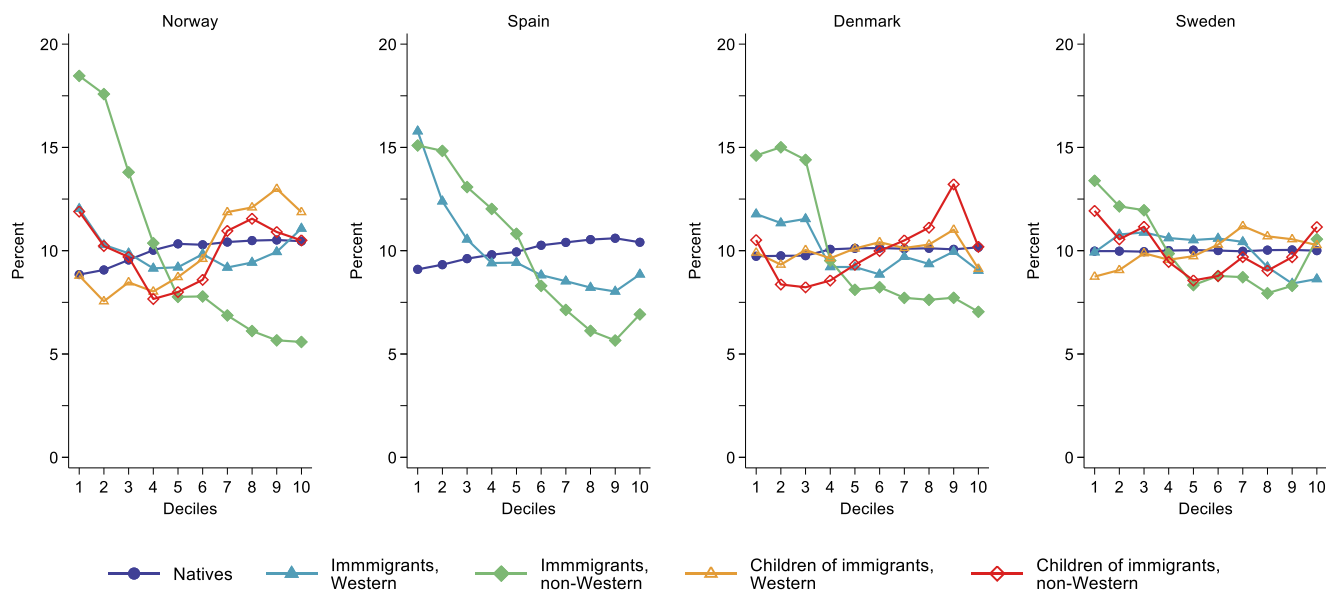
Supplementary Figure 5. Decomposition of immigrant–native difference in annual earnings separately for Western (i.e., Europe, North America, and Other Western) and non-Western (i.e., Asia, Latin America, Middle East and North Africa, and Sub-Saharan Africa) regions of origin based on two-way (job and worker) fixed effect panel data analysis.

The figure summarizes the results for the decomposition of the immigrant–native difference in logged annual earnings into within-job gaps, between-job skill segregation, and between-job pay premia segregation for immigrants and children of immigrants separately by world region of origin. The estimated total immigrant–native difference is given by the total size of the stacked bars, with negative coefficients indicating that (children of) immigrants earn less than natives. The estimates are derived from a two-way (job and worker) fixed effect model on the largest connected set of workers, ages 25–60 years, separately for each country, with adjustment for age squared, age cubed, and year dummies, with a sex dummy, education categories, and year of birth included in the second stage of the decompositions; for details, see Supplementary Table 41.



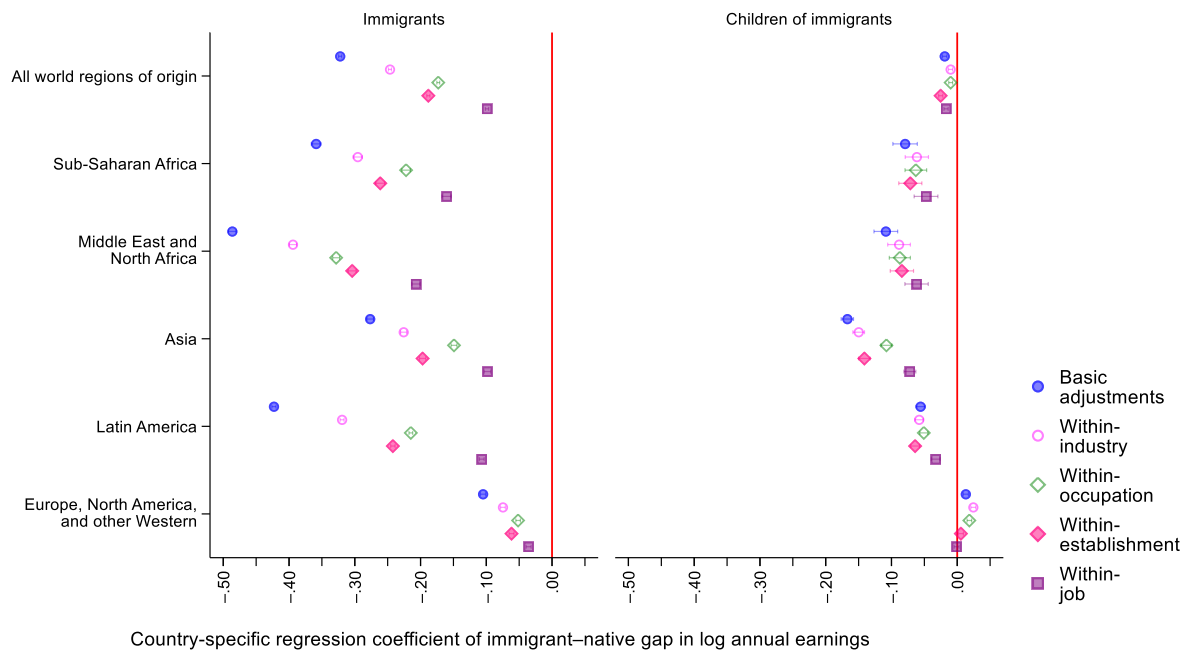
Supplementary Figure 6. Distribution of natives, immigrants, and children of immigrants for all world regions across deciles of the job-specific earnings distribution based on results from two-way (job and worker) fixed effect panel data analysis.

The figure summarizes the distribution of workers by immigrant background across jobs (occupation–establishment fixed effects) with the lowest (decile 1) to the highest (decile 10) job-specific earnings premia. The estimates are derived from a two-way (job and worker) fixed effect model on the largest connected set of workers, ages 25–60 years, separately for each country, with adjustment for age squared, age cubed, and year dummies.



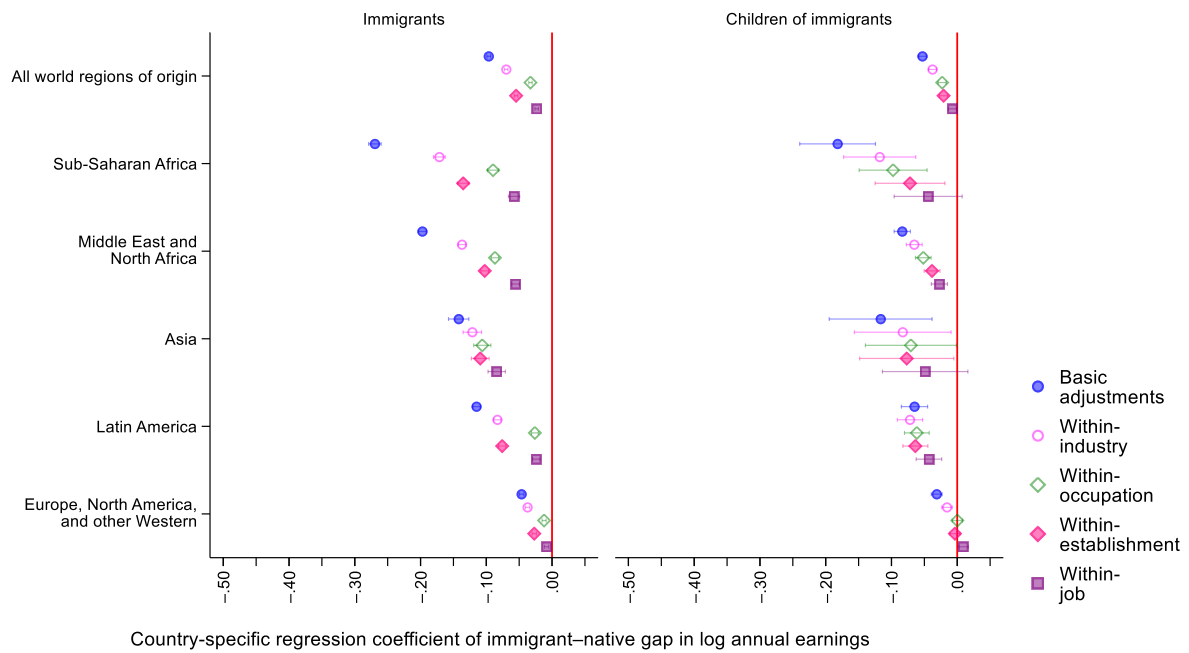
Supplementary Figure 7. Distribution of natives, immigrants, and children of immigrants separately by Western (Europe, North America, and Other Western) and non-Western (Asia, Latin America, Middle East and North Africa, and Sub-Saharan Africa) regions of origin across deciles of the job-specific earnings distribution based on results from two-way (job and worker) fixed effect panel data analysis.

The figure summarizes the distribution of workers by immigrant background across jobs (occupation–establishment fixed effects) with the lowest (decile 1) to the highest (decile 10) job-specific earnings premia. The estimates are derived from a two-way (job and worker) fixed effect model on the largest connected set of workers, ages 25–60 years, separately for each country, with adjustment for age squared, age cubed, and year dummies.



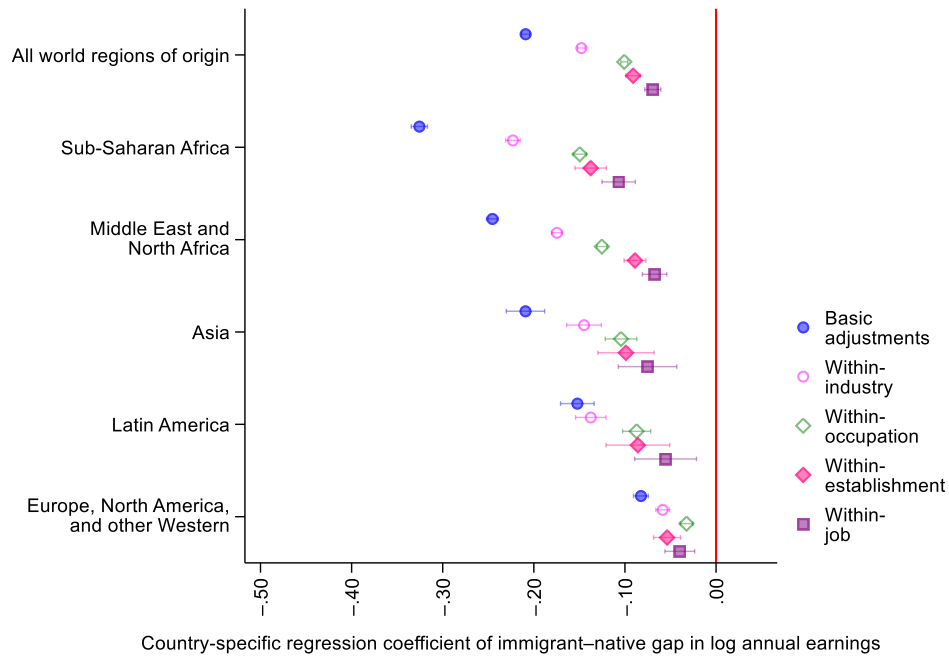
Supplementary Figure 8. Canadian estimates of immigrant–native differences in annual earnings after basic adjustments and within industry, occupation, establishment, and jobs, for all world regions and separately by region of origin, used in main analysis.

Each estimate represents the coefficient from a separate OLS regression model estimating the difference between the logged annual earnings of immigrants and natives ages 25–60 years, with negative coefficients indicating that immigrants earn less than natives, for all world regions combined and separately by world region of origin. The error bars indicate 95% confidence intervals. Following standard conventions, we interpret these coefficients as the relative difference between the average (children of) immigrant and native earnings, but more formally they indicate the difference in relative geometric means for unlogged earnings (which is the absolute difference in the arithmetic means of logged earnings). The basic adjustment model reports differences from a model that controls for age, age squared, education, sex, and geographic region. Subsequent models provide estimates of within-industry, within-occupation, within-establishment, and within-job (occupation–establishment units) (children of) immigrant–native differences by introducing fixed effects for industry, occupation, establishment, and occupation–establishment units. For details, see Supplementary Table 42.



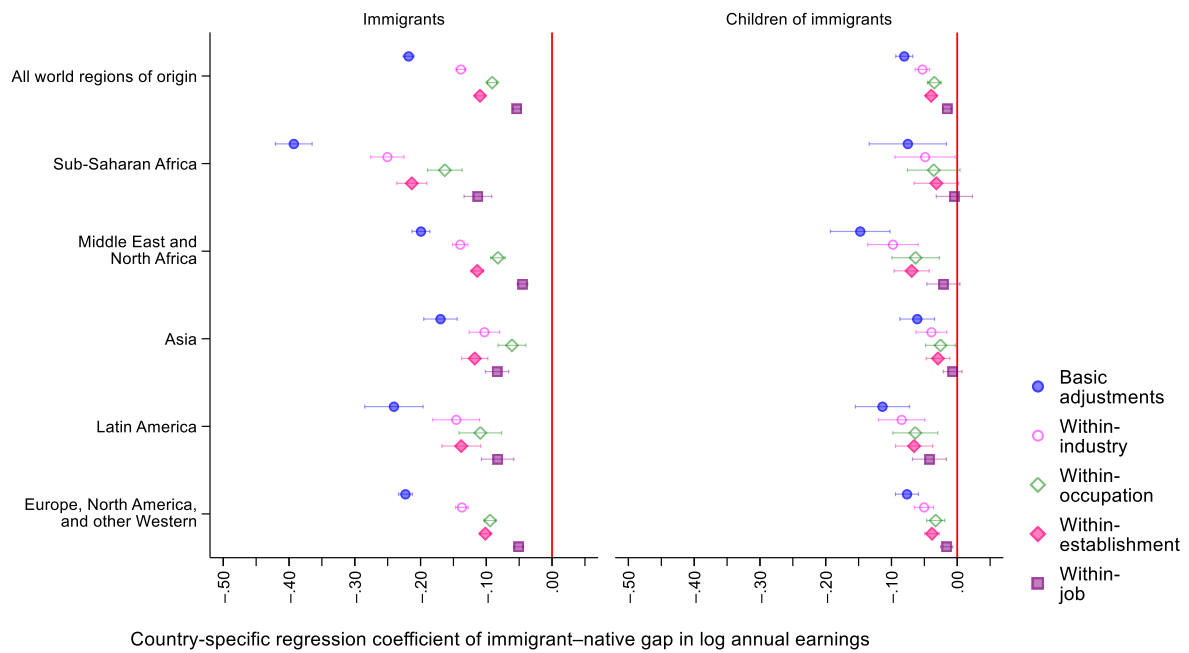
Supplementary Figure 9. Danish estimates of immigrant–native differences in annual earnings after basic adjustments and within industry, occupation, establishment, and jobs, for all world regions and separately by region of origin, used in main analysis.

Each estimate represents the coefficient from a separate OLS regression model estimating the difference between the logged annual earnings of immigrants and natives ages 25–60 years, with negative coefficients indicating that immigrants earn less than natives, for all world regions combined and separately by world region of origin. The error bars indicate 95% confidence intervals. Following standard conventions, we interpret these coefficients as the relative difference between the average (children of) immigrant and native earnings, but more formally they indicate the difference in relative geometric means for unlogged earnings (which is the absolute difference in the arithmetic means of logged earnings). The basic adjustment model reports differences from a model that controls for age, age squared, education, sex, and geographic region. Subsequent models provide estimates of within-industry, within-occupation, within-establishment, and within-job (occupation–establishment units) (children of) immigrant–native differences by introducing fixed effects for industry, occupation, establishment, and occupation–establishment units. For details, see Supplementary Table 43.



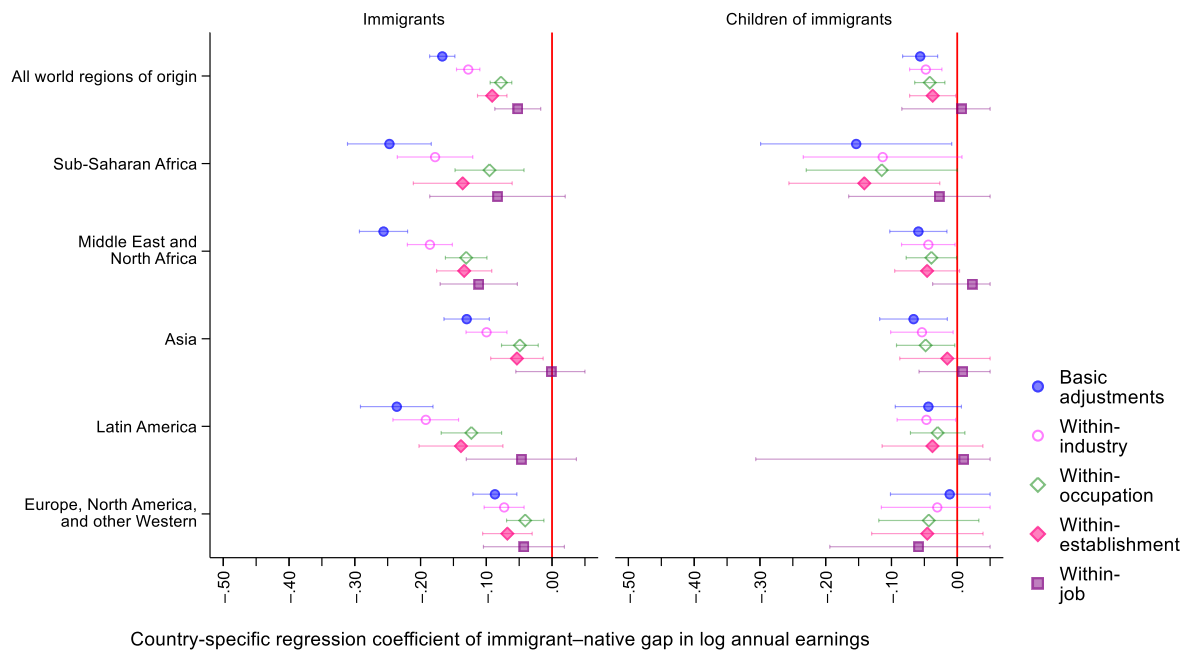
Supplementary Figure 10. French estimates of immigrant–native differences in annual earnings after basic adjustments and within industry, occupation, establishment, and jobs, for all world regions and separately by region of origin, used in main analysis.

Each estimate represents the coefficient from a separate OLS regression model estimating the difference between the logged annual earnings of immigrants and natives ages 25–60 years, with negative coefficients indicating that immigrants earn less than natives, for all world regions combined and separately by world region of origin. The error bars indicate 95% confidence intervals. Following standard conventions, we interpret these coefficients as the relative difference between the average immigrant and native earnings, but more formally they indicate the difference in relative geometric means for unlogged earnings (which is the absolute difference in the arithmetic means of logged earnings). The basic adjustment model reports differences from a model that controls for age, age squared, education, sex, and geographic region. Subsequent models provide estimates of within-industry, within-occupation, within-establishment, and within-job (occupation–establishment units) immigrant–native differences by introducing fixed effects for industry, occupation, establishment, and occupation–establishment units. For details, see Supplementary Table 44.



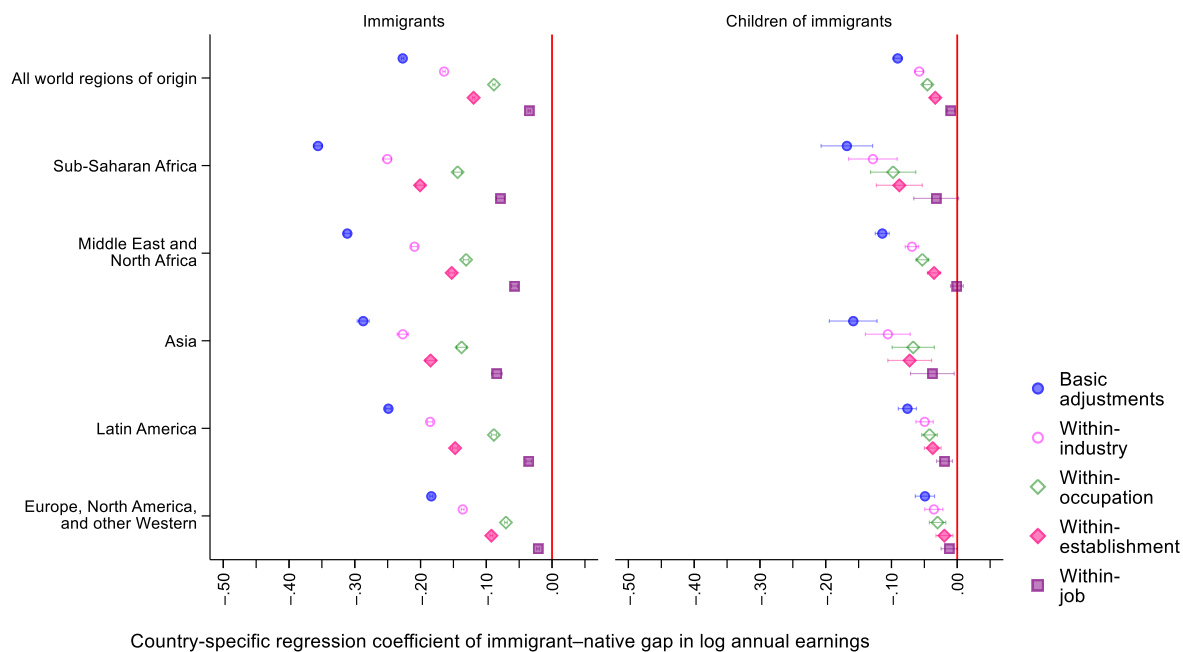
Supplementary Figure 11. German estimates of immigrant–native differences in annual earnings after basic adjustments and within industry, occupation, establishment, and jobs, for all world regions and separately by region of origin, used in main analysis.

Each estimate represents the coefficient from a separate OLS regression model estimating the difference between the logged annual earnings of immigrants and natives ages 25–60 years, with negative coefficients indicating that immigrants earn less than natives, for all world regions combined and separately by world region of origin. The error bars indicate 95% confidence intervals. Following standard conventions, we interpret these coefficients as the relative difference between the average (children of) immigrant and native earnings, but more formally they indicate the difference in relative geometric means for unlogged earnings (which is the absolute difference in the arithmetic means of logged earnings). The basic adjustment model reports differences from a model that controls for age, age squared, education, sex, and geographic region. Subsequent models provide estimates of within-industry, within-occupation, within-establishment, and within-job (occupation–establishment units) (children of) immigrant–native differences by introducing fixed effects for industry, occupation, establishment, and occupation–establishment units. For details, see Supplementary Table 46.



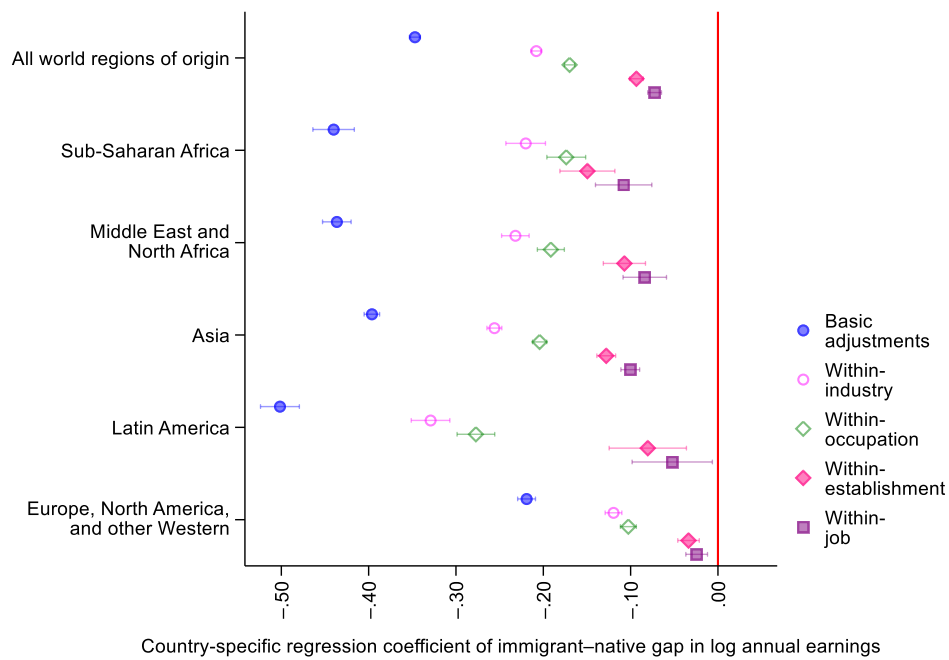
Supplementary Figure 12. Dutch estimates of immigrant-native differences in annual earnings after basic adjustments and within industry, occupation, establishment, and jobs, for all world regions and separately by region of origin, used in main analysis.

Each estimate represents the coefficient from a separate OLS regression model estimating the difference between the logged annual earnings of immigrants and natives ages 25–60 years, with negative coefficients indicating that immigrants earn less than natives, for all world regions combined and separately by world region of origin. The error bars indicate 95% confidence intervals. Following standard conventions, we interpret these coefficients as the relative difference between the average (children of) immigrant and native earnings, but more formally they indicate the difference in relative geometric means for unlogged earnings (which is the absolute difference in the arithmetic means of logged earnings). The basic adjustment model reports differences from a model that controls for age, age squared, education, sex, and geographic region. Subsequent models provide estimates of within-industry, within-occupation, within-establishment, and within-job (occupation–establishment units) (children of) immigrant-native differences by introducing fixed effects for industry, occupation, establishment, and occupation–establishment units. For details, see Supplementary Table 47.



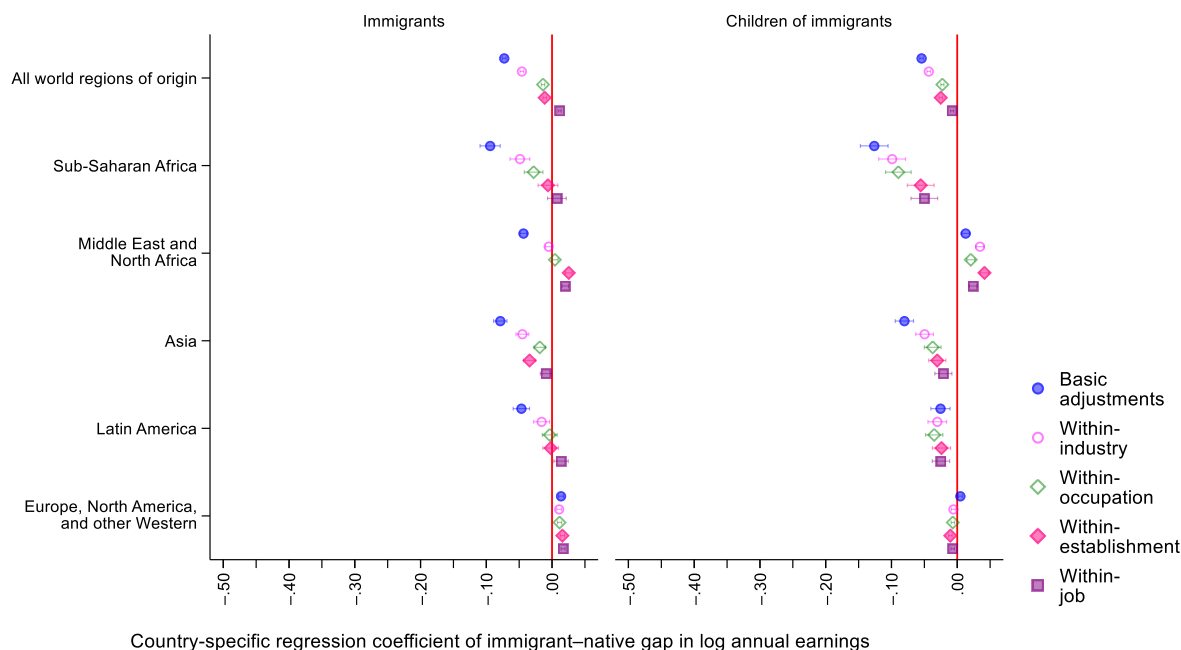
Supplementary Figure 13. Norwegian estimates of immigrant–native differences in annual earnings after basic adjustments and within industry, occupation, establishment, and jobs, for all world regions and separately by region of origin, used in main analysis.

Each estimate represents the coefficient from a separate OLS regression model estimating the difference between the logged annual earnings of immigrants and natives ages 25–60 years, with negative coefficients indicating that immigrants earn less than natives, for all world regions combined and separately by world region of origin. The error bars indicate 95% confidence intervals. Following standard conventions, we interpret these coefficients as the relative difference between the average (children of) immigrant and native earnings, but more formally they indicate the difference in relative geometric means for unlogged earnings (which is the absolute difference in the arithmetic means of logged earnings). The basic adjustment model reports differences from a model that controls for age, age squared, education, sex, and geographic region. Subsequent models provide estimates of within-industry, within-occupation, within-establishment, and within-job (occupation–establishment units) (children of) immigrant–native differences by introducing fixed effects for industry, occupation, establishment, and occupation–establishment units. For details, see Supplementary Table 49.



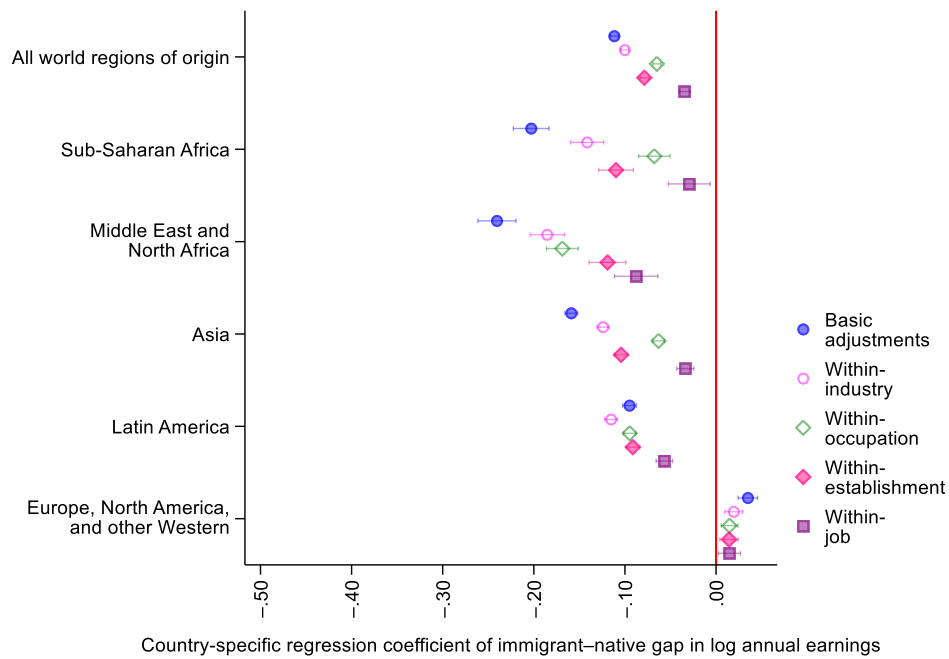
Supplementary Figure 14. Spanish estimates of immigrant–native differences in annual earnings after basic adjustments and within industry, occupation, establishment, and jobs, for all world regions and separately by region of origin, used in main analysis.

Each estimate represents the coefficient from a separate OLS regression model estimating the difference between the logged annual earnings of immigrants and natives ages 25–60 years, with negative coefficients indicating that immigrants earn less than natives, for all world regions combined and separately by world region of origin. The error bars indicate 95% confidence intervals. Following standard conventions, we interpret these coefficients as the relative difference between the average immigrant and native earnings, but more formally they indicate the difference in relative geometric means for unlogged earnings (which is the absolute difference in the arithmetic means of logged earnings). The basic adjustment model reports differences from a model that controls for age, age squared, education, sex, and geographic region. Subsequent models provide estimates of within-industry, within-occupation, within-establishment, and within-job (occupation–establishment units) immigrant–native differences by introducing fixed effects for industry, occupation, establishment, and occupation–establishment units. For details, see Supplementary Table 50.



Supplementary Figure 15. Swedish estimates of immigrant–native differences in annual earnings after basic adjustments and within industry, occupation, establishment, and jobs, for all world regions and separately by region of origin, used in main analysis.

Each estimate represents the coefficient from a separate OLS regression model estimating the difference between the logged annual earnings of immigrants and natives ages 25–60 years, with negative coefficients indicating that immigrants earn less than natives, for all world regions combined and separately by world region of origin. The error bars indicate 95% confidence intervals. Following standard conventions, we interpret these coefficients as the relative difference between the average (children of) immigrant and native earnings, but more formally they indicate the difference in relative geometric means for unlogged earnings (which is the absolute difference in the arithmetic means of logged earnings). The basic adjustment model reports differences from a model that controls for age, age squared, education, sex, and geographic region. Subsequent models provide estimates of within-industry, within-occupation, within-establishment, and within-job (occupation–establishment units) (children of) immigrant–native differences by introducing fixed effects for industry, occupation, establishment, and occupation–establishment units. For details, see Supplementary Table 51.



Supplementary Figure 16. US estimates of immigrant-native differences in annual earnings after basic adjustments and within industry, occupation, establishment, and jobs, for all world regions and separately by region of origin, used in main analysis.

Each estimate represents the coefficient from a separate OLS regression model estimating the difference between the logged annual earnings of immigrants and natives ages 25–60 years, with negative coefficients indicating that immigrants earn less than natives, for all world regions combined and separately by world region of origin. The error bars indicate 95% confidence intervals. Following standard conventions, we interpret these coefficients as the relative difference between the average immigrant and native earnings, but more formally they indicate the difference in relative geometric means for unlogged earnings (which is the absolute difference in the arithmetic means of logged earnings). The basic adjustment model reports differences from a model that controls for age, age squared, education, sex, and geographic region. Subsequent models provide estimates of within-industry, within-occupation, within-establishment, and within-job (occupation–establishment units) immigrant–native differences by introducing fixed effects for industry, occupation, establishment, and occupation–establishment units. For details, see Supplementary Table 52.

Supplementary Table 1. List of countries within world regions of origin.

World region of origin				
Asia	Latin America	Middle East and North Africa	Sub-Saharan Africa	Europe, North America, and Other Western
(1)	(2)	(3)	(4)	(5)
Bangladesh	Antigua and Barbuda	Afghanistan	Angola	Albania
Bhutan	Argentina	United Arab Emirates	Benin	Andorra
Cambodia	Aruba	Armenia	Botswana	Australia
China	Bahamas	Azerbaijan	Burkina Faso	Austria
Fiji	Belize	Bahrain	Burundi	Belarus
French Polynesia	Bolivia	Cyprus	Cabo Verde	Belgium
India	Brazil	Algeria	Cameroon	Bosnia and Herzegovina
Indonesia	Chile	Egypt	Central African Republic	Bulgaria
Japan	Colombia	Western Sahara	Chad	Canada
Kazakhstan	Costa Rica	Georgia	Comoros	Croatia
Kyrgyzstan	Cuba	Iran	Congo	Czechia
Laos	Curaçao	Iraq	Côte d'Ivoire	Denmark
Malaysia	Dominica	Israel	Democratic Republic of the Congo	Estonia
Maldives	Dominican Republic	Jordan	Djibouti	Faroe Islands
Mongolia	Ecuador	Kuwait	Equatorial Guinea	Finland
Myanmar	El Salvador	Lebanon	Eritrea	France
Nepal	Grenada	Libya	Ethiopia	Germany
Papua New Guinea	Guatemala	Morocco	Gabon	Greece
Philippines	Guyana	Oman	Gambia	Holy See
Republic of Korea	Haiti	Pakistan	Ghana	Hungary
Samoa	Honduras	State of Palestine	Guinea	Iceland
Singapore	Jamaica	Qatar	Guinea-Bissau	Ireland
Sri Lanka	Mexico	Saudi Arabia	Kenya	Italy
Tajikistan	Nicaragua	Sudan	Lesotho	Latvia
Thailand	Panama	Syrian Arab Republic	Liberia	Liechtenstein
Tonga	Paraguay	Tunisia	Madagascar	Lithuania
Turkmenistan	Peru	Turkey	Malawi	Luxembourg
Uzbekistan	Puerto Rico	Yemen	Mali	Malta
Vietnam	Saint Kitts and Nevis		Mauritania	Monaco
	Saint Lucia		Mauritius	Montenegro
	Saint Vincent and the Grenadines		Mozambique	Netherlands
	Suriname		Namibia	New Zealand
	Trinidad and Tobago		Niger	Norway
	Uruguay		Nigeria	Poland
	Venezuela		Réunion	Portugal
			Rwanda	Republic of Moldova
			Saint Helena	Romania
			Sao Tome and Principe	Russian Federation
			Senegal	San Marino
			Seychelles	Serbia
			Sierra Leone	Slovakia
			Somalia	Slovenia
			South Africa	Spain
			South Sudan	Sweden
			Swaziland	Switzerland
			Togo	Macedonia
			Uganda	Ukraine
			United Republic of Tanzania	United Kingdom of Great Britain and Northern Ireland
			Zambia	United States of America
			Zimbabwe	

Note: For some of the destination countries, the grouping of countries into regions of origin is less detailed than this list of countries.

Supplementary Table 2. Random-effects meta-analysis of immigrant–native differences in earnings from main analysis reported in Fig. 1a.

		Regression coefficients for log annual earnings						Logged coefficients as percentage gaps		
		Fixed Effect for:					Proportion within job			
		Basic adj.	Ind	Occ	Est	Occ-Est		Basic adj.	Occ-Est	Proportion within job
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Panel A: Immigrants	Coef.	-.197	-.139	-.090	-.093	-.047	.24	-17.9%	-4.6%	.26
	Std. Err.	(.032)	(.021)	(.018)	(.016)	(.011)				
	Upper 95% CI	-.123	-.090	-.049	-.056	-.022				
	Lower 95% CI	-.271	-.188	-.132	-.130	-.072				
	P-value	.000	.000	.001	.000	.002				
	t-value	-6.160	-6.561	-5.014	-5.798	-4.375				
	I^2	99.97	99.93	99.91	99.86	99.70				
	τ^2	0.009	0.004	0.003	0.002	0.001				
	Cochrane Q	27,918.88	17,145.65	12,138.07	11,073.82	4,103.43				
	P-value of Q	0.000	0.000	0.000	0.000	0.000				
	N (country)	9	9	9	9	9				
Panel B: Children of immigrants	Coef.	-.059	-.041	-.028	-.028	-.011	.19	-5.7%	-1.1%	.20
	Std. Err.	(.010)	(.007)	(.006)	(.003)	(.002)				
	Upper 95% CI	-.035	-.025	-.016	-.022	-.007				
	Lower 95% CI	-.083	-.057	-.041	-.035	-.016				
	P-value	.002	.002	.004	.000	.002				
	t-value	-5.650	-5.747	-5.138	-9.797	-6.217				
	I^2	98.87	97.83	96.70	85.78	73.57				
	τ^2	0.001	0.000	0.000	0.000	0.000				
	Cochrane Q	474.63	332.66	125.55	18.76	23.52				
	P-value of Q	0.000	0.000	0.000	0.002	0.000				
	N (country)	6	6	6	6	6				

Note: Estimates obtained from a random-effects meta-analysis of the pooled set of country-specific estimates from Ordinary Least Squares (OLS) regression models found in Supplementary Table 3. Each estimate from the meta-analysis represents the coefficient of the averaged difference between the logged annual earnings of immigrants and natives (panel A) and children of immigrants and natives (panel B), ages 25–60 years, across all countries. Following standard conventions, we interpret these coefficients as the relative difference between the average (children of) immigrant and native earnings, but more formally they indicate the difference in relative geometric means for unlogged earnings (which is the absolute difference in the arithmetic means of logged earnings). The 'basic adjustment' column reports the averaged differences from a model that controls for age and age squared, education, gender, and geographic region. Subsequent models provide averaged estimates of within-industry, within-occupation, within-establishment, and within-job (occupation–establishment units) (children of) immigrant–native differences by introducing fixed effects for industry, occupation, establishment, and occupation–establishment units. The estimates in the parentheses report the averaged standard errors of each coefficient obtained from the meta-analysis, with the corresponding lower and upper bounds of the 95% confidence intervals. The *t*-statistics, and corresponding *P*-values, refer to two-sided *t*-tests for the coefficients of the (children of) immigrant–native difference in log annual earnings. Column 5 reports the proportion of the (children of) immigrant–native difference from column 1 (with only basic adjustments) that remains when we compare (children of) immigrants and natives who are working in the same occupations and establishments using the log point estimate. In this column, the number .00 refers to cases where (children of) immigrants do not earn less than natives at the within-job level, the number 1.00 refers to cases where the within-job earnings disadvantage of (children of) immigrants relative to natives is larger than in the 'basic adjustments' model, and dashed lines (–) is used in cases where (children of) immigrants do not earn less than natives in the 'basic adjustments' model. Columns 7 and 8 report the (children of) immigrant–native difference from column 1 (with only basic adjustments) and column 5 (within-job comparison) as percentage gaps using the standard equation for exponentiation of the logged coefficients. Column 9 the proportion of the (children of) immigrant–native difference from column 1 (with only basic adjustments) that remains when we compare (children of) immigrants and natives who are working in the same occupations and establishments using the percentage gaps. In this column, the number .00 refers to cases where (children of) immigrants do not earn less than natives at the within-job level, the number 1.00 refers to cases where the within-job earnings disadvantage of (children of) immigrants relative to natives is larger than in the 'basic adjustments' model, and dashed lines (–) is used in cases where (children of) immigrants do not earn less than natives in the 'basic adjustments' model.

Supplementary Table 3. Immigrant–native differences in earnings by destination country from main analysis reported in Fig. 1b.

		Regression coefficients for log annual earnings					Logged coefficients as percentage gaps		
		Fixed effect for:							
		Basic adj.	Ind	Occ	Est	Occ-Est	Proportion within Job	Basic adj.	Occ-Est
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
								Proportion within job	(9)
Panel A: Immigrants									
Canada	Coef.	-.322	-.246	-.173	-.188	-.099	.31	-27.5%	-9.4%
	Std. Err.	(.001)	(.001)	(.001)	(.001)	(.001)			
	Upper 95% CI	-.320	-.244	-.171	-.186	-.096			
	Lower 95% CI	-.325	-.249	-.175	-.190	-.101			
	P-value	.000	.000	.000	.000	.000			
	t-value	-269.92	-215.40	-158.12	-154.64	-77.51			
	R ²	0.198	0.299	0.391	0.429	0.566			
	N	2,771,043	2,771,043	2,771,043	2,088,907	1,429,648			
Denmark	Coef.	-.096	-.070	-.033	-.055	-.023	.24	-9.2%	-2.3%
	Std. Err.	(.001)	(.001)	(.001)	(.001)	(.001)			
	Upper 95% CI	-.094	-.067	-.030	-.052	-.021			
	Lower 95% CI	-.099	-.072	-.035	-.057	-.026			
	P-value	.000	.000	.000	.000	.000			
	t-value	-68.84	-51.40	-25.18	-39.66	-16.90			
	R ²	0.200	0.268	0.345	0.382	0.492			
	N	1,755,962	1,755,756	1,755,352	1,364,717	951,079			
France	Coef.	-0.209	-0.148	-0.101	-0.091	-0.069	.33	-18.9%	-6.7%
	Std. Err.	(.002)	(.002)	(.002)	(.004)	(.004)			
	Upper 95% CI	-.205	-.144	-.097	-.083	-.061			
	Lower 95% CI	-.214	-.152	-.105	-.099	-.078			
	P-value	.000	.000	.000	.000	.000			
	t-value	-91.94	-70.42	-52.22	-22.03	-15.44			
	R ²	0.303	0.414	0.510	0.659	0.747			
	N	764,703	764,039	764,699	222,884	130,983			
Germany	Coef.	-.218	-.139	-.091	-.110	-.054	.25	-19.6%	-5.2%
	Std. Err.	(.004)	(.004)	(.004)	(.003)	(.003)			
	Upper 95% CI	-.210	-.131	-.084	-.103	-.048			
	Lower 95% CI	-.226	-.146	-.098	-.116	-.059			
	P-value	.000	.000	.000	.000	.000			
	t-value	-51.55	-36.17	-25.18	-33.76	-18.22			
	R ²	0.318	0.453	0.545	0.586	0.703			
	N	1,089,303	1,089,210	1,088,753	1,058,703	863,810			
Netherlands	Coef.	-.167	-.128	-.078	-.091	-.052	.31	-15.4%	-5.1%
	Std. Err.	(.010)	(.009)	(.008)	(.011)	(.018)			
	Upper 95% CI	-.148	-.110	-.061	-.069	-.017			
	Lower 95% CI	-.186	-.145	-.094	-.113	-.087			
	P-value	.000	.000	.000	.000	.003			
	t-value	-17.06	-14.10	-9.26	-7.98	-2.93			
	R ²	0.385	0.475	0.555	0.599	0.748			
	N	56,829	56,601	56,724	23,369	9,296			
Norway	Coef.	-.227	-.164	-.088	-.119	-.035	.15	-20.3%	-3.4%
	Std. Err.	(.001)	(.001)	(.001)	(.001)	(.001)			
	Upper 95% CI	-.225	-.162	-.087	-.117	-.033			
	Lower 95% CI	-.229	-.166	-.090	-.121	-.037			
	P-value	.000	.000	.000	.000	.000			
	t-value	-243.15	-178.71	-100.96	-127.45	-37.12			
	R ²	0.289	0.381	0.481	0.502	0.627			
	N	1,866,155	1,866,114	1,866,105	1,466,515	1,008,304			
Spain	Coef.	-.347	-.208	-.170	-.093	-.073	.21	-29.3%	-7.0%
	Std. Err.	(.003)	(.003)	(.003)	(.004)	(.004)			
	Upper 95% CI	-.341	-.202	-.164	-.086	-.065			
	Lower 95% CI	-.353	-.214	-.176	-.101	-.080			
	P-value	.000	.000	.000	.000	.000			

	<i>t</i> -value	-107.98	-66.74	-56.78	-23.34	-18.09				
	<i>R</i> ²	0.236	0.355	0.413	0.591	0.648				
	<i>N</i>	476,108	475,992	476,023	163,641	136,264				
Sweden	Coef.	-.073	-.046	-.014	-.011	.011	.00	-7.0%	1.2%	.00
	Std. Err.	(.001)	(.001)	(.001)	(.001)	(.001)				
	Upper 95% CI	-.070	-.043	-.011	-.009	.014				
	Lower 95% CI	-.076	-.049	-.016	-.014	.009				
	<i>P</i> -value	.000	.000	.000	.000	.000				
	<i>t</i> -value	-50.10	-32.74	-10.74	-8.22	9.12				
	<i>R</i> ²	0.233	0.298	0.425	0.439	0.572				
	<i>N</i>	3,340,002	3,332,251	3,076,527	2,209,883	1,307,820				
United States	Coef.	-.112	-.100	-.065	-.079	-.035	.31	-10.6%	-3.4%	.32
	Std. Err.	(.002)	(.002)	(.002)	(.002)	(.003)				
	Upper 95% CI	-.107	-.096	-.061	-.074	-.029				
	Lower 95% CI	-.116	-.105	-.069	-.083	-.040				
	<i>P</i> -value	.000	.000	.000	.000	.000				
	<i>t</i> -value	-45.65	-43.87	-29.63	-32.29	-11.50				
	<i>R</i> ²	0.263	0.385	0.460	0.538	0.697				
	<i>N</i>	1,398,000	1,374,000	1,374,000	740,000	310,000				
Panel B: Children of immigrants										
Canada	Coef.	-.019	-.010	-.010	-.025	-.017	.89	-1.9%	-1.7%	.89
	Std. Err.	(.002)	(.002)	(.001)	(.002)	(.002)				
	Upper 95% CI	-.016	-.007	-.007	-.022	-.014				
	Lower 95% CI	-.022	-.013	-.013	-.028	-.020				
	<i>P</i> -value	.000	.000	.000	.000	.000				
	<i>t</i> -value	-11.36	-6.39	-6.71	-15.82	-10.59				
	<i>R</i> ²	0.198	0.299	0.391	0.429	0.566				
	<i>N</i>	2,771,043	2,771,043	2,771,043	2,088,907	1,429,648				
Denmark	Coef.	-.053	-.038	-.023	-.021	-.007	.14	-5.2%	-0.7%	.14
	Std. Err.	(.003)	(.003)	(.003)	(.003)	(.003)				
	Upper 95% CI	-.046	-.031	-.017	-.014	-.001				
	Lower 95% CI	-.059	-.044	-.029	-.027	-.014				
	<i>P</i> -value	.000	.000	.000	.000	.021				
	<i>t</i> -value	-15.91	-11.65	-7.28	-6.48	-2.31				
	<i>R</i> ²	0.200	0.268	0.345	0.382	0.492				
	<i>N</i>	1,755,962	1,755,756	1,755,352	1,364,717	951,079				
Germany	Coef.	-.081	-.053	-.035	-.040	-.015	.19	-7.7%	-1.5%	.20
	Std. Err.	(.007)	(.006)	(.005)	(.004)	(.004)				
	Upper 95% CI	-.068	-.042	-.024	-.031	-.008				
	Lower 95% CI	-.094	-.064	-.045	-.048	-.022				
	<i>P</i> -value	.000	.000	.000	.000	.000				
	<i>t</i> -value	-12.24	-9.50	-6.54	-9.23	-4.26				
	<i>R</i> ²	0.318	0.453	0.545	0.586	0.703				
	<i>N</i>	1,089,303	1,089,210	1,088,753	1,058,703	863,810				
Netherlands	Coef.	-.056	-.048	-.042	-.037	.007	.00	-5.5%	0.7%	.00
	Std. Err.	(.014)	(.013)	(.012)	(.018)	(.046)				
	Upper 95% CI	-.030	-.023	-.019	-.002	.098				
	Lower 95% CI	-.083	-.072	-.065	-.072	-.084				
	<i>P</i> -value	.000	.000	.000	.037	.885				
	<i>t</i> -value	-4.15	-3.82	-3.56	-2.08	0.14				
	<i>R</i> ²	0.385	0.475	0.555	0.599	0.748				
	<i>N</i>	56,829	56,601	56,724	23,369	9,296				
Norway	Coef.	-.091	-.058	-.045	-.033	-.010	.11	-8.7%	-1.0%	.11
	Std. Err.	(.004)	(.003)	(.003)	(.003)	(.003)				
	Upper 95% CI	-.084	-.051	-.039	-.027	-.003				
	Lower 95% CI	-.098	-.065	-.052	-.040	-.016				
	<i>P</i> -value	.000	.000	.000	.000	.003				
	<i>t</i> -value	-24.94	-16.75	-14.29	-9.94	-2.98				
	<i>R</i> ²	0.223	0.294	0.361	0.438	0.537				

	<i>N</i>	1,866,155	1,866,114	1,866,105	1,466,515	1,008,304				
Sweden	Coef.	-.054	-.043	-.023	-.025	-.008	.15	-5.3%	-0.8%	.15
	Std. Err.	(.001)	(.001)	(.001)	(.001)	(.001)				
	Upper 95% CI	-.052	-.041	-.020	-.022	-.006				
	Lower 95% CI	-.057	-.046	-.025	-.028	-.010				
	<i>P</i> -value	.000	.000	.000	.000	.000				
	<i>t</i> -value	-39.12	-32.47	-18.71	-19.52	-6.70				
	<i>R</i> ²	0.233	0.298	0.425	0.439	0.572				
	<i>N</i>	3,340,002	3,332,251	3,076,527	2,209,883	1,307,820				

Note: Each estimate represents the coefficients from an Ordinary Least Squares (OLS) regression model for each country estimating the difference between the logged annual earnings of immigrants and natives (panel A) and children of immigrants and natives (panel B), ages 25–60 years, for all world regions combined, with negative coefficients indicating that immigrants earn less than natives. Following standard conventions, we interpret these coefficients as the relative difference between the average (children of) immigrant and native earnings, but more formally they indicate the difference in relative geometric means for unlogged earnings (which is the absolute difference in the arithmetic means of logged earnings). The 'basic adjustment' column reports differences from a model that controls for age and age squared, education, gender, and geographic region. Subsequent models provide estimates of within-industry, within-occupation, within-establishment, and within-job (occupation–establishment units) (children of) immigrant–native differences by introducing fixed effects for industry, occupation, establishment, and occupation–establishment units. The estimates in the parentheses report the averaged standard errors of each coefficient obtained from the meta-analysis, with the corresponding lower and upper bounds of the 95% confidence intervals. The *t*-statistics, and corresponding *P*-values, refer to two-sided *t*-tests for the coefficients of the (children of) immigrant–native difference in log annual earnings. Column 5 reports the proportion of the (children of) immigrant–native difference from column 1 (with only basic adjustments) that remains when we compare (children of) immigrants and natives who are working in the same occupations and establishments using the log point estimate. In this column, the number .00 refers to cases where (children of) immigrants do not earn less than natives at the within-job level, the number 1.00 refers to cases where the within-job earnings disadvantage of (children of) immigrants relative to natives is larger than in the 'basic adjustments' model, and dashed lines (–) is used in cases where (children of) immigrants do not earn less than natives in the 'basic adjustments' model. Columns 7 and 8 report the (children of) immigrant–native difference from column 1 (with only basic adjustments) and column 5 (within-job comparison) as percentage gaps using the standard equation for exponentiation of the logged coefficients. Column 9 the proportion of the (children of) immigrant–native difference from column 1 (with only basic adjustments) that remains when we compare (children of) immigrants and natives who are working in the same occupations and establishments using the percentage gaps. In this column, the number .00 refers to cases where (children of) immigrants do not earn less than natives at the within-job level, the number 1.00 refers to cases where the within-job earnings disadvantage of (children of) immigrants relative to natives is larger than in the 'basic adjustments' model, and dashed lines (–) is used in cases where (children of) immigrants do not earn less than natives in the 'basic adjustments' model.

Supplementary Table 4. Random-effects meta-analysis of immigrant–native differences in earnings by region of origin from main analysis reported in Fig. 2a.

		Regression coefficients for log annual earnings					Logged coefficients as percentage gaps			
		Basic adj.	Fixed effect for:			Proportion within job	Basic adj.	Occ-Est	Proportion within job	
			Ind	Occ	Est					Occ-Est
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Panel A: Immigrants										
Sub-Saharan Africa	Coef.	-.302	-.201	-.130	-.155	-.086	.28	-26.1%	-8.2%	.32
	Std. Err.	(.040)	(.028)	(.024)	(.022)	(.015)				
	Upper 95% CI	-.222	-.145	-.082	-.109	-.055				
	Lower 95% CI	-.382	-.258	-.177	-.200	-.117				
	P-value	.000	.000	.000	.000	.000				
	t-value	-7.638	-7.217	-5.473	-6.910	-5.662				
Middle East and North Africa	Coef.	-.270	-.186	-.139	-.124	-.079	.29	-23.7%	-7.6%	.32
	Std. Err.	(.039)	(.028)	(.023)	(.022)	(.015)				
	Upper 95% CI	-.191	-.130	-.092	-.079	-.049				
	Lower 95% CI	-.350	-.242	-.187	-.168	-.108				
	P-value	.000	.000	.000	.000	.000				
	t-value	-6.859	-6.719	-5.935	-5.595	-5.297				
Asia	Coef.	-.225	-.165	-.110	-.110	-.048	.22	-20.1%	-4.7%	.23
	Std. Err.	(.040)	(.028)	(.024)	(.022)	(.015)				
	Upper 95% CI	-.145	-.109	-.062	-.064	-.018				
	Lower 95% CI	-.305	-.222	-.157	-.155	-.079				
	P-value	.000	.000	.000	.000	.003				
	t-value	-5.684	-5.937	-4.643	-4.886	-3.183				
Latin America	Coef.	-.205	-.149	-.099	-.115	-.066	.32	-18.5%	-6.4%	.34
	Std. Err.	(.039)	(.028)	(.024)	(.022)	(.015)				
	Upper 95% CI	-.125	-.093	-.051	-.070	-.036				
	Lower 95% CI	-.284	-.205	-.146	-.160	-.096				
	P-value	.000	.000	.000	.000	.000				
	t-value	-5.186	-5.370	-4.208	-5.188	-4.438				
Europe, North America, and other Western	Coef.	-.094	-.061	-.037	-.041	-.017	.18	-9.0%	-1.7%	.19
	Std. Err.	(.039)	(.028)	(.023)	(.022)	(.015)				
	Upper 95% CI	-.014	-.005	.010	.004	.012				
	Lower 95% CI	-.174	-.117	-.085	-.085	-.047				
	P-value	.022	.033	.121	.073	.246				
	t-value	-2.385	-2.214	-1.584	-1.841	-1.178				
	I ²	99.89	99.81	99.76	99.67	99.24				
	tau ²	0.0140	0.0069	0.0049	0.0044	0.0020				
	Cochrane Q	39881.43	25771.91	19270.25	15577.08	6082.233				
	P-value of Q	.000	.000	.000	.000	.000				
	N (country)	45	45	45	45	45				
Panel B: Children of immigrants										
Sub-Saharan Africa	Coef.	-.126	-.091	-.078	-.068	-.036	.28	-11.8%	-3.5%	.30
	Std. Err.	(.020)	(.016)	(.013)	(.015)	(.010)				
	Upper 95% CI	-.086	-.058	-.052	-.036	-.015				
	Lower 95% CI	-.166	-.125	-.104	-.099	-.057				
	P-value	.000	.000	.000	.000	.000				
	t-value	-6.424	-5.621	-6.067	-4.696	-3.921				
Middle East and North Africa	Coef.	-.081	-.053	-.044	-.037	-.013	.16	-7.8%	-1.3%	.17
	Std. Err.	(.017)	(.014)	(.011)	(.013)	(.009)				
	Upper 95% CI	-.046	-.024	-.022	-.009	.005				
	Lower 95% CI	-.117	-.083	-.067	-.064	-.031				
	P-value	.000	.001	.001	.010	.074				
	t-value	-4.543	-3.639	-3.973	-2.793	-1.863				
Asia	Coef.	-.063	-.056	-.047	-.049	-.032	.50	-6.1%	-3.1%	.51
	Std. Err.	(.017)	(.014)	(.011)	(.014)	(.009)				
	Upper 95% CI	-.027	-.027	-.025	-.021	-.013				
	Lower 95% CI	-.098	-.086	-.070	-.078	-.050				
	P-value	.002	.001	.000	.002	.001				

	<i>t</i> -value	-3.522	-3.789	-4.115	-3.518	-3.648				
Latin America	Coef.	-.109	-.082	-.060	-.064	-.033	.30	-10.3%	-3.2%	.31
	Std. Err.	(.018)	(.015)	(.012)	(.015)	(.010)				
	Upper 95% CI	-.072	-.050	-.035	-.034	-.013				
	Lower 95% CI	-.147	-.113	-.084	-.094	-.053				
	<i>P</i> -value	.000	.000	.000	.001	.004				
	<i>t</i> -value	-5.406	-4.711	-4.373	-3.937	-3.168				
Europe, North America, and other Western	Coef.	-.026	-.017	-.012	-.015	-.006	.24	-2.6%	-0.6%	.24
	Std. Err.	(.017)	(.014)	(.011)	(.013)	(.008)				
	Upper 95% CI	.010	.012	.011	.012	.011				
	Lower 95% CI	-.062	-.047	-.034	-.043	-.024				
	<i>P</i> -value	.164	.250	.283	.262	.385				
	<i>t</i> -value	-1.433	-1.179	-1.098	-1.148	-.885				
	<i>R</i> ²	.97.89	.97.33	.95.91	.97.11	.93.41				
	<i>tau</i> ²	.0017	.0012	.0007	.0011	.0004				
	Cochrane <i>Q</i>	988.59	989.25	625.98	749.12	241.87				
	<i>P</i> -value of <i>Q</i>	.000	.000	.000	.000	.000				
	<i>N</i> (country)	30	30	30	30	30				

Note: Estimates obtained from a random-effects meta-analysis of the pooled set of country-specific estimates by world region of origin from Ordinary Least Squares (OLS) regression models found in tables with the full estimates from each country (Canada: Supplementary Table 42; Denmark: Supplementary Table 43; France: Supplementary Table 44; Germany: Supplementary Table 46; Netherlands: Supplementary Table 47; Norway: Supplementary Table 49; Spain: Supplementary Table 50; Sweden: Supplementary Table 51; United States: Supplementary Table 52). Each estimate from the meta-analysis represents the coefficient of the averaged difference between the logged annual earnings of immigrants and natives (panel A) and children of immigrants and natives (panel B) separately world region of origin, ages 25–60 years, across all countries. Following standard conventions, we interpret these coefficients as the relative difference between the average (children of) immigrant and native earnings, but more formally they indicate the difference in relative geometric means for unlogged earnings (which is the absolute difference in the arithmetic means of logged earnings). The 'basic adjustment' column reports the averaged differences from a model that controls for age and age squared, education, gender, and geographic region. Subsequent models provide averaged estimates of within-industry, within-occupation, within-establishment, and within-job (occupation–establishment units) (children of) immigrant–native differences by introducing fixed effects for industry, occupation, establishment, and occupation–establishment units. The estimates in the parentheses report the averaged standard errors of each coefficient obtained from the meta-analysis, with the corresponding lower and upper bounds of the 95% confidence intervals. The *t*-statistics, and corresponding *P*-values, refer to two-sided *t*-tests for the coefficients of the (children of) immigrant–native difference in log annual earnings. Column 5 reports the proportion of the (children of) immigrant–native difference from column 1 (with only basic adjustments) that remains when we compare (children of) immigrants and natives who are working in the same occupations and establishments using the log point estimate. In this column, the number .00 refers to cases where (children of) immigrants do not earn less than natives at the within-job level, the number 1.00 refers to cases where the within-job earnings disadvantage of (children of) immigrants relative to natives is larger than in the 'basic adjustments' model, and dashed lines (–) is used in cases where (children of) immigrants do not earn less than natives in the 'basic adjustments' model. Columns 7 and 8 report the (children of) immigrant–native difference from column 1 (with only basic adjustments) and column 5 (within-job comparison) as percentage gaps using the standard equation for exponentiation of the logged coefficients. Column 9 the proportion of the (children of) immigrant–native difference from column 1 (with only basic adjustments) that remains when we compare (children of) immigrants and natives who are working in the same occupations and establishments using the percentage gaps. In this column, the number .00 refers to cases where (children of) immigrants do not earn less than natives at the within-job level, the number 1.00 refers to cases where the within-job earnings disadvantage of (children of) immigrants relative to natives is larger than in the 'basic adjustments' model, and dashed lines (–) is used in cases where (children of) immigrants do not earn less than natives in the 'basic adjustments' model.

Supplementary Table 5. Within-job immigrant–native differences in annual earnings by region of origin and destination country from main analysis reported in Fig. 2b.

		Fixed effect for Occ-Est				
		Asia	Latin America	Middle East and North Africa	Sub-Saharan Africa	Europe, North America, and other Western
		(1)	(2)	(3)	(4)	(5)
Panel A: Immigrants						
Canada	Coef.	-.107	-.098	-.207	-.160	-.036
	Std. Err.	(.002)	(.003)	(.003)	(.004)	(.002)
	t-value	-58.42	-38.4	-63.94	-44.50	-18.42
	R ²	0.568	0.568	0.568	0.568	0.568
	N	1,429,648	1,429,648	1,429,648	1,429,648	1,429,648
Denmark	Coef.	-.024	-.084	-.055	-.058	-.008
	Std. Err.	(.003)	(.007)	(.003)	(.004)	(.002)
	t-value	-8.53	-12.54	-18.57	-13.22	-5.11
	R ²	0.492	0.492	0.492	0.492	0.492
	N	951,079	951,079	951,079	951,079	951,079
France	Coef.	-.055	-.075	-.067	-.107	-.040
	Std. Err.	(.017)	(.016)	(.007)	(.009)	(.008)
	t-value	-3.20	-4.59	-9.87	-11.44	-4.78
	R ²	0.748	0.748	0.748	0.748	0.748
	N	130,983	130,983	130,983	130,983	130,983
Germany	Coef.	-.083	-.084	-.045	-.113	-.051
	Std. Err.	(.013)	(.009)	(.004)	(.011)	(.004)
	t-value	-6.59	-9.26	-10.80	-10.44	-13.31
	R ²	0.703	0.703	0.703	0.703	0.703
	N	863,810	863,810	863,810	863,810	863,810
Netherlands	Coef.	-.047	-.001	-.112	-.083	-.043
	Std. Err.	(.043)	(.027)	(.030)	(.053)	(.031)
	t-value	-1.09	-0.048	-3.724	-1.58	-1.36
	R ²	0.748	0.748	0.748	0.748	0.748
	N	9,296	9,296	9,296	9,296	9,296
Norway	Coef.	-.035	-.084	-.057	-.079	-.021
	Std. Err.	(.002)	(.004)	(.002)	(.003)	(.001)
	t-value	-17.35	-20.16	-24.46	-23.43	-19.81
	R ²	0.627	0.627	0.627	0.627	0.627
	N	1,008,304	1,008,304	1,008,304	1,008,304	1,008,304
Spain	Coef.	-.052	-.100	-.084	-.108	-.024
	Std. Err.	(.023)	(.005)	(.013)	(.016)	(.006)
	t-value	-2.23	-18.36	-6.60	-6.56	-3.855
	R ²	0.649	0.649	0.649	0.649	0.649
	N	136,264	136,264	136,264	136,264	136,264
Sweden	Coef.	.014	-.009	.020	.007	.017
	Std. Err.	(.006)	(.004)	(.002)	(.007)	(.002)
	t-value	2.43	-2.09	8.22	1.02	10.86
	R ²	0.555	0.555	0.555	0.555	0.555
	N	1,307,820	1,307,820	1,307,820	1,307,820	1,307,820
United States	Coef.	-.057	-.034	-.088	-.029	.015
	Std. Err.	(.005)	(.005)	(.012)	(.012)	(.006)
	t-value	-12.36	-7.05	-7.22	-7.22	-2.52
	R ²	0.698	0.698	0.698	0.698	0.698
	N	310,000	310,000	310,000	310,000	310,000
Panel B: Children of immigrants						
Canada	Coef.	-.033	-.072	-.062	-.047	-.001
	Std. Err.	(.003)	(.005)	(.009)	(.009)	(.002)
	t-value	-9.629	-15.537	-6.833	-5.164	-0.503
	R ²	0.568	0.568	0.568	0.568	0.568
	N	1,429,648	1,429,648	1,429,648	1,429,648	1,429,648
Denmark	Coef.	-.043	-.049	-.027	-.044	.009
	Std. Err.	(.010)	(.033)	(.006)	(.026)	(.004)

	<i>t</i> -value	-4.34	-1.47	-4.33	-1.68	2.29
	<i>R</i> ²	0.492	0.492	0.492	0.492	0.492
	<i>N</i>	951,079	951,079	951,079	951,079	951,079
Germany	Coef.	-.042	-.007	-.021	-.004	-.016
	Std. Err.	(.013)	(.007)	(.013)	(.014)	(.005)
	<i>t</i> -value	-3.21	-0.96	-1.64	-0.31	-3.41
	<i>R</i> ²	0.703	0.703	0.703	0.703	0.703
	<i>N</i>	863,810	863,810	863,810	863,810	863,810
Netherlands	Coef.	.010	.008	.023	-.027	-.059
	Std. Err.	(.161)	(.034)	(.031)	(.070)	(.069)
	<i>t</i> -value	0.06	0.25	0.74	-0.39	-0.86
	<i>R</i> ²	0.748	0.748	0.748	0.748	0.748
	<i>N</i>	9,296	9,296	9,296	9,296	9,296
Norway	Coef.	-.019	-.038	-.001	-.032	-.012
	Std. Err.	(.006)	(.017)	(.005)	(.017)	(.006)
	<i>t</i> -value	-3.14	-2.24	-0.12	-1.84	-1.92
	<i>R</i> ²	0.627	0.627	0.627	0.627	0.627
	<i>N</i>	1,008,304	1,008,304	1,008,304	1,008,304	1,008,304
Sweden	Coef.	-.025	-.021	.024	-.050	-.007
	Std. Err.	(.007)	(.007)	(.003)	(.010)	(.001)
	<i>t</i> -value	-3.67	-3.19	7.64	-4.83	-5.38
	<i>R</i> ²	0.555	0.555	0.555	0.555	0.555
	<i>N</i>	1,565,029	1,565,029	1,565,029	1,565,029	1,565,029

Note: Each estimate represents the coefficients from an Ordinary Least Squares (OLS) regression model for each country estimating the within-job difference between the logged annual earnings of immigrants and natives (panel A) and children of immigrants and natives (panel B), ages 25–60 years, by world region of origin, with negative coefficients indicating that immigrants earn less than natives. Following standard conventions, we interpret these coefficients as the relative difference between the average (children of) immigrant and native earnings, but more formally they indicate the difference in relative geometric means for unlogged earnings (which is the absolute difference in the arithmetic means of logged earnings). The coefficients report within-job (occupation–establishment units) (children of) immigrant–native differences by introducing fixed effects for occupation–establishment units and controls for age and age squared, education, gender, and geographic region. The estimates in the parentheses report the standard errors of each coefficient. The final column reports the proportion of the (children of) immigrant–native difference from the first column (with only basic adjustments) that remains when we compare (children of) immigrants and natives who are working in the same occupations and establishments. In this column, the number .00 refers to cases where (children of) immigrants do not earn less than natives at the within-job level, the number 1.00 refers to cases where the within-job earnings disadvantage of (children of) immigrants relative to natives is larger than in the 'basic adjustments' model, and dashed lines (–) is used in cases where (children of) immigrants do not earn less than natives in the 'basic adjustments' model.

Supplementary Table 6. Random-effects meta-analysis of immigrant–native differences in annual earnings restricted to destination countries with information on both immigrants and children of immigrants.

		Fixed effect for:					Proportion within job
		Basic adj.	Ind	Occ	Est	Occ-Est	
		(1)	(2)	(3)	(4)	(5)	(6)
Immigrants	Coef.	-.184	-.132	-.079	-.096	-.042	.23
	Std. Err.	(.038)	(.029)	(.023)	(.025)	(.015)	
	<i>t</i> -value	-4.884	-4.526	-3.490	-3.879	-2.733	
	<i>I</i> ² (%)	99.97	99.96	99.94	99.94	99.84	
	<i>tau</i> ²	.009	.005	.003	.004	.001	
	Cochrane <i>Q</i>	24510.36	16340.21	11222.13	10963.17	3975.40	
	<i>P</i> -value of <i>Q</i>	.000	.000	.000	.000	.000	
	<i>N</i> (country)	6	6	6	6	6	
Children of immigrants	Coef.	-.059	-.041	-.028	-.028	-.011	.19
	Std. Err.	(.010)	(.007)	(.006)	(.003)	(.002)	
	<i>t</i> -value	-5.650	-5.747	-5.138	-9.797	-6.217	
	<i>I</i> ² (%)	98.87	97.83	96.70	85.78	73.57	
	<i>tau</i> ²	.001	.000	.000	.000	.000	
	Cochrane <i>Q</i>	474.63	332.66	125.55	18.76	23.52	
	<i>P</i> -value of <i>Q</i>	.000	.000	.000	.002	.000	
	<i>N</i> (country)	6	6	6	6	6	

Note: Estimates obtained from a random-effects meta-analysis of the pooled set of country-specific estimates from Ordinary Least Squares (OLS) regression models for countries with information on both immigrants and children of immigrants in Supplementary Table 3 (Canada, Denmark, Germany, Netherlands, Norway, and Sweden). Each estimate from the meta-analysis represents the coefficient of the averaged difference between the logged annual earnings of immigrants and natives (panel A) and children of immigrants and natives (panel B), ages 25–60 years, across all countries. Following standard conventions, we interpret these coefficients as the relative difference between the average (children of) immigrant and native earnings, but more formally they indicate the difference in relative geometric means for unlogged earnings (which is the absolute difference in the arithmetic means of logged earnings). The 'basic adjustment' column reports the averaged differences from a model that controls for age and age squared, education, gender, and geographic region. Subsequent models provide averaged estimates of within-industry, within-occupation, within-establishment, and within-job (occupation–establishment units) (children of) immigrant–native differences by introducing fixed effects for industry, occupation, establishment, and occupation–establishment units. The estimates in the parentheses report the averaged standard errors of each coefficient obtained from the meta-analysis. The final column reports the proportion of the (children of) immigrant–native difference from the first column (with only basic adjustments) that remains when we compare (children of) immigrants and natives who are working in the same occupations and establishments. In this column, the number .00 refers to cases where (children of) immigrants do not earn less than natives at the within-job level, the number 1.00 refers to cases where the within-job earnings disadvantage of (children of) immigrants relative to natives is larger than in the 'basic adjustments' model, and dashed lines (–) is used in cases where (children of) immigrants do not earn less than natives in the 'basic adjustments' model.

Supplementary Table 7. Random-effects meta-analysis of immigrant–native differences in annual earnings by region of origin, restricted to destination countries with information on both immigrants and children of immigrants.

		Fixed effect for:					Proportion within job
		Basic adj.	Ind	Occ	Est	Occ-Est	
		(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Immigrants							
Sub-Saharan Africa	Coef.	-.287	-.199	-.124	-.159	-.081	.28
	Std. Err.	(.047)	(.038)	(.030)	(.033)	(.022)	
	t-value	-6.122	-5.204	-4.109	-4.820	-3.687	
Middle East and North Africa	Coef.	-.249	-.178	-.126	-.130	-.074	.30
	Std. Err.	(.047)	(.038)	(.030)	(.033)	(.021)	
	t-value	-5.345	-4.688	-4.204	-3.982	-3.498	
Asia	Coef.	-.218	-.157	-.094	-.124	-.047	.21
	Std. Err.	(.047)	(.038)	(.030)	(.033)	(.022)	
	t-value	-4.656	-4.093	-3.106	-3.750	-2.159	
Latin America	Coef.	-.181	-.137	-.087	-.117	-.062	.34
	Std. Err.	(.047)	(.038)	(.030)	(.033)	(.021)	
	t-value	-3.880	-3.601	-2.911	-3.564	-2.918	
Europe, North America, and other Western	Coef.	-.105	-.075	-.043	-.056	-.023	.22
	Std. Err.	(.047)	(.038)	(.030)	(.033)	(.021)	
	t-value	-2.261	-1.960	-1.436	-1.705	-1.071	
I^2 (%)		99.92	99.89	99.85	99.85	99.67	
τ^2		.0131	.0087	.0054	.0064	.0027	
Cochrane Q		37,819.29	26,787.04	18,617.85	16,192.54	5,908.65	
P-value of Q		.000	.000	.000	.000	.000	
N (country)		30	30	30	30	30	
Panel B: Children of immigrants							
Sub-Saharan Africa	Coef.	-.126	-.091	-.078	-.068	-.036	.28
	Std. Err.	(.020)	(.016)	(.013)	(.015)	(.010)	
	t-value	-6.450	-5.621	-6.151	-4.477	-3.483	
Middle East and North Africa	Coef.	-.081	-.053	-.044	-.037	-.013	.16
	Std. Err.	(.017)	(.014)	(.011)	(.013)	(.009)	
	t-value	-4.706	-3.723	-4.091	-2.739	-1.517	
Asia	Coef.	-.063	-.056	-.047	-.049	-.032	.50
	Std. Err.	(.017)	(.014)	(.011)	(.014)	(.009)	
	t-value	-3.599	-3.921	-4.345	-3.595	-3.498	
Latin America	Coef.	-.109	-.082	-.060	-.064	-.033	.30
	Std. Err.	(.018)	(.015)	(.012)	(.015)	(.010)	
	t-value	-6.004	-5.367	-5.095	-4.431	-3.452	
Europe, North America, and other Western	Coef.	-.026	-.017	-.012	-.015	-.006	.24
	Std. Err.	(.017)	(.014)	(.011)	(.013)	(.008)	
	t-value	-1.488	-1.195	-1.084	-1.133	-.729	
I^2 (%)		97.89	97.33	95.91	97.11	93.41	
τ^2		.0017	.0012	.0007	.0011	.0004	
Cochrane Q		988.59	989.25	625.98	749.12	241.87	
P-value of Q		.000	.000	.000	.000	.000	
N (country)		30	30	30	30	30	

Note: Estimates obtained from a random-effects meta-analysis of the pooled set of country-specific estimates by world region of origin from Ordinary Least Squares (OLS) regression models for countries with information on both immigrants and children of immigrants (Canada: Supplementary Table 42; Denmark: Supplementary Table 43; Germany: Supplementary Table 46; Netherlands: Supplementary Table 47; Norway: Supplementary Table 49; Sweden: Supplementary Table 51). Each estimate from the meta-analysis represents the coefficient of the averaged difference between the logged annual earnings of immigrants and natives (panel A) and children of immigrants and natives (panel B) separately world region of origin, ages 25–60 years, across all countries. Following standard conventions, we interpret these coefficients as the relative difference between the average (children of) immigrant and native earnings, but more formally they indicate the difference in relative geometric means for unlogged earnings (which is the absolute difference in the arithmetic means of logged earnings). The 'basic adjustment' column reports the averaged differences from a model that controls for age and age squared, education, gender, and geographic region. Subsequent models provide averaged estimates of within-industry, within-occupation, within-establishment, and within-job (occupation–establishment units) (children of) immigrant–native differences by introducing fixed effects for industry, occupation, establishment, and occupation–establishment units. The estimates in the parentheses report the averaged standard errors of each coefficient obtained from the meta-analysis. The final column reports the proportion of the (children of) immigrant–native difference from the first column (with only basic adjustments) that remains when we compare (children of) immigrants and natives who are working in the same occupations and establishments. In this column, the number .00 refers to cases where (children of) immigrants do not earn less than natives at the within-job level, the number 1.00 refers to cases where the within-job earnings disadvantage of (children of) immigrants relative to natives is larger than in the 'basic adjustments' model, and dashed lines (–) is used in cases where (children of) immigrants do not earn less than natives in the 'basic adjustments' model.

Supplementary Table 8. Fixed-effects meta-analysis of immigrant–native differences in annual earnings.

		Fixed effect for:					Proportion within job
		Basic adj.	Ind	Occ	Est	Occ-Est	
		(1)	(2)	(3)	(4)	(5)	(6)
Immigrants	Coef.	-.202	-.147	-.088	-.102	-.038	.19
	Std. Err.	(.001)	(.001)	(.000)	(.001)	(.001)	
	t-value	-369.396	-278.837	-177.067	-184.389	-68.473	
	N (country)	9	9	9	9	9	
Children of immigrants	Coef.	-.046	-.033	-.021	-.026	-.011	.24
	Std. Err.	(.001)	(.001)	(.001)	(.001)	(.001)	
	t-value	-47.193	-35.826	-24.130	-29.034	-12.875	
	N (country)	6	6	6	6	6	

Note: Estimates obtained from a fixed-effects meta-analysis of the pooled set of country-specific estimates from Ordinary Least Squares (OLS) regression models found in Supplementary Table 3. Each estimate from the meta-analysis represents the coefficient of the averaged difference between the logged annual earnings of immigrants and natives (panel A) and children of immigrants and natives (panel B), ages 25–60 years, across all countries. Following standard conventions, we interpret these coefficients as the relative difference between the average (children of) immigrant and native earnings, but more formally they indicate the difference in relative geometric means for unlogged earnings (which is the absolute difference in the arithmetic means of logged earnings). The 'basic adjustment' column reports the averaged differences from a model that controls for age and age squared, education, gender, and geographic region. Subsequent models provide averaged estimates of within-industry, within-occupation, within-establishment, and within-job (occupation–establishment units) (children of) immigrant–native differences by introducing fixed effects for industry, occupation, establishment, and occupation–establishment units. The estimates in the parentheses report the averaged standard errors of each coefficient obtained from the meta-analysis. The final column reports the proportion of the (children of) immigrant–native difference from the first column (with only basic adjustments) that remains when we compare (children of) immigrants and natives who are working in the same occupations and establishments. In this column, the number .00 refers to cases where (children of) immigrants do not earn less than natives at the within-job level, the number 1.00 refers to cases where the within-job earnings disadvantage of (children of) immigrants relative to natives is larger than in the 'basic adjustments' model, and dashed lines (–) is used in cases where (children of) immigrants do not earn less than natives in the 'basic adjustments' model.

Supplementary Table 9. Fixed-effects meta-analysis of immigrant–native differences in annual earnings by region of origin.

		Fixed effect for:					Proportion within job (6)
		Basic adj.	Ind	Occ	Est	Occ-Est	
		(1)	(2)	(3)	(4)	(5)	
Panel A: Immigrants							
Sub-Saharan Africa	Coef.	-.320	-.229	-.149	-.187	-.093	.29
	Std. Err.	(.002)	(.002)	(.002)	(.002)	(.002)	
	t-value	-170.648	-130.225	-89.603	-98.329	-48.343	
Middle East and North Africa	Coef.	-.255	-.181	-.129	-.122	-.059	.23
	Std. Err.	(.001)	(.001)	(.001)	(.001)	(.001)	
	t-value	-207.025	-154.919	-117.203	-96.700	-47.567	
Asia	Coef.	-.296	-.223	-.137	-.166	-.061	.21
	Std. Err.	(.001)	(.001)	(.001)	(.001)	(.001)	
	t-value	-271.517	-215.440	-138.288	-150.986	-53.485	
Latin America	Coef.	-.241	-.184	-.120	-.148	-.075	.31
	Std. Err.	(.002)	(.001)	(.001)	(.002)	(.002)	
	t-value	-152.053	-123.452	-85.330	-95.582	-46.095	
Europe, North America, and other Western	Coef.	-.112	-.081	-.042	-.054	-.014	.12
	Std. Err.	(.001)	(.001)	(.001)	(.001)	(.001)	
	t-value	-152.398	-115.016	-64.194	-75.985	-19.744	
N (country)		45	45	45	45	45	
Panel B: Children of immigrants							
Sub-Saharan Africa	Coef.	-.110	-.083	-.075	-.064	-.039	.36
	Std. Err.	(.006)	(.006)	(.006)	(.006)	(.006)	
	t-value	-17.28	-13.84	-13.35	-11.14	-6.94	
Middle East and North Africa	Coef.	-.039	-.015	-.016	.000	.005	.00
	Std. Err.	(.002)	(.002)	(.002)	(.002)	(.002)	
	t-value	-15.99	-6.11	-6.97	0.02	1.98	
Asia	Coef.	-.056	-.054	-.048	-.054	-.030	.54
	Std. Err.	(.003)	(.003)	(.002)	(.003)	(.003)	
	t-value	-20.46	-20.84	-19.70	-20.99	-11.76	
Latin America	Coef.	-.133	-.111	-.080	-.094	-.044	.33
	Std. Err.	(.004)	(.003)	(.003)	(.003)	(.003)	
	t-value	-36.23	-31.85	-24.46	-28.08	-13.52	
Europe, North America, and other Western	Coef.	.002	.002	.001	-.006	-.005	-
	Std. Err.	(.001)	(.001)	(.001)	(.001)	(.001)	
	t-value	1.75	1.64	0.63	-5.89	-4.88	
N (country)		30	30	30	30	30	

Note: Estimates obtained from a fixed-effects meta-analysis of the pooled set of country-specific estimates by world region of origin from Ordinary Least Squares (OLS) regression models found in tables with the full estimates from each country (Canada: Supplementary Table 42; Denmark: Supplementary Table 43; France: Supplementary Table 44; Germany: Supplementary Table 46; Netherlands: Supplementary Table 47; Norway: Supplementary Table 49; Spain: Supplementary Table 50; Sweden: Supplementary Table 51; United States: Supplementary Table 52). Each estimate from the meta-analysis represents the coefficient of the averaged difference between the logged annual earnings of immigrants and natives (panel A) and children of immigrants and natives (panel B) separately world region of origin, ages 25–60 years, across all countries. Following standard conventions, we interpret these coefficients as the relative difference between the average (children of) immigrant and native earnings, but more formally they indicate the difference in relative geometric means for unlogged earnings (which is the absolute difference in the arithmetic means of logged earnings). The 'basic adjustment' column reports the averaged differences from a model that controls for age and age squared, education, gender, and geographic region. Subsequent models provide averaged estimates of within-industry, within-occupation, within-establishment, and within-job (occupation–establishment units) (children of) immigrant–native differences by introducing fixed effects for industry, occupation, establishment, and occupation–establishment units. The estimates in the parentheses report the averaged standard errors of each coefficient obtained from the meta-analysis. The final column reports the proportion of the (children of) immigrant–native difference from the first column (with only basic adjustments) that remains when we compare (children of) immigrants and natives who are working in the same occupations and establishments. In this column, the number .00 refers to cases where (children of) immigrants do not earn less than natives at the within-job level, the number 1.00 refers to cases where the within-job earnings disadvantage of (children of) immigrants relative to natives is larger than in the 'basic adjustments' model, and dashed lines (–) is used in cases where (children of) immigrants do not earn less than natives in the 'basic adjustments' model.

Supplementary Table 10. Random-effects meta-analysis of immigrant–native differences in annual earnings separately for recent immigrants, established immigrants, and childhood immigrants.

		Fixed Effect for:					Proportion within Job
		Basic adj.	Ind	Occ	Est	Occ-Est	
		(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Recent adult immigrants	Coef.	-.280	-.214	-.150	-.161	-.103	.37
	Std. Err.	(.055)	(.041)	(.030)	(.037)	(.022)	
	t-value	-5.134	-5.209	-4.994	-4.292	-4.692	
	I^2 (%)	99.96	99.94	99.89	99.91	99.71	
	τ^2	0.0208	0.0118	0.0063	0.0098	0.0034	
	Cochrane Q	25,502.45	16,356.84	9,860.37	10,047.69	3,282.61	
	P-value of Q	0.0000	0.0000	0.0000	0.0000	0.0000	
	N (country)	7	7	7	7	7	
Panel B: Established adult immigrants	Coef.	-.193	-.139	-.079	-.099	-.037	.19
	Std. Err.	(.030)	(.023)	(.020)	(.017)	(.013)	
	t-value	-6.508	-6.138	-4.034	-5.842	-2.769	
	I^2 (%)	99.92	99.88	99.85	99.76	99.60	
	τ^2	0.0061	0.0036	0.0027	0.0020	0.0012	
	Cochrane Q	9,400.53	6,801.28	5,902.49	3,335.31	1,453.54	
	P-value of Q	0.0000	0.0000	0.0000	0.0000	0.0000	
	N (country)	7	7	7	7	7	
Panel C: Childhood immigrants	Coef.	-.074	-.051	-.029	-.036	-.012	.16
	Std. Err.	(.010)	(.007)	(.007)	(.008)	(.008)	
	t-value	-7.096	-7.716	-4.309	-4.413	-1.464	
	I^2 (%)	99.12	98.02	98.30	98.61	98.59	
	τ^2	0.0007	0.0003	0.0003	0.0004	0.0004	
	Cochrane Q	501.87	306.33	555.91	680.80	615.23	
	P-value of Q	0.0000	0.0000	0.0000	0.0000	0.0000	
	N (country)	7	7	7	7	7	

Note: Estimates obtained from a random-effects meta-analysis of the pooled set of country-specific estimates from Ordinary Least Squares (OLS) regression models found in Supplementary Table 12. Each estimate from the meta-analysis represents the coefficient of the averaged difference between the logged annual earnings of recent immigrants (less than 10 years since immigration) and natives (panel A), established immigrants (10 or more years since immigration) and natives (panel B), and childhood immigrants (17 years old or less at immigration) and natives (panel C), ages 25–60 years, across all countries. Following standard conventions, we interpret these coefficients as the relative difference between the average immigrant and native earnings, but more formally they indicate the difference in relative geometric means for unlogged earnings (which is the absolute difference in the arithmetic means of logged earnings). The ‘basic adjustment’ column reports the averaged differences from a model that controls for age and age squared, education, gender, and geographic region. Subsequent models provide averaged estimates of within-industry, within-occupation, within-establishment, and within-job (occupation–establishment units) immigrant–native differences by introducing fixed effects for industry, occupation, establishment, and occupation–establishment units. The estimates in the parentheses report the averaged standard errors of each coefficient obtained from the meta-analysis. The final column reports the proportion of the immigrant–native difference from the first column (with only basic adjustments) that remains when we compare immigrants and natives who are working in the same occupations and establishments. In this column, the number .00 refers to cases where immigrants do not earn less than natives at the within-job level, the number 1.00 refers to cases where the within-job earnings disadvantage of immigrants relative to natives is larger than in the ‘basic adjustments’ model, and dashed lines (–) is used in cases where immigrants do not earn less than natives in the ‘basic adjustments’ model.

Supplementary Table 11. Immigrant–native differences in earnings by region of origin separately for recent immigrants, established immigrants, and childhood immigrants.

		Fixed effect for:					
		Basic adj.	Ind	Occ	Est	Occ-Est	Proportion within job
		(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Recent adult immigrants							
Sub-Saharan Africa	Coef.	-.392	-.291	-.202	-.226	-.139	.36
	Std. Err.	(.060)	(.048)	(.037)	(.044)	(.029)	
	t-value	-6.560	-6.018	-5.421	-5.182	-4.834	
Middle East and North Africa	Coef.	-.400	-.309	-.243	-.238	-.171	.43
	Std. Err.	(.060)	(.048)	(.037)	(.043)	(.028)	
	t-value	-6.716	-6.424	-6.567	-5.483	-6.019	
Asia	Coef.	-.263	-.207	-.153	-.188	-.120	.46
	Std. Err.	(.060)	(.049)	(.038)	(.045)	(.030)	
	t-value	-4.374	-4.240	-4.067	-4.187	-4.016	
Latin America	Coef.	-.284	-.232	-.168	-.201	-.137	.48
	Std. Err.	(.060)	(.048)	(.037)	(.044)	(.029)	
	t-value	-4.737	-4.785	-4.491	-4.584	-4.727	
Europe, North America, and other Western	Coef.	-.160	-.121	-.083	-.093	-.063	.39
	Std. Err.	(.059)	(.048)	(.037)	(.043)	(.028)	
	t-value	-2.691	-2.515	-2.247	-2.153	-2.218	
	<i>I</i> ² (%)	99.83	99.77	99.66	99.69	99.22	
	<i>tau</i> ²	0.0248	0.0162	0.0095	0.0132	0.0056	
	Cochrane <i>Q</i>	22,930.29	15,150.05	9,270.39	9,051.16	2,836.35	
	<i>P</i> -value of <i>Q</i>	0.0000	0.0000	0.0000	0.0000	0.0000	
	<i>N</i> (country)	35	35	35	35	35	
Panel B: Established adult immigrants							
Sub-Saharan Africa	Coef.	-.261	-.172	-.096	-.134	-.058	.22
	Std. Err.	(.034)	(.027)	(.023)	(.023)	(.017)	
	t-value	-7.728	-6.441	-4.195	-5.922	-3.500	
Middle East and North Africa	Coef.	-.264	-.183	-.126	-.118	-.057	.21
	Std. Err.	(.034)	(.026)	(.023)	(.022)	(.016)	
	t-value	-7.862	-6.929	-5.578	-5.325	-3.464	
Asia	Coef.	-.215	-.161	-.090	-.120	-.035	.16
	Std. Err.	(.034)	(.027)	(.023)	(.023)	(.017)	
	t-value	-6.335	-6.033	-3.925	-5.270	-2.088	
Latin America	Coef.	-.195	-.141	-.078	-.126	-.055	.28
	Std. Err.	(.034)	(.027)	(.023)	(.022)	(.017)	
	t-value	-5.781	-5.286	-3.432	-5.613	-3.322	
Europe, North America, and other Western	Coef.	-.090	-.063	-.030	-.045	-.010	.11
	Std. Err.	(.033)	(.026)	(.023)	(.022)	(.016)	
	t-value	-2.690	-2.389	-1.325	-2.045	-.615	
	<i>I</i> ² (%)	99.70	99.57	99.49	99.36	98.80	
	<i>tau</i> ²	0.0078	0.0049	0.0036	0.0034	0.0018	
	Cochrane <i>Q</i>	10,632.23	7,881.37	7,611.72	4,097.23	2,100.11	
	<i>P</i> -value of <i>Q</i>	0.0000	0.0000	0.0000	0.0000	0.0000	
	<i>N</i> (country)	35	35	35	35	35	
Panel C: Childhood immigrants							
Sub-Saharan Africa	Coef.	-.137	-.088	-.056	-.057	-.027	.19
	Std. Err.	.020	.017	.015	.015	.013	
	t-value	-6.813	-5.252	-3.857	-3.675	-2.039	
Middle East and North Africa	Coef.	-.102	-.069	-.054	-.040	-.021	.21
	Std. Err.	.019	.016	.014	.014	.012	
	t-value	-5.314	-4.318	-3.949	-2.774	-1.786	
Asia	Coef.	-.075	-.060	-.038	-.046	-.014	.19
	Std. Err.	.020	.017	.014	.015	.012	
	t-value	-3.659	-3.602	-2.625	-3.036	-1.137	
Latin America	Coef.	-.107	-.073	-.043	-.061	-.028	.26
	Std. Err.	.020	.017	.014	.015	.012	
	t-value	-5.365	-4.436	-3.027	-4.006	-2.237	

Europe, North America, and other Western	Coef.	-.016	-.008	-.002	-.010	-.002	.13
	Std. Err.	.019	.016	.013	.014	.012	
	t-value	-.855	-.513	-.122	-.735	-.188	
	I^2 (%)	98.66	98.26	97.96	97.79	96.56	
	τ^2	0.0024	0.0017	0.0012	0.0014	0.0009	
	Cochrane Q	2,295.89	1,837.49	1,568.00	1,586.41	825.17	
	P-value of Q	0.0000	0.0000	1.3e-311	1.5e-315	0.0000	
	N (country)	35	35	35	35	35	

Note: Estimates obtained from a random-effects meta-analysis of the pooled set of country-specific estimates by world region of origin from Ordinary Least Squares (OLS) regression models. Each estimate from the meta-analysis represents the coefficient of the averaged difference between the logged annual earnings of recent immigrants (less than 10 years since immigration) and natives (panel A), established immigrants (10 or more years since immigration) and natives (panel B), and childhood immigrants (17 years old or less at immigration) and natives (panel C) separately world region of origin, ages 25–60 years, across all countries. Following standard conventions, we interpret these coefficients as the relative difference between the average immigrant and native earnings, but more formally they indicate the difference in relative geometric means for unlogged earnings (which is the absolute difference in the arithmetic means of logged earnings). The 'basic adjustment' column reports the averaged differences from a model that controls for age and age squared, education, gender, and geographic region. Subsequent models provide averaged estimates of within-industry, within-occupation, within-establishment, and within-job (occupation–establishment units) immigrant–native differences by introducing fixed effects for industry, occupation, establishment, and occupation–establishment units. The estimates in the parentheses report the averaged standard errors of each coefficient obtained from the meta-analysis. The final column reports the proportion of the immigrant–native difference from the first column (with only basic adjustments) that remains when we compare immigrants and natives who are working in the same occupations and establishments. In this column, the number .00 refers to cases where immigrants do not earn less than natives at the within-job level, the number 1.00 refers to cases where the within-job earnings disadvantage of immigrants relative to natives is larger than in the 'basic adjustments' model, and dashed lines (–) is used in cases where immigrants do not earn less than natives in the 'basic adjustments' model.

Supplementary Table 12. Immigrant–native differences in earnings separately for recent immigrants, established immigrants, and childhood immigrants by destination country.

		Fixed effect for:					
		Basic adj.	Ind	Occ	Est	Occ-Est	Proportion within Job
		(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Recent adult immigrants							
Canada	Coef.	-.552	-.429	-.306	-.356	-.214	.39
	Std. Err.	(.002)	(.002)	(.002)	(.002)	(.002)	
	t-value	-289.84	-235.40	-174.60	-176.30	-95.72	
	R ²	0.209	0.306	0.394	0.433	0.568	
	N	2,771,043	2,771,043	2,771,043	2,088,907	1,429,648	
Denmark	Coef.	-.086	-.075	-.048	-.059	-.044	.51
	Std. Err.	(.002)	(.002)	(.002)	(.002)	(.002)	
	t-value	-37.16	-34.05	-22.87	-25.46	-18.69	
	R ²	0.200	0.268	0.345	0.382	0.492	
	N	1,755,962	1,755,756	1,755,352	1,364,717	951,079	
France	Coef.	-.262	-.182	-.142	-.092	-.087	.33
	Std. Err.	(.006)	(.006)	(.005)	(.012)	(.013)	
	t-value	-42.23	-31.86	-26.88	-7.93	-6.55	
	R ²	.305	.414	.510	.659	.748	
	N	764,703	764,039	764,699	222,884	130,983	
Germany	Coef.	-.325	-.203	-.158	-.156	-.105	.32
	Std. Err.	(.007)	(.006)	(.006)	(.005)	(.005)	
	t-value	-49.80	-33.32	-28.12	-29.53	-21.88	
	R ²	0.321	0.454	0.546	0.586	0.704	
	N	1,089,303	1,089,210	1,088,753	1,058,703	863,810	
Norway	Coef.	-.312	-.242	-.149	-.187	-.085	.27
	Std. Err.	(.001)	(.001)	(.001)	(.001)	(.001)	
	t-value	-222.56	-174.77	-113.42	-128.88	-57.25	
	R ²	0.293	0.384	0.483	0.504	0.628	
	N	1,866,155	1,866,114	1,866,105	1,466,515	1,008,304	
Sweden	Coef.	-.199	-.158	-.096	-.093	-.050	.25
	Std. Err.	(.008)	(.008)	(.007)	(.008)	(.007)	
	t-value	-25.36	-20.66	-13.61	-11.99	-6.94	
	R ²	0.234	0.298	0.425	0.439	0.572	
	N	3,340,002	3,332,251	3,076,527	2,209,883	1,307,820	
United States	Coef.	-.221	-.208	-.151	-.181	-.135	.61
	Std. Err.	(.005)	(.005)	(.005)	(.005)	(.007)	
	t-value	-41.49	-42.21	-32.12	-32.94	-19.59	
	R ²	0.264	0.386	0.461	0.539	0.698	
	N	1,398,000	1,374,000	1,374,000	740,000	310,000	
Panel B: Established adult immigrants							
Canada	Coef.	-.320	-.245	-.169	-.182	-.084	.26
	Std. Err.	(.002)	(.002)	(.001)	(.002)	(.002)	
	t-value	-202.52	-163.43	-117.49	-114.63	-49.77	
	R ²	0.209	0.306	0.394	0.433	0.568	
	N	2,771,043	2,771,043	2,771,043	2,088,907	1,429,648	
Denmark	Coef.	-.108	-.071	-.021	-.061	-.017	.15
	Std. Err.	(.002)	(.002)	(.002)	(.002)	(.002)	
	t-value	-58.14	-40.16	-12.80	-35.22	-9.89	
	R ²	0.200	0.268	0.345	0.382	0.492	
	N	1,755,962	1,755,756	1,755,352	1,364,717	951,079	
France	Coef.	-.271	-.190	-.127	-.125	-.089	.33
	Std. Err.	(.003)	(.003)	(.003)	(.006)	(.006)	
	t-value	-86.36	-65.65	-48.16	-21.45	-14.61	
	R ²	.305	.414	.510	.659	.748	
	N	764,703	764,039	764,699	222,884	130,983	
Germany	Coef.	-.198	-.129	-.074	-.100	-.037	.19
	Std. Err.	(.006)	(.005)	(.005)	(.004)	(.004)	

	<i>t</i> -value	-34.07	-24.83	-15.27	-23.13	-9.62	
	<i>R</i> ²	0.321	0.454	0.546	0.586	0.704	
	<i>N</i>	1,089,303	1,089,210	1,088,753	1,058,703	863,810	
Norway	Coef.	-.187	-.133	-.059	-.097	-.014	.08
	Std. Err.	(.001)	(.001)	(.001)	(.001)	(.001)	
	<i>t</i> -value	-153.04	-113.56	-53.94	-84.35	-12.52	
	<i>R</i> ²	0.293	0.384	0.483	0.504	0.628	
	<i>N</i>	1,866,155	1,866,114	1,866,105	1,466,515	1,008,304	
Sweden	Coef.	-.130	-.092	-.036	-.047	-.002	.01
	Std. Err.	(.004)	(.004)	(.004)	(.004)	(.003)	
	<i>t</i> -value	-30.83	-22.84	-9.92	-12.06	-0.44	
	<i>R</i> ²	0.234	0.298	0.425	0.439	0.572	
	<i>N</i>	3,340,002	3,332,251	3,076,527	2,209,883	1,307,820	
United States	Coef.	-.135	-.114	-.067	-.083	-.017	.13
	Std. Err.	(.003)	(.003)	(.003)	(.003)	(.004)	
	<i>t</i> -value	-40.24	-36.53	-22.47	-24.83	-4.06	
	<i>R</i> ²	0.264	0.386	0.461	0.539	0.698	
	<i>N</i>	1,398,000	1,374,000	1,374,000	740,000	310,000	
Panel C: Childhood immigrants							
Canada	Coef.	-.079	-.064	-.053	-.060	-.036	.45
	Std. Err.	(.002)	(.002)	(.002)	(.002)	(.002)	
	<i>t</i> -value	-41.81	-35.69	-31.82	-33.51	-19.45	
	<i>R</i> ²	0.209	0.306	0.394	0.433	0.568	
	<i>N</i>	2,771,043	2,771,043	2,771,043	2,088,907	1,429,648	
Denmark	Coef.	-.088	-.056	-.031	-.034	-.009	.11
	Std. Err.	(.003)	(.003)	(.003)	(.003)	(.003)	
	<i>t</i> -value	-31.35	-20.74	-11.64	-12.67	-3.54	
	<i>R</i> ²	0.200	0.268	0.345	0.382	0.492	
	<i>N</i>	1,755,962	1,755,756	1,755,352	1,364,717	951,079	
France	Coef.	-.100	-.076	-.049	-.046	-.037	.37
	Std. Err.	(.003)	(.003)	(.003)	(.006)	(.007)	
	<i>t</i> -value	-29.169	-24.325	-16.984	-7.486	-5.185	
	<i>R</i> ²	.305	.414	.510	.659	.748	
	<i>N</i>	764,703	764,039	764,699	222,884	130,983	
Germany	Coef.	-.073	-.051	-.020	-.061	-.021	.29
	Std. Err.	(.009)	(.007)	(.007)	(.006)	(.006)	
	<i>t</i> -value	-8.27	-6.85	-2.64	-10.30	-3.86	
	<i>R</i> ²	0.321	0.454	0.546	0.586	0.704	
	<i>N</i>	1,089,303	1,089,210	1,088,753	1,058,703	863,810	
Norway	Coef.	-.096	-.048	-.021	-.023	.013	.00
	Std. Err.	(.002)	(.002)	(.002)	(.002)	(.002)	
	<i>t</i> -value	-41.19	-21.62	-10.24	-10.40	5.90	
	<i>R</i> ²	0.293	0.384	0.483	0.504	0.628	
	<i>N</i>	1,866,155	1,866,114	1,866,105	1,466,515	1,008,304	
Sweden	Coef.	-.058	-.033	-.006	-.002	.016	.00
	Std. Err.	(.002)	(.002)	(.001)	(.001)	(.001)	
	<i>t</i> -value	-37.21	-22.18	-4.55	-1.58	12.06	
	<i>R</i> ²	0.234	0.298	0.425	0.439	0.572	
	<i>N</i>	3,340,002	3,332,251	3,076,527	2,209,883	1,307,820	
United States	Coef.	-.021	-.026	-.018	-.026	-.010	.50
	Std. Err.	(.004)	(.003)	(.003)	(.004)	(.004)	
	<i>t</i> -value	-5.72	-7.60	-5.47	-7.28	-2.43	
	<i>R</i> ²	0.264	0.386	0.461	0.539	0.698	
	<i>N</i>	1,398,000	1,374,000	1,374,000	740,000	310,000	

Note: Each estimate represents the coefficients from an Ordinary Least Squares (OLS) regression model for each country estimating the difference between the logged of recent immigrants (less than 10 years since immigration) and natives (panel A), established immigrants (10 or more years since immigration) and natives (panel B), and childhood immigrants (17 years old or less at immigration) and natives (panel C), ages 25–60 years, for all world regions combined, with negative coefficients indicating that immigrants earn less than natives. Following standard conventions, we interpret these coefficients as the relative difference between the average immigrant and native earnings, but more formally they indicate the difference in relative geometric means for unlogged earnings (which is the absolute difference in the arithmetic means of logged earnings). The 'basic adjustment' column reports differences from a model that controls for age and age squared, education, gender, and geographic region. Subsequent models provide estimates of within-industry, within-occupation, within-establishment, and within-job (occupation–establishment units) immigrant–native differences by introducing fixed effects for industry, occupation,

establishment, and occupation–establishment units. The estimates in the parentheses report the standard errors of each coefficient. The final column reports the proportion of the immigrant–native difference from the first column (with only basic adjustments) that remains when we compare immigrants and natives who are working in the same occupations and establishments. In this column, the number .00 refers to cases where immigrants do not earn less than natives at the within-job level, the number 1.00 refers to cases where the within-job earnings disadvantage of immigrants relative to natives is larger than in the 'basic adjustments' model, and dashed lines (–) is used in cases where immigrants do not earn less than natives in the 'basic adjustments' model.

Supplementary Table 13. Random-effects meta-analysis of immigrant–native differences in earnings for men.

		Fixed Effect for:					Proportion within Job
		Basic adj.	Ind	Occ	Est	Occ-Est	
		(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Immigrants	Coef.	-.220	-.153	-.104	-.095	-.049	.22
	Std. Err.	(.034)	(.023)	(.021)	(.018)	(.014)	
	t-value	-6.538	-6.712	-4.937	-5.353	-3.598	
	I^2	99.94	99.88	99.88	99.77	99.56	
	τ^2	0.0102	0.0047	0.0040	0.0028	0.0014	
	Cochrane Q	14,500.29	9,136.94	8,091.96	5,723.86	2,368.62	
	P-value of Q	.000	.000	.000	.000	.000	
	N (country)	9	9	9	9	9	
Panel B: Children of immigrants	Coef.	-.086	-.057	-.041	-.035	-.017	.20
	Std. Err.	(.012)	(.009)	(.008)	(.001)	(.003)	
	t-value	-7.003	-5.991	-5.023	-31.299	-6.374	
	I^2	98.24	97.29	96.42	.02	76.35	
	τ^2	.0009	.0005	.0003	.0000	.0000	
	Cochrane Q	294.27	262.95	95.17	3.80	30.06	
	P-value of Q	.000	.000	.000	.579	.000	
	N (country)	6	6	6	6	6	

Note: Estimates obtained from a random-effects meta-analysis of the pooled set of country-specific estimates from Ordinary Least Squares (OLS) regression models found in Supplementary Table 15. Each estimate from the meta-analysis represents the coefficient of the averaged difference between the logged annual earnings of immigrants and natives (panel A) and children of immigrants and natives (panel B), ages 25–60 years, across all countries. Following standard conventions, we interpret these coefficients as the relative difference between the average (children of) immigrant and native earnings, but more formally they indicate the difference in relative geometric means for unlogged earnings (which is the absolute difference in the arithmetic means of logged earnings). The 'basic adjustment' column reports the averaged differences from a model that controls for age and age squared, education, gender, and geographic region. Subsequent models provide averaged estimates of within-industry, within-occupation, within-establishment, and within-job (occupation–establishment units) (children of) immigrant–native differences by introducing fixed effects for industry, occupation, establishment, and occupation–establishment units. The estimates in the parentheses report the averaged standard errors of each coefficient obtained from the meta-analysis. The final column reports the proportion of the (children of) immigrant–native difference from the first column (with only basic adjustments) that remains when we compare (children of) immigrants and natives who are working in the same occupations and establishments. In this column, the number .00 refers to cases where (children of) immigrants do not earn less than natives at the within-job level, the number 1.00 refers to cases where the within-job earnings disadvantage of (children of) immigrants relative to natives is larger than in the 'basic adjustments' model, and dashed lines (–) is used in cases where (children of) immigrants do not earn less than natives in the 'basic adjustments' model.

Supplementary Table 14. Random-effects meta-analysis of immigrant–native differences in earnings by region of origin for men.

		Fixed effect for:					
		Basic adj.	Ind	Occ	Est	Occ-Est	Proportion within job
		(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Immigrants							
Sub-Saharan Africa	Coef.	-.341	-.224	-.150	-.170	-.089	.26
	Std. Err.	(.042)	(.030)	(.027)	(.025)	(.017)	
	t-value	-8.135	-7.390	-5.640	-6.791	-5.112	
Middle East and North Africa	Coef.	-.287	-.193	-.146	-.115	-.064	.22
	Std. Err.	(.042)	(.030)	(.026)	(.024)	(.017)	
	t-value	-6.890	-6.431	-5.555	-4.732	-3.775	
Asia	Coef.	-.245	-.174	-.127	-.117	-.060	.24
	Std. Err.	(.042)	(.030)	(.027)	(.025)	(.018)	
	t-value	-5.833	-5.722	-4.779	-4.725	-3.418	
Latin America	Coef.	-.228	-.163	-.116	-.118	-.071	.31
	Std. Err.	(.042)	(.030)	(.026)	(.024)	(.017)	
	t-value	-5.477	-5.418	-4.396	-4.864	-4.250	
Europe, North America, and other Western	Coef.	-.104	-.068	-.043	-.036	-.017	.16
	Std. Err.	(.042)	(.030)	(.026)	(.024)	(.017)	
	t-value	-2.511	-2.273	-1.632	-1.468	-.991	
I^2		99.83	99.71	99.67	99.50	98.86	
τ^2		.0156	.0081	.0062	.0052	.0023	
Cochrane Q		26,429.12	18,141.51	14,018.80	9,906.89	3,556.41	
P-value of Q		.000	.000	.000	.000	.000	
N (country)		45	45	45	45	45	
Panel B: Children of immigrants							
Sub-Saharan Africa	Coef.	-.193	-.133	-.109	-.096	-.058	.30
	Std. Err.	(.024)	(.020)	(.016)	(.019)	(.014)	
	t-value	-8.115	-6.537	-6.599	-5.077	-4.036	
Middle East and North Africa	Coef.	-.096	-.055	-.050	-.034	-.013	.13
	Std. Err.	(.021)	(.018)	(.014)	(.016)	(.012)	
	t-value	-4.600	-3.106	-3.601	-2.060	-1.092	
Asia	Coef.	-.108	-.091	-.078	-.071	-.048	.44
	Std. Err.	(.021)	(.018)	(.014)	(.017)	(.012)	
	t-value	-5.096	-5.009	-5.476	-4.139	-3.882	
Latin America	Coef.	-.178	-.129	-.098	-.098	-.060	.33
	Std. Err.	(.023)	(.020)	(.016)	(.019)	(.014)	
	t-value	-7.779	-6.606	-6.225	-5.255	-4.353	
Europe, North America, and other Western	Coef.	-.038	-.025	-.016	-.016	-.007	.17
	Std. Err.	(.021)	(.018)	(.014)	(.017)	(.012)	
	t-value	-1.830	-1.373	-1.176	-0.959	-0.570	
I^2		96.84	96.34	94.89	96.00	92.62	
τ^2		.0024	.0018	.0011	.0015	.0007	
Cochrane Q		650.09	821.73	545.73	550.10	198.53	
P-value of Q		.000	.000	.000	.000	.000	
N (country)		30	30	30	30	30	

Note: Estimates obtained from a random-effects meta-analysis of the pooled set of country-specific estimates by world region of origin from Ordinary Least Squares (OLS) regression models. Each estimate from the meta-analysis represents the coefficient of the averaged difference between the logged annual earnings of immigrants and natives (panel A) and children of immigrants and natives (panel B) separately world region of origin, ages 25–60 years, across all countries. Following standard conventions, we interpret these coefficients as the relative difference between the average (children of) immigrant and native earnings, but more formally they indicate the difference in relative geometric means for unlogged earnings (which is the absolute difference in the arithmetic means of logged earnings). The ‘basic adjustment’ column reports the averaged differences from a model that controls for age and age squared, education, gender, and geographic region. Subsequent models provide averaged estimates of within-industry, within-occupation, within-establishment, and within-job (occupation–establishment units) (children of) immigrant–native differences by introducing fixed effects for industry, occupation, establishment, and occupation–establishment units. The estimates in the parentheses report the averaged standard errors of each coefficient obtained from the meta-analysis. The final column reports the proportion of the (children of) immigrant–native difference from the first column (with only basic adjustments) that remains when we compare (children of) immigrants and natives who are working in the same occupations and establishments. In this column, the number .00 refers to cases where (children of) immigrants do not earn less than natives at the within-job level, the number 1.00 refers to cases where the within-job earnings disadvantage of (children of) immigrants relative to natives is larger than in the ‘basic adjustments’ model, and dashed lines (–) is used in cases where (children of) immigrants do not earn less than natives in the ‘basic adjustments’ model.

Supplementary Table 15. Immigrant–native differences in annual earnings by destination country for men.

		Fixed effect for:					
		Basic adj.	Ind	Occ	Est	Occ-Est	Proportion within job
		(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Immigrants							
Canada	Coef.	-.338	-.260	-.197	-.194	-.106	.31
	Std. Err.	(.002)	(.002)	(.002)	(.002)	(.002)	
	t-value	-199.56	-160.91	-127.50	-112.67	-57.98	
	R ²	0.156	0.267	0.357	0.435	0.584	
	N	1,397,952	1,397,952	1,397,952	1,008,585	642,455	
Denmark	Coef.	-.103	-.075	-.034	-.055	-.019	.18
	Std. Err.	(.002)	(.002)	(.002)	(.002)	(.002)	
	t-value	-50.19	-38.07	-17.75	-26.94	-9.10	
	R ²	0.171	0.249	0.335	0.387	0.509	
	N	892,209	892,045	891,772	674,176	457,155	
France	Coef.	-.221	-.151	-.100	-.073	-.057	.26
	Std. Err.	(.003)	(.003)	(.003)	(.006)	(.007)	
	t-value	-71.68	-52.92	-38.16	-11.85	-8.00	
	R ²	0.296	0.422	0.517	0.711	0.779	
	N	396,951	396,482	396,944	109,648	62,925	
Germany	Coef.	-.246	-.159	-.108	-.122	-.058	.24
	Std. Err.	(.005)	(.005)	(.004)	(.004)	(.003)	
	t-value	-45.55	-33.65	-24.49	-32.51	-18.20	
	R ²	0.344	0.495	0.591	0.640	0.764	
	N	663,919	663,854	663,535	645,837	523,304	
Netherlands	Coef.	-.235	-.186	-.140	-.135	-.135	.57
	Std. Err.	(.014)	(.013)	(.012)	(.021)	(.036)	
	t-value	-16.63	-14.33	-11.43	-6.46	-3.76	
	R ²	0.344	0.447	0.522	0.623	0.774	
	N	28,495	28,336	28,434	10,262	3,627	
Norway	Coef.	-.252	-.174	-.100	-.118	-.037	.15
	Std. Err.	(.001)	(.001)	(.001)	(.001)	(.001)	
	t-value	-198.51	-138.82	-82.69	-91.11	-28.02	
	R ²	0.249	0.362	0.461	0.527	0.649	
	N	982,219	982,186	982,189	750,834	504,907	
Spain	Coef.	-.376	-.224	-.186	-.078	-.056	.15
	Std. Err.	(.004)	(.004)	(.004)	(.006)	(.006)	
	t-value	-87.64	-53.85	-46.64	-13.32	-9.57	
	R ²	0.224	0.356	0.413	0.627	0.678	
	N	255,842	255,754	255,818	76,300	62,999	
Sweden	Coef.	-.100	-.057	-.014	-.013	.013	.00
	Std. Err.	(.002)	(.002)	(.002)	(.002)	(.002)	
	t-value	-48.24	-28.48	-7.82	-6.86	7.57	
	R ²	0.181	0.265	0.402	0.454	0.598	
	N	1,717,519	1,715,044	1,561,869	1,072,686	626,023	
United States	Coef.	-.107	-.090	-.059	-.068	-.029	.27
	Std. Err.	(.003)	(.003)	(.003)	(.004)	(.005)	
	t-value	-31.07	-28.12	-19.03	-19.34	-6.49	
	R ²	0.244	0.375	0.446	0.555	0.714	
	N	717,000	704,000	704,000	368,000	147,000	
Panel B: Children of immigrants							
Canada	Coef.	-.037	-.016	-.017	-.033	-.027	.73
	Std. Err.	(.002)	(.002)	(.002)	(.002)	(.002)	
	t-value	-15.73	-7.11	-7.95	-14.78	-11.90	
	R ²	0.156	0.267	0.357	0.435	0.584	
	N	1,397,952	1,397,952	1,397,952	1,008,585	642,455	
Denmark	Coef.	-.078	-.055	-.034	-.032	-.013	.17
	Std. Err.	(.005)	(.005)	(.005)	(.005)	(.005)	

	<i>t</i> -value	-15.67	-11.44	-7.23	-6.57	-2.63	
	<i>R</i> ²	0.171	0.249	0.335	0.387	0.509	
	<i>N</i>	892,209	892,045	891,772	674,176	457,155	
Germany	Coef.	-.104	-.065	-.044	-.043	-.016	.15
	Std. Err.	(.010)	(.008)	(.008)	(.005)	(.005)	
	<i>t</i> -value	-10.15	-8.03	-5.74	-8.21	-3.36	
	<i>R</i> ²	0.344	0.495	0.591	0.640	0.764	
	<i>N</i>	663,919	663,854	663,535	645,837	523,304	
Netherlands	Coef.	-.113	-.083	-.076	-.046	-.011	.10
	Std. Err.	(.020)	(.018)	(.017)	(.024)	(.034)	
	<i>t</i> -value	-5.68	-4.58	-4.44	-1.97	-0.34	
	<i>R</i> ²	0.344	0.447	0.522	0.623	0.774	
	<i>N</i>	28,495	28,336	28,434	10,262	3,627	
Norway	Coef.	-.116	-.073	-.060	-.038	-.015	.13
	Std. Err.	(.005)	(.005)	(.005)	(.005)	(.005)	
	<i>t</i> -value	-22.27	-14.92	-13.22	-7.86	-3.14	
	<i>R</i> ²	0.249	0.362	0.461	0.527	0.649	
	<i>N</i>	982,219	982,186	982,189	750,834	504,907	
Sweden	Coef.	-.078	-.059	-.031	-.035	-.012	.15
	Std. Err.	(.002)	(.002)	(.002)	(.002)	(.002)	
	<i>t</i> -value	-38.74	-30.47	-18.16	-18.81	-7.05	
	<i>R</i> ²	0.181	0.265	0.402	0.454	0.598	
	<i>N</i>	1,717,519	1,715,044	1,561,869	1,072,686	626,023	

Note: Each estimate represents the coefficients from an Ordinary Least Squares (OLS) regression model for each country estimating the difference between the logged annual earnings of immigrants and natives (panel A) and children of immigrants and natives (panel B) for men, ages 25–60 years, for all world regions combined, with negative coefficients indicating that immigrants earn less than natives. Following standard conventions, we interpret these coefficients as the relative difference between the average (children of) immigrant and native earnings, but more formally they indicate the difference in relative geometric means for unlogged earnings (which is the absolute difference in the arithmetic means of logged earnings). The 'basic adjustment' column reports differences from a model that controls for age and age squared, education, gender, and geographic region. Subsequent models provide estimates of within-industry, within-occupation, within-establishment, and within-job (occupation–establishment units) (children of) immigrant–native differences by introducing fixed effects for industry, occupation, establishment, and occupation–establishment units. The estimates in the parentheses report the standard errors of each coefficient. The final column reports the proportion of the (children of) immigrant–native difference from the first column (with only basic adjustments) that remains when we compare (children of) immigrants and natives who are working in the same occupations and establishments. In this column, the number .00 refers to cases where (children of) immigrants do not earn less than natives at the within-job level, the number 1.00 refers to cases where the within-job earnings disadvantage of (children of) immigrants relative to natives is larger than in the 'basic adjustments' model, and dashed lines (–) is used in cases where (children of) immigrants do not earn less than natives in the 'basic adjustments' model.

Supplementary Table 16. Random-effects meta-analysis of immigrant–native differences in earnings for women.

73%		Fixed Effect for:					Proportion within Job
		Basic adj.	Ind	Occ	Est	Occ-Est	
		(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Immigrants	Coef.	-.169	-.121	-.074	-.090	-.046	.27
	Std. Err.	(.030)	(.021)	(.017)	(.016)	(.012)	
	t-value	-5.561	-5.765	-4.387	-5.609	-3.822	
	I^2	99.93	99.85	99.80	99.71	99.43	
	τ^2	.0083	.0039	.0025	.0023	.0012	
	Cochrane Q	12,858.51	7,987.43	4,328.50	5,082.89	1,529.72	
	P-value of Q	.000	.000	.000	.000	.000	
	N (country)	9	9	9	9	9	
Panel B: Children of immigrants	Coef.	-.032	-.025	-.015	-.019	-.006	.18
	Std. Err.	(.010)	(.006)	(.004)	(.004)	(.002)	
	t-value	-3.289	-4.085	-3.656	-5.108	-3.345	
	I^2	97.44	94.17	89.23	83.34	39.02	
	τ^2	.0005	.0002	.0001	.0001	.0000	
	Cochrane Q	193.67	95.48	37.59	17.74	7.56	
	P-value of Q	.000	.000	.000	.003	.183	
	N (country)	6	6	6	6	6	

Note: Estimates obtained from a random-effects meta-analysis of the pooled set of country-specific estimates from Ordinary Least Squares (OLS) regression models found in Supplementary Table 18. Each estimate from the meta-analysis represents the coefficient of the averaged difference between the logged annual earnings of immigrants and natives (panel A) and children of immigrants and natives (panel B), ages 25–60 years, across all countries. Following standard conventions, we interpret these coefficients as the relative difference between the average (children of) immigrant and native earnings, but more formally they indicate the difference in relative geometric means for unlogged earnings (which is the absolute difference in the arithmetic means of logged earnings). The 'basic adjustment' column reports the averaged differences from a model that controls for age and age squared, education, gender, and geographic region. Subsequent models provide averaged estimates of within-industry, within-occupation, within-establishment, and within-job (occupation–establishment units) (children of) immigrant–native differences by introducing fixed effects for industry, occupation, establishment, and occupation–establishment units. The estimates in the parentheses report the averaged standard errors of each coefficient obtained from the meta-analysis. The final column reports the proportion of the (children of) immigrant–native difference from the first column (with only basic adjustments) that remains when we compare (children of) immigrants and natives who are working in the same occupations and establishments. In this column, the number .00 refers to cases where (children of) immigrants do not earn less than natives at the within-job level, the number 1.00 refers to cases where the within-job earnings disadvantage of (children of) immigrants relative to natives is larger than in the 'basic adjustments' model, and dashed lines (–) is used in cases where (children of) immigrants do not earn less than natives in the 'basic adjustments' model.

Supplementary Table 17. Random-effects meta-analysis of immigrant–native differences in earnings by region of origin for women.

		Fixed effect for:					
		Basic adj.	Ind	Occ	Est	Occ-Est	Proportion within job
		(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Immigrants							
Sub-Saharan Africa	Coef.	-.236	-.158	-.094	-.124	-.067	.28
	Std. Err.	(.038)	(.028)	(.023)	(.022)	(.016)	
	t-value	-6.267	-5.628	-4.028	-5.518	-4.153	
Middle East and North Africa	Coef.	-.237	-.173	-.129	-.137	-.091	.39
	Std. Err.	(.037)	(.028)	(.023)	(.022)	(.016)	
	t-value	-6.342	-6.237	-5.611	-6.194	-5.806	
Asia	Coef.	-.198	-.156	-.096	-.097	-.035	.18
	Std. Err.	(.037)	(.028)	(.023)	(.023)	(.016)	
	t-value	-5.285	-5.615	-4.165	-4.285	-2.153	
Latin America	Coef.	-.183	-.135	-.082	-.109	-.060	.33
	Std. Err.	(.037)	(.028)	(.023)	(.022)	(.015)	
	t-value	-4.908	-4.891	-3.591	-4.993	-3.881	
Europe, North America, and other Western	Coef.	-.094	-.063	-.038	-.052	-.027	.29
	Std. Err.	(.037)	(.028)	(.023)	(.022)	(.015)	
	t-value	-2.518	-2.275	-1.661	-2.380	-1.761	
	I^2	99.78	99.64	99.53	99.36	98.58	
	τ^2	.0124	.0068	.0046	.0043	.0020	
	Cochrane Q	18,910.16	12,050.04	7,154.88	7,509.66	2,446.61	
	P-value of Q	.000	.000	.000	.000	.000	
	N (country)	45	45	45	45	45	
Panel B: Children of immigrants							
Sub-Saharan Africa	Coef.	-.049	-.044	-.040	-.035	-.012	.24
	Std. Err.	(.021)	(.017)	(.013)	(.017)	(.012)	
	t-value	-2.385	-2.588	-3.015	-2.092	-0.985	
Middle East and North Africa	Coef.	-.068	-.054	-.040	-.039	-.017	.25
	Std. Err.	(.017)	(.014)	(.010)	(.014)	(.009)	
	t-value	-4.003	-3.809	-3.887	-2.781	-1.928	
Asia	Coef.	-.010	-.019	-.014	-.026	-.013	1.00
	Std. Err.	0.017	0.014	0.010	0.014	0.009	
	t-value	-0.579	-1.353	-1.358	-1.820	-1.446	
Latin America	Coef.	-.049	-.039	-.026	-.030	-.013	.26
	Std. Err.	(.018)	(.015)	(.011)	(.015)	(.009)	
	t-value	-2.755	-2.566	-2.316	-2.024	-1.381	
Europe, North America, and other Western	Coef.	-.010	-.006	-.004	-.010	-.001	.07
	Std. Err.	(.017)	(.014)	(.010)	(.014)	(.008)	
	t-value	-0.622	-0.410	-0.378	-0.695	-0.098	
	I^2	95.61	94.53	91.05	94.56	85.27	
	τ^2	.0015	.0011	.0006	.0011	.0004	
	Cochrane Q	477.73	381.05	222.78	354.71	113.57	
	P-value of Q	.000	.000	.000	.000	.000	
	N (country)	30	30	30	30	30	

Note: Estimates obtained from a random-effects meta-analysis of the pooled set of country-specific estimates by world region of origin from Ordinary Least Squares (OLS) regression models. Each estimate from the meta-analysis represents the coefficient of the averaged difference between the logged annual earnings of immigrants and natives (panel A) and children of immigrants and natives (panel B) separately world region of origin, ages 25–60 years, across all countries. Following standard conventions, we interpret these coefficients as the relative difference between the average (children of) immigrant and native earnings, but more formally they indicate the difference in relative geometric means for unlogged earnings (which is the absolute difference in the arithmetic means of logged earnings). The ‘basic adjustment’ column reports the averaged differences from a model that controls for age and age squared, education, gender, and geographic region. Subsequent models provide averaged estimates of within-industry, within-occupation, within-establishment, and within-job (occupation–establishment units) (children of) immigrant–native differences by introducing fixed effects for industry, occupation, establishment, and occupation–establishment units. The estimates in the parentheses report the averaged standard errors of each coefficient obtained from the meta-analysis. The final column reports the proportion of the (children of) immigrant–native difference from the first column (with only basic adjustments) that remains when we compare (children of) immigrants and natives who are working in the same occupations and establishments. In this column, the number .00 refers to cases where (children of) immigrants do not earn less than natives at the within-job level, the number 1.00 refers to cases where the within-job earnings disadvantage of (children of) immigrants relative to natives is larger than in the ‘basic adjustments’ model, and dashed lines (–) is used in cases where (children of) immigrants do not earn less than natives in the ‘basic adjustments’ model.

Supplementary Table 18. Immigrant–native differences in annual earnings by destination country for women.

		Fixed effect for:					
		Basic adj.	Ind	Occ	Est	Occ-Est	Proportion within job
		(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Immigrants							
Canada	Coef.	-.296	-.226	-.143	-.180	-.088	.30
	Std. Err.	(.002)	(.002)	(.002)	(.002)	(.002)	
	t-value	-175.40	-139.15	-92.40	-99.94	-46.37	
	R ²	0.177	0.279	0.381	0.392	0.526	
	N	1,373,091	1,373,091	1,373,091	1,041,870	743,840	
Denmark	Coef.	-.089	-.058	-.027	-.046	-.022	.25
	Std. Err.	(.002)	(.002)	(.002)	(.002)	(.002)	
	t-value	-46.69	-31.36	-15.29	-24.11	-11.16	
	R ²	0.175	0.243	0.315	0.362	0.467	
	N	863,753	863,711	863,565	683,059	479,822	
France	Coef.	-.194	-.142	-.099	-.107	-.079	.41
	Std. Err.	(.003)	(.003)	(.003)	(.005)	(.006)	
	t-value	-57.844	-45.729	-34.921	-20.038	-13.589	
	R ²	0.275	0.377	0.479	0.622	0.728	
	N	367,682	367,480	367,670	104,716	61,034	
Germany	Coef.	-.170	-.102	-.059	-.084	-.042	.25
	Std. Err.	(.007)	(.006)	(.006)	(.005)	(.005)	
	t-value	-25.68	-16.36	-10.16	-15.48	-8.04	
	R ²	0.160	0.306	0.415	0.453	0.586	
	N	425,384	425,353	425,187	412,032	335,402	
Netherlands	Coef.	-.106	-.076	-.026	-.075	-.013	.13
	Std. Err.	(.013)	(.012)	(.011)	(.016)	(.027)	
	t-value	-8.19	-6.31	-2.32	-4.80	-0.51	
	R ²	0.313	0.418	0.513	0.565	0.715	
	N	28,331	28,258	28,275	12,284	5,015	
Norway	Coef.	-.196	-.149	-.074	-.112	-.031	.16
	Std. Err.	(.001)	(.001)	(.001)	(.001)	(.001)	
	t-value	-142.93	-110.00	-58.09	-80.32	-21.88	
	R ²	0.249	0.329	0.438	0.449	0.578	
	N	883,934	883,926	883,905	700,368	480,171	
Spain	Coef.	-.311	-.189	-.152	-.113	-.095	.31
	Std. Err.	(.005)	(.005)	(.005)	(.006)	(.006)	
	t-value	-64.38	-40.08	-33.75	-18.00	-15.09	
	R ²	0.216	0.327	0.392	0.572	0.637	
	N	220,266	220,237	220,201	79,109	65,492	
Sweden	Coef.	-.043	-.031	-.010	-.007	.009	.00
	Std. Err.	(.002)	(.002)	(.002)	(.002)	(.002)	
	t-value	-21.30	-15.55	-5.78	-3.68	4.80	
	R ²	0.239	0.291	0.409	0.416	0.536	
	N	1,622,483	1,617,207	1,514,656	1,120,498	656,656	
United States	Coef.	-.118	-.111	-.070	-.088	-.040	.34
	Std. Err.	(.003)	(.003)	(.003)	(.004)	(.005)	
	t-value	-33.92	-34.40	-22.79	-24.31	-8.78	
	R ²	0.230	0.357	0.442	0.521	0.687	
	N	681,000	670,000	670,000	356,000	147,000	
Panel B: Children of immigrants							
Canada	Coef.	.002	-.002	-.002	-.018	-.009	–
	Std. Err.	(.002)	(.002)	(.002)	(.002)	(.002)	
	t-value	0.86	-0.88	-1.19	-7.69	-3.64	
	R ²	0.177	0.279	0.381	0.392	0.526	
	N	1,373,091	1,373,091	1,373,091	1,041,870	743,840	
Denmark	Coef.	-.028	-.019	-.011	-.009	-.002	.08
	Std. Err.	(.004)	(.004)	(.004)	(.004)	(.004)	

	t-value	-6.45	-4.39	-2.70	-2.02	-0.53	
	R ²	0.175	0.243	0.315	0.362	0.467	
	N	863,753	863,711	863,565	683,059	479,822	
Germany	Coef.	-.056	-.041	-.024	-.035	-.014	.24
	Std. Err.	(.008)	(.008)	(.007)	(.006)	(.005)	
	t-value	-6.74	-5.45	-3.37	-5.63	-2.56	
	R ²	0.160	0.306	0.415	0.453	0.586	
	N	425,384	425,353	425,187	412,032	335,402	
Netherlands	Coef.	-.017	-.031	-.023	-.028	-.018	1.00
	Std. Err.	(.018)	(.017)	(.016)	(.023)	(.034)	
	t-value	-0.96	-1.83	-1.47	-1.22	-0.52	
	R ²	0.313	0.418	0.513	0.565	0.715	
	N	28,331	28,258	28,275	12,284	5,015	
Norway	Coef.	-.059	-.038	-.029	-.025	-.005	.09
	Std. Err.	(.005)	(.005)	(.004)	(.005)	(.005)	
	t-value	-11.87	-7.90	-6.59	-5.35	-1.13	
	R ²	0.249	0.329	0.438	0.449	0.578	
	N	883,934	883,926	883,905	700,368	480,171	
Sweden	Coef.	-.030	-.026	-.012	-.014	-.002	.08
	Std. Err.	(.002)	(.002)	(.002)	(.002)	(.002)	
	t-value	-15.58	-13.96	-7.25	-7.82	-1.37	
	R ²	0.239	0.291	0.409	0.416	0.536	
	N	1,622,483	1,617,207	1,514,656	1,120,498	656,656	

Note: Each estimate represents the coefficients from an Ordinary Least Squares (OLS) regression model for each country estimating the difference between the logged annual earnings of immigrants and natives (panel A) and children of immigrants and natives (panel B) for women, ages 25–60 years, for all world regions combined, with negative coefficients indicating that immigrants earn less than natives. Following standard conventions, we interpret these coefficients as the relative difference between the average (children of) immigrant and native earnings, but more formally they indicate the difference in relative geometric means for unlogged earnings (which is the absolute difference in the arithmetic means of logged earnings). The 'basic adjustment' column reports differences from a model that controls for age and age squared, education, gender, and geographic region. Subsequent models provide estimates of within-industry, within-occupation, within-establishment, and within-job (occupation–establishment units) (children of) immigrant–native differences by introducing fixed effects for industry, occupation, establishment, and occupation–establishment units. The estimates in the parentheses report the standard errors of each coefficient. The final column reports the proportion of the (children of) immigrant–native difference from the first column (with only basic adjustments) that remains when we compare (children of) immigrants and natives who are working in the same occupations and establishments. In this column, the number .00 refers to cases where (children of) immigrants do not earn less than natives at the within-job level, the number 1.00 refers to cases where the within-job earnings disadvantage of (children of) immigrants relative to natives is larger than in the 'basic adjustments' model, and dashed lines (–) is used in cases where (children of) immigrants do not earn less than natives in the 'basic adjustments' model.

Supplementary Table 19. Random-effects meta-analysis of immigrant–native differences in earnings for workers with tertiary education.

		Fixed Effect for:					Proportion within Job
		Basic adj.	Ind	Occ	Est	Occ-Est	
		(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Immigrants	Coef.	-.203	-.167	-.107	-.117	-.069	.34
	Std. Err.	.044	.033	.023	.024	.016	
	t-value	-4.670	-5.124	-4.707	-4.835	-4.409	
	I^2	99.95	99.91	99.85	99.83	99.57	
	τ^2	.0170	.0095	.0046	.0053	.0021	
	Cochrane Q	17,660.10	12,878.69	7,452.01	7,845.00	2,926.69	
	P-value of Q	.000	.000	.000	.000	.000	
	N (country)	9	9	9	9	9	
Panel B: Children of immigrants	Coef.	-.025	-.019	-.014	-.012	-.001	.05
	Std. Err.	.007	.005	.005	.007	.007	
	t-value	-3.777	-3.853	-3.087	-1.797	-0.212	
	I^2	91.12	83.75	82.85	93.37	90.54	
	τ^2	.0002	.0001	.0001	.0002	.0002	
	Cochrane Q	29.86	22.06	22.43	95.48	51.45	
	P-value of Q	.000	.001	.000	.000	.000	
	N (country)	6	6	6	6	6	

Note: Estimates obtained from a random-effects meta-analysis of the pooled set of country-specific estimates from Ordinary Least Squares (OLS) regression models found in Supplementary Table 21. Each estimate from the meta-analysis represents the coefficient of the averaged difference between the logged annual earnings of immigrants and natives (panel A) and children of immigrants and natives (panel B), ages 25–60 years, across all countries. Following standard conventions, we interpret these coefficients as the relative difference between the average (children of) immigrant and native earnings, but more formally they indicate the difference in relative geometric means for unlogged earnings (which is the absolute difference in the arithmetic means of logged earnings). The 'basic adjustment' column reports the averaged differences from a model that controls for age and age squared, education, gender, and geographic region. Subsequent models provide averaged estimates of within-industry, within-occupation, within-establishment, and within-job (occupation–establishment units) (children of) immigrant–native differences by introducing fixed effects for industry, occupation, establishment, and occupation–establishment units. The estimates in the parentheses report the averaged standard errors of each coefficient obtained from the meta-analysis. The final column reports the proportion of the (children of) immigrant–native difference from the first column (with only basic adjustments) that remains when we compare (children of) immigrants and natives who are working in the same occupations and establishments. In this column, the number .00 refers to cases where (children of) immigrants do not earn less than natives at the within-job level, the number 1.00 refers to cases where the within-job earnings disadvantage of (children of) immigrants relative to natives is larger than in the 'basic adjustments' model, and dashed lines (–) is used in cases where (children of) immigrants do not earn less than natives in the 'basic adjustments' model.

Supplementary Table 20. Random-effects meta-analysis of immigrant–native differences in earnings by region of origin for workers with tertiary education.

		Fixed effect for:					
		Basic adj.	Ind	Occ	Est	Occ-Est	Proportion within job
		(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Immigrants							
Sub-Saharan Africa	Coef.	-.320	-.240	-.144	-.185	-.094	.29
	Std. Err.	(.054)	(.040)	(.028)	(.032)	(.022)	
	t-value	-5.890	-6.035	-5.100	-5.845	-4.201	
Middle East and North Africa	Coef.	-.271	-.213	-.146	-.138	-.091	.34
	Std. Err.	(.053)	(.039)	(.027)	(.030)	(.021)	
	t-value	-5.069	-5.448	-5.321	-4.557	-4.313	
Asia	Coef.	-.215	-.189	-.122	-.137	-.061	.28
	Std. Err.	(.054)	(.039)	(.028)	(.031)	(.022)	
	t-value	-4.004	-4.811	-4.413	-4.485	-2.832	
Latin America	Coef.	-.246	-.204	-.136	-.150	-.098	.40
	Std. Err.	(.053)	(.039)	(.027)	(.030)	(.021)	
	t-value	-4.613	-5.237	-4.982	-4.994	-4.753	
Europe, North America, and other Western	Coef.	-.110	-.092	-.056	-.064	-.035	.32
	Std. Err.	(.053)	(.039)	(.027)	(.030)	(.020)	
	t-value	-2.063	-2.380	-2.084	-2.159	-1.708	
	I ²	99.83	99.73	99.53	99.52	98.87	
	tau ²	.0249	.0134	.0066	.0079	.0035	
	Cochrane Q	23,788.30	17,417.89	10,668.26	10,563.02	4,280.19	
	P-value of Q	.000	.000	.000	.000	.000	
	N (country)	45	45	45	45	45	
Panel B: Children of immigrants							
Sub-Saharan Africa	Coef.	-.034	-.021	-.014	-.014	.007	.00
	Std. Err.	(.021)	(.019)	(.015)	(.020)	(.015)	
	t-value	-1.605	-1.093	-0.929	-0.690	0.459	
Middle East and North Africa	Coef.	-.022	-.014	-.021	-.015	-.005	.24
	Std. Err.	(.018)	(.016)	(.012)	(.017)	(.012)	
	t-value	-1.273	-0.838	-1.699	-0.898	-0.476	
Asia	Coef.	-.007	-.019	-.016	-.012	-.007	1.00
	Std. Err.	(.018)	(.017)	(.012)	(.017)	(.012)	
	t-value	-0.374	-1.132	-1.334	-0.690	-0.571	
Latin America	Coef.	-.085	-.068	-.043	-.044	-.018	.22
	Std. Err.	(.019)	(.018)	(.014)	(.019)	(.014)	
	t-value	-4.492	-3.821	-3.107	-2.337	-1.358	
Europe, North America, and other Western	Coef.	-.022	-.016	-.012	-.009	-.001	.03
	Std. Err.	(.017)	(.016)	(.012)	(.017)	(.011)	
	t-value	-1.259	-0.996	-0.970	-0.502	-0.067	
	I ²	94.00	93.94	90.44	94.77	87.59	
	tau ²	.0016	.0014	.0007	.0016	.0006	
	Cochrane Q	296.52	310.85	183.18	343.34	138.17	
	P-value of Q	.000	.000	.000	.000	.000	
	N (country)	30	30	30	30	30	

Note: Estimates obtained from a random-effects meta-analysis of the pooled set of country-specific estimates by world region of origin from Ordinary Least Squares (OLS) regression models. Each estimate from the meta-analysis represents the coefficient of the averaged difference between the logged annual earnings of immigrants and natives (panel A) and children of immigrants and natives (panel B) separately world region of origin, ages 25–60 years, across all countries. Following standard conventions, we interpret these coefficients as the relative difference between the average (children of) immigrant and native earnings, but more formally they indicate the difference in relative geometric means for unlogged earnings (which is the absolute difference in the arithmetic means of logged earnings). The 'basic adjustment' column reports the averaged differences from a model that controls for age and age squared, education, gender, and geographic region. Subsequent models provide averaged estimates of within-industry, within-occupation, within-establishment, and within-job (occupation–establishment units) (children of) immigrant–native differences by introducing fixed effects for industry, occupation, establishment, and occupation–establishment units. The estimates in the parentheses report the averaged standard errors of each coefficient obtained from the meta-analysis. The final column reports the proportion of the (children of) immigrant–native difference from the first column (with only basic adjustments) that remains when we compare (children of) immigrants and natives who are working in the same occupations and establishments. In this column, the number .00 refers to cases where (children of) immigrants do not earn less than natives at the within-job level, the number 1.00 refers to cases where the within-job earnings disadvantage of (children of) immigrants relative to natives is larger than in the 'basic adjustments' model, and dashed lines (–) is used in cases where (children of) immigrants do not earn less than natives in the 'basic adjustments' model.

Supplementary Table 21. Immigrant–native differences in annual earnings by destination country for workers with tertiary education.

		Fixed effect for:					
		Basic adj.	Ind	Occ	Est	Occ-Est	Proportion within job
		(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Immigrants							
Canada	Coef.	-.391	-.336	-.229	-.258	-.145	.37
	Std. Err.	(.002)	(.002)	(.002)	(.002)	(.002)	
	t-value	-195.81	-172.97	-122.24	-124.97	-66.56	
	R ²	0.181	0.278	0.387	0.411	0.523	
	N	889,159	889,159	889,159	726,372	543,665	
Denmark	Coef.	-.100	-.103	-.075	-.089	-.057	.57
	Std. Err.	(.003)	(.003)	(.003)	(.003)	(.003)	
	t-value	-37.03	-39.63	-29.62	-34.24	-21.74	
	R ²	0.239	0.297	0.362	0.411	0.493	
	N	681,756	681,721	681,574	549,176	379,848	
France	Coef.	-.248	-.200	-.120	-.140	-.089	.36
	Std. Err.	(.005)	(.005)	(.004)	(.007)	(.007)	
	t-value	-48.522	-42.924	-29.081	-20.432	-11.913	
	R ²	0.288	0.396	0.509	0.637	0.737	
	N	238,463	238,299	238,453	68,854	37,089	
Germany	Coef.	0	0	0	0	0	.34
	Std. Err.	(.010)	(.009)	(.008)	(.007)	(.008)	
	t-value	-19.36	-17.61	-12.99	-15.69	-8.66	
	R ²	0.302	0.448	0.550	0.572	0.686	
	N	266,430	266,393	266,292	261,045	207,429	
Netherlands	Coef.	-.149	-.151	-.088	-.141	-.107	.72
	Std. Err.	(.015)	(.013)	(.012)	(.017)	(.024)	
	t-value	-10.24	-11.42	-7.26	-8.13	-4.40	
	R ²	0.304	0.395	0.494	0.541	0.695	
	N	28,629	28,535	28,571	12,419	4,562	
Norway	Coef.	-.238	-.176	-.080	-.126	-.040	.17
	Std. Err.	(.001)	(.001)	(.001)	(.001)	(.001)	
	t-value	-165.18	-125.87	-60.92	-89.21	-28.41	
	R ²	0.283	0.389	0.502	0.513	0.633	
	N	882,593	882,579	882,565	721,451	494,234	
Spain	Coef.	-.391	-.266	-.187	-.112	-.090	.23
	Std. Err.	(.008)	(.008)	(.007)	(.009)	(.009)	
	t-value	-47.25	-34.81	-26.82	-12.30	-10.01	
	R ²	0.218	0.353	0.450	0.555	0.644	
	N	115,493	115,442	115,486	44,126	33,997	
Sweden	Coef.	-.003	.004	.007	.022	.020	.00
	Std. Err.	(.003)	(.003)	(.002)	(.003)	(.002)	
	t-value	-0.98	1.67	3.13	8.72	8.58	
	R ²	0.234	0.301	0.473	0.457	0.602	
	N	874,096	873,030	830,123	673,181	394,376	
United States	Coef.	-.111	-.117	-.086	-.093	-.052	.47
	Std. Err.	(.003)	(.003)	(.003)	(.003)	(.003)	
	t-value	-37.42	-42.71	-33.10	-32.35	-15.06	
	R ²	0.239	0.365	0.450	0.516	0.680	
	N	1,033,000	1,018,000	1,018,000	569,000	243,000	
Panel B: Children of immigrants							
Canada	Coef.	-.021	-.024	-.017	-.033	-.016	.75
	Std. Err.	(.003)	(.003)	(.002)	(.003)	(.003)	
	t-value	-7.61	-9.25	-6.78	-12.61	-6.04	
	R ²	0.181	0.278	0.387	0.411	0.523	
	N	889,159	889,159	889,159	726,372	543,665	
Denmark	Coef.	-.005	-.003	-.002	.003	.006	.00
	Std. Err.	(.005)	(.005)	(.005)	(.005)	(.005)	

	<i>t</i> -value	-0.95	-0.57	-0.46	0.70	1.20	
	<i>R</i> ²	0.239	0.297	0.362	0.411	0.493	
	<i>N</i>	681,756	681,721	681,574	549,176	379,848	
Germany	Coef.	-.055	-.042	-.034	-.027	-.019	.35
	Std. Err.	(.014)	(.012)	(.011)	(.009)	(.009)	
	<i>t</i> -value	-3.99	-3.54	-3.22	-2.96	-2.15	
	<i>R</i> ²	0.302	0.448	0.550	0.572	0.686	
	<i>N</i>	266,430	266,393	266,292	261,045	207,429	
Netherlands	Coef.	-.026	-.035	-.037	-.011	.086	.00
	Std. Err.	(.019)	(.018)	(.017)	(.027)	(.060)	
	<i>t</i> -value	-1.37	-1.94	-2.18	-0.40	1.43	
	<i>R</i> ²	0.304	0.395	0.494	0.541	0.695	
	<i>N</i>	28,629	28,535	28,571	12,419	4,562	
Norway	Coef.	-.039	-.019	-.018	.000	.012	.00
	Std. Err.	(.005)	(.005)	(.004)	(.004)	(.004)	
	<i>t</i> -value	-7.87	-4.15	-4.19	-0.02	2.72	
	<i>R</i> ²	0.283	0.389	0.502	0.513	0.633	
	<i>N</i>	882,593	882,579	882,565	721,451	494,234	
Sweden	Coef.	-.021	-.015	-.007	-.004	.003	.00
	Std. Err.	(.003)	(.003)	(.002)	(.002)	(.002)	
	<i>t</i> -value	-7.92	-6.14	-3.01	-1.69	1.32	
	<i>R</i> ²	0.234	0.301	0.473	0.457	0.602	
	<i>N</i>	874,096	873,030	830,123	673,181	394,376	

Note: Each estimate represents the coefficients from an Ordinary Least Squares (OLS) regression model for each country estimating the difference between the logged annual earnings of immigrants and natives (panel A) and children of immigrants and natives (panel B) for women, ages 25–60 years, for all world regions combined, with negative coefficients indicating that immigrants earn less than natives. Following standard conventions, we interpret these coefficients as the relative difference between the average (children of) immigrant and native earnings, but more formally they indicate the difference in relative geometric means for unlogged earnings (which is the absolute difference in the arithmetic means of logged earnings). The 'basic adjustment' column reports differences from a model that controls for age and age squared, education, gender, and geographic region. Subsequent models provide estimates of within-industry, within-occupation, within-establishment, and within-job (occupation–establishment units) (children of) immigrant–native differences by introducing fixed effects for industry, occupation, establishment, and occupation–establishment units. The estimates in the parentheses report the standard errors of each coefficient. The final column reports the proportion of the (children of) immigrant–native difference from the first column (with only basic adjustments) that remains when we compare (children of) immigrants and natives who are working in the same occupations and establishments. In this column, the number .00 refers to cases where (children of) immigrants do not earn less than natives at the within-job level, the number 1.00 refers to cases where the within-job earnings disadvantage of (children of) immigrants relative to natives is larger than in the 'basic adjustments' model, and dashed lines (–) is used in cases where (children of) immigrants do not earn less than natives in the 'basic adjustments' model.

Supplementary Table 22. Random-effects meta-analysis of immigrant–native differences in earnings for workers with upper-secondary education or less.

		Fixed Effect for:					Proportion within Job
		Basic adj.	Ind	Occ	Est	Occ-Est	
		(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Immigrants	Coef.	-.190	-.116	-.073	-.063	-.020	.11
	Std. Err.	(.028)	(.018)	(.018)	(.012)	(.013)	
	t-value	-6.840	-6.591	-4.172	-5.064	-1.626	
	I^2	99.94	99.85	99.86	99.63	99.60	
	τ^2	.0069	.0028	.0028	.0014	.0013	
	Cochrane Q	12,115.75	5,804.71	4,919.47	2,713.35	905.61	
	P-value of Q	.000	.000	.000	.000	.000	
	N (country)	9	9	9	9	9	
Panel B: Children of immigrants	Coef.	-.081	-.054	-.036	-.036	-.016	.20
	Std. Err.	(.017)	(.012)	(.009)	(.005)	(.002)	
	t-value	-4.851	-4.395	-3.936	-7.184	-7.088	
	I^2	99.31	98.84	98.15	93.14	55.37	
	τ^2	.0017	.0009	.0005	.0001	.0000	
	Cochrane Q	719.75	562.23	210.03	57.47	12.43	
	P-value of Q	.000	.000	.000	.000	.029	
	N (country)	6	6	6	6	6	

Note: Estimates obtained from a random-effects meta-analysis of the pooled set of country-specific estimates from Ordinary Least Squares (OLS) regression models found in Supplementary Table 24. Each estimate from the meta-analysis represents the coefficient of the averaged difference between the logged annual earnings of immigrants and natives (panel A) and children of immigrants and natives (panel B), ages 25–60 years, across all countries. Following standard conventions, we interpret these coefficients as the relative difference between the average (children of) immigrant and native earnings, but more formally they indicate the difference in relative geometric means for unlogged earnings (which is the absolute difference in the arithmetic means of logged earnings). The 'basic adjustment' column reports the averaged differences from a model that controls for age and age squared, education, gender, and geographic region. Subsequent models provide averaged estimates of within-industry, within-occupation, within-establishment, and within-job (occupation–establishment units) (children of) immigrant–native differences by introducing fixed effects for industry, occupation, establishment, and occupation–establishment units. The estimates in the parentheses report the averaged standard errors of each coefficient obtained from the meta-analysis. The final column reports the proportion of the (children of) immigrant–native difference from the first column (with only basic adjustments) that remains when we compare (children of) immigrants and natives who are working in the same occupations and establishments. In this column, the number .00 refers to cases where (children of) immigrants do not earn less than natives at the within-job level, the number 1.00 refers to cases where the within-job earnings disadvantage of (children of) immigrants relative to natives is larger than in the 'basic adjustments' model, and dashed lines (–) is used in cases where (children of) immigrants do not earn less than natives in the 'basic adjustments' model.

Supplementary Table 23. Random-effects meta-analysis of immigrant–native differences in earnings by region of origin for workers with upper-secondary education or less.

		Fixed effect for:					
		Basic adj.	Ind	Occ	Est	Occ-Est	Proportion within job
		(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Immigrants							
Sub-Saharan Africa	Coef.	-.286	-.174	-.109	-.121	-.061	.21
	Std. Err.	(.038)	(.026)	(.024)	(.019)	(.016)	
	t-value	-7.589	-6.743	-4.596	-6.381	-3.817	
Middle East and North Africa	Coef.	-.276	-.173	-.130	-.101	-.058	.21
	Std. Err.	(.038)	(.026)	(.024)	(.019)	(.016)	
	t-value	-7.354	-6.770	-5.514	-5.419	-3.542	
Asia	Coef.	-.243	-.151	-.099	-.075	-.022	.09
	Std. Err.	(.038)	(.026)	(.024)	(.019)	(.016)	
	t-value	-6.446	-5.833	-4.139	-3.893	-1.321	
Latin America	Coef.	-.180	-.117	-.076	-.080	-.032	.18
	Std. Err.	(.038)	(.026)	(.024)	(.019)	(.016)	
	t-value	-4.795	-4.586	-3.209	-4.305	-2.017	
Europe, North America, and other Western	Coef.	-.089	-.044	-.024	-.022	-.005	.06
	Std. Err.	(.037)	(.026)	(.024)	(.019)	(.016)	
	t-value	-2.374	-1.709	-1.021	-1.169	-.328	
	I ²	99.85	99.70	99.68	99.32	98.86	
	tau ²	.0126	.0058	.0050	.0030	.0019	
	Cochrane Q	24,660.64	13,610.47	9,881.13	5,792.58	1,650.87	
	P-value of Q	.000	.000	.000	.000	.000	
	N (country)	45	45	45	45	45	
Panel B: Children of immigrants							
Sub-Saharan Africa	Coef.	-.195	-.142	-.124	-.105	-.066	.34
	Std. Err.	(.025)	(.020)	(.016)	(.017)	(.014)	
	t-value	-7.687	-7.178	-7.611	-6.101	-4.743	
Middle East and North Africa	Coef.	-.118	-.076	-.059	-.049	-.024	.20
	Std. Err.	(.022)	(.017)	(.014)	(.014)	(.011)	
	t-value	-5.351	-4.504	-4.315	-3.460	-2.179	
Asia	Coef.	-.102	-.079	-.065	-.066	-.042	.41
	Std. Err.	(.022)	(.017)	(.014)	(.015)	(.012)	
	t-value	-4.601	-4.637	-4.746	-4.483	-3.653	
Latin America	Coef.	-.129	-.096	-.074	-.081	-.047	.37
	Std. Err.	(.024)	(.018)	(.015)	(.016)	(.012)	
	t-value	-5.465	-5.261	-4.986	-5.068	-3.842	
Europe, North America, and other Western	Coef.	-.024	-.014	-.008	-.017	-.008	.32
	Std. Err.	(.022)	(.017)	(.014)	(.015)	(.011)	
	t-value	-1.077	-0.794	-0.605	-1.170	-0.706	
	I ²	97.92	97.01	95.79	96.25	93.21	
	tau ²	.0028	.0017	.0010	.0012	.0006	
	Cochrane Q	1,101.93	1,032.60	661.72	667.98	242.15	
	P-value of Q	.000	.000	.000	.000	.000	
	N (country)	30	30	30	30	30	

Note: Estimates obtained from a random-effects meta-analysis of the pooled set of country-specific estimates by world region of origin from Ordinary Least Squares (OLS) regression models. Each estimate from the meta-analysis represents the coefficient of the averaged difference between the logged annual earnings of immigrants and natives (panel A) and children of immigrants and natives (panel B) separately world region of origin, ages 25–60 years, across all countries. Following standard conventions, we interpret these coefficients as the relative difference between the average (children of) immigrant and native earnings, but more formally they indicate the difference in relative geometric means for unlogged earnings (which is the absolute difference in the arithmetic means of logged earnings). The 'basic adjustment' column reports the averaged differences from a model that controls for age and age squared, education, gender, and geographic region. Subsequent models provide averaged estimates of within-industry, within-occupation, within-establishment, and within-job (occupation–establishment units) (children of) immigrant–native differences by introducing fixed effects for industry, occupation, establishment, and occupation–establishment units. The estimates in the parentheses report the averaged standard errors of each coefficient obtained from the meta-analysis. The final column reports the proportion of the (children of) immigrant–native difference from the first column (with only basic adjustments) that remains when we compare (children of) immigrants and natives who are working in the same occupations and establishments. In this column, the number .00 refers to cases where (children of) immigrants do not earn less than natives at the within-job level, the number 1.00 refers to cases where the within-job earnings disadvantage of (children of) immigrants relative to natives is larger than in the 'basic adjustments' model, and dashed lines (–) is used in cases where (children of) immigrants do not earn less than natives in the 'basic adjustments' model.

Supplementary Table 24. Immigrant–native differences in annual earnings by destination country for workers with upper-secondary degrees or less education.

		Fixed effect for:					
		Basic adj.	Ind	Occ	Est	Occ-Est	Proportion within job
		(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Immigrants							
Canada	Coef.	-.267	-.180	-.126	-.117	-.046	.17
	Std. Err.	(.001)	(.001)	(.001)	(.002)	(.002)	
	t-value	-179.95	-127.35	-92.99	-76.03	-28.26	
	R ²	0.160	0.276	0.361	0.438	0.584	
	N	1,881,884	1,881,884	1,881,884	1,331,271	841,556	
Denmark	Coef.	-.097	-.062	-.029	-.043	-.019	.19
	Std. Err.	(.002)	(.002)	(.002)	(.002)	(.002)	
	t-value	-59.50	-38.90	-19.03	-26.36	-11.20	
	R ²	0.146	0.235	0.321	0.376	0.493	
	N	1,074,206	1,074,035	1,073,759	808,981	557,163	
France	Coef.	-.195	-.127	-.091	-.062	-.054	.28
	Std. Err.	(.002)	(.002)	(.002)	(.005)	(.006)	
	t-value	-79.214	-55.665	-42.657	-12.126	-9.567	
	R ²	.202	.340	.438	.615	.690	
	N	526,122	525,620	526,118	145,617	87,064	
Germany	Coef.	-.222	-.130	-.080	-.098	-.042	.19
	Std. Err.	(.005)	(.004)	(.004)	(.003)	(.003)	
	t-value	-48.69	-31.54	-20.58	-28.15	-13.29	
	R ²	0.258	0.416	0.513	0.570	0.691	
	N	822,872	822,810	822,415	796,606	650,509	
Netherlands	Coef.	-.173	-.099	-.059	-.033	.029	.00
	Std. Err.	(.013)	(.012)	(.011)	(.018)	(.026)	
	t-value	-13.12	-8.20	-5.28	-1.80	1.08	
	R ²	0.317	0.445	0.525	0.583	0.721	
	N	28,193	28,053	28,127	10,180	4,187	
Norway	Coef.	-.220	-.147	-.086	-.096	-.027	.12
	Std. Err.	(.001)	(.001)	(.001)	(.001)	(.001)	
	t-value	-182.72	-122.19	-72.58	-75.31	-20.22	
	R ²	0.263	0.363	0.447	0.522	0.622	
	N	983,559	983,530	983,526	729,977	487,343	
Spain	Coef.	-.338	-.192	-.165	-.078	-.063	.19
	Std. Err.	(.003)	(.003)	(.003)	(.005)	(.005)	
	t-value	-97.95	-56.77	-50.04	-16.65	-13.09	
	R ²	0.179	0.309	0.355	0.578	0.611	
	N	360,614	360,547	360,533	113,242	96,899	
Sweden	Coef.	-.093	-.059	-.019	-.020	.010	.00
	Std. Err.	(.002)	(.002)	(.001)	(.002)	(.002)	
	t-value	-54.79	-36.17	-12.52	-12.68	6.59	
	R ²	0.185	0.257	0.378	0.418	0.541	
	N	2,465,906	2,459,220	2,246,397	1,523,921	893,324	
United States	Coef.	-.104	-.048	-.002	-.013	.046	.00
	Std. Err.	(.004)	(.004)	(.004)	(.005)	(.008)	
	t-value	-23.78	-11.54	-0.38	-2.43	6.07	
	R ²	0.162	0.314	0.378	0.540	0.674	
	N	365,000	357,000	357,000	156,000	56,000	
Panel B: Children of immigrants							
Canada	Coef.	-.017	-.002	-.005	-.021	-.018	1.00
	Std. Err.	(.002)	(.002)	(.002)	(.002)	(.002)	
	t-value	-7.90	-0.78	-2.79	-10.30	-8.45	
	R ²	0.160	0.276	0.361	0.438	0.584	
	N	1,881,884	1,881,884	1,881,884	1,331,271	841,556	
Denmark	Coef.	-.092	-.060	-.036	-.036	-.018	.20
	Std. Err.	(.004)	(.004)	(.004)	(.004)	(.004)	

	<i>t</i> -value	-20.41	-14.00	-8.57	-8.28	-4.21	
	<i>R</i> ²	0.146	0.235	0.321	0.376	0.493	
	<i>N</i>	1,074,206	1,074,035	1,073,759	808,981	557,163	
Germany	Coef.	-.086	-.054	-.032	-.041	-.013	.15
	Std. Err.	(.007)	(.006)	(.006)	(.005)	(.004)	
	<i>t</i> -value	-11.73	-8.83	-5.46	-9.04	-3.50	
	<i>R</i> ²	0.258	0.416	0.513	0.570	0.691	
	<i>N</i>	822,872	822,810	822,415	796,606	650,509	
Netherlands	Coef.	-.091	-.069	-.059	-.024	.026	.00
	Std. Err.	(.020)	(.018)	(.016)	(.021)	(.032)	
	<i>t</i> -value	-4.59	-3.93	-3.63	-1.13	0.80	
	<i>R</i> ²	0.317	0.445	0.525	0.583	0.721	
	<i>N</i>	28,193	28,053	28,127	10,180	4,187	
Norway	Coef.	-.141	-.090	-.068	-.055	-.025	.18
	Std. Err.	(.005)	(.005)	(.005)	(.005)	(.005)	
	<i>t</i> -value	-26.56	-18.02	-14.54	-11.27	-5.07	
	<i>R</i> ²	0.263	0.363	0.447	0.522	0.622	
	<i>N</i>	983,559	983,530	983,526	729,977	487,343	
Sweden	Coef.	-.066	-.052	-.027	-.033	-.012	.18
	Std. Err.	(.002)	(.002)	(.001)	(.002)	(.001)	
	<i>t</i> -value	-40.39	-33.41	-19.03	-21.64	-8.26	
	<i>R</i> ²	0.185	0.257	0.378	0.418	0.541	
	<i>N</i>	2,465,906	2,459,220	2,246,397	1,523,921	893,324	

Note: Each estimate represents the coefficients from an Ordinary Least Squares (OLS) regression model for each country estimating the difference between the logged annual earnings of immigrants and natives (panel A) and children of immigrants and natives (panel B) for women, ages 25–60 years, for all world regions combined, with negative coefficients indicating that immigrants earn less than natives. Following standard conventions, we interpret these coefficients as the relative difference between the average (children of) immigrant and native earnings, but more formally they indicate the difference in relative geometric means for unlogged earnings (which is the absolute difference in the arithmetic means of logged earnings). The 'basic adjustment' column reports differences from a model that controls for age and age squared, education, gender, and geographic region. Subsequent models provide estimates of within-industry, within-occupation, within-establishment, and within-job (occupation–establishment units) (children of) immigrant–native differences by introducing fixed effects for industry, occupation, establishment, and occupation–establishment units. The estimates in the parentheses report the standard errors of each coefficient. The final column reports the proportion of the (children of) immigrant–native difference from the first column (with only basic adjustments) that remains when we compare (children of) immigrants and natives who are working in the same occupations and establishments. In this column, the number .00 refers to cases where (children of) immigrants do not earn less than natives at the within-job level, the number 1.00 refers to cases where the within-job earnings disadvantage of (children of) immigrants relative to natives is larger than in the 'basic adjustments' model, and dashed lines (–) is used in cases where (children of) immigrants do not earn less than natives in the 'basic adjustments' model.

Supplementary Table 25. Random-effects meta-analysis of immigrant–native differences in hourly wages and hourly earnings.

		Fixed Effect for:					Proportion within Job
		Basic adj.	Ind	Occ	Est	Occ-Est	
		(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Immigrants	Coef.	-.133	-.100	-.066	-.066	-.034	.25
	Std. Err.	.019	.013	.009	.013	.008	
	t-value	-7.086	-7.796	-7.007	-5.123	-4.149	
	I^2	99.91	99.84	99.77	99.81	99.63	
	τ^2	.0021	.0010	.0005	.0010	.0004	
	Cochrane Q	8,020.44	4,356.09	1,980.50	3,275.21	423.89	
	P-value of Q	.000	.000	.000	.000	.000	
	N (country)	6	6	6	6	6	
Panel B: Children of immigrants	Coef.	-.049	-.035	-.029	-.021	-.009	.19
	Std. Err.	(.009)	(.006)	(.009)	(.003)	(.003)	
	t-value	-5.52	-5.92	-3.40	-6.66	-2.73	
	I^2	97.04	92.94	97.63	75.12	85.93	
	τ^2	.0002	.0001	.0002	.0000	.0000	
	Cochrane Q	96.48	21.95	80.30	8.04	14.04	
	P-value of Q	.000	.000	.000	.018	.001	
	N (country)	3	3	3	3	3	

Note: Estimates obtained from a random-effects meta-analysis of the pooled set of country-specific estimates from Ordinary Least Squares (OLS) regression models found in Supplementary Table 27. Each estimate represents the coefficients from an Ordinary Least Squares (OLS) regression model for each country estimating the difference between the logged hourly wages on contractual hours (Denmark, Netherlands, and Norway) or hourly earnings (France, Spain, and the United States) of immigrants and natives (panel A) and children of immigrants and natives (panel B), ages 25–60 years, across all countries. Following standard conventions, we interpret these coefficients as the relative difference between the average (children of) immigrant and native earnings, but more formally they indicate the difference in relative geometric means for unlogged earnings (which is the absolute difference in the arithmetic means of logged earnings). The 'basic adjustment' column reports the averaged differences from a model that controls for age and age squared, education, gender, and geographic region. Subsequent models provide averaged estimates of within-industry, within-occupation, within-establishment, and within-job (occupation–establishment units) (children of) immigrant–native differences by introducing fixed effects for industry, occupation, establishment, and occupation–establishment units. The estimates in the parentheses report the averaged standard errors of each coefficient obtained from the meta-analysis. The final column reports the proportion of the (children of) immigrant–native difference from the first column (with only basic adjustments) that remains when we compare (children of) immigrants and natives who are working in the same occupations and establishments. In this column, the number .00 refers to cases where (children of) immigrants do not earn less than natives at the within-job level, the number 1.00 refers to cases where the within-job earnings disadvantage of (children of) immigrants relative to natives is larger than in the 'basic adjustments' model, and dashed lines (–) is used in cases where (children of) immigrants do not earn less than natives in the 'basic adjustments' model.

Supplementary Table 26. Random-effects meta-analysis of immigrant–native differences in hourly wages and hourly earnings by region of origin.

		Fixed effect for:					
		Basic adj.	Ind	Occ	Est	Occ-Est	Proportion within job
		(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Immigrants							
Sub-Saharan Africa	Coef.	-.202	-.136	-.080	-.096	-.046	.23
	Std. Err.	(.025)	(.017)	(.013)	(.017)	(.011)	
	t-value	-8.242	-7.768	-6.015	-5.704	-4.074	
Middle East and North Africa	Coef.	-.182	-.125	-.091	-.077	-.046	.25
	Std. Err.	(.024)	(.017)	(.013)	(.017)	(.011)	
	t-value	-7.459	-7.247	-6.906	-4.671	-4.224	
Asia	Coef.	-.154	-.129	-.088	-.089	-.042	.27
	Std. Err.	(.025)	(.017)	(.013)	(.017)	(.011)	
	t-value	-6.299	-7.396	-6.602	-5.263	-3.773	
Latin America	Coef.	-.150	-.115	-.080	-.081	-.048	.32
	Std. Err.	(.024)	(.017)	(.013)	(.016)	(.011)	
	t-value	-6.125	-6.652	-6.094	-4.931	-4.535	
Europe, North America, and other Western	Coef.	-.065	-.049	-.029	-.036	-.015	.23
	Std. Err.	(.024)	(.017)	(.013)	(.016)	(.011)	
	t-value	-2.652	-2.853	-2.211	-2.173	-1.382	
	I ²	99.77	99.61	99.51	99.51	99.07	
	tau ²	.0035	.0018	.0010	.0015	.0006	
	Cochrane Q	11,287.59	6,870.45	3,218.25	4,856.58	718.68	
	P-value of Q	.000	.000	.000	.000	.000	
	N (country)	30	30	30	30	30	
Panel B: Children of immigrants							
Sub-Saharan Africa	Coef.	-.082	-.052	-.035	-.043	-.012	.15
	Std. Err.	(.013)	(.011)	(.011)	(.009)	(.012)	
	t-value	-6.418	-4.698	-3.154	-4.836	-1.058	
Middle East and North Africa	Coef.	-.058	-.039	-.034	-.024	-.006	.10
	Std. Err.	(.009)	(.006)	(.008)	(.004)	(.009)	
	t-value	-6.288	-6.056	-4.126	-6.908	-0.632	
Asia	Coef.	-.048	-.044	-.041	-.034	-.027	.55
	Std. Err.	(.010)	(.007)	(.009)	(.004)	(.010)	
	t-value	-5.021	-6.280	-4.807	-7.841	-2.663	
Latin America	Coef.	-.077	-.055	-.037	-.034	-.021	.28
	Std. Err.	(.012)	(.010)	(.011)	(.009)	(.012)	
	t-value	-6.511	-5.510	-3.517	-3.980	-1.825	
Europe, North America, and other Western	Coef.	-.025	-.018	-.012	-.010	-.004	.17
	Std. Err.	(.010)	(.007)	(.009)	(.004)	(.010)	
	t-value	-2.557	-2.667	-1.422	-2.870	-0.438	
	I ²	85.72	67.00	83.69	23.12	85.41	
	tau ²	.0002	.0001	.0001	.0000	.0001	
	Cochrane Q	94.28	27.10	50.30	16.16	29.07	
	P-value of Q	.000	.003	.000	.095	.001	
	N (country)	15	15	15	15	15	

Note: Estimates obtained from a random-effects meta-analysis of the pooled set of country-specific estimates by world region of origin from Ordinary Least Squares (OLS) regression models. Each estimate represents the coefficients from an Ordinary Least Squares (OLS) regression model for each country estimating the difference between the logged hourly wages on contractual hours (Denmark, Netherlands, and Norway) or hourly earnings (France, Spain, and the United States) of immigrants and natives (panel A) and children of immigrants and natives (panel B) separately world region of origin, ages 25–60 years, across all countries. Following standard conventions, we interpret these coefficients as the relative difference between the average (children of) immigrant and native earnings, but more formally they indicate the difference in relative geometric means for unlogged earnings (which is the absolute difference in the arithmetic means of logged earnings). The 'basic adjustment' column reports the averaged differences from a model that controls for age and age squared, education, gender, and geographic region. Subsequent models provide averaged estimates of within-industry, within-occupation, within-establishment, and within-job (occupation–establishment units) (children of) immigrant–native differences by introducing fixed effects for industry, occupation, establishment, and occupation–establishment units. The estimates in the parentheses report the averaged standard errors of each coefficient obtained from the meta-analysis. The final column reports the proportion of the (children of) immigrant–native difference from the first column (with only basic adjustments) that remains when we compare (children of) immigrants and natives who are working in the same occupations and establishments. In this column, the number .00 refers to cases where (children of) immigrants do not earn less than natives at the within-job level, the number 1.00 refers to cases where the within-job earnings disadvantage of (children of) immigrants relative to natives is larger than in the 'basic adjustments' model, and dashed lines (–) is used in cases where (children of) immigrants do not earn less than natives in the 'basic adjustments' model.

Supplementary Table 27. Immigrant–native differences in hourly wages and hourly earnings by destination country.

			Fixed effect for:					Proportion within job
			Basic adj.	Ind	Occ	Est	Occ-Est	
Measure of hourly wage			(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Immigrants								
Denmark	Hourly wage on contractual hours	Coef.	-.072	-.059	-.033	-.048	-.026	.35
		Std. Err.	(.001)	(.001)	(.001)	(.001)	(.001)	
		t-value	-75.07	-66.39	-44.82	-55.10	-36.92	
		R ²	0.316	0.419	0.607	0.525	0.736	
		N	1,311,492	1,311,460	1,311,342	1,098,668	773,180	
France	Hourly earnings	Coef.	-.165	-.125	-.080	-.076	-.054	.33
		Std. Err.	(.002)	(.002)	(.002)	(.003)	(.003)	
		t-value	-85.351	-70.285	-50.766	-25.445	-18.036	
		R ²	.349	.447	.570	.653	.781	
		N	764,591	763,927	764,587	222,853	130,972	
Netherlands	Hourly wage on contractual hours	Coef.	-.164	-.132	-.099	-.106	-.060	.36
		Std. Err.	(.006)	(.006)	(.006)	(.008)	(.010)	
		t-value	-25.61	-22.13	-17.82	-13.50	-6.01	
		R ²	0.425	0.505	0.584	0.617	0.755	
		N	56,829	56,601	56,724	23,369	9,296	
Norway	Hourly wage on contractual hours	Coef.	-.165	-.124	-.068	-.098	-.039	.24
		Std. Err.	(.001)	(.001)	(.000)	(.001)	(.000)	
		t-value	-314.01	-245.38	-159.37	-194.40	-93.17	
		R ²	0.388	0.482	0.632	0.604	0.786	
		N	1,866,155	1,866,114	1,866,105	1,466,515	1,008,304	
Spain	Hourly earnings	Coef.	-.159	-.096	-.070	-.032	-.021	.13
		Std. Err.	(.002)	(.002)	(.002)	(.003)	(.002)	
		t-value	-82.67	-50.63	-39.44	-12.58	-8.91	
		R ²	0.244	0.338	0.420	0.592	0.674	
		N	476,108	475,992	476,023	163,641	136,264	
United States	Hourly earnings	Coef.	-.076	-.067	-.048	-.038	-.007	.09
		Std. Err.	(.002)	(.002)	(.002)	(.003)	(.003)	
		t-value	-31.23	-28.89	-21.15	-15.16	-2.26	
		R ²	0.213	0.306	0.351	0.455	0.616	
		N	1,398,000	1,374,000	1,374,000	740,000	310,000	
Panel B: Children of immigrants								
Denmark	Hourly wage on contractual hours	Coef.	-.032	-.026	-.014	-.017	-.006	.17
		Std. Err.	(.002)	(.002)	(.002)	(.002)	(.002)	
		t-value	-16.33	-13.80	-8.12	-9.33	-3.61	
		R ²	0.316	0.419	0.607	0.525	0.736	
		N	1,311,492	1,311,460	1,311,342	1,098,668	773,180	
Netherlands	Hourly wage on contractual hours	Coef.	-.058	-.048	-.043	-.032	.011	.00
		Std. Err.	(.008)	(.008)	(.007)	(.011)	(.028)	
		t-value	-6.92	-6.06	-5.80	-2.98	0.40	
		R ²	0.425	0.505	0.584	0.617	0.755	
		N	56,829	56,601	56,724	23,369	9,296	
Norway	Hourly wage on contractual hours	Coef.	-.059	-.037	-.034	-.023	-.013	.23
		Std. Err.	(.002)	(.002)	(.002)	(.002)	(.001)	
		t-value	-31.27	-20.57	-21.76	-13.44	-9.24	
		R ²	0.388	0.482	0.632	0.604	0.786	
		N	1,866,155	1,866,114	1,866,105	1,466,515	1,008,304	

Note: Each estimate represents the coefficients from an Ordinary Least Squares (OLS) regression model for each country estimating the difference between the logged hourly wages on contractual hours (Denmark, Netherlands, and Norway) or hourly earnings (France, Spain, and the United States) of immigrants and natives (panel A) and children of immigrants and natives (panel B), ages 25–60 years, for all world regions combined, with negative coefficients indicating that immigrants earn less than natives. Following standard conventions, we interpret these coefficients as the relative difference between the average (children of) immigrant and native earnings, but more formally they indicate the difference in relative geometric means for unlogged earnings (which is the absolute difference in the arithmetic means of logged earnings). The 'basic adjustment' column reports differences from a model that controls for age and age squared, education, gender, and geographic region. Subsequent models provide estimates of within-industry, within-occupation, within-establishment, and within-job (occupation–establishment units) (children of) immigrant–native differences by introducing fixed effects for industry, occupation, establishment, and occupation–establishment units. The estimates in the parentheses report the standard errors of each coefficient. The final column reports the proportion of the (children of) immigrant–native difference from the first column (with only basic adjustments) that remains when we compare (children of) immigrants and natives who are working in the same occupations and establishments. In this column, the number .00 refers to cases where (children of) immigrants do not earn

less than natives at the within-job level, the number 1.00 refers to cases where the within-job earnings disadvantage of (children of) immigrants relative to natives is larger than in the 'basic adjustments' model, and dashed lines (–) is used in cases where (children of) immigrants do not earn less than natives in the 'basic adjustments' model.

Supplementary Table 28. Immigrant–native differences in annual earnings on sample of immigrant–native integrated job cells.

		Sensitivity: Integrated job cells					Main analysis		Difference in Basic adj. estimates relative to main analysis	Difference in Occ-Est estimates relative to main analysis	Proportion within job (integrated job cells)	Proportion within job (main analysis)
		Basic adj.	Fixed effect for				Basic adj.	Fixed effect				
			Ind	Occ	Est	Occ-Est		Occ-Est				
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Panel A: Immigrants												
Canada	Coef.	-.264	-.215	-.140	-.176	-.099	-.322	-.099	.058	.000	.37	.31
	Std. Err.	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)				
	t-value	-179.97	-152.70	-106.34	-128.72	-77.51	-269.92	-77.51				
	R ²	0.209	0.312	0.421	0.425	0.566	0.198	0.566				
	N	1,429,648	1,429,648	1,429,648	1,429,648	1,429,648	2,771,043	1,429,648				
Denmark	Coef.	-.073	-.045	-.033	-.030	-.023	-.096	-.023	.024	.000	.32	.24
	Std. Err.	(.002)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)				
	t-value	-47.20	-30.07	-22.94	-20.64	-16.90	-68.84	-16.90				
	R ²	0.210	0.297	0.359	0.414	0.492	0.200	0.492				
	N	951,086	951,079	951,079	951,079	951,079	1,755,962	951,079				
France	Coef.	-.160	-.100	-.085	-.069	-.069	-0.209	-0.069	.049	.000	.43	.33
	Std. Err.	(.003)	(.003)	(.003)	(.005)	(.004)	0.002	0.004				
	t-value	-46.832	-32.567	-29.706	-15.254	-15.435	-91.94	-15.44				
	R ²	0.413	0.548	0.615	0.715	0.747	0.303	0.747				
	N	130,983	130,983	130,983	130,983	130,983	764,703	130,983				
Germany	Coef.	-.194	-.115	-.084	-.082	-.054	-.218	-.054	.025	.000	.28	.25
	Std. Err.	(.004)	(.003)	(.003)	(.003)	(.003)	(.004)	(.003)				
	t-value	-50.06	-33.10	-25.40	-27.04	-18.22	-51.55	-18.22				
	R ²	0.332	0.489	0.573	0.621	0.703	0.318	0.703				
	N	863,810	863,810	863,810	863,810	863,810	1,089,303	863,810				
Netherlands	Coef.	-.098	-.066	-.050	-.062	-.052	-.167	-.052	.069	.000	.53	.31
	Std. Err.	(.020)	(.018)	(.017)	(.018)	(.018)	(.010)	(.018)				
	t-value	-4.92	-3.60	-2.89	-3.46	-2.93	-17.06	-2.93				
	R ²	0.491	0.632	0.688	0.692	0.748	0.385	0.748				
	N	9,296	9,296	9,296	9,296	9,296	56829	9296				
Norway	Coef.	-.171	-.105	-.059	-.068	-.035	-.227	-.035	.056	.000	.20	.15
	Std. Err.	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)				
	t-value	-160.17	-102.07	-61.18	-67.86	-37.12	-243.15	-37.12				
	R ²	0.301	0.419	0.511	0.538	0.627	0.289	0.627				
	N	1,008,304	1,008,304	1,008,304	1,008,304	1,008,304	1,866,155	1,008,304				
Spain	Coef.	-.247	-.144	-.127	-.073	-.073	-.347	-.073	.100	.000	.29	.21
	Std. Err.	(.005)	(.005)	(.004)	(.004)	(.004)	(.003)	(.004)				
	t-value	-49.76	-31.17	-28.83	-17.58	-18.09	-107.98	-18.09				
	R ²	0.243	0.402	0.455	0.617	0.648	0.236	0.648				
	N	136,264	136,264	136,264	136,264	136,264	476,108	136,264				
Sweden	Coef.	-.030	-.006	.000	.010	.011	-.073	.011	.043	.000	.00	.00
	Std. Err.	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)				
	t-value	-20.09	-4.46	0.14	7.37	9.12	-50.10	9.12				
	R ²	0.282	0.365	0.466	0.477	0.572	0.233	0.572				
	N	1,307,856	1,307,820	1,307,820	1,307,820	1,307,820	3,340,002	1,307,820				
United States	Coef.	-.073	-.094	-.053	-.073	-.035	-.112	-.035	.039	.000	.48	.31
	Std. Err.	(.004)	(.004)	(.003)	(.003)	(.003)	(.002)	(.003)				
	t-value	-18.77	-26.07	-15.93	-22.01	-11.50	-45.65	-11.50				
	R ²	0.339	0.466	0.558	0.578	0.697	0.263	0.697				
	N	317,000	312,000	312,000	311,000	310,000	1,398,000	310,000				
Panel B: Children of immigrants												
Canada	Coef.	-.033	-.027	-.019	-.028	-.017	-.019	-.017	-.014	.000	.51	.89
	Std. Err.	(.002)	(.002)	(.002)	(.002)	(.002)	(.002)	(.002)				
	t-value	-17.11	-14.75	-11.43	-16.00	-10.59	-11.36	-10.59				
	R ²	0.209	0.312	0.421	0.425	0.566	0.198	0.566				
	N	1,429,648	1,429,648	1,429,648	1,429,648	1,429,648	2,771,043	1,429,648				
Denmark	Coef.	-.045	-.024	-.016	-.012	-.007	-.053	-.007	.008	.000	.16	.14

	Std. Err.	(.004)	(.003)	(.003)	(.003)	(.003)	(.003)	(.003)				
	t-value	-12.86	-7.00	-4.70	-3.69	-2.31	-15.91	-2.31				
	R ²	0.210	0.297	0.359	0.414	0.492	0.200	0.492				
	N	951,086	951,079	951,079	951,079	951,079	1,755,962	951,079				
Germany	Coef.	-.075	-.046	-.037	-.023	-.015	-.081	-.015	.005	.000	.20	.19
	Std. Err.	(.006)	(.005)	(.004)	(.004)	(.004)	(.007)	(.004)				
	t-value	-13.58	-9.66	-8.52	-5.85	-4.26	-12.24	-4.26				
	R ²	0.332	0.489	0.573	0.621	0.703	0.318	0.703				
	N	863,810	863,810	863,810	863,810	863,810	1,089,303	863,810				
Netherlands	Coef.	-.014	.010	.006	.001	.007	-.056	.007	.043	.000	.00	.00
	Std. Err.	(.040)	(.040)	(.039)	(.043)	(.046)	(.014)	(.046)				
	t-value	-0.35	0.26	0.17	0.03	0.14	-4.15	0.14				
	R ²	0.491	0.632	0.688	0.692	0.748	0.385	0.748				
	N	9,296	9,296	9,296	9,296	9,296	56,829	9,296				
Norway	Coef.	-.063	-.033	-.029	-.017	-.010	-.091	-.010	.028	.000	.15	.11
	Std. Err.	(.004)	(.004)	(.003)	(.003)	(.003)	(.004)	(.003)				
	t-value	-16.07	-8.94	-8.61	-4.87	-2.98	-24.94	-2.98				
	R ²	0.301	0.419	0.511	0.538	0.627	0.289	0.627				
	N	1,008,304	1,008,304	1,008,304	1,008,304	1,008,304	1,866,155	1,008,304				
Sweden	Coef.	-.026	-.015	-.016	-.007	-.008	-.054	-.008	.028	.000	.30	.15
	Std. Err.	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)				
	t-value	-18.39	-11.27	-12.67	-5.32	-6.70	-39.12	-6.70				
	R ²	0.282	0.365	0.466	0.477	0.572	0.233	0.572				
	N	1,307,856	1,307,820	1,307,820	1,307,820	1,307,820	3,340,002	1,307,820				

Note: Each estimate represents the coefficients from an Ordinary Least Squares (OLS) regression model for each country estimating the difference between the logged annual earnings of immigrants and natives (panel A) and children of immigrants and natives (panel B) using the integrated job-cell sample, ages 25–60 years, for all world regions combined, with negative coefficients indicating that immigrants earn less than natives. Following standard conventions, we interpret these coefficients as the relative difference between the average (children of) immigrant and native earnings, but more formally they indicate the difference in relative geometric means for unlogged earnings (which is the absolute difference in the arithmetic means of logged earnings). The 'basic adjustment' column reports differences from a model that controls for age and age squared, education, gender, and geographic region. Subsequent models provide estimates of within-industry, within-occupation, within-establishment, and within-job (occupation–establishment units) (children of) immigrant–native differences by introducing fixed effects for industry, occupation, establishment, and occupation–establishment units. The estimates in the parentheses report the standard errors of each coefficient. Columns 8 and 9 report the difference between the sensitivity analysis and the main analysis for the basic adjustment and within-job estimates, respectively. Columns 10 and 11 report the proportion of the (children of) immigrant–native difference from basic adjustments that remains when we compare (children of) immigrants and natives who are working in the same occupations and establishments in the sensitivity analysis and main analysis, respectively. In these columns, the number .00 refers to cases where (children of) immigrants do not earn less than natives at the within-job level, the number 1.00 refers to cases where the within-job earnings disadvantage of (children of) immigrants relative to natives is larger than in the 'basic adjustments' model, and dashed lines (–) is used in cases where (children of) immigrants do not earn less than natives in the 'basic adjustments' model.

Supplementary Table 29. Immigrant–native differences in annual earnings using coarsened measure of occupation (1-digit).

		Sensitivity: Coarsened occupation, 1-digit					Difference in Occ-Est estimates relative to main analysis	Proportion within job (coarsened)	Proportion within job (main analysis)
		Fixed effect for			Main analysis Fixed effect for				
		Basic adj.	Occ	Occ-Est	Occ	Occ-Est			
			(1)	(2)	(3)	(4)			
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: Immigrants									
Canada	Coef.	-.322	-.243	-.172	-.173	-.099	-.073	.53	.31
	Std. Err.	(.001)	(.001)	(.001)	(.001)	(.001)			
	t-value	-269.92	-213.57	-137.57	-158.12	-77.51			
	R ²	0.198	0.314	0.470	0.391	0.566			
	N	2,771,043	2,771,043	1,832,651	2,771,043	1,429,648			
Denmark	Coef.	-.096	-.039	-.025	-.033	-.023	-.002	.26	.24
	Std. Err.	(.001)	(.001)	(.001)	(.001)	(.001)			
	t-value	-68.84	-29.61	-18.55	-25.18	-16.90			
	R ²	0.200	0.324	0.461	0.345	0.492			
	N	1,755,962	1,755,840	1,119,293	1,755,352	951,079			
France	Coef.	-.209	-.109	-.061	-0.101	-0.069	.009	.29	.33
	Std. Err.	(.002)	(.002)	(.004)	0.002	0.004			
	t-value	-91.944	-56.008	-13.549	-52.22	-15.44			
	R ²	0.303	0.500	0.734	0.510	0.747			
	N	764,703	764,699	155,511	764,699	130,983			
Germany	Coef.	-.218	-.122	-.084	-.091	-.054	-.031	.39	.25
	Std. Err.	(.004)	(.004)	(.003)	(.004)	(.003)			
	t-value	-51.55	-32.52	-27.70	-25.18	-18.22			
	R ²	0.318	0.470	0.633	0.545	0.703			
	N	1,089,303	1,089,302	992,318	1,088,753	863,810			
Netherlands	Coef.	-.167	-.080	-.054	-.078	-.052	-.002	.33	.31
	Std. Err.	(.010)	(.008)	(.014)	(.008)	(.018)			
	t-value	-17.06	-9.42	-4.03	-9.26	-2.93			
	R ²	0.385	0.533	0.686	0.555	0.748			
	N	56,829	56,824	15,554	56,724	9,296			
Norway	Coef.	-.227	-.102	-.045	-.088	-.035	-.010	.20	.15
	Std. Err.	(.001)	(.001)	(.001)	(.001)	(.001)			
	t-value	-243.15	-114.82	-48.03	-100.96	-37.12			
	R ²	0.289	0.449	0.591	0.481	0.627			
	N	1,866,155	1,866,153	1,180,966	1,866,105	1,008,304			
Sweden	Coef.	-.073	-.022	.011	-.014	.011	-.001	.00	.00
	Std. Err.	(.001)	(.001)	(.001)	(.001)	(.001)			
	t-value	-50.10	-17.05	8.66	-10.74	9.12			
	R ²	0.233	0.387	0.535	0.425	0.572			
	N	3,340,002	3,076,527	1,686,488	3,076,527	1,307,820			
United States	Coef.	-.112	-.095	-.061	-.065	-.035	-.026	.54	.31
	Std. Err.	(.002)	(.002)	(.003)	(.002)	(.003)			
	t-value	-45.65	-42.13	-22.87	-29.63	-11.50			
	R ²	0.263	0.408	0.595	0.460	0.697			
	N	1,398,000	1,374,000	538,000	1,374,000	310,000			
Panel B: Children of immigrants									
Canada	Coef.	-.019	-.012	-.024	-.010	-.017	-.007	1.00	.89
	Std. Err.	(.002)	(.002)	(.002)	(.001)	(.002)			
	t-value	-11.36	-7.38	-14.92	-6.71	-10.59			
	R ²	0.198	0.314	0.470	0.391	0.566			
	N	2,771,043	2,771,043	1,832,651	2,771,043	1,429,648			
Denmark	Coef.	-.053	-.024	-.008	-.023	-.007	.000	.14	.14
	Std. Err.	(.003)	(.003)	(.003)	(.003)	(.003)			
	t-value	-15.91	-7.66	-2.36	-7.28	-2.31			
	R ²	0.200	0.324	0.461	0.345	0.492			
	N	1,755,962	1,755,840	1,119,293	1,755,352	951,079			

Germany	Coef.	-.081	-.046	-.027	-.035	-.015	-.012	.34	.19
	Std. Err.	(.007)	(.006)	(.004)	(.005)	(.004)			
	t-value	-12.24	-8.33	-7.13	-6.54	-4.26			
	R ²	0.318	0.470	0.633	0.545	0.703			
	N	1,089,303	1,089,302	992,318	1,088,753	863,810			
Netherlands	Coef.	-.056	-.041	-.016	-.042	.007	-.022	.28	.00
	Std. Err.	(.014)	(.012)	(.022)	(.012)	(.046)			
	t-value	-4.15	-3.41	-0.70	-3.56	0.14			
	R ²	0.385	0.533	0.686	0.555	0.748			
	N	56,829	56,824	15,554	56,724	9,296			
Norway	Coef.	-.091	-.046	-.011	-.045	-.010	-.001	.12	.11
	Std. Err.	(.004)	(.003)	(.003)	(.003)	(.003)			
	t-value	-24.94	-13.92	-3.30	-14.29	-2.98			
	R ²	0.289	0.449	0.591	0.481	0.627			
	N	1,866,155	1,866,153	1,180,966	1,866,105	1,008,304			
Sweden	Coef.	-.054	-.027	-.010	-.023	-.008	-.002	.18	.15
	Std. Err.	(.001)	(.001)	(.001)	(.001)	(.001)			
	t-value	-39.12	-22.19	-8.48	-18.71	-6.70			
	R ²	0.233	0.387	0.535	0.425	0.572			
	N	3,340,002	3,076,527	1,686,488	3,076,527	1,307,820			

Note: Each estimate represents the coefficients from an Ordinary Least Squares (OLS) regression model for each country estimating the difference between the logged annual earnings of immigrants and natives (panel A) and children of immigrants and natives (panel B), ages 25–60 years, for all world regions combined, with negative coefficients indicating that immigrants earn less than natives. Following standard conventions, we interpret these coefficients as the relative difference between the average (children of) immigrant and native earnings, but more formally they indicate the difference in relative geometric means for unlogged earnings (which is the absolute difference in the arithmetic means of logged earnings). The 'basic adjustment' column reports differences from a model that controls for age and age squared, education, gender, and geographic region. Subsequent models provide estimates of within-occupation (1-digit level) and within-job (occupation–establishment units) (children of) immigrant–native differences by introducing fixed effects for occupation and occupation–establishment units from the sensitivity analysis (columns 2 and 3) and the main analysis (4 and 5). The estimates in the parentheses report the standard errors of each coefficient. Column 6 reports the difference between the sensitivity analysis and the main analysis for the within-job estimates. Columns 10 and 11 report the proportion of the (children of) immigrant–native difference from basic adjustments that remains when we compare (children of) immigrants and natives who are working in the same occupations and establishments in the sensitivity analysis and main analysis, respectively. In these columns, the number .00 refers to cases where (children of) immigrants do not earn less than natives at the within-job level, the number 1.00 refers to cases where the within-job earnings disadvantage of (children of) immigrants relative to natives is larger than in the 'basic adjustments' model, and dashed lines (–) is used in cases where (children of) immigrants do not earn less than natives in the 'basic adjustments' model.

Supplementary Table 30. Immigrant–native differences in annual earnings using coarsened measure of occupation (2-digit).

		Sensitivity: Coarsened occupation, 2-digit			Main analysis		Difference in Occ-Est estimates relative to main analysis	Proportion within job (coarsened)	Proportion within job (main analysis)
		Fixed effect for			Fixed effect for				
		Basic adj.	Occ	Occ-Est	Occ	Occ-Est			
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: Immigrants									
Canada	Coef.	-.322	-.191	-.118	-.173	-.099	-.019	.37	.31
	Std. Err.	(.001)	(.001)	(.001)	(.001)	(.001)			
	t-value	-269.92	-172.37	-94.34	-158.12	-77.51			
	R ²	0.198	0.367	0.537	0.391	0.566			
	N	2,771,043	2,771,043	1,572,078	2,771,043	1,429,648			
Denmark	Coef.	-.096	-.034	-.023	-.033	-.023	.000	.24	.24
	Std. Err.	(.001)	(.001)	(.001)	(.001)	(.001)			
	t-value	-68.84	-25.80	-16.96	-25.18	-16.90			
	R ²	0.200	0.328	0.473	0.345	0.492			
	N	1,755,962	1,755,839	1,041,792	1,755,352	951,079			
Germany	Coef.	-.218	-.110	-.069	-.091	-.054	-.016	.32	.25
	Std. Err.	(.004)	(.004)	(.003)	(.004)	(.003)			
	t-value	-51.55	-29.37	-22.77	-25.18	-18.22			
	R ²	0.318	0.485	0.654	0.545	0.703			
	N	1,089,303	1,089,302	944,210	1,088,753	863,810			
Norway	Coef.	-.227	-.100	-.040	-.088	-.035	-.005	.18	.15
	Std. Err.	(.001)	(.001)	(.001)	(.001)	(.001)			
	t-value	-243.15	-111.95	-42.69	-100.96	-37.12			
	R ²	0.289	0.453	0.599	0.481	0.627			
	N	1,866,155	1,866,153	1,106,527	1,866,105	1,008,304			
Sweden	Coef.	-.073	-.019	.013	-.014	.011	.001	.00	.00
	Std. Err.	(.001)	(.001)	(.001)	(.001)	(.001)			
	t-value	-50.10	-14.45	10.02	-10.74	9.12			
	R ²	0.233	0.395	0.540	0.425	0.572			
	N	3,340,002	3,076,527	1,543,367	3,076,527	1,307,820			
United States	Coef.	-.112	-.076	-.043	-.065	-.035	-.009	.39	.31
	Std. Err.	(.002)	(.002)	(.003)	(.002)	(.003)			
	t-value	-45.65	-34.06	-15.18	-29.63	-11.50			
	R ²	0.263	0.437	0.657	0.460	0.697			
	N	1,398,000	1,374,000	380,000	1,374,000	310,000			
Panel B: Children of immigrants									
Canada	Coef.	-.019	-.011	-.019	-.010	-.017	-.002	1.00	.89
	Std. Err.	(.002)	(.002)	(.002)	(.001)	(.002)			
	t-value	-11.36	-6.99	-12.23	-6.71	-10.59			
	R ²	0.198	0.367	0.537	0.391	0.566			
	N	2,771,043	2,771,043	1,572,078	2,771,043	1,429,648			
Denmark	Coef.	-.053	-.022	-.007	-.023	-.007	.000	.13	.14
	Std. Err.	(.003)	(.003)	(.003)	(.003)	(.003)			
	t-value	-15.91	-7.03	-2.23	-7.28	-2.31			
	R ²	0.200	0.328	0.473	0.345	0.492			
	N	1,755,962	1,755,839	1,041,792	1,755,352	951,079			
Germany	Coef.	-.081	-.040	-.022	-.035	-.015	-.007	.28	.19
	Std. Err.	(.007)	(.006)	(.004)	(.005)	(.004)			
	t-value	-12.24	-7.27	-5.96	-6.54	-4.26			
	R ²	0.318	0.485	0.654	0.545	0.703			
	N	1,089,303	1,089,302	944,210	1,088,753	863,810			
Norway	Coef.	-.091	-.043	-.008	-.045	-.010	.001	.09	.11
	Std. Err.	(.004)	(.003)	(.003)	(.003)	(.003)			
	t-value	-24.94	-13.23	-2.50	-14.29	-2.98			
	R ²	0.289	0.453	0.599	0.481	0.627			
	N	1,866,155	1,866,153	1,106,527	1,866,105	1,008,304			
Sweden	Coef.	-.054	-.025	-.008	-.023	-.008	.000	.15	.15

Std. Err.	(.001)	(.001)	(.001)	(.001)	(.001)
<i>t</i> -value	-39.12	-20.48	-6.97	-18.71	-6.70
<i>R</i> ²	0.233	0.395	0.540	0.425	0.572
<i>N</i>	3,340,002	3,076,527	1,543,367	3,076,527	1,307,820

Note: Each estimate represents the coefficients from an Ordinary Least Squares (OLS) regression model for each country estimating the difference between the logged annual earnings of immigrants and natives (panel A) and children of immigrants and natives (panel B), ages 25–60 years, for all world regions combined, with negative coefficients indicating that immigrants earn less than natives. Following standard conventions, we interpret these coefficients as the relative difference between the average (children of) immigrant and native earnings, but more formally they indicate the difference in relative geometric means for unlogged earnings (which is the absolute difference in the arithmetic means of logged earnings). The 'basic adjustment' column reports differences from a model that controls for age and age squared, education, gender, and geographic region. Subsequent models provide estimates of within-occupation (2-digit level) and within-job (occupation–establishment units) (children of) immigrant–native differences by introducing fixed effects for occupation and occupation–establishment units from the sensitivity analysis (columns 2 and 3) and the main analysis (4 and 5). The estimates in the parentheses report the standard errors of each coefficient. Column 6 reports the difference between the sensitivity analysis and the main analysis for the within-job estimates. Columns 10 and 11 report the proportion of the (children of) immigrant–native difference from basic adjustments that remains when we compare (children of) immigrants and natives who are working in the same occupations and establishments in the sensitivity analysis and main analysis, respectively. In these columns, the number .00 refers to cases where (children of) immigrants do not earn less than natives at the within-job level, the number 1.00 refers to cases where the within-job earnings disadvantage of (children of) immigrants relative to natives is larger than in the 'basic adjustments' model, and dashed lines (–) is used in cases where (children of) immigrants do not earn less than natives in the 'basic adjustments' model.

Supplementary Table 31. Immigrant–native differences in annual earnings using coarsened measure of occupation (3-digit).

		Sensitivity: Coarsened occupation, 3-digit			Main analysis		Difference in Occ-Est estimates relative to main analysis	Proportion within job (coarsened)	Proportion within job (main analysis)
		Basic adj.	Fixed effect for		Fixed effect for				
			Occ	Occ-Est	Occ	Occ-Est			
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: Immigrants									
Denmark	Coef.	-.096	-.033	-.025	-.033	-.023	-.002	.26	.24
	Std. Err.	(.001)	(.001)	(.001)	(.001)	(.001)			
	t-value	-68.84	-25.32	-18.07	-25.18	-16.90			
	R ²	0.200	0.335	0.482	0.345	0.492			
	N	1,755,962	1,755,747	995,774	1,755,352	951,079			
Germany	Coef.	-.218	-.107	-.070	-.091	-.054	-.016	.32	.25
	Std. Err.	(.004)	(.004)	(.003)	(.004)	(.003)			
	t-value	-51.55	-28.98	-23.10	-25.18	-18.22			
	R ²	0.318	0.512	0.678	0.545	0.703			
	N	1,089,303	1,089,300	907,529	1,088,753	863,810			
Norway	Coef.	-.227	-.095	-.039	-.088	-.035	-.005	.17	.15
	Std. Err.	(.001)	(.001)	(.001)	(.001)	(.001)			
	t-value	-243.15	-107.27	-41.96	-100.96	-37.12			
	R ²	0.289	0.464	0.613	0.481	0.627			
	N	1,866,155	1,866,153	1,061,407	1,866,105	1,008,304			
Sweden	Coef.	-.073	-.019	.009	-.014	.011	-.002	1.00	1.00
	Std. Err.	(.001)	(.001)	(.001)	(.001)	(.001)			
	t-value	-50.10	-14.53	7.36	-10.74	9.12			
	R ²	0.233	0.410	0.554	0.425	0.572			
	N	3,340,002	3,076,527	1,429,908	3,076,527	1,307,820			
Panel B: Children of immigrants									
Denmark	Coef.	-.053	-.023	-.009	-.023	-.007	-.001	.17	.14
	Std. Err.	(.003)	(.003)	(.003)	(.003)	(.003)			
	t-value	-15.91	-7.28	-2.73	-7.28	-2.31			
	R ²	0.200	0.335	0.482	0.345	0.492			
	N	1,755,962	1,755,747	995,774	1,755,352	951,079			
Germany	Coef.	-.081	-.041	-.023	-.035	-.015	-.007	.28	.19
	Std. Err.	(.007)	(.005)	(.004)	(.005)	(.004)			
	t-value	-12.24	-7.55	-6.20	-6.54	-4.26			
	R ²	0.318	0.512	0.678	0.545	0.703			
	N	1,089,303	1,089,300	907,529	1,088,753	863,810			
Norway	Coef.	-.091	-.050	-.015	-.045	-.010	-.006	.17	.11
	Std. Err.	(.004)	(.003)	(.003)	(.003)	(.003)			
	t-value	-24.94	-15.45	-4.69	-14.29	-2.98			
	R ²	0.289	0.464	0.613	0.481	0.627			
	N	1,866,155	1,866,153	1,061,407	1,866,105	1,008,304			
Sweden	Coef.	-.054	-.025	-.010	-.023	-.008	-.002	.19	.15
	Std. Err.	(.001)	(.001)	(.001)	(.001)	(.001)			
	t-value	-39.12	-20.98	-8.83	-18.71	-6.70			
	R ²	0.233	0.410	0.554	0.425	0.572			
	N	3,340,002	3,076,527	1,429,908	3,076,527	1,307,820			

Note: Each estimate represents the coefficients from an Ordinary Least Squares (OLS) regression model for each country estimating the difference between the logged annual earnings of immigrants and natives (panel A) and children of immigrants and natives (panel B), ages 25–60 years, for all world regions combined, with negative coefficients indicating that immigrants earn less than natives. Following standard conventions, we interpret these coefficients as the relative difference between the average (children of) immigrant and native earnings, but more formally they indicate the difference in relative geometric means for unlogged earnings (which is the absolute difference in the arithmetic means of logged earnings). The 'basic adjustment' column reports differences from a model that controls for age and age squared, education, gender, and geographic region. Subsequent models provide estimates of within-occupation (3-digit level) and within-job (occupation–establishment units) (children of) immigrant–native differences by introducing fixed effects for occupation and occupation–establishment units from the sensitivity analysis (columns 2 and 3) and the main analysis (4 and 5). The estimates in the parentheses report the standard errors of each coefficient. Column 6 reports the difference between the sensitivity analysis and the main analysis for the within-job estimates. Columns 10 and 11 report the proportion of the (children of) immigrant–native difference from basic adjustments that remains when we compare (children of) immigrants and natives who are working in the same occupations and establishments in the sensitivity analysis and main analysis, respectively. In these columns, the number .00 refers to cases where (children of) immigrants do not earn less than natives at the within-job level, the number 1.00 refers to cases where the within-job earnings disadvantage of (children of) immigrants relative to natives is larger than in the 'basic adjustments' model, and dashed lines (–) is used in cases where (children of) immigrants do not earn less than natives in the 'basic adjustments' model.

Supplementary Table 32. Immigrant–native differences in annual earnings adjusting for fixed effects on firm identifiers.

		Sensitivity: Firm identifiers			Main analysis		Difference in Occ-Firm estimates relative to main analysis	Proportion within job (Occ-Firm job cells)	Proportion within job (main analysis)
		Fixed effects for			Fixed effects for				
		Basic adj.	Firm	Occ-Firm	Est	Occ-Est			
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: Immigrants									
Denmark	Coef.	-.096	-.058	-.020	-.055	-.023	.003	.21	.24
	Std. Err.	(.001)	(.001)	(.001)	(.001)	(.001)			
	t-value	-68.84	-42.50	-14.99	-39.66	-16.90			
	R ²	0.200	0.342	0.441	0.382	0.492			
	N	1,755,962	1,518,323	1,196,036	1,364,717	951,079			
France	Coef.	-.209	-.113	-.071	-0.091	-0.069	-.002	.34	.33
	Std. Err.	(.002)	(.002)	(.002)	0.004	0.004			
	t-value	-91.944	-48.826	-31.476	-22.03	-15.44			
	R ²	0.303	0.572	0.691	0.659	0.747			
	N	764,703	355,195	239,541	222,884	130,983			
Netherlands	Coef.	-.170	-.092	-.047	-.091	-.052	.005	.28	.31
	Std. Err.	(.010)	(.012)	(.017)	(.011)	(.018)			
	t-value	-17.65	-7.87	-2.73	-7.98	-2.93			
	R ²	0.386	0.596	0.739	0.599	0.748			
	N	56,829	25,260	9,999	23369	9,296			
Norway	Coef.	-.227	-.124	-.036	-.119	-.035	-.002	.16	.15
	Std. Err.	(.001)	(.001)	(.001)	(.001)	(.001)			
	t-value	-243.15	-134.49	-40.37	-127.45	-37.12			
	R ²	0.289	0.476	0.600	0.502	0.627			
	N	1,866,155	1,618,335	1,261,388	1,466,515	1,008,304			
Spain	Coef.	-.347	-.104	-.083	-.093	-.073	-.010	.24	.21
	Std. Err.	(.003)	(.004)	(.004)	(.004)	(.004)			
	t-value	-107.98	-26.88	-21.46	-23.34	-18.09			
	R ²	0.236	0.556	0.611	0.591	0.648			
	N	476,108	214,093	186,067	163,641	136,264			
Sweden	Coef.	-.073	-.016	.009	-.011	.011	-.002	.00	.00
	Std. Err.	(.001)	(.001)	(.001)	(.001)	(.001)			
	t-value	-50.10	-11.88	7.66	-8.22	9.12			
	R ²	0.233	0.414	0.541	0.439	0.572			
	N	3,340,002	2,662,784	1,922,492	2,209,883	1,307,820			
Panel B: Children of immigrants									
Denmark	Coef.	-.053	-.026	-.008	-.021	-.007	-.001	.15	.14
	Std. Err.	(.003)	(.003)	(.003)	(.003)	(.003)			
	t-value	-15.91	-7.92	-2.57	-6.48	-2.31			
	R ²	0.200	0.342	0.441	0.382	0.492			
	N	1,755,962	1,518,323	1,196,036	1,364,717	951,079			
Netherlands	Coef.	-.056	-.034	.015	-.037	.007	.008	.00	.00
	Std. Err.	(.014)	(.019)	(.047)	(.018)	(.046)			
	t-value	-4.15	-1.81	0.32	-2.08	0.14			
	R ²	0.386	0.596	0.739	0.599	0.748			
	N	56,829.00	25,260.00	9,999.00	23,369	9,296			
Norway	Coef.	-.091	-.038	-.012	-.033	-.010	-.002	.13	.11
	Std. Err.	(.004)	(.003)	(.003)	(.003)	(.003)			
	t-value	-24.94	-11.34	-3.74	-9.94	-2.98			
	R ²	0.289	0.476	0.600	0.502	0.627			
	N	1,866,155	1,618,335	1,261,388	1,466,515	1,008,304			
Sweden	Coef.	-.054	-.029	-.008	-.025	-.008	.000	.15	.15
	Std. Err.	(.001)	(.001)	(.001)	(.001)	(.001)			
	t-value	-39.12	-22.68	-7.06	-19.52	-6.70			
	R ²	0.233	0.414	0.541	0.439	0.572			
	N	3,340,002	2,662,784	1,922,492	2,209,883	1,307,820			

Note: Each estimate represents the coefficients from an Ordinary Least Squares (OLS) regression model for each country estimating the difference between the logged annual earnings of immigrants and natives (panel A) and children of immigrants and natives (panel B), ages 25–60 years, for all world regions combined, with negative coefficients indicating that immigrants earn less than natives. Following standard conventions, we interpret these coefficients as the relative difference between the average (children of) immigrant and native earnings, but more formally they indicate the difference in relative geometric means for unlogged earnings (which is the absolute difference in the arithmetic means of logged earnings). The 'basic adjustment' column reports differences from a model that controls for age and age squared, education, gender, and geographic region. Subsequent models provide estimates of within-firm and within-job (firm–establishment units) (children of) immigrant–native differences by introducing fixed effects for firm and occupation–firm units (columns 2 and 3) and estimates from the main analysis of within-establishment and within-job (occupation–establishment units) (children of) immigrant–native differences by introducing fixed effects for establishment and establishment–firm units (columns 4 and 5). The estimates in the parentheses report the standard errors of each coefficient. Column 6 reports the difference between the sensitivity analysis and the main analysis for the within-job estimates. Columns 10 and 11 report the proportion of the (children of) immigrant–native difference from basic adjustments that remains when we compare (children of) immigrants and natives who are working in the same occupations and establishments in the sensitivity analysis and main analysis, respectively. In these columns, the number .00 refers to cases where (children of) immigrants do not earn less than natives at the within-job level, the number 1.00 refers to cases where the within-job earnings disadvantage of (children of) immigrants relative to natives is larger than in the 'basic adjustments' model, and dashed lines (–) is used in cases where (children of) immigrants do not earn less than natives in the 'basic adjustments' model.

Supplementary Table 33. Immigrant–native differences in annual earnings without adjustment for education.

		Sensitivity: No adjustment for education					Main analysis		Difference in Basic adj. estimates relative to main analysis	Difference in Occ-Est estimates relative to main analysis	Proportion within job (no adjustment for education)	Proportion within job (main analysis)
		Basic adj.	Fixed effect for:				Basic adj.	Fixed effect Occ-Est				
			Ind	Occ	Est	Occ-Est						
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Panel A: Immigrants												
Canada	Coef.	-.272	-.193	-.149	-.138	-.077	-.322	-.099	.050	.022	.28	.31
	Std. Err.	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)				
	t-value	-221.51	-167.47	-138.63	-112.71	-61.11	-269.92	-77.51				
	R ²	0.134	0.266	0.386	0.404	0.563	0.198	0.566				
	N	2,771,043	2,771,043	2,771,043	2,088,907	1,429,648	2,771,043	1,429,648				
Denmark	Coef.	-.161	-.113	-.059	-.086	-.039	-.096	-.023	-.065	-.015	.24	.24
	Std. Err.	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)				
	t-value	-122.15	-89.32	-48.49	-66.41	-29.77	-68.84	-16.90				
	R ²	0.154	0.241	0.342	0.363	0.491	0.200	0.492				
	N	1,755,962	1,755,756	1,755,352	1,364,717	951,079	1,755,962	951,079				
France	Coef.	-.258	-.160	-.095	-.092	-.062	-0.209	-0.069	-.048	.007	.24	.33
	Std. Err.	(.002)	(.002)	(.002)	(.004)	(.005)	0.002	0.004				
	t-value	-106.219	-73.461	-49.108	-22.201	-13.784	-91.94	-15.44				
	R ²	0.189	0.348	0.499	0.626	0.743	0.303	0.747				
	N	764,703	764,039	764,699	222,884	130,983	764,703	130,983				
Germany	Coef.	-.304	-.171	-.106	-.122	-.055	-.218	-.054	-.086	-.002	.18	.25
	Std. Err.	(.004)	(.004)	(.003)	(.003)	(.003)	(.004)	(.003)				
	t-value	-73.28	-46.35	-30.82	-38.11	-19.34	-51.55	-18.22				
	R ²	0.234	0.407	0.536	0.553	0.700	0.318	0.703				
	N	1,089,303	1,089,210	1,088,753	1,058,703	863,810	1,089,303	863,810				
Netherlands	Coef.	-.213	-.137	-.068	-.091	-.048	-.167	-.052	-.046	.004	.22	.31
	Std. Err.	(.011)	(.009)	(.008)	(.012)	(.018)	(.010)	(.018)				
	t-value	-20.06	-14.63	-8.10	-7.80	-2.66	-17.06	-2.93				
	R ²	0.236	0.387	0.530	0.532	0.737	0.385	0.748				
	N	56,829	56,601	56,724	23,369	9,296	56,829	9,296				
Norway	Coef.	-.256	-.167	-.086	-.114	-.034	-.227	-.035	-.029	.001	.13	.15
	Std. Err.	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)				
	t-value	-279.05	-185.27	-102.40	-122.48	-37.46	-243.15	-37.12				
	R ²	0.212	0.336	0.473	0.470	0.624	0.289	0.627				
	N	1,866,155	1,866,114	1,866,105	1,466,515	1,008,304	1,866,155	1,008,304				
Spain	Coef.	-.425	-.231	-.180	-.092	-.072	-.347	-.073	-.078	.000	.17	.21
	Std. Err.	(.003)	(.003)	(.003)	(.004)	(.004)	(.003)	(.004)				
	t-value	-130.46	-73.47	-60.34	-22.87	-18.12	-107.98	-18.09				
	R ²	0.169	0.324	0.408	0.576	0.647	0.236	0.648				
	N	476,108	475,992	476,023	163,641	136,264	476,108	136,264				
Sweden	Coef.	-.106	-.071	-.020	-.029	.010	-.073	.011	-.033	-.002	.00	.00
	Std. Err.	(.002)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)				
	t-value	-70.07	-49.40	-15.32	-20.55	7.55	-50.10	9.12				
	R ²	0.174	0.253	0.419	0.401	0.569	0.233	0.572				
	N	3,340,002	3,332,251	3,076,527	2,209,883	1,307,820	3,340,002	1,307,820				
United States	Coef.	-.153	-.104	-.056	-.066	-.018	-.112	-.035	-.041	.017	.12	.31
	Std. Err.	(.003)	(.002)	(.002)	(.003)	(.003)	(.002)	(.003)				
	t-value	-59.15	-44.60	-25.93	-26.36	-6.03	-45.65	-11.50				
	R ²	0.145	0.308	0.444	0.484	0.690	0.263	0.697				
	N	1,415,000	1,391,000	1,391,000	749,000	314,000	1,398,000	310,000				
Panel B: Children of immigrants												
Canada	Coef.	.019	.014	-.003	-.008	-.013	-.019	-.017	.038	.004	—	.89
	Std. Err.	(.002)	(.002)	(.001)	(.002)	(.002)	(.002)	(.002)				
	t-value	10.585	8.451	-2.327	-5.204	-8.054	-11.36	-10.59				
	R ²	0.134	0.266	0.386	0.404	0.563	0.198	0.566				
	N	2,771,043	2,771,043	2,771,043	2,088,907	1,429,648	2,771,043	1,429,648				

Denmark	Coef.	-.071	-.050	-.029	-.029	-.010	-.053	-.007	-.019	-.003	.15	.14
	Std. Err.	(.003)	(.003)	(.003)	(.003)	(.003)	(.003)	(.003)				
	t-value	-20.78	-15.37	-9.06	-9.06	-3.25	-15.91	-2.31				
	R ²	0.154	0.241	0.342	0.363	0.491	0.200	0.492				
	N	1,755,962	1,755,756	1,755,352	1,364,717	951,079	1,755,962	951,079				
Germany	Coef.	-.097	-.058	-.036	-.042	-.015	-.081	-.015	-.016	.000	.15	.19
	Std. Err.	(.007)	(.006)	(.005)	(.004)	(.004)	(.007)	(.004)				
	t-value	-13.77	-10.07	-6.70	-9.56	-4.15	-12.24	-4.26				
	R ²	0.234	0.407	0.536	0.553	0.700	0.318	0.703				
	N	1,089,303	1,089,210	1,088,753	1,058,703	863,810	1,089,303	863,810				
Netherlands	Coef.	-.124	-.089	-.059	-.074	-.003	-.056	.007	-.068	-.010	.02	.00
	Std. Err.	(.015)	(.014)	(.012)	(.019)	(.046)	(.014)	(.046)				
	t-value	-8.08	-6.57	-4.91	-3.83	-0.07	-4.15	0.14				
	R ²	0.236	0.387	0.530	0.532	0.737	0.385	0.748				
	N	56,829	56,601	56,724	23,369	9,296	56,829	9,296				
Norway	Coef.	-.108	-.066	-.049	-.036	-.011	-.091	-.010	-.018	-.001	.10	.11
	Std. Err.	(.004)	(.004)	(.003)	(.003)	(.003)	(.004)	(.003)				
	t-value	-28.09	-18.51	-15.48	-10.55	-3.32	-24.94	-2.98				
	R ²	0.212	0.336	0.473	0.470	0.624	0.289	0.627				
	N	1,866,155	1,866,114	1,866,105	1,466,515	1,008,304	1,866,155	1,008,304				
Sweden	Coef.	-.079	-.063	-.027	-.038	-.010	-.054	-.008	-.025	-.002	.12	.15
	Std. Err.	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)				
	t-value	-54.83	-45.80	-22.52	-29.27	-8.16	-39.12	-6.70				
	R ²	0.174	0.253	0.419	0.401	0.569	0.233	0.572				
	N	3,340,002	3,332,251	3,076,527	2,209,883	1,307,820	3,340,002	1,307,820				

Note: Each estimate represents the coefficients from an Ordinary Least Squares (OLS) regression model for each country estimating the difference between the logged annual earnings of immigrants and natives (panel A) and children of immigrants and natives (panel B), ages 25–60 years, for all world regions combined, with negative coefficients indicating that immigrants earn less than natives. Following standard conventions, we interpret these coefficients as the relative difference between the average (children of) immigrant and native earnings, but more formally they indicate the difference in relative geometric means for unlogged earnings (which is the absolute difference in the arithmetic means of logged earnings). The 'basic adjustment' column reports differences from a model that controls for age and age squared, gender, and geographic region. Subsequent models provide estimates of within-industry, within-occupation, within-establishment, and within-job (occupation–establishment units) (children of) immigrant–native differences by introducing fixed effects for industry, occupation, establishment, and occupation–establishment units. The estimates in the parentheses report the standard errors of each coefficient. Columns 8 and 9 report the difference between the sensitivity analysis and the main analysis for the basic adjustment and within-job estimates, respectively. Columns 10 and 11 report the proportion of the (children of) immigrant–native difference from basic adjustments that remains when we compare (children of) immigrants and natives who are working in the same occupations and establishments in the sensitivity analysis and main analysis, respectively. In these columns, the number .00 refers to cases where (children of) immigrants do not earn less than natives at the within-job level, the number 1.00 refers to cases where the within-job earnings disadvantage of (children of) immigrants relative to natives is larger than in the 'basic adjustments' model, and dashed lines (–) is used in cases where (children of) immigrants do not earn less than natives in the 'basic adjustments' model.

Supplementary Table 34. Immigrant–native differences in annual earnings without adjustment for geography.

		Sensitivity: No adjustment for geographic region				Main analysis		Difference in Basic adj. estimates relative to main analysis	Difference in Occ-Est estimates relative to main analysis	Proportion within job (no adjustment for geographic region)	Proportion within job (main analysis)	
		Basic adj.	Fixed effect for:				Basic adj.					Fixed effect Occ-Est
			Ind	Occ	Est	Occ-Est						
Panel A: Immigrants												
Canada	Coef.	-.247	-.177	-.112	-.173	-.088	-.322	-.099	.076	.011	.36	.31
	Std. Err.	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)				
	t-value	-224.37	-167.31	-111.20	-144.79	-70.48	-269.92	-77.51				
	R ²	0.174	0.281	0.377	0.423	0.563	0.198	0.566				
	N	2,771,043	2,771,043	2,771,043	2,088,907	1,429,648	2,771,043	1,429,648				
Denmark	Coef.	-.080	-.057	-.023	-.055	-.023	-.096	-.023	.016	.000	.29	.24
	Std. Err.	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)				
	t-value	-56.91	-42.29	-17.53	-39.62	-16.74	-68.84	-16.90				
	R ²	0.185	0.262	0.341	0.382	0.492	0.200	0.492				
	N	1,755,962	1,755,756	1,755,352	1,364,717	951,079	1,755,962	951,079				
France	Coef.	-.144	-.095	-.063	-.091	-.069	-0.209	-0.069	.065	.000	.48	.33
	Std. Err.	(.002)	(.002)	(.002)	(.004)	(.004)	0.002	0.004				
	t-value	-63.689	-46.043	-33.169	-22.022	-15.430	-91.94	-15.44				
	R ²	0.246	0.384	0.494	0.659	0.747	0.303	0.747				
	N	764,716	764,052	764,712	222,885	130,983	764,703	130,983				
Germany	Coef.	-.190	-.103	-.057	-.110	-.054	-.218	-.054	.028	.000	.28	.25
	Std. Err.	(.004)	(.004)	(.004)	(.003)	(.003)	(.004)	(.003)				
	t-value	-45.01	-26.94	-15.76	-33.76	-18.22	-51.55	-18.22				
	R ²	0.242	0.415	0.517	0.586	0.703	0.318	0.703				
	N	1,089,337	1,089,210	1,088,753	1,058,703	863,810	1,089,303	863,810				
Netherlands	Coef.	-.147	-.105	-.056	-.091	-.052	-.167	-.052	.020	.000	.35	.31
	Std. Err.	(.010)	(.009)	(.008)	(.011)	(.018)	(.010)	(.018)				
	t-value	-14.95	-11.55	-6.61	-7.98	-2.93	-17.06	-2.93				
	R ²	0.362	0.462	0.545	0.599	0.748	0.385	0.748				
	N	56,829	56,601	56,724	23,369	9,296	56,829	9,296				
Norway	Coef.	-.211	-.150	-.075	-.119	-.035	-.227	-.035	.016	.000	.16	.15
	Std. Err.	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)				
	t-value	-226.07	-163.52	-85.91	-127.47	-37.11	-243.15	-37.12				
	R ²	0.260	0.372	0.475	0.501	0.627	0.289	0.627				
	N	1,866,156	1,866,115	1,866,106	1,466,517	1,008,304	1,866,155	1,008,304				
Spain	Coef.	-.297	-.153	-.119	-.093	-.073	-.347	-.073	.050	.000	.24	.21
	Std. Err.	(.003)	(.003)	(.003)	(.004)	(.004)	(.003)	(.004)				
	t-value	-92.74	-49.36	-40.09	-23.34	-18.09	-107.98	-18.09				
	R ²	0.189	0.324	0.393	0.591	0.648	0.236	0.648				
	N	476,108	475,992	476,023	163,641	136,264	476,108	136,264				
Sweden	Coef.	-.050	-.028	-.001	-.011	.011	-.073	.011	.023	.000	.00	.00
	Std. Err.	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)				
	t-value	-34.43	-20.10	-1.04	-8.22	9.12	-50.10	9.12				
	R ²	0.208	0.285	0.419	0.439	0.572	0.233	0.572				
	N	3,340,002	3,332,251	3,076,527	2,209,883	1,307,820	3,340,002	1,307,820				
United States	Coef.	-.022	-.018	.018	-.050	-.004	-.112	-.035	.090	.031	.17	.31
	Std. Err.	(.002)	(.002)	(.002)	(.002)	(.003)	(.002)	(.003)				
	t-value	-9.16	-8.21	8.45	-20.37	-1.24	-45.65	-11.50				
	R ²	0.217	0.345	0.423	0.515	0.666	0.263	0.697				
	N	1,508,000	1,481,000	1,459,000	798,000	327,000	1,398,000	310,000				
Panel B: Children of immigrants												
Canada	Coef.	.048	.053	.042	-.012	-.009	-.019	-.017	.067	.008	—	.89
	Std. Err.	(.002)	(.002)	(.001)	(.002)	(.002)	(.002)	(.002)				
	t-value	29.43	34.07	29.19	-7.78	-5.44	-11.36	-10.59				
	R ²	0.174	0.281	0.377	0.423	0.563	0.198	0.566				
	N	2,771,043	2,771,043	2,771,043	2,088,907	1,429,648	2,771,043	1,429,648				

Denmark	Coef.	-.021	-.015	-.006	-.021	-.007	-.053	-.007	.032	.000	.34	.14
	Std. Err.	(.003)	(.003)	(.003)	(.003)	(.003)	(.003)	(.003)				
	t-value	-6.30	-4.75	-1.80	-6.43	-2.23	-15.91	-2.31				
	R ²	0.185	0.262	0.341	0.382	0.492	0.200	0.492				
	N	1,755,962	1,755,756	1,755,352	1,364,717	951,079	1,755,962	951,079				
Germany	Coef.	-.064	-.035	-.018	-.040	-.015	-.081	-.015	.016	.000	.24	.19
	Std. Err.	(.007)	(.006)	(.005)	(.004)	(.004)	(.007)	(.004)				
	t-value	-9.65	-6.11	-3.29	-9.23	-4.26	-12.24	-4.26				
	R ²	0.242	0.415	0.517	0.586	0.703	0.318	0.703				
	N	1,089,337	1,089,210	1,088,753	1,058,703	863,810	1,089,303	863,810				
Netherlands	Coef.	-.027	-.022	-.018	-.037	.007	-.056	.007	.029	.000	.00	.00
	Std. Err.	(.014)	(.012)	(.012)	(.018)	(.046)	(.014)	(.046)				
	t-value	-1.99	-1.73	-1.58	-2.08	0.14	-4.15	0.14				
	R ²	0.362	0.462	0.545	0.599	0.748	0.385	0.748				
	N	56,829	56,601	56,724	23,369	9,296	56,829	9,296				
Norway	Coef.	-.044	-.021	-.017	-.033	-.010	-.091	-.010	.046	.000	.22	.11
	Std. Err.	(.004)	(.003)	(.003)	(.003)	(.003)	(.004)	(.003)				
	t-value	-12.21	-6.24	-5.32	-9.98	-3.00	-24.94	-2.98				
	R ²	0.260	0.372	0.475	0.501	0.627	0.289	0.627				
	N	1,866,156	1,866,115	1,866,106	1,466,517	1,008,304	1,866,155	1,008,304				
Sweden	Coef.	-.021	-.020	-.006	-.025	-.008	-.054	-.008	.034	.000	.39	.15
	Std. Err.	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)				
	t-value	-14.84	-14.89	-5.30	-19.52	-6.70	-39.12	-6.70				
	R ²	0.208	0.285	0.419	0.439	0.572	0.233	0.572				
	N	3,340,002	3,332,251	3,076,527	2,209,883	1,307,820	3,340,002	1,307,820				

Note: Each estimate represents the coefficients from an Ordinary Least Squares (OLS) regression model for each country estimating the difference between the logged annual earnings of immigrants and natives (panel A) and children of immigrants and natives (panel B), ages 25–60 years, for all world regions combined, with negative coefficients indicating that immigrants earn less than natives. Following standard conventions, we interpret these coefficients as the relative difference between the average (children of) immigrant and native earnings, but more formally they indicate the difference in relative geometric means for unlogged earnings (which is the absolute difference in the arithmetic means of logged earnings). The 'basic adjustment' column reports differences from a model that controls for age and age squared, education, and gender. Subsequent models provide estimates of within-industry, within-occupation, within-establishment, and within-job (occupation–establishment units) (children of) immigrant–native differences by introducing fixed effects for industry, occupation, establishment, and occupation–establishment units. The estimates in the parentheses report the standard errors of each coefficient. Columns 8 and 9 report the difference between the sensitivity analysis and the main analysis for the basic adjustment and within-job estimates, respectively. Columns 10 and 11 report the proportion of the (children of) immigrant–native difference from basic adjustments that remains when we compare (children of) immigrants and natives who are working in the same occupations and establishments in the sensitivity analysis and main analysis, respectively. In these columns, the number .00 refers to cases where (children of) immigrants do not earn less than natives at the within-job level, the number 1.00 refers to cases where the within-job earnings disadvantage of (children of) immigrants relative to natives is larger than in the 'basic adjustments' model, and dashed lines (–) is used in cases where (children of) immigrants do not earn less than natives in the 'basic adjustments' model.

Supplementary Table 35. Immigrant–native differences in annual earnings without adjustment for education and geography.

		Sensitivity: No adjustment for education and geographic region					Main analysis		Difference in Basic adj. estimates relative to main analysis	Difference in Occ-Est estimates relative to main analysis	Proportion within job (no adjustment for education and geographic region)	Proportion within job (main analysis)
		Fixed effect for:					Fixed effect:					
		Basic adj.	Ind	Occ	Est	Occ-Est	Basic adj.	Occ-Est				
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Panel A: Immigrants												
Canada	Coef.	-.169	-.106	-.083	-.116	-.064	-.322	-.099	.153	.035	.38	.31
	Std. Err.	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)				
	t-value	-149.17	-99.87	-84.26	-96.59	-52.04	-269.92	-77.51				
	R ²	0.097	0.242	0.371	0.396	0.558	0.198	0.566				
	N	2,771,043	2,771,043	2,771,043	2,088,907	1,429,648	2,771,043	1,429,648				
Denmark	Coef.	-.135	-.095	-.047	-.086	-.038	-.096	-.023	-.039	-.015	.28	.24
	Std. Err.	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)				
	t-value	-101.69	-75.16	-38.75	-66.31	-29.60	-68.84	-16.90				
	R ²	0.126	0.232	0.338	0.363	0.490	0.200	0.492				
	N	1,755,962	1,755,756	1,755,352	1,364,717	951,079	1,755,962	951,079				
France	Coef.	-.181	-.100	-.058	-.092	-.062	-0.209	-0.069	.028	.007	.34	.33
	Std. Err.	(.002)	(.002)	(.002)	(.004)	(.005)	0.002	0.004				
	t-value	-73.714	-46.614	-30.686	-22.194	-13.778	-91.94	-15.44				
	R ²	0.089	0.306	0.483	0.626	0.743	0.303	0.747				
	N	764,716	764,052	764,712	222,885	130,983	764,703	130,983				
Germany	Coef.	-.272	-.130	-.069	-.122	-.055	-.218	-.054	-.054	-.002	.20	.25
	Std. Err.	(.004)	(.004)	(.003)	(.003)	(.003)	(.004)	(.003)				
	t-value	-66.99	-35.75	-20.31	-38.11	-19.34	-51.55	-18.22				
	R ²	0.141	0.363	0.507	0.553	0.700	0.318	0.703				
	N	1,089,337	1,089,210	1,088,753	1,058,703	863,810	1,089,303	863,810				
Netherlands	Coef.	-.179	-.103	-.040	-.091	-.048	-.167	-.052	-.012	.004	.27	.31
	Std. Err.	(.011)	(.009)	(.008)	(.012)	(.018)	(.010)	(.018)				
	t-value	-16.51	-10.99	-4.80	-7.80	-2.66	-17.06	-2.93				
	R ²	0.177	0.364	0.517	0.532	0.737	0.385	0.748				
	N	56,829	56,601	56,724	23,369	9,296	56,829	9,296				
Norway	Coef.	-.235	-.146	-.070	-.114	-.034	-.227	-.035	-.008	.001	.14	.15
	Std. Err.	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)				
	t-value	-254.83	-163.34	-83.94	-122.49	-37.44	-243.15	-37.12				
	R ²	0.166	0.320	0.466	0.470	0.624	0.289	0.627				
	N	1,866,156	1,866,115	1,866,106	1,466,517	1,008,304	1,866,155	1,008,304				
Spain	Coef.	-.387	-.173	-.129	-.092	-.072	-.347	-.073	-.039	.000	.19	.21
	Std. Err.	(.003)	(.003)	(.003)	(.004)	(.004)	(.003)	(.004)				
	t-value	-117.90	-55.37	-43.54	-22.87	-18.12	-107.98	-18.09				
	R ²	0.091	0.285	0.386	0.576	0.647	0.236	0.648				
	N	476,108	475,992	476,023	163,641	136,264	476,108	136,264				
Sweden	Coef.	-.081	-.051	-.006	-.029	.010	-.073	.011	-.009	-.002	.00	.00
	Std. Err.	(.002)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)				
	t-value	-53.32	-35.03	-4.92	-20.55	7.55	-50.10	9.12				
	R ²	0.132	0.235	0.411	0.401	0.569	0.233	0.572				
	N	3,340,002	3,332,251	3,076,527	2,209,883	1,307,820	3,340,002	1,307,820				
United States	Coef.	-.037	-.008	.034	-.031	.015	-.112	-.035	.074	.050	.00	.31
	Std. Err.	(.003)	(.002)	(.002)	(.003)	(.003)	(.002)	(.003)				
	t-value	-14.94	-3.32	15.97	-12.31	5.14	-45.65	-11.50				
	R ²	0.075	0.260	0.404	0.462	0.658	0.263	0.697				
	N	1,529,000	1,501,000	1,477,000	808,000	331,000	1,398,000	310,000				
Panel B: Children of immigrants												
Canada	Coef.	.110	.091	.052	.009	-.004	-.019	-.017	.129	.013	–	.89
	Std. Err.	(.002)	(.002)	(.001)	(.002)	(.002)	(.002)	(.002)				
	t-value	64.64	57.08	35.94	5.53	-2.30	-11.36	-10.59				
	R ²	0.097	0.242	0.371	0.396	0.558	0.198	0.566				
	N	2,771,043	2,771,043	2,771,043	2,088,907	1,429,648	2,771,043	1,429,648				
Denmark	Coef.	-.029	-.022	-.010	-.029	-.010	-.053	-.007	.024	-.003	.36	.14

	Std. Err.	(.003)	(.003)	(.003)	(.003)	(.003)	(.003)	(.003)				
	t-value	-8.32	-6.85	-3.29	-8.99	-3.17	-15.91	-2.31				
	R ²	0.126	0.232	0.338	0.363	0.490	0.200	0.492				
	N	1,755,962	1,755,756	1,755,352	1,364,717	951,079	1,755,962	951,079				
Germany	Coef.	-.075	-.037	-.018	-.042	-.015	-.081	-.015	.005	.000	.20	.19
	Std. Err.	(.007)	(.006)	(.006)	(.004)	(.004)	(.007)	(.004)				
	t-value	-10.58	-6.23	-3.23	-9.56	-4.15	-12.24	-4.26				
	R ²	0.141	0.363	0.507	0.553	0.700	0.318	0.703				
	N	1,089,337	1,089,210	1,088,753	1,058,703	863,810	1,089,303	863,810				
Netherlands	Coef.	-.075	-.052	-.031	-.074	-.003	-.056	.007	-.018	-.010	.04	.00
	Std. Err.	(.015)	(.013)	(.012)	(.019)	(.046)	(.014)	(.046)				
	t-value	-4.83	-3.85	-2.62	-3.83	-0.07	-4.15	0.14				
	R ²	0.177	0.364	0.517	0.532	0.737	0.385	0.748				
	N	56,829	56,601	56,724	23,369	9,296	56,829	9,296				
Norway	Coef.	-.040	-.018	-.018	-.036	-.011	-.091	-.010	.050	-.001	.27	.11
	Std. Err.	(.004)	(.004)	(.003)	(.003)	(.003)	(.004)	(.003)				
	t-value	-10.54	-5.15	-5.81	-10.56	-3.33	-24.94	-2.98				
	R ²	0.166	0.320	0.466	0.470	0.624	0.289	0.627				
	N	1,866,156	1,866,115	1,866,106	1,466,517	1,008,304	1,866,155	1,008,304				
Sweden	Coef.	-.039	-.035	-.010	-.038	-.010	-.054	-.008	.015	-.002	.25	.15
	Std. Err.	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)				
	t-value	-27.16	-25.70	-8.32	-29.27	-8.16	-39.12	-6.70				
	R ²	0.132	0.235	0.411	0.401	0.569	0.233	0.572				
	N	3,340,002	3,332,251	3,076,527	2,209,883	1,307,820	3,340,002	1,307,820				

Note: Each estimate represents the coefficients from an Ordinary Least Squares (OLS) regression model for each country estimating the difference between the logged annual earnings of immigrants and natives (panel A) and children of immigrants and natives (panel B), ages 25–60 years, for all world regions combined, with negative coefficients indicating that immigrants earn less than natives. Following standard conventions, we interpret these coefficients as the relative difference between the average (children of) immigrant and native earnings, but more formally they indicate the difference in relative geometric means for unlogged earnings (which is the absolute difference in the arithmetic means of logged earnings). The 'basic adjustment' column reports differences from a model that controls for age and age squared, and gender. Subsequent models provide estimates of within-industry, within-occupation, within-establishment, and within-job (occupation–establishment units) (children of) immigrant–native differences by introducing fixed effects for industry, occupation, establishment, and occupation–establishment units. The estimates in the parentheses report the standard errors of each coefficient. Columns 8 and 9 report the difference between the sensitivity analysis and the main analysis for the basic adjustment and within-job estimates, respectively. Columns 10 and 11 report the proportion of the (children of) immigrant–native difference from basic adjustments that remains when we compare (children of) immigrants and natives who are working in the same occupations and establishments in the sensitivity analysis and main analysis, respectively. In these columns, the number .00 refers to cases where (children of) immigrants do not earn less than natives at the within-job level, the number 1.00 refers to cases where the within-job earnings disadvantage of (children of) immigrants relative to natives is larger than in the 'basic adjustments' model, and dashed lines (–) is used in cases where (children of) immigrants do not earn less than natives in the 'basic adjustments' model.

Supplementary Table 36. Immigrant–native differences in annual earnings without adjustment for age.

		Sensitivity: No adjustment for age					Main analysis		Difference in Basic adj. estimates relative to main analysis	Difference in Occ-Est estimates relative to main analysis	Proportion within job (no adjustment for age)	Proportion within job (main analysis)
		Fixed effect for:					Fixed effect					
		Basic adj.	Ind	Occ	Est	Occ-Est	Basic adj.	Occ-Est				
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Panel A: Immigrants												
Canada	Coef.	-.275	-.199	-.130	-.142	-.059	-.322	-.099	.047	.040	.22	.31
	Std. Err.	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)				
	t-value	-224.47	-170.51	-117.01	-113.32	-45.02	-269.92	-77.51				
	R ²	0.145	0.258	0.360	0.384	0.534	0.198	0.566				
	N	2,771,043	2,771,043	2,771,043	2,088,907	1,429,648	2,771,043	1,429,648				
Denmark	Coef.	-.141	-.111	-.066	-.090	-.046	-.096	-.023	-.045	-.022	.32	.24
	Std. Err.	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)				
	t-value	-96.88	-78.35	-48.53	-62.49	-31.48	-68.84	-16.90				
	R ²	0.104	0.181	0.279	0.301	0.435	0.200	0.492				
	N	1,755,962	1,755,756	1,755,352	1,364,717	951,079	1,755,962	951,079				
France	Coef.	-.200	-.131	-.083	-.072	-.051	-0.209	-0.069	.010	.018	.26	.33
	Std. Err.	(.002)	(.002)	(.002)	(.004)	(.005)	0.002	0.004				
	t-value	-86.277	-61.183	-42.314	-17.424	-11.352	-91.94	-15.44				
	R ²	0.243	0.366	0.479	0.633	0.728	0.303	0.747				
	N	764,703	764,039	764,699	222,884	130,983	764,703	130,983				
Germany	Coef.	-.226	-.145	-.099	-.116	-.060	-.218	-.054	-.008	-.006	.26	.25
	Std. Err.	(.004)	(.004)	(.004)	(.003)	(.003)	(.004)	(.003)				
	t-value	-53.57	-38.00	-27.40	-35.56	-20.42	-51.55	-18.22				
	R ²	0.307	0.445	0.539	0.579	0.698	0.318	0.703				
	N	1,089,303	1,089,210	1,088,753	1,058,703	863,810	1,089,303	863,810				
Netherlands	Coef.	-.158	-.114	-.064	-.081	-.039	-.167	-.052	.009	.013	.25	.31
	Std. Err.	(.010)	(.009)	(.009)	(.012)	(.018)	(.010)	(.018)				
	t-value	-15.88	-12.47	-7.49	-6.87	-2.14	-17.06	-2.93				
	R ²	0.333	0.439	0.526	0.568	0.730	0.385	0.748				
	N	56,829	56,601	56,724	23,369	9,296	56,829	9,296				
Norway	Coef.	-.234	-.162	-.078	-.115	-.023	-.227	-.035	-.006	.012	.10	.15
	Std. Err.	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)				
	t-value	-243.36	-171.12	-87.18	-118.93	-23.79	-243.15	-37.12				
	R ²	0.211	0.317	0.441	0.443	0.594	0.289	0.627				
	N	1,866,155	1,866,114	1,866,105	1,466,515	1,008,304	1,866,155	1,008,304				
Spain	Coef.	-.366	-.216	-.174	-.090	-.069	-.347	-.073	-.019	.003	.19	.21
	Std. Err.	(.003)	(.003)	(.003)	(.004)	(.004)	(.003)	(.004)				
	t-value	-113.04	-68.70	-57.82	-22.17	-17.03	-107.98	-18.09				
	R ²	0.192	0.322	0.389	0.567	0.634	0.236	0.648				
	N	476,108	475,992	476,023	163,641	136,264	476,108	136,264				
Sweden	Coef.	-.111	-.079	-.037	-.046	-.010	-.073	.011	-.038	-.021	.09	.00
	Std. Err.	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)				
	t-value	-73.97	-54.85	-28.62	-32.33	-7.37	-50.10	9.12				
	R ²	0.145	0.219	0.377	0.352	0.525	0.233	0.572				
	N	3,340,002	3,332,251	3,076,527	2,209,883	1,307,820	3,340,002	1,307,820				
United States	Coef.	-.083	-.073	-.040	-.053	-.008	-.112	-.035	.029	.026	.10	.31
	Std. Err.	(.002)	(.002)	(.002)	(.003)	(.003)	(.002)	(.003)				
	t-value	-33.23	-31.42	-17.90	-21.36	-2.73	-45.65	-11.50				
	R ²	0.223	0.355	0.439	0.507	0.677	0.263	0.697				
	N	1,398,000	1,374,000	1,374,000	740,000	310,000	1,398,000	310,000				
Panel B: Children of immigrants												
Canada	Coef.	-.011	-.002	-.003	-.017	-.012	-.019	-.017	.009	.005	1.00	.89
	Std. Err.	(.002)	(.002)	(.002)	(.002)	(.002)	(.002)	(.002)				
	t-value	-5.94	-0.94	-2.23	-10.09	-6.99	-11.36	-10.59				
	R ²	0.145	0.258	0.360	0.384	0.534	0.198	0.566				
	N	2,771,043	2,771,043	2,771,043	2,088,907	1,429,648	2,771,043	1,429,648				
Denmark	Coef.	-.222	-.198	-.158	-.172	-.124	-.053	-.007	-.169	-.116	.56	.14

	Std. Err.	(.004)	(.003)	(.003)	(.003)	(.003)	(.003)	(.003)				
	t-value	-62.59	-57.99	-47.97	-50.80	-36.91	-15.91	-2.31				
	R ²	0.104	0.181	0.279	0.301	0.435	0.200	0.492				
	N	1,755,962	1,755,756	1,755,352	1,364,717	951,079	1,755,962	951,079				
Germany	Coef.	-.096	-.066	-.047	-.051	-.024	-.081	-.015	-.016	-.009	.25	.19
	Std. Err.	(.007)	(.006)	(.005)	(.004)	(.004)	(.007)	(.004)				
	t-value	-14.83	-11.87	-8.89	-11.84	-6.68	-12.24	-4.26				
	R ²	0.307	0.445	0.539	0.579	0.698	0.318	0.703				
	N	1,089,303	1,089,210	1,088,753	1,058,703	863,810	1,089,303	863,810				
Netherlands	Coef.	-.118	-.098	-.087	-.082	-.032	-.056	.007	-.062	-.039	.27	.00
	Std. Err.	(.014)	(.013)	(.012)	(.018)	(.044)	(.014)	(.046)				
	t-value	-8.16	-7.50	-7.12	-4.46	-0.73	-4.15	0.14				
	R ²	0.333	0.439	0.526	0.568	0.730	0.385	0.748				
	N	56,829	56,601	56,724	23,369	9,296	56,829	9,296				
Norway	Coef.	-.232	-.181	-.138	-.144	-.085	-.091	-.010	-.141	-.076	.37	.11
	Std. Err.	(.004)	(.004)	(.003)	(.004)	(.003)	(.004)	(.003)				
	t-value	-59.43	-49.40	-41.72	-40.42	-25.52	-24.94	-2.98				
	R ²	0.211	0.317	0.441	0.443	0.594	0.289	0.627				
	N	1,866,155	1,866,114	1,866,105	1,466,515	1,008,304	1,866,155	1,008,304				
Sweden	Coef.	-.100	-.084	-.050	-.063	-.030	-.054	-.008	-.046	-.022	.30	.15
	Std. Err.	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)				
	t-value	-67.99	-60.04	-39.95	-46.48	-24.10	-39.12	-6.70				
	R ²	0.145	0.219	0.377	0.352	0.525	0.233	0.572				
	N	3,340,002	3,332,251	3,076,527	2,209,883	1,307,820	3,340,002	1,307,820				

Note: Each estimate represents the coefficients from an Ordinary Least Squares (OLS) regression model for each country estimating the difference between the logged annual earnings of immigrants and natives (panel A) and children of immigrants and natives (panel B), ages 25–60 years, for all world regions combined, with negative coefficients indicating that immigrants earn less than natives. Following standard conventions, we interpret these coefficients as the relative difference between the average (children of) immigrant and native earnings, but more formally they indicate the difference in relative geometric means for unlogged earnings (which is the absolute difference in the arithmetic means of logged earnings). The 'basic adjustment' column reports differences from a model that controls for education, gender, and geographic region. Subsequent models provide estimates of within-industry, within-occupation, within-establishment, and within-job (occupation–establishment units) (children of) immigrant–native differences by introducing fixed effects for industry, occupation, establishment, and occupation–establishment units. The estimates in the parentheses report the standard errors of each coefficient. Columns 8 and 9 report the difference between the sensitivity analysis and the main analysis for the basic adjustment and within-job estimates, respectively. Columns 10 and 11 report the proportion of the (children of) immigrant–native difference from basic adjustments that remains when we compare (children of) immigrants and natives who are working in the same occupations and establishments in the sensitivity analysis and main analysis, respectively. In these columns, the number .00 refers to cases where (children of) immigrants do not earn less than natives at the within-job level, the number 1.00 refers to cases where the within-job earnings disadvantage of (children of) immigrants relative to natives is larger than in the 'basic adjustments' model, and dashed lines (–) is used in cases where (children of) immigrants do not earn less than natives in the 'basic adjustments' model.

Supplementary Table 37. Immigrant–native differences in annual earnings for sample with broader age range (ages 18–70).

		Sensitivity: Broader age range					Main analysis		Difference in Basic adj. estimates relative to main analysis	Difference in Occ-Est estimates relative to main analysis	Proportion within job (broader age range)	Proportion within job (main analysis)
		Fixed effect for:					Fixed effect					
		Basic adj.	Ind	Occ	Est	Occ-Est	Basic adj.	Occ-Est				
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Panel A: Immigrants												
Canada	Coef.	-.288	-.223	-.158	-.170	-.093	-.322	-.099	.034	.006	.32	.31
	Std. Err.	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)				
	t-value	-261.59	-211.61	-156.28	-151.81	-77.94	-269.92	-77.51				
	R ²	0.304	0.386	0.463	0.507	0.624	0.198	0.566				
	N	3,456,058	3,456,058	3,456,058	2,625,520	1,788,151	2,771,043	1,429,648				
Denmark	Coef.	-.087	-.064	-.030	-.051	-.021	-.096	-.023	.009	.002	.24	.24
	Std. Err.	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)				
	t-value	-66.04	-50.27	-24.88	-39.21	-16.34	-68.84	-16.90				
	R ²	0.293	0.349	0.416	0.441	0.539	0.200	0.492				
	N	2,093,957	2,093,717	2,093,256	1,644,296	1,155,680	1,755,962	951,079				
France	Coef.	-.209	-.149	-.102	-.095	-.071	-0.209	-0.069	.000	-.002	.34	.33
	Std. Err.	(.002)	(.002)	(.002)	(.004)	(.004)	0.002	0.004				
	t-value	-95.299	-73.716	-54.571	-23.739	-16.324	-91.94	-15.44				
	R ²	0.329	0.429	0.518	0.654	0.740	0.303	0.747				
	N	847,932	847,207	847,929	252,935	149,841	764,703	130,983				
Germany	Coef.	-.215	-.135	-.088	-.105	-.050	-.218	-.054	.003	.003	.23	.25
	Std. Err.	(.004)	(.004)	(.003)	(.003)	(.003)	(.004)	(.003)				
	t-value	-53.85	-36.84	-25.77	-33.97	-18.28	-51.55	-18.22				
	R ²	0.317	0.449	0.541	0.583	0.697	0.318	0.703				
	N	1,231,853	1,231,776	1,231,369	1,201,252	988,194	1,089,303	863,810				
Netherlands	Coef.	-.159	-.111	-.064	-.087	-.025	-.167	-.052	.008	.028	.15	.31
	Std. Err.	(.009)	(.008)	(.008)	(.011)	(.015)	(.010)	(.018)				
	t-value	-18.12	-13.71	-8.43	-7.93	-1.62	-17.06	-2.93				
	R ²	0.472	0.548	0.610	0.653	0.771	0.385	0.748				
	N	87,654	87,383	87,590	39,279	16,560	56829	9296				
Norway	Coef.	-.215	-.151	-.078	-.107	-.028	-.227	-.035	.012	.007	.13	.15
	Std. Err.	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)				
	t-value	-239.41	-170.69	-92.88	-119.27	-30.72	-243.15	-37.12				
	R ²	0.382	0.460	0.540	0.556	0.663	0.289	0.627				
	N	2,263,347	2,263,306	2,263,282	1,802,418	1,266,032	1,866,155	1,008,304				
Spain	Coef.	-.311	-.184	-.149	-.078	-.058	-.347	-.073	.036	.014	.19	.21
	Std. Err.	(.003)	(.003)	(.003)	(.004)	(.004)	(.003)	(.004)				
	t-value	-103.23	-62.81	-53.00	-20.76	-15.38	-107.98	-18.09				
	R ²	0.287	0.390	0.440	0.602	0.651	0.236	0.648				
	N	544,450	544,321	544,320	194,441	163,847	476,108	136,264				
Sweden	Coef.	-.075	-.052	-.021	-.019	.003	-.073	.011	-.002	-.009	.00	.00
	Std. Err.	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)				
	t-value	-54.49	-38.37	-16.44	-14.36	2.20	-50.10	9.12				
	R ²	0.353	0.395	0.459	0.499	0.576	0.233	0.572				
	N	4,288,908	4,277,667	3,866,671	2,897,471	1,713,420	3,340,002	1,307,820				
United States	Coef.	-.106	-.096	-.063	-.075	-.030	-.112	-.035	.006	.005	.28	.31
	Std. Err.	(.002)	(.002)	(.002)	(.002)	(.003)	(.002)	(.003)				
	t-value	-47.23	-45.91	-31.20	-33.71	-11.05	-45.65	-11.50				
	R ²	0.327	0.436	0.502	0.577	0.719	0.263	0.697				
	N	1,777,000	1,746,000	1,747,000	960,000	413,000	1,398,000	310,000				
Panel B: Children of immigrants												
Canada	Coef.	-.042	-.029	-.025	-.038	-.027	-.019	-.017	-.023	-.010	.64	.89
	Std. Err.	(.002)	(.001)	(.001)	(.001)	(.001)	(.002)	(.002)				
	t-value	-27.93	-20.20	-18.41	-26.19	-18.06	-11.36	-10.59				
	R ²	0.304	0.386	0.463	0.507	0.624	0.198	0.566				
	N	3,456,058	3,456,058	3,456,058	2,625,520	1,788,151	2,771,043	1,429,648				
Denmark	Coef.	-.066	-.048	-.033	-.029	-.017	-.053	-.007	-.013	-.009	.26	.14

	Std. Err.	(.003)	(.003)	(.003)	(.003)	(.003)	(.003)	(.003)				
	t-value	-23.21	-17.30	-12.30	-10.56	-6.03	-15.91	-2.31				
	R ²	0.293	0.349	0.416	0.441	0.539	0.200	0.492				
	N	2,093,957	2,093,717	2,093,256	1,644,296	1,155,680	1,755,962	951,079				
Germany	Coef.	-.081	-.055	-.037	-.041	-.017	-.081	-.015	-.001	-.002	.21	.19
	Std. Err.	(.006)	(.005)	(.005)	(.004)	(.003)	(.007)	(.004)				
	t-value	-13.80	-10.86	-7.79	-10.39	-5.12	-12.24	-4.26				
	R ²	0.317	0.449	0.541	0.583	0.697	0.318	0.703				
	N	1,231,853	1,231,776	1,231,369	1,201,252	988,194	1,089,303	863,810				
Netherlands	Coef.	-.033	-.021	-.018	-.013	.013	-.056	.007	.023	.006	.00	.00
	Std. Err.	(.012)	(.011)	(.011)	(.015)	(.024)	(.014)	(.046)				
	t-value	-2.73	-1.84	-1.65	-0.88	0.55	-4.15	0.14				
	R ²	0.472	0.548	0.610	0.653	0.771	0.385	0.748				
	N	87,654	87,383	87,590	39,279	16,560	56,829	9,296				
Norway	Coef.	-.118	-.072	-.054	-.045	-.018	-.091	-.010	-.027	-.009	.16	.11
	Std. Err.	(.003)	(.003)	(.003)	(.003)	(.003)	(.004)	(.003)				
	t-value	-37.06	-23.96	-19.15	-15.05	-6.27	-24.94	-2.98				
	R ²	0.382	0.460	0.540	0.556	0.663	0.289	0.627				
	N	2,263,347	2,263,306	2,263,282	1,802,418	1,266,032	1,866,155	1,008,304				
Sweden	Coef.	-.058	-.047	-.029	-.030	-.013	-.054	-.008	-.003	-.005	.23	.15
	Std. Err.	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)				
	t-value	-44.10	-37.01	-24.55	-23.66	-10.82	-39.12	-6.70				
	R ²	0.353	0.395	0.459	0.499	0.576	0.233	0.572				
	N	4,288,908	4,277,667	3,866,671	2,897,471	1,713,420	3,340,002	1,307,820				

Note: Each estimate represents the coefficients from an Ordinary Least Squares (OLS) regression model for each country estimating the difference between the logged annual earnings of immigrants and natives (panel A) and children of immigrants and natives (panel B), ages 18–70 years, for all world regions combined, with negative coefficients indicating that immigrants earn less than natives. Following standard conventions, we interpret these coefficients as the relative difference between the average (children of) immigrant and native earnings, but more formally they indicate the difference in relative geometric means for unlogged earnings (which is the absolute difference in the arithmetic means of logged earnings). The 'basic adjustment' column reports differences from a model that controls for age and age squared, education, gender, and geographic region. Subsequent models provide estimates of within-industry, within-occupation, within-establishment, and within-job (occupation–establishment units) (children of) immigrant–native differences by introducing fixed effects for industry, occupation, establishment, and occupation–establishment units. The estimates in the parentheses report the standard errors of each coefficient. Columns 8 and 9 report the difference between the sensitivity analysis and the main analysis for the basic adjustment and within-job estimates, respectively. Columns 10 and 11 report the proportion of the (children of) immigrant–native difference from basic adjustments that remains when we compare (children of) immigrants and natives who are working in the same occupations and establishments in the sensitivity analysis and main analysis, respectively. In these columns, the number .00 refers to cases where (children of) immigrants do not earn less than natives at the within-job level, the number 1.00 refers to cases where the within-job earnings disadvantage of (children of) immigrants relative to natives is larger than in the 'basic adjustments' model, and dashed lines (–) is used in cases where (children of) immigrants do not earn less than natives in the 'basic adjustments' model.

Supplementary Table 38. Immigrant–native differences in annual earnings after adjusting for seniority.

		Sensitivity: Adjustment for seniority					Main analysis		Difference in Basic adj. estimates relative to main analysis	Difference in Occ-Est estimates relative to main analysis	Proportion within job (adjustment for seniority)	Proportion within job (main analysis)
		Basic adj.	Fixed effect for:				Basic Adj.	Fixed effect for: Occ-Est				
			Ind	Occ	Est	Occ-Est						
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Panel A: Immigrants												
Canada	Coef.	-.237	-.186	-.127	-.135	-.061	-.322	-.099	.085	.038	.26	.31
	Std. Err.	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)				
	t-value	-212.00	-172.68	-123.53	-118.57	-51.27	-269.92	-77.51				
	R ²	0.312	0.390	0.464	0.495	0.600	0.198	0.566				
	N	2,771,043	2,771,043	2,771,043	2,105,343	1,512,758	2,771,043	1,429,648				
Denmark	Coef.	-.063	-.048	-.015	-.035	-.007	-.096	-.023	.034	.016	.12	.24
	Std. Err.	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)				
	t-value	-49.96	-39.82	-12.87	-28.89	-6.33	-68.84	-16.90				
	R ²	0.394	0.451	0.529	0.537	0.642	0.200	0.492				
	N	1,700,307	1,700,104	1,699,701	1,318,130	910,209	1,755,962	951,079				
France	Coef.	-.167	-.123	-.075	-.082	-.057	-0.209	-0.069	.042	.012	.34	.33
	Std. Err.	(.002)	(.002)	(.002)	(.004)	(.004)	0.002	0.004				
	t-value	-68.153	-54.148	-36.447	-20.092	-13.537	-91.94	-15.44				
	R ²	0.333	0.434	0.542	0.658	0.770	0.303	0.747				
	N	610,289	609,718	610,285	180,242	104,438	764,703	130,983				
Germany	Coef.	-.150	-.101	-.057	-.082	-.028	-.218	-.054	.069	.025	.19	.25
	Std. Err.	(.004)	(.004)	(.004)	(.003)	(.003)	(.004)	(.003)				
	t-value	-34.65	-25.59	-15.28	-25.21	-9.73	-51.55	-18.22				
	R ²	0.374	0.478	0.570	0.602	0.718	0.318	0.703				
	N	1,025,184	1,025,097	1,024,654	996,736	813,745	1,089,303	863,810				
Netherlands	Coef.	-.131	-.106	-.059	-.076	-.013	-.167	-.052	.036	.039	.10	.31
	Std. Err.	(.010)	(.009)	(.009)	(.012)	(.017)	(.010)	(.018)				
	t-value	-13.02	-11.28	-6.84	-6.57	-0.79	-17.06	-2.93				
	R ²	0.414	0.495	0.576	0.620	0.778	0.385	0.748				
	N	49,831	49,630	49,735	20,428	8,107	56829	9296				
Norway	Coef.	-.209	-.151	-.075	-.107	-.022	-.227	-.035	.018	.013	.10	.15
	Std. Err.	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)				
	t-value	-230.71	-169.24	-88.53	-117.80	-24.21	-243.15	-37.12				
	R ²	0.314	0.403	0.502	0.522	0.648	0.289	0.627				
	N	1,866,155	1,866,114	1,866,105	1,466,515	1,008,304	1,866,155	1,008,304				
Spain	Coef.	-.181	-.104	-.077	-.024	-.015	-.347	-.073	.166	.058	.08	.21
	Std. Err.	(.004)	(.004)	(.003)	(.005)	(.005)	(.003)	(.004)				
	t-value	-47.65	-28.65	-22.64	-5.13	-3.32	-107.98	-18.09				
	R ²	0.310	0.416	0.483	0.639	0.712	0.236	0.648				
	N	259,373	259,284	259,322	86,534	69,518	476,108	136,264				
Sweden	Coef.	-.063	-.040	-.011	-.009	.013	-.073	.011	.010	.002	.00	.00
	Std. Err.	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)				
	t-value	-42.18	-27.99	-8.08	-6.76	10.48	-50.10	9.12				
	R ²	0.240	0.307	0.441	0.450	0.586	0.233	0.572				
	N	2,794,747	2,794,122	2,607,578	1,946,655	1,168,452	3,340,002	1,307,820				
United States	Coef.	-.091	-.088	-.058	-.067	-.025	-.112	-.035	.020	.009	.28	.31
	Std. Err.	(.002)	(.002)	(.002)	(.002)	(.003)	(.002)	(.003)				
	t-value	-38.38	-39.60	-26.96	-28.14	-8.67	-45.65	-11.50				
	R ²	0.308	0.424	0.490	0.566	0.715	0.263	0.697				
	N	1,398,000	1,374,000	1,374,000	740,000	310,000	1,398,000	310,000				
Panel B: Children of immigrants												
Canada	Coef.	-.020	-.011	-.011	-.020	-.014	-.019	-.017	-.001	.003	.72	.89
	Std. Err.	(.002)	(.002)	(.001)	(.001)	(.002)	(.002)	(.002)				
	t-value	-12.49	-7.18	-7.68	-13.09	-9.45	-11.36	-10.59				
	R ²	0.312	0.390	0.464	0.495	0.600	0.198	0.566				

Denmark	<i>N</i>	2,771,043	2,771,043	2,771,043	2,105,343	1,512,758	2,771,043	1,429,648				
	Coef.	-.037	-.027	-.013	-.014	.000	-.053	-.007	.016	.007	.00	.14
	Std. Err.	(.003)	(.003)	(.003)	(.003)	(.003)	(.003)	(.003)				
	<i>t</i> -value	-12.88	-9.64	-4.91	-5.15	-0.06	-15.91	-2.31				
	<i>R</i> ²	0.394	0.451	0.529	0.537	0.642	0.200	0.492				
Germany	<i>N</i>	1,700,307	1,700,104	1,699,701	1,318,130	910,209	1,755,962	951,079				
	Coef.	-.058	-.041	-.023	-.030	-.007	-.081	-.015	.023	.008	.13	.19
	Std. Err.	(.007)	(.006)	(.005)	(.004)	(.004)	(.007)	(.004)				
	<i>t</i> -value	-8.77	-7.18	-4.36	-6.96	-1.98	-12.24	-4.26				
	<i>R</i> ²	0.374	0.478	0.570	0.602	0.718	0.318	0.703				
Netherlands	<i>N</i>	1,025,184	1,025,097	1,024,654	996,736	813,745	1,089,303	863,810				
	Coef.	-.043	-.040	-.033	-.025	.022	-.056	.007	.014	.015	.00	.00
	Std. Err.	(.013)	(.012)	(.012)	(.019)	(.048)	(.014)	(.046)				
	<i>t</i> -value	-3.17	-3.25	-2.86	-1.28	0.46	-4.15	0.14				
	<i>R</i> ²	0.414	0.495	0.576	0.620	0.778	0.385	0.748				
Norway	<i>N</i>	49,831	49,630	49,735	20,428	8,107	56,829	9,296				
	Coef.	-.085	-.053	-.041	-.028	-.006	-.091	-.010	.006	.004	.07	.11
	Std. Err.	(.004)	(.003)	(.003)	(.003)	(.003)	(.004)	(.003)				
	<i>t</i> -value	-23.75	-15.55	-13.22	-8.58	-1.81	-24.94	-2.98				
	<i>R</i> ²	0.314	0.403	0.502	0.522	0.648	0.289	0.627				
Sweden	<i>N</i>	1,866,155	1,866,114	1,866,105	1,466,515	1,008,304	1,866,155	1,008,304				
	Coef.	-.047	-.038	-.018	-.022	-.006	-.054	-.008	.007	.001	.14	.15
	Std. Err.	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)				
	<i>t</i> -value	-32.84	-27.73	-14.96	-16.81	-5.29	-39.12	-6.70				
	<i>R</i> ²	0.240	0.307	0.441	0.450	0.586	0.233	0.572				
	<i>N</i>	2,794,747	2,794,122	2,607,578	1,946,655	1,168,452	3,340,002	1,307,820				

Note: Each estimate represents the coefficients from an Ordinary Least Squares (OLS) regression model for each country estimating the difference between the logged annual earnings of immigrants and natives (panel A) and children of immigrants and natives (panel B), ages 25–60 years, for all world regions combined, with negative coefficients indicating that immigrants earn less than natives. Following standard conventions, we interpret these coefficients as the relative difference between the average (children of) immigrant and native earnings, but more formally they indicate the difference in relative geometric means for unlogged earnings (which is the absolute difference in the arithmetic means of logged earnings). The ‘basic adjustment’ column reports differences from a model that controls for seniority, age and age squared, education, gender, and geographic region. Subsequent models provide estimates of within-industry, within-occupation, within-establishment, and within-job (occupation–establishment units) (children of) immigrant–native differences by introducing fixed effects for industry, occupation, establishment, and occupation–establishment units. The estimates in the parentheses report the standard errors of each coefficient. Columns 8 and 9 report the difference between the sensitivity analysis and the main analysis for the basic adjustment and within-job estimates, respectively. Columns 10 and 11 report the proportion of the (children of) immigrant–native difference from basic adjustments that remains when we compare (children of) immigrants and natives who are working in the same occupations and establishments in the sensitivity analysis and main analysis, respectively. In these columns, the number .00 refers to cases where (children of) immigrants do not earn less than natives at the within-job level, the number 1.00 refers to cases where the within-job earnings disadvantage of (children of) immigrants relative to natives is larger than in the ‘basic adjustments’ model, and dashed lines (–) is used in cases where (children of) immigrants do not earn less than natives in the ‘basic adjustments’ model.

Supplementary Table 39. Immigrant–native differences in annual earnings adjusting for part-time and full-time employment.

		Sensitivity: Adjustment for part-time				Main analysis		Difference in Basic adj. estimates relative to main analysis	Difference in Occ-Est estimates relative to main analysis	Proportion within job (adjustment for part- time)	Proportion within job (main analysis)	
		Fixed effect for:				Fixed effect for:						
		Basic adj.	Ind	Occ	Est	Occ-Est	Basic Adj.					Occ-Est
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Panel A: Immigrants												
Canada	Coef.	-.303	-.230	-.166	-.176	-.092	-.322	-.099	.019	.007	.30	.31
	Std. Err.	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)				
	t-value	-280.27	-222.50	-167.45	-161.77	-81.83	-269.92	-77.51				
	R ²	0.349	0.437	0.507	0.548	0.671	0.198	0.566				
	N	2,771,043	2,771,043	2,771,043	1,987,766	1,331,236	2,771,043	1,429,648				
Denmark	Coef.	-.087	-.067	-.038	-.056	-.030	-.096	-.023	.009	-.006	.34	.24
	Std. Err.	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)				
	t-value	-65.72	-51.93	-30.16	-41.95	-22.09	-68.84	-16.90				
	R ²	0.272	0.329	0.396	0.433	0.533	0.200	0.492				
	N	1,755,962	1,755,594	1,754,655	1,282,286	880,045	1,755,962	951,079				
France	Coef.	-.199	-.140	-.095	-.084	-.066	-0.209	-0.069	.010	.004	.33	.33
	Std. Err.	(.002)	(.002)	(.002)	(.004)	(.005)	0.002	0.004				
	t-value	-91.953	-69.588	-51.616	-19.844	-14.246	-91.94	-15.44				
	R ²	0.363	0.462	0.551	0.685	0.771	0.303	0.747				
	N	764,703	762,286	764,669	200,289	116,040	764,703	130,983				
Germany	Coef.	-.210	-.134	-.091	-.107	-.054	-.218	-.054	.008	.000	.26	.25
	Std. Err.	(.004)	(.004)	(.003)	(.003)	(.003)	(.004)	(.003)				
	t-value	-54.29	-38.33	-27.46	-37.16	-20.36	-51.55	-18.22				
	R ²	0.409	0.533	0.615	0.660	0.765	0.318	0.703				
	N	1,089,303	1,088,879	1,087,589	1,039,192	827,184	1,089,303	863,810				
Netherlands	Coef.	-.177	-.133	-.091	-.106	-.041	-.167	-.052	-.010	.011	.23	.31
	Std. Err.	(.009)	(.008)	(.008)	(.011)	(.017)	(.010)	(.018)				
	t-value	-20.50	-16.26	-11.84	-9.65	-2.45	-17.06	-2.93				
	R ²	0.505	0.576	0.638	0.686	0.809	0.385	0.748				
	N	56,829	56,144	56,621	19,775	7,462	56,829	9296				
Norway	Coef.	-.186	-.141	-.082	-.099	-.033	-.227	-.035	.041	.002	.18	.15
	Std. Err.	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)				
	t-value	-214.46	-166.25	-101.56	-114.80	-37.29	-243.15	-37.12				
	R ²	0.418	0.489	0.564	0.594	0.695	0.289	0.627				
	N	1,866,155	1,865,961	1,865,945	1,363,505	930,021	1,866,155	1,008,304				
Spain	Coef.	-.305	-.188	-.156	-.084	-.068	-.347	-.073	.042	.005	.22	.21
	Std. Err.	(.003)	(.003)	(.003)	(.004)	(.004)	(.003)	(.004)				
	t-value	-102.52	-64.94	-55.95	-21.41	-17.08	-107.98	-18.09				
	R ²	0.362	0.448	0.496	0.635	0.689	0.236	0.648				
	N	476,108	475,711	476,018	149,816	124,461	476,108	136,264				
United States	Coef.	-.090	-.086	-.060	-.069	-.036	-.112	-.035	.022	-.002	.41	.31
	Std. Err.	(.002)	(.002)	(.002)	(.002)	(.003)	(.002)	(.003)				
	t-value	-47.01	-48.09	-35.29	-34.30	-14.48	-45.65	-11.50				
	R ²	0.548	0.614	0.669	0.663	0.771	0.263	0.697				
	N	1,398,000	1,373,000	1,374,000	716,000	296,000	1,398,000	310,000				
Panel B: Children of immigrants												
Canada	Coef.	-.013	-.004	-.004	-.020	-.012	-.019	-.017	.006	.005	.88	.89
	Std. Err.	(.002)	(.001)	(.001)	(.001)	(.001)	(.002)	(.002)				
	t-value	-8.91	-3.07	-2.62	-14.01	-8.41	-11.36	-10.59				
	R ²	0.349	0.437	0.507	0.548	0.671	0.198	0.566				
	N	2,771,043	2,771,043	2,771,043	1,987,766	1,331,236	2,771,043	1,429,648				
Denmark	Coef.	-.047	-.036	-.025	-.023	-.011	-.053	-.007	.005	-.004	.24	.14
	Std. Err.	(.003)	(.003)	(.003)	(.003)	(.003)	(.003)	(.003)				
	t-value	-15.00	-11.77	-8.18	-7.31	-3.57	-15.91	-2.31				
	R ²	0.272	0.329	0.396	0.433	0.533	0.200	0.492				
	N	1,755,962	1,755,594	1,754,655	1,282,286	880,045	1,755,962	951,079				

Germany	Coef.	-.078	-.051	-.034	-.037	-.014	-.081	-.015	.003	.001	.18	.19
	Std. Err.	(.006)	(.005)	(.005)	(.004)	(.003)	(.007)	(.004)				
	t-value	-12.41	-9.78	-6.94	-9.68	-4.19	-12.24	-4.26				
	R ²	0.409	0.533	0.615	0.660	0.765	0.318	0.703				
	N	1,089,303	1,088,879	1,087,589	1,039,192	827,184	1,089,303	863,810				
Netherlands	Coef.	-.040	-.036	-.028	-.034	.079	-.056	.007	.017	.072	.00	.00
	Std. Err.	(.012)	(.011)	(.011)	(.016)	(.029)	(.014)	(.046)				
	t-value	-3.32	-3.14	-2.64	-2.19	2.71	-4.15	0.14				
	R ²	0.505	0.576	0.638	0.686	0.809	0.385	0.748				
	N	56,829	56,144	56,621	19,775	7,462	56,829	9,296				
Norway	Coef.	-.070	-.048	-.039	-.023	-.006	-.091	-.010	.020	.004	.08	.11
	Std. Err.	(.003)	(.003)	(.003)	(.003)	(.003)	(.004)	(.003)				
	t-value	-21.72	-15.26	-13.46	-7.62	-1.96	-24.94	-2.98				
	R ²	0.418	0.489	0.564	0.594	0.695	0.289	0.627				
	N	1,866,155	1,865,961	1,865,945	1,363,505	930,021	1,866,155	1,008,304				

Note: Each estimate represents the coefficients from an Ordinary Least Squares (OLS) regression model for each country estimating the difference between the logged annual earnings of immigrants and natives (panel A) and children of immigrants and natives (panel B), ages 25–60 years, for all world regions combined, with negative coefficients indicating that immigrants earn less than natives. Following standard conventions, we interpret these coefficients as the relative difference between the average (children of) immigrant and native earnings, but more formally they indicate the difference in relative geometric means for unlogged earnings (which is the absolute difference in the arithmetic means of logged earnings). The 'basic adjustment' column reports differences from a model that controls for part-time vs full-time employment, age and age squared, education, gender, and geographic region. Subsequent models provide estimates of within-industry, within-occupation, within-establishment, and within-job (occupation–establishment units) (children of) immigrant–native differences by introducing fixed effects for industry, occupation, establishment, and occupation–establishment units. The estimates in the parentheses report the standard errors of each coefficient. Columns 8 and 9 report the difference between the sensitivity analysis and the main analysis for the basic adjustment and within-job estimates, respectively. Columns 10 and 11 report the proportion of the (children of) immigrant–native difference from basic adjustments that remains when we compare (children of) immigrants and natives who are working in the same occupations and establishments in the sensitivity analysis and main analysis, respectively. In these columns, the number .00 refers to cases where (children of) immigrants do not earn less than natives at the within-job level, the number 1.00 refers to cases where the within-job earnings disadvantage of (children of) immigrants relative to natives is larger than in the 'basic adjustments' model, and dashed lines (–) is used in cases where (children of) immigrants do not earn less than natives in the 'basic adjustments' model.

Supplementary Table 40. Decomposition of immigrant–native differences in annual earnings from supplementary two-way fixed effect (AKM) panel analysis for immigrants and children of immigrants from all world regions.

Supplementary Table 1: Decomposition of immigrant-native differences in annual earnings from supplementary two-way fixed effect (TWFE) panel analysis for immigrants and children of immigrants from all home regions				
	Proportion of total gap			
	Total gap	Within-job gap	Between-job skill segregation	Between-job pay premia segregation
	(1)	(2)	(3)	(4)
Immigrants				
Denmark	-0.080	0.25	0.31	0.44
France	-0.169	0.33	0.41	0.26
Norway	-0.169	0.21	0.29	0.50
Spain	-0.260	0.17	0.38	0.45
Sweden	-0.038	0.01	0.48	0.51
Children of immigrants				
Denmark	-0.021	0.58	0.44	-0.02
Norway	-0.030	0.47	0.26	0.27
Sweden	-0.011	0.61	0.30	0.10

Note: The table summarizes the results for the decomposition of the immigrant-native difference in logged annual earnings into within-job gaps, between-job skill segregation, and between-job pay premia segregation for immigrants and children of immigrants. Column 1 shows the total gap estimated from the two-way fixed effects panel data analysis. Columns 2–4 shows the proportion of the total gap that is attributable to within-job gaps, between-job segregation, and between-job. The estimates are derived from a two-way (job and worker) fixed effect model on the largest connected set of workers, ages 25–60, separately for each country, with adjustment for age squared, age cubed and year dummies, with agender dummy, education categories and year of birth included in the second stage of the decompositions.

Supplementary Table 41. Decomposition of immigrant–native differences in annual earnings from supplementary two-way fixed effect (AKM) panel analysis for immigrants and children of immigrants by world region of origin.

	Panel A: Europe, North America, and Other Western				Panel B: Asia, Latin America, Middle East and North Africa, and Sub-Saharan			
	Proportion of total gap				Proportion of total gap			
	Total gap	Within-job gap	Between-job skill segregation	Between-job pay premia segregation	Total gap	Within-job gap	Between-job skill segregation	Between-job pay premia segregation
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Immigrants								
Denmark	-0.026	-0.03	0.43	0.59	-0.165	0.33	0.27	0.40
Norway	-0.093	0.31	0.22	0.47	-0.208	0.20	0.30	0.51
Spain	-0.165	0.13	0.45	0.42	-0.322	0.19	0.36	0.45
Sweden	-0.013	-0.52	0.77	0.75	-0.029	-0.10	0.68	0.42
Children of immigrants								
Denmark	-0.004	-1.00	1.92	0.08	-0.050	0.79	0.25	-0.04
Norway	-0.026	0.98	-0.16	0.17	-0.031	0.38	0.32	0.30
Sweden	0.006	-0.63	0.42	1.21	0.014	0.25	-0.13	0.88

Note: The table summarizes the results for the decomposition of the immigrant-native difference in logged annual earnings into within-job gaps, between-job skill segregation, and between-job pay premia segregation for immigrants and children of immigrants separately by world regions of origin. Columns 1 and 5 show the total gap estimated from the two-way fixed effects panel data analysis, Columns 2-4 and 6-8 show the proportion of the total gap that is attributable to within-job gaps, between-job segregation, and between-job. The estimates are derived from a two-way (job and worker) fixed effect model on the largest connected set of workers, ages 25 –60, separately for each country, with adjustment for age squared, age cubed and year dummies, with agender dummy, education categories and year of birth included in the second stage of the decompositions.

Supplementary Table 42. Canadian estimates of immigrant–native differences in annual earnings from main analysis.

		Fixed effect for:					
		Basic adj.	Ind	Occ	Est	Occ-Est	Proportion within job
		(1)	(2)	(3)	(4)	(5)	(6)
Panel A: All world regions							
Immigrants	Coef.	-.322	-.246	-.173	-.188	-.099	.31
	Std. Err.	(.001)	(.001)	(.001)	(.001)	(.001)	
	t-value	-269.915	-215.404	-158.116	-154.639	-77.505	
Children of immigrants	Coef.	-.019	-.010	-.010	-.025	-.017	.89
	Std. Err.	(.002)	(.002)	(.001)	(.002)	(.002)	
	t-value	-11.357	-6.386	-6.712	-15.823	-10.585	
	R ²	0.198	0.299	0.391	0.429	0.566	
	N	2,771,043	2,771,043	2,771,043	2,088,907	1,429,648	
Panel B: By world region							
Immigrants							
Asia	Coef.	-.423	-.319	-.215	-.242	-.107	.25
	Std. Err.	(.002)	(.002)	(.001)	(.002)	(.002)	
	t-value	-265.55	-209.54	-146.16	-142.74	-58.42	
Latin America	Coef.	-.277	-.226	-.149	-.197	-.098	.36
	Std. Err.	(.003)	(.002)	(.002)	(.002)	(.003)	
	t-value	-108.6	-94.4	-66.0	-81.7	-38.4	
Middle East and North Africa	Coef.	-.486	-.394	-.328	-.304	-.207	.43
	Std. Err.	(.003)	(.003)	(.003)	(.003)	(.003)	
	t-value	-158.93	-138.01	-122.18	-98.96	-63.94	
Sub-Saharan Africa	Coef.	-.359	-.296	-.222	-.261	-.160	.45
	Std. Err.	(.004)	(.004)	(.003)	(.004)	(.004)	
	t-value	-95.02	-83.71	-67.31	-74.38	-44.50	
Europe, North America, and Other Western	Coef.	-.105	-.075	-.052	-.062	-.036	.34
	Std. Err.	(.002)	(.002)	(.002)	(.002)	(.002)	
	t-value	-53.32	-40.12	-29.62	-32.94	-18.42	
Children of immigrants							
Asia	Coef.	-.056	-.058	-.051	-.064	-.033	.59
	Std. Err.	(.004)	(.003)	(.003)	(.003)	(.003)	
	t-value	-15.870	-17.326	-16.274	-19.149	-9.629	
Latin America	Coef.	-.167	-.150	-.108	-.141	-.072	.43
	Std. Err.	(.005)	(.005)	(.004)	(.004)	(.005)	
	t-value	-34.906	-33.176	-25.415	-31.525	-15.537	
Middle East and North Africa	Coef.	-.109	-.089	-.087	-.084	-.062	.57
	Std. Err.	(.009)	(.009)	(.008)	(.009)	(.009)	
	t-value	-11.822	-10.109	-10.678	-9.330	-6.833	
Sub-Saharan Africa	Coef.	-.079	-.061	-.063	-.071	-.047	.60
	Std. Err.	(.009)	(.009)	(.008)	(.009)	(.009)	
	t-value	-8.383	-6.830	-7.503	-7.954	-5.164	
Europe, North America, and Other Western	Coef.	.013	.024	.018	.006	-.001	–
	Std. Err.	(.002)	(.002)	(.002)	(.002)	(.002)	
	t-value	6.444	12.776	10.392	2.952	-0.503	
	R ²	0.205	0.304	0.394	0.432	0.568	
	N	2,771,043	2,771,043	2,771,043	2,088,907	1,429,648	

Note: Each estimate represents the coefficients from an Ordinary Least Squares (OLS) regression model for each country estimating the difference between the logged annual earnings of (i) immigrants and natives and (ii) children of immigrants and natives, ages 25–60 years, for all world regions combined (panel A) and separately by world region of origin (panel B), with negative coefficients indicating that immigrants earn less than natives. Following standard conventions, we interpret these coefficients as the relative difference between the average (children of) immigrant and native earnings, but more formally they indicate the difference in relative geometric means for unlogged earnings (which is the absolute difference in the arithmetic means of logged earnings). The 'basic adjustment' column reports differences from a model that controls for age and age squared, education, gender, and geographic region. Subsequent models provide estimates of within-industry, within-occupation, within-establishment, and within-job (occupation–establishment units) (children of) immigrant–native differences by introducing fixed effects for industry, occupation, establishment, and occupation–establishment units. The estimates in the parentheses report the standard errors of each coefficient. The final column reports the proportion of the (children of) immigrant–native difference from the first column (with only basic adjustments) that remains when we compare (children of) immigrants and natives who are working in the same occupations and establishments. In this column, the number .00 refers to cases where (children of) immigrants do not earn less than natives at the within-job level, the number 1.00 refers to cases where the within-job earnings disadvantage of (children of) immigrants relative to natives is larger than in the 'basic adjustments' model, and dashed lines (–) is used in cases where (children of) immigrants do not earn less than natives in the 'basic adjustments' model.

Supplementary Table 43. Danish estimates of immigrant–native differences in annual earnings from main analysis.

		Fixed effect for:					
		Basic adj.	Ind	Occ	Est	Occ-Est	Proportion within job
		(1)	(2)	(3)	(4)	(5)	(6)
Panel A: All world regions							
Immigrants	Coef.	-.096	-.070	-.033	-.055	-.023	.24
	Std. Err.	(.001)	(.001)	(.001)	(.001)	(.001)	
	t-value	-68.841	-51.403	-25.175	-39.663	-16.895	
Children of immigrants	Coef.	-.053	-.038	-.023	-.021	-.007	.14
	Std. Err.	(.003)	(.003)	(.003)	(.003)	(.003)	
	t-value	-15.910	-11.651	-7.283	-6.481	-2.314	
	R ²	0.200	0.268	0.345	0.382	0.492	
	N	1,755,962	1,755,756	1,755,352	1,364,717	951,079	
Panel B: By world region							
Immigrants							
Asia	Coef.	-.115	-.083	-.026	-.076	-.024	.21
	Std. Err.	(.003)	(.003)	(.003)	(.003)	(.003)	
	t-value	-37.86	-29.49	-9.75	-26.95	-8.53	
Latin America	Coef.	-.142	-.121	-.106	-.109	-.084	.59
	Std. Err.	(.008)	(.007)	(.007)	(.007)	(.007)	
	t-value	-17.99	-16.94	-15.96	-15.84	-12.54	
Middle East and North Africa	Coef.	-.197	-.137	-.087	-.102	-.055	.28
	Std. Err.	(.003)	(.003)	(.003)	(.003)	(.003)	
	t-value	-62.55	-45.49	-30.14	-34.30	-18.57	
Sub-Saharan Africa	Coef.	-.269	-.171	-.090	-.135	-.058	.21
	Std. Err.	(.005)	(.005)	(.004)	(.004)	(.004)	
	t-value	-55.73	-37.54	-20.50	-30.25	-13.22	
Europe, North America, and Other Western	Coef.	-.046	-.037	-.012	-.027	-.008	.18
	Std. Err.	(.002)	(.002)	(.002)	(.002)	(.002)	
	t-value	-26.73	-22.51	-7.71	-16.30	-5.11	
Children of immigrants							
Asia	Coef.	-.065	-.072	-.061	-.064	-.043	.66
	Std. Err.	(.010)	(.010)	(.010)	(.010)	(.010)	
	t-value	-6.37	-7.35	-6.41	-6.57	-4.34	
Latin America	Coef.	-.116	-.083	-.070	-.077	-.049	.42
	Std. Err.	(.040)	(.038)	(.035)	(.037)	(.033)	
	t-value	-2.92	-2.21	-2.00	-2.10	-1.47	
Middle East and North Africa	Coef.	-.084	-.065	-.052	-.038	-.027	.32
	Std. Err.	(.006)	(.006)	(.006)	(.006)	(.006)	
	t-value	-13.28	-10.62	-8.51	-6.22	-4.33	
Sub-Saharan Africa	Coef.	-.182	-.118	-.097	-.072	-.044	.24
	Std. Err.	(.029)	(.028)	(.026)	(.027)	(.026)	
	t-value	-6.19	-4.22	-3.70	-2.65	-1.68	
Europe, North America, and Other Western	Coef.	-.031	-.016	.000	-.004	.009	.00
	Std. Err.	(.004)	(.004)	(.004)	(.004)	(.004)	
	t-value	-7.39	-3.82	0.05	-0.87	2.29	
	R ²	0.202	0.269	0.346	0.383	0.492	
	N	1,755,962	1,755,756	1,755,352	1,364,717	951,079	

Note: Each estimate represents the coefficients from an Ordinary Least Squares (OLS) regression model for each country estimating the difference between the logged annual earnings of (i) immigrants and natives and (ii) children of immigrants and natives, ages 25–60 years, for all world regions combined (panel A) and separately by world region of origin (panel B), with negative coefficients indicating that immigrants earn less than natives. Following standard conventions, we interpret these coefficients as the relative difference between the average (children of) immigrant and native earnings, but more formally they indicate the difference in relative geometric means for unlogged earnings (which is the absolute difference in the arithmetic means of logged earnings). The 'basic adjustment' column reports differences from a model that controls for age and age squared, education, gender, and geographic region. Subsequent models provide estimates of within-industry, within-occupation, within-establishment, and within-job (occupation–establishment units) (children of) immigrant–native differences by introducing fixed effects for industry, occupation, establishment, and occupation–establishment units. The estimates in the parentheses report the standard errors of each coefficient. The final column reports the proportion of the (children of) immigrant–native difference from the first column (with only basic adjustments) that remains when we compare (children of) immigrants and natives who are working in the same occupations and establishments. In this column, the number .00 refers to cases where (children of) immigrants do not earn less than natives at the within-job level, the number 1.00 refers to cases where the within-job earnings disadvantage of (children of) immigrants relative to natives is larger than in the 'basic adjustments' model, and dashed lines (–) is used in cases where (children of) immigrants do not earn less than natives in the 'basic adjustments' model.

Supplementary Table 44. French estimates of immigrant–native differences in annual earnings from main analysis.

		Fixed effect for:					
		Basic adj.	Ind	Occ	Est	Occ-Est	Proportion within job
		(1)	(2)	(3)	(4)	(5)	(6)
Panel A: All world regions							
Immigrants	Coef.	-.209	-.148	-.101	-.091	-.069	.33
	Std. Err.	(.002)	(.002)	(.002)	(.004)	(.004)	
	t-value	-91.944	-70.416	-52.218	-22.029	-15.435	
	R ²	0.303	0.414	0.510	0.659	0.747	
	N	764,703	764,039	764,699	222,884	130,983	
Panel B: By world region							
Immigrants							
Asia	Coef.	-.152	-.138	-.087	-.086	-.055	.36
	Std. Err.	(.009)	(.009)	(.008)	(.018)	(.017)	
	t-value	-16.181	-16.162	-11.069	-4.808	-3.199	
Latin America	Coef.	-.209	-.145	-.104	-.099	-.075	.36
	Std. Err.	(.011)	(.010)	(.009)	(.016)	(.016)	
	t-value	-19.487	-14.888	-11.788	-6.292	-4.593	
Middle East and North Africa	Coef.	-.245	-.175	-.125	-.089	-.067	.27
	Std. Err.	(.003)	(.003)	(.003)	(.006)	(.007)	
	t-value	-73.595	-57.041	-44.249	-14.531	-9.873	
Sub-Saharan Africa	Coef.	-.326	-.223	-.150	-.138	-.107	.33
	Std. Err.	(.005)	(.004)	(.004)	(.009)	(.009)	
	t-value	-72.030	-54.637	-39.708	-15.723	-11.439	
Europe, North America, and Other Western	Coef.	-.082	-.059	-.032	-.054	-.040	.48
	Std. Err.	(.004)	(.004)	(.004)	(.008)	(.008)	
	t-value	-19.813	-15.158	-9.230	-7.123	-4.776	
	R ²	0.305	0.415	0.510	0.659	0.748	
	N	764,703	764,039	764,699	222,884	130,983	

Note: Each estimate represents the coefficients from an Ordinary Least Squares (OLS) regression model for each country estimating the difference between the logged annual earnings of immigrants and natives ages 25–60 years for all world regions combined (panel A) and separately by world region of origin (panel B), with negative coefficients indicating that immigrants earn less than natives. Following standard conventions, we interpret these coefficients as the relative difference between the average immigrant and native earnings, but more formally they indicate the difference in relative geometric means for unlogged earnings (which is the absolute difference in the arithmetic means of logged earnings). The 'basic adjustment' column reports differences from a model that controls for age and age squared, education, gender, and geographic region. Subsequent models provide estimates of within-industry, within-occupation, within-establishment, and within-job (occupation–establishment units) immigrant–native differences by introducing fixed effects for industry, occupation, establishment, and occupation–establishment units. The estimates in the parentheses report the standard errors of each coefficient. The final column reports the proportion of the immigrant–native difference from the first column (with only basic adjustments) that remains when we compare immigrants and natives who are working in the same occupations and establishments. In this column, the number .00 refers to cases where immigrants do not earn less than natives at the within-job level, the number 1.00 refers to cases where the within-job earnings disadvantage of immigrants relative to natives is larger than in the 'basic adjustments' model, and dashed lines (–) is used in cases where immigrants do not earn less than natives in the 'basic adjustments' model.

Supplementary Table 45. French estimates of immigrant–native differences in annual earnings from supplementary analysis (using the full DADS population register without adjustment for education).

Supplementary Table 43. French estimates of immigrant-native differences in annual earnings from supplementary analysis (using the full DADS population register without adjustment for education).							
		Basic adj., without education	Fixed effect for:				Proportion within job
			Ind	Occ	Est	Occ-Est	
		(1)	(2)	(3)	(4)	(5)	(6)
Immigrants	Coef.	-.271	-.154	-.099	-.099	-.057	.21
	Std. Err.	(.000)	(.001)	(.001)	(.000)	(.000)	
	t-value	-687.07	-427.11	-310.77	-277.83	-173.56	
	R ²	0.193	0.361	0.523	0.515	0.700	
	N	18,788,104	18,788,100	18,788,092	14,270,720	9,603,221	

Note: Each estimate represents the coefficients from an Ordinary Least Squares (OLS) regression model for each country estimating the difference between the logged annual earnings of immigrants and natives ages 25–60 years for all world regions combined (panel A) and separately by world region of origin (panel B), with negative coefficients indicating that immigrants earn less than natives. Following standard conventions, we interpret these coefficients as the relative difference between the average immigrant and native earnings, but more formally they indicate the difference in relative geometric means for unlogged earnings (which is the absolute difference in the arithmetic means of logged earnings). The 'basic adjustment' column reports differences from a model that controls for age and age squared, gender, and geographic region. Subsequent models provide estimates of within-industry, within-occupation, within-establishment, and within-job (occupation–establishment units) immigrant–native differences by introducing fixed effects for industry, occupation, establishment, and occupation–establishment units. The estimates in the parentheses report the standard errors of each coefficient. The final column reports the proportion of the immigrant–native difference from the first column (with only basic adjustments) that remains when we compare immigrants and natives who are working in the same occupations and establishments. In this column, the number .00 refers to cases where immigrants do not earn less than natives at the within-job level, the number 1.00 refers to cases where the within-job earnings disadvantage of immigrants relative to natives is larger than in the 'basic adjustments' model, and dashed lines (–) is used in cases where immigrants do not earn less than natives in the 'basic adjustments' model.

Supplementary Table 46. German estimates of immigrant–native differences in annual earnings from main analysis.

		Fixed effect for:					
		Basic adj.	Ind	Occ	Est	Occ-Est	Proportion within job
		(1)	(2)	(3)	(4)	(5)	(6)
Panel A: All world regions							
Immigrants	Coef.	-.218	-.139	-.091	-.110	-.054	.25
	Std. Err.	(.004)	(.004)	(.004)	(.003)	(.003)	
	t-value	-51.55	-36.17	-25.18	-33.76	-18.22	
Children of immigrants	Coef.	-.081	-.053	-.035	-.040	-.015	.19
	Std. Err.	(.007)	(.006)	(.005)	(.004)	(.004)	
	t-value	-12.24	-9.50	-6.54	-9.23	-4.26	
	R ²	0.318	0.453	0.545	0.586	0.703	
	N	1,089,303	1,089,210	1,088,753	1,058,703	863,810	
Panel B: By world region							
Immigrants							
Asia	Coef.	-.241	-.146	-.109	-.138	-.083	.34
	Std. Err.	(.023)	(.018)	(.016)	(.015)	(.013)	
	t-value	-10.62	-8.03	-6.62	-9.15	-6.59	
Latin America	Coef.	-.170	-.103	-.061	-.118	-.084	.49
	Std. Err.	(.013)	(.012)	(.011)	(.010)	(.009)	
	t-value	-13.08	-8.69	-5.64	-11.58	-9.26	
Middle East and North Africa	Coef.	-.199	-.140	-.082	-.114	-.045	.23
	Std. Err.	(.007)	(.006)	(.006)	(.005)	(.004)	
	t-value	-28.59	-23.63	-14.48	-23.29	-10.80	
Sub-Saharan Africa	Coef.	-.393	-.250	-.163	-.213	-.113	.29
	Std. Err.	(.014)	(.013)	(.013)	(.012)	(.011)	
	t-value	-27.51	-19.37	-12.16	-18.35	-10.44	
Europe, North America, and Other Western	Coef.	-.223	-.137	-.094	-.101	-.051	.23
	Std. Err.	(.005)	(.005)	(.005)	(.004)	(.004)	
	t-value	-42.02	-28.12	-20.63	-24.39	-13.31	
Children of immigrants							
Asia	Coef.	-.114	-.085	-.064	-.066	-.042	.37
	Std. Err.	(.021)	(.018)	(.017)	(.014)	(.013)	
	t-value	-5.41	-4.69	-3.66	-4.57	-3.21	
Latin America	Coef.	-.061	-.039	-.025	-.029	-.007	.11
	Std. Err.	(.013)	(.012)	(.012)	(.009)	(.007)	
	t-value	-4.52	-3.29	-2.19	-3.21	-0.96	
Middle East and North Africa	Coef.	-.148	-.098	-.063	-.069	-.021	.14
	Std. Err.	(.023)	(.020)	(.018)	(.014)	(.013)	
	t-value	-6.38	-4.99	-3.44	-5.09	-1.64	
Sub-Saharan Africa	Coef.	-.075	-.049	-.036	-.032	-.004	.06
	Std. Err.	(.030)	(.023)	(.020)	(.017)	(.014)	
	t-value	-2.51	-2.09	-1.75	-1.83	-0.31	
Europe, North America, and Other Western	Coef.	-.076	-.050	-.033	-.038	-.016	.21
	Std. Err.	(.009)	(.007)	(.007)	(.006)	(.005)	
	t-value	-8.58	-6.81	-4.66	-6.72	-3.41	
	R ²	0.319	0.453	0.546	0.586	0.703	
	N	1,089,303	1,089,210	1,088,753	1,058,703	863,810	

Note: Each estimate represents the coefficients from an Ordinary Least Squares (OLS) regression model for each country estimating the difference between the logged annual earnings of (i) immigrants and natives and (ii) children of immigrants and natives, ages 25–60 years, for all world regions combined (panel A) and separately by world region of origin (panel B), with negative coefficients indicating that immigrants earn less than natives. Following standard conventions, we interpret these coefficients as the relative difference between the average (children of) immigrant and native earnings, but more formally they indicate the difference in relative geometric means for unlogged earnings (which is the absolute difference in the arithmetic means of logged earnings). The 'basic adjustment' column reports differences from a model that controls for age and age squared, education, gender, and geographic region. Subsequent models provide estimates of within-industry, within-occupation, within-establishment, and within-job (occupation–establishment units) (children of) immigrant–native differences by introducing fixed effects for industry, occupation, establishment, and occupation–establishment units. The estimates in the parentheses report the standard errors of each coefficient. The final column reports the proportion of the (children of) immigrant–native difference from the first column (with only basic adjustments) that remains when we compare (children of) immigrants and natives who are working in the same occupations and establishments. In this column, the number .00 refers to cases where (children of) immigrants do not earn less than natives at the within-job level, the number 1.00 refers to cases where the within-job earnings disadvantage of (children of) immigrants relative to natives is larger than in the 'basic adjustments' model, and dashed lines (–) is used in cases where (children of) immigrants do not earn less than natives in the 'basic adjustments' model.

Supplementary Table 47. Dutch estimates of immigrant–native differences in annual earnings from main analysis.

		Fixed effect for:					
		Basic adj.	Ind	Occ	Est	Occ-Est	Proportion within job
		(1)	(2)	(3)	(4)	(5)	(6)
Panel A: All world regions							
Immigrants	Coef.	-.167	-.128	-.078	-.091	-.052	.31
	Std. Err.	(.010)	(.009)	(.008)	(.011)	(.018)	
	t-value	-17.063	-14.104	-9.261	-7.977	-2.927	
Children of immigrants	Coef.	-.056	-.048	-.042	-.037	.007	.00
	Std. Err.	(.014)	(.013)	(.012)	(.018)	(.046)	
	t-value	-4.154	-3.824	-3.563	-2.084	0.144	
	R ²	0.385	0.475	0.555	0.599	0.748	
	N	56,829	56,601	56,724	23,369	9,296	
Panel B: By world region							
Immigrants							
Asia	Coef.	-.236	-.192	-.123	-.139	-.047	.20
	Std. Err.	(.028)	(.025)	(.023)	(.033)	(.043)	
	t-value	-8.40	-7.54	-5.23	-4.26	-1.09	
Latin America	Coef.	-.130	-.100	-.049	-.053	-.001	.01
	Std. Err.	(.018)	(.016)	(.014)	(.020)	(.027)	
	t-value	-7.380	-6.277	-3.435	-2.626	-0.048	
Middle East and North Africa	Coef.	-.256	-.186	-.131	-.134	-.112	.44
	Std. Err.	(.019)	(.017)	(.016)	(.021)	(.030)	
	t-value	-13.726	-10.650	-8.116	-6.252	-3.724	
Sub-Saharan Africa	Coef.	-.247	-.178	-.095	-.136	-.083	.34
	Std. Err.	(.032)	(.029)	(.027)	(.038)	(.053)	
	t-value	-7.62	-6.08	-3.55	-3.54	-1.58	
Europe, North America, and Other Western	Coef.	-.087	-.073	-.041	-.068	-.043	.49
	Std. Err.	(.017)	(.016)	(.014)	(.019)	(.031)	
	t-value	-5.10	-4.70	-2.82	-3.54	-1.36	
Children of immigrants							
Asia	Coef.	-.044	-.047	-.030	-.038	.010	.00
	Std. Err.	(.026)	(.023)	(.021)	(.039)	(.161)	
	t-value	-1.71	-2.07	-1.41	-0.96	0.06	
Latin America	Coef.	-.066	-.054	-.048	-.015	.008	.00
	Std. Err.	(.026)	(.024)	(.023)	(.037)	(.034)	
	t-value	-2.53	-2.22	-2.13	-0.41	0.25	
Middle East and North Africa	Coef.	-.059	-.044	-.039	-.046	.023	.00
	Std. Err.	(.022)	(.021)	(.020)	(.025)	(.031)	
	t-value	-2.67	-2.12	-2.01	-1.82	0.74	
Sub-Saharan Africa	Coef.	-.154	-.113	-.115	-.141	-.027	.18
	Std. Err.	(.074)	(.062)	(.059)	(.059)	(.070)	
	t-value	-2.07	-1.84	-1.96	-2.41	-0.39	
Europe, North America, and Other Western	Coef.	-.012	-.030	-.043	-.045	-.059	1.00
	Std. Err.	(.046)	(.043)	(.039)	(.043)	(.069)	
	t-value	-0.25	-0.70	-1.11	-1.05	-0.86	
	R ²	0.386	0.476	0.555	0.599	0.748	
	N	56,829	56,601	56,724	23,369	9,296	

Note: Each estimate represents the coefficients from an Ordinary Least Squares (OLS) regression model for each country estimating the difference between the logged annual earnings of (i) immigrants and natives and (ii) children of immigrants and natives, ages 25–60 years, for all world regions combined (panel A) and separately by world region of origin (panel B), with negative coefficients indicating that immigrants earn less than natives. Following standard conventions, we interpret these coefficients as the relative difference between the average (children of) immigrant and native earnings, but more formally they indicate the difference in relative geometric means for unlogged earnings (which is the absolute difference in the arithmetic means of logged earnings). The 'basic adjustment' column reports differences from a model that controls for age and age squared, education, gender, and geographic region. Subsequent models provide estimates of within-industry, within-occupation, within-establishment, and within-job (occupation–establishment units) (children of) immigrant–native differences by introducing fixed effects for industry, occupation, establishment, and occupation–establishment units. The estimates in the parentheses report the standard errors of each coefficient. The final column reports the proportion of the (children of) immigrant–native difference from the first column (with only basic adjustments) that remains when we compare (children of) immigrants and natives who are working in the same occupations and establishments. In this column, the number .00 refers to cases where (children of) immigrants do not earn less than natives at the within-job level, the number 1.00 refers to cases where the within-job earnings disadvantage of (children of) immigrants relative to natives is larger than in the 'basic adjustments' model, and dashed lines (–) is used in cases where (children of) immigrants do not earn less than natives in the 'basic adjustments' model.

Supplementary Table 48. Dutch estimates of immigrant–native differences in annual earnings from main analysis.

Supplementary Table 40: OLS estimates of immigrant-native differences in annual earnings from main analysis.

		Fixed effect for:		
		Basic adj.	Ind	Est
		(1)	(2)	(3)
Panel A: All world regions				
Immigrants	Coef.	-.165	-.090	-.083
	Std. Err.	(.001)	(.001)	(.001)
	t-value	-234.17	-131.02	-119.05
Children of immigrants	Coef.	-.084	-.059	-.050
	Std. Err.	(.001)	(.001)	(.001)
	t-value	-71.74	-53.34	-47.94
	R ²	0.309	0.414	0.530
N		5,535,385	5,535,356	4,701,954
Panel B: By world region				
Immigrants				
Asia	Coef.	-.090	-.053	-.090
	Std. Err.	(.002)	(.002)	(.002)
	t-value	-40.87	-27.11	-43.25
Latin America	Coef.	-.151	-.103	-.104
	Std. Err.	(.002)	(.001)	(.001)
	t-value	-94.68	-71.85	-78.85
Middle East and North Africa	Coef.	-.248	-.166	-.120
	Std. Err.	(.001)	(.001)	(.001)
	t-value	-172.51	-126.88	-98.30
Sub-Saharan Africa	Coef.	-.250	-.148	-.131
	Std. Err.	(.003)	(.002)	(.002)
	t-value	-97.79	-64.27	-61.78
Europe, North America, and Other Western	Coef.	-.128	-.043	-.039
	Std. Err.	(.001)	(.001)	(.001)
	t-value	-131.79	-45.48	-39.34
Children of immigrants				
Asia	Coef.	-.074	-.064	-.067
	Std. Err.	(.003)	(.003)	(.002)
	t-value	-26.73	-25.00	-28.46
Latin America	Coef.	-.112	-.081	-.073
	Std. Err.	(.002)	(.002)	(.002)
	t-value	-50.45	-39.28	-38.29
Middle East and North Africa	Coef.	-.073	-.045	-.030
	Std. Err.	(.002)	(.002)	(.002)
	t-value	-43.52	-28.18	-20.06
Sub-Saharan Africa	Coef.	-.171	-.118	-.106
	Std. Err.	(.007)	(.007)	(.006)
	t-value	-24.70	-18.12	-17.26
Europe, North America, and Other Western	Coef.	-.042	-.029	-.029
	Std. Err.	(.004)	(.004)	(.004)
	t-value	-9.70	-7.32	-8.02
	R ²	0.310	0.415	0.531
N		5,535,385	5,535,356	4,701,954

Note: Each estimate represents the coefficients from an Ordinary Least Squares (OLS) regression model for each country estimating the difference between the logged annual earnings of (i) immigrants and natives and (ii) children of immigrants and natives, ages 25–60 years, for all world regions combined (panel A) and separately by world region of origin (panel B), with negative coefficients indicating that immigrants earn less than natives. Following standard conventions, we interpret these coefficients as the relative difference between the average (children of) immigrant and native earnings, but more formally they indicate the difference in relative geometric means for unlogged earnings (which is the absolute difference in the arithmetic means of logged earnings). The 'basic adjustment' column reports differences from a model that controls for age and age squared, education, gender, and geographic region. Subsequent models provide estimates of within-industry, within-occupation, within-establishment, and within-job (occupation–establishment units) (children of) immigrant–native differences by introducing fixed effects for industry, occupation, establishment, and occupation–establishment units. The estimates in the parentheses report the standard errors of each coefficient. The final column reports the proportion of the (children of) immigrant–native difference from the first column (with only basic adjustments) that remains when we compare (children of) immigrants and natives who are working in the same occupations and establishments. In this column, the number .00 refers to cases where (children of) immigrants do not earn less than natives at the within-job level, the number 1.00 refers to cases where the within-job earnings disadvantage of (children of) immigrants relative to natives is larger than in the 'basic adjustments' model, and dashed lines (–) is used in cases where (children of) immigrants do not earn less than natives in the 'basic adjustments' model.

Supplementary Table 49. Norwegian estimates of immigrant–native differences in annual earnings from main analysis.

		Fixed effect for:					
		Basic adj.	Ind	Occ	Est	Occ-Est	Proportion within job
		(1)	(2)	(3)	(4)	(5)	(6)
Panel A: All world regions							
Immigrants	Coef.	-.227	-.164	-.088	-.119	-.035	.15
	Std. Err.	(.001)	(.001)	(.001)	(.001)	(.001)	
	t-value	-243.15	-178.71	-100.96	-127.45	-37.12	
Children of immigrants	Coef.	-.091	-.058	-.045	-.033	-.010	.11
	Std. Err.	(.004)	(.003)	(.003)	(.003)	(.003)	
	t-value	-24.94	-16.75	-14.29	-9.94	-2.98	
	R ²	0.289	0.381	0.481	0.502	0.627	
	N	1,866,155	1,866,114	1,866,105	1,466,515	1,008,304	
Panel B: By world region							
Immigrants							
Asia	Coef.	-.249	-.185	-.088	-.147	-.035	.14
	Std. Err.	(.002)	(.002)	(.002)	(.002)	(.002)	
	t-value	-118.08	-91.58	-45.94	-72.43	-17.35	
Latin America	Coef.	-.287	-.227	-.138	-.185	-.084	.29
	Std. Err.	(.005)	(.004)	(.004)	(.004)	(.004)	
	t-value	-61.07	-52.25	-34.32	-43.92	-20.16	
Middle East and North Africa	Coef.	-.312	-.209	-.131	-.153	-.057	.18
	Std. Err.	(.002)	(.002)	(.002)	(.002)	(.002)	
	t-value	-130.82	-91.11	-60.17	-64.77	-24.46	
Sub-Saharan Africa	Coef.	-.356	-.251	-.144	-.201	-.079	.22
	Std. Err.	(.003)	(.003)	(.003)	(.003)	(.003)	
	t-value	-102.61	-75.61	-45.64	-60.59	-23.43	
Europe, North America, and Other Western	Coef.	-.184	-.136	-.070	-.092	-.021	.12
	Std. Err.	(.001)	(.001)	(.001)	(.001)	(.001)	
	t-value	-165.44	-126.29	-69.60	-84.51	-19.81	
Children of immigrants							
Asia	Coef.	-.076	-.050	-.042	-.037	-.019	.26
	Std. Err.	(.007)	(.007)	(.006)	(.006)	(.006)	
	t-value	-10.75	-7.40	-6.96	-5.74	-3.14	
Latin America	Coef.	-.158	-.106	-.067	-.072	-.038	.24
	Std. Err.	(.019)	(.017)	(.016)	(.017)	(.017)	
	t-value	-8.55	-6.07	-4.08	-4.26	-2.24	
Middle East and North Africa	Coef.	-.114	-.069	-.053	-.035	-.001	.01
	Std. Err.	(.005)	(.005)	(.005)	(.005)	(.005)	
	t-value	-21.01	-13.23	-10.91	-6.86	-0.12	
Sub-Saharan Africa	Coef.	-.168	-.128	-.097	-.088	-.032	.19
	Std. Err.	(.020)	(.019)	(.018)	(.018)	(.017)	
	t-value	-8.41	-6.81	-5.56	-4.95	-1.84	
Europe, North America, and Other Western	Coef.	-.049	-.036	-.030	-.019	-.012	.25
	Std. Err.	(.007)	(.007)	(.006)	(.007)	(.006)	
	t-value	-6.58	-5.06	-4.72	-2.95	-1.92	
	R ²	0.291	0.382	0.482	0.503	0.627	
	N	1,866,155	1,866,114	1,866,105	1,466,515	1,008,304	

Note: Each estimate represents the coefficients from an Ordinary Least Squares (OLS) regression model for each country estimating the difference between the logged annual earnings of (i) immigrants and natives and (ii) children of immigrants and natives, ages 25–60 years, for all world regions combined (panel A) and separately by world region of origin (panel B), with negative coefficients indicating that immigrants earn less than natives. Following standard conventions, we interpret these coefficients as the relative difference between the average (children of) immigrant and native earnings, but more formally they indicate the difference in relative geometric means for unlogged earnings (which is the absolute difference in the arithmetic means of logged earnings). The 'basic adjustment' column reports differences from a model that controls for age and age squared, education, gender, and geographic region. Subsequent models provide estimates of within-industry, within-occupation, within-establishment, and within-job (occupation–establishment units) (children of) immigrant–native differences by introducing fixed effects for industry, occupation, establishment, and occupation–establishment units. The estimates in the parentheses report the standard errors of each coefficient. The final column reports the proportion of the (children of) immigrant–native difference from the first column (with only basic adjustments) that remains when we compare (children of) immigrants and natives who are working in the same occupations and establishments. In this column, the number .00 refers to cases where (children of) immigrants do not earn less than natives at the within-job level, the number 1.00 refers to cases where the within-job earnings disadvantage of (children of) immigrants relative to natives is larger than in the 'basic adjustments' model, and dashed lines (–) is used in cases where (children of) immigrants do not earn less than natives in the 'basic adjustments' model.

Supplementary Table 50. Spanish estimates of immigrant–native differences in annual earnings from main analysis.

Supplementary Table S6: Spanish estimates of immigrant native differences in annual earnings from main analysis.

		Fixed effect for:					
		Basic adj.	Ind	Occ	Est	Occ-Est	Proportion within job
		(1)	(2)	(3)	(4)	(5)	(6)
Panel A: All world regions							
Immigrants	Coef.	-.347	-.208	-.170	-.093	-.073	.21
	Std. Err.	(.003)	(.003)	(.003)	(.004)	(.004)	
	t-value	-107.979	-66.736	-56.782	-23.339	-18.091	
	R ²	0.236	0.355	0.413	0.591	0.648	
	N	476,108	475,992	476,023	163,641	136,264	
Panel B: By world region							
Immigrants							
Asia	Coef.	-.502	-.329	-.277	-.080	-.052	.10
	Std. Err.	(.011)	(.011)	(.011)	(.023)	(.023)	
	t-value	-44.17	-29.17	-25.20	-3.56	-2.23	
Latin America	Coef.	-.396	-.256	-.204	-.128	-.100	.25
	Std. Err.	(.005)	(.004)	(.004)	(.005)	(.005)	
	t-value	-87.63	-59.02	-49.02	-23.31	-18.36	
Middle East and North Africa	Coef.	-.436	-.232	-.191	-.107	-.084	.19
	Std. Err.	(.008)	(.008)	(.008)	(.012)	(.013)	
	t-value	-52.35	-28.88	-24.27	-8.69	-6.60	
Sub-Saharan Africa	Coef.	-.440	-.220	-.174	-.150	-.108	.25
	Std. Err.	(.012)	(.012)	(.011)	(.016)	(.016)	
	t-value	-36.35	-19.05	-15.33	-9.31	-6.56	
Europe, North America, and Other Western	Coef.	-.219	-.120	-.103	-.034	-.024	.11
	Std. Err.	(.005)	(.005)	(.005)	(.006)	(.006)	
	t-value	-42.120	-24.529	-22.033	-5.362	-3.855	
	R ²	0.238	0.356	0.414	0.591	0.649	
	N	476,108	475,992	476,023	163,641	136,264	

Note: Each estimate represents the coefficients from an Ordinary Least Squares (OLS) regression model for each country estimating the difference between the logged annual earnings of immigrants and natives ages 25–60 years for all world regions combined (panel A) and separately by world region of origin (panel B), with negative coefficients indicating that immigrants earn less than natives. Following standard conventions, we interpret these coefficients as the relative difference between the average immigrant and native earnings, but more formally they indicate the difference in relative geometric means for unlogged earnings (which is the absolute difference in the arithmetic means of logged earnings). The 'basic adjustment' column reports differences from a model that controls for age and age squared, education, gender, and geographic region. Subsequent models provide estimates of within-industry, within-occupation, within-establishment, and within-job (occupation–establishment units) immigrant–native differences by introducing fixed effects for industry, occupation, establishment, and occupation–establishment units. The estimates in the parentheses report the standard errors of each coefficient. The final column reports the proportion of the immigrant–native difference from the first column (with only basic adjustments) that remains when we compare immigrants and natives who are working in the same occupations and establishments. In this column, the number .00 refers to cases where immigrants do not earn less than natives at the within-job level, the number 1.00 refers to cases where the within-job earnings disadvantage of immigrants relative to natives is larger than in the 'basic adjustments' model, and dashed lines (–) is used in cases where immigrants do not earn less than natives in the 'basic adjustments' model.

Supplementary Table 51. Swedish estimates of immigrant–native differences in annual earnings from main analysis.

		Fixed effect for:					
		Basic adj.	Ind	Occ	Est	Occ-Est	Proportion within job
		(1)	(2)	(3)	(4)	(5)	(6)
Panel A: All world regions							
Immigrants	Coef.	-.073	-.046	-.014	-.011	.011	.00
	Std. Err.	(.001)	(.001)	(.001)	(.001)	(.001)	
	t-value	-50.10	-32.74	-10.74	-8.22	9.12	
Children of immigrants	Coef.	-.054	-.043	-.023	-.025	-.008	.15
	Std. Err.	(.001)	(.001)	(.001)	(.001)	(.001)	
	t-value	-39.12	-32.47	-18.71	-19.52	-6.70	
	R ²	0.233	0.298	0.425	0.439	0.572	
	N	3,340,002	3,332,251	3,076,527	2,209,883	1,307,820	
Panel B: By world region							
Immigrants							
Asia	Coef.	-.047	-.016	-.004	-.002	.014	.00
	Std. Err.	(.006)	(.006)	(.006)	(.006)	(.006)	
	t-value	-7.36	-2.57	-0.62	-0.34	2.43	
Latin America	Coef.	-.079	-.045	-.019	-.034	-.009	.12
	Std. Err.	(.005)	(.005)	(.004)	(.005)	(.004)	
	t-value	-15.12	-9.07	-4.19	-7.14	-2.09	
Middle East and North Africa	Coef.	-.044	-.005	.004	.025	.020	.00
	Std. Err.	(.003)	(.003)	(.002)	(.003)	(.002)	
	t-value	-16.20	-2.01	1.79	9.68	8.22	
Sub-Saharan Africa	Coef.	-.094	-.049	-.028	-.006	.007	.00
	Std. Err.	(.008)	(.008)	(.007)	(.008)	(.007)	
	t-value	-12.04	-6.39	-3.88	-0.81	1.02	
Europe, North America, and Other Western	Coef.	.014	.011	.011	.016	.017	1.00
	Std. Err.	(.002)	(.002)	(.002)	(.002)	(.002)	
	t-value	7.24	5.92	7.08	9.23	10.86	
Children of immigrants							
Asia	Coef.	-.025	-.030	-.035	-.024	-.025	.97
	Std. Err.	(.007)	(.007)	(.007)	(.007)	(.007)	
	t-value	-3.43	-4.20	-5.23	-3.38	-3.67	
Latin America	Coef.	-.080	-.050	-.037	-.030	-.021	.26
	Std. Err.	(.007)	(.007)	(.007)	(.007)	(.007)	
	t-value	-11.34	-7.25	-5.73	-4.56	-3.19	
Middle East and North Africa	Coef.	.013	.035	.021	.042	.024	1.00
	Std. Err.	(.003)	(.003)	(.003)	(.003)	(.003)	
	t-value	3.84	10.55	6.68	12.61	7.64	
Sub-Saharan Africa	Coef.	-.126	-.099	-.089	-.055	-.050	.40
	Std. Err.	(.011)	(.010)	(.010)	(.010)	(.010)	
	t-value	-11.73	-9.52	-9.01	-5.34	-4.83	
Europe, North America, and Other Western	Coef.	.005	-.006	-.007	-.010	-.007	—
	Std. Err.	(.002)	(.002)	(.001)	(.001)	(.001)	
	t-value	3.00	-3.91	-5.04	-7.42	-5.38	
	R ²	0.211	0.286	0.417	0.424	0.555	
	N	3,340,002	3,332,251	3,076,527	2,209,883	1,307,820	

Note: Each estimate represents the coefficients from an Ordinary Least Squares (OLS) regression model for each country estimating the difference between the logged annual earnings of (i) immigrants and natives and (ii) children of immigrants and natives, ages 25–60 years, for all world regions combined (panel A) and separately by world region of origin (panel B), with negative coefficients indicating that immigrants earn less than natives. Following standard conventions, we interpret these coefficients as the relative difference between the average (children of) immigrant and native earnings, but more formally they indicate the difference in relative geometric means for unlogged earnings (which is the absolute difference in the arithmetic means of logged earnings). The 'basic adjustment' column reports differences from a model that controls for age and age squared, education, gender, and geographic region. Subsequent models provide estimates of within-industry, within-occupation, within-establishment, and within-job (occupation–establishment units) (children of) immigrant–native differences by introducing fixed effects for industry, occupation, establishment, and occupation–establishment units. The estimates in the parentheses report the standard errors of each coefficient. The final column reports the proportion of the (children of) immigrant–native difference from the first column (with only basic adjustments) that remains when we compare (children of) immigrants and natives who are working in the same occupations and establishments. In this column, the number .00 refers to cases where (children of) immigrants do not earn less than natives at the within-job level, the number 1.00 refers to cases where the within-job earnings disadvantage of (children of) immigrants relative to natives is larger than in the 'basic adjustments' model, and dashed lines (–) is used in cases where (children of) immigrants do not earn less than natives in the 'basic adjustments' model.

Supplementary Table 52. US estimates of immigrant–native differences in annual earnings from main analysis.

Supplementary Table S2. OLS estimates of immigrant-native differences in annual earnings in main analysis.

		Fixed effect for:					
		Basic adj.	Ind	Occ	Est	Occ-Est	Proportion within job
		(1)	(2)	(3)	(4)	(5)	(6)
Panel A: All world regions							
Immigrants	Coef.	-.112	-.100	-.065	-.079	-.035	.31
	Std. Err.	(.002)	(.002)	(.002)	(.002)	(.003)	
	t-value	-45.65	-43.87	-29.63	-32.29	-11.50	
	R ²	0.263	0.385	0.460	0.538	0.697	
	N	1,398,000	1,374,000	1,374,000	740,000	310,000	
Panel B: By world region							
Immigrants							
Asia	Coef.	-.095	-.115	-.095	-.091	-.057	.60
	Std. Err.	(.004)	(.004)	(.003)	(.004)	(.005)	
	t-value	-24.51	-32.31	-27.66	-24.15	-12.36	
Latin America	Coef.	-.159	-.124	-.063	-.104	-.034	.21
	Std. Err.	(.004)	(.003)	(.003)	(.004)	(.005)	
	t-value	-44.24	-36.64	-19.32	-27.99	-7.05	
Middle East and North Africa	Coef.	-.241	-.185	-.169	-.119	-.088	.36
	Std. Err.	(.011)	(.010)	(.009)	(.010)	(.012)	
	t-value	-22.62	-19.27	-19.01	-11.60	-7.22	
Sub-Saharan Africa	Coef.	-.203	-.142	-.068	-.110	-.029	.15
	Std. Err.	(.010)	(.009)	(.009)	(.010)	(.012)	
	t-value	-22.62	-19.27	-19.01	-11.60	-7.22	
Europe, North America, and Other Western	Coef.	.035	.019	.015	.014	.015	.42
	Std. Err.	(.005)	(.005)	(.005)	(.005)	(.006)	
	t-value	-20.29	-15.31	-7.73	-11.36	-2.52	
	R ²	0.264	0.386	0.461	0.538	0.698	
	N	1,398,000	1,374,000	1,374,000	740,000	310,000	

Note: Each estimate represents the coefficients from an Ordinary Least Squares (OLS) regression model for each country estimating the difference between the logged annual earnings of immigrants and natives ages 25–60 years for all world regions combined (panel A) and separately by world region of origin (panel B), with negative coefficients indicating that immigrants earn less than natives. Following standard conventions, we interpret these coefficients as the relative difference between the average immigrant and native earnings, but more formally they indicate the difference in relative geometric means for unlogged earnings (which is the absolute difference in the arithmetic means of logged earnings). The 'basic adjustment' column reports differences from a model that controls for age and age squared, education, gender, and geographic region. Subsequent models provide estimates of within-industry, within-occupation, within-establishment, and within-job (occupation–establishment units) immigrant–native differences by introducing fixed effects for industry, occupation, establishment, and occupation–establishment units. The estimates in the parentheses report the standard errors of each coefficient. The final column reports the proportion of the immigrant–native difference from the first column (with only basic adjustments) that remains when we compare immigrants and natives who are working in the same occupations and establishments. In this column, the number .00 refers to cases where immigrants do not earn less than natives at the within-job level, the number 1.00 refers to cases where the within-job earnings disadvantage of immigrants relative to natives is larger than in the 'basic adjustments' model, and dashed lines (–) is used in cases where immigrants do not earn less than natives in the 'basic adjustments' model.