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

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Abstract: Immigrants to high-income countries often face considerable and persisting labor market difficulties upon arrival, yet their native-born children often experience economic progress. Little is known about the degree to which immigrant–native earnings differences reflect unequal pay when doing the same work for the same employer versus differential sorting into lower-paid jobs and broader labor market segregation. Using linked employer–employee data from nine European and North American countries, we document that sorting of immigrant-background workers into lower-paying jobs on average accounts for about four-fifths of immigrant–native earnings differences. However, within-job pay inequality remains consequential in several countries. These findings highlight the centrality of policies aimed at reducing between-job immigrant–native segregation, but also the relevance of policies ensuring equal pay for equal work.

One-Sentence Summary: Immigrant pay gaps arise primarily from sorting into low-paying jobs, and less from unequal pay relative to native-born workers in the same job.

Main Text:

Global migration from lower income countries has made the societal incorporation of successive immigrant flows a pressing challenge for receiving high-income countries in Europe and North America (*1-5*). Identifying the magnitude and sources of immigrants' labor market disadvantages and the policies needed to alleviate them is the subject of intense academic and political debate. Immigrants—especially those arriving from low-income origin countries—tend to earn less than natives upon arrival; these gaps tend to decline over time but often remain present over the entire life course (*6-10*). Many policies focus on addressing differences in pay between immigrants and natives in the same job (e.g., equal pay legislation), while others focus on improving access to higher-paying jobs. Yet we currently do not know whether within-job pay differences or sorting into different jobs accounts for a larger share of the differences that we observe.

Immigrants' earnings disadvantages are often assumed to reflect differences in country-specific human and social capital, such as language skills, cultural knowhow, access to job-relevant social networks, and limited transferability of educational degrees acquired abroad (*10-12*). Native-born children of immigrants often experience intergenerational progress towards non-migrant natives' earnings levels, and this assimilation process is often attributed to the acquisition of native-level language proficiency and other productivity-related skills, completion of domestic educational degrees, and better access to job-related social networks that ease entry into the mainstream economy (*13-16*).

Substantial differences in pay across firms and establishments in Western economies (*17-20*) suggest that widespread ethnic workplace segregation and differences in employers' wage-

setting practices are likely to be central factors shaping how immigrants fare in the labor market (*21-26*). Previous research documents that immigrants' gradual catch-up in earnings relative to natives in the years following arrival often reflects improved access to better-paying firms (*27-31*). However, despite a vast literature on ethnoracial discrimination in hiring (*32-34*), only a few studies have addressed whether immigrants earn less than observably comparable natives employed in the same workplace or attempted to quantify the consequences of workplace segregation for immigrant–native earnings disparities (*27-31, 35-37*).

Here, we study the extent to which immigrants earn less than non-migrant natives when doing the same work for the same employer (i.e., within-job inequality) or whether immigrant–native earnings gaps reflect differential sorting into lower-paying jobs (i.e., between-job segregation), including broader patterns of labor market segregation, in nine European and North American economies. We identify the earnings differences that emerge when immigrants, native-born children of immigrants, and native workers occupy the same job, often interpreted as an indicator of employer bias in wage setting, and compare these to the contribution of differential sorting across industries, occupations, workplaces, and jobs within workplaces. Do immigrants have similar earnings to non-migrant natives who work in the same occupations in the same establishments? And do the children of immigrants earn wages similar to those of the children of non-immigrant natives when they do the same work for the same employer?

The answers to these questions have far-reaching implications for policy and society at large. If inequalities arise because immigrants and their native-born children receive different pay relative to non-immigrants when they are doing the same work for the same employer, then policies

promoting equal pay for equal work have an important role to play in creating an egalitarian society. By contrast, if immigrants and their children have similar earnings to the non-migrant natives they work next to but have lower earnings because they are sorted into different jobs, this suggests that policies should focus on providing the relevant skills and educational degrees, eliminating employer bias in hiring and promotion processes, as well as extending access to job-relevant social networks.

We provide the first cross-national evidence on these crucial questions by reporting immigrant–native differences in annual earnings between immigrant-background and native workers with the same occupation and same employer relative to the contribution of industry, occupation, workplace, and job segregation. We also assess how the contribution of processes related to between-job segregation and within-job pay inequality vary across immigrant generations and between immigrant minorities from different world regions of origin. Data combining detailed information on immigrant status and links between persons who work for the same employer (i.e., linked employer–employee data) have until recently been difficult to access. Using contemporary linked employer-employee data with records on more than 13,000,000 persons from nine major immigrant-receiving countries in Europe and North America (Canada, Denmark, France, Germany, Netherlands, Norway, Spain, Sweden, and the United States), we quantify the contribution of within-job inequality and between-job segregation to the earnings gaps that immigrants and children of immigrants experience relative to natives. We study high-income countries characterized by widely different labor market institutions and immigrant populations which allow us to assess whether processes creating differential sorting of

immigrants and natives across jobs and within-job pay inequality operate in comparable ways across diverse national contexts.

Based on harmonized country-level estimates of immigrant–native differences in annual earnings, after adjustments for education, age, gender, and within-country geographic region, we examine immigrant–native earnings differences within industries, occupations, establishments, and jobs (cf. (*38*), see Supplementary Materials, Section S1–S2). Our analysis proceeds in three steps. First, we summarize the contribution of within-job inequality and between-job segregation to immigrant–native earnings gaps averaged across the nine countries using a meta-analytic approach (*39*). Second, we describe variation between host countries in levels of immigrant–native earnings differences and the relative contribution of within-job inequality and between-job segregation. Third, we examine differences in between-job segregation and within-job inequality among immigrants and children of immigrants from different world regions of origin.

Our results show that, on average, four-fifths of the total immigrant–native earnings differences are attributable to between-job segregation, while the remaining earnings differences reflect differences in pay between immigrants and natives who hold the same occupation and work for the same employer. For countries with data on immigrants' native-born children, both total and within-job earnings differences relative to natives tend to be strongly reduced in the second generation. Although there is cross-national variation in the magnitude of immigrant–native earnings gaps, the relative contribution of between-job segregation and within-job pay inequality is comparable across our nine host countries. These patterns are found among immigrants and native-born children of immigrants from Asia, Latin America, the Middle East and North Africa,

and Sub-Saharan Africa, while earnings differences relative to natives are less pronounced among immigrants from Europe, North America, and other Western countries. Supplementary analyses from countries with information on years since migration reveal larger total and within-job earnings differences to natives among recently arrived immigrants compared to established immigrants and immigrants who arrived as children, but between-job segregation accounts for the majority of immigrant–native earnings differences in all groups (Section S3). Moreover, the overall patterns are similar for men and women, and analyses using hourly wages from countries where this is available are consistent with our main findings (Section S4). Our results are robust to using alternative job measures, sample restrictions, and covariate adjustments (Section S5). Overall, the key conclusion from our analysis is that immigrant–native earnings differences primarily stem for differences in sorting across unique combinations of occupations and employers (i.e., between-job segregation), and to a lesser extent arise from differences in pay when working in the same occupation for the same employer (i.e., within-job inequality).

Results

Within-job pay inequality and between-job segregation by immigrant generation

Fig. 1A reveals the strong contribution of between-job segregation on immigrants' disadvantage in earnings relative to natives, but also a non-trivial contribution of within-job pay inequality. These results summarize the average differences in annual earnings between immigrants and natives (and separately, the children of immigrants and natives) using the pooled country-specific estimates from all countries. On average, immigrants earn about 20% less than natives after adjustment for education, age, gender, and geographic region of employment. The influential role of labor market segregation is shown by immigrants' reduced pay gaps relative to

natives once we compare employees who work in the same industry (~14%), occupation (~9%), establishment (~9%), and job (~5%). This implies that 23% of the baseline differences that we observe are due to within-job inequality, so that differential sorting into jobs (occupation–establishment units) accounts for 77% of the differences in earnings between immigrants and natives. This establishes differential sorting across jobs as the key driver of immigrants' earnings disadvantages, although immigrants also earn less than native coworkers with the same job.

For children of immigrants, Fig. 1A shows that both total and within-job earnings differences relative to natives are considerably lower than among immigrants. After basic adjustments, children of immigrants on average earn almost 6% less than natives. This difference in earnings shrinks when comparing children of immigrants to children of native-born parents who work in the same industry (~4%), occupation (~3%), and establishment (~3%). When narrowing our comparison to coworkers with the same occupation and employer, the within-job differences in earnings between children of immigrants and natives is, on average, about 1%. For children of immigrants, sorting into jobs accounts for 81% of the total immigrant–native earnings difference. Our results show that the absolute magnitude of the total and within-industry, within-occupation, within-establishment, and within-job earnings differences relative to natives are, on average, about 70–75% lower among children of immigrants compared to immigrants.

Overall, the processes generating between-job segregation and within-job earnings differences seem to play out similarly in both immigrant generations but are strongly reduced in magnitude in the native-born second generation. Within-job earnings differences between children of immigrants and natives are, on average, very small, but within-job inequality remains

consequential for the foreign-born immigrant generation. However, these aggregate patterns hide considerable variation between countries and across immigrant populations from different world regions of origin.

Cross-national differences in between-job segregation and within-job pay inequality

Fig. 1B presents the differences in earnings relative to natives for immigrants and native-born children of immigrants separately for each of the nine countries. The largest total earnings differences after basic adjustments are found among immigrants in Spain and Canada, who on average earn about 30% less than natives, while immigrants in Norway, Germany, France, and the Netherlands earn about 17–23% less than natives. The smallest differences relative to natives are found in the US, Danish, and Swedish immigrant populations, who earn about 7–11% less than natives. Although, these country-differences tend to diminish when it comes to the within-job pay gap, there are still some notable cross-national differences. . In Spain and Canada, immigrants earn between 7–10% less than natives who do the same work for the same employer. In Sweden, we find no within-job pay inequality between immigrants and natives, while the within-job immigrant–native differences in earnings range between 2–6% in Denmark, France, Germany, Netherlands, Norway, and the United States. Sorting into lower-paying jobs generate between 69–85% of the total earnings differences in all countries except Sweden, where sorting accounts for all of the baseline earnings differences. Figure 1B also presents estimates of the within-industry, within-occupation, and within-establishment immigrant–native earnings gaps. These results highlight how sorting into lower-paying industries, occupations, and workplaces also constitute key sources of immigrants' earnings disparities relative to natives.

Figure 1B reveals strikingly reduced earnings differences among native-born children of immigrants in all countries where information on this population is available (Canada, Denmark, Germany, Netherlands, Norway, and Sweden). First, within-job pay differentials between natives and children of immigrants are, on average, very small and below 2% in all countries. Second, the total earnings differences relative to natives after basic adjustments tend to be considerably smaller among children of immigrants than those found among immigrants, ranging from about 2% (Canada) to 8–9% (Germany and Norway). Although the size of total earnings differences relative to natives are reduced among children of immigrants within all countries, Fig. 1B shows that differential sorting into lower-paying jobs makes a similar contribution to total earnings differences in the second generation. However, the pattern across these six countries shows considerable labor market progress and modest earnings disadvantages when children of immigrants work in the same occupation for the same employer.

Differences in between-job segregation and within-job pay inequality by world region of origin

Fig. 2A summarizes earnings differences relative to natives for immigrants and children of immigrants separately for the five world regions of origin (Sub-Saharan Africa; Middle East and North Africa; Latin America; Asia; and Europe, North America, and Other Western countries) averaged across all countries using the meta-analytic summary of country-specific estimates for each region of origin (figs. S8–S16 report the full set of country-specific estimates for each region). For immigrants, the largest earnings disadvantages to natives after basic adjustments are found for the Sub-Saharan African and Middle Eastern and North African origin regions, ranging between 27–30%. Immigrants from Asia and Latin America earn on average between 21–23%

less than natives, while immigrants from Western origin countries earn approximately 10% less than natives.

Cross-regional variation in within-job earnings differences follows a similar pattern. Immigrants from Sub-Saharan Africa and the Middle East and North Africa earn about 8% less than their native coworkers in the same job, while corresponding within-job earnings differences are only slightly smaller among immigrants from Latin America (~6%) and Asia (~6%). In contrast, within-job earnings differences relative to natives are, on average, only 2% among immigrants from Western countries. Across all origin regions, differential sorting across jobs accounts for about 70–80% of the total earnings differences relative to natives. These findings again underscore that sorting across jobs – as well as industries, occupations, and workplaces – is the central factor behind the considerable earnings disadvantages that immigrants face. Nonetheless, Fig. 2A also documents that immigrants, except those of Western origins, often earn considerably less than natives who do the same work for the same employer.

Figure 2A also shows that, when averaged across all countries, reduced earnings disadvantages are found among children of immigrants within all world regions. Still, the largest total earnings differences relative to natives are found among children of Sub-Saharan African immigrants, who earn about 13% less than natives, followed by children of Latin American (11%), Middle Eastern and North African (8%), Asian (6%), and Western (3%) origins. Children of Sub-Saharan African, Latin American, and Asian immigrants earn 3–4% less than native coworkers doing the same work for the same employer. Children of Middle Eastern and North African immigrants on average earn about 1% less than natives in the same job, while the within-job

earnings differences are close to zero for native-born children with European and North American immigrant origins. Differential sorting across jobs constitutes between 70–85% of the total earnings differences across all regions except among children of Asian immigrants, where within-job inequality makes up half of the (relatively modest) total earnings differences to natives.

Figure 2B establishes that the pattern of within-job earnings differences by world region of origin is broadly consistent when we zoom in on the country-specific estimates for immigrants and children of immigrants from each world regions of origin. There is variation across countries in the size of the region-specific within-job earnings differences relative to natives in both immigrant generations. In the country-specific cases where immigrants from a given world region of origin earn above 5% less than natives in the same job, the corresponding within-job earnings difference to natives is at least 40% lower, often considerably lower, among children of immigrants from all origin regions except for children of immigrants from Latin America in Canada and Sub-Saharan Africa in Denmark. Thus, the broad tendency is one of reduced within-job inequality when children of immigrants are compared to immigrants from the same world region of origin who live in the same host country.

Discussion

Achieving successful economic incorporation of immigrants and their native-born children is a central policy goal in immigrant-receiving societies. Yet, prior to this study, the degree to which immigrants and their children earn the same as native-born workers when doing the same work for the same employer was largely unknown.

Using linked employer–employee data from nine high-income countries in Europe and North America, we show that immigrants, on average, earn about 20% less than natives after accounting for basic adjustments and that most of this difference is driven by differential sorting into industries, occupations, workplaces, and jobs. Unequal pay between immigrants and natives who do the same work for the same employer is less pronounced, but, on average, still constitute about one-fifth of the earnings gaps that immigrants experience relative to natives. Importantly, we also document a clear pattern of intergenerational economic assimilation among immigrants' native-born children, where both overall and within-job differences in earnings relative to natives tend to be smaller than those found among immigrants in the same host country and from the same world region of origin.

Although the relative contribution of between-job segregation and within-job pay inequality is similar across countries, there is considerable variation in the magnitude of the earnings disadvantages experienced by immigrant-background workers in different host countries and from different world regions. These heterogeneous inequality patterns will reflect a variety of factors, such as differences in labor market institutions and selectivity in immigrant flows. Nonetheless, the consistently large contribution of sorting into lower-paying jobs to immigrant–native earnings differences across host countries, regions of origin, and generational status is striking. That said, our findings also highlight that within-job pay disadvantages among foreign-born immigrant workers of non-Western origins remain consequential in several national contexts.

Despite the labor market progress we document among children of immigrants, our findings highlight that policies that reduce friction in immigrant-background workers' job search and improve access to higher-paying jobs and workplaces—such as promoting language learning, acquisition of domestic education, better access to employment-related networks, and limiting discrimination in hiring and promotion—are central for facilitating better incorporation of immigrants and their native-born children. Simultaneously, immigrants' within-job earnings disadvantages relative to natives also suggest that policies that monitor and ensure equal pay for the same work should also be a priority across contemporary Western labor markets.

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Data and materials availability: Restricted-access administrative data from nine different countries are used in this study. As described in the Supplemental Material, the data underlying our analyses in each country can be accessed by receiving permissions from the relevant data owners, including Statistics Canada; Statistics Denmark; the French Comité du Secret Statistique; the German Institute for Employment Research; the Central Bureau of Statistics of the Netherlands; Statistics Norway; the Ministry of Labor, Migration and Social Security of Spain; Statistics Sweden; and the U.S. Census Bureau. Research on the US data was conducted by E. Vickstrom for the US Census Bureau. Any opinions and conclusions expressed herein are those of the authors and do not represent the views of the U.S. Census Bureau. The Census Bureau has ensured appropriate access and use of confidential data and has reviewed these results for disclosure avoidance protection (Project 7526852: CBDRB-FY2022-CES010-014, CBDRB-FY23-CES014-017).

Supplementary Materials

Materials and Methods

Supplementary Text

Figs. S1 to S16

Tables S1 to S40

References (*40–50*)

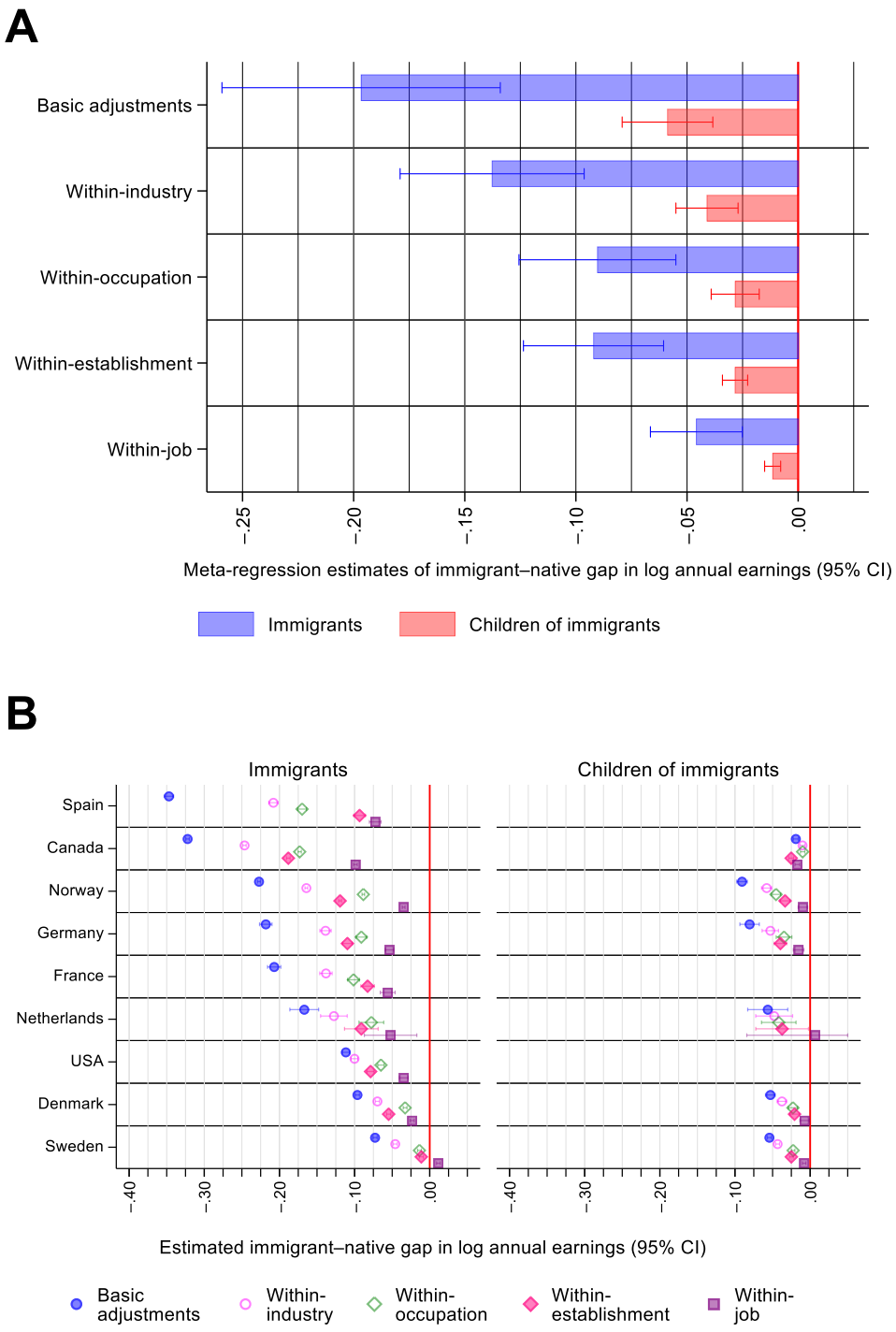

Fig. 1. Immigrant–native earnings differences after basic adjustments and within industry, occupation, establishment, and job averaged across all countries and separately by host country. (**A**) Differences in log annual earnings relative to natives after basic adjustments and within industry, occupation, establishment, and job (occupation–establishment units) for immigrants (Canada, Denmark, France, Germany, Netherlands, Norway, Spain, Sweden, and the United States) and children of immigrants (Canada, Denmark, Germany, Netherlands, Norway, and Sweden) averaged across all countries using meta-analysis of the pooled country-specific estimates. (**B**) Country-specific differences in log annual earnings relative to natives after basic adjustments and within industry, occupation, establishment, and job for immigrants and children of immigrants in each country from country-specific Ordinary Least Squares (OLS) regressions before and after introducing fixed effects for industry, occupation, establishment, and occupation–establishment units.

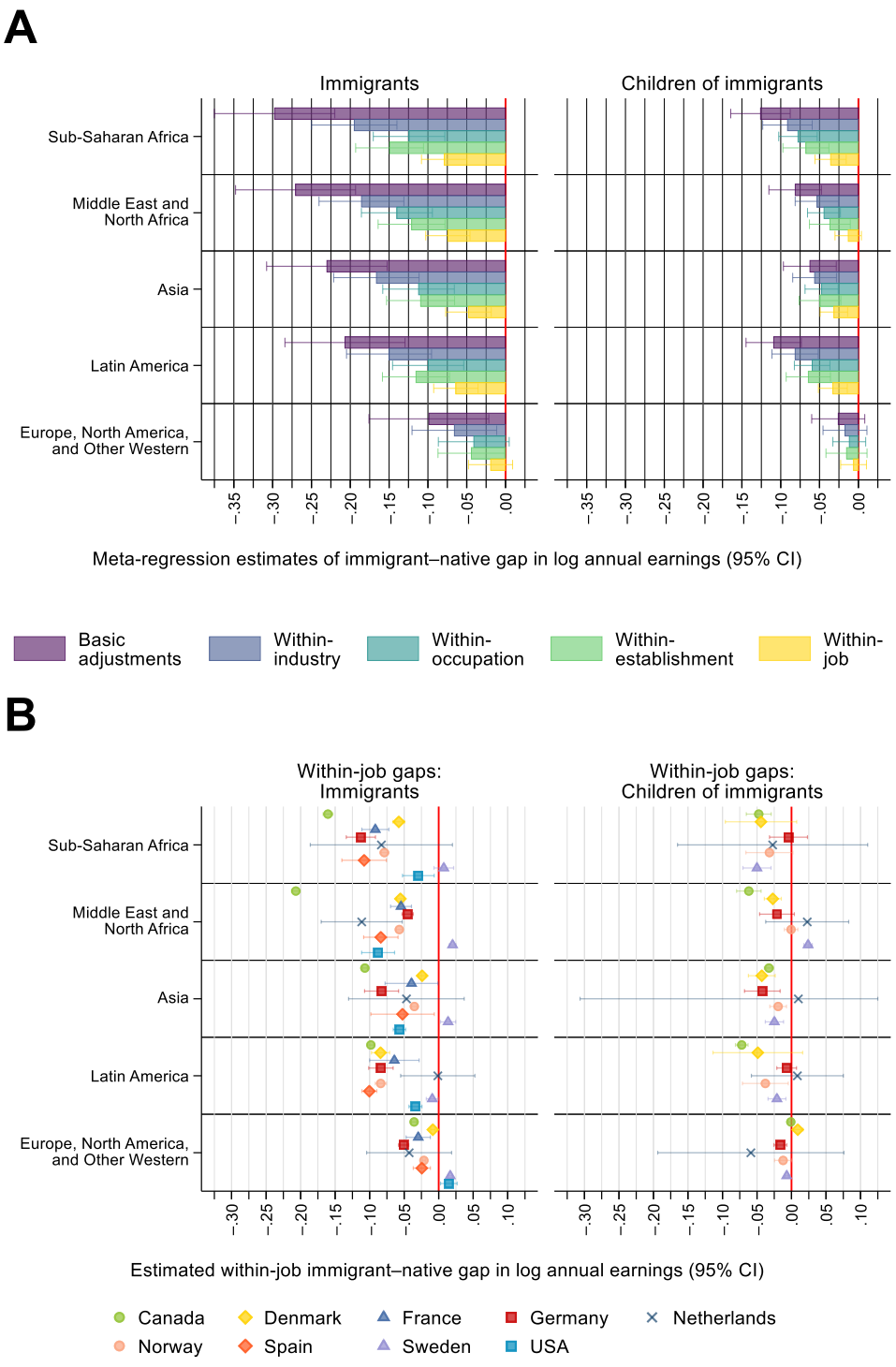

Fig. 2. Immigrant–native earnings differences after basic adjustments and within industry, occupation, establishment, and job by world region of origin. (**A**) Differences in log annual earnings relative to natives after basic adjustments and within industry, occupation, establishment, and job (occupation–establishment units) separately for immigrants (Canada, Denmark, France, Germany, Netherlands, Norway, Spain, Sweden, and the United States) and children of immigrants (Canada, Denmark, Germany, Netherlands, Norway, and Sweden) from different world regions of origin averaged across all countries using meta-analysis of the pooled country-specific estimates. (**B**) Country-specific within-job differences in log annual earnings relative to natives separately for immigrants and children of immigrants from different world regions within each country from country-specific OLS regressions with fixed effects for occupation–establishment units.

Supplementary Materials for

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

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The PDF file includes:

Materials and Methods
Supplementary Text
Figs. S1 to S16
Tables S1 to S40
References

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S1 Materials and methods

This study uses linked employer-employee administrative data (i.e., data that link individual employees directly to their employers) from nine countries in Europe and North America to investigate the extent to which immigrant–native earnings differentials arise from (a) immigrants, native-born children of immigrants, and native workers of non-migrant background receiving different pay when doing the same work for the same employer or (b) from processes of sorting of workers with immigrant and native background into different industries, occupations, establishments, and jobs (i.e., unique establishment–occupation units). Our analytic procedure follows two basic steps: first, we estimate immigrant–native earnings differentials from a series of regression models using separate datasets for each host country; and second, we merge all country-specific estimates of immigrant–native earnings gaps into one combined dataset and perform a series of meta-regressions to systematize the main patterns of immigrant–native earnings gaps as averages across all countries and averages for each world region of origin averaged across all countries.

The supplemental materials provide additional information on the materials and methods (Section S1) and supplementary text and results that support the main analysis (Section S2), additional results testing the sensitivity of the conclusions from the main analysis (Section S3–S5), detailed information on the data used for each separate country (Section S6); and the full set of country-specific results underlying the main analysis (Section S6).

S1.1 Data

We use recent linked employer–employee administrative data from Canada, Denmark, France, Germany, Netherlands, Norway, Spain, Sweden, and the United States. We restrict our main samples to workers between ages 25 and 60. For each worker, we select the job observations with the highest annual earnings in the year of observation. We exclude workers in marginal jobs, defined as observations with annual earnings below 50 percent of the lowest earnings decile cutoff. We use the most recent data available, from 2016 to 2019 depending on the country.

An overview of the key features of the data across countries is provided in Table S1 and below we provide a general description of the measurement of the key variables used in the analysis. Given the unique nature of each country's data, we provide additional information about the data utilized in each country, variable measurement, and report relevant country-specific supplementary analyses that we conducted (Section S6).

S1.2 Variables

S1.2.1 Earnings and wages

We use the natural log of annual earnings as our dependent variable. The measure of annual earnings is based on pre-tax earnings, which captures the sum of hourly wages and annual hours worked as well as potential differences in overtime, performance bonuses, and other wage components contributing to take home pay. For the six countries where we can isolate hourly wage on contractual hours (Denmark, Netherlands, and Norway) or hourly earnings (France, Spain, and the United States), we also report estimates using these alternative wage and earnings measures (Table S13).

S1.2.2 Nativity and immigrant background

In five countries (Canada, Denmark, Netherlands, Norway, and Sweden), we can identify the country of birth of individuals and their parents. For these countries, immigrants are defined as persons who were born abroad (i.e., born in a different country than their current country of residence) and children of immigrants are defined as persons with two foreign-born parents who were born in their current country of residence; these groups are compared to the native population who were born in their country of residence to parents born in their country of residence. In three countries (France, Spain, and the United States), we can identify an individual's country of birth, but not their parents' country of birth. In these countries we compare immigrants (i.e., those who were born abroad) to the native population (in this case, those who were born in their country of residence). For Germany, information on the country of birth of individuals and their parents is not available and we identify immigrants and children of immigrants using longitudinal data on citizenship status and nationality as well as name-based information observed from social security data across an individual's labor market career.

Supplementary analyses report results for immigrants separately by duration of stay in seven countries (Canada, Denmark, France, Germany, Norway, Sweden, and the United States; see Section S3). These analyses distinguish between (a) recent immigrants (less than 10 years since immigration); (b) established immigrants (10 or more years since immigration); and (c) childhood immigrants (17 years old or younger at immigration).

S1.2.3 World region of origin

In the analyses where we focus on variation by world region of origin, we group immigrants and children of immigrants into five broad world regions of origin: (a) West (Europe, North America, and other Western countries); (b) Middle East and North Africa; (c) Sub-Saharan Africa; (d) Asia; and (e) Latin America. For eight of the nine countries (Canada, Denmark, France, Netherlands, Norway, Spain, Sweden, and the United States), region of origin is based on country of birth for immigrants and parental country of birth for children of immigrants. In cases where the foreign-born parents have different countries of origin, we use information on the mother's country of birth.

A detailed list of the countries grouped into each region of origin is provided in Table S2. For Germany, information on own and parental country of birth is not available. To proxy world region of origin, we categorize immigrants and children of immigrants using information on personal names using a machine-learning algorithm that assigns names to different world regions of origin with high precision (see description of the German data in Section S5 for a detailed description of this approach). We use the same grouping of world regions of origin for Germany.

S1.2.4 Industry

Industry is measured using detailed variables capturing the main economic activity of the establishment where the individual is employed. For Denmark, France, Netherlands, and Norway, industry is measured using the four-digit nomenclature of the Statistical Classification of Economic Activities in the European Community (NACE). For Germany and Sweden, we use three-digit NACE industry codes. For Spain, we use the two-digit National Classification of Economic Activities (CNAE). For Canada and the United States, industry is measured using the three-digit North American Industrial Classification (NAICS).

S1.2.5 Establishment

For Denmark, France, Germany, Netherlands, Norway, Spain, and Sweden, we measure employers using information on unique identifiers for establishments. Establishments generally refer to distinct workplaces (often defined by a unique postal address) which are different from the firm level except in the case of single establishment firms. For Canada and the United States, employers are measured using unique identifiers for firms, which often include multiple establishments in different geographic locations. For countries where information on both establishments and firms is available (Denmark, France, Netherlands, Norway, Spain, and Sweden), we report results using firm identifiers instead of establishments to assess the sensitivity of this alternative measure for these countries (Table S22).

S1.2.6 Occupation

We use four-digit national adaptations of the International Standard Classification of Occupations (ISCO) to measure occupations for Denmark, Germany, Norway, and Sweden. For the Netherlands, we also use the International Standard Classification of Occupations (ISCO) but measured at the two-digit level to due to small sample sizes at the job level (occupation–establishment level). Job-level sample sizes are also small in France, and we use a coarsened two-digit occupation measure here too, where the two-digit version of *Nomenclature des Professions et Categories Socio-Professionelles* (CSP) contains 30 occupational categories. For Spain, occupation is measured using employer-reported one-digit *grupo de cotización* (10 categories) system. For Canada, occupations are measured using the Canadian National Occupational Classification (three-digit level, with about 140 unique occupations). For the United States,

occupation is measured using the three-digit categories of the Standard Occupation Classification (SOC). Below, we provide sensitivity analyses where we coarsen our occupational measures (one-, two-, and three-digit levels) for countries with detailed occupational information to assess the role of occupational granularity for our results.

S1.2.7 Job

We define jobs at the intersection of occupation and establishment (or firms), where the occupation–establishment units are defined as jobs and within-job pay gaps refers to the estimated pay differences within occupation–establishment units (*38*). This conceptualization of jobs as unique occupation–establishment cells correspond to an understanding of jobs as cases where individuals are hired to do specific tasks, often within the same work group, in the same workplace or company (*40*). Too detailed occupational and job titles may, however, just capture indicators of wage levels instead of distinguishing the content of work performed (*41*). To address this question, we report results where we coarsen our measure of jobs, by using one-, two-, and three-digit measures of occupations when defining occupation–establishment units (Tables S19–S21). For countries with information on both firms and establishments, we also report results where jobs are measured as the intersection of occupations and firms (i.e., occupation–firm units, Table S22).

S1.2.8 Covariates

All models in the main analysis control for sex, educational attainment, geographic region, and age. Sex is a binary variable distinguishing men and women. Educational attainment is measured using information on individuals' highest level of completed education and we distinguish between four or five levels: less than upper-secondary education; completed upper-secondary education; short tertiary education (e.g., Bachelor's degrees or equivalent); long tertiary education (e.g., Master's degrees or equivalent); and, in countries where this is available, doctoral degrees. We also include a separate indictor for individuals with missing information on education. Geographic region is measured using a set of dummy variables indicating local labor markets (e.g., municipalities or counties for most countries, see country-specific data descriptions). Age is measured using a linear and quadratic term.

We report a series of sensitivity analyses, where we test the robustness of our results to exclusion of the adjustments for education, geographic region, age, and also estimate models using a broader age range for our sample (18–70 years). Further, we also include results where we include additional adjustment for seniority in the current establishment and an indicator of part-time or full-time employment.

S1.3 Methods

Our analysis is conducted in two steps. First, we estimate a series of Ordinary Least Squares (OLS) regression models for each separate country that report earnings differences relative for natives to

immigrants and children of immigrants from (a) all world regions of origin combined and (b) separately by world region of origin. Second, we use a meta-analytic approach to summarize the average of these country-specific estimates immigrant–native earnings differences across all countries for immigrants and children of immigrants from (a) all world regions of origin combined and (b) separately by world region of origin. We describe this two-stage approach in more detail below.

S1.3.1 Country-specific regressions

In the first stage of the analysis, we estimate a series of OLS regression models using five different model specification (cf. Penner et al. (*38*) for a similar approach used to study the gender pay gap). These regression models are estimated separately for each country; this allows us to examine contemporary country-specific variation in earnings gaps relative to natives among immigrants and children of immigrants at different levels in the labor market. The first model only adjusts for basic covariates (Model 1), which provides our baseline estimate of total pay gaps between: (a) immigrants and natives, and (b) between the native-born children of immigrants and natives. These models include covariate controls for educational attainment level, gender, age, age squared, and geographic region of employment within the host country. In the following models we introduce fixed effects that allow us to compare immigrants, children of immigrants, and natives who work in the same industry (Model 2), the same occupation (Model 3), the same establishment (Model 4), and the same job (i.e., occupation–establishment unit; Model 5).

Comparing the results of these five models enables us to quantify the extent to which immigrant–native differences in earnings are accounted for by sorting across industries, occupations, establishments, and jobs (occupation–establishment units) relative to within-job pay inequality (i.e., different pay for the same job). The equations estimated for our five core models follow the same general form, using five different specifications:

$$\ln \text{ earnings}_i = \theta_{BASE}\boldsymbol{x}_i + \varepsilon_i, \quad (1)$$

$$\ln \text{ earnings}_i = \theta_{IND}\boldsymbol{x}_i + \eta_{ind} + \varepsilon_i, \quad (2)$$

$$\ln \text{ earnings}_i = \theta_{OCC}\boldsymbol{x}_i + \eta_{occ} + \varepsilon_i, \quad (3)$$

$$\ln \text{ earnings}_i = \theta_{EST}\boldsymbol{x}_i + \eta_{est} + \varepsilon_i, \quad (4)$$

$$\ln \text{ earnings}_i = \theta_{OCCEST}\boldsymbol{x}_i + \eta_{occest} + \varepsilon_i, \quad (5)$$

where the subscripts represent *i* for individuals, *ind* for industries, *occ* for occupations, *est* for establishments, and *occest* for occupation–establishment units. The dependent variable is the

logarithm of annual earnings (ln earnings$_i$) for individual *i*, and the independent variables are collected in the vector $\boldsymbol{x}_i$, which includes a constant; the gender, age, and age-squared of individual *i*; and a series of indicator variables for immigrant background, educational attainment level and geographic region of individual *i*. The fixed effects η_{ind}, η_{occ}, η_{est}, and η_{occest} refer to fixed effects for industry, occupation, establishment, and occupation–establishment units, respectively. Our measure of immigrant background refers to an indicator of native workers, the reference category, immigrants, and children of immigrants. In models where we distinguish between immigrants' and children of immigrants' world region of origin, the indicator variables for immigrant background include indicators for the world region of origin (i.e., Asia; Europe, North America, and Other Western; Latin America; Middle East and North Africa; Sub-Saharan Africa) for immigrants and children of immigrants.

Model 1 thus provides estimates of the immigrant–native differences in earnings after basic adjustments for gender, age, age-squared, education, and geographic region. Model 2 includes these same covariates as well as the fixed effects η_{ind} representing the industry indicators. Thus, model 2 provides estimates of immigrant–native differences in earnings obtained from comparing immigrants and children of immigrants to natives who work in the same industry. Intuitively, these results can be thought of as estimating the immigrant–native difference in earnings separately for each industry unit and then taking a weighted average of these immigrant–native differences across all industries. Models 3, 4, and 5 are analogous to model 2, but contain the fixed effects η_{occ}, η_{est}, and η_{occest} that refer to the unique occupation (η_{occ}), establishment (η_{est}), or occupation–establishment (η_{occest}) unit. The analytic sample for each model is restricted to fixed effect units that are integrated by immigrant background (i.e., there is at least either one immigrant or child of immigrant and one native worker present in the given unit). The subscripts to the θ parameters indicate that these are different coefficients, pertaining to different levels, basic adjustments (BASE), industry (IND), occupation (OCC), establishment (EST), and occupation–establishment (OCCEST).

We use the natural log of earnings as our dependent variable. Following standard conventions, these coefficients are interpreted as the relative difference between the average earnings for immigrant-background and non-migrant native workers, but more formally our estimates refer to the differences in relative geometric means for unlogged earnings (which is the absolute difference in the arithmetic means of logged earnings). See Petersen (*42*) for an extended discussion of the interpretation of such coefficients.

We report all estimates from our main model specifications for immigrants and children of immigrants for each separate country in the section describing the country-specific data. The coefficients and standard errors of these country-specific estimates of immigrant–native differences in earnings constitute the basis for the meta-analysis described below.

S1.3.2 Meta-analysis of the country-specific regression estimates

In the second stage of our analysis, we use meta-analysis to summarize the overall patterns in the immigrant–native pay gaps across the nine countries. The meta-analysis pools all of the country-specific estimates of differences in earnings between natives and immigrants (and separately, the differences between natives and the children of immigrants) for each of the model specifications described above (models 1–5). Thus, we obtain the immigrant–native difference in earnings averaged across all countries after basic adjustments and within industry, occupation, establishment, and job (occupation–establishment).

Our aim with the meta-analysis is twofold. First, we want to summarize the country-level immigrant–native differences in earnings across all countries, using the estimates that do not differentiate by world region of origin (i.e., for each of the five regression models described in the section above, we take one estimate for each of the nine of the countries for immigrants and one estimate for each of the six countries with information on children of immigrants). Second, we want to summarize how the immigrant–native differences in earnings vary by world region of origin when averaged across the countries where immigrants are currently living. To achieve this, we use the set of country-specific estimates that differentiate by world region of origin among immigrants and children of immigrants (i.e., estimates from the five world regions for each of the nine of the countries for immigrants and for each of the six countries for children of immigrants).

To capture sources of variability when summarizing the overall patterns across countries, we use a random-effects meta-analysis specification (*39, 43, 44*). Random-effects meta-analysis incorporate a variance component capturing variation in outcomes across countries that are due to unobserved country-level factors. Random-effects meta-analysis are recommended whenever there is reason to believe that the effect in question is likely to vary within the population of estimates, rather than representing a single underlying effect that is constant over the whole population (e.g., the different countries we are examining are likely to exhibit variation in their immigrant–native earnings differences).

We specify a random-effects meta-regression model estimated by restricted maximum likelihood using the meta regress function in Stata/MP version 17 (*45*). The general form of this equation is:

$$y_i = \alpha + \mu_i + \varepsilon_i, \text{ where } \mu_i \sim N(0, \tau^2) \text{ and } \varepsilon_i \sim N(0, \sigma_i^2) \quad (6)$$

Here, y_i is the immigrant–native difference in log annual earnings estimated for the country i, α is the constant term, μ_i is random effect describing the country-specific deviation from the distribution mean that is normally distributed with a mean of 0 and standard deviation of τ, where τ^2 is the residual between-country variance (or random-effect variance). ε_i is a random error term describing sampling variability that is normally distributed with a mean of 0 and a standard

deviation of σ, where σ_i^2 is the observed variance in the immigrant–native difference in log annual earnings in country i. Using the country-specific immigrant–native earnings difference estimates, we fit this model separately for immigrants and children of immigrants for each of the five model specifications described above (Section S1.3.1).

Fig. 1A in the main text summarizes the predicted immigrant–native difference in log annual earnings averaged across all countries for immigrants and children of immigrants using the country-specific estimates that do not differentiate by (children of) immigrants' world region of origin. The figure presents the average earnings gaps for each of the five regression specifications (i.e., basic adjustments, within-industry, within-occupation, within-establishment, and within-job).

Next, we summarize variation in immigrant–native earnings differences averaged across all countries. To achieve this, we use in the country-by-region-specific estimates of immigrant–native differences in log annual earnings and introduce covariates for world region of origin to the model specification, which has this form:

$$y_k = \beta x_k + \mu_k + \varepsilon_k, \text{ where } \mu_k \sim N(0, \tau^2) \text{ and } \varepsilon_k \sim N(0, \sigma_k^2) \quad (7)$$

This equation is similar to the previous equation, but y_k is the immigrant–native difference in log annual earnings estimated country-by-region combination k (i.e., unique combinations of country and world region of origin). β as vector of coefficients (including the constant) and x_k is a vector of indicators for the five world regions (i.e., Asia; Europe, North America, and Other Western; Middle East and North Africa; Latin America; Sub-Saharan Africa). The remaining terms have the same interpretations and assumptions as above but refer to country-by-region combination *k*. In the same fashion as above, we use the country-by-region specific immigrant–native earnings difference estimates to fit this model separately for immigrants and children of immigrants for each of the five model specifications described above (Section S1.3.1).

Fig. 2A in the main text summarizes the immigrant–native differences in log annual earnings for different world regions of origin averaged across all countries for immigrants and children of immigrants using the country-by-region specific estimates (i.e., differentiating the estimated earnings gaps by world region of origin within each country). The figure presents the average earnings gaps by origin region for immigrants and children of immigrants separately each of the five regression specifications (i.e., basic adjustments, within-industry, within-occupation, within-establishment, and within-job).

Finally, we also report the same summary estimates using an alternate meta-regression specification also using meta regress function in Stata/MP version 17 (*45*). 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 previous equations, 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 Section 1.3.1) are less susceptible to small-sample bias in this model (see (*39*), 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. However, we also report results from fixed-effects models as a type of robustness check (*39*) (Section S2.3).

S2 Supplementary text with information for the main analysis

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 S2.1). 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 S2.2.), 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, as described above, for the same set of countries used in the main analysis (Section S2.3).

S2.1 Estimated coefficients and standard errors from figures in main text

Tables S3 to S6 report the estimated coefficients and standard errors from Figs. 1 and 2 in the main text. The last column in each table shows the proportion of the immigrant–native difference in earnings found within jobs compared to the earnings difference after basic adjustments.

S2.2 Meta-regression restricted to countries with children of immigrants

We also report summary estimates using the random-effects meta-regression models described above using estimates for immigrants which is constrained only to the countries where we also

have information on children of immigrants (Section S2.2). 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.

Figure S1 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 is identical. Tables S7 and S8 report the exact coefficients and standard errors for the estimates reported in Figure S1.

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

S2.3 Meta-regression using fixed-effects specification

In Figure S2 and Table S9–S10, 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.

S3 Supplementary text for analyses by immigrants' duration of stay

Immigrants typically improve their earnings and labor market positions relative to natives as they spend more time in the host country, which is often attributed to improved country-specific human and social capital (*6-10*). This includes factors such as improved language skills, better cultural and institutional understanding of the host society, acquisition of education and training in the host society, and better access to job-relevant social networks (*10-12*). Thus, adult immigrants with longer durations of stay in the host 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 host country. Thus, childhood immigrants (often referred to as the 1.5 generation) are more likely to have achieved native-level fluency in the host-country language and have received an educational degree in the host country. Thus, an important question

is whether childhood immigrants' labor market outcomes are more similar to those of immigrants who arrived as adults or to those of native-born children of immigrants.

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: (a) recent immigrants, defined as those who arrived as adults (at age 18 or older) and have been in the host country for less than 10 years; (b) established immigrants, who arrived as adults (at age 18 or older) and have lived in the host country for 10 or more years; and (c) childhood immigrants, all immigrants who arrived in the host country between age zero and 17. Below, we report results for immigrants in each of these subpopulations using estimates from the seven countries where have information on immigrants' year of arrival or equivalent (Canada, Denmark, France, Germany, Norway, Sweden, and the United States).

S3.1 Averaged pattern across countries

Fig. S3A summarizes the overall pattern of immigrant pay gaps in total earnings and the relative contribution of within-job pay inequality versus industry, occupation, establishment, and job segregation using the same meta-analytic approach as used in the main analysis (see Table S11 for detailed estimates). We find that recent immigrants have the largest average total earnings difference relative to natives (–.276 log points), whereas the total earnings difference is markedly smaller among established immigrants (–.193 log points), and childhood immigrants experience considerably smaller gaps (–.073 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 (–.100 log points) compared to established immigrants (–.035 log points) and childhood immigrants (–.011 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, 3.5% and 1.1%, respectively, less than native coworkers in the same job. For established immigrants and childhood immigrants, the within-job earnings differences make up 15–18% of the total earnings differences with the remaining 85–82% attributable to differential sorting into lower-paying jobs.

Overall, Fig S3A 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 Table S3).

S3.2 Differences between host countries

Fig S3B 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 Table S12 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), Norway (–.085 log points), France (–.061 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 (–.037 log points) and is –.030 log points (France) or lower in the remaining countries (Denmark, Germany, Norway, Sweden, and the United States).

Overall, Fig. S3B shows that the main tendency across all seven host 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.

S3.3 Differences by world region of origin

Fig. S4A presents estimated earnings differences separately for recent immigrants, established immigrants, and childhood immigrants from each of the five world regions of origin, when averaged across the seven countries using our meta-analytic approach (see Table S13 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, Fig. S4A 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.

Fig. S4A 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 9% (Europe, North America, and other Western) and 27% (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 11% (Europe, North America, and other Western) to 27% (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.

Finally, Fig S4B reports the country-specific regression estimates of within-job immigrant–native earnings differences by world region of origin for each of the seven countries (see Table S14 for detailed estimates). Overall, these country-specific estimates are broadly in line with aggregated patterns by world region of origin summarized by meta-analysis (see Fig. S4A above).

S4 Supplementary text for analyses by sex and alternative outcomes

S4.1 Immigrant–native differences in annual earnings for men and women

There are many reasons that male and female immigrants and children of immigrants could face different obstacles in the labor market, which can produce systematic gender differences in immigrant–native pay gaps. For example, field experiments of ethnoracial discrimination in hiring often find the level of discrimination to be higher for immigrant men than among immigrant women (*32*). Figure S5 reports estimates for immigrant–native pay differentials for log annual earnings from the Basic Adjustments and Within-job models for men and women separately for each country. Tables S15 (men) and S16 (women) report exact coefficients and standard errors for all five model specifications.

There is a pattern where immigrant men experience somewhat larger total pay gaps compared to immigrant women in the Basic adjustments model in most countries. 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 gender difference in the size of the within-job immigrant–native pay gaps 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 gender 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, this suggests that the larger total immigrant gaps observed among men in both immigrant generations in most countries is due to a stronger sorting of immigrant men and women into lower-paying jobs and not due to larger differences in pay relative to non-migrant natives when immigrant-origin workers do the same work for the same employer.

S4.2 Immigrant–native differences in hourly wages or hourly earnings

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.

Table S17 shows that the immigrant–native earnings differences tend to be considerably smaller for hourly wages and hourly earnings than for annual earnings, but the relative contribution of sorting across industries, occupations, establishments, and jobs versus within-job unequal pay is qualitatively similar for both immigrants and children of immigrants. The within-job gaps in hourly wages/earnings range between about 1 to 6 percent for immigrants and about 1 percent at the highest for children of immigrants across these countries.

S5 Supplementary text for sensitivity analyses

This section provides estimates for the immigrant–native earnings gaps using alternative sample and job definitions, and including 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 (*46, 47*).

S5.1 Sensitivity analyses for job-integrated sample and job definitions

In this section, we, first, assess 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 (i.e., we estimate all regression models using only the sample of individuals in job cells where both non-migrant natives and immigrants and/or children of immigrants are both observed). Second, we 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. Third, 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.

Figure S6 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. Tables S18–S22 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.

S5.1.1 Sample restricted to immigrant–native integrated job cells

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). To address whether part of the contribution of labor market 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 our 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 in at the job level for a consistent sample across all five model specifications). Figure S4 presents the estimates from basic adjustments model and the within-job model for the integrated job cell sample. Table S14 reports the full set of estimates using the immigrant–native job-integrated sample.

Figure S6 (Integrated job cells) 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.

S5.1.2 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" estimate (*38, 48, 49*). 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" ((*40*), p. 9). However, as noted by Petersen et al. (*41*): "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 four or three digit occupational classification schemes in six out of our nine countries (4-digit: Canada, Denmark, Germany, Norway, and Sweden; 3-digit occuational 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 contraints (Spain). To assess whether differences in the granularity of our occupational measurements are not 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.

Figure S6 (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, there 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 Tables S15–S17, 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 couuntries does not reflect differences in the granularity of our occupational measures in selected countries.

S5.1.3 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.

Figure S6 (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. Table S18 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.

S5.2 Sensitivity analyses for covariate adjustment and age restrictions

This section presents results where we explore the extent to which our estimates are sensitive to various changes in the adjustment for covariates in the model specification of the country-specific fixed regressions. In addition, we also assess changes in the estimates when including a broader age range (18–70 years old) in our analytic sample.

In Figure S7, 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 Tables S23–S29.

Figure S7 documents substantial variation in the estimates for the total immigrant–native pay differentials (basic adjustments model) for immigrants and children of immigrants depending on covariate adjustments and the sample age restriction. For the within-job estimates of immigrant–native pay differentials, there is much less variation across the various model specifications. In the following, we comment on the estimates from each of the sensitivity analyses.

S5.2.1 No adjustment for education

For immigrants, Figure S7 (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 Table S23). 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, Nehterlands, 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.

S5.2.2 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 Figure S7 (No geography) and Table S24. 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, Figure S7 (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, Figure S7 (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.

S5.2.3 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. Figure S7 (No education or geography) presents these results for the basic adjustments model and the within-job model. Table S25 presents the full set of results from all model specifications.

For immigrants, Figure S7 (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 .006 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, Figure S7 (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 geograpy, 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 immigants, children of immigrants, and natives with the same occupation working for the same employer, aiccounting for education and georgaphy 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.

S5.2.4 No adjustment for age

Figure S7 (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. Table S26 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 host 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.

S5.2.5 Sample with broader age range

Figure S7 (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. Table S27 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.

S5.2.6 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. Figure S7 (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). Table S28 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 .01 to about .04 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.

S5.2.7 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 senstivity 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. Figure S7 (Fulltime) summarizes the results from the basic adjustments and within-job models after adjusting for parttime versus fulltime employment. Table S29 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 dataset 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.

S6 Supplementary text for description of country-specific data

S6.1 Canada

Our analyses use the linkage between Canadian census long-form micro data 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, gender 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 data files used for this project can be accessed at Statistics Canada upon receipt of a security check and authorization from Statistics Canada. Figure S8 and Table S30 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.

S6.2 Denmark

Our analyses use data 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. 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. These data are 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 associated with poorer data coverage, we exclude them from our analyses, and use data on primary jobs with earnings that are greater than one-sixth of the average earnings reported for Denmark in 2019 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 the data is weighted by Statistics Denmark to adjust for this bias.

Information about immigrant status, country of origin, gender, 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.

Data similar to those used for this project can be accessed at Statistics Denmark upon receipt of proper authorizations and after paying the relevant fees. Figure S9 and Table S31 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.

S6.3 France

Our analyses for France use two databases. 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 French social security register and French Census data. The BTS data consist 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 data 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.

In the BTS data 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 Categories 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 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).

Access to the DADS data can be obtained from the CASD dedicated to researchers authorized by the French *Comité du Secret Statistique*. Figure S10 and Table S32 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). Table S33 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.

S6.4 Germany

Our analyses use customized administrative data, combining 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 complete data of 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 employees. 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 stratification. Accordingly, large establishments, small federal states, small industries, and the manufacturing industry in East Germany, are overrepresented. 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 data (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. The basis for the data is 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, our data covers the approximately 80 percent of the workforce, but excludes civil servants (*Beamte*) and self-employed. For our analyses we keep regularly employed and thus for example exclude marginally employed (currently those earning less than 450 Euros per month) or people in vocational training. The data 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 data quality for educational qualifications, we correct the data according to 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 time. 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 term. We use gender, age and a non-linear age term, part-time and full-time information, qualification, and nationality to impute the wages. The data do 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 data in Germany usually does not include information on migration status, we use different operationalizations to identify immigrants and children of immigrants. We define all employees who hold a non-German nationality upon their first observation in the German social security data as immigrants. In the German context, nationality has been used before to proxy migration status. Using nationality as an indicator for immigrant status works comparably well in the German context because before December 2014 Germany made the acquisition of their citizenship via naturalization dependent on the applicant's release from their previous nationality (although some exceptions apply). People whose nationality is non-German upon their first observed spell in the social security data could theoretically also be second or third generation immigrants. In 2016, approximately 24 percent of second or third generation immigrants did not have a German nationality. 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.

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 do not have 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 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 a dual citizenship, who at some point opt for their non-German nationality. 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) (*50*). The algorithm is trained on approximately 70 million names and assigns probabilities of the regional origin to every requested name based on closeness of the names to the original names and homophily in communication patterns that informs embeddings of names. We implement a number of data protection measures to guarantee that API requests do not reveal whether first names

originated from social security data 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. 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.

To test the validity of the name-based measures, we selected nationality-groups based on citizenship in the administrative data and examined the likely origins based on NamePrism. For those with a German nationality, the probability of the person's origin based on their name on average clearly indicates German (with an average probability of .64). For those with a nationality from the Greater Middle Eastern region, the probability distribution of the person's origin based on their name, on average clearly indicates Greater Middle East (with an average probability of .25) whereas this probability is .02 or less for all other grouped nationalities including German.

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 data. We thus compare the percent of immigrants in our data 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.

The data used is based upon the Linked-Employer-Employee-Data of the IAB (LIAB cross-sectional model 2 1993-2019 LIAB QM2 9319) and enriched with additional internal data sources. Data similar to those used for this project can be accessed at Institute for Employment Research (IAB) of the German Federal Employment Agency (BA) Nuremberg upon receipt of proper authorizations Figure S11 and Table S34 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.

S6.5 Netherlands

Our analyses use 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 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 data (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 occupational data has 8,140,057 observations (full registry sample).

Wage information is obtained from wage register that provides data 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 gender 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 data 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 (*38*) 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 register data. 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.

Data similar to those used for this project can be accessed at Statistics Netherlands upon receipt of proper authorizations. Figure S12 and Table S35 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. Table S36 reports results after basic adjustments and within industry and establishment for the full population data, where information on occupation and occupation–establishment units (i.e., jobs) is not available.

S6.6 Norway

Our analyses use data from Statistics Norway's wage statistics from 2018 for information on contractual monthly salaries, contractual hours worked, part- versus full-time status, occupation, and employers. Statistics Norway's wage statistics (based on data from *A-ordningen* since 2015)

cover all formal jobs, firms, and establishments in the entire private and public sector in the Norwegian labor market.

We merge the annual earnings data 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. In 2018, there were about 430 municipalities in Norway.

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 gender 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.

Data similar to those used for this project can be accessed at Statistics Norway upon receipt of proper authorizations. Figure S13 and Table S37 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.

S6.7 Spain

Our analyses use data 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 data collection. The variable definitions are publicly available and can be accessed through the website of the Social Security Office *(Instituto Nacional De La Seguridad Social)*.

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 analyses use data from 2018, the most recent year in our data, for which we can extract noncapped individual earning records and establishment-level information from the tax datasets.

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, gender, full-time status), establishments, occupations, and industries. Industry is measured using the National Classification of Economic Activities (CNAE-

93). The main economic activity of each establishment is captured by one of 59 two-digit industry codes.

In addition to the uncensored 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 data files used for 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*). Figure S14 and Table S38 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.

S6.8 Sweden

Our data come from Sweden use Statistics Sweden's LISA database, which is a collection of administrative data on the population level. 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 data 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. Occupation is based on Statistics Sweden's Swedish version of *ISCO-08* (*Standard för svensk yrkesklassificering, SSYK2012*), available at the at the four-digit level, and the source data comes mainly from employer reports. Information about gender 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.

Data similar to those used for this project can be accessed at Statistics Sweden upon receipt of the proper authorizations. Figure S15 and Table S39 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.

S6.9 United States

Our analyses use 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 datasets 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 (*17*) 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 does not affect results.

We additionally derive information on gender, 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, these data 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 × 40 hours × 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 data for business establishments. CBP data are edited to remove anomalies and validate several data items, 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.

Data used for this project can be accessed at the U.S. Census Bureau upon receipt of proper authorizations. Figure S16 and Table S40 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.

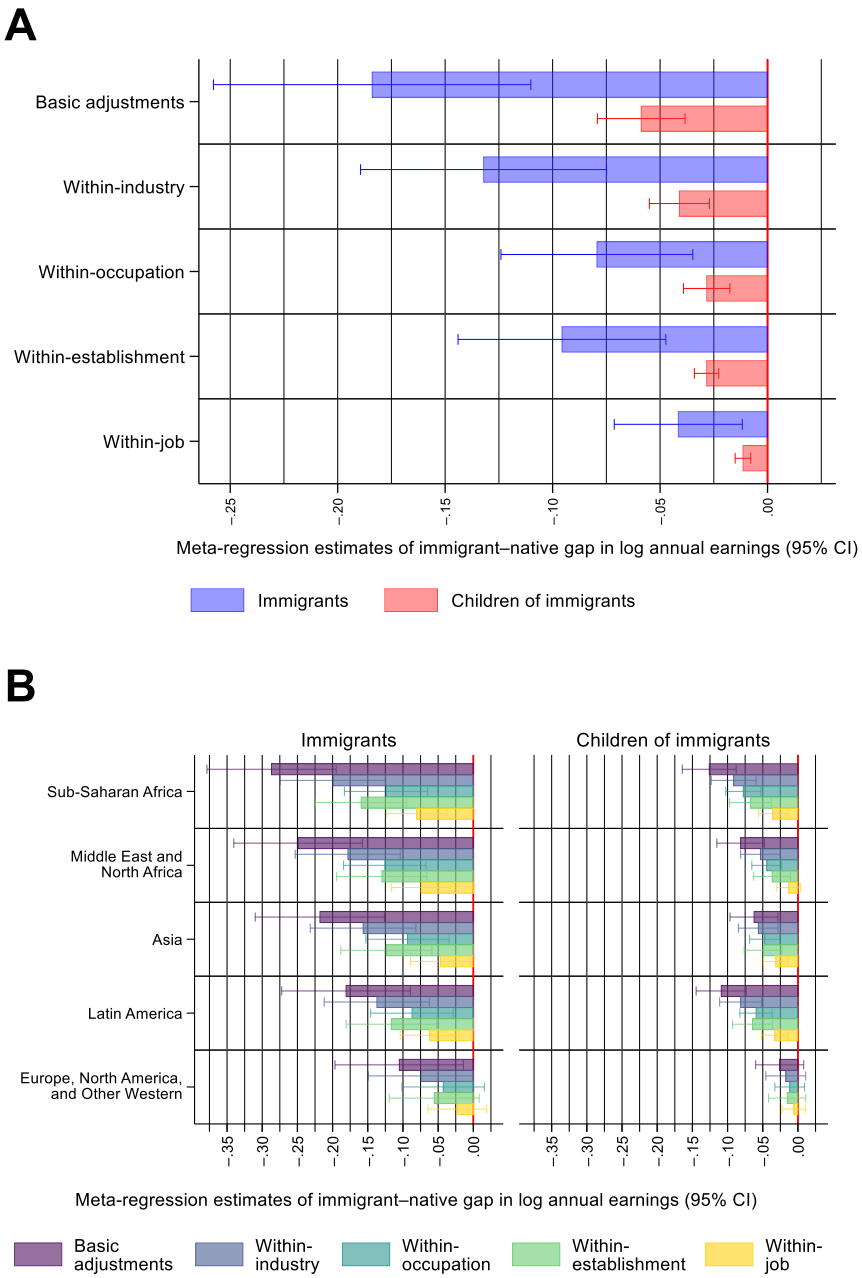

Figure S1. Immigrant–native differences in annual earnings after basic adjustments and within industry, occupation, establishment, and job averaged across all countries and averaged separately by world region using random-effects meta-analysis, restricted to countries with data on both immigrants and children of immigrants.

Note: (**A**) Average differences in log annual earnings relative to natives after basic adjustments and within industry, occupation, establishment, and job (occupation–establishment units) for immigrants and children of immigrants across all countries, obtained using random-effects meta-analysis of the pooled country-specific estimates (Canada, Denmark, Germany, Netherlands, Norway, and Sweden). (**B**) Averaged differences in log annual earnings relative to natives after basic adjustments and within industry, occupation, establishment, and job (occupation–establishment units) separately for immigrants and children of immigrants from different world regions of origin across all countries, obtained using random-effects meta-analysis of the pooled country-specific estimates (Canada, Denmark, Germany, Netherlands, Norway, and Sweden).

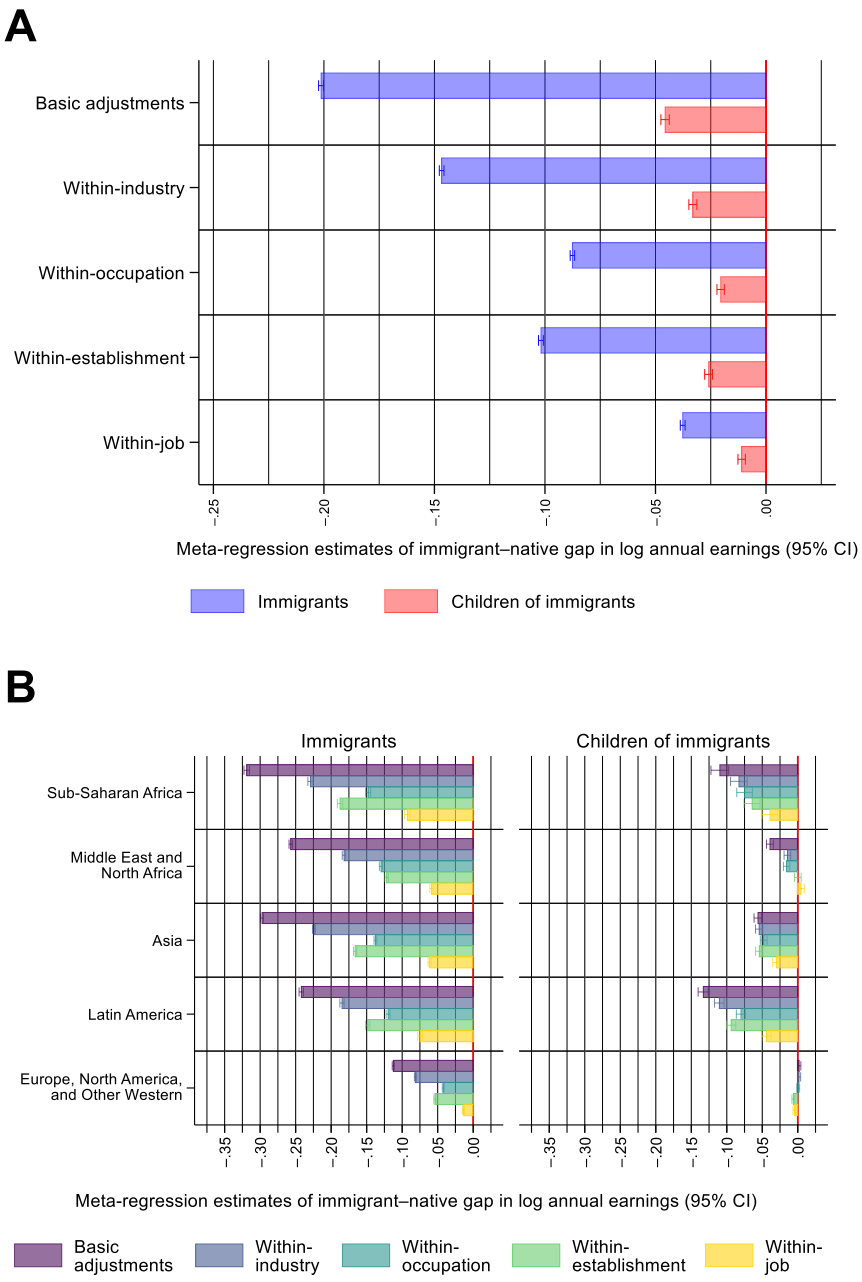

Figure S2. Immigrant–native differences in annual earnings after basic adjustments and within industry, occupation, establishment, and job averaged across all countries and averaged separately by world region using fixed-effects meta-analysis.

Note: (**A**) Average differences in log annual earnings relative to natives after basic adjustments and within industry, occupation, establishment, and job (occupation–establishment units) for immigrants (Canada, Denmark, France, Germany, Netherlands, Norway, Spain, Sweden, and the United States) and children of immigrants (Canada, Denmark, Germany, Netherlands, Norway, and Sweden) across all countries, obtained using fixed-effects meta-analysis of the pooled country-specific estimates. (**B**) Averaged differences in log annual earnings relative to natives after basic adjustments and within industry, occupation, establishment, and job (occupation–establishment units) separately for immigrants (Canada, Denmark, France, Germany, Netherlands, Norway, Spain, Sweden, and the United States) and children of immigrants (Canada, Denmark, Germany, Netherlands, Norway, and Sweden) from different world regions of origin across all countries, obtained using fixed-effects meta-analysis of the pooled country-specific estimates.

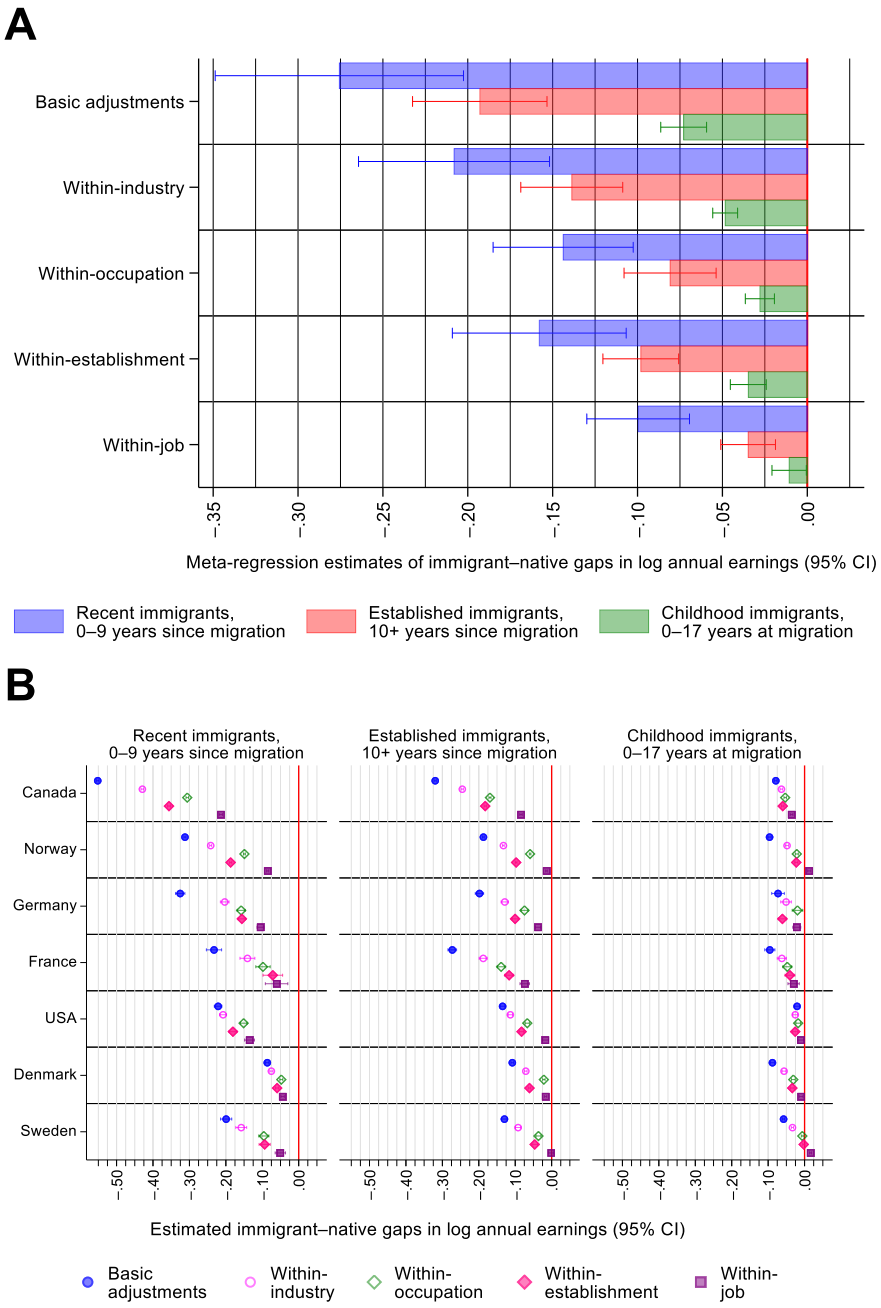

Figure S3. Immigrant–native differences in annual earnings for recent immigrants, established immigrants, and childhood immigrants after basic adjustments and within industry, occupation, establishment, and job averaged across all countries and separately by host country.

Note: (**A**) Differences in log annual earnings relative to natives after basic adjustments and within industry, occupation, establishment, and job (occupation–establishment units) for recent immigrants, established immigrants, and childhood immigrants averaged across all countries (Canada, Denmark, France, Germany, Norway, Sweden, and the United States) using random-effects meta-analysis of the pooled country-specific estimates. (**B**) Country-specific differences in log annual earnings relative to natives after basic adjustments and within industry, occupation, establishment, and job for immigrants and children of immigrants in each country from country-specific Ordinary Least Squares (OLS) regressions before and after introducing fixed effects for industry, occupation, establishment, and occupation–establishment units.

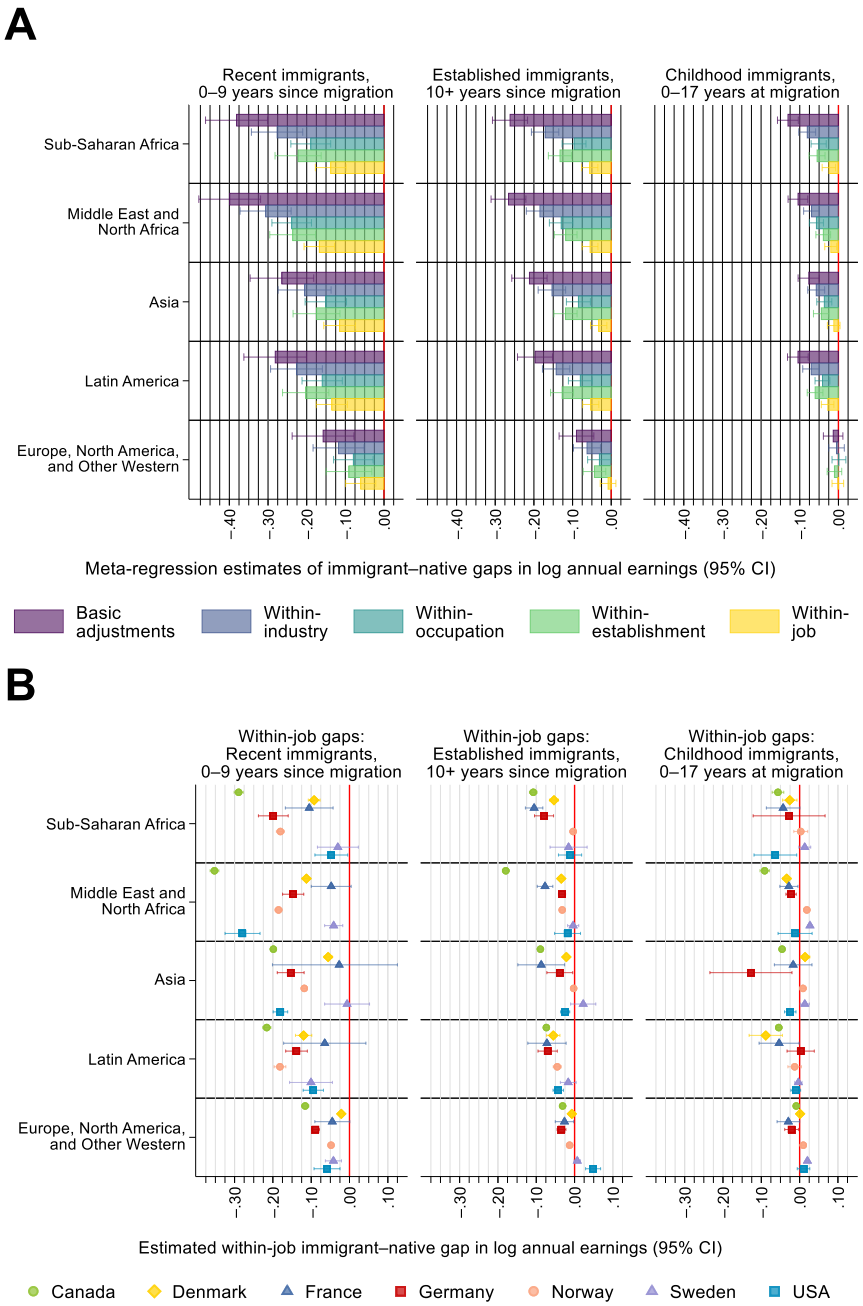

Figure S4. Immigrant–native differences in annual earnings for recent immigrants, established immigrants, and childhood immigrants after basic adjustments and within industry, occupation, establishment, and job by world region of origin.

Note: (**A**) Differences in log annual earnings relative to natives after basic adjustments and within industry, occupation, establishment, and job (occupation–establishment units) separately for recent immigrants, established immigrants, and childhood immigrants from different world regions of origin averaged across all countries (Canada, Denmark, France, Germany, Norway, Sweden, and the United States) using meta-analysis of the pooled country-specific estimates. (**B**) Country-specific within-job differences in log annual earnings relative to natives separately for immigrants and children of immigrants from different world regions within each country from country-specific OLS regressions with fixed effects for occupation–establishment units.

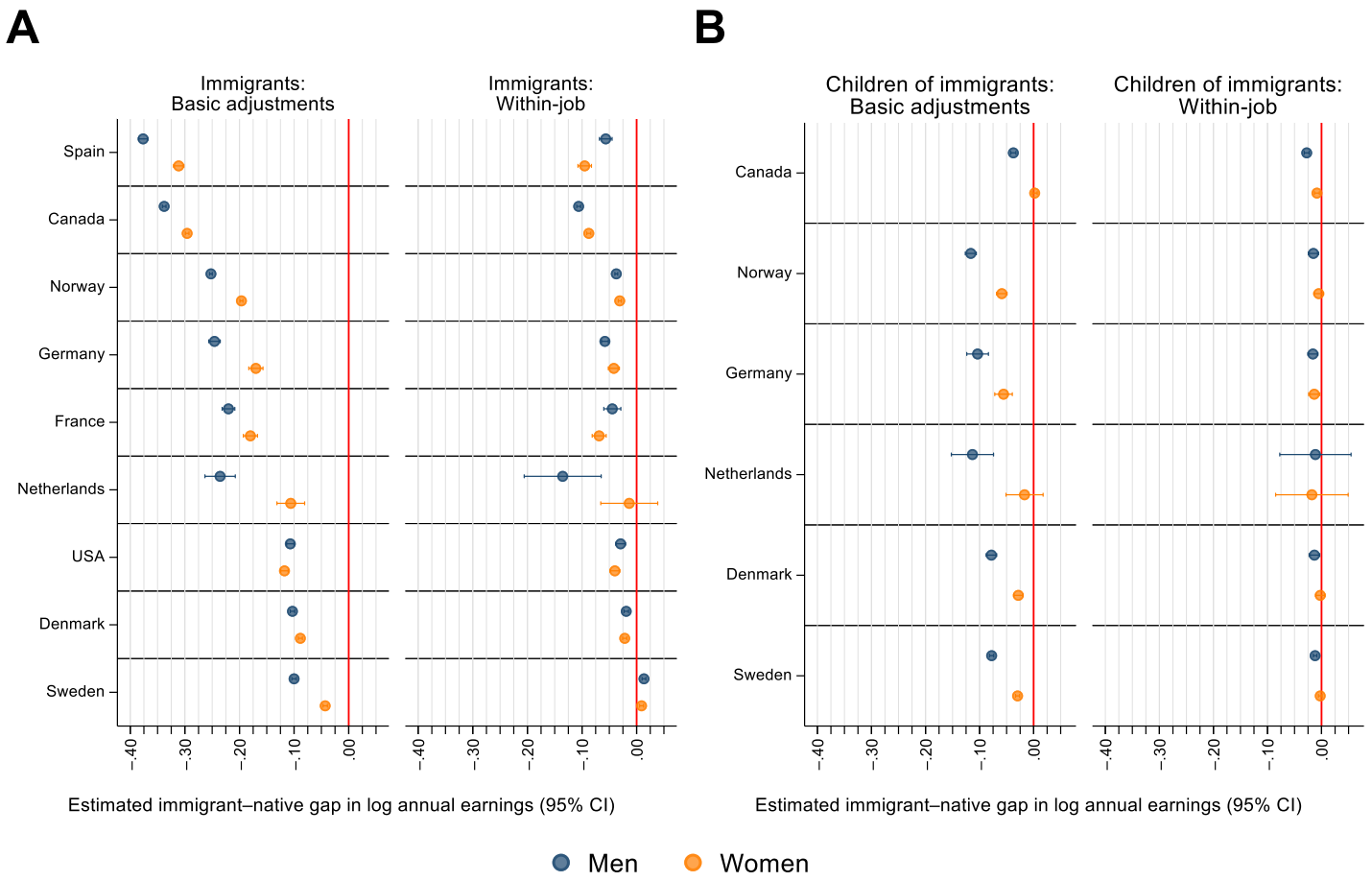

Figure S5. Immigrant–native differences in annual earnings after basic adjustments and within industry, occupation, establishment, and job separately for men and women.

Note: Each estimate represents the coefficient from a separate model estimating the difference between the logged annual earnings of immigrants and natives and children of immigrants and natives ages 25–60 years, with negative coefficients indicating that (children of) immigrants earn less than natives, for all immigrants and children of immigrants combined. 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 panels report differences from a model that controls for age, age squared, education, gender, 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.

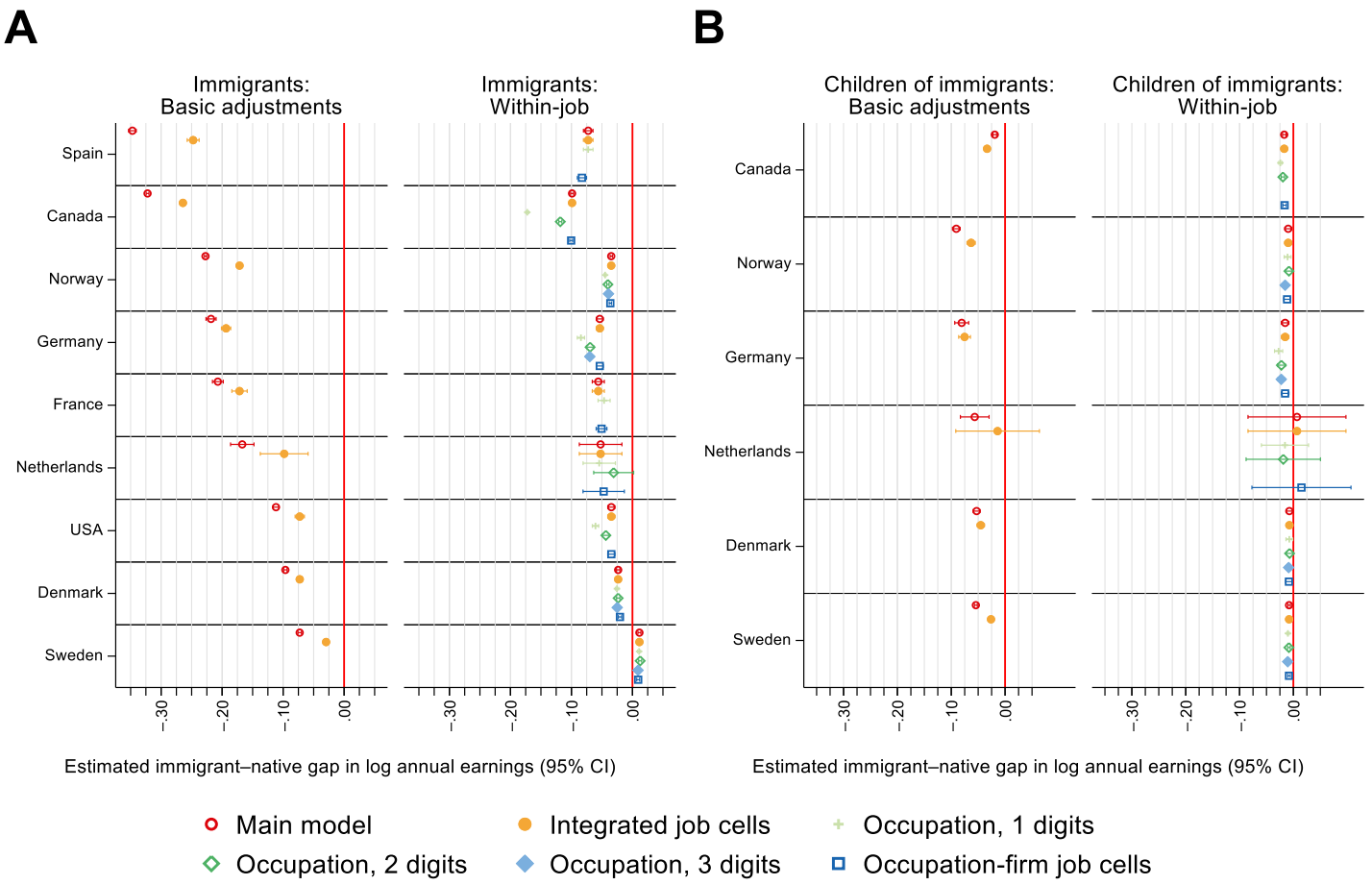

Figure S6. Immigrant–native differences in annual earnings after basic adjustments and within job for job-integrated sample and alternative job definitions.

Note: Each estimate represents the coefficient from a separate model estimating the difference between the logged annual earnings of immigrants and natives and children of immigrants and natives ages 25–60 years, with negative coefficients indicating that (children of) immigrants earn less than natives, for all immigrants and children of immigrants combined. 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 panels report differences from a model that controls for age, age squared, education, gender, 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.

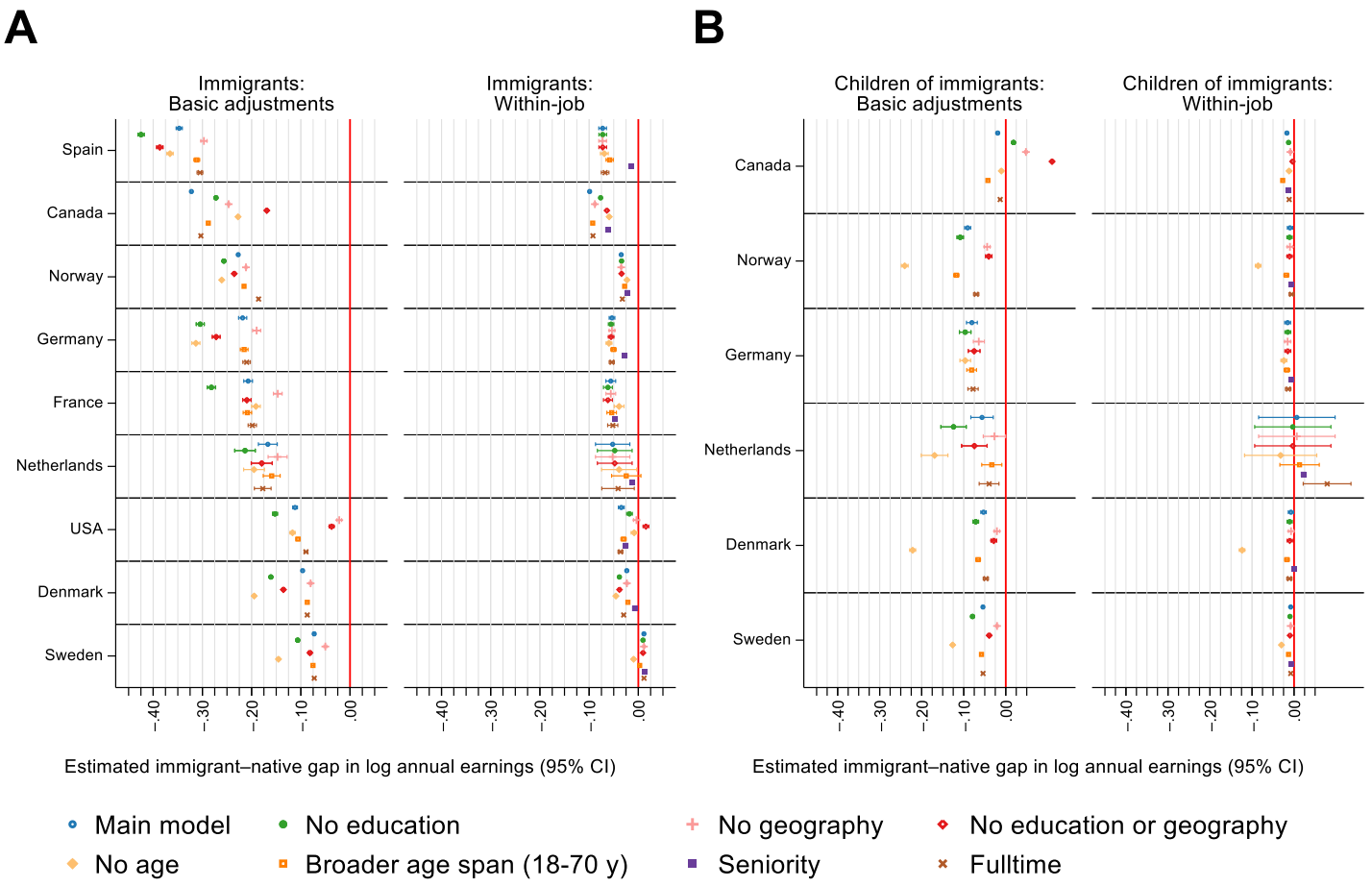

Figure S7. Immigrant–native differences in annual earnings after basic adjustments and within jobs for model specifications with alternative covariate adjustments and age restriction.

Note: Each estimate represents the coefficient from a separate model estimating the difference between the logged annual earnings of immigrants and natives and children of immigrants and natives ages 25–60 years, with negative coefficients indicating that (children of) immigrants earn less than natives, for all immigrants and children of immigrants combined. 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 panels report differences from a model that controls for age, age squared, education, gender, 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.

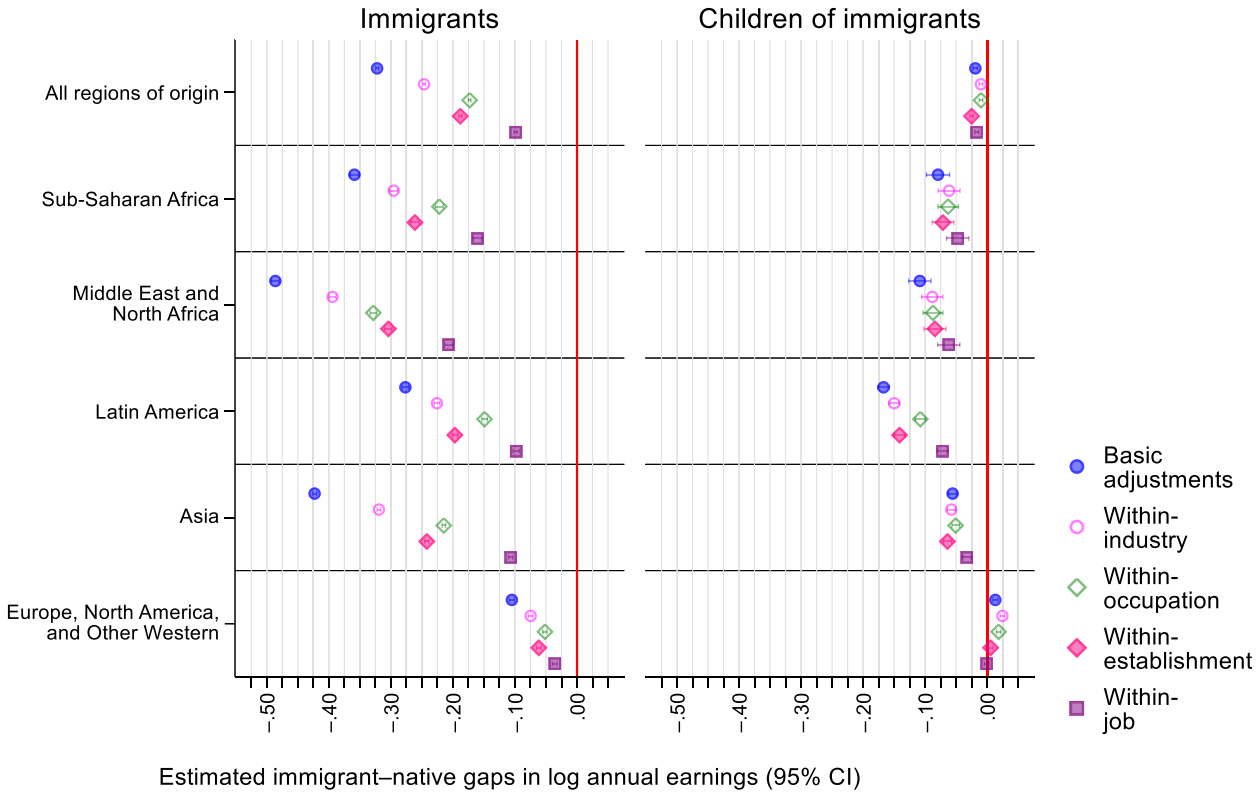

Figure S8. Canadian estimates of immigrant–native differences in annual earnings after basic adjustments and within industry, occupation, establishment, and jobs, for all world regions and separately by region of origin, used in main analysis.

Note: Each estimate represents the coefficient from a separate model estimating the difference between the logged annual earnings of immigrants and natives and children of immigrants and natives ages 25–60 years, with negative coefficients indicating that (children of) immigrants earn less than natives, for all world regions combined and separately by world region of origin. 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, 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.

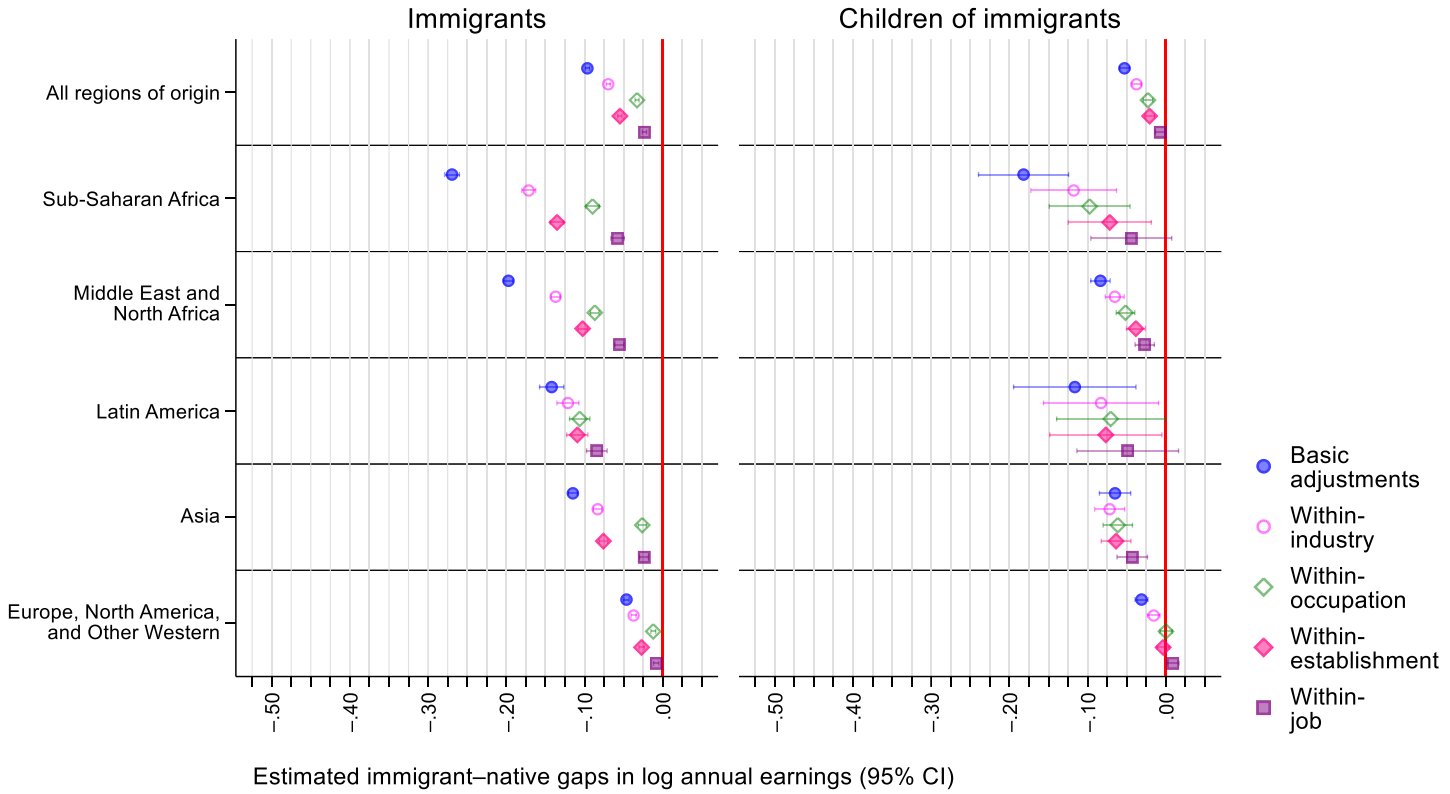

Figure S9. Danish estimates of immigrant–native differences in annual earnings after basic adjustments and within industry, occupation, establishment, and jobs, for all world regions and separately by region of origin, used in main analysis.

Note: Each estimate represents the coefficient from a separate model estimating the difference between the logged annual earnings of immigrants and natives and children of immigrants and natives ages 25–60 years, with negative coefficients indicating that (children of) immigrants earn less than natives, for all world regions combined and separately by world region of origin. 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, 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.

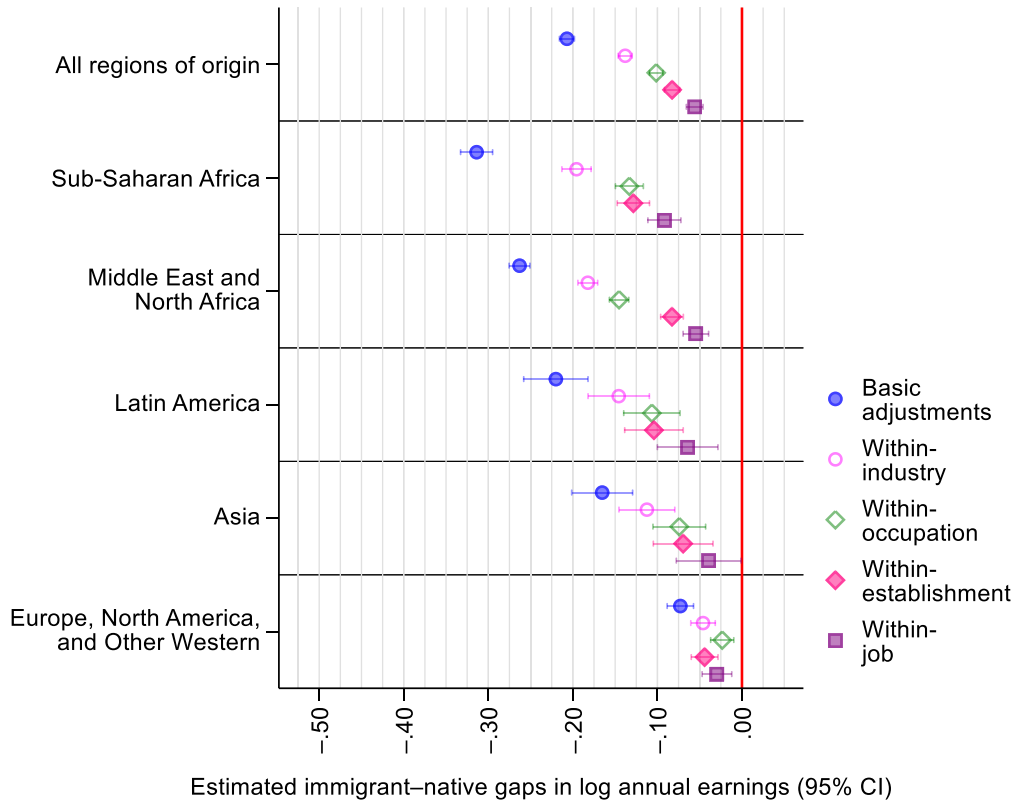

Figure S10. French estimates of immigrant–native differences in annual earnings after basic adjustments and within industry, occupation, establishment, and jobs, for all world regions and separately by region of origin, used in main analysis.

Note: Each estimate represents the coefficient from a separate 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. 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, 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.

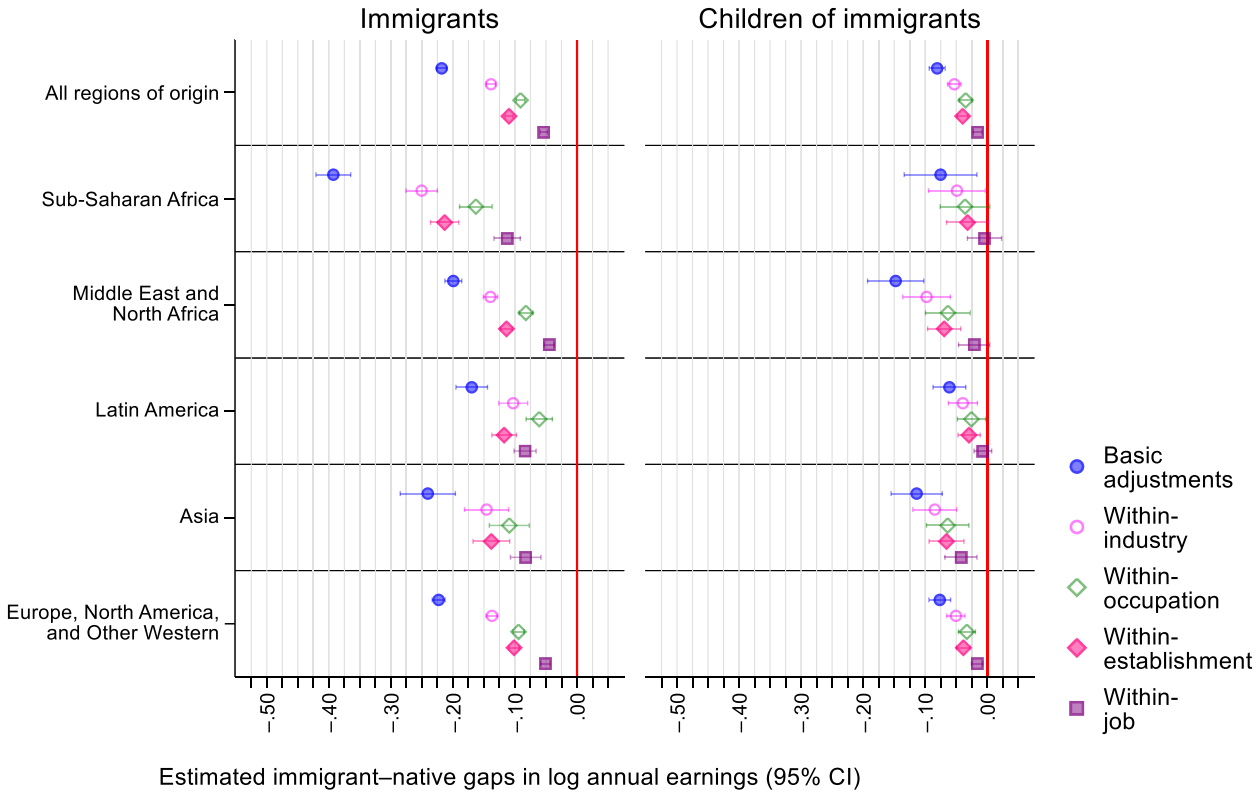

Figure S11. German estimates of immigrant–native differences in annual earnings after basic adjustments and within industry, occupation, establishment, and jobs, for all world regions and separately by region of origin, used in main analysis.

Note: Each estimate represents the coefficient from a separate model estimating the difference between the logged annual earnings of immigrants and natives and children of immigrants and natives ages 25–60 years, with negative coefficients indicating that (children of) immigrants earn less than natives, for all world regions combined and separately by world region of origin. 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, 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.

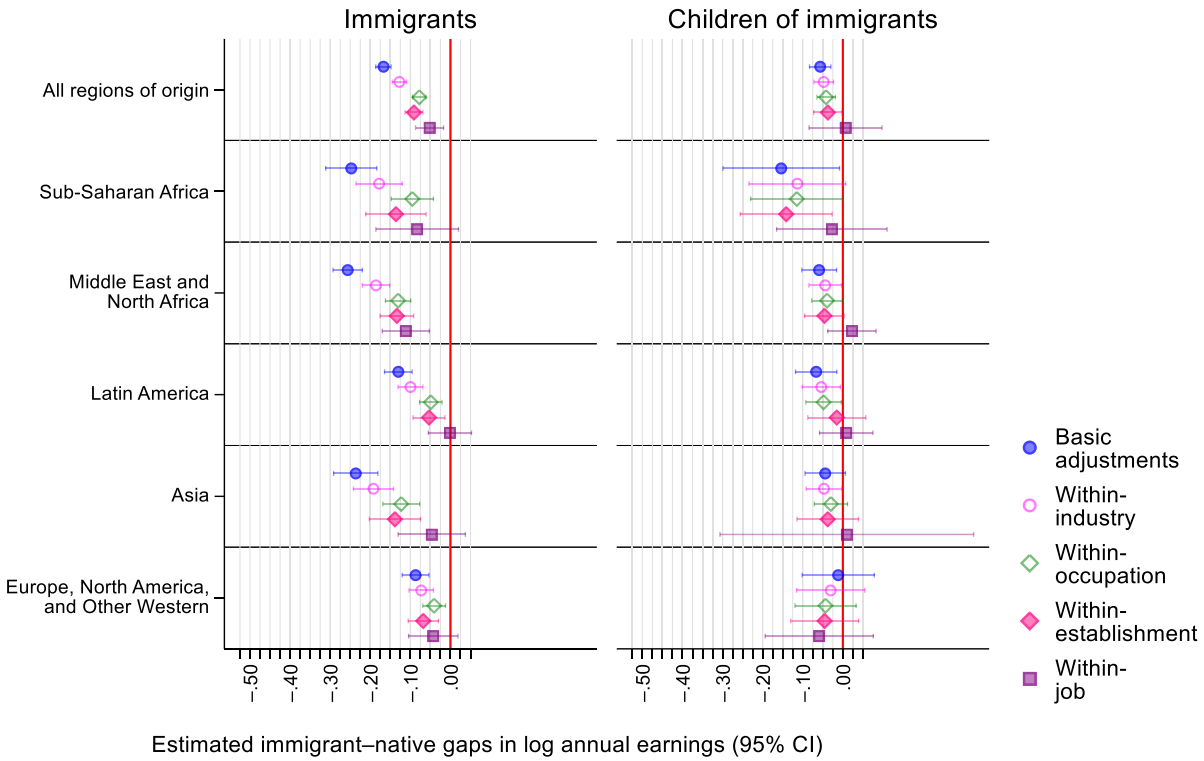

Figure S12. Dutch estimates of immigrant–native differences in annual earnings after basic adjustments and within industry, occupation, establishment, and jobs, for all world regions and separately by region of origin, used in main analysis.

Note: Each estimate represents the coefficient from a separate model estimating the difference between the logged annual earnings of immigrants and natives and children of immigrants and natives ages 25–60 years, with negative coefficients indicating that (children of) immigrants earn less than natives, for all world regions combined and separately by world region of origin. 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, 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.

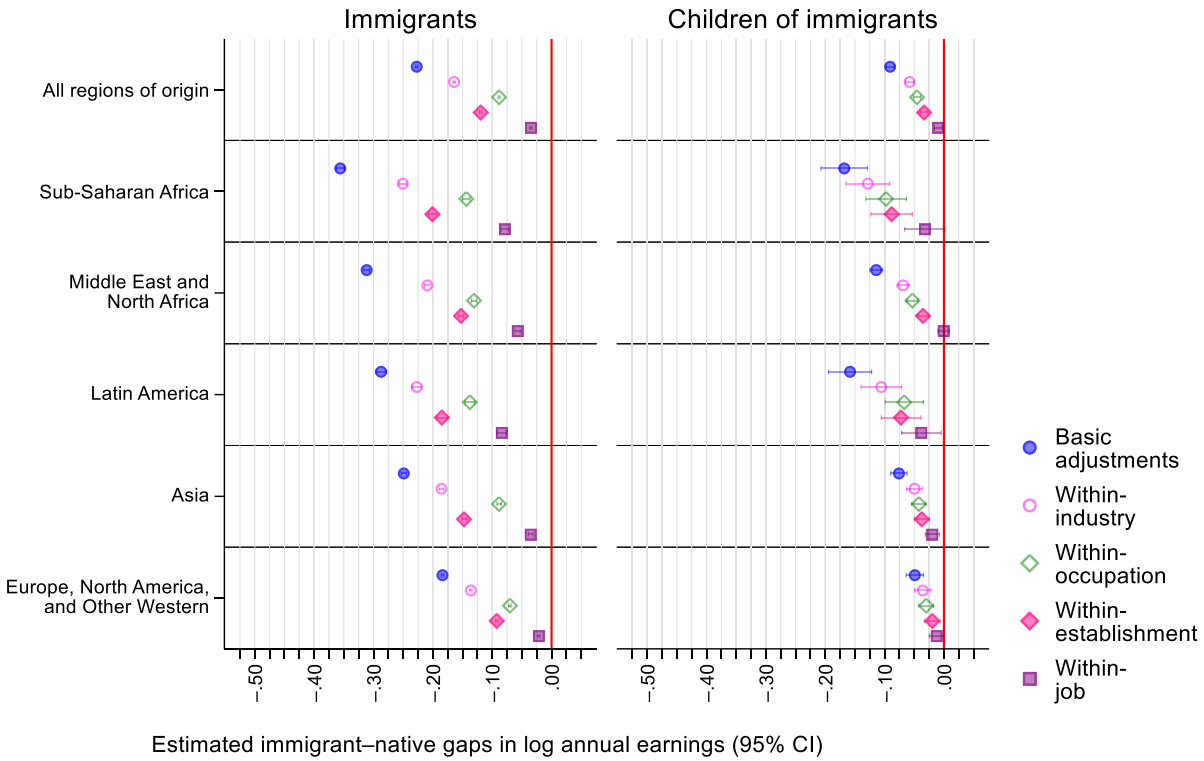

Figure S13. Norwegian estimates of immigrant–native differences in annual earnings after basic adjustments and within industry, occupation, establishment, and jobs, for all world regions and separately by region of origin, used in main analysis.

Note: Each estimate represents the coefficient from a separate model estimating the difference between the logged annual earnings of immigrants and natives and children of immigrants and natives ages 25–60 years, with negative coefficients indicating that (children of) immigrants earn less than natives, for all world regions combined and separately by world region of origin. 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, 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.

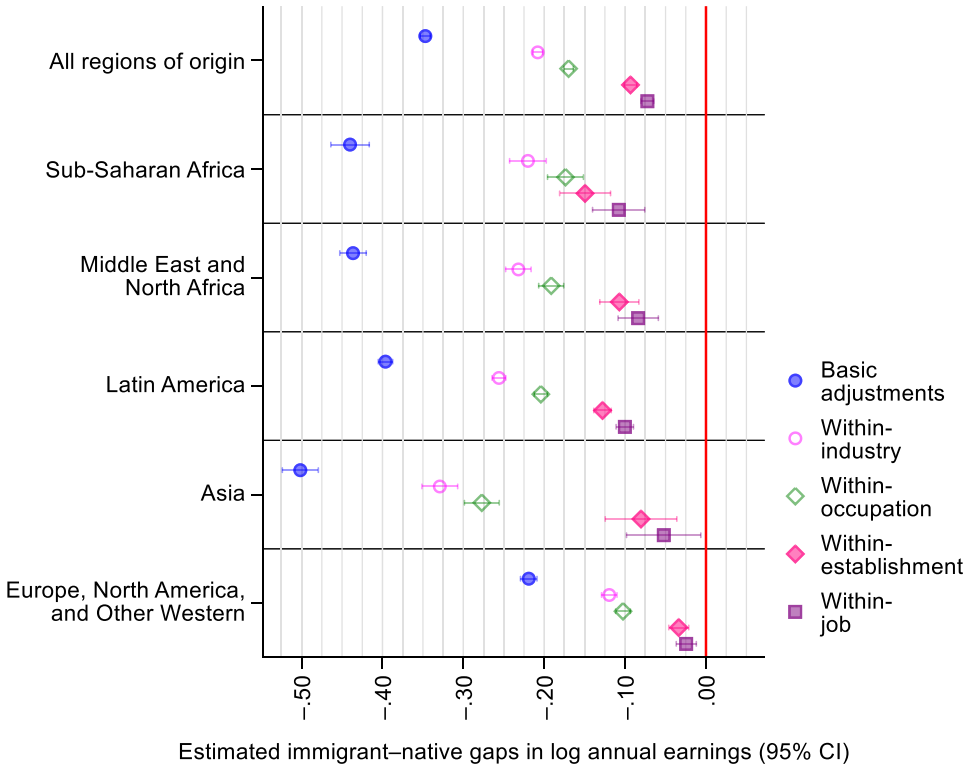

Figure S14. Spanish estimates of immigrant–native differences in annual earnings after basic adjustments and within industry, occupation, establishment, and jobs, for all world regions and separately by region of origin, used in main analysis.

Note: Each estimate represents the coefficient from a separate 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. 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, 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.

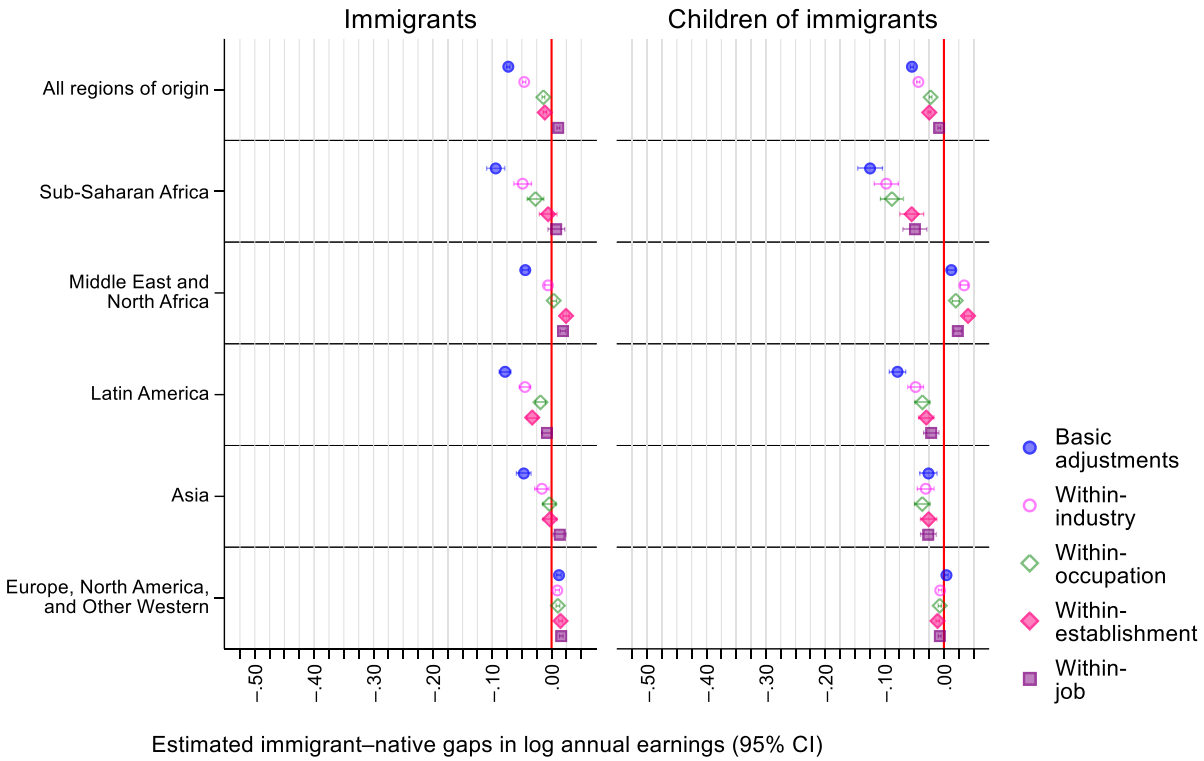

Figure S15. Swedish estimates of immigrant–native differences in annual earnings after basic adjustments and within industry, occupation, establishment, and jobs, for all world regions and separately by region of origin, used in main analysis.

Note: Each estimate represents the coefficient from a separate model estimating the difference between the logged annual earnings of immigrants and natives and children of immigrants and natives ages 25–60 years, with negative coefficients indicating that (children of) immigrants earn less than natives, for all world regions combined and separately by world region of origin. 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, 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.

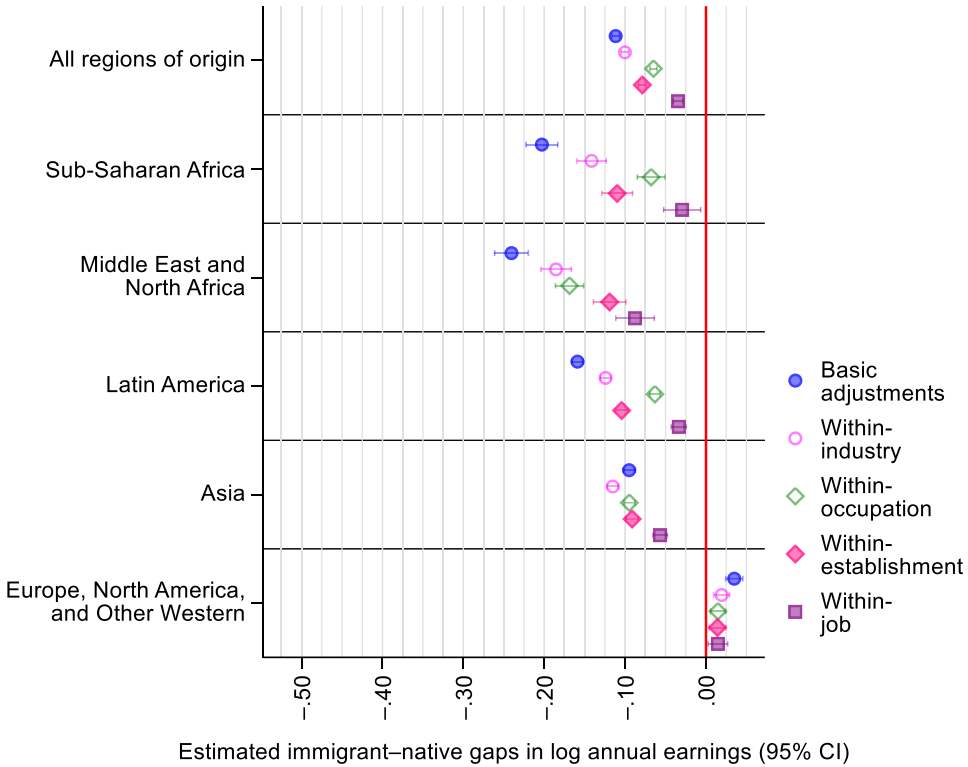

Figure S16. US estimates of immigrant–native differences in annual earnings after basic adjustments and within industry, occupation, establishment, and jobs, for all world regions and separately by region of origin, used in main analysis.

Note: Each estimate represents the coefficient from a separate 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. 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, 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.

Table S1. Key features of data across countries

	Number of observations	Year	Data source	Immigrant background	Geographic region measure	Industry measure	Occupation measure	Establishment measure	Education measure
	(1)	(3)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Canada	2,771,043	2016	Linked registry and census data	Ego and parental country of birth	Census metropolitan areas and census agglomerations	3-digit NAICS	4-digit NOC	Firm	5 categories
Denmark	1,755,962	2019	Registry	Ego and parental country of birth	Municipality	4-digit NACE	4-digit ISCO	Establishment	5 categories and missing
France	590,789	2018	Linked registry and census data	Ego region of birth	County	4-digit NACE	2-digit CSP	Establishment	4 categories and missing
Germany	1,089,303	2017	Sample from registry	Nationality in social security registry data and first names	Municipality	3-digit NACE	4-digit ISCO	Establishment	3 categories and missing
Netherlands	56,829	2019	Sample from registry	Ego and parental country of birth	Municipality	4-digit NACE	2-digit ISCO	Establishment	5 categories and missings
Norway	1,866,155	2019	Registry	Ego and parental country of birth	Municipality	4-digit NACE	4-digit ISCO	Establishment	5 categories and missing
Spain	476,108	2018	Sample	Ego country of birth	Municipality	2-digit CNAE	Grupo de cotización	Establishment	4 categories and missing
Sweden	3,340,002	2018	Registry	Ego and parental country of birth	Municipality	3-digit NACE	4-digit ISCO	Establishment	5 categories and missing
United States	1,398,000	2017	Linked census data and registry sample	Ego country of birth	County	3-digit NAICS	3-digit SOC	Firm	5 categories and missing

Note: Number of observations contains the number of individual worker observations for Model 1 (Basic adjustments) reported in Figure 1B and Appendix Table S4.

Table S2. 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 countries, the grouping of countries into regions of origin is less detailed than this list of countries.

Table S3. Immigrant–native differences in annual earnings from main analysis reported in Fig. 1A.

		Fixed Effect for:				
	Basic adj.	Ind	Occ	Est	Occ-Est	Proportion within Job
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Immigrants	-.197	-.138	-.090	-.092	-.046	.23
	(.032)	(.021)	(.018)	(.016)	(.011)	
Panel B: Children of immigrants	-.059	-.041	-.028	-.028	-.011	.19
	(.010)	(.007)	(.006)	(.003)	(.002)	

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 Table S4. 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.

Table S4. Immigrant–native differences in annual earnings from main analysis reported in Fig. 1B.

		Fixed effect for:				Proportion
	Basic adj.	Ind	Occ	Est	Occ-Est	within Job
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Immigrants						
Canada	-.322	-.246	-.173	-.188	-.099	.31
	(.001)	(.001)	(.001)	(.001)	(.001)	
Denmark	-.096	-.070	-.033	-.055	-.023	.24
	(.001)	(.001)	(.001)	(.001)	(.001)	
France	-.207	-.138	-.101	-.083	-.056	.27
	(.005)	(.004)	(.004)	(.005)	(.005)	
Germany	-.218	-.139	-.091	-.110	-.054	.25
	(.004)	(.004)	(.004)	(.003)	(.003)	
Netherlands	-.167	-.128	-.078	-.091	-.052	.31
	(.010)	(.009)	(.008)	(.011)	(.018)	
Norway	-.227	-.164	-.088	-.119	-.035	.15
	(.001)	(.001)	(.001)	(.001)	(.001)	
Spain	-.347	-.208	-.170	-.093	-.073	.21
	(.003)	(.003)	(.003)	(.004)	(.004)	
Sweden	-.073	-.046	-.014	-.011	.011	.00
	(.001)	(.001)	(.001)	(.001)	(.001)	
United States	-.112	-.100	-.065	-.079	-.035	.31
	(.002)	(.002)	(.002)	(.002)	(.003)	
Panel B: Children of immigrants						
Canada	-.019	-.010	-.010	-.025	-.017	.89
	(.002)	(.002)	(.001)	(.002)	(.002)	
Denmark	-.053	-.038	-.023	-.021	-.007	.14
	(.003)	(.003)	(.003)	(.003)	(.003)	
Germany	-.081	-.053	-.035	-.040	-.015	.19
	(.007)	(.006)	(.005)	(.004)	(.004)	
Netherlands	-.056	-.048	-.042	-.037	.007	.00
	(.014)	(.013)	(.012)	(.018)	(.046)	
Norway	-.091	-.058	-.045	-.033	-.010	.11
	(.004)	(.003)	(.003)	(.003)	(.003)	
Sweden	-.054	-.043	-.023	-.025	-.008	.15
	(.001)	(.001)	(.001)	(.001)	(.001)	

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 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.

Table S5. Immigrant–native differences in annual earnings from main analysis reported in Fig. 2A.

		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	-.298	-.195	-.124	-.149	-.079	.27
	(.040)	(.028)	(.024)	(.022)	(.015)	
Middle East and North Africa	-.270	-.186	-.140	-.121	-.074	.27
	(.039)	(.028)	(.023)	(.022)	(.015)	
Asia	-.230	-.166	-.112	-.109	-.048	.21
	(.040)	(.028)	(.024)	(.022)	(.015)	
Latin America	-.207	-.150	-.100	-.115	-.064	.31
	(.039)	(.028)	(.023)	(.022)	(.015)	
Europe, North America, and other Western	-.099	-.066	-.041	-.044	-.019	.20
	(.039)	(.028)	(.023)	(.022)	(.014)	
Panel B: Children of immigrants						
Sub-Saharan Africa	-.126	-.091	-.078	-.068	-.036	.28
	(.020)	(.016)	(.013)	(.015)	(.010)	
Middle East and North Africa	-.081	-.053	-.044	-.037	-.013	.16
	(.017)	(.014)	(.011)	(.013)	(.009)	
Asia	-.063	-.056	-.047	-.049	-.032	.50
	(.017)	(.014)	(.011)	(.014)	(.009)	
Latin America	-.109	-.082	-.060	-.064	-.033	.30
	(.018)	(.015)	(.012)	(.015)	(.010)	
Europe, North America, and other Western	-.026	-.017	-.012	-.015	-.006	.24
	(.017)	(.014)	(.011)	(.013)	(.008)	

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: S30; Denmark: S31; France: S32; Germany: S34; Netherlands: S35; Norway: S37; Spain: S38; Sweden: S39; United States: S40). 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.

Table S6. Immigrant–native differences in annual earnings from main results 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	-.107	-.098	-.207	-.160	-.036
	(.002)	(.003)	(.003)	(.004)	(.002)
Denmark	-.024	-.084	-.055	-.058	-.008
	(.003)	(.007)	(.003)	(.004)	(.002)
France	-.039	-.064	-.055	-.092	-.030
	(.020)	(.018)	(.008)	(.010)	(.009)
Germany	-.083	-.084	-.045	-.113	-.051
	(.013)	(.009)	(.004)	(.011)	(.004)
Netherlands	-.047	-.001	-.112	-.083	-.043
	(.043)	(.027)	(.030)	(.053)	(.031)
Norway	-.035	-.084	-.057	-.079	-.021
	(.002)	(.004)	(.002)	(.003)	(.001)
Spain	-.052	-.100	-.084	-.108	-.024
	(.023)	(.005)	(.013)	(.016)	(.006)
Sweden	.014	-.009	.020	.007	.017
	(.006)	(.004)	(.002)	(.007)	(.002)
United States	-.057	-.034	-.088	-.029	.015
	(.005)	(.005)	(.012)	(.012)	(.006)
Panel B: Children of immigrants					
Canada	-.033	-.072	-.062	-.047	-.001
	(.003)	(.005)	(.009)	(.009)	(.002)
Denmark	-.043	-.049	-.027	-.044	.009
	(.010)	(.033)	(.006)	(.026)	(.004)
Germany	-.042	-.007	-.021	-.004	-.016
	(.013)	(.007)	(.013)	(.014)	(.005)
Netherlands	.010	.008	.023	-.027	-.059
	(.161)	(.034)	(.031)	(.070)	(.069)
Norway	-.019	-.038	-.001	-.032	-.012
	(.006)	(.017)	(.005)	(.017)	(.006)
Sweden	-.025	-.021	.024	-.050	-.007
	(.007)	(.007)	(.003)	(.010)	(.001)

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.

Table S7. Random-effects meta-analysis of immigrant–native differences in annual earnings restricted to countries with information on both immigrants and children of immigrants.

		Fixed effect for:				Proportion
	Basic adj.	Ind	Occ	Est	Occ-Est	within job
	(1)	(2)	(3)	(4)	(5)	(6)
Immigrants	-.184	-.132	-.079	-.096	-.042	.23
	(.038)	(.029)	(.023)	(.025)	(.015)	
Children of immigrants	-.059	-.041	-.028	-.028	-.011	.19
	(.010)	(.007)	(.006)	(.003)	(.002)	

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 Table S4 (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.

Table S8. Random-effects meta-analysis of immigrant–native differences in annual earnings, restricted to countries with information on both immigrants and children of immigrants.

		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	-.287	-.199	-.124	-.159	-.081	.28
	(.047)	(.038)	(.030)	(.033)	(.022)	
Middle East and North Africa	-.249	-.178	-.126	-.130	-.074	.30
	(.047)	(.038)	(.030)	(.033)	(.021)	
Asia	-.218	-.157	-.094	-.124	-.047	.21
	(.047)	(.038)	(.030)	(.033)	(.022)	
Latin America	-.181	-.137	-.087	-.117	-.062	.34
	(.047)	(.038)	(.030)	(.033)	(.021)	
Europe, North America, and other Western	-.105	-.075	-.043	-.056	-.023	.22
	(.047)	(.038)	(.030)	(.033)	(.021)	
Panel B: Children of immigrants						
Sub-Saharan Africa	-.126	-.091	-.078	-.068	-.036	.28
	(.020)	(.016)	(.013)	(.015)	(.010)	
Middle East and North Africa	-.081	-.053	-.044	-.037	-.013	.16
	(.017)	(.014)	(.011)	(.013)	(.009)	
Asia	-.063	-.056	-.047	-.049	-.032	.50
	(.017)	(.014)	(.011)	(.014)	(.009)	
Latin America	-.109	-.082	-.060	-.064	-.033	.30
	(.018)	(.015)	(.012)	(.015)	(.010)	
Europe, North America, and other Western	-.026	-.017	-.012	-.015	-.006	.24
	(.017)	(.014)	(.011)	(.013)	(.008)	

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: S30; Denmark: S31; Germany: S34; Netherlands: S35; Norway: S37; Sweden: S39). 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.

Table S9. 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	-.201	-.147	-.088	-.102	-.038	.19
	(.001)	(.001)	(.001)	(.001)	(.001)	
Children of immigrants	-.046	-.033	-.021	-.026	-.011	.24
	(.001)	(.001)	(.001)	(.001)	(.001)	

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 Table S4. 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.

Table S10. Fixed-effects meta-analysis of immigrant–native differences in annual earnings.

		Fixed effect for:				Proportion
	Basic adj.	Ind	Occ	Est	Occ-Est	within job
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Immigrants						
Sub-Saharan Africa	-.319	-.229	-.148	-.188	-.093	.29
	(.002)	(.002)	(.002)	(.002)	(.002)	
Middle East and North Africa	-.257	-.182	-.130	-.122	-.059	.23
	(.001)	(.001)	(.001)	(.001)	(.001)	
Asia	-.297	-.224	-.138	-.166	-.061	.21
	(.001)	(.001)	(.001)	(.001)	(.001)	
Latin America	-.242	-.185	-.120	-.149	-.075	.31
	(.002)	(.002)	(.001)	(.002)	(.002)	
Europe, North America, and other Western	-.113	-.081	-.042	-.054	-.014	.12
	(.001)	(.001)	(.001)	(.001)	(.001)	
Panel B: Children of immigrants						
Sub-Saharan Africa	-.110	-.083	-.075	-.064	-.039	.36
	(.006)	(.006)	(.006)	(.006)	(.006)	
Middle East and North Africa	-.039	-.015	-.016	.000	.005	.00
	(.002)	(.002)	(.002)	(.002)	(.002)	
Asia	-.056	-.054	-.048	-.054	-.030	.54
	(.003)	(.003)	(.002)	(.003)	(.003)	
Latin America	-.133	-.111	-.080	-.094	-.044	.33
	(.004)	(.003)	(.003)	(.003)	(.003)	
Europe, North America, and other Western	.002	.002	.001	-.006	-.005	–
	(.001)	(.001)	(.001)	(.001)	(.001)	

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: S30; Denmark: S31; France: S32; Germany: S34; Netherlands: S35; Norway: S37; Spain: S38; Sweden: S39; United States: S40). 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.

Table S11. Random-effects meta-analysis of immigrant–native differences in annual earnings separately for recent immigrants, established immigrants, and childhood immigrants reported in Fig. S3A.

		Fixed Effect for:				Proportion
	Basic adj.	Ind	Occ	Est	Occ-Est	within Job
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Recent immigrants	-.276	-.208	-.144	-.158	-.100	.36
	(.037)	(.029)	(.021)	(.026)	(.015)	
Panel B: Established immigrants	-.193	-.139	-.081	-.098	-.035	.18
	(.020)	(.015)	(.014)	(.011)	(.008)	
Panel C: Childhood immigrants	-.073	-.048	-.028	-.035	-.011	.15
	(.007)	(.004)	(.004)	(.005)	(.005)	

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 Table S12. 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.

Table S12. Immigrant–native differences in earnings separately for recent immigrants, established immigrants, and childhood immigrants reported in Fig. S3B.

		Fixed effect for:				
	Basic adj.	Ind	Occ	Est	Occ-Est	Proportion within Job
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Recent immigrants						
Canada	-.552	-.429	-.306	-.356	-.214	.39
	(.002)	(.002)	(.002)	(.002)	(.002)	
Denmark	-.086	-.075	-.048	-.059	-.044	.51
	(.002)	(.002)	(.002)	(.002)	(.002)	
France	-.233	-.141	-.098	-.071	-.061	.26
	(.011)	(.010)	(.010)	(.014)	(.016)	
Germany	-.325	-.203	-.158	-.156	-.105	.32
	(.007)	(.006)	(.006)	(.005)	(.005)	
Norway	-.312	-.242	-.149	-.187	-.085	.27
	(.001)	(.001)	(.001)	(.001)	(.001)	
Sweden	-.199	-.158	-.096	-.093	-.050	.25
	(.008)	(.008)	(.007)	(.008)	(.007)	
United States	-.221	-.208	-.151	-.181	-.135	.61
	(.005)	(.005)	(.005)	(.005)	(.007)	
Panel B: Established immigrants						
Canada	-.320	-.245	-.169	-.182	-.084	.26
	(.002)	(.002)	(.001)	(.002)	(.002)	
Denmark	-.108	-.071	-.021	-.061	-.017	.15
	(.002)	(.002)	(.002)	(.002)	(.002)	
France	-.273	-.188	-.139	-.117	-.074	.27
	(.006)	(.006)	(.005)	(.006)	(.007)	
Germany	-.198	-.129	-.074	-.100	-.037	.19
	(.006)	(.005)	(.005)	(.004)	(.004)	
Norway	-.187	-.133	-.059	-.097	-.014	.08
	(.001)	(.001)	(.001)	(.001)	(.001)	
Sweden	-.130	-.092	-.036	-.047	-.002	.01
	(.004)	(.004)	(.004)	(.004)	(.003)	
United States	-.135	-.114	-.067	-.083	-.017	.13
	(.003)	(.003)	(.003)	(.003)	(.004)	
Panel C: Childhood immigrants						
Canada	-.079	-.064	-.053	-.060	-.036	.45
	(.002)	(.002)	(.002)	(.002)	(.002)	
Denmark	-.088	-.056	-.031	-.034	-.009	.11
	(.003)	(.003)	(.003)	(.003)	(.003)	
France	-.095	-.062	-.047	-.040	-.030	.32
	(.007)	(.006)	(.006)	(.007)	(.008)	
Germany	-.073	-.051	-.020	-.061	-.021	.29
	(.009)	(.007)	(.007)	(.006)	(.006)	
Norway	-.096	-.048	-.021	-.023	.013	.00
	(.002)	(.002)	(.002)	(.002)	(.002)	
Sweden	-.058	-.033	-.006	-.002	.016	.00
	(.002)	(.002)	(.001)	(.001)	(.001)	
United States	-.021	-.026	-.018	-.026	-.010	.50
	(.004)	(.003)	(.003)	(.004)	(.004)	

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.

Table S13. Immigrant–native differences in earnings separately for recent immigrants, established immigrants, and childhood immigrants reported in Fig. S4A.

		Fixed effect for:				Proportion within
	Basic adj.	Ind	Occ	Est	Occ-Est	job
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Recent immigrants						
Sub-Saharan Africa	-.381	-.277	-.189	-.222	-.138	.36
	(.041)	(.034)	(.026)	(.030)	(.020)	
Middle East and North Africa	-.399	-.306	-.239	-.236	-.167	.42
	(.041)	(.034)	(.026)	(.030)	(.020)	
Asia	-.264	-.205	-.151	-.175	-.115	.43
	(.042)	(.035)	(.027)	(.031)	(.021)	
Latin America	-.282	-.226	-.160	-.203	-.135	.48
	(.041)	(.034)	(.027)	(.031)	(.021)	
Europe, North America, and other Western	-.158	-.118	-.079	-.091	-.060	.38
	(.041)	(.034)	(.026)	(.030)	(.020)	
Panel B: Established immigrants						
Sub-Saharan Africa	-.262	-.171	-.096	-.133	-.056	.21
	(.023)	(.018)	(.016)	(.015)	(.011)	
Middle East and North Africa	-.266	-.185	-.130	-.118	-.055	.21
	(.023)	(.018)	(.015)	(.015)	(.010)	
Asia	-.212	-.153	-.085	-.118	-.032	.15
	(.023)	(.018)	(.016)	(.015)	(.011)	
Latin America	-.197	-.142	-.080	-.127	-.053	.27
	(.023)	(.018)	(.016)	(.015)	(.011)	
Europe, North America, and other Western	-.090	-.063	-.031	-.043	-.008	.09
	(.023)	(.018)	(.015)	(.015)	(.010)	
Panel C: Childhood immigrants						
Sub-Saharan Africa	-.131	-.081	-.051	-.055	-.025	.19
	(.014)	(.011)	(.010)	(.011)	(.009)	
Middle East and North Africa	-.105	-.069	-.057	-.039	-.020	.19
	(.013)	(.010)	(.009)	(.010)	(.008)	
Asia	-.077	-.057	-.037	-.044	-.012	.16
	(.014)	(.011)	(.010)	(.010)	(.008)	
Latin America	-.105	-.071	-.041	-.060	-.028	.27
	(.014)	(.011)	(.010)	(.010)	(.008)	
Europe, North America, and other Western	-.014	-.005	.001	-.010	-.002	.11
	(.013)	(.010)	(.009)	(.010)	(.008)	

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.

Table S14. Immigrant–native differences in earnings separately for recent immigrants, established immigrants, and childhood immigrants reported in Fig. S4B.

	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	-.199	-.216	-.352	-.289	-.116
	(.003)	(.005)	(.006)	(.006)	(.005)
Denmark	-.056	-.120	-.112	-.092	-.021
	(.005)	(.011)	(.006)	(.008)	(.003)
France	-.027	-.065	-.048	-.105	-.045
	(.089)	(.055)	(.027)	(.032)	(.023)
Germany	-.154	-.138	-.147	-.199	-.089
	(.018)	(.014)	(.014)	(.020)	(.005)
Norway	-.118	-.182	-.185	-.180	-.048
	(.004)	(.008)	(.005)	(.005)	(.002)
Sweden	-.006	-.101	-.041	-.030	-.042
	(.030)	(.028)	(.012)	(.027)	(.011)
United States	-.180	-.094	-.279	-.048	-.059
	(.010)	(.014)	(.023)	(.022)	(.017)
Panel A: Immigrants					
Canada	-.089	-.074	-.179	-.108	-.031
	(.002)	(.004)	(.005)	(.005)	(.003)
Denmark	-.021	-.056	-.035	-.054	-.007
	(.003)	(.009)	(.004)	(.006)	(.002)
France	-.087	-.072	-.077	-.106	-.026
	(.031)	(.025)	(.010)	(.012)	(.012)
Germany	-.039	-.070	-.033	-.080	-.034
	(.017)	(.013)	(.005)	(.013)	(.006)
Norway	-.002	-.045	-.032	-.004	-.013
	(.003)	(.005)	(.003)	(.004)	(.001)
Sweden	.023	-.016	-.004	-.016	.007
	(.017)	(.011)	(.007)	(.025)	(.004)
United States	-.025	-.043	-.018	-.012	.048
	(.006)	(.007)	(.017)	(.015)	(.010)
Panel A: Immigrants					
Canada	-.046	-.054	-.091	-.057	-.009
	(.003)	(.004)	(.006)	(.008)	(.003)
Denmark	.014	-.088	-.034	-.026	.001
	(.006)	(.022)	(.005)	(.010)	(.004)
France	-.017	-.054	-.028	-.043	-.029
	(.025)	(.027)	(.012)	(.022)	(.015)
Germany	-.127	.003	-.022	-.027	-.021
	(.055)	(.018)	(.007)	(.048)	(.009)
Norway	.009	-.013	.019	.003	.010
	(.004)	(.009)	(.004)	(.009)	(.003)
Sweden	.014	-.003	.027	.013	.020
	(.006)	(.005)	(.003)	(.008)	(.002)
United States	-.025	-.010	-.012	-.063	.010
	(.008)	(.006)	(.023)	(.028)	(.008)

Note: Each estimate represents the coefficients from an Ordinary Least Squares (OLS) regression model for each country estimating the within-job difference between the 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, 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 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) 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 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 (children of) immigrants do not earn less than natives in the 'basic adjustments' model.

Table S15. Immigrant–native differences in annual earnings 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	-.338	-.260	-.197	-.194	-.106	.31
	(.002)	(.002)	(.002)	(.002)	(.002)	
Denmark	-.103	-.075	-.034	-.055	-.019	.18
	(.002)	(.002)	(.002)	(.002)	(.002)	
France	-.220	-.139	-.101	-.066	-.045	.20
	(.006)	(.005)	(.005)	(.007)	(.008)	
Germany	-.246	-.159	-.108	-.122	-.058	.24
	(.005)	(.005)	(.004)	(.004)	(.003)	
Netherlands	-.235	-.186	-.140	-.135	-.135	.57
	(.014)	(.013)	(.012)	(.021)	(.036)	
Norway	-.252	-.174	-.100	-.118	-.037	.15
	(.001)	(.001)	(.001)	(.001)	(.001)	
Spain	-.376	-.224	-.186	-.078	-.056	.15
	(.004)	(.004)	(.004)	(.006)	(.006)	
Sweden	-.100	-.057	-.014	-.013	.013	.00
	(.002)	(.002)	(.002)	(.002)	(.002)	
United States	-.107	-.090	-.059	-.068	-.029	.27
	(.003)	(.003)	(.003)	(.004)	(.005)	
Panel B: Children of immigrants						
Canada	-.037	-.016	-.017	-.033	-.027	.73
	(.002)	(.002)	(.002)	(.002)	(.002)	
Denmark	-.078	-.055	-.034	-.032	-.013	.17
	(.005)	(.005)	(.005)	(.005)	(.005)	
Germany	-.104	-.065	-.044	-.043	-.016	.15
	(.010)	(.008)	(.008)	(.005)	(.005)	
Netherlands	-.113	-.083	-.076	-.046	-.011	.10
	(.020)	(.018)	(.017)	(.024)	(.034)	
Norway	-.116	-.073	-.060	-.038	-.015	.13
	(.005)	(.005)	(.005)	(.005)	(.005)	
Sweden	-.078	-.059	-.031	-.035	-.012	.15
	(.002)	(.002)	(.002)	(.002)	(.002)	

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.

Table S16. Immigrant–native differences in annual earnings 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	-.296	-.226	-.143	-.180	-.088	.30
	(.002)	(.002)	(.002)	(.002)	(.002)	
Denmark	-.089	-.058	-.027	-.046	-.022	.25
	(.002)	(.002)	(.002)	(.002)	(.002)	
France	-.180	-.131	-.094	-.099	-.069	.38
	(.007)	(.006)	(.006)	(.006)	(.007)	
Germany	-.170	-.102	-.059	-.084	-.042	.25
	(.007)	(.006)	(.006)	(.005)	(.005)	
Netherlands	-.106	-.076	-.026	-.075	-.013	.13
	(.013)	(.012)	(.011)	(.016)	(.027)	
Norway	-.196	-.149	-.074	-.112	-.031	.16
	(.001)	(.001)	(.001)	(.001)	(.001)	
Spain	-.311	-.189	-.152	-.113	-.095	.31
	(.005)	(.005)	(.005)	(.006)	(.006)	
Sweden	-.043	-.031	-.010	-.007	.009	.00
	(.002)	(.002)	(.002)	(.002)	(.002)	
United States	-.118	-.111	-.070	-.088	-.040	.34
	(.003)	(.003)	(.003)	(.004)	(.005)	
Panel B: Children of immigrants						
Canada	.002	-.002	-.002	-.018	-.009	–
	(.002)	(.002)	(.002)	(.002)	(.002)	
Denmark	-.028	-.019	-.011	-.009	-.002	.08
	(.004)	(.004)	(.004)	(.004)	(.004)	
Germany	-.056	-.041	-.024	-.035	-.014	.24
	(.008)	(.008)	(.007)	(.006)	(.005)	
Netherlands	-.017	-.031	-.023	-.028	-.018	1.00
	(.018)	(.017)	(.016)	(.023)	(.034)	
Norway	-.059	-.038	-.029	-.025	-.005	.09
	(.005)	(.005)	(.004)	(.005)	(.005)	
Sweden	-.030	-.026	-.012	-.014	-.002	.08
	(.002)	(.002)	(.002)	(.002)	(.002)	

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.

Table S17. Immigrant–native differences in hourly wages and hourly earnings.

			Fixed effect for:				
		Basic adj.	Ind	Occ	Est	Occ-Est	Proportion within job
	Measure of hourly wage	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Immigrants							
Denmark	Hourly wage on contractual hours	-.072	-.059	-.033	-.048	-.026	.35
		(.001)	(.001)	(.001)	(.001)	(.001)	
France	Hourly earnings	-.156	-.119	-.083	-.071	-.043	.28
		(.004)	(.003)	(.003)	(.003)	(.003)	
Netherlands	Hourly wage on contractual hours	-.164	-.132	-.099	-.106	-.060	.36
		(.006)	(.006)	(.006)	(.008)	(.010)	
Norway	Hourly wage on contractual hours	-.165	-.124	-.068	-.098	-.039	.24
		(.001)	(.001)	(.000)	(.001)	(.000)	
Spain	Hourly earnings	-.159	-.096	-.070	-.032	-.021	.13
		(.002)	(.002)	(.002)	(.003)	(.002)	
United States	Hourly earnings	-.076	-.067	-.048	-.038	-.007	.09
		(.002)	(.002)	(.002)	(.003)	(.003)	
Panel B: Children of immigrants							
Denmark	Hourly wage on contractual hours	-.032	-.026	-.014	-.017	-.006	.17
		(.002)	(.002)	(.002)	(.002)	(.002)	
Netherlands	Hourly wage on contractual hours	-.058	-.048	-.043	-.032	.011	.00
		(.008)	(.008)	(.007)	(.011)	(.028)	
Norway	Hourly wage on contractual hours	-.059	-.037	-.034	-.023	-.013	.23
		(.002)	(.002)	(.002)	(.002)	(.001)	

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) 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. 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.

Table S18. Immigrant–native differences in annual earnings on sample of immigrant–native integrated job cells.

	Sensitivity: Integrated job cells					Main analysis					
		Fixed effect for					Fixed effect	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.	Ind	Occ	Est	Occ-Est	Basic adj.	Occ-Est				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Panel A: Immigrants											
Canada	-.264	-.215	-.140	-.176	-.099	-.322	-.099	.058	.000	.37	.31
	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)				
Denmark	-.073	-.045	-.033	-.030	-.023	-.096	-.023	.024	.000	.32	.24
	(.002)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)				
France	-.171	-.085	-.067	-.061	-.056	-.207	-.056	.036	.000	.33	.27
	(.006)	(.006)	(.005)	(.005)	(.005)	(.005)	(.005)				
Germany	-.194	-.115	-.084	-.082	-.054	-.218	-.054	.025	.000	.28	.25
	(.004)	(.003)	(.003)	(.003)	(.003)	(.004)	(.003)				
Netherlands	-.098	-.066	-.050	-.062	-.052	-.167	-.052	.069	.000	.53	.31
	(.020)	(.018)	(.017)	(.018)	(.018)	(.010)	(.018)				
Norway	-.171	-.105	-.059	-.068	-.035	-.227	-.035	.056	.000	.20	.15
	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)				
Spain	-.247	-.144	-.127	-.073	-.073	-.347	-.073	.100	.000	.29	.21
	(.005)	(.005)	(.004)	(.004)	(.004)	(.003)	(.004)				
Sweden	-.030	-.006	.000	.010	.011	-.073	.012	.043	.000	.00	.00
	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)				
United States	-.073	-.094	-.053	-.073	-.035	-.112	-.035	.039	.000	.48	.31
	(.004)	(.004)	(.003)	(.003)	(.003)	(.002)	(.003)				
Panel B: Children of immigrants											
Canada	-.033	-.027	-.019	-.028	-.017	-.019	-.017	-.014	.000	.51	.89
	(.002)	(.002)	(.002)	(.002)	(.002)	(.002)	(.002)				
Denmark	-.045	-.024	-.016	-.012	-.007	-.053	-.007	.008	.000	.16	.14
	(.004)	(.003)	(.003)	(.003)	(.003)	(.003)	(.003)				
Germany	-.075	-.046	-.037	-.023	-.015	-.081	-.015	.005	.000	.20	.19
	(.006)	(.005)	(.004)	(.004)	(.004)	(.007)	(.004)				
Netherlands	-.014	.010	.006	.001	.007	-.056	.007	.043	.000	.00	.00
	(.040)	(.040)	(.039)	(.043)	(.046)	(.014)	(.046)				
Norway	-.063	-.033	-.029	-.017	-.010	-.091	-.010	.028	.000	.15	.11
	(.004)	(.004)	(.003)	(.003)	(.003)	(.004)	(.003)				
Sweden	-.026	-.015	-.016	-.007	-.008	-.054	-.008	.028	.000	.30	.15
	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)				

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.

Table S19. Immigrant–native differences in annual earnings using coarsened measure of occupation (1-digit)

		Sensitivity: Coarsened occupation, 1-digit		Main analysis				
		Fixed effect for		Fixed effect for		Difference in Occ-Est estimates relative to main analysis	Proportion within job (coarsened)	Proportion within job (main analysis)
	Basic adj.	Occ	Occ-Est	Occ	Occ-Est			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: Immigrants								
Canada	-.322	-.243	-.172	-.173	-.099	-.073	.53	.31
	(.001)	(.001)	(.001)	(.001)	(.001)			
Denmark	-.096	-.039	-.025	-.033	-.023	-.002	.26	.24
	(.001)	(.001)	(.001)	(.001)	(.001)			
France	-.207	-.106	-.046	-.101	-.056	.009	.22	.27
	(.005)	(.004)	(.005)	(.004)	(.005)			
Germany	-.218	-.122	-.084	-.091	-.054	-.031	.39	.25
	(.004)	(.004)	(.003)	(.004)	(.003)			
Netherlands	-.167	-.080	-.054	-.078	-.052	-.002	.33	.31
	(.010)	(.008)	(.014)	(.008)	(.018)			
Norway	-.227	-.102	-.045	-.088	-.035	-.010	.20	.15
	(.001)	(.001)	(.001)	(.001)	(.001)			
Sweden	-.073	-.022	.011	-.014	.012	-.001	.00	.00
	(.001)	(.001)	(.001)	(.001)	(.001)			
United States	-.112	-.095	-.061	-.065	-.035	-.026	.54	.31
	(.002)	(.002)	(.003)	(.002)	(.003)			
Panel B: Children of immigrants								
Canada	-.019	-.012	-.024	-.010	-.017	-.007	1.00	.89
	(.002)	(.002)	(.002)	(.001)	(.002)			
Denmark	-.053	-.024	-.008	-.023	-.007	.000	.14	.14
	(.003)	(.003)	(.003)	(.003)	(.003)			
Germany	-.081	-.046	-.027	-.035	-.015	-.012	.34	.19
	(.007)	(.006)	(.004)	(.005)	(.004)			
Netherlands	-.056	-.041	-.016	-.042	.007	-.022	.28	.00
	(.014)	(.012)	(.022)	(.012)	(.046)			
Norway	-.091	-.046	-.011	-.045	-.010	-.001	.12	.11
	(.004)	(.003)	(.003)	(.003)	(.003)			
Sweden	-.054	-.027	-.010	-.022	-.008	-.002	.18	.15
	(.001)	(.001)	(.001)	(.001)	(.001)			

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.

Table S20. Immigrant–native differences in annual earnings using coarsened measure of occupation (2-digit)

		Sensitivity: Coarsened occupation, 2-digit		Main analysis				
		Fixed effect for		Fixed effect for		Difference in Occ-Est estimates relative to main analysis	Proportion within job (coarsened)	Proportion within job (main analysis)
	Basic adj.	Occ	Occ-Est	Occ	Occ-Est			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: Immigrants								
Canada	-.322	-.191	-.118	-.173	-.099	-.019	.37	.31
	(.001)	(.001)	(.001)	(.001)	(.001)			
Denmark	-.096	-.034	-.023	-.033	-.023	.000	.24	.24
	(.001)	(.001)	(.001)	(.001)	(.001)			
Germany	-.218	-.110	-.069	-.091	-.054	-.016	.32	.25
	(.004)	(.004)	(.003)	(.004)	(.003)			
Norway	-.227	-.100	-.040	-.088	-.035	-.005	.18	.15
	(.001)	(.001)	(.001)	(.001)	(.001)			
Sweden	-.073	-.019	.013	-.014	.012	.001	.00	.00
	(.001)	(.001)	(.001)	(.001)	(.001)			
United States	-.112	-.076	-.043	-.065	-.035	-.009	.39	.31
	(.002)	(.002)	(.003)	(.002)	(.003)			
Panel B: Children of immigrants								
Canada	-.019	-.011	-.019	-.010	-.017	-.002	1.00	.89
	(.002)	(.002)	(.002)	(.001)	(.002)			
Denmark	-.053	-.022	-.007	-.023	-.007	.000	.13	.14
	(.003)	(.003)	(.003)	(.003)	(.003)			
Germany	-.081	-.040	-.022	-.035	-.015	-.007	.28	.19
	(.007)	(.006)	(.004)	(.005)	(.004)			
Netherlands	-.056	-.041	-.019	-.042	.007	-.025	.33	.00
	(.014)	(.012)	(.035)	(.012)	(.046)			
Norway	-.091	-.043	-.008	-.045	-.010	.001	.09	.11
	(.004)	(.003)	(.003)	(.003)	(.003)			
Sweden	-.054	-.025	-.008	-.022	-.008	.000	.15	.15
	(.001)	(.001)	(.001)	(.001)	(.001)			

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.

Table S21. Immigrant–native differences in annual earnings using coarsened measure of occupation (3-digit)

		Sensitivity: Coarsened occupation, 3-digit		Main analysis				
		Fixed effect for		Fixed effect for				
	Basic adj.	Occ	Occ-Est	Occ	Occ-Est	Difference in Occ-Est estimates relative to main analysis	Proportion within job (coarsened)	Proportion within job (main analysis)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: Immigrants								
Denmark	-.096	-.033	-.025	-.033	-.023	-.002	.26	.24
	(.001)	(.001)	(.001)	(.001)	(.001)			
Germany	-.218	-.107	-.070	-.091	-.054	-.016	.32	.25
	(.004)	(.004)	(.003)	(.004)	(.003)			
Norway	-.227	-.095	-.039	-.088	-.035	-.005	.17	.15
	(.001)	(.001)	(.001)	(.001)	(.001)			
Sweden	-.073	-.019	.009	-.014	.012	-.002	1.00	1.00
	(.001)	(.001)	(.001)	(.001)	(.001)			
Panel B: Children of immigrants								
Denmark	-.053	-.023	-.009	-.023	-.007	-.001	.17	.14
	(.003)	(.003)	(.003)	(.003)	(.003)			
Germany	-.081	-.041	-.023	-.035	-.015	-.007	.28	.19
	(.007)	(.005)	(.004)	(.005)	(.004)			
Norway	-.091	-.050	-.015	-.045	-.010	-.006	.17	.11
	(.004)	(.003)	(.003)	(.003)	(.003)			
Sweden	-.054	-.025	-.010	-.022	-.008	-.003	.19	.15
	(.001)	(.001)	(.001)	(.001)	(.001)			

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.

Table S22. Immigrant–native differences in annual earnings, adjusting for fixed effects on firm identifiers.

		Sensitivity: Firm identifiers		Main analysis				
		Fixed effects for		Fixed effects for		Difference in Occ-Firm estimates relative to main analysis	Proportion within job (Occ-Firm job cells)	Proportion within job (main analysis)
	Basic adj.	Firm	Occ-Firm	Est	Occ-Est			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: Immigrants								
Denmark	-.096	-.058	-.020	-.055	-.023	.003	.21	.24
	(.001)	(.001)	(.001)	(.001)	(.001)			
France	-.207	-.092	-.051	-.083	-.056	.005	.24	.27
	(.005)	(.004)	(.005)	(.005)	(.005)			
Netherlands	-.170	-.092	-.047	-.091	-.052	.005	.28	.31
	(.010)	(.012)	(.017)	(.011)	(.018)			
Norway	-.227	-.124	-.036	-.119	-.035	-.002	.16	.15
	(.001)	(.001)	(.001)	(.001)	(.001)			
Spain	-.347	-.104	-.083	-.093	-.073	-.010	.24	.21
	(.003)	(.004)	(.004)	(.004)	(.004)			
Sweden	-.073	-.016	.009	-.011	.012	-.002	.00	.00
	(.001)	(.001)	(.001)	(.001)	(.001)			
Panel B: Children of immigrants								
Denmark	-.053	-.026	-.008	-.021	-.007	-.001	.15	.14
	(.003)	(.003)	(.003)	(.003)	(.003)			
Netherlands	-.056	-.034	.015	-.037	.007	.008	.00	.00
	(.014)	(.019)	(.047)	(.018)	(.046)			
Norway	-.091	-.038	-.012	-.033	-.010	-.002	.13	.11
	(.004)	(.003)	(.003)	(.003)	(.003)			
Sweden	-.054	-.029	-.008	-.025	-.008	.000	.15	.15
	(.001)	(.001)	(.001)	(.001)	(.001)			

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.

Table S23. 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: Ind	Occ	Est	Occ-Est	Basic adj.	Fixed effect Occ-Est				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Panel A: Immigrants											
Canada	-.272	-.193	-.149	-.138	-.077	-.322	-.099	.050	.022	.28	.31
	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)				
Denmark	-.161	-.113	-.059	-.086	-.039	-.096	-.023	-.065	-.015	.24	.24
	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)				
France	-.282	-.157	-.109	-.087	-.062	-.207	-.056	-.075	-.006	.22	.27
	(.004)	(.004)	(.004)	(.004)	(.005)	(.005)	(.005)				
Germany	-.304	-.171	-.106	-.122	-.055	-.218	-.054	-.086	-.002	.18	.25
	(.004)	(.004)	(.003)	(.003)	(.003)	(.004)	(.003)				
Netherlands	-.213	-.137	-.068	-.091	-.048	-.167	-.052	-.046	.004	.22	.31
	(.011)	(.009)	(.008)	(.012)	(.018)	(.010)	(.018)				
Norway	-.256	-.167	-.086	-.114	-.034	-.227	-.035	-.029	.001	.13	.15
	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)				
Spain	-.425	-.231	-.180	-.092	-.072	-.347	-.073	-.078	.000	.17	.21
	(.003)	(.003)	(.003)	(.004)	(.004)	(.003)	(.004)				
Sweden	-.106	-.071	-.020	-.029	.010	-.073	.012	-.033	-.002	.00	.00
	(.002)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)				
United States	-.153	-.104	-.056	-.066	-.018	-.112	-.035	-.041	.017	.12	.31
	(.003)	(.002)	(.002)	(.003)	(.003)	(.002)	(.003)				
Panel B: Children of immigrants											
Canada	.019	.014	-.003	-.008	-.013	-.019	-.017	.038	.004	–	.89
	(.002)	(.002)	(.001)	(.002)	(.002)	(.002)	(.002)				
Denmark	-.071	-.050	-.029	-.029	-.010	-.053	-.007	-.019	-.003	.15	.14
	(.003)	(.003)	(.003)	(.003)	(.003)	(.003)	(.003)				
Germany	-.097	-.058	-.036	-.042	-.015	-.081	-.015	-.016	.000	.15	.19
	(.007)	(.006)	(.005)	(.004)	(.004)	(.007)	(.004)				
Netherlands	-.124	-.089	-.059	-.074	-.003	-.056	.007	-.068	-.010	.02	.00
	(.015)	(.014)	(.012)	(.019)	(.046)	(.014)	(.046)				
Norway	-.108	-.066	-.049	-.036	-.011	-.091	-.010	-.018	-.001	.10	.11
	(.004)	(.004)	(.003)	(.003)	(.003)	(.004)	(.003)				
Sweden	-.079	-.063	-.027	-.038	-.010	-.054	-.008	-.025	-.002	.12	.15
	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)				

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.

Table S24. Immigrant–native differences in annual earnings without adjustment for geography.

	Sensitivity: No adjustment for geographic region					Main analysis					
		Fixed effect for:					Fixed effect				
	Basic adj.	Ind	Occ	Est	Occ-Est	Basic adj.	Occ-Est	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)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Panel A: Immigrants											
Canada	-.247	-.177	-.112	-.173	-.088	-.322	-.099	.076	.011	.36	.31
	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)				
Denmark	-.080	-.057	-.023	-.055	-.023	-.096	-.023	.016	.000	.29	.24
	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)				
France	-.147	-.089	-.065	-.083	-.056	-.207	-.056	.060	.000	.38	.27
	(.005)	(.004)	(.004)	(.005)	(.005)	(.005)	(.005)				
Germany	-.190	-.103	-.057	-.110	-.054	-.218	-.054	.028	.000	.28	.25
	(.004)	(.004)	(.004)	(.003)	(.003)	(.004)	(.003)				
Netherlands	-.147	-.105	-.056	-.091	-.052	-.167	-.052	.020	.000	.35	.31
	(.010)	(.009)	(.008)	(.011)	(.018)	(.010)	(.018)				
Norway	-.211	-.150	-.075	-.119	-.035	-.227	-.035	.016	.000	.16	.15
	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)				
Spain	-.297	-.153	-.119	-.093	-.073	-.347	-.073	.050	.000	.24	.21
	(.003)	(.003)	(.003)	(.004)	(.004)	(.003)	(.004)				
Sweden	-.050	-.028	-.001	-.011	.011	-.073	.012	.023	.000	.00	.00
	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)				
United States	-.022	-.018	.018	-.050	-.004	-.112	-.035	.090	.031	.17	.31
	(.002)	(.002)	(.002)	(.002)	(.003)	(.002)	(.003)				
Panel B: Children of immigrants											
Canada	.048	.053	.042	-.012	-.009	-.019	-.017	.067	.008	–	.89
	(.002)	(.002)	(.001)	(.002)	(.002)	(.002)	(.002)				
Denmark	-.021	-.015	-.006	-.021	-.007	-.053	-.007	.032	.000	.34	.14
	(.003)	(.003)	(.003)	(.003)	(.003)	(.003)	(.003)				
Germany	-.064	-.035	-.018	-.040	-.015	-.081	-.015	.016	.000	.24	.19
	(.007)	(.006)	(.005)	(.004)	(.004)	(.007)	(.004)				
Netherlands	-.027	-.022	-.018	-.037	.007	-.056	.007	.029	.000	.00	.00
	(.014)	(.012)	(.012)	(.018)	(.046)	(.014)	(.046)				
Norway	-.044	-.021	-.017	-.033	-.010	-.091	-.010	.046	.000	.22	.11
	(.004)	(.003)	(.003)	(.003)	(.003)	(.004)	(.003)				
Sweden	-.021	-.020	-.006	-.025	-.008	-.054	-.008	.033	.000	.39	.15
	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)				

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.

Table S25. Immigrant–native differences in annual earnings without adjustment for education and geography.

	Sensitivity: No adjustment for education and geographic region					Main analysis					
		Fixed effect for:					Fixed effect:				
	Basic adj.	Ind	Occ	Est	Occ-Est	Basic adj.	Occ-Est	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)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Panel A: Immigrants											
Canada	-.169	-.106	-.083	-.116	-.064	-.322	-.099	.153	.035	.38	.31
	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)				
Denmark	-.135	-.095	-.047	-.086	-.038	-.096	-.023	-.039	-.015	.28	.24
	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)				
France	-.210	-.103	-.074	-.087	-.062	-.207	-.056	-.003	-.006	.29	.27
	(.004)	(.004)	(.004)	(.004)	(.005)	(.005)	(.005)				
Germany	-.272	-.130	-.069	-.122	-.055	-.218	-.054	-.054	-.002	.20	.25
	(.004)	(.004)	(.003)	(.003)	(.003)	(.004)	(.003)				
Netherlands	-.179	-.103	-.040	-.091	-.048	-.167	-.052	-.012	.004	.27	.31
	(.011)	(.009)	(.008)	(.012)	(.018)	(.010)	(.018)				
Norway	-.235	-.146	-.070	-.114	-.034	-.227	-.035	-.008	.001	.14	.15
	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)				
Spain	-.387	-.173	-.129	-.092	-.072	-.347	-.073	-.039	.000	.19	.21
	(.003)	(.003)	(.003)	(.004)	(.004)	(.003)	(.004)				
Sweden	-.081	-.051	-.006	-.029	.010	-.073	.012	-.009	-.002	.00	.00
	(.002)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)				
United States	-.037	-.008	.034	-.031	.015	-.112	-.035	.074	.050	.00	.31
	(.003)	(.002)	(.002)	(.003)	(.003)	(.002)	(.003)				
Panel B: Children of immigrants											
Canada	.110	.091	.052	.009	-.004	-.019	-.017	.129	.013	–	.89
	(.002)	(.002)	(.001)	(.002)	(.002)	(.002)	(.002)				
Denmark	-.029	-.022	-.010	-.029	-.010	-.053	-.007	.024	-.003	.36	.14
	(.003)	(.003)	(.003)	(.003)	(.003)	(.003)	(.003)				
Germany	-.075	-.037	-.018	-.042	-.015	-.081	-.015	.005	.000	.20	.19
	(.007)	(.006)	(.006)	(.004)	(.004)	(.007)	(.004)				
Netherlands	-.075	-.052	-.031	-.074	-.003	-.056	.007	-.018	-.010	.04	.00
	(.015)	(.013)	(.012)	(.019)	(.046)	(.014)	(.046)				
Norway	-.040	-.018	-.018	-.036	-.011	-.091	-.010	.050	-.001	.27	.11
	(.004)	(.004)	(.003)	(.003)	(.003)	(.004)	(.003)				
Sweden	-.039	-.035	-.010	-.038	-.010	-.054	-.008	.015	-.002	.25	.15
	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)				

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.

Table S26. 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	-.275	-.199	-.130	-.142	-.059	-.322	-.099	.047	.040	.22	.31
	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)				
Denmark	-.141	-.111	-.066	-.090	-.046	-.096	-.023	-.045	-.022	.32	.24
	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)				
France	-.191	-.116	-.081	-.063	-.039	-.207	-.056	.016	.017	.20	.27
	(.005)	(.004)	(.004)	(.005)	(.005)	(.005)	(.005)				
Germany	-.226	-.145	-.099	-.116	-.060	-.218	-.054	-.008	-.006	.26	.25
	(.004)	(.004)	(.004)	(.003)	(.003)	(.004)	(.003)				
Netherlands	-.158	-.114	-.064	-.081	-.039	-.167	-.052	.009	.013	.25	.31
	(.010)	(.009)	(.009)	(.012)	(.018)	(.010)	(.018)				
Norway	-.234	-.162	-.078	-.115	-.023	-.227	-.035	-.006	.012	.10	.15
	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)				
Spain	-.366	-.216	-.174	-.090	-.069	-.347	-.073	-.019	.003	.19	.21
	(.003)	(.003)	(.003)	(.004)	(.004)	(.003)	(.004)				
Sweden	-.111	-.079	-.037	-.046	-.010	-.073	.012	-.038	-.021	.09	.00
	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)				
United States	-.083	-.073	-.040	-.053	-.008	-.112	-.035	.029	.026	.10	.31
	(.002)	(.002)	(.002)	(.003)	(.003)	(.002)	(.003)				
Panel B: Children of immigrants											
Canada	-.011	-.002	-.003	-.017	-.012	-.019	-.017	.009	.005	1.00	.89
	(.002)	(.002)	(.002)	(.002)	(.002)	(.002)	(.002)				
Denmark	-.222	-.198	-.158	-.172	-.124	-.053	-.007	-.169	-.116	.56	.14
	(.004)	(.003)	(.003)	(.003)	(.003)	(.003)	(.003)				
Germany	-.096	-.066	-.047	-.051	-.024	-.081	-.015	-.016	-.009	.25	.19
	(.007)	(.006)	(.005)	(.004)	(.004)	(.007)	(.004)				
Netherlands	-.118	-.098	-.087	-.082	-.032	-.056	.007	-.062	-.039	.27	.00
	(.014)	(.013)	(.012)	(.018)	(.044)	(.014)	(.046)				
Norway	-.232	-.181	-.138	-.144	-.085	-.091	-.010	-.141	-.076	.37	.11
	(.004)	(.004)	(.003)	(.004)	(.003)	(.004)	(.003)				
Sweden	-.100	-.084	-.050	-.063	-.030	-.054	-.008	-.046	-.022	.30	.15
	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)				

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.

Table S27. 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)
	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	-.288	-.223	-.158	-.170	-.093	-.322	-.099	.034	.006	.32	.31
	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)				
Denmark	-.087	-.064	-.030	-.051	-.021	-.096	-.023	.009	.002	.24	.24
	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)				
France	-.209	-.141	-.103	-.082	-.054	-.207	-.056	-.002	.002	.26	.27
	(.004)	(.004)	(.004)	(.005)	(.005)	(.005)	(.005)				
Germany	-.215	-.135	-.088	-.105	-.050	-.218	-.054	.003	.003	.23	.25
	(.004)	(.004)	(.003)	(.003)	(.003)	(.004)	(.003)				
Netherlands	-.159	-.111	-.064	-.087	-.025	-.167	-.052	.008	.028	.15	.31
	(.009)	(.008)	(.008)	(.011)	(.015)	(.010)	(.018)				
Norway	-.215	-.151	-.078	-.107	-.028	-.227	-.035	.012	.007	.13	.15
	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)				
Spain	-.311	-.184	-.149	-.078	-.058	-.347	-.073	.036	.014	.19	.21
	(.003)	(.003)	(.003)	(.004)	(.004)	(.003)	(.004)				
Sweden	-.075	-.052	-.021	-.019	.003	-.073	.012	-.002	-.009	.00	.00
	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)				
United States	-.106	-.096	-.063	-.075	-.030	-.112	-.035	.006	.005	.28	.31
	(.002)	(.002)	(.002)	(.002)	(.003)	(.002)	(.003)				
Panel B: Children of immigrants											
Canada	-.042	-.029	-.025	-.038	-.027	-.019	-.017	-.023	-.010	.64	.89
	(.002)	(.001)	(.001)	(.001)	(.001)	(.002)	(.002)				
Denmark	-.066	-.048	-.033	-.029	-.017	-.053	-.007	-.013	-.009	.26	.14
	(.003)	(.003)	(.003)	(.003)	(.003)	(.003)	(.003)				
Germany	-.081	-.055	-.037	-.041	-.017	-.081	-.015	-.001	-.002	.21	.19
	(.006)	(.005)	(.005)	(.004)	(.003)	(.007)	(.004)				
Netherlands	-.033	-.021	-.018	-.013	.013	-.056	.007	.023	.006	.00	.00
	(.012)	(.011)	(.011)	(.015)	(.024)	(.014)	(.046)				
Norway	-.118	-.072	-.054	-.045	-.018	-.091	-.010	-.027	-.009	.16	.11
	(.003)	(.003)	(.003)	(.003)	(.003)	(.004)	(.003)				
Sweden	-.058	-.047	-.029	-.030	-.013	-.054	-.008	-.004	-.005	.23	.15
	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)				

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.

Table S28. 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)
		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	-.237	-.186	-.127	-.135	-.061	-.322	-.099	.085	.038	.26	.31
	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)				
Denmark	-.063	-.048	-.015	-.035	-.007	-.096	-.023	.034	.016	.12	.24
	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)				
France	-.172	-.125	-.087	-.073	-.047	-.207	-.056	.035	.009	.27	.27
	(.005)	(.005)	(.004)	(.004)	(.005)	(.005)	(.005)				
Germany	-.150	-.101	-.057	-.082	-.028	-.218	-.054	.069	.025	.19	.25
	(.004)	(.004)	(.004)	(.003)	(.003)	(.004)	(.003)				
Netherlands	-.131	-.106	-.059	-.076	-.013	-.167	-.052	.036	.039	.10	.31
	(.010)	(.009)	(.009)	(.012)	(.017)	(.010)	(.018)				
Norway	-.209	-.151	-.075	-.107	-.022	-.227	-.035	.018	.013	.10	.15
	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)				
Spain	-.181	-.104	-.077	-.024	-.015	-.347	-.073	.166	.058	.08	.21
	(.004)	(.004)	(.003)	(.005)	(.005)	(.003)	(.004)				
Sweden	-.063	-.040	-.011	-.009	.013	-.073	.012	.010	.002	.00	.00
	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)				
United States	-.091	-.088	-.058	-.067	-.025	-.112	-.035	.020	.009	.28	.31
	(.002)	(.002)	(.002)	(.002)	(.003)	(.002)	(.003)				
Panel B: Children of immigrants											
Canada	-.020	-.011	-.011	-.020	-.014	-.019	-.017	-.001	.003	.72	.89
	(.002)	(.002)	(.001)	(.001)	(.002)	(.002)	(.002)				
Denmark	-.037	-.027	-.013	-.014	.000	-.053	-.007	.016	.007	.00	.14
	(.003)	(.003)	(.003)	(.003)	(.003)	(.003)	(.003)				
Germany	-.058	-.041	-.023	-.030	-.007	-.081	-.015	.023	.008	.13	.19
	(.007)	(.006)	(.005)	(.004)	(.004)	(.007)	(.004)				
Netherlands	-.043	-.040	-.033	-.025	.022	-.056	.007	.014	.015	.00	.00
	(.013)	(.012)	(.012)	(.019)	(.048)	(.014)	(.046)				
Norway	-.085	-.053	-.041	-.028	-.006	-.091	-.010	.006	.004	.07	.11
	(.004)	(.003)	(.003)	(.003)	(.003)	(.004)	(.003)				
Sweden	-.047	-.038	-.018	-.022	-.006	-.054	-.008	.007	.001	.14	.15
	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)				

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.

Table S29. Immigrant–native differences in annual earnings adjusting for part-time and full-time employment.

	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 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	-.303	-.230	-.166	-.176	-.092	-.322	-.099	.019	.007	.30	.31
	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)				
Denmark	-.087	-.067	-.038	-.056	-.030	-.096	-.023	.009	-.006	.34	.24
	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)				
France	-.199	-.128	-.093	-.076	-.052	-.207	-.056	.008	.004	.26	.27
	(.004)	(.004)	(.004)	(.005)	(.005)	(.005)	(.005)				
Germany	-.210	-.134	-.091	-.107	-.054	-.218	-.054	.008	.000	.26	.25
	(.004)	(.004)	(.003)	(.003)	(.003)	(.004)	(.003)				
Netherlands	-.177	-.133	-.091	-.106	-.041	-.167	-.052	-.010	.011	.23	.31
	(.009)	(.008)	(.008)	(.011)	(.017)	(.010)	(.018)				
Norway	-.186	-.141	-.082	-.099	-.033	-.227	-.035	.041	.002	.18	.15
	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)				
Spain	-.305	-.188	-.156	-.084	-.068	-.347	-.073	.042	.005	.22	.21
	(.003)	(.003)	(.003)	(.004)	(.004)	(.003)	(.004)				
United States	-.090	-.086	-.060	-.069	-.036	-.112	-.035	.022	-.002	.41	.31
	(.002)	(.002)	(.002)	(.002)	(.003)	(.002)	(.003)				
Panel B: Children of immigrants											
Canada	-.013	-.004	-.004	-.020	-.012	-.019	-.017	.006	.005	.88	.89
	(.002)	(.001)	(.001)	(.001)	(.001)	(.002)	(.002)				
Denmark	-.047	-.036	-.025	-.023	-.011	-.053	-.007	.005	-.004	.24	.14
	(.003)	(.003)	(.003)	(.003)	(.003)	(.003)	(.003)				
Germany	-.078	-.051	-.034	-.037	-.014	-.081	-.015	.003	.001	.18	.19
	(.006)	(.005)	(.005)	(.004)	(.003)	(.007)	(.004)				
Netherlands	-.040	-.036	-.028	-.034	.079	-.056	.007	.017	.072	.00	.00
	(.012)	(.011)	(.011)	(.016)	(.029)	(.014)	(.046)				
Norway	-.070	-.048	-.039	-.023	-.006	-.091	-.010	.020	.004	.08	.11
	(.003)	(.003)	(.003)	(.003)	(.003)	(.004)	(.003)				

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.

Table S30. Canadian estimates of immigrant-native differences in annual earnings from main analysis.

		Fixed effect for:				Proportion
	Basic adj.	Ind	Occ	Est	Occ-Est	within job
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: All world regions						
Immigrants	-.322	-.246	-.173	-.188	-.099	.31
	(.001)	(.001)	(.001)	(.001)	(.001)	
Children of immigrants	-.019	-.010	-.010	-.025	-.017	.89
	(.002)	(.002)	(.001)	(.002)	(.002)	
Panel B: By world region						
Immigrants						
Asia	-.423	-.319	-.215	-.242	-.107	.25
	(.002)	(.002)	(.001)	(.002)	(.002)	
Latin America	-.277	-.226	-.149	-.197	-.098	.36
	(.003)	(.002)	(.002)	(.002)	(.003)	
Middle East and North Africa	-.486	-.394	-.328	-.304	-.207	.43
	(.003)	(.003)	(.003)	(.003)	(.003)	
Sub-Saharan Africa	-.359	-.296	-.222	-.261	-.160	.45
	(.004)	(.004)	(.003)	(.004)	(.004)	
Europe, North America,	-.105	-.075	-.052	-.062	-.036	.34
and Other Western	(.002)	(.002)	(.002)	(.002)	(.002)	
Children of immigrants						
Asia	-.056	-.058	-.051	-.064	-.033	.59
	(.004)	(.003)	(.003)	(.003)	(.003)	
Latin America	-.167	-.150	-.108	-.141	-.072	.43
	(.005)	(.005)	(.004)	(.004)	(.005)	
Middle East and North Africa	-.109	-.089	-.087	-.084	-.062	.57
	(.009)	(.009)	(.008)	(.009)	(.009)	
Sub-Saharan Africa	-.079	-.061	-.063	-.071	-.047	.60
	(.009)	(.009)	(.008)	(.009)	(.009)	
Europe, North America,	.013	.024	.018	.006	-.001	–
and Other Western	(.002)	(.002)	(.002)	(.002)	(.002)	

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.

Table S31. Danish estimates of immigrant-native differences in annual earnings from main analysis.

		Fixed effect for:				Proportion
	Basic adj.	Ind	Occ	Est	Occ-Est	within job
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: All world regions						
Immigrants	-.096	-.070	-.033	-.055	-.023	.24
	(.001)	(.001)	(.001)	(.001)	(.001)	
Children of immigrants	-.053	-.038	-.023	-.021	-.007	.14
	(.003)	(.003)	(.003)	(.003)	(.003)	
Panel B: By world region						
Immigrants						
Asia	-.115	-.083	-.026	-.076	-.024	.21
	(.003)	(.003)	(.003)	(.003)	(.003)	
Latin America	-.142	-.121	-.106	-.109	-.084	.59
	(.008)	(.007)	(.007)	(.007)	(.007)	
Middle East and North Africa	-.197	-.137	-.087	-.102	-.055	.28
	(.003)	(.003)	(.003)	(.003)	(.003)	
Sub-Saharan Africa	-.269	-.171	-.090	-.135	-.058	.21
	(.005)	(.005)	(.004)	(.004)	(.004)	
Europe, North America,	-.046	-.037	-.012	-.027	-.008	.18
and Other Western	(.002)	(.002)	(.002)	(.002)	(.002)	
Children of immigrants						
Asia	-.065	-.072	-.061	-.064	-.043	.66
	(.010)	(.010)	(.010)	(.010)	(.010)	
Latin America	-.116	-.083	-.070	-.077	-.049	.42
	(.040)	(.038)	(.035)	(.037)	(.033)	
Middle East and North Africa	-.084	-.065	-.052	-.038	-.027	.32
	(.006)	(.006)	(.006)	(.006)	(.006)	
Sub-Saharan Africa	-.182	-.118	-.097	-.072	-.044	.24
	(.029)	(.028)	(.026)	(.027)	(.026)	
Europe, North America,	-.031	-.016	.000	-.004	.009	.00
and Other Western	(.004)	(.004)	(.004)	(.004)	(.004)	

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.

Table S32. French estimates of immigrant-native differences in annual earnings from main analysis (PTS-EDP panel).

		Fixed effect for:				Proportion
	Basic adj.	Ind	Occ	Est	Occ-Est	within job
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: All world regions						
Immigrants	-.207	-.138	-.101	-.083	-.056	.27
	(.005)	(.004)	(.004)	(.005)	(.005)	
Panel B: By world region						
Immigrants						
Asia	-.165	-.112	-.074	-.070	-.039	.24
	(.018)	(.017)	(.016)	(.018)	(.020)	
Latin America	-.220	-.146	-.107	-.104	-.064	.29
	(.019)	(.019)	(.017)	(.018)	(.018)	
Middle East and North Africa	-.263	-.182	-.145	-.083	-.055	.21
	(.006)	(.006)	(.006)	(.007)	(.008)	
Sub-Saharan Africa	-.314	-.196	-.133	-.128	-.092	.29
	(.010)	(.009)	(.008)	(.010)	(.010)	
Europe, North America,	-.073	-.046	-.023	-.044	-.030	.41
and Other Western	(.008)	(.007)	(.007)	(.008)	(.009)	

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.

Table S33. French estimates of immigrant-native differences in annual earnings from supplementary analysis (using data from full DADS population register without adjustment for education).

	Basic adj., without education	Fixed effect for: Ind	Occ	Est	Occ-Est	Proportion within job
	(1)	(2)	(3)	(4)	(5)	(6)
Immigrants	-.267	-.176	-.097	-.104	-.058	.22
	(.000)	(.001)	(.001)	(.000)	(.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, 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.

Table S34. German estimates of immigrant-native differences in annual earnings from main analysis.

		Fixed effect for:				Proportion
	Basic adj.	Ind	Occ	Est	Occ-Est	within job
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: All world regions						
Immigrants	-.218	-.139	-.091	-.110	-.054	.25
	(.004)	(.004)	(.004)	(.003)	(.003)	
Children of immigrants	-.081	-.053	-.035	-.040	-.015	.19
	(.007)	(.006)	(.005)	(.004)	(.004)	
Panel B: By world region						
Immigrants						
Asia	-.241	-.146	-.109	-.138	-.083	.34
	(.023)	(.018)	(.016)	(.015)	(.013)	
Latin America	-.170	-.103	-.061	-.118	-.084	.49
	(.013)	(.012)	(.011)	(.010)	(.009)	
Middle East and North Africa	-.199	-.140	-.082	-.114	-.045	.23
	(.007)	(.006)	(.006)	(.005)	(.004)	
Sub-Saharan Africa	-.393	-.250	-.163	-.213	-.113	.29
	(.014)	(.013)	(.013)	(.012)	(.011)	
Europe, North America,	-.223	-.137	-.094	-.101	-.051	.23
and Other Western	(.005)	(.005)	(.005)	(.004)	(.004)	
Children of immigrants						
Asia	-.114	-.085	-.064	-.066	-.042	.37
	(.021)	(.018)	(.017)	(.014)	(.013)	
Latin America	-.061	-.039	-.025	-.029	-.007	.11
	(.013)	(.012)	(.012)	(.009)	(.007)	
Middle East and North Africa	-.148	-.098	-.063	-.069	-.021	.14
	(.023)	(.020)	(.018)	(.014)	(.013)	
Sub-Saharan Africa	-.075	-.049	-.036	-.032	-.004	.06
	(.030)	(.023)	(.020)	(.017)	(.014)	
Europe, North America,	-.076	-.050	-.033	-.038	-.016	.21
and Other Western	(.009)	(.007)	(.007)	(.006)	(.005)	

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.

Table S35. Dutch estimates of immigrant-native differences in annual earnings from main analysis (EBB occupation sample).

		Fixed effect for:				Proportion
	Basic adj.	Ind	Occ	Est	Occ-Est	within job
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: All world regions						
Immigrants	-.167	-.128	-.078	-.091	-.052	.31
	(.010)	(.009)	(.008)	(.011)	(.018)	
Children of immigrants	-.056	-.048	-.042	-.037	.007	.00
	(.014)	(.013)	(.012)	(.018)	(.046)	
Panel B: By world region						
Immigrants						
Asia	-.236	-.192	-.123	-.139	-.047	.20
	(.028)	(.025)	(.023)	(.033)	(.043)	
Latin America	-.130	-.100	-.049	-.053	-.001	.01
	(.018)	(.016)	(.014)	(.020)	(.027)	
Middle East and North Africa	-.256	-.186	-.131	-.134	-.112	.44
	(.019)	(.017)	(.016)	(.021)	(.030)	
Sub-Saharan Africa	-.247	-.178	-.095	-.136	-.083	.34
	(.032)	(.029)	(.027)	(.038)	(.053)	
Europe, North America,	-.087	-.073	-.041	-.068	-.043	.49
and Other Western	(.017)	(.016)	(.014)	(.019)	(.031)	
Children of immigrants						
Asia	-.044	-.047	-.030	-.038	.010	.00
	(.026)	(.023)	(.021)	(.039)	(.161)	
Latin America	-.066	-.054	-.048	-.015	.008	.00
	(.026)	(.024)	(.023)	(.037)	(.034)	
Middle East and North Africa	-.059	-.044	-.039	-.046	.023	.00
	(.022)	(.021)	(.020)	(.025)	(.031)	
Sub-Saharan Africa	-.154	-.113	-.115	-.141	-.027	.18
	(.074)	(.062)	(.059)	(.059)	(.070)	
Europe, North America,	-.012	-.030	-.043	-.045	-.059	1.00
and Other Western	(.046)	(.043)	(.039)	(.043)	(.069)	

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.

Table S36. Dutch estimates of immigrant-native differences in annual earnings from supplementary analysis (using full registry sample without information on occupation).

		Fixed effect for:	
	Basic adj.	Ind	Est
	(1)	(2)	(3)
Panel A: All world regions			
Immigrants	-.165	-.090	-.083
	(.001)	(.001)	(.001)
Children of immigrants	-.084	-.059	-.050
	(.001)	(.001)	(.001)
Panel B: By world region			
Immigrants			
Asia	-.090	-.053	-.090
	(.002)	(.002)	(.002)
Latin America	-.151	-.103	-.104
	(.002)	(.001)	(.001)
Middle East and North Africa	-.248	-.166	-.120
	(.001)	(.001)	(.001)
Sub-Saharan Africa	-.250	-.148	-.131
	(.003)	(.002)	(.002)
Europe, North America,	-.128	-.043	-.039
and Other Western	(.001)	(.001)	(.001)
Children of immigrants			
Asia	-.074	-.064	-.067
	(.003)	(.003)	(.002)
Latin America	-.112	-.081	-.073
	(.002)	(.002)	(.002)
Middle East and North Africa	-.073	-.045	-.030
	(.002)	(.002)	(.002)
Sub-Saharan Africa	-.171	-.118	-.106
	(.007)	(.007)	(.006)
Europe, North America,	-.042	-.029	-.029
and Other Western	(.004)	(.004)	(.004)

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 and within-establishment (children of) immigrant–native differences by introducing fixed effects for industry and establishment. 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.

Table S37. Norwegian estimates of immigrant-native differences in annual earnings from main analysis.

		Fixed effect for:				Proportion
	Basic adj.	Ind	Occ	Est	Occ-Est	within job
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: All world regions						
Immigrants	-.227	-.164	-.088	-.119	-.035	.15
	(.001)	(.001)	(.001)	(.001)	(.001)	
Children of immigrants	-.091	-.058	-.045	-.033	-.010	.11
	(.004)	(.003)	(.003)	(.003)	(.003)	
Panel B: By world region						
Immigrants						
Asia	-.249	-.185	-.088	-.147	-.035	.14
	(.002)	(.002)	(.002)	(.002)	(.002)	
Latin America	-.287	-.227	-.138	-.185	-.084	.29
	(.005)	(.004)	(.004)	(.004)	(.004)	
Middle East and North Africa	-.312	-.209	-.131	-.153	-.057	.18
	(.002)	(.002)	(.002)	(.002)	(.002)	
Sub-Saharan Africa	-.356	-.251	-.144	-.201	-.079	.22
	(.003)	(.003)	(.003)	(.003)	(.003)	
Europe, North America,	-.184	-.136	-.070	-.092	-.021	.12
and Other Western	(.001)	(.001)	(.001)	(.001)	(.001)	
Children of immigrants						
Asia	-.076	-.050	-.042	-.037	-.019	.26
	(.007)	(.007)	(.006)	(.006)	(.006)	
Latin America	-.158	-.106	-.067	-.072	-.038	.24
	(.019)	(.017)	(.016)	(.017)	(.017)	
Middle East and North Africa	-.114	-.069	-.053	-.035	-.001	.01
	(.005)	(.005)	(.005)	(.005)	(.005)	
Sub-Saharan Africa	-.168	-.128	-.097	-.088	-.032	.19
	(.020)	(.019)	(.018)	(.018)	(.017)	
Europe, North America,	-.049	-.036	-.030	-.019	-.012	.25
and Other Western	(.007)	(.007)	(.006)	(.007)	(.006)	

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.

Table S38. Spanish estimates of immigrant-native differences in annual earnings from main analysis.

		Fixed effect for:				Proportion
	Basic adj.	Ind	Occ	Est	Occ-Est	within job
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: All world regions						
Immigrants	-.347	-.208	-.170	-.093	-.073	.21
	(.003)	(.003)	(.003)	(.004)	(.004)	
Panel B: By world region						
Immigrants						
Asia	-.502	-.329	-.277	-.080	-.052	.10
	(.011)	(.011)	(.011)	(.023)	(.023)	
Latin America	-.396	-.256	-.204	-.128	-.100	.25
	(.005)	(.004)	(.004)	(.005)	(.005)	
Middle East and North Africa	-.436	-.232	-.191	-.107	-.084	.19
	(.008)	(.008)	(.008)	(.012)	(.013)	
Sub-Saharan Africa	-.440	-.220	-.174	-.150	-.108	.25
	(.012)	(.012)	(.011)	(.016)	(.016)	
Europe, North America,	-.219	-.120	-.103	-.034	-.024	.11
and Other Western	(.005)	(.005)	(.005)	(.006)	(.006)	

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.

Table S39. Swedish estimates of immigrant-native differences in annual earnings from main analysis.

		Fixed effect for:				Proportion
	Basic adj.	Ind	Occ	Est	Occ-Est	within job
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: All world regions						
Immigrants	-.073	-.046	-.014	-.011	.011	.00
	(.001)	(.001)	(.001)	(.001)	(.001)	
Children of immigrants	-.054	-.043	-.023	-.025	-.008	.15
	(.001)	(.001)	(.001)	(.001)	(.001)	
Panel B: By world region						
Immigrants						
Asia	-.047	-.016	-.004	-.002	.014	.00
	(.006)	(.006)	(.006)	(.006)	(.006)	
Latin America	-.079	-.045	-.019	-.034	-.009	.12
	(.005)	(.005)	(.004)	(.005)	(.004)	
Middle East and North Africa	-.044	-.005	.004	.025	.020	.00
	(.003)	(.003)	(.002)	(.003)	(.002)	
Sub-Saharan Africa	-.094	-.049	-.028	-.006	.007	.00
	(.008)	(.008)	(.007)	(.008)	(.007)	
Europe, North America,	.014	.011	.011	.016	.017	1.00
and Other Western	(.002)	(.002)	(.002)	(.002)	(.002)	
Children of immigrants						
Asia	-.025	-.030	-.035	-.024	-.025	.97
	(.007)	(.007)	(.007)	(.007)	(.007)	
Latin America	-.080	-.050	-.037	-.030	-.021	.26
	(.007)	(.007)	(.007)	(.007)	(.007)	
Middle East and North Africa	.013	.035	.021	.042	.024	1.89
	(.003)	(.003)	(.003)	(.003)	(.003)	
Sub-Saharan Africa	-.126	-.099	-.089	-.055	-.050	.40
	(.011)	(.010)	(.010)	(.010)	(.010)	
Europe, North America,	.005	-.006	-.007	-.010	-.007	–
and Other Western	(.002)	(.002)	(.001)	(.001)	(.001)	

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.

Table S40. US estimates of immigrant-native differences in annual earnings from main analysis.

		Fixed effect for:				Proportion
	Basic adj.	Ind	Occ	Est	Occ-Est	within job
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: All world regions						
Immigrants	-.112	-.100	-.065	-.079	-.035	.31
	(.002)	(.002)	(.002)	(.002)	(.003)	
Panel B: By world region						
Immigrants						
Asia	-.095	-.115	-.095	-.091	-.057	.60
	(.004)	(.004)	(.003)	(.004)	(.005)	
Latin America	-.159	-.124	-.063	-.104	-.034	.21
	(.004)	(.003)	(.003)	(.004)	(.005)	
Middle East and North Africa	-.241	-.185	-.169	-.119	-.088	.36
	(.011)	(.010)	(.009)	(.010)	(.012)	
Sub-Saharan Africa	-.203	-.142	-.068	-.110	-.029	.15
	(.010)	(.009)	(.009)	(.010)	(.012)	
Europe, North America,	.035	.019	.015	.014	.015	.42
and Other Western	(.005)	(.005)	(.005)	(.005)	(.006)	

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.