

1 **Title: Immigrant–native pay gap driven by lack of access to high-paying jobs**

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32

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

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

47 **Main Text:**

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

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

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

70 setting practices are likely to be central factors shaping how immigrants fare in the labor market  
71 (21-26). Previous research documents that immigrants' gradual catch-up in earnings relative to  
72 natives in the years following arrival often reflects improved access to better-paying firms (27-  
73 31). However, despite a vast literature on ethnoracial discrimination in hiring (32-34), only a few  
74 studies have addressed whether immigrants earn less than observably comparable natives  
75 employed in the same workplace or attempted to quantify the consequences of workplace  
76 segregation for immigrant–native earnings disparities (27-31, 35-37).

77  
78 Here, we study the extent to which immigrants earn less than non-migrant natives when doing  
79 the same work for the same employer (i.e., within-job inequality) or whether immigrant–native  
80 earnings gaps reflect differential sorting into lower-paying jobs (i.e., between-job segregation),  
81 including broader patterns of labor market segregation, in nine European and North American  
82 economies. We identify the earnings differences that emerge when immigrants, native-born  
83 children of immigrants, and native workers occupy the same job, often interpreted as an indicator  
84 of employer bias in wage setting, and compare these to the contribution of differential sorting  
85 across industries, occupations, workplaces, and jobs within workplaces. Do immigrants have  
86 similar earnings to non-migrant natives who work in the same occupations in the same  
87 establishments? And do the children of immigrants earn wages similar to those of the children of  
88 non-immigrant natives when they do the same work for the same employer?

89  
90 The answers to these questions have far-reaching implications for policy and society at large. If  
91 inequalities arise because immigrants and their native-born children receive different pay relative  
92 to non-immigrants when they are doing the same work for the same employer, then policies

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

99

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

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

117  
118 Based on harmonized country-level estimates of immigrant–native differences in annual  
119 earnings, after adjustments for education, age, gender, and within-country geographic region, we  
120 examine immigrant–native earnings differences within industries, occupations, establishments,  
121 and jobs (cf. (38), see Supplementary Materials, Section S1–S2). Our analysis proceeds in three  
122 steps. First, we summarize the contribution of within-job inequality and between-job segregation  
123 to immigrant–native earnings gaps averaged across the nine countries using a meta-analytic  
124 approach (39). Second, we describe variation between host countries in levels of immigrant–  
125 native earnings differences and the relative contribution of within-job inequality and between-job  
126 segregation. Third, we examine differences in between-job segregation and within-job inequality  
127 among immigrants and children of immigrants from different world regions of origin.

128  
129 Our results show that, on average, four-fifths of the total immigrant–native earnings differences  
130 are attributable to between-job segregation, while the remaining earnings differences reflect  
131 differences in pay between immigrants and natives who hold the same occupation and work for  
132 the same employer. For countries with data on immigrants’ native-born children, both total and  
133 within-job earnings differences relative to natives tend to be strongly reduced in the second  
134 generation. Although there is cross-national variation in the magnitude of immigrant–native  
135 earnings gaps, the relative contribution of between-job segregation and within-job pay inequality  
136 is comparable across our nine host countries. These patterns are found among immigrants and  
137 native-born children of immigrants from Asia, Latin America, the Middle East and North Africa,

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

151

## 152 **Results**

### 153 *Within-job pay inequality and between-job segregation by immigrant generation*

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



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

167  
168 For children of immigrants, Fig. 1A shows that both total and within-job earnings differences  
169 relative to natives are considerably lower than among immigrants. After basic adjustments,  
170 children of immigrants on average earn almost 6% less than natives. This difference in earnings  
171 shrinks when comparing children of immigrants to children of native-born parents who work in  
172 the same industry (~4%), occupation (~3%), and establishment (~3%). When narrowing our  
173 comparison to coworkers with the same occupation and employer, the within-job differences in  
174 earnings between children of immigrants and natives is, on average, about 1%. For children of  
175 immigrants, sorting into jobs accounts for 81% of the total immigrant–native earnings difference.  
176 Our results show that the absolute magnitude of the total and within-industry, within-occupation,  
177 within-establishment, and within-job earnings differences relative to natives are, on average,  
178 about 70–75% lower among children of immigrants compared to immigrants.

179  
180 Overall, the processes generating between-job segregation and within-job earnings differences  
181 seem to play out similarly in both immigrant generations but are strongly reduced in magnitude  
182 in the native-born second generation. Within-job earnings differences between children of  
183 immigrants and natives are, on average, very small, but within-job inequality remains

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

187

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

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

206

207 Figure 1B reveals strikingly reduced earnings differences among native-born children of  
208 immigrants in all countries where information on this population is available (Canada, Denmark,  
209 Germany, Netherlands, Norway, and Sweden). First, within-job pay differentials between natives  
210 and children of immigrants are, on average, very small and below 2% in all countries. Second,  
211 the total earnings differences relative to natives after basic adjustments tend to be considerably  
212 smaller among children of immigrants than those found among immigrants, ranging from about  
213 2% (Canada) to 8–9% (Germany and Norway). Although the size of total earnings differences  
214 relative to natives are reduced among children of immigrants within all countries, Fig. 1B shows  
215 that differential sorting into lower-paying jobs makes a similar contribution to total earnings  
216 differences in the second generation. However, the pattern across these six countries shows  
217 considerable labor market progress and modest earnings disadvantages when children of  
218 immigrants work in the same occupation for the same employer.

219

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

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

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

231  
232 Cross-regional variation in within-job earnings differences follows a similar pattern. Immigrants  
233 from Sub-Saharan Africa and the Middle East and North Africa earn about 8% less than their  
234 native coworkers in the same job, while corresponding within-job earnings differences are only  
235 slightly smaller among immigrants from Latin America (~6%) and Asia (~6%). In contrast,  
236 within-job earnings differences relative to natives are, on average, only 2% among immigrants  
237 from Western countries. Across all origin regions, differential sorting across jobs accounts for  
238 about 70–80% of the total earnings differences relative to natives. These findings again  
239 underscore that sorting across jobs – as well as industries, occupations, and workplaces – is the  
240 central factor behind the considerable earnings disadvantages that immigrants face. Nonetheless,  
241 Fig. 2A also documents that immigrants, except those of Western origins, often earn  
242 considerably less than natives who do the same work for the same employer.

243  
244 Figure 2A also shows that, when averaged across all countries, reduced earnings disadvantages  
245 are found among children of immigrants within all world regions. Still, the largest total earnings  
246 differences relative to natives are found among children of Sub-Saharan African immigrants,  
247 who earn about 13% less than natives, followed by children of Latin American (11%), Middle  
248 Eastern and North African (8%), Asian (6%), and Western (3%) origins. Children of Sub-  
249 Saharan African, Latin American, and Asian immigrants earn 3–4% less than native coworkers  
250 doing the same work for the same employer. Children of Middle Eastern and North African  
251 immigrants on average earn about 1% less than natives in the same job, while the within-job

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

257  
258 Figure 2B establishes that the pattern of within-job earnings differences by world region of  
259 origin is broadly consistent when we zoom in on the country-specific estimates for immigrants  
260 and children of immigrants from each world regions of origin. There is variation across countries  
261 in the size of the region-specific within-job earnings differences relative to natives in both  
262 immigrant generations. In the country-specific cases where immigrants from a given world  
263 region of origin earn above 5% less than natives in the same job, the corresponding within-job  
264 earnings difference to natives is at least 40% lower, often considerably lower, among children of  
265 immigrants from all origin regions except for children of immigrants from Latin America in  
266 Canada and Sub-Saharan Africa in Denmark. Thus, the broad tendency is one of reduced within-  
267 job inequality when children of immigrants are compared to immigrants from the same world  
268 region of origin who live in the same host country.

269

## 270 **Discussion**

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

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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.

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

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## 307 **References and Notes**

- 308 1. G. J. Abel, N. Sander, Quantifying global international migration flows. *Science* **343**, 1520-  
309 1522 (2014).
- 310 2. R. Alba, N. Foner, *Strangers No More: Immigration and the Challenges of Integration in*  
311 *North America and Western Europe*. (Princeton University Press, Princeton, 2015).
- 312 3. M. C. Waters, M. G. Pineau, *The Integration of Immigrants into American Society*. (The  
313 National Academies Press, Washington, DC, 2015), pp. 520.
- 314 4. R. Abramitzky, L. Boustan, *Streets of Gold: America's Untold Story of Immigrant Success*.  
315 (Public Affairs, New York, 2022).
- 316 5. A. Portes, R. G. Rumbaut, *Immigrant America: A Portrait*. (University of California Press,  
317 Berkeley, 2014).
- 318 6. A. F. Heath, S. Y. Cheung, *Unequal Chances: Ethnic Minorities in Western Labour Markets*.  
319 (Oxford University Press/The British Academy, Oxford, 2007).
- 320 7. A. Villarreal, C. R. Tamborini, Immigrants' Economic Assimilation: Evidence from  
321 Longitudinal Earnings Records. *American Sociological Review* **83**, 686-715 (2018).
- 322 8. D. Rho, S. Sanders, Immigrant Earnings Assimilation in the United States: A Panel Analysis.  
323 *Journal of Labor Economics* **39**, 37-78 (2021).
- 324 9. D. Lubotsky, Chutes or ladders? A longitudinal analysis of immigrant earnings. *Journal of*  
325 *Political Economy* **115**, 820-867 (2007).

- 326 10. H. O. Duleep, in *Handbook of the Economics of International Migration*. (Elsevier, 2015),  
327 vol. 1, pp. 105-182.
- 328 11. B. R. Chiswick, Effect of Americanization on Earnings of Foreign-Born Men. *Journal of*  
329 *Political Economy* **86**, 897-921 (1978).
- 330 12. G. J. Borjas, *Immigration Economics*. (Harvard University Press, Cambridge, MA, 2014).
- 331 13. A. F. Heath, C. Rethon, E. Kilpi, The Second Generation in Western Europe: Education,  
332 Unemployment, and Occupational Attainment. *Annual Review of Sociology* **34**, 211-235  
333 (2008).
- 334 14. B. Duncan, S. J. Trejo, Assessing the Socioeconomic Mobility and Integration of U.S.  
335 Immigrants and Their Descendants. *Annals of the American Academy of Political and Social*  
336 *Science* **657**, 108-135 (2015).
- 337 15. L. G. Drouhot, V. Nee, Assimilation and the Second Generation in Europe and America:  
338 Blending and Segregating Social Dynamics Between Immigrants and Natives. *Annual Review*  
339 *of Sociology* **45**, 177-199 (2019).
- 340 16. A. Villarreal, C. R. Tamborini, The Economic Assimilation of Second-Generation Men: An  
341 Analysis of Earnings Trajectories Using Administrative Records. *Demography*, 10924116  
342 (2023).
- 343 17. J. Song, D. J. Price, F. Guvenen, N. Bloom, T. Von Wachter, Firming up inequality.  
344 *Quarterly Journal of Economics* **134**, 1-50 (2019).
- 345 18. E. Barth, A. Bryson, J. C. Davis, R. Freeman, It's Where You Work: Increases in the  
346 Dispersion of Earnings across Establishments and Individuals in the United States. *Journal of*  
347 *Labor Economics* **34**, S67-S97 (2016).
- 348 19. D. Tomaskovic-Devey *et al.*, Rising between-workplace inequalities in high-income  
349 countries. *Proceedings of the National Academy of Sciences* **117**, 9277-9283 (2020).
- 350 20. N. Wilmers, C. Aeppli, Consolidated Advantage: New Organizational Dynamics of Wage  
351 Inequality. *American Sociological Review* **86**, 1100-1130 (2021).
- 352 21. R. Waldinger, M. I. Lichter, *How the Other Half Works: Immigration and the Social*  
353 *Organization of Labor*. (University of California Press, Berkeley, 2003).
- 354 22. F. Andersson, M. García-Pérez, J. Haltiwanger, K. McCue, S. Sanders, Workplace  
355 Concentration of Immigrants. *Demography* **51**, 2281-2306 (2014).
- 356 23. A. Glitz, Ethnic segregation in Germany. *Labour Economics* **29**, 28-40 (2014).
- 357 24. O. Åslund, O. N. Skans, Will I See You at Work: Ethnic Workplace Segregation in Sweden,  
358 1985-2002. *Industrial and Labor Relations Review* **63**, 471-493 (2010).



- 359 25. M. Lillehagen, A. S. Hermansen, Entering the Mainstream Economy? Workplace  
360 Segregation and Immigrant Assimilation. *SocArxiv*, doi:10.31235/osf.io/c31232n31235  
361 (2022).
- 362 26. J. K. Hellerstein, D. Neumark, Workplace Segregation in the United States: Race, Ethnicity,  
363 and Skill. *The Review of Economics and Statistics* **90**, 459-477 (2008).
- 364 27. A. Aydemir, M. Skuterud, The Immigrant Wage Differential Within and Across  
365 Establishments. *ILR Review* **61**, 334-352 (2008).
- 366 28. E. Barth, B. Bratsberg, O. Raaum, Immigrant Wage Profiles Within and Between  
367 Establishments. *Labour Economics* **19**, 541-556 (2012).
- 368 29. B. Dostie, J. Li, D. Card, D. Parent, Employer policies and the immigrant–native earnings  
369 gap. *Journal of Econometrics* **233**, 544-567 (2021).
- 370 30. O. Åslund, C. Bratu, S. Lombardi, A. Thoresson, Firm productivity and immigrant-native  
371 earnings disparities. *IZA Discussion Paper No. 14960*, (2023).
- 372 31. J. Arellano-Bover, S. San, The Role of Firms and Job Mobility in the Assimilation of  
373 Immigrants: Former Soviet Union Jews in Isreal 1990–2019. *IZA Discussion Paper No.*  
374 *16389*, (2023).
- 375 32. L. Quillian *et al.*, Do Some Countries Discriminate More than Others? Evidence from 97  
376 Field Experiments of Racial Discrimination in Hiring. *Sociological Science* **6**, 467-496  
377 (2019).
- 378 33. P. Oreopoulos, Why do skilled immigrants struggle in the labor market? A field experiment  
379 with thirteen thousand resumes. *American Economic Journal: Economic Policy* **3**, 148-171  
380 (2011).
- 381 34. L. Quillian, J. J. Lee, Trends in racial and ethnic discrimination in hiring in six Western  
382 countries. *Proceedings of the National Academy of Sciences* **120**, e2212875120 (2023).
- 383 35. D. Tomaskovic-Devey, M. Hällsten, D. Avent-Holt, Where Do Immigrants Fare Worse?  
384 Modeling Workplace Wage Gap Variation with Longitudinal Employer-Employee Data.  
385 *American Journal of Sociology* **120**, 1095-1143 (2015).
- 386 36. S. M. Melzer, D. Tomaskovic-Devey, R. Schunck, P. Jacobebbinghaus, A Relational  
387 Inequality Approach to First-and Second-Generation Immigrant Earnings in German  
388 Workplaces. *Social Forces* **97**, 91-128 (2018).
- 389 37. E. Peters, S. M. Melzer, Immigrant–Native Wage Gaps at Work: How the Public and Private  
390 Sectors Shape Relational Inequality Processes. *Work and Occupations* **49**, 79-129 (2022).
- 391 38. A. M. Penner *et al.*, Within-job gender pay inequality in 15 countries. *Nature Human*  
392 *Behaviour* **7**, 184–189 (2023).

- 393 39. M. Borenstein, L. V. Hedges, J. P. Higgins, H. R. Rothstein, *Introduction to meta-analysis*.  
394 (John Wiley & Sons, 2021).
- 395 40. B. F. Reskin, H. I. Hartmann, *Women's Work, Men's Work. Sex Segregation on the Job*.  
396 (National Academy Press, 1986).
- 397 41. T. Petersen, V. Snartland, L.-E. Becken, K. M. Olsen, Within-Job Wage Discrimination and  
398 the Gender Wage Gap: The Case of Norway. *European Sociological Review* **13**, 199-213  
399 (1997).
- 400 42. T. Petersen, Multiplicative models for continuous dependent variables: Estimation on  
401 unlogged versus logged form. *Sociological Methodology* **47**, 113-164 (2017).
- 402 43. S. W. Raudenbush, Analyzing effect sizes: Random-effects models. *The handbook of*  
403 *research synthesis and meta-analysis* **2**, 295-316 (2009).
- 404 44. L. V. Hedges, J. L. Vevea, Fixed-and random-effects models in meta-analysis. *Psychological*  
405 *methods* **3**, 486 (1998).
- 406 45. StataCorp, *Stata Meta-Analysis Reference Manual*. (StataCorp LLC, College Station, TX,  
407 2021).
- 408 46. U. Simonsohn, J. P. Simmons, L. D. Nelson, Specification curve analysis. *Nature Human*  
409 *Behaviour* **4**, 1208-1214 (2020).
- 410 47. C. Young, K. Holsteen, Model uncertainty and robustness: A computational framework for  
411 multimodel analysis. *Sociological Methods & Research* **46**, 3-40 (2017).
- 412 48. T. Petersen, L. A. Morgan, Separate and Unequal: Occupation-Establishment Sex  
413 Segregation and the Gender Wage Gap. *American Journal of Sociology* **101**, 329-365 (1995).
- 414 49. K. Bayard, J. Hellerstein, D. Neumark, K. Troske, New evidence on sex segregation and sex  
415 differences in wages from matched employee-employer data. *Journal of Labor Economics*  
416 **21**, 887-922 (2003).
- 417 50. J. Ye *et al.*, in *Proceedings of the 2017 ACM on Conference on Information and Knowledge*  
418 *Management*. (2017), pp. 1897-1906.

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437 D. Tomaskovic-Devey, and E. Vickstrom interpreted the results and wrote the paper. A. S.  
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444 the German analyses; and E. Vickstrom was responsible for conducting the US analyses.

445

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447

448 **Data and materials availability:** Restricted-access administrative data from nine different  
449 countries are used in this study. As described in the Supplemental Material, the data  
450 underlying our analyses in each country can be accessed by receiving permissions from the  
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## 461 **Supplementary Materials**

462 Materials and Methods

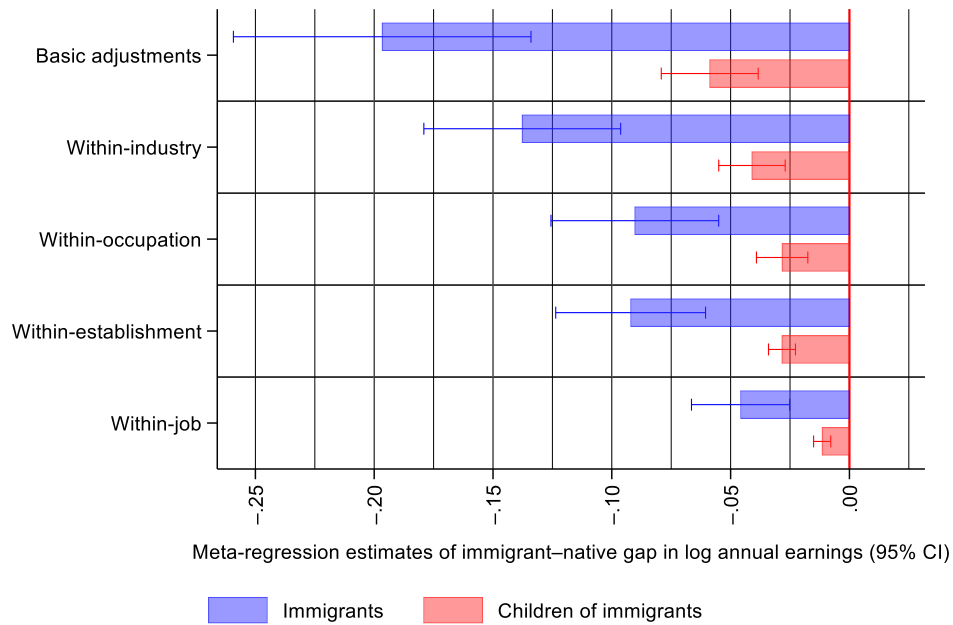
463 Supplementary Text

464 Figs. S1 to S16

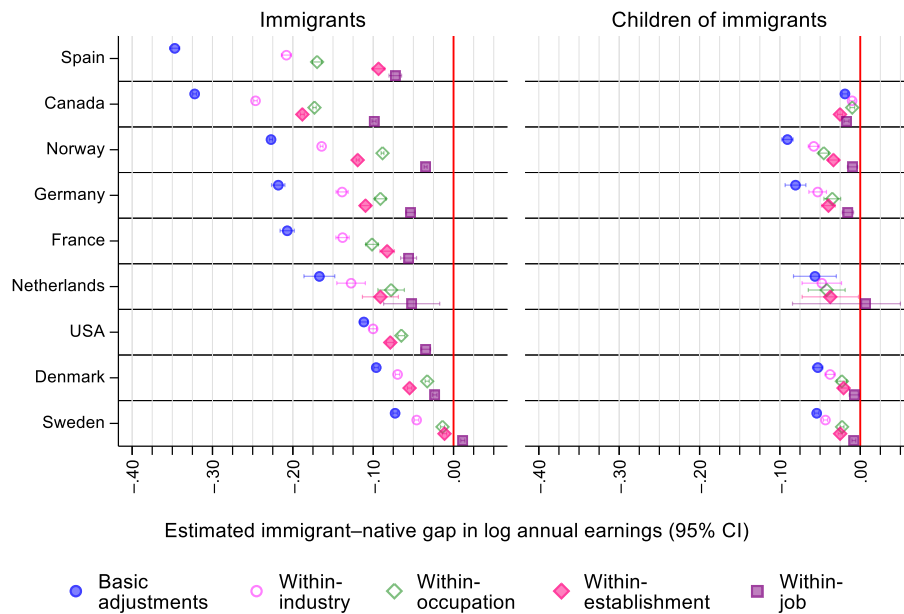
465 Tables S1 to S40

466 References (40–50)

**A**



**B**

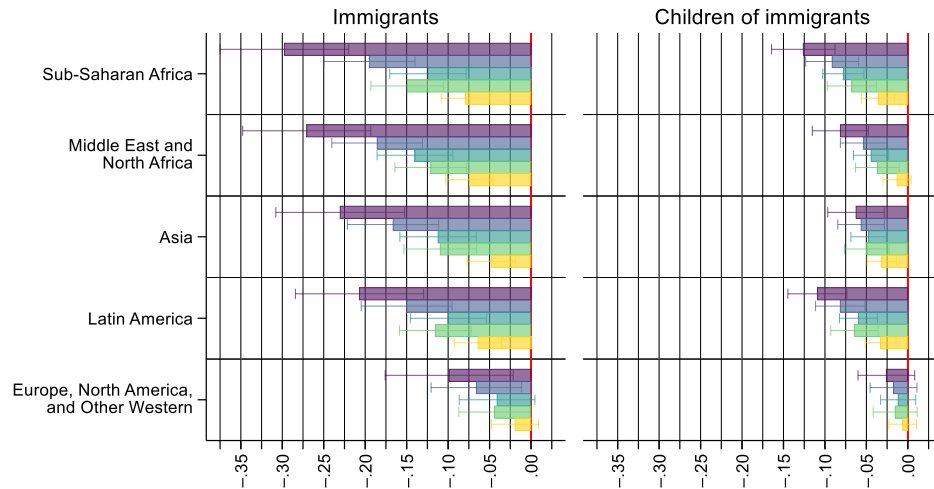


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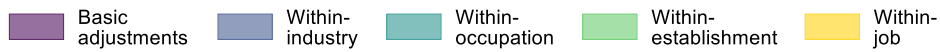
**Fig. 1. Immigrant–native earnings differences after basic adjustments and within industry, occupation, establishment, and job averaged across all countries and separately by host country. (A)** Differences in log annual earnings relative to natives after basic adjustments and within industry, occupation, establishment, and job (occupation–establishment units) for immigrants (Canada, Denmark, France, Germany, Netherlands, Norway, Spain, Sweden, and the

473 United States) and children of immigrants (Canada, Denmark, Germany, Netherlands, Norway,  
474 and Sweden) averaged across all countries using meta-analysis of the pooled country-specific  
475 estimates. **(B)** Country-specific differences in log annual earnings relative to natives after basic  
476 adjustments and within industry, occupation, establishment, and job for immigrants and children  
477 of immigrants in each country from country-specific Ordinary Least Squares (OLS) regressions  
478 before and after introducing fixed effects for industry, occupation, establishment, and occupation–  
479 establishment units.

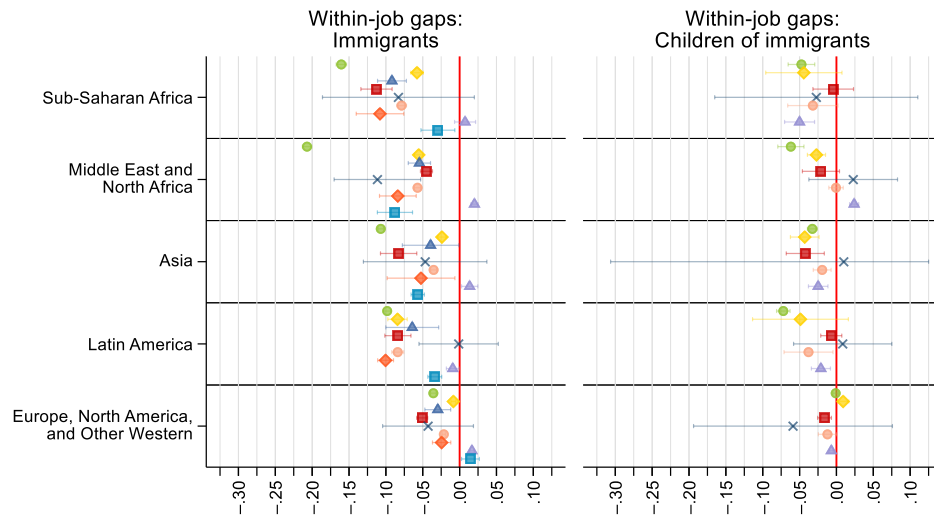
**A**



Meta-regression estimates of immigrant–native gap in log annual earnings (95% CI)



**B**



Estimated within-job immigrant–native gap in log annual earnings (95% CI)



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**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

486 (Canada, Denmark, Germany, Netherlands, Norway, and Sweden) from different world regions of  
487 origin averaged across all countries using meta-analysis of the pooled country-specific estimates.  
488 **(B)** Country-specific within-job differences in log annual earnings relative to natives separately  
489 for immigrants and children of immigrants from different world regions within each country from  
490 country-specific OLS regressions with fixed effects for occupation–establishment units.

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**Supplementary Materials for**  
**Immigrant–native pay gap driven by lack of access to high-paying jobs**

Are Skeie Hermansen, Andrew Penner, Marta Elvira, Olivier Godechot, Martin Hällsten, Lasse  
Folke Henriksen, Feng Hou, Zoltán Lippényi, Trond Petersen, Malte Reichelt, Halil Sabanci,  
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**The PDF file includes:**

- Materials and Methods
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696 **S1 Materials and methods**

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

710  
711 The supplemental materials provide additional information on the materials and methods (Section  
712 S1) and supplementary text and results that support the main analysis (Section S2), additional  
713 results testing the sensitivity of the conclusions from the main analysis (Section S3–S5), detailed  
714 information on the data used for each separate country (Section S6); and the full set of country-  
715 specific results underlying the main analysis (Section S6).

716  
717 **S1.1 Data**

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

724  
725 An overview of the key features of the data across countries is provided in Table S1 and below we  
726 provide a general description of the measurement of the key variables used in the analysis. Given  
727 the unique nature of each country’s data, we provide additional information about the data utilized  
728 in each country, variable measurement, and report relevant country-specific supplementary  
729 analyses that we conducted (Section S6).

730

731 **S1.2 Variables**

732 **S1.2.1 Earnings and wages**

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

740

741 **S1.2.2 Nativity and immigrant background**

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

755

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

761

762 **S1.2.3 World region of origin**

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

770  
771 A detailed list of the countries grouped into each region of origin is provided in Table S2. For  
772 Germany, information on own and parental country of birth is not available. To proxy world region  
773 of origin, we categorize immigrants and children of immigrants using information on personal  
774 names using a machine-learning algorithm that assigns names to different world regions of origin  
775 with high precision (see description of the German data in Section S5 for a detailed description of  
776 this approach). We use the same grouping of world regions of origin for Germany.

777  
778 **S1.2.4 Industry**  
779 Industry is measured using detailed variables capturing the main economic activity of the  
780 establishment where the individual is employed. For Denmark, France, Netherlands, and Norway,  
781 industry is measured using the four-digit nomenclature of the Statistical Classification of Economic  
782 Activities in the European Community (NACE). For Germany and Sweden, we use three-digit  
783 NACE industry codes. For Spain, we use the two-digit National Classification of Economic  
784 Activities (CNAE). For Canada and the United States, industry is measured using the three-digit  
785 North American Industrial Classification (NAICS).

786  
787 **S1.2.5 Establishment**  
788 For Denmark, France, Germany, Netherlands, Norway, Spain, and Sweden, we measure employers  
789 using information on unique identifiers for establishments. Establishments generally refer to  
790 distinct workplaces (often defined by a unique postal address) which are different from the firm  
791 level except in the case of single establishment firms. For Canada and the United States, employers  
792 are measured using unique identifiers for firms, which often include multiple establishments in  
793 different geographic locations. For countries where information on both establishments and firms  
794 is available (Denmark, France, Netherlands, Norway, Spain, and Sweden), we report results using  
795 firm identifiers instead of establishments to assess the sensitivity of this alternative measure for  
796 these countries (Table S22).

797  
798 **S1.2.6 Occupation**  
799 We use four-digit national adaptations of the International Standard Classification of Occupations  
800 (ISCO) to measure occupations for Denmark, Germany, Norway, and Sweden. For the  
801 Netherlands, we also use the International Standard Classification of Occupations (ISCO) but  
802 measured at the two-digit level to due to small sample sizes at the job level (occupation–  
803 establishment level). Job-level sample sizes are also small in France, and we use a coarsened two-  
804 digit occupation measure here too, where the two-digit version of *Nomenclature des Professions*  
805 *et Catégories Socio-Professionnelles* (CSP) contains 30 occupational categories. For Spain,  
806 occupation is measured using employer-reported one-digit *grupo de cotización* (10 categories)  
807 system. For Canada, occupations are measured using the Canadian National Occupational  
808 Classification (three-digit level, with about 140 unique occupations). For the United States,

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

813

### 814 **S1.2.7 Job**

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

826

### 827 **S1.2.8 Covariates**

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

838

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

844

## 845 **S1.3 Methods**

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

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

854

### 855 **S1.3.1 Country-specific regressions**

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

868

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

874

$$875 \quad \ln \text{earnings}_i = \theta_{BASE} \mathbf{x}_i + \varepsilon_i, \tag{1}$$

876

$$877 \quad \ln \text{earnings}_i = \theta_{IND} \mathbf{x}_i + \eta_{ind} + \varepsilon_i, \tag{2}$$

878

$$879 \quad \ln \text{earnings}_i = \theta_{OCC} \mathbf{x}_i + \eta_{occ} + \varepsilon_i, \tag{3}$$

880

$$881 \quad \ln \text{earnings}_i = \theta_{EST} \mathbf{x}_i + \eta_{est} + \varepsilon_i, \tag{4}$$

882

$$883 \quad \ln \text{earnings}_i = \theta_{OCCEST} \mathbf{x}_i + \eta_{occest} + \varepsilon_i, \tag{5}$$

884

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

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

898  
899 Model 1 thus provides estimates of the immigrant–native differences in earnings after basic  
900 adjustments for gender, age, age-squared, education, and geographic region. Model 2 includes  
901 these same covariates as well as the fixed effects  $\eta_{\text{ind}}$  representing the industry indicators. Thus,  
902 model 2 provides estimates of immigrant–native differences in earnings obtained from comparing  
903 immigrants and children of immigrants to natives who work in the same industry. Intuitively, these  
904 results can be thought of as estimating the immigrant–native difference in earnings separately for  
905 each industry unit and then taking a weighted average of these immigrant–native differences across  
906 all industries. Models 3, 4, and 5 are analogous to model 2, but contain the fixed effects  $\eta_{\text{occ}}$ ,  $\eta_{\text{est}}$ ,  
907 and  $\eta_{\text{occest}}$  that refer to the unique occupation ( $\eta_{\text{occ}}$ ), establishment ( $\eta_{\text{est}}$ ), or occupation–  
908 establishment ( $\eta_{\text{occest}}$ ) unit. The analytic sample for each model is restricted to fixed effect units  
909 that are integrated by immigrant background (i.e., there is at least either one immigrant or child of  
910 immigrant and one native worker present in the given unit). The subscripts to the  $\theta$  parameters  
911 indicate that these are different coefficients, pertaining to different levels, basic adjustments  
912 (BASE), industry (IND), occupation (OCC), establishment (EST), and occupation–establishment  
913 (OCCEST).

914  
915 We use the natural log of earnings as our dependent variable. Following standard conventions,  
916 these coefficients are interpreted as the relative difference between the average earnings for  
917 immigrant-background and non-migrant native workers, but more formally our estimates refer to  
918 the differences in relative geometric means for unlogged earnings (which is the absolute difference  
919 in the arithmetic means of logged earnings). See Petersen (42) for an extended discussion of the  
920 interpretation of such coefficients.

921  
922 We report all estimates from our main model specifications for immigrants and children of  
923 immigrants for each separate country in the section describing the country-specific data. The  
924 coefficients and standard errors of these country-specific estimates of immigrant–native  
925 differences in earnings constitute the basis for the meta-analysis described below.

926

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

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

935  
936 Our aim with the meta-analysis is twofold. First, we want to summarize the country-level  
937 immigrant–native differences in earnings across all countries, using the estimates that do not  
938 differentiate by world region of origin (i.e., for each of the five regression models described in the  
939 section above, we take one estimate for each of the nine of the countries for immigrants and one  
940 estimate for each of the six countries with information on children of immigrants). Second, we  
941 want to summarize how the immigrant–native differences in earnings vary by world region of  
942 origin when averaged across the countries where immigrants are currently living. To achieve this,  
943 we use the set of country-specific estimates that differentiate by world region of origin among  
944 immigrants and children of immigrants (i.e., estimates from the five world regions for each of the  
945 nine of the countries for immigrants and for each of the six countries for children of immigrants).

946  
947 To capture sources of variability when summarizing the overall patterns across countries, we use a  
948 random-effects meta-analysis specification (39, 43, 44). Random-effects meta-analysis incorporate  
949 a variance component capturing variation in outcomes across countries that are due to unobserved  
950 country-level factors. Random-effects meta-analysis are recommended whenever there is reason to  
951 believe that the effect in question is likely to vary within the population of estimates, rather than  
952 representing a single underlying effect that is constant over the whole population (e.g., the different  
953 countries we are examining are likely to exhibit variation in their immigrant–native earnings  
954 differences).

955  
956 We specify a random-effects meta-regression model estimated by restricted maximum likelihood  
957 using the meta regress function in Stata/MP version 17 (45). The general form of this equation is:

958  
959 
$$y_i = \alpha + \mu_i + \varepsilon_i, \text{ where } \mu_i \sim N(0, \tau^2) \text{ and } \varepsilon_i \sim N(0, \sigma_i^2) \tag{6}$$

960  
961 Here,  $y_i$  is the immigrant–native difference in log annual earnings estimated for the country  $i$ ,  $\alpha$  is  
962 the constant term,  $\mu_i$  is random effect describing the country-specific deviation from the  
963 distribution mean that is normally distributed with a mean of 0 and standard deviation of  $\tau$ , where  
964  $\tau^2$  is the residual between-country variance (or random-effect variance).  $\varepsilon_i$  is a random error term  
965 describing sampling variability that is normally distributed with a mean of 0 and a standard

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

970  
971 Fig. 1A in the main text summarizes the predicted immigrant–native difference in log annual  
972 earnings averaged across all countries for immigrants and children of immigrants using the  
973 country-specific estimates that do not differentiate by (children of) immigrants’ world region of  
974 origin. The figure presents the average earnings gaps for each of the five regression specifications  
975 (i.e., basic adjustments, within-industry, within-occupation, within-establishment, and within-job).

976  
977 Next, we summarize variation in immigrant–native earnings differences averaged across all  
978 countries. To achieve this, we use in the country-by-region-specific estimates of immigrant–native  
979 differences in log annual earnings and introduce covariates for world region of origin to the model  
980 specification, which has this form:

$$981 \quad y_k = \beta x_k + \mu_k + \varepsilon_k, \text{ where } \mu_k \sim N(0, \tau^2) \text{ and } \varepsilon_k \sim N(0, \sigma_k^2) \quad (7)$$

982  
983  
984 This equation is similar to the previous equation, but  $y_k$  is the immigrant–native difference in log  
985 annual earnings estimated country-by-region combination  $k$  (i.e., unique combinations of country  
986 and world region of origin).  $\beta$  as vector of coefficients (including the constant) and  $x_k$  is a vector  
987 of indicators for the five world regions (i.e., Asia; Europe, North America, and Other Western;  
988 Middle East and North Africa; Latin America; Sub-Saharan Africa). The remaining terms have the  
989 same interpretations and assumptions as above but refer to country-by-region combination  $k$ . In the  
990 same fashion as above, we use the country-by-region specific immigrant–native earnings difference  
991 estimates to fit this model separately for immigrants and children of immigrants for each of the  
992 five model specifications described above (Section S1.3.1).

993  
994 Fig. 2A in the main text summarizes the immigrant–native differences in log annual earnings for  
995 different world regions of origin averaged across all countries for immigrants and children of  
996 immigrants using the country-by-region specific estimates (i.e., differentiating the estimated  
997 earnings gaps by world region of origin within each country). The figure presents the average  
998 earnings gaps by origin region for immigrants and children of immigrants separately each of the  
999 five regression specifications (i.e., basic adjustments, within-industry, within-occupation, within-  
1000 establishment, and within-job).

1001  
1002 Finally, we also report the same summary estimates using an alternate meta-regression  
1003 specification also using meta regress function in Stata/MP version 17 (45). The general form of the  
1004 two alternate meta-regression models we estimate are:



1005  
1006 
$$y_i = \alpha + \mu_i + \varepsilon_i, \text{ where } \varepsilon_i \sim N(0, \sigma_i^2) \tag{8}$$

1007  
1008 
$$y_k = \beta x_k + \mu_k + \varepsilon_k, \text{ where } \varepsilon_k \sim N(0, \sigma_k^2). \tag{9}$$

1009  
1010 These equations are similar to the previous equations, but without the random effect describing the  
1011 country-specific (i.e.,  $\mu_i$  in Eq. 8) or country-by-region-specific (i.e.,  $\mu_k$  in Eq. 9) deviation from  
1012 the distribution mean. These models, often called fixed-effect meta-regressions, could be  
1013 appropriate in our case because the setup of the country-specific regression is identical in the  
1014 analyses from all countries (i.e., all of the estimates are functionally equivalent), our goal is to  
1015 summarize only the country-specific estimates from our sample of estimates (i.e., we compute a  
1016 common effect size for the identified population of estimates and do not generalize beyond this),  
1017 and the small number of estimates summarized using the country-specific regression models (i.e.,  
1018 models 1–5 described in Section 1.3.1) are less susceptible to small-sample bias in this model (see  
1019 (39), p. 83–84). Nevertheless, we still believe that the random effects model is more appropriate  
1020 due to the assumed heterogeneity in the estimated immigrant–native earnings differences across  
1021 countries and groups with different world regions of origin within countries. However, we also  
1022 report results from fixed-effects models as a type of robustness check (39) (Section S2.3).

1023

## 1024 **S2 Supplementary text with information for the main analysis**

1025 This section presents supporting information for estimates presented in the main analysis. First, we  
1026 report the coefficients and standard errors for the results presented in Figs. 1 and 2 in the main text  
1027 (Section S2.1). Second, we report results from a meta-analysis of country-specific estimates from  
1028 the countries where we have information on both immigrants and children of immigrants (Section  
1029 S2.2.), in order to assess whether the average pattern reported for immigrants summarized in Figs.  
1030 1A and 2A are robust to exclusion of the three countries where information on children of  
1031 immigrants is not available (France, Spain, and the United States). Third, we report estimates from  
1032 fixed-effect meta-regression models, as described above, for the same set of countries used in the  
1033 main analysis (Section S2.3).

1034

### 1035 **S2.1 Estimated coefficients and standard errors from figures in main text**

1036 Tables S3 to S6 report the estimated coefficients and standard errors from Figs. 1 and 2 in the main  
1037 text. The last column in each table shows the proportion of the immigrant–native difference in  
1038 earnings found within jobs compared to the earnings difference after basic adjustments.

1039

### 1040 **S2.2 Meta-regression restricted to countries with children of immigrants**

1041 We also report summary estimates using the random-effects meta-regression models described  
1042 above using estimates for immigrants which is constrained only to the countries where we also

1043 have information on children of immigrants (Section S2.2). Thus, we assess whether the pattern of  
1044 smaller earnings differences relative to natives among children of immigrants compared to the  
1045 corresponding earnings differences among immigrants is consistent with the main results in the  
1046 subsample of countries where we have information on both immigrant generations.

1047  
1048 Figure S1 provides a graphical overview of the estimates from the meta-analysis corresponding to  
1049 those reported in Figs. 1A and 2A in the main text but restricted to only countries where information  
1050 of both immigrants and children of immigrants is available (Canada, Denmark, Germany, Norway,  
1051 Netherlands, and Sweden). Thus, the estimates for immigrants in this figure differs from those  
1052 reported in the main text, but the estimates for children of immigrants is identical. Tables S7 and  
1053 S8 report the exact coefficients and standard errors for the estimates reported in Figure S1.

1054  
1055 The results from the meta-analysis using the restricted sample of countries are very similar to the  
1056 results in the main analysis and supports our main conclusions.

1057  
1058 **S2.3 Meta-regression using fixed-effects specification**

1059 In Figure S2 and Table S9–S10, we report results from the fixed-effects specification of the meta-  
1060 analysis of the country-specific estimates used in the main analysis. The estimates from the fixed-  
1061 effects meta-analysis are comparable to those reported in the main analysis although there are some  
1062 discrepancies. For example, the estimated earnings differences relative to natives for immigrants  
1063 from Asia in the basic adjustments model is slightly larger than the corresponding estimate in the  
1064 main analysis, but the within-job gap for Asian immigrants is very similar in the fixed-effect meta-  
1065 analysis and the main analysis (i.e., the random-effects meta-analysis).

1066  
1067 The main pattern in the results from the fixed-effects meta-regression models generally support the  
1068 conclusions reached in the main analysis.

1069  
1070 **S3 Supplementary text for analyses by immigrants' duration of stay**

1071 Immigrants typically improve their earnings and labor market positions relative to natives as they  
1072 spend more time in the host country, which is often attributed to improved country-specific human  
1073 and social capital (6-10). This includes factors such as improved language skills, better cultural and  
1074 institutional understanding of the host society, acquisition of education and training in the host  
1075 society, and better access to job-relevant social networks (10-12). Thus, adult immigrants with  
1076 longer durations of stay in the host country are expected to fare better in the labor market compared  
1077 to recently-arrived immigrants with shorter durations of stay. Furthermore, immigrants who arrived  
1078 during childhood are an important transitional group since they were born abroad but had parts of  
1079 their childhood and adolescence in the host country. Thus, childhood immigrants (often referred to  
1080 as the 1.5 generation) are more likely to have achieved native-level fluency in the host-country  
1081 language and have received an educational degree in the host country. Thus, an important question

1082 is whether childhood immigrants' labor market outcomes are more similar to those of immigrants  
1083 who arrived as adults or to those of native-born children of immigrants.

1084  
1085 To assess heterogeneity by immigrants' duration of stay, we conduct supplementary analyses like  
1086 those reported in the main analyses where we differentiate foreign-born immigrants into three  
1087 separate subpopulations: (a) recent immigrants, defined as those who arrived as adults (at age 18  
1088 or older) and have been in the host country for less than 10 years; (b) established immigrants, who  
1089 arrived as adults (at age 18 or older) and have lived in the host country for 10 or more years; and  
1090 (c) childhood immigrants, all immigrants who arrived in the host country between age zero and 17.  
1091 Below, we report results for immigrants in each of these subpopulations using estimates from the  
1092 seven countries where we have information on immigrants' year of arrival or equivalent (Canada,  
1093 Denmark, France, Germany, Norway, Sweden, and the United States).

1094

### 1095 **S3.1 Averaged pattern across countries**

1096 Fig. S3A summarizes the overall pattern of immigrant pay gaps in total earnings and the relative  
1097 contribution of within-job pay inequality versus industry, occupation, establishment, and job  
1098 segregation using the same meta-analytic approach as used in the main analysis (see Table S11 for  
1099 detailed estimates). We find that recent immigrants have the largest average total earnings  
1100 difference relative to natives ( $-.276$  log points), whereas the total earnings difference is markedly  
1101 smaller among established immigrants ( $-.193$  log points), and childhood immigrants experience  
1102 considerably smaller gaps ( $-.073$  log points). However, for all three subpopulations of immigrants  
1103 we see a clear pattern where immigrant–native earnings differences arise primarily from  
1104 differential sorting into lower-paying industries, occupations, establishments, and jobs. Turning to  
1105 the within-job earnings differences to natives, we see that these are considerably larger among  
1106 recent immigrants ( $-.100$  log points) compared to established immigrants ( $-.035$  log points) and  
1107 childhood immigrants ( $-.011$  log points).

1108

1109 Thus, the recent immigrants earn, on average, about 10% less than observably comparable natives  
1110 in the same job, which is substantial, and the within-job earnings difference constitute slightly more  
1111 than one-third of the total earnings difference to natives. In contrast, established immigrants and  
1112 childhood immigrants experience considerably smaller within-job earnings differences relative to  
1113 natives and earn, on average, 3.5% and 1.1%, respectively, less than native coworkers in the same  
1114 job. For established immigrants and childhood immigrants, the within-job earnings differences  
1115 make up 15–18% of the total earnings differences with the remaining 85–82% attributable to  
1116 differential sorting into lower-paying jobs.

1117

1118 Overall, Fig S3A shows that both total and within-job earnings differences are largest among  
1119 recently arrived immigrants (i.e., immigrants with less than 10 years since arrival). Although  
1120 established immigrants experience substantially larger total earnings disparities than childhood

1121 immigrants, the within-job earnings differences of established immigrants and childhood  
1122 immigrants are both relatively small, particularly compared to recent immigrants. For childhood  
1123 immigrants, both the total and within-job earnings differences to natives are relatively modest and  
1124 the size of these immigrant–native gaps are broadly comparable to those reported for native-born  
1125 children of immigrants in the main analysis (see Fig. 1A and Table S3).

1126

### 1127 **S3.2 Differences between host countries**

1128 Fig S3B reports the estimated total and within-industry, within-occupation, within-establishment,  
1129 and within-job immigrant–native earnings differences separately by immigrants’ duration of stay  
1130 for each of the seven countries (see Table S12 for detailed estimates). The largest total immigrant–  
1131 native earnings differences among recent immigrants are found in Canada (–.552 log points),  
1132 Germany (–.325 log points), and Norway (–.312 log points), whereas the smallest is found in  
1133 Denmark (–.086 log points). In all countries, the total immigrant–native earnings differences are  
1134 much lower among established immigrants and even further reduced among childhood immigrants.  
1135 In Canada, for example, the total earnings difference to natives among established immigrants is –  
1136 .320 log points and among childhood immigrants it is –.079 log points. Similarly, the within-job  
1137 earnings differences to natives tend to be considerably larger among recent immigrants compared  
1138 to established immigrants and childhood immigrants in all countries. The largest within-job  
1139 earnings difference among recent immigrants is found in Canada (–.214 log points), which is  
1140 followed by the United States (–.135 log points), Germany (–.105 log points), Norway (–.085 log  
1141 points), France (–.061 log points), Sweden (–.050 log points), and Denmark (–.044 log points). For  
1142 established immigrants, the largest within-job earnings difference is again found in Canada (–.084  
1143 log points), which is followed by France (–.074 log points), and in the remaining countries the  
1144 within-job earnings differences to natives are –.037 log points (Germany) or lower (Denmark,  
1145 Norway, Sweden, and the United States). The within-job differences for childhood immigrants are  
1146 further reduced, with the largest gaps again found in Canada (–.037 log points) and is –.030 log  
1147 points (France) or lower in the remaining countries (Denmark, Germany, Norway, Sweden, and  
1148 the United States).

1149

1150 Overall, Fig. S3B shows that the main tendency across all seven host countries is that the total  
1151 earnings differences relative to natives among both recent immigrants, established immigrants, and  
1152 childhood immigrants in large part reflects sorting into lower-paying industries, occupations,  
1153 establishments, and jobs, and to a lesser degree reflects within-job earnings differences between  
1154 immigrants-background and native coworkers. Nonetheless, the within-job earnings differences  
1155 relative to natives among recent immigrants can be nontrivial in many countries. Finally, we see  
1156 broadly comparable contributions of between-job segregation and within-job pay inequality across  
1157 all three immigrant subpopulations, although the total and within-job earnings differences are  
1158 considerably smaller among established immigrants and childhood immigrants than they are  
1159 among recent immigrants.

1160

### 1161 **S3.3 Differences by world region of origin**

1162 Fig. S4A presents estimated earnings differences separately for recent immigrants, established  
1163 immigrants, and childhood immigrants from each of the five world regions of origin, when  
1164 averaged across the seven countries using our meta-analytic approach (see Table S13 for detailed  
1165 estimates). For all world regions, the immigrant–native earnings differences are largest among  
1166 recently arrived immigrants, smaller among established immigrants, and smallest for childhood  
1167 immigrants. This pattern is apparent for both the total immigrant–native earnings differences and  
1168 for the within-industry, within-occupation, within-establishment, and within-job levels. For all  
1169 world regions of origin, the total earnings differences to natives primarily reflect sorting into lower-  
1170 paying industries, occupations, establishments, and jobs, rather than within-job earnings  
1171 differences, and this is true for recent immigrants, established immigrants, and childhood  
1172 immigrants.

1173  
1174 Turning to variation between origin regions, Fig. S4A shows that the largest total and within-job  
1175 immigrant native differences among recently arrived immigrants is found among the groups with  
1176 background from Sub-Saharan Africa and the Middle East and North Africa, followed by Latin  
1177 America and Asia, and, finally, those from Europe, North America, and other Western origin  
1178 countries. For established immigrants, variation across world regions of origin is similar. The  
1179 largest immigrant–native earnings differences are observed in the Sub-Saharan African and Middle  
1180 Eastern and North African regions and the smallest immigrant–native earnings differences  
1181 observed among immigrants from Western origin countries. For childhood immigrants, variation  
1182 across origin regions in both total and within immigrant–native earnings differences is less  
1183 pronounced, although the largest total earnings difference relative to natives is again found in the  
1184 Sub-Saharan African origin region and the smallest earnings differences are found among those  
1185 from Western origin countries.

1186  
1187 Fig. S4A further shows that not only are within-job earnings differences largest among recent  
1188 immigrants, but that within-job earnings differences also constitute a larger part of the total  
1189 immigrant–native earnings differences in this group. For recent immigrants, within-job earnings  
1190 differences account for between 36% (Sub-Saharan Africa) and 48% (Latin America) of the total  
1191 earnings differences. For established immigrants and childhood immigrants, within-job earnings  
1192 differences constitute a smaller share of the total earnings differences to natives. Within-job  
1193 earnings differences account for between 9% (Europe, North America, and other Western) and  
1194 27% (Latin America) of the total earnings differences relative to natives among established  
1195 immigrants. For childhood immigrants, the corresponding contribution of within-job earnings  
1196 differences ranges from 11% (Europe, North America, and other Western) to 27% (Latin America).  
1197 Although sorting into lower-paying jobs is the main driver of the earnings disparities relative to  
1198 natives in all subpopulations of immigrants, within-job earnings differences relative to natives  
1199 seem to matter more, both in absolute and relative terms, among recently arrived immigrants.

1200

1201 Finally, Fig S4B reports the country-specific regression estimates of within-job immigrant–native  
1202 earnings differences by world region of origin for each of the seven countries (see Table S14 for  
1203 detailed estimates). Overall, these country-specific estimates are broadly in line with aggregated  
1204 patterns by world region of origin summarized by meta-analysis (see Fig. S4A above).

1205

## 1206 **S4 Supplementary text for analyses by sex and alternative outcomes**

### 1207 **S4.1 Immigrant–native differences in annual earnings for men and women**

1208 There are many reasons that male and female immigrants and children of immigrants could face  
1209 different obstacles in the labor market, which can produce systematic gender differences in  
1210 immigrant–native pay gaps. For example, field experiments of ethnoracial discrimination in hiring  
1211 often find the level of discrimination to be higher for immigrant men than among immigrant women  
1212 (32). Figure S5 reports estimates for immigrant–native pay differentials for log annual earnings  
1213 from the Basic Adjustments and Within-job models for men and women separately for each  
1214 country. Tables S15 (men) and S16 (women) report exact coefficients and standard errors for all  
1215 five model specifications.

1216

1217 There is a pattern where immigrant men experience somewhat larger total pay gaps compared to  
1218 immigrant women in the Basic adjustments model in most countries. However, the total  
1219 immigrant–native pay gaps are similar for men and women in Denmark and the United States. In  
1220 contrast there is no systematic gender difference in the size of the within-job immigrant–native pay  
1221 gaps across countries except in the Netherlands, where immigrant men experience considerably  
1222 larger within-job gaps than immigrant women.

1223

1224 For children of immigrants, there is also a systematic pattern of larger total immigrant–native pay  
1225 gaps in the basic adjustments model among men compared to women in all countries. The gender  
1226 differences in within-job pay gaps are, however, very small in all countries and there is no pattern  
1227 of a larger male disadvantage.

1228

1229 For both immigrants and children of immigrants, this suggests that the larger total immigrant gaps  
1230 observed among men in both immigrant generations in most countries is due to a stronger sorting  
1231 of immigrant men and women into lower-paying jobs and not due to larger differences in pay  
1232 relative to non-migrant natives when immigrant-origin workers do the same work for the same  
1233 employer.

1234

### 1235 **S4.2 Immigrant–native differences in hourly wages or hourly earnings**

1236 This section provides additional analyses where we analyze differences in hourly wages (or in some  
1237 cases, hourly earnings) for the countries where this information is available (Denmark, France, the  
1238 Netherlands, Norway, Spain, and the United States). The distinction between wages and earnings

1239 is important: analyses of wages provide insight into inequality from the employer’s perspective  
1240 (the price employers pay for labor); analyses of earnings capture the perspective of what employees  
1241 receive, including potential differences in overtime, performance bonuses, and other components  
1242 affecting take home pay, and how work contributes to employees’ broader economic well-being.

1243  
1244 The ability to isolate hourly wage varies across countries, and as such in our primary analyses we  
1245 focus on earnings differences, as we have earnings information in all nine countries. However,  
1246 since hourly wages provide a more direct measure of the price employers pay for each amount of  
1247 labor, we present results for hourly wages for the countries where this information is available.  
1248 Information on hourly wage on contractual hours is available in Denmark, Netherlands, and  
1249 Norway, while we use information on hourly earnings for France, Spain, and the United States.

1250  
1251 Table S17 shows that the immigrant–native earnings differences tend to be considerably smaller  
1252 for hourly wages and hourly earnings than for annual earnings, but the relative contribution of  
1253 sorting across industries, occupations, establishments, and jobs versus within-job unequal pay is  
1254 qualitatively similar for both immigrants and children of immigrants. The within-job gaps in hourly  
1255 wages/earnings range between about 1 to 6 percent for immigrants and about 1 percent at the  
1256 highest for children of immigrants across these countries.

1257

## 1258 **S5 Supplementary text for sensitivity analyses**

1259 This section provides estimates for the immigrant–native earnings gaps using alternative sample  
1260 and job definitions, and including alternative sets of covariates in our country-specific regression  
1261 models. These analyses serve both to assess the sensitivity of our results to changing model  
1262 specification for single countries and to inform comparability of our estimates across the countries  
1263 in our study, since the definition of some of our variables (e.g., the detail of our occupational  
1264 measures) differs between countries. These analyses are informed by recent work on model  
1265 uncertainty in the social sciences and the framework of multimodel estimation and specification  
1266 curve analyses (46, 47).

1267

### 1268 **S5.1 Sensitivity analyses for job-integrated sample and job definitions**

1269 In this section, we, first, assess whether our estimates of the relative role of sorting into industries,  
1270 occupations, and establishments versus within-job pay inequality change if we restrict our sample  
1271 only to individuals working in immigrant–native integrated job cells (i.e., we estimate all regression  
1272 models using only the sample of individuals in job cells where both non-migrant natives and  
1273 immigrants and/or children of immigrants are both observed). Second, we assess how the estimates  
1274 for within-job pay gaps differ if we define job cells (occupation–establishment) using more  
1275 coarsened measures of occupation since our countries vary in the level of granularity in  
1276 occupational codes. Third, for countries where we have information on both establishments and  
1277 firms (Denmark, France, Norway, Netherlands, Sweden, Spain), we estimate alternative models

1278 defining jobs as occupation–firm cells since only information on firms is available in Canada and  
1279 the United States.

1280  
1281 Figure S6 summarizes the relevant estimates using the basic adjustments model (Model 1) and the  
1282 within-job model (Model 5) for each country where the relevant sensitivity analysis can be tested.  
1283 We discuss the results for each of our sensitivity tests separately below. Tables S18–S22 report  
1284 coefficients and standard errors for the basic adjustment and the within-occupation and within-job  
1285 specifications compared to the results from the main analysis.

1286

### 1287 **S5.1.1 Sample restricted to immigrant–native integrated job cells**

1288 Sorting processes that lead immigrant and native background employees to disproportionately  
1289 work in different jobs might in some cases also lead to complete segregation at the job level (i.e.,  
1290 some jobs are occupied only by immigrants or children of immigrants while other jobs are only  
1291 occupied by natives). To address whether part of the contribution of labor market segregation to  
1292 the total immigrant–native earnings gaps (i.e., basic adjustments, Model 1) reflects the sorting of  
1293 immigrant and native background into jobs where only immigrants or natives are employed, we  
1294 estimate our models on samples that are restricted to immigrant–native-integrated jobs (i.e., at least  
1295 one worker of both immigrant and native background is present in at the job level for a consistent  
1296 sample across all five model specifications). Figure S4 presents the estimates from basic  
1297 adjustments model and the within-job model for the integrated job cell sample. Table S14 reports  
1298 the full set of estimates using the immigrant–native job-integrated sample.

1299  
1300 Figure S6 (Integrated job cells) shows that the basic adjustments estimates for immigrants tend to  
1301 be slightly smaller than the estimated immigrant–native earnings differentials. This implies that a  
1302 small part of the basic adjustments gaps in our main models reflect that immigrants in part are  
1303 sorted into lower-paying job cells without any native coworkers and natives into job cells with no  
1304 immigrant-background coworkers. The within-job pay gaps are identical in the main model and for  
1305 the job-integrated sample, since the samples in the main within-job model specification are also  
1306 restricted to workers in immigrant–native integrated job cells. These results suggests that sorting  
1307 into lower-paying jobs is slightly less important when restricting the sample to job-integrated cells  
1308 but the overall pattern is qualitatively similar to that reported from the main analysis.

1309

### 1310 **S5.1.2 Job definitions using coarsened occupational measures**

1311 In our primary specification, we follow standard conventions from the literature on within-job pay  
1312 gaps in referring to the within occupation–establishment unit estimate as the “within-job” estimate  
1313 (38, 48, 49). As noted above, the conceptualization of jobs as falling at the intersection of  
1314 occupations and establishments assumes coworkers in the same occupation–establishment unit are  
1315 hired to do “particular task[s] within a particular work group in a particular company or  
1316 establishment” ((40), p. 9). However, as noted by Petersen et al. (41): “There is a question as to



1317 what is the appropriate level of detail for occupational or job titles, because if they get too detailed,  
1318 the titles may just be indicators of wage levels rather than distinguishing the content of work  
1319 performed” (p. 203).

1320  
1321 In our main analyses, the level of granularity varies between the different countries in our sample.  
1322 We use detailed four or three digit occupational classification schemes in six out of our nine  
1323 countries (4-digit: Canada, Denmark, Germany, Norway, and Sweden; 3-digit occupational codes:  
1324 the United States); in the three remaining countries we use less precise measures since we only  
1325 have a sample of individuals observed within a particular establishment (for France and the  
1326 Netherlands we use two-digit occupational codes) or other data constraints (Spain). To assess  
1327 whether differences in the granularity of our occupational measurements are not driving our results  
1328 we estimate models using coarsened one-, two-, or three-digit occupational codes for the countries  
1329 where our main model specification relies on a more detailed measure of occupational codes.

1330  
1331 Figure S6 (Occupation, 1-digit; Occupation, 2-digit; Occupation 3-digit) summarizes the estimates  
1332 defining jobs at different levels of granularity, where the occupation–establishment cells are  
1333 defined using occupational codes at one-, two-, or three-digit level. The overall patterns indicate  
1334 that there are small differences in the estimated within-job estimates of immigrant–native pay  
1335 differences when jobs are measured using either coarsened one-digit or two-digit measures of  
1336 occupation in the occupation–establishment cells compared to when jobs (occupation–  
1337 establishment cells) are defined using the finer-grained (i.e., three-digit or four-digit) occupational  
1338 codes. The overall results indicate that there are relatively small differences in the estimated within-  
1339 job estimates of immigrant–native pay differences when jobs are measured using either coarsened  
1340 occupational measures or more finer-grained (e.g., four-digit) occupational codes. For Norway,  
1341 Germany, the Netherlands, the United States, Denmark, and Sweden, the differences in the within-  
1342 job estimates tend to be small for immigrants. However, the within-job gaps using one-digit  
1343 occupational measures are slightly larger in Germany and the United States. In Canada, the within-  
1344 job gap using one-digit occupations is considerably larger, but the within-job estimates for the two-  
1345 digit occupational job definition differ considerably less compared to the three-digit occupational  
1346 measure used in the main model specification.

1347  
1348 In France and the Netherlands, where we use a two-digit measure of occupations when defining  
1349 job cells, there are small differences in the estimates using one-digit occupations in the job cell  
1350 definitions. Within-job pay gaps may be upwardly biased due to the coarsened measures of  
1351 occupations in these countries. For the Netherlands, we obtained estimates based on a three-digit  
1352 occupational measure and they are close to identical to the estimates based on the two-digit measure  
1353 (these estimates are not reported here, but available upon request). In Spain, where we only have a  
1354 one-digit measure of occupations available we are not able to assess the sensitivity of occupational  
1355 granularity. As a result, our estimates of within-job pay gaps are likely to represent an upper-bound  
1356 measure of within-job pay differences.

1357  
1358 For children of immigrants, there are very small differences in the within-job pay differences  
1359 relative to natives regardless of whether job cells are defined using one-, two-, three- or four-digit  
1360 measures of occupational codes.

1361  
1362 Taken together, there results indicate that the estimated size of within-job pay gaps for both  
1363 immigrants and children of immigrants are relatively stable regardless of the level granularity of  
1364 the occupational measure used. Moreover, as also shown in Tables S15–S17, this indicates that  
1365 differences or the lack of differences in the estimated contribution of sorting across jobs and within-  
1366 job pay gaps to immigrant–native pay differences across countries does not reflect differences in  
1367 the granularity of our occupational measures in selected countries.

1368

### 1369 **S5.1.3 Adjustment for firms instead of establishments**

1370 In Canada and the United States our measure of employers relies on information on firms, which  
1371 can contain many separate establishments, whereas in the remaining seven countries we use  
1372 information on establishments (i.e., the actual sites of work). To explore the sensitivity of our  
1373 estimates to the use of firm identifiers instead of establishment identifiers, we re-estimated our  
1374 main model specifications using firm identifiers for the countries where information on both firms  
1375 and establishments was available (Denmark, France, Norway, Netherlands, Sweden, Spain) and  
1376 compared the within-job estimates using firm identifiers (i.e., occupation-firm cells) to our  
1377 preferred estimates using job definitions based on occupation–establishment cells.

1378

1379 Figure S6 (Occupation–firm job cells) summarizes the estimated within-job pay gaps for the  
1380 occupation-firm job cells for immigrants and children of immigrants in Denmark, France, Norway,  
1381 Netherlands, Sweden, Spain, as well as for Canada and the United States, where these are identical  
1382 to the results from the main model specification. Table S18 reports the exact coefficients, standard  
1383 errors, and comparisons with the main analysis.

1384

1385 For both immigrants and children of immigrants in Denmark, Norway, and Sweden, we see that  
1386 the within-job estimates using occupation-firm cells are almost identical to those obtained when  
1387 defining jobs using occupation–establishment cells. These estimates indicate that the within-job  
1388 immigrant–native pay gaps using occupation-firm cells are not upwardly biased compared to the  
1389 within-job estimates using occupational–establishment job cell definition. Although the actual  
1390 patterns might differ in Canada and the United States, the results from Denmark, France, Norway,  
1391 Netherlands, Sweden, and Spain suggest that the differences between the within-job pay gaps using  
1392 occupation–establishment and occupation–firm fixed effects may be relatively similar in size.  
1393 Nonetheless, the within-job immigrant–native pay gaps in Canada and the United States should be  
1394 treated as upper-bound estimates.

1395

1396 **S5.2 Sensitivity analyses for covariate adjustment and age restrictions**

1397 This section presents results where we explore the extent to which our estimates are sensitive to  
1398 various changes in the adjustment for covariates in the model specification of the country-specific  
1399 fixed regressions. In addition, we also assess changes in the estimates when including a broader  
1400 age range (18–70 years old) in our analytic sample.

1401  
1402 In Figure S7, we summarize estimates for the basic adjustments model (Model 1) and the within-  
1403 job model (Model 5) where we exclude adjustment for (a) educational attainment level, (b)  
1404 geographic region, (c) both educational attainment level and geographic region, or (d) age; include  
1405 workers in (e) a broader age, spanning from 18 to 70 years old; or include additional adjustment  
1406 for (f) seniority with the current employer or (g) whether the individual is employed in a full-time  
1407 or part-time contract. Exact coefficients and standard errors for all model specifications, as well as  
1408 comparisons of estimates with the main analysis, are reported in Tables S23–S29.

1409  
1410 Figure S7 documents substantial variation in the estimates for the total immigrant–native pay  
1411 differentials (basic adjustments model) for immigrants and children of immigrants depending on  
1412 covariate adjustments and the sample age restriction. For the within-job estimates of immigrant–  
1413 native pay differentials, there is much less variation across the various model specifications. In the  
1414 following, we comment on the estimates from each of the sensitivity analyses.

1415  
1416 **S5.2.1 No adjustment for education**

1417 For immigrants, Figure S7 (No education) shows that the total immigrant–native differences in  
1418 annual earnings are larger in the basic adjustments models where differences in educational  
1419 attainment level are not adjusted for (full results are reported in Table S23). This is the case for all  
1420 countries except in Canada and implies that part of the immigrant–native earnings gaps reflect that  
1421 immigrants, on average, have less education than natives in the remaining countries (Spain,  
1422 Norway, Germany, France, the Netherlands, the United States, Denmark and Sweden). For the  
1423 within-job models controlling for education makes little difference in the immigrant–native  
1424 earnings gaps, suggesting that the role of education is primarily to sort immigrants and natives into  
1425 different jobs.

1426  
1427 For children of immigrants, we see a similar but less pronounced pattern of larger immigrant–  
1428 native earnings gaps in the basic adjustments model that do not include controls for education. As  
1429 with immigrants, this pattern is found for all countries (Norway, Germany, Netherlands, Denmark,  
1430 and Sweden) except for Canada, where the immigrant–native gap is reversed to a small immigrant  
1431 advantage when the model does not adjust for education. For the within-job models we again see  
1432 that the immigrant–native differences in annual earnings are very similar with and without  
1433 adjustments for education.

1434

1435 **S5.2.2 No adjustment for geographic region**

1436 Our estimates in the main analysis adjust for geographic region in order to compare immigrants  
1437 and children of immigrants to native workers in the same local labor market. As immigrants,  
1438 children of immigrants, and natives may be differentially sorted across regions with different  
1439 average levels of earnings (e.g., central urban areas with higher average earnings versus rural areas  
1440 with lower earnings levels), we assess the sensitivity of our results to this issue in Figure S7 (No  
1441 geography) and Table S24. These models allow us to compare the immigrant–native earnings gaps  
1442 from models that do and do not include controls for the geographic region of employment.

1443  
1444 For immigrants, Figure S7 (No geography) shows slightly smaller immigrant–native differences in  
1445 annual earnings in the basic adjustments model where we adjust for geographic region. This  
1446 suggests that immigrants, on average, concentrate in geographic regions with higher earnings levels  
1447 compared to natives. In contrast, the within-job differences in earnings between immigrants and  
1448 natives are identical or very similar to the main analysis when there is no adjustment for geographic  
1449 region. The largest differences between the within-job estimates with and without control for  
1450 geographic region are found for Canada and the United states, where employers are measured using  
1451 firm identifiers and not establishments. Since firms, except for single-establishment firms, include  
1452 several establishments, this implies that jobs can refer to employees with the same occupation  
1453 working in different establishments at different geographic locations, and it is therefore not  
1454 surprising that adjustment for geographic region will reduce the within-job immigrant–native  
1455 difference in earnings.

1456  
1457 For children of immigrants, Figure S7 (No geography) shows a similar pattern, with smaller gaps  
1458 in annual earnings relative to natives in the basic adjustments model without control for geographic  
1459 region. As above, this implies that on average children of immigrants are located in areas with  
1460 higher levels of earnings than natives. For the within-job gaps, the estimated immigrant–native  
1461 differences in annual earnings are more or less identical in the models with and without geographic  
1462 adjustments. This is also the case for children of immigrants in Canada, where jobs are defined as  
1463 occupation-firm cells.

1464  
1465 **S5.2.3 No adjustment for education and geographic region**

1466 Since the estimates from models that separately do not adjust for education and geography differ  
1467 in opposite directions relative to our main results, we also present results where we do not adjust  
1468 for both educational attainment and geographic region. Figure S7 (No education or geography)  
1469 presents these results for the basic adjustments model and the within-job model. Table S25 presents  
1470 the full set of results from all model specifications.

1471  
1472 For immigrants, Figure S7 (No education or geography) shows a less consistent pattern across  
1473 countries for the basic adjustments model. For Norway, France, the Netherlands, and Sweden, the

1474 basic adjustments model that does not control for education and geography provides results that  
1475 are similar to those from the model specification that do control for education and geography (i.e.,  
1476 in these countries differences are up to about .01 log point). For Spain, Germany, Denmark, and  
1477 the United States, the model specification without adjustment for education and geography  
1478 provides estimates that are between .04 and .08 log points larger than the estimates in the main  
1479 results. In Canada, the immigrant–native differences in annual earnings in the basic adjustments  
1480 model without controls for education and geography are considerably smaller (about .15 log points)  
1481 than the corresponding estimates with adjustment for education and geography.

1482  
1483 For the within-job estimates, the differences between the model specifications with and without  
1484 adjustment for education and geography tend to be very small for Spain, Norway, Germany,  
1485 France, the Netherlands, and Sweden (i.e., the differences in estimates range from zero to .006 log  
1486 points). For Denmark, the within-job immigrant–native gap in the model specification without  
1487 adjustments is .015 log points larger than main results. For Canada and the United States, not  
1488 adjusting for geography and education has a nontrivial influence on the estimated within-job  
1489 immigrant–native gaps, producing gaps that are .035 (Canada) and .050 (United States) log points  
1490 smaller than the estimates reported in the main model.

1491  
1492 For children of immigrants, Figure S7 (No education or geography) also shows a less consistent  
1493 pattern across countries for the basic adjustments model. For Germany, the Netherlands, Denmark  
1494 and Sweden, the differences in the estimated immigrant–native gaps in annual earnings in the basic  
1495 adjustments are relatively small and range between .005 (Germany) and .024 (Denmark). For  
1496 Canada, there is .129 log point difference in the models with and without adjustment for education  
1497 and geography, and the model without adjustments shows that children of immigrants have .11 log  
1498 points higher annual earnings compared to non-migrant natives. For Norway, the immigrant–native  
1499 gap in annual earnings is .05 log points smaller in the model without control for geography and  
1500 education compared to the estimates in the main results with adjustments for education and  
1501 geography. Examining the within-job estimates, we find that the differences in the estimated  
1502 immigrant–native differences in annual earnings in the models with or without adjustment for  
1503 education and geography are very small—ranging between zero (Germany) and .013 (Canada) log  
1504 points.

1505  
1506 Overall, these estimates show that the estimates from the basic adjustments model are relatively  
1507 sensitive to whether or not adjustments for education and geography are included. However, at the  
1508 within-job level, where we compare immigrants, children of immigrants, and natives with the same  
1509 occupation working for the same employer, accounting for education and geography makes little  
1510 difference in most countries, and in the two cases where they do—immigrants in Canada and the  
1511 United States—they show that the within-job estimates from our main analysis constitute upper-  
1512 bound estimates of the immigrant–native differences in earnings. This is likely due to correction

1513 for geographic differences between workers in the same firm who are employed in establishments  
1514 in different geographic locations.

1515

#### 1516 **S5.2.4 No adjustment for age**

1517 Figure S7 (No age) presents results for the prime-age worker sample (i.e., workers aged 25–60  
1518 years) used in the main analysis without linear and quadratic adjustment for age. Table S26  
1519 provides the full set of estimates from this sensitivity analysis.

1520

1521 For immigrants, the estimated immigrant–native gaps are larger in the basic adjustments model  
1522 without control for age than in the main analysis for some countries (Spain, Germany, Denmark,  
1523 and Sweden), similar in other countries (Norway, France, Netherlands), and smaller for some  
1524 countries (Canada and the United States). For the within-job gaps, the differences between the  
1525 estimates from the main analysis and the models without age adjustments are considerably smaller.  
1526 However, the largest gaps are once again found for Canada and the United States, where the gaps  
1527 are about .03–.04 log points smaller in the models not adjusting for age.

1528

1529 For children of immigrants, the estimated earnings gaps are substantially larger (ranging between  
1530 .06 to .17 log points larger) in the models not adjusting for education in Norway, the Netherlands,  
1531 Denmark, and Sweden. For Canada and Germany there are small differences between the estimated  
1532 gaps from the main analysis and the estimates from models without age adjustments. For the  
1533 within-job estimates, the estimated immigrant–native gaps also tend to be considerably larger  
1534 (ranging between .02 to .12 log points larger) than the estimated gaps in the main analysis in  
1535 Denmark, the Netherlands, Norway, and Sweden. In the Canada and Germany, there are very small  
1536 differences between the within-job immigrant–native gaps with and without adjustment for age.

1537

1538 The substantial differences between the results from the main analysis and the models that do not  
1539 adjust for age among children of immigrants are likely to reflect the young age distribution found  
1540 in the populations of native-born children of immigrants in many host countries. If we then do not  
1541 adjust for age differences relative to natives, we will compare children of immigrants to natives  
1542 that, on average, are older workers and who have higher earnings due to increasing earnings levels  
1543 with lifecycle career progression.

1544

#### 1545 **S5.2.5 Sample with broader age range**

1546 Figure S7 (Broader age range) presents results for the sample including workers in a broader age  
1547 range (18–70 years). This model includes the same linear and quadratic adjustment for age as in  
1548 the main analysis. Table S27 presents the full set of results for the models using this broader age  
1549 sample. Overall, the estimated immigrant–native earnings gaps in the sample with the broader age  
1550 range is relatively comparable to those reported in the main analysis.

1551

1552 For immigrants, the estimated immigrant–native gaps in annual earnings in the basic adjustments  
1553 model are very similar or slightly smaller than the estimates from the main analysis for all countries.  
1554 The largest differences in the estimated immigrant–native gaps are .03–.04 log points (Canada and  
1555 Spain). For the within-job estimates, the estimated immigrant–native gaps using the sample with  
1556 the broader age range tend to be similar to the estimates from the main analysis. The largest  
1557 differences are found for the Netherlands and Spain, where the estimated within-job earnings gaps  
1558 are .028 and .014 log points, respectively, smaller than the estimates reported in the main analysis.  
1559

1560 For children of immigrants, the differences in the estimated immigrant–native gaps in annual  
1561 earnings for the basic adjustments model using the broader age range and the main analysis are  
1562 relatively modest, ranging from about .03 log points larger in Norway to about .02 log points  
1563 smaller in the Netherlands. For the within-job estimates, the estimated earnings gaps relative to  
1564 natives for the broader age range differ by up to .01 log points for Canada, Denmark, Germany, the  
1565 Netherlands, Norway, and Sweden.

1566

#### 1567 **S5.2.6 Adjustment for seniority**

1568 Our main analysis does not control for workplace seniority, but a concern is that differences in  
1569 seniority between immigrants and children of immigrants relative to native workers can upwardly  
1570 bias the estimated immigrant–native earnings gaps. To address this concern, we estimated models  
1571 adjusting for seniority (number of years employed in the current establishment or firm) for all  
1572 countries. Figure S7 (Seniority) presents the results where we include adjustment for seniority  
1573 using a categorical measure of employment (first year of employment, 2–5 years of employment,  
1574 6–10 years of employment, and 11 or more years of employment). Table S28 presents the full set  
1575 of estimates from all model specifications.

1576

1577 For immigrants, the results from the basic adjustments model show that controlling for workplace  
1578 seniority reduces the immigrant–native earnings gaps substantially in Spain (.166 log points),  
1579 Canada (.085 log points), and Germany (.069 log points) when compared to the main analysis.  
1580 There are smaller reductions (e.g., from .01 to about .04 log points) in Denmark, France,  
1581 Netherlands, Norway, Sweden, and the United States. For the within-job model, the differences in  
1582 the estimated immigrant–native earnings gaps between the main analysis and the models adjusting  
1583 for seniority are considerably smaller. However, in Canada, the Netherlands, and Spain, there are  
1584 still nontrivial reductions in the within-job gap estimates (e.g., from about .04 to .06 log points)  
1585 after adjustment for seniority. For the remaining countries, the within-job immigrant–native  
1586 earnings gaps are reduced by about .01 log point or less.

1587

1588 For children of immigrants, there are considerably smaller differences between models that do and  
1589 do not adjust for workplace seniority. The differences in the earnings gaps from the basic  
1590 adjustment models with and without seniority range from zero to about .02 log points. For the

1591 within-job gaps, the differences are even smaller and the largest differences between the main  
1592 analysis and the models with control for seniority is found for the Netherlands (.015 log points)  
1593 and is close to zero for most of the remaining countries.

1594

### 1595 **S5.2.7 Adjustment for part-time versus full-time employment status**

1596 Differential access to employment in full-time and part-time jobs may be an important source of  
1597 immigrant–native differences in annual earnings. To address sensitivity to this issue, we estimate  
1598 models where the basic adjustments model controls for binary indicator of part-time versus full-  
1599 time work. For the within-job model, we interact this binary indicator with each occupation–  
1600 establishment unit. This implies that we include separate fixed effects for workers in part-time and  
1601 full-time employment for each job cell. Figure S7 (Fulltime) summarizes the results from the basic  
1602 adjustments and within-job models after adjusting for parttime versus fulltime employment. Table  
1603 S29 reports the full results after adjusting for part- and full-time employment states, where we  
1604 include separate fixed effects for workers in parttime and fulltime employment also for each  
1605 industry, occupation, and establishment.

1606

1607 For immigrants, the basic adjustments models have relatively similar immigrant–native earnings  
1608 gaps (e.g., changes ranging from approximately .01–.02 log points) regardless of whether or not a  
1609 control for full-time employment is included in the model in most countries (Canada, Denmark,  
1610 Germany, France, the Netherlands, and the United States). In Norway and Spain, the difference is  
1611 somewhat larger at about .04 log points. For Sweden, we lack information on part-time and full-  
1612 time work in the dataset used in the main analysis. For the within-job pay gaps, adjusting for part-  
1613 vs full-time jobs matters less in all countries, with changes in coefficients ranging from about zero  
1614 log points (Germany, Norway and the United States) to .011 log points (the Netherlands).

1615

1616 For children of immigrants, adjusting for full-time employment results in relatively small changes  
1617 in the estimated gaps for both the basic adjustments and the within-job models. For the basic  
1618 adjustments model, the estimate of the immigrant–native earnings gaps changes between .003 log  
1619 points (Germany) and .020 log points (Norway). For the within-job model, changes in the estimated  
1620 immigrant–native earnings gaps are very small and, except the Netherlands, below .01 log points.  
1621 For the Netherlands, however, the within-job estimate from the full-time analysis differs by .072  
1622 log points from the main analysis, so that once we account for differences in part- vs full-time  
1623 work, there are large within-job earnings advantage for children of immigrants (.079 log points)  
1624 relative to natives.

1625

## 1626 **S6 Supplementary text for description of country-specific data**

### 1627 **S6.1 Canada**

1628 Our analyses use the linkage between Canadian census long-form micro data files and the  
1629 Longitudinal Worker File (LWF). Information on individuals' immigration status, educational



1630 level and the occupation of their main job comes from the 2016 census (a mandatory census sent  
1631 to one in four households, with a response rate of 98 percent). The LWF is an administrative file  
1632 that contains basic demographic characteristics (age, gender and geographic region) and person-  
1633 job information for all workers who were issued a T4 form (Statement of Remuneration Paid) by  
1634 their employer in a given year. All employers in Canada are required to complete the T4 forms for  
1635 their employees on an annual basis. For this study, the LWF provides the annual earnings of a job  
1636 and the identifier of the employer (firm). The LWF is linked to Census file in the corresponding  
1637 income year (e.g., the income year for the 2016 census is 2015, so the 2016 census is linked with  
1638 the 2015 LWF) using the linkage keys developed by Statistics Canada.

1639  
1640 Immigration status is based on the country of birth of individuals and their parents. Immigrants are  
1641 those who are born in a foreign country and admitted to Canada as permanent residents. Children  
1642 of immigrants refer to individuals born in Canada with two foreign-born parents, and their country  
1643 of origin refers to their mother's country of birth. Individuals who are born in Canada with at least  
1644 one Canadian-born parent are assigned to the Canadian-born majority group. Based on country of  
1645 origin, immigrants and children of immigrants are grouped into different world regions of origin.  
1646 Additional analyses also use information on year of immigration and year of birth to further  
1647 differentiate immigrants into childhood immigrants (who immigrated before age 18), established  
1648 immigrants (10+ years since immigration) and recently arrived immigrants (<10 years since  
1649 immigration).

1650  
1651 Education is based on individuals' highest certificate, diploma or degree. It is coded into five levels:  
1652 less than high school, high school graduation, non-university certificate or diploma, bachelor's  
1653 degree, graduate degree. The occupation codes are based on Canada's National Occupational  
1654 Classification at the three-digit level, with about 140 categories. Industry of the firm is measured  
1655 using three-digit codes from North American Industrial Classification (NAICS2017), with about  
1656 100 categories.

1657  
1658 The geographic units for workers' place of work are census metropolitan areas (CMAs, large urban  
1659 areas) or census agglomerations (CAs, small urban areas) for urban areas, and four zones of rural  
1660 areas (strong metropolitan influenced zone, moderate metropolitan influenced zone, weak  
1661 metropolitan influenced zone, and weak metropolitan influenced zone). There were 152 CMAs and  
1662 CAs in 2016.

1663  
1664 The data files used for this project can be accessed at Statistics Canada upon receipt of a security  
1665 check and authorization from Statistics Canada. Figure S8 and Table S30 report results from the  
1666 separate regressions used in the main analysis for Canada for the immigrant-native differences in  
1667 annual earnings for all world regions of origin combined and separately by world region of origin.

1668

## 1669 **S6.2 Denmark**

1670 Our analyses use data from Statistics Denmark's registry-based Labor Force Statistics (RAS, *Den*  
1671 *Registerbaserede Arbejdsstyrkestatistik*) and the Integrated Database for Labor Market Research  
1672 (IDA, *Den Integrerede Database for Arbejdsmarkedsforskning*) for information on earnings, part-  
1673 versus full-time status, municipality of the establishment, industry, occupations, and  
1674 establishments. Occupation is based on Statistics Denmark's four-digit version of ISCO-08 called  
1675 DISCO. Establishment municipality refers to the physical location of the establishment. Industry  
1676 is based on the 4-digit NACE classification linked to establishments. The earnings measure is  
1677 calculated by taking the total annual earnings (reported directly by employers to tax authorities)  
1678 excluding fringe benefits. The part- vs. full-time measure is an indicator variable that takes the  
1679 value 1 if workers are employed at least 27 hours per week. These data are collected once per year  
1680 in November and provide information on all employment spells in both the public and private  
1681 sector. Information on employment spells comes from employer-reported tax records, which  
1682 distinguish primary, secondary, and tertiary jobs. As tertiary and secondary jobs are associated with  
1683 poorer data coverage, we exclude them from our analyses, and use data on primary jobs with  
1684 earnings that are greater than one-sixth of the average earnings reported for Denmark in 2019 by  
1685 the OECD Labor Force Statistics. Our measure of hourly wages is derived from the LONN variable  
1686 FORTJ\_STAND which is a standardized hourly wage measure excluding wages during holidays  
1687 and illness as well as overtime. This variable is available for all employees in the public sector but  
1688 in the private sector reporting is only mandatory for establishments with 10 or more employees and  
1689 so the data is weighted by Statistics Denmark to adjust for this bias.

1690  
1691 Information about immigrant status, country of origin, gender, age, and municipality of residence  
1692 is based on records from the Central Population Register (BEF, *Befolkningsregisteret*).  
1693 Immigration status is based on the country of birth of individuals and their parents. Immigrants are  
1694 those who are born in a foreign country. Children of immigrants refer to individuals born in  
1695 Denmark where neither parent are both (a) a Danish citizen and (b) born in Denmark. Country of  
1696 origin is defined using mother's information when available, using the mother's country of birth.  
1697 If this is Denmark, mother's citizenship country is used. When mother's information is unavailable  
1698 information from non-maternal parent is used. When no parental information is available, country  
1699 of origin is defined using the individual's own information. If the individual is an immigrant, it is  
1700 assumed that the country of origin is the country of birth. If the individual is a child of an immigrant,  
1701 it is assumed that the country of origin is the citizenship country. In additional analyses, we use  
1702 information on year of immigration and year of birth to further differentiate immigrants into  
1703 childhood immigrants (who immigrated before age 18), established immigrants (10+ years since  
1704 immigration) and recently arrived immigrants (<10 years since immigration).

1705  
1706 Information about education refers to each individual's highest level of educational qualifications  
1707 in each year based on annual records from the National Students Register (KOTRE, *Det*  
1708 *Komprimerede Elevregister*). Information on educational level is measured using five categories

1709 (less than completed upper-secondary education; completed upper-secondary education; short  
1710 university degree, BA or equivalent; MA degree or equivalent; PhD degree or equivalent) and a  
1711 category for missing information.

1712  
1713 Data similar to those used for this project can be accessed at Statistics Denmark upon receipt of  
1714 proper authorizations and after paying the relevant fees. Figure S9 and Table S31 report results  
1715 from the separate regressions used in the main analysis for Denmark for the immigrant–native  
1716 differences in annual earnings for all world regions of origin combined and separately by world  
1717 region of origin.

1718

### 1719 **S6.3 France**

1720 Our analyses for France use two databases. The first is the BTS (*Base Tous Salariés*) wage dataset  
1721 based on firms' yearly social security declaration files (*Déclaration Annuelle de Données Sociales*  
1722 or DADS – hence, BTS was formerly known as DADS). The second is the PTS-EDP (*Panel Tous*  
1723 *Salariés - Échantillon Démographique Permanent*), a sample of the population combining French  
1724 social security register and French Census data. The BTS data consist of population-level  
1725 observations of private sector workers, plus all hospital and local civil service workers; state civil  
1726 servants are included beginning 2009. The PTS-EDP data consists of a smaller representative  
1727 sample of the working population working both in the public and the private sectors. For some  
1728 workers born on some random days of the year, information is selected from the full population  
1729 registers. This sample represents 4% of the workers after 2002.

1730

1731 In the BTS data we only know if the worker was born in France or abroad and we lack information  
1732 on workers' education. However, the linked Census information in the PTS-EDP Panel details  
1733 workers' area of birth (in 10 categories) and workers' education (in 7 categories). Information on  
1734 the country of origin is a good, but not perfect, proxy of migrant origin. We are not able to  
1735 distinguish French expatriates' children born abroad and French citizens repatriated from former  
1736 French colonies (mainly, but not always, from Algeria) from the immigrant population. However,  
1737 these categories represent a relatively small share of the foreign-born population (about 13%). In  
1738 the PTS-EDP Panel, we combine the country of birth categories to proxy those used in this paper:  
1739 our native category consists of individuals born in (a) France; our North America and Other  
1740 Western category combines the categories (b) Spain, Italy, Portugal; (c) Other Western European  
1741 countries; (d) Eastern Europe and Balkans; and (e) Ex-USSR; our Asia category combines (f)  
1742 Vietnam, Laos and Cambodia; our Middle East and North Africa category includes (g) Algeria,  
1743 Morocco, Tunisia, and (h) Other Asian countries, primarily immigrants from the Middle East; our  
1744 Sub-Saharan Africa category includes (i) Other African countries; and our Latin America category  
1745 includes (j) America and Oceania. Information on the parents' country of birth is too incomplete  
1746 and partial for reliable use, thus information on children of immigrants is not used. In additional  
1747 analyses, we use information on year of immigration and year of birth to further differentiate

1748 immigrants into childhood immigrants (who immigrated before age 18), established immigrants  
1749 (10+ years since immigration) and recently arrived immigrants (<10 years since immigration).

1750  
1751 We compute hourly wage using employees' annual gross wages and hours information, taking into  
1752 account compulsory overtime bonuses. For instance, overtime hours between 35 hours and 43  
1753 hours per week get paid at least 25 percent more, and hours above 43 hours per week get paid 50  
1754 percent more. Person-job matches that report earnings less than half of the yearly minimum wage  
1755 are excluded. This leads to the exclusion of approximately 33 percent of job spells and 20 percent  
1756 of individuals, mostly very short-term job spells.

1757  
1758 Our measure of occupation is the four-digit *Nomenclature des Professions et Catégories Socio-*  
1759 *Professionnelles* (CSP), which contains approximately 400 unique occupational codes. For the BTS  
1760 register population level we use the 4-digit occupation codes, and for the smaller PTS-EDP panel  
1761 we use the 2-digit occupation codes (30 categories) to avoid issues with data sparsity for our within-  
1762 job (establishment–occupation) comparisons.

1763  
1764 The industry of the establishment is measured using four-digit codes from the Statistical  
1765 Classification of Economic Activities in the European Community (NACE-08), which  
1766 differentiates about 400 detailed industries. We also include information geographic regions using  
1767 the municipality of the establishment. In the smaller PTS-EDP panel, we aggregate geographical  
1768 information at the county level (there are 36,000 municipalities and 3,000 counties in France).

1769  
1770 Access to the DADS data can be obtained from the CASD dedicated to researchers authorized by  
1771 the French *Comité du Secret Statistique*. Figure S10 and Table S32 report results from the separate  
1772 regressions used in the main analysis for France for the immigrant–native differences in annual  
1773 earnings for all world regions of origin combined and separately by world region of origin (in the  
1774 PTS-EDP panel sample we use two-digit CSP occupational codes). Table S33 report corresponding  
1775 results for the full DADS social security register (using four-digit CSP occupational codes), where  
1776 information on country of birth and education is not available.

## 1777 1778 **S6.4 Germany**

1779 Our analyses use customized administrative data, combining records from the IAB Establishment  
1780 Panel (IAB BP 9319 v1; which samples around 15,500 establishments across 10 size groups and  
1781 19 industries classes each year) with complete data of the Integrated Employment Biographies (IEB  
1782 V15.00.00-201912) of the Federal Employment Agency. For every sampled establishment we  
1783 merge employees' complete employment and unemployment histories since 1975 for West  
1784 Germany and 1993 for East Germany of all employees who have worked for at least one day in the  
1785 establishment during the year it was sampled.

1786

1787 The population of the IAB Establishment Panel consists of all establishments with at least one  
1788 employee liable to social security contributions as of 30 June of the previous year. The sampling  
1789 frame is provided quarterly by the Federal Employment Agency (BA establishment file) and  
1790 includes approximately two million establishments in East and West Germany, which notify the  
1791 social security agencies of their employees. The sample for the IAB Establishment Panel is drawn  
1792 from the establishment file for 30 June of the previous year and is stratified by the size of the  
1793 establishment, sector and federal state (16 states, 19 sectors, and 10 establishment size classes)  
1794 according to the principle of optimum stratification. Accordingly, large establishments, small  
1795 federal states, small industries, and the manufacturing industry in East Germany, are  
1796 overrepresented. We take the sample stratification into account by using cross-sectional weights  
1797 that are proportional to the numbers of establishments and employees.

1798  
1799 We use the 2017 wave of the IAB Establishment Panel and merge individual administrative data  
1800 (Integrated Employment Biographies, IEB V15.00.00-201912) to the sample. For all  
1801 establishments in our sample, we obtain the complete employment and unemployment histories of  
1802 all workers subject to social security contributions who have been employed in one of the sampled  
1803 establishments for at least one day in 2017. The basis for the data is the integrated notification  
1804 procedure for health, pension, and unemployment insurance, which came into effect in 1973 and  
1805 was extended to cover Eastern Germany in 1991. Employers are required to submit notifications  
1806 to the responsible social security agencies concerning all their employees covered by social security  
1807 at least once a year. Thus, our data covers the approximately 80 percent of the workforce, but  
1808 excludes civil servants (*Beamte*) and self-employed. For our analyses we keep regularly employed  
1809 and thus for example exclude marginally employed (currently those earning less than 450 Euros  
1810 per month) or people in vocational training. The data contain no information on the hours worked,  
1811 but differentiate between full- and part-time work, with part-time employees defined as those  
1812 working 18 hours or less.

1813  
1814 Occupation is based on a German version of ISCO-08 (*Klassifizierung der Berufe KldB2010*),  
1815 which is fully aligned with ISCO-08 four-digit occupations. Industry is measured using 3-digit  
1816 German industry codes that mirror the NACE Rev-2 codes (w08\_3). The source of the information  
1817 is the official classification of the Federal Employment Agency (BA). Geographic region is  
1818 measured using the county codes of the establishment (ao\_kreis).

1819  
1820 To improve the data quality for educational qualifications, we correct the data according to the  
1821 “Combined Source Correction” (CSC) method, which uses an individual’s highest schooling and  
1822 qualification degrees by not allowing educational qualifications to change to a lower degree over  
1823 time. Education is measured using information on the highest obtained degree, which distinguishes  
1824 between three categories (less than completed upper-secondary education; completed upper-  
1825 secondary education; university degrees, including BA degrees, MA degrees, and PhD degrees or  
1826 equivalent), and a category for individuals without information on formal education.

1827  
1828 In the IEB, earnings information is top coded according to the social security contributions limits.  
1829 We use interval regressions to predict the right censored values and add an error term. We use  
1830 gender, age and a non-linear age term, part-time and full-time information, qualification, and  
1831 nationality to impute the wages. The data do not include hourly wages, but we calculate total yearly  
1832 earnings by summing the earnings for all employment spells in 2017. The total earnings per spell  
1833 are calculated by multiplying the daily wages by the number of consecutive days employed in a  
1834 given establishment. These can be establishments in the BP sample or, if an employee in one of the  
1835 sampled establishments changes their workplace, can be from a different establishment. For  
1836 multiple part-time spells within the same establishment or in multiple sampled establishments (.3  
1837 percent of the observations), we randomly choose one spell.

1838  
1839 As social security data in Germany usually does not include information on migration status, we  
1840 use different operationalizations to identify immigrants and children of immigrants. We define all  
1841 employees who hold a non-German nationality upon their first observation in the German social  
1842 security data as immigrants. In the German context, nationality has been used before to proxy  
1843 migration status. Using nationality as an indicator for immigrant status works comparably well in  
1844 the German context because before December 2014 Germany made the acquisition of their  
1845 citizenship via naturalization dependent on the applicant's release from their previous nationality  
1846 (although some exceptions apply). People whose nationality is non-German upon their first  
1847 observed spell in the social security data could theoretically also be second or third generation  
1848 immigrants. In 2016, approximately 24 percent of second or third generation immigrants did not  
1849 have a German nationality. However, this number includes people of all ages and thus persons  
1850 under the age of 23, at which age residents with dual citizenship had to decide for one or the other  
1851 nationality prior to December 20, 2014. Moreover, the higher incentives to obtain a German  
1852 citizenship for employees suggests that this number is smaller in our sample.

1853  
1854 We define employees as children of immigrants if either (a) their first name indicates a less than 1  
1855 percent probability of being German and they do not have German nationality in their first  
1856 observation in the German social security data (i.e., their name suggests that they are not native  
1857 and they are not themselves an immigrant) or (b) if they held German nationality in their first  
1858 observation in the German social security data, but a non-German nationality in 2017. The latter  
1859 classification should capture people with a dual citizenship, who at some point opt for their non-  
1860 German nationality. To assess the name-based origin, we use an API that provides access to a  
1861 name-classification algorithm that is based on word-embeddings procedures (NamePrism) (50).  
1862 The algorithm is trained on approximately 70 million names and assigns probabilities of the  
1863 regional origin to every requested name based on closeness of the names to the original names and  
1864 homophily in communication patterns that informs embeddings of names. We implement a number  
1865 of data protection measures to guarantee that API requests do not reveal whether first names

1866 originated from social security data or from names that we scraped from various online sources.  
1867 The procedure was accepted by the ethics committee of the Institute for Employment Research.

1868  
1869 For both immigrants and children of immigrants, we define similar aggregate regions of origin.  
1870 The basis is set through an aggregate taxonomy provided by NamePrism, which allows us to  
1871 differentiate between Germany, Greater Middle East, Africa, South Asia and East Asia, Hispanic,  
1872 Celtic/English, and Other. This grouping of world regions of origin corresponds in large part to the  
1873 grouping used for the remaining countries in this study, where direct measures of ego country of  
1874 birth and parental country of birth are available.

1875  
1876 To test the validity of the name-based measures, we selected nationality-groups based on  
1877 citizenship in the administrative data and examined the likely origins based on NamePrism. For  
1878 those with a German nationality, the probability of the person's origin based on their name on  
1879 average clearly indicates German (with an average probability of .64). For those with a nationality  
1880 from the Greater Middle Eastern region, the probability distribution of the person's origin based  
1881 on their name, on average clearly indicates Greater Middle East (with an average probability of  
1882 .25) whereas this probability is .02 or less for all other grouped nationalities including German.

1883  
1884 The classification of immigrants and children of immigrants described above is based on multiple  
1885 assumptions as migration status cannot directly be observed in the administrative data. We thus  
1886 compare the percent of immigrants in our data to data from the German Mikrozensus. For 2017,  
1887 the official percentages among those in the labor force are 78.3% natives (85.2% in our sample),  
1888 17.9% immigrants (10.4% in our sample), and 3.8% children of immigrants (4.4% in our sample).  
1889 Identifying immigrants based on their nationality at their first spell seems to underestimate the size  
1890 of the group of immigrants. This is likely the case because of (a) naturalizations before entering  
1891 the labor market or (b) naturalizations before 1975 in West Germany or 1993 in East Germany.  
1892 Indeed, only about 30 percent of the first-generation immigrants in our sample have a German  
1893 nationality in 2017, whereas the share should be closer to 50 percent based on the Mikrozensus.  
1894 Because some of the immigrants are falsely categorized as Germans without migration background,  
1895 the differences between immigrants and Germans without a migration background are likely  
1896 underestimated.

1897  
1898 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.  
1899 Data similar to those used for this project can be accessed at Institute for Employment Research  
1900 (IAB) of the German Federal Employment Agency (BA) Nuremberg upon receipt of proper  
1901 authorizations Figure S11 and Table S34 report results from the separate regressions used in the  
1902 main analysis for Germany for the immigrant-native differences in annual earnings for all world  
1903 regions of origin combined and separately by world region of origin.  
1904

1905

1906

## 1907 **S6.5 Netherlands**

1908 Our analyses use the 2019 Dutch Labor Force survey (*Enquete Beroepsbevolking*, EBB) linked to  
1909 municipal population registers (*Gemeentelijke Basisadministratie*, GBA), educational registers,  
1910 wage registers (*Polisadministratie*, POLISBUS) and company registers (*Algemeen Bedrijven*  
1911 *Register*, ABR) maintained and provided by Statistics Netherlands.

1912

1913 We cannot analyze the full population of the Netherlands in our main analyses as occupation is  
1914 only available from the EBB surveys. The EBB is sampled from the Dutch population 16 years or  
1915 older. It has a quarterly rotating panel design: in each quarter, it surveys a roughly one percent  
1916 sample of the Dutch population and administers a follow-up survey to the respondents who  
1917 participated in the previous quarter. Each individual stays the panel for a maximum period of 12  
1918 months. The sampling method of the EBB is a two-step stratified household sample: in the first  
1919 step a stratified sample of municipalities was taken, followed by a systematic random sample of  
1920 addresses within each municipality. As the Central Bureau of Statistics draws the household sample  
1921 for the EBB from the municipal registers, almost all members of EBB households are matched to  
1922 register data (in 2019 the match rate was 94%). Following the exclusion of employees aged younger  
1923 than 18 and older than 70, and workers with marginal employment, the sample of employees with  
1924 occupation information was 56,829 (EBB occupation sample). The full sample that contains all our  
1925 study variables except occupational data has 8,140,057 observations (full registry sample).

1926

1927 Wage information is obtained from wage register that provides data on monthly salaries and  
1928 contractual working hours for jobs in a given year. Wages are calculated using the contractual  
1929 yearly wage from a given job excluding bonus payments, cash benefits, and overtime pay, divided  
1930 by the number of hours worked to arrive at hourly base wage. Earnings are measured with the total  
1931 cash earnings which include annual bonus payments and overtime pay divided by the number of  
1932 months employed in a given job to adjust for variation in job spells (e.g., job changes and seasonal  
1933 work). The wage register also includes information that allows us to identify employers.

1934

1935 The municipal register linked to the EBB contains complete population information on country of  
1936 birth of residents and their parents, as well as gender and age. Immigration status is based on the  
1937 country of birth of individuals and their parents. Immigrants are those who are born in a foreign  
1938 country. Children of immigrants refer to individuals born in the Netherlands with two foreign-born  
1939 parents, and their country of origin refers to their mother's country of birth. Individuals who are  
1940 born in the Netherlands with at least one Dutch-born parent are assigned to the Dutch-born majority  
1941 group.

1942

1943



1944 The EBB measures occupations using ISCO 2008 codes. We used the 2-digit version for our main  
1945 analyses, as more detailed measures were not feasible due to limited sample sizes within  
1946 establishments. When individuals have more than one occupation code for a primary job recorded  
1947 (e.g., they change jobs during the survey window), we use information from their first recorded  
1948 occupation.

1949  
1950 Our measure of education (ISCED 2011) is gathered from the digital administration of educational  
1951 institutions for recent cohorts of graduates, supplemented by self-reported education data from the  
1952 EBB for older cohorts. In the occupation sample, we have education information for 99.2% percent  
1953 of workers. The full sample contains education information for 71 % of all Dutch workers. We  
1954 coded missing on education with a separate category in the analyses.

1955  
1956 The industry of the establishment is obtained from the ABR and measured using four-digit codes  
1957 from the Statistical Classification of Economic Activities in the European Community (NACE-08),  
1958 which differentiates about 400 detailed industries. We also include information geographic regions  
1959 using the municipality of the establishment.

1960  
1961 The household-based sample results in the underrepresentation of smaller and relatively segregated  
1962 establishments by immigration status which could bias the results (see (38) for a more detailed  
1963 discussion on potential biases when estimating within-workplace and within-job pay gaps using  
1964 household samples). We corrected for this underrepresentation by weighting the sample  
1965 distribution of workplace composition by immigration status (natives, immigrants, children of  
1966 immigrants) to match the population-level distribution of workplace composition by immigration  
1967 status obtained from register data. We created workplace migrant composition quartiles on the total  
1968 population of workers to calculate weights for our baseline and occupation fixed effects  
1969 comparisons. To weight our establishment and job fixed effect model estimates, we created the  
1970 quartile distribution on the universe of integrated workplaces.

1971  
1972 Data similar to those used for this project can be accessed at Statistics Netherlands upon receipt of  
1973 proper authorizations. Figure S12 and Table S35 report results from the separate regressions used  
1974 in the main analysis for the Netherlands for the immigrant–native differences in annual earnings  
1975 for all world regions of origin combined and separately by world region of origin. Table S36 reports  
1976 results after basic adjustments and within industry and establishment for the full population data,  
1977 where information on occupation and occupation–establishment units (i.e., jobs) is not available.

1978  
1979 **S6.6 Norway**

1980 Our analyses use data from Statistics Norway’s wage statistics from 2018 for information on  
1981 contractual monthly salaries, contractual hours worked, part- versus full-time status, occupation,  
1982 and employers. Statistics Norway’s wage statistics (based on data from *A-ordningen* since 2015)

1983 cover all formal jobs, firms, and establishments in the entire private and public sector in the  
1984 Norwegian labor market.

1985  
1986 We merge the annual earnings data from tax records to the wage statistics sample in order to get  
1987 information on occupation and on contractual work hours (which we use to create our indicator of  
1988 full- versus part-time work). The measure of earnings comes from tax records and includes all  
1989 work-related income (such as parental and sick leave benefits; but not unemployment benefits) for  
1990 each year and is captured with high accuracy.

1991  
1992 Information on occupation is based on Statistics Norway's four-digit Norwegian version of ISCO-  
1993 88 (i.e., *Standard for yrkesklassifisering, STYRK98*). For individuals who work multiple jobs and  
1994 thus have multiple job observations per year, we use information from their job observation with  
1995 the highest contractual monthly salary. The industry of the establishment is measured using four-  
1996 digit codes from the Statistical Classification of Economic Activities in the European Community  
1997 (NACE-08), which differentiates about 400 detailed industries. We also include information  
1998 geographic regions using the municipality of the establishment. In 2018, there were about 430  
1999 municipalities in Norway.

2000  
2001 Our measure of hourly wages is based on information on contractual monthly salaries and  
2002 contractual hours worked at the time of registration each year. Monthly salary information is based  
2003 on contractual regular earnings per month and does not include bonuses, nonregular extra pay, or  
2004 overtime pay. In the private sector, hours worked is based on information on contractual hours  
2005 worked per week. In the public sector, we derive our measure of hours worked from information  
2006 on the percent of full-time hours of employment (i.e., we compute hours from a measure that  
2007 provides information about the individual's contractual work hours as the percent of regular full-  
2008 time work, ranging between zero and 100).

2009  
2010 Immigrant background is defined based on information on the country of birth of each individual  
2011 and their parents. Those with at least one Norwegian-born parent are assigned to the native-born  
2012 majority group. Immigrants refer to individuals born outside Norway to two foreign-born parents,  
2013 and country of origin refers to their country of birth. Children of immigrants refer to individuals  
2014 born in Norway with two foreign-born parents, and country of origin refers to their mother's  
2015 country of birth (if the parents have different countries of birth). We group immigrants and children  
2016 of immigrants into different world regions of origin using information on their country of origin.  
2017 In additional analyses, we use information on year of immigration and year of birth to further  
2018 differentiate immigrants into childhood immigrants (who immigrated before age 18), established  
2019 immigrants (10+ years since immigration) and recently arrived immigrants (<10 years since  
2020 immigration).

2021

2022 Information about gender and age is based on records from the Central Population Register.  
2023 Information about education refers to each individual’s highest level of educational qualifications  
2024 in each year based on annual records from the National Education Database (i.e., *Nasjonal*  
2025 *utdanningsdatabase, NUDB*). Information on educational level is measured using the eight  
2026 category NUS2000 scale (i.e., the Norwegian version of ISCED-97), ranging from primary  
2027 education (1) to doctoral level degree (8). We use this information to create a categorical measure  
2028 with five levels, and observations registered with no education are included as a separate category  
2029 in the main analysis.

2030  
2031 Data similar to those used for this project can be accessed at Statistics Norway upon receipt of  
2032 proper authorizations. Figure S13 and Table S37 report results from the separate regressions used  
2033 in the main analysis for the Norway for the immigrant–native differences in annual earnings for all  
2034 world regions of origin combined and separately by world region of origin.

2035

## 2036 **S6.7 Spain**

2037 Our analyses use data from the Continuous Sample of Working Histories (CSWH) (*Muestra*  
2038 *Continua de Vidas Laborales con Datos Fiscales*) from Spain’s Social Security Office. The CSWH  
2039 contains matched anonymized social security, income tax, and census records for a four percent,  
2040 non-stratified random sample of the population that had any relationship with Spain’s Social  
2041 Security (whether via employment, self-employment, unemployment, or retirement) in that year.  
2042 The CSWH provides information on individuals’ complete labor market histories from 1980 (or  
2043 the year the individual registers with Social Security) to the year of data collection. The variable  
2044 definitions are publicly available and can be accessed through the website of the Social Security  
2045 Office (*Instituto Nacional De La Seguridad Social*).

2046  
2047 Earnings information from Social Security records is censored at both the top and the bottom.  
2048 Given our inquiry focusing on earnings differentials between immigrants and natives, top-capped  
2049 earning records might bias the analyses. To overcome this challenge, we merge social security  
2050 records with the tax records which have info on non-capped earnings from 2006 onwards, for all  
2051 the individuals that could be tracked with social security records. Our analyses use data from 2018,  
2052 the most recent year in our data, for which we can extract noncapped individual earning records  
2053 and establishment-level information from the tax datasets.

2054  
2055 For individuals who work at multiple establishments in a year, we only consider the main job, that  
2056 is the job spell with the highest earnings across firms. In this way, we build a yearly panel that  
2057 covers employment spells, with a start and end date and tied to a firm identifier. Each spell includes  
2058 information on individuals (e.g., age, gender, full-time status), establishments, occupations, and  
2059 industries. Industry is measured using the National Classification of Economic Activities (CNAE-

2060 93). The main economic activity of each establishment is captured by one of 59 two-digit industry  
2061 codes.

2062  
2063 In addition to the uncensored aggregate earnings, we calculate hourly earnings (our proxy for  
2064 hourly wages). We calculate hours worked using information on the number of days worked and  
2065 the percent of employment (e.g., eight hours per day for a full-time worker, four hours per day for  
2066 a half-time worker, two hours per day for a quarter-time worker). Our measure of occupation comes  
2067 from the occupation information that employers are required to provide (*grupo de cotización*) to  
2068 the Social Security office and contains ten occupational categories. We also use four categories of  
2069 education: 1) less than secondary education, 2) secondary education, 3) tertiary education, and 4)  
2070 master's degrees and above. Additionally, we include information on geographic regions, using  
2071 229 unique municipality IDs where establishments are located.

2072  
2073 Immigrant background is defined based on the information on the country of birth of individuals.  
2074 Using information on the country of birth, we also identify immigrants' country of origin.

2075  
2076 The data files used for this project can be accessed from the Social Security Office upon receipt of  
2077 authorizations from the Ministry of Labor, Migrations and Social Security of Spain (*Ministerio de*  
2078 *Trabajo, Migraciones y Seguridad Social*). Figure S14 and Table S38 report results from the  
2079 separate regressions used in the main analysis for Spain for the immigrant–native differences in  
2080 annual earnings for all world regions of origin combined and separately by world region of origin.

## 2081 2082 **S6.8 Sweden**

2083 Our data come from Sweden use Statistics Sweden's LISA database, which is a collection of  
2084 administrative data on the population level. The measure of earnings comes from tax records, and  
2085 includes all work-related income (such as parental and sick leave benefits; but not unemployment  
2086 benefits) for each year. Establishment comes from the same data source and is a firm located at a  
2087 specific address (i.e., in firms located at two different addresses, each firm address combination  
2088 would be considered a unique establishment). Seniority is based on the number of years employed  
2089 in the same establishment (using a time-stable identifier that takes mergers and splits into account,  
2090 denoted *FAD* by Statistics Sweden).

2091  
2092 Immigration background is coded based on own and parental country of birth. Immigrants refer to  
2093 those born outside Sweden to non-Swedish born parents and children of immigrants are those born  
2094 in Sweden where both parents are foreign born. World region of origin is coded based on own  
2095 country of birth for natives and immigrants, and mother's country of birth for children of  
2096 immigration. Information on age at immigration comes from immigration records.

2097

2098 Industry is measured with the Swedish *SNI* standard, which closely follows the European *NACE*.  
2099 Following the comparative convention in the paper, we use the three-digit version. Municipality of  
2100 employment comes from the same tax records as earnings. Occupation is based on Statistics  
2101 Sweden’s Swedish version of *ISCO-08* (*Standard för svensk yrkesklassificering, SSYK2012*),  
2102 available at the at the four-digit level, and the source data comes mainly from employer reports.  
2103 Information about gender and age is based on records from the national register.

2104  
2105 Information about education refers to each individual’s highest level of educational qualifications  
2106 in each year based on annual records from the Education Register, using the Swedish version of  
2107 *ISCED-97* named *SUN2000*. We use this information to create a categorical measure with five  
2108 levels, and observations registered with no education are included as a separate category in the  
2109 main analysis.

2110  
2111 Data similar to those used for this project can be accessed at Statistics Sweden upon receipt of the  
2112 proper authorizations. Figure S15 and Table S39 report results from the separate regressions used  
2113 in the main analysis for Sweden for the immigrant–native differences in annual earnings for all  
2114 world regions of origin combined and separately by world region of origin.

## 2115 2116 **S6.9 United States**

2117 Our analyses use earnings and employer information for each individual’s employment spell(s)  
2118 from Internal Revenue Service (IRS) Form W-2 and cover the tax years 2005-2017. Individuals on  
2119 this form are identified and linked across datasets using a unique, anonymized Protected  
2120 Identification Key (PIK). This form also contains the Employer Identification Number (EIN),  
2121 which in most cases identifies a firm (see (17) for more details). We take Box 1 from W-2, which  
2122 reports total annual taxable earnings for each individual at a particular EIN, including salary,  
2123 wages, and bonuses, but excluding deferred compensation. W-2 reports do not indicate spell  
2124 duration, or the number of hours worked. We unduplicate by EIN-PIK-year, taking the most  
2125 recently dated form available. For individuals who work at multiple EINs in a year, we use  
2126 information from their highest-earning W-2 report.

2127  
2128 Because Form W-2 contains no occupational information, we link these forms to the American  
2129 Community Survey (ACS), a one percent random sample of U.S. households that asks respondents  
2130 to self-report their current primary or most recent primary occupation at the time of the survey. We  
2131 link individuals’ highest-paid W-2 report to the concurrent ACS year; for example, W-2s from tax  
2132 year 2017 are linked to respondents in the 2017 ACS. Self-reported occupations are coded by  
2133 highly trained Census Bureau coders into one of approximately 500 three-digit categories from the  
2134 Standard Occupation Classification (SOC) system. Analyses using less granular two-digit  
2135 occupational codes produce similar patterns, suggesting that changes in this classification system  
2136 does not affect results.

2137  
2138 We additionally derive information on gender, age, immigration background, industry,  
2139 municipality of work, municipality of residence, hours worked, weeks worked, and education from  
2140 the ACS. Educational information applies to the current period, and (average) hours worked and  
2141 weeks worked pertain to the previous 12 months. We multiply hours worked by weeks worked  
2142 (using interval midpoints for weeks worked) to obtain the total annual number of hours worked.  
2143 We then divide total W-2 earnings by annual hours worked to arrive at our estimate of hourly wage  
2144 in a typical week. This assumes individuals are working a similar number of hours in the current  
2145 year. Unfortunately, these data do not allow us to isolate overtime and bonuses from total  
2146 compensation in creating this hourly wage variable. To measure part- vs. full-time status, we define  
2147 individuals as working full-time if their total nominal W-2 earnings surpassed the equivalent of  
2148 working the federal minimum wage in that year  $\times$  40 hours  $\times$  50 weeks.

2149  
2150 We derive immigration background from reported place of birth. We define individuals reporting  
2151 a country of birth outside of the United States as first-generation immigrants and those reporting  
2152 birth in the United States as native. We calculate age at immigration by subtracting the reported  
2153 year of arrival in the United States from the survey year. We are not able to capture native-born  
2154 children of immigrants as the ACS lacks information on parental country of birth.

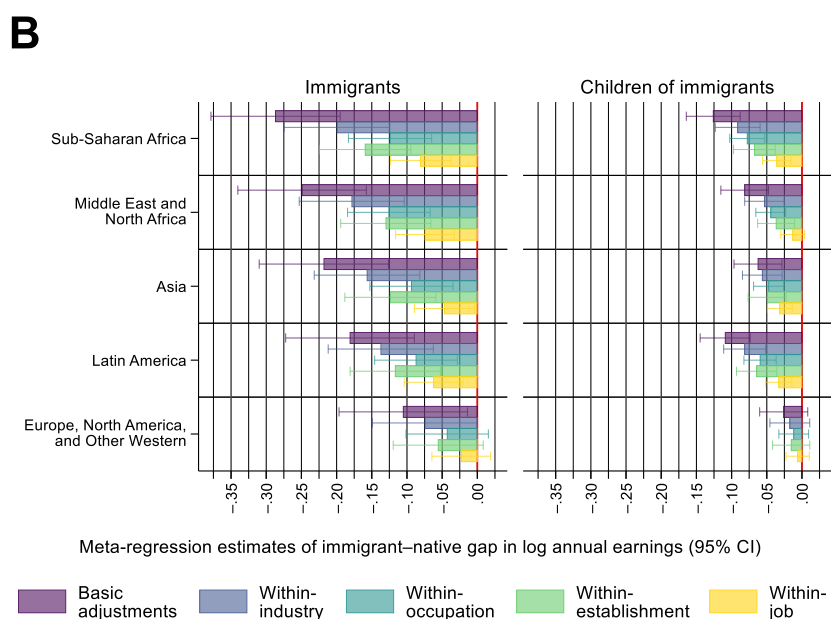
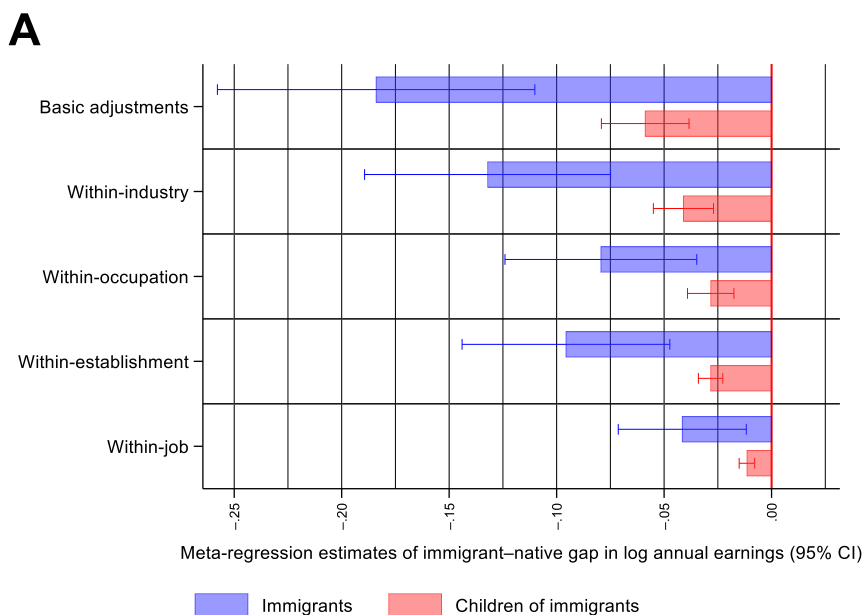
2155  
2156 We define the municipality of work as the county of work corresponding to the address that the  
2157 respondent provided in response to the ACS question on location of work in the previous week.  
2158 We define municipality of residence and the county of residence corresponding to the address  
2159 sampled for the ACS at which the respondent lived.

2160  
2161 We derive the industry of the respondent's place of work by linking the EIN on the respondent's  
2162 IRS Form W-2 to the County Business Patterns (CBP) database. CBP variables are extracted from  
2163 the Business Register (BR), a database of all known single and multi-establishment employer  
2164 companies maintained by the U.S. Census Bureau. The BR contains the most complete, current,  
2165 and consistent data for business establishments. CBP data are edited to remove anomalies and  
2166 validate several data items, including industry classification. Industry classification of businesses  
2167 in the CBP is according to the 2017 North American Industry Classification System (NAICS),  
2168 which includes nearly 1,000 industries. More information on the 2017 NAICS codes is available  
2169 on the NAICS website.

2170  
2171 Data used for this project can be accessed at the U.S. Census Bureau upon receipt of proper  
2172 authorizations. Figure S16 and Table S40 report results from the separate regressions used in the  
2173 main analysis for the United States for the immigrant-native differences in annual earnings for all  
2174 world regions of origin combined and separately by world region of origin.

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**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.

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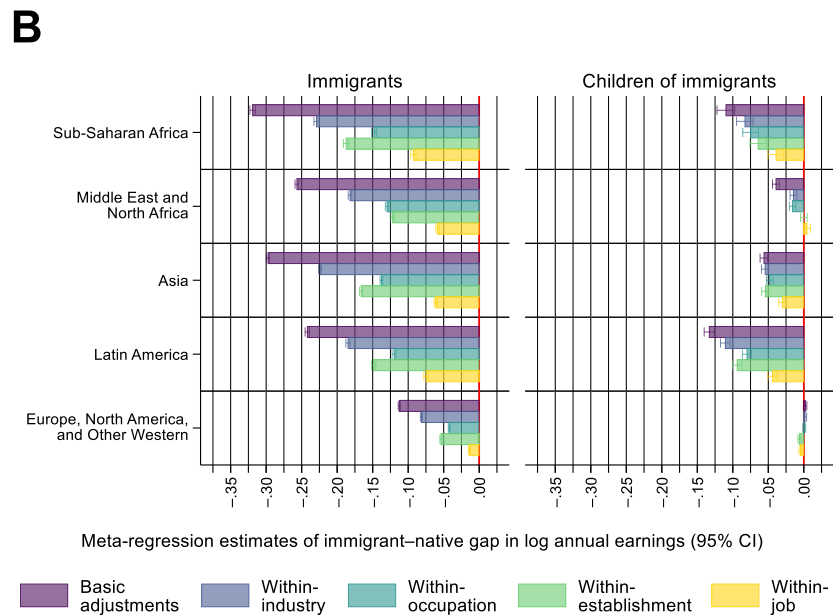
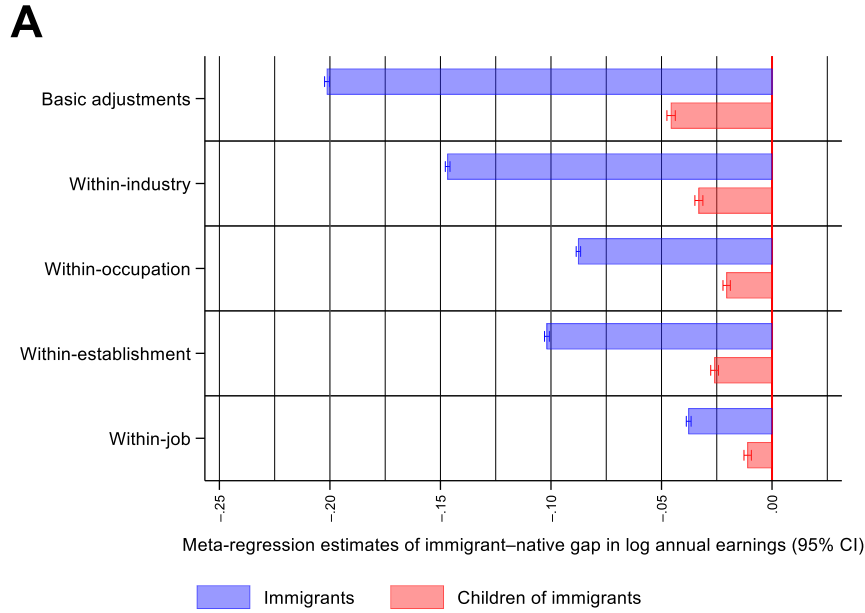
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Note: (A) Average differences in log annual earnings relative to natives after basic adjustments and within industry, occupation, establishment, and job (occupation–establishment units) for immigrants and children of immigrants across all countries, 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).



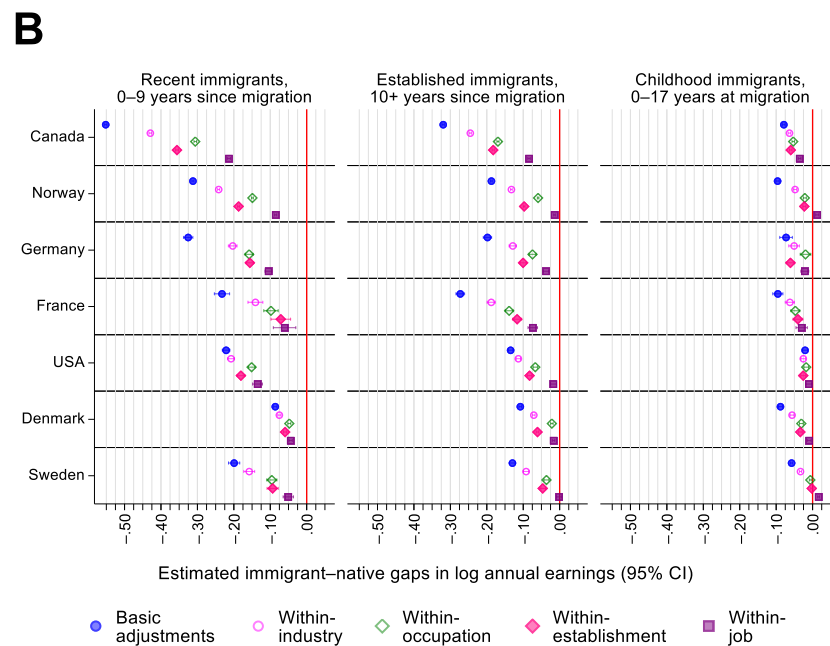
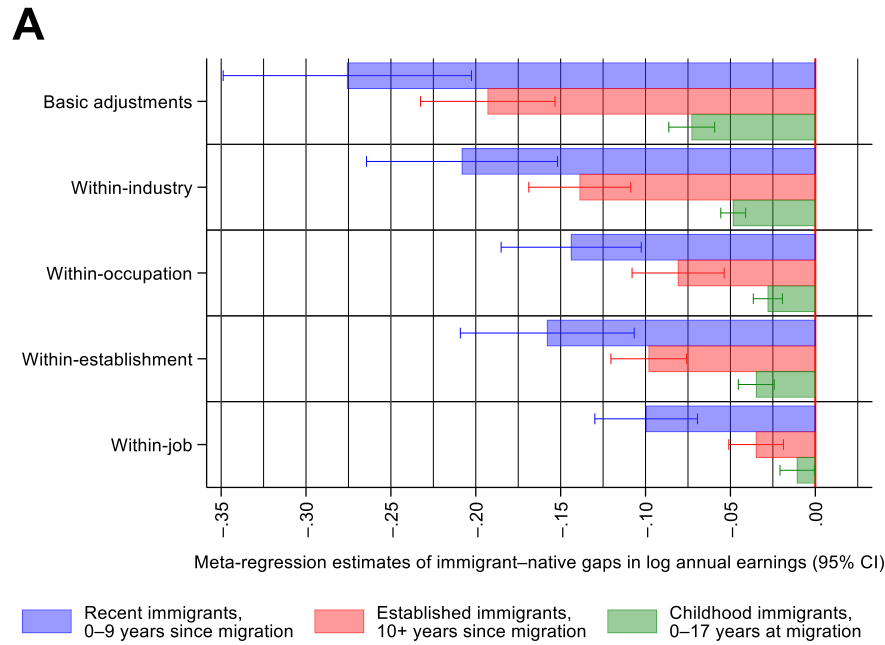


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**Figure S2.** Immigrant–native differences in annual earnings after basic adjustments and within industry, occupation, establishment, and job averaged across all countries and averaged separately by world region using fixed-effects meta-analysis.

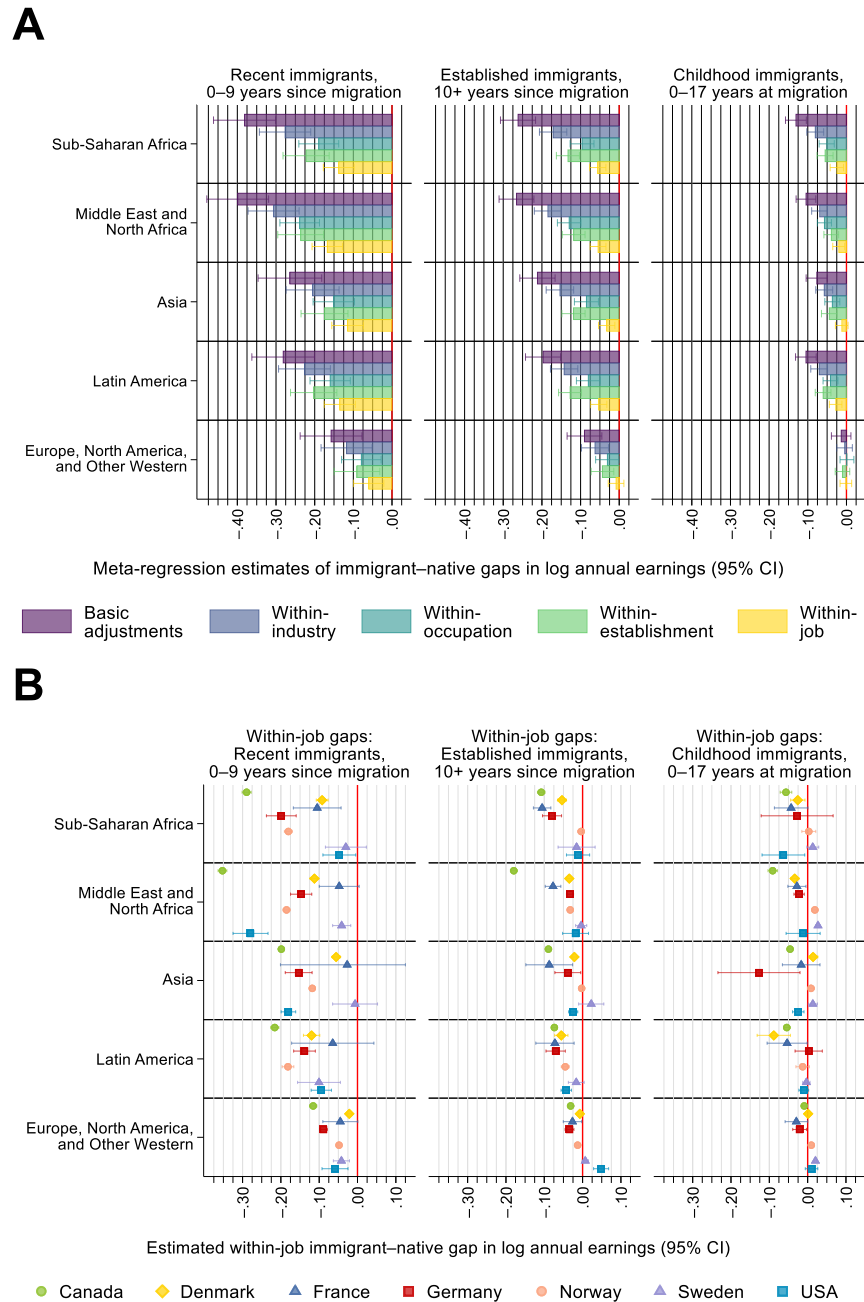
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*Note:* (A) Average differences in log annual earnings relative to natives after basic adjustments and within industry, occupation, establishment, and job (occupation–establishment units) for immigrants (Canada, Denmark, France, Germany, Netherlands, 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.

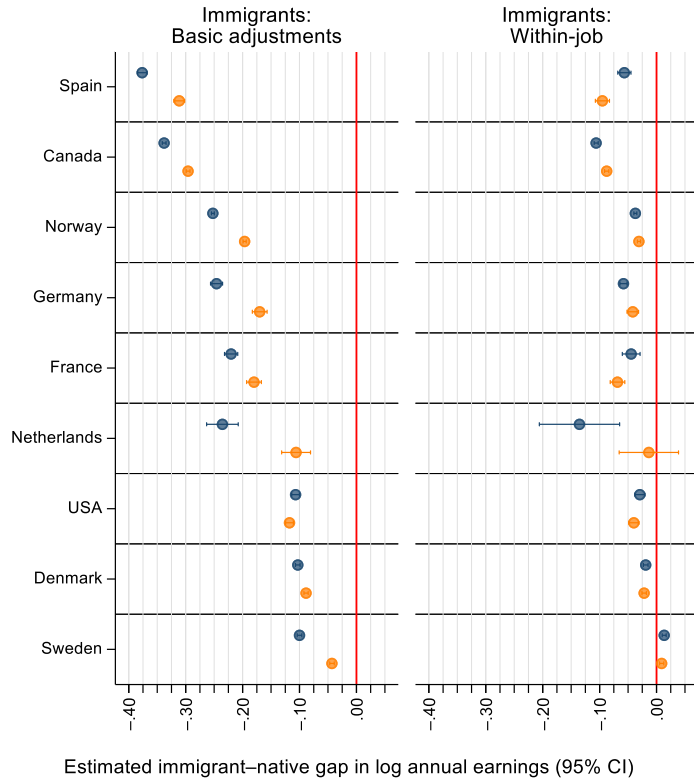
*Note:* (A) Differences in log annual earnings relative to natives after basic adjustments and within industry, occupation, establishment, and job (occupation–establishment units) for recent immigrants, established immigrants, and childhood immigrants averaged across all countries (Canada, Denmark, France, 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.



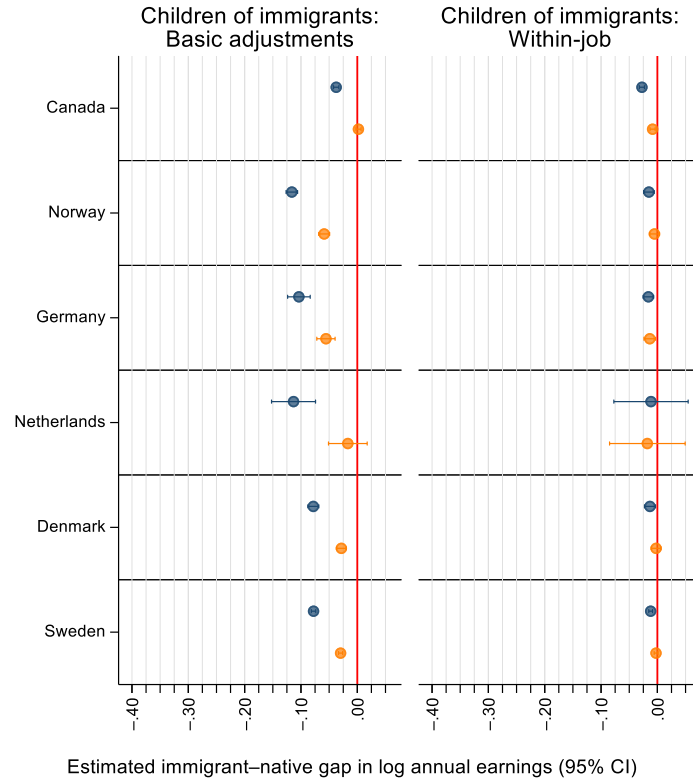
**Figure S4.** Immigrant–native differences in annual earnings for recent immigrants, established immigrants, and childhood immigrants after basic adjustments and within industry, occupation, establishment, and job by world region of origin.

*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.

A



B



● Men ● Women

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

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2228

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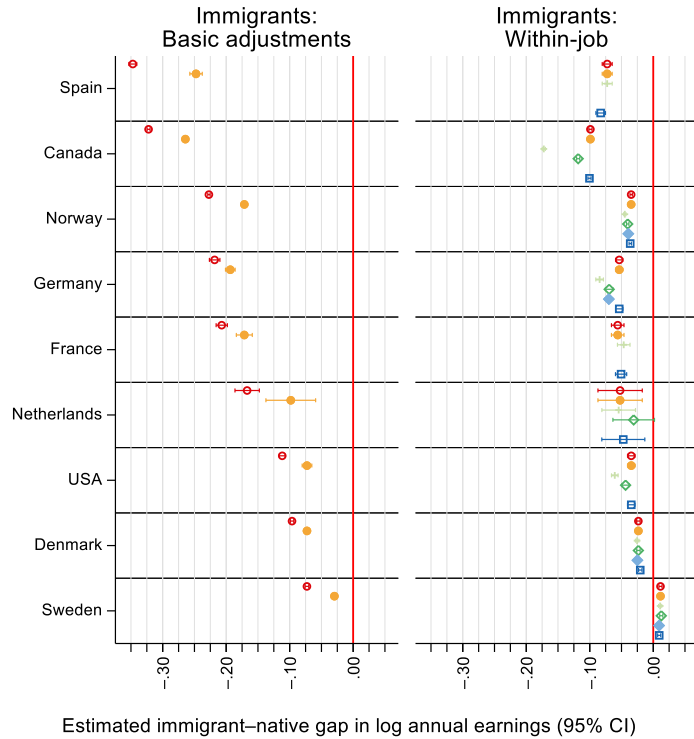
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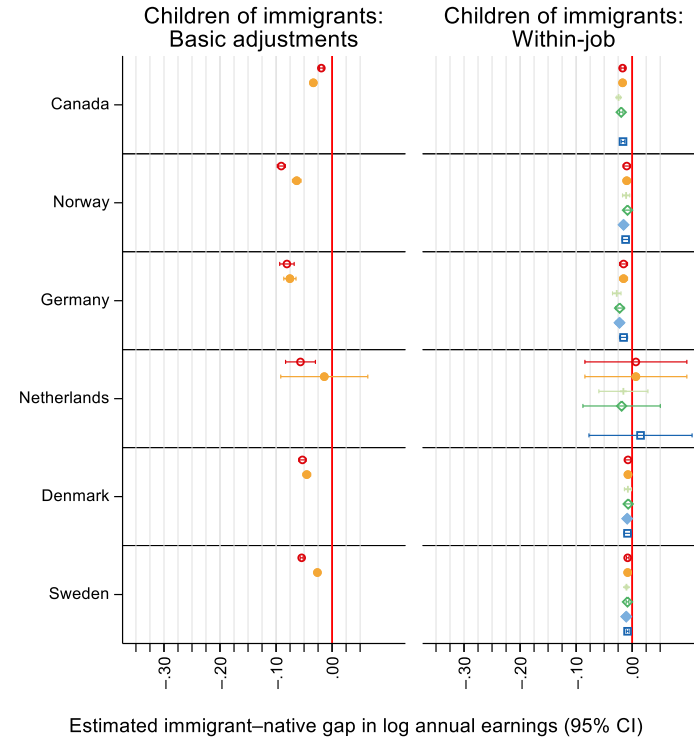
2232

*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.

**A**



**B**



- Main model
- Integrated job cells
- + Occupation, 1 digits
- ◇ Occupation, 2 digits
- ◆ Occupation, 3 digits
- Occupation-firm job cells

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

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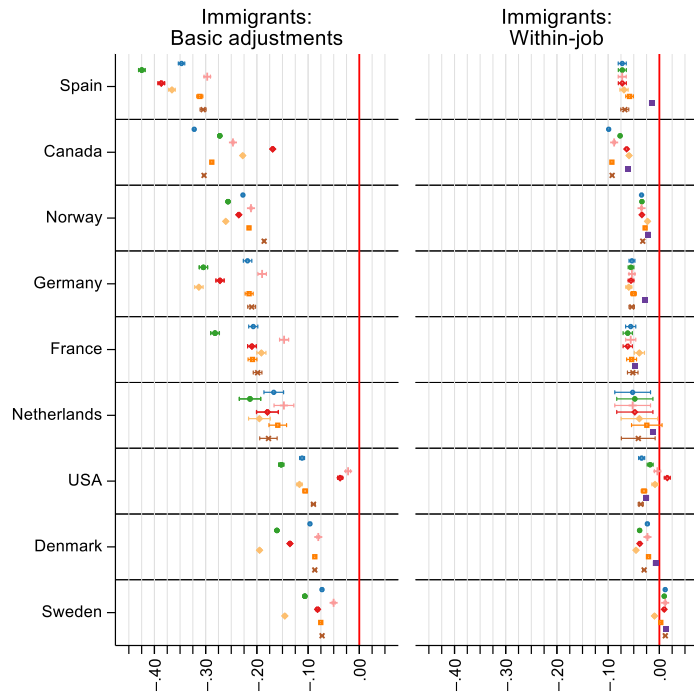
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*Note:* Each estimate represents the coefficient from a separate model estimating the difference between the logged annual earnings of immigrants and natives and children of immigrants and natives ages 25–60 years, with negative coefficients indicating 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.

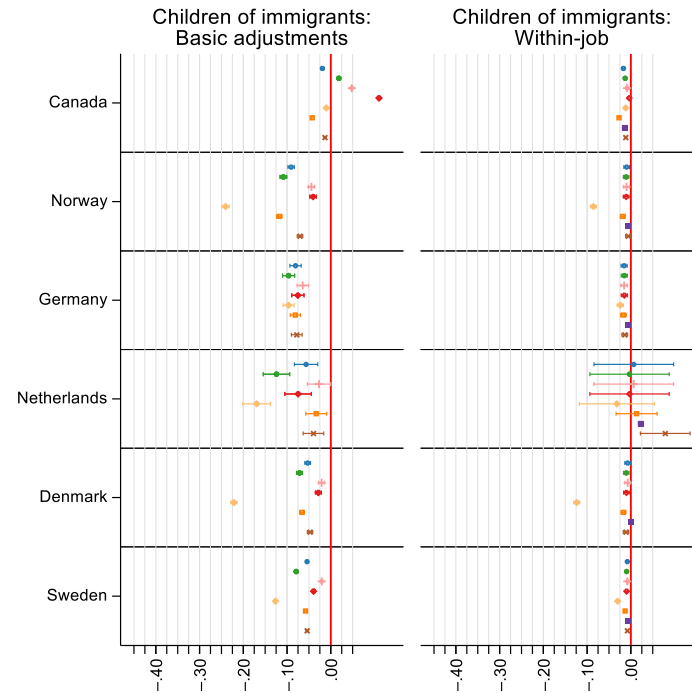
**A**



Estimated immigrant–native gap in log annual earnings (95% CI)

- Main model
- No education
- ◆ No age
- Broader age span (18-70 y)

**B**



Estimated immigrant–native gap in log annual earnings (95% CI)

- + No geography
- ◆ No education or geography
- Seniority
- × Fulltime

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2243

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

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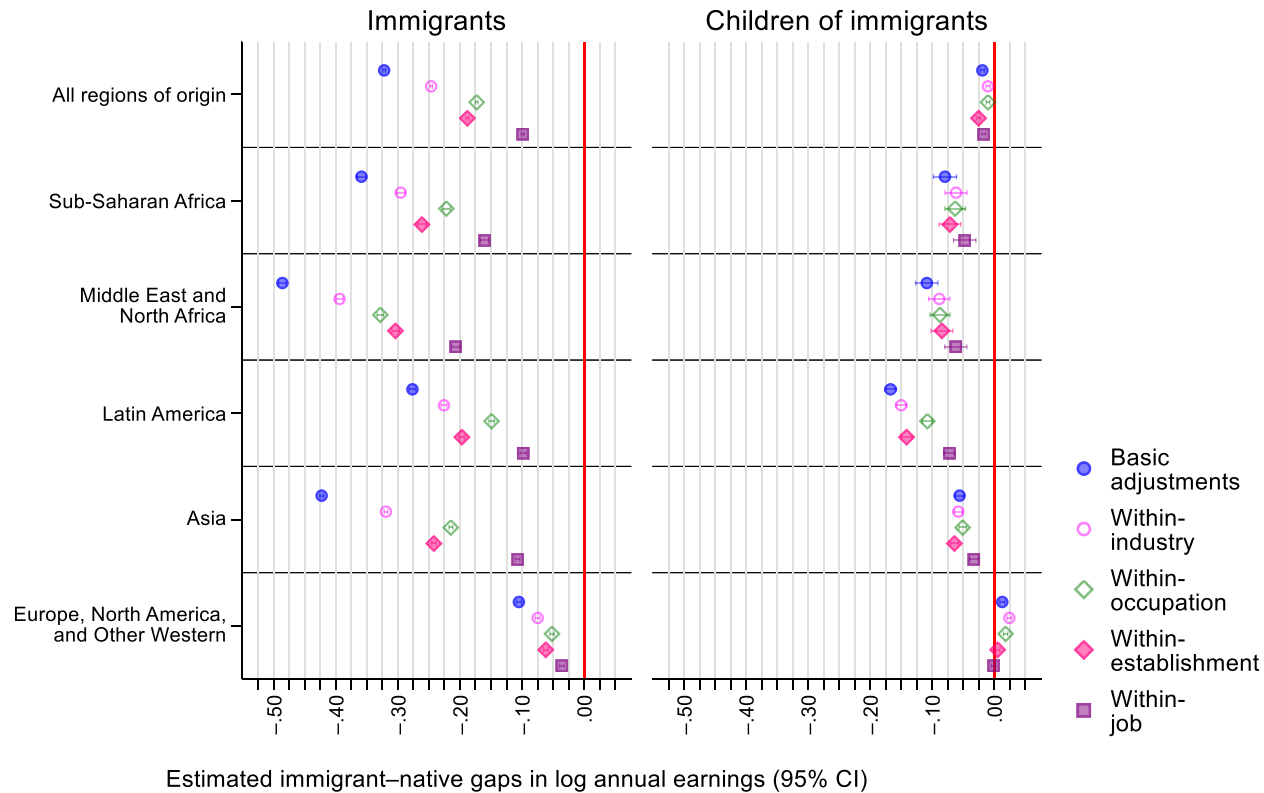
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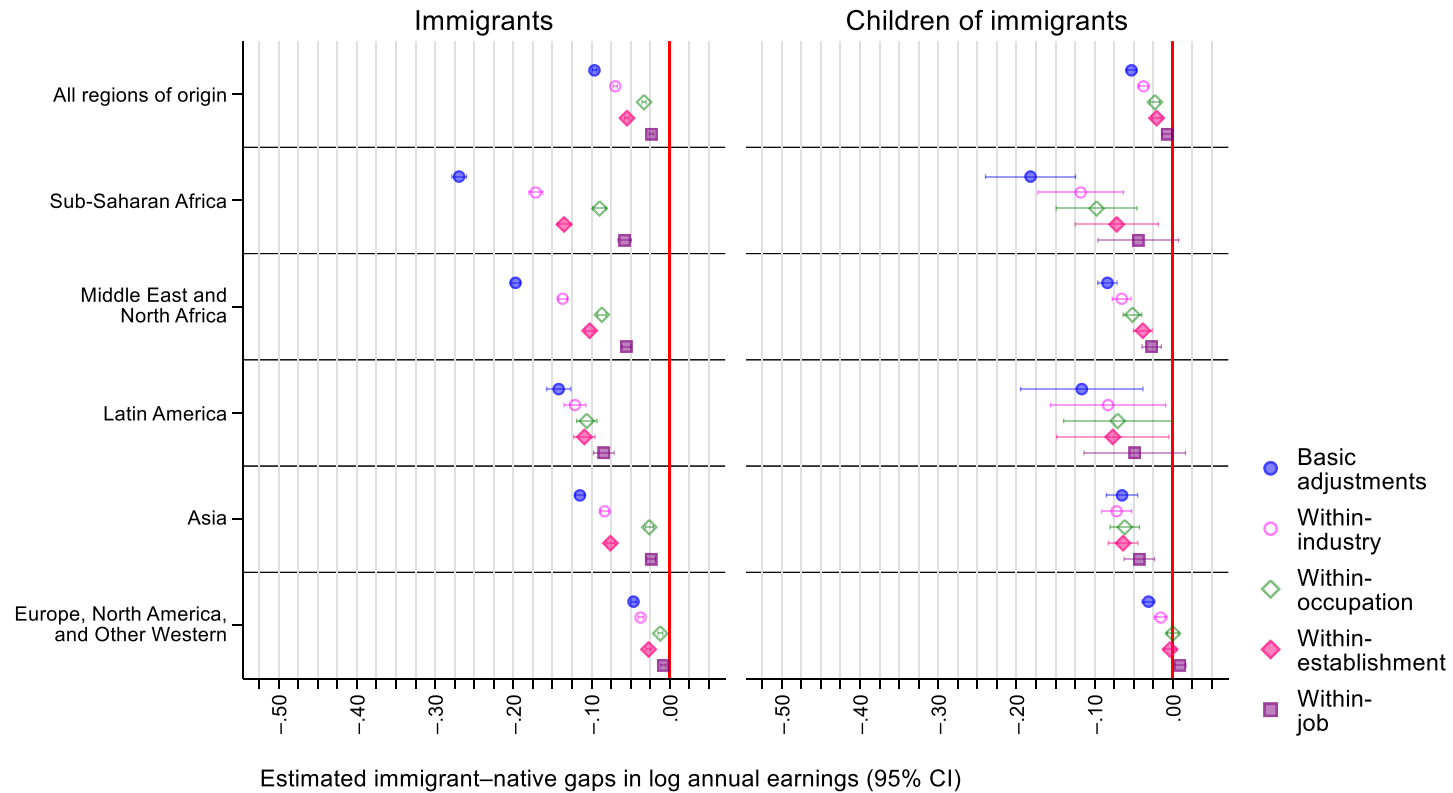
*Note:* Each estimate represents the coefficient from a separate model estimating the difference between the logged annual earnings of immigrants and natives and children of immigrants and natives ages 25–60 years, with negative coefficients indicating that (children of) immigrants earn less than natives, 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.



2250

2251 **Figure S8.** Canadian estimates of immigrant–native differences in annual earnings after basic adjustments and within industry, occupation,  
 2252 establishment, and jobs, for all world regions and separately by region of origin, used in main analysis.

2253 *Note:* Each estimate represents the coefficient from a separate model estimating the difference between the logged annual earnings of immigrants and natives and  
 2254 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  
 2255 combined and separately by world region of origin. Following standard conventions, we interpret these coefficients as the relative difference between the average  
 2256 (children of) immigrant and native earnings, but more formally they indicate the difference in relative geometric means for unlogged earnings (which is the absolute  
 2257 difference in the arithmetic means of logged earnings). The basic adjustment model reports differences from a model that controls for age, age squared, education,  
 2258 gender, and geographic region. Subsequent models provide estimates of within-industry, within-occupation, within-establishment, and within-job (occupation–  
 2259 establishment units) (children of) immigrant–native differences by introducing fixed effects for industry, occupation, establishment, and occupation–  
 2260 establishment units.

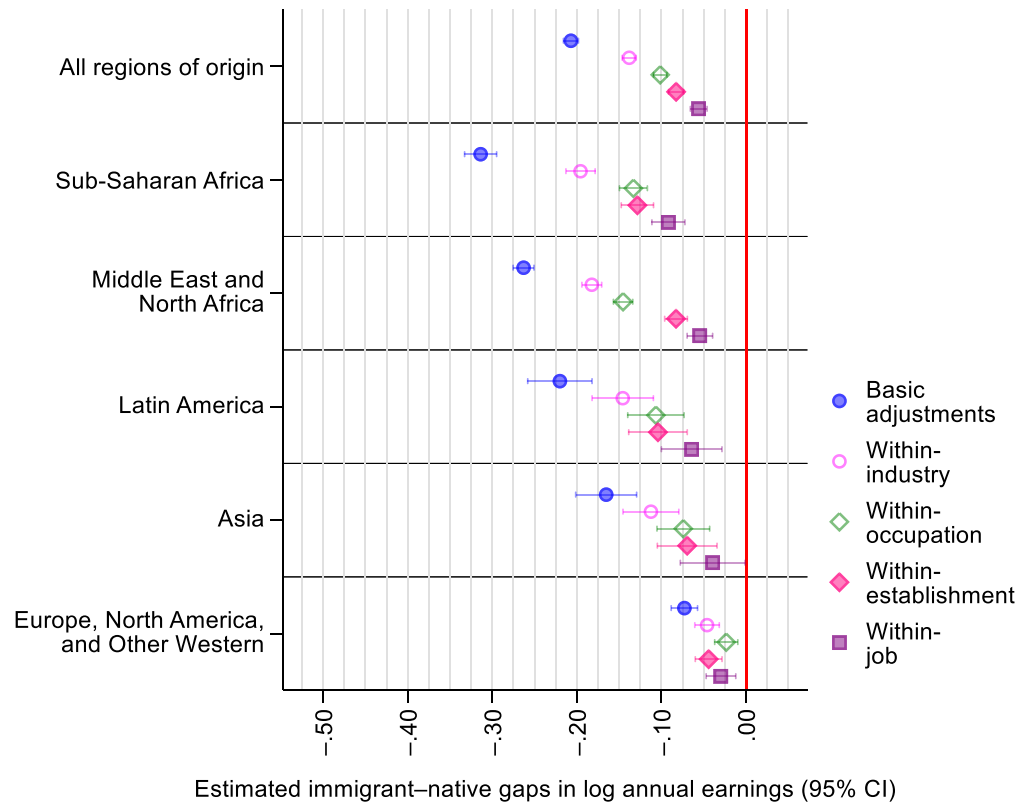


2261

2262 **Figure S9.** Danish estimates of immigrant–native differences in annual earnings after basic adjustments and within industry, occupation,  
 2263 establishment, and jobs, for all world regions and separately by region of origin, used in main analysis.

2264 *Note:* Each estimate represents the coefficient from a separate model estimating the difference between the logged annual earnings of immigrants and natives and  
 2265 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  
 2266 combined and separately by world region of origin. Following standard conventions, we interpret these coefficients as the relative difference between the average  
 2267 (children of) immigrant and native earnings, but more formally they indicate the difference in relative geometric means for unlogged earnings (which is the absolute  
 2268 difference in the arithmetic means of logged earnings). The basic adjustment model reports differences from a model that controls for age, age squared, education,  
 2269 gender, and geographic region. Subsequent models provide estimates of within-industry, within-occupation, within-establishment, and within-job (occupation–  
 2270 establishment units) (children of) immigrant–native differences by introducing fixed effects for industry, occupation, establishment, and occupation–establishment  
 2271 units.

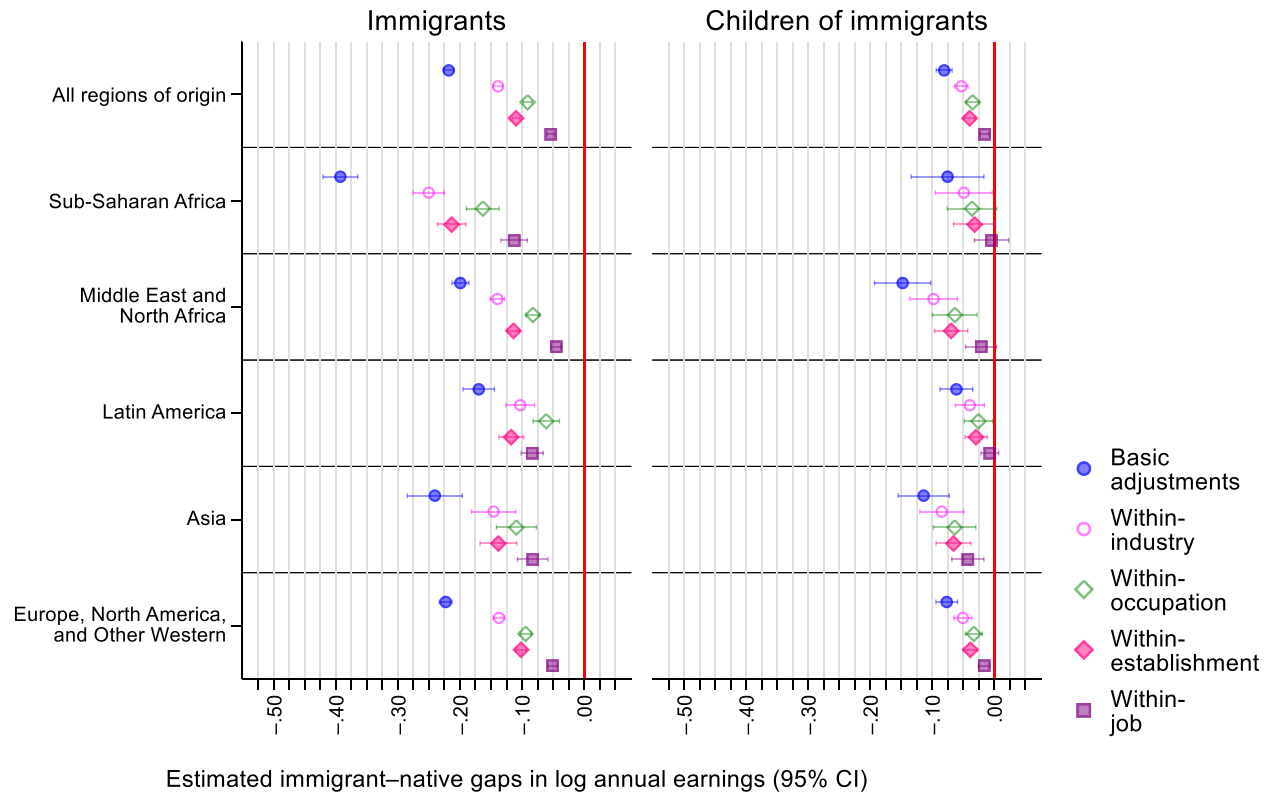




2272

2273 **Figure S10.** French estimates of immigrant–native differences in annual earnings after basic adjustments and within industry, occupation,  
 2274 establishment, and jobs, for all world regions and separately by region of origin, used in main analysis.

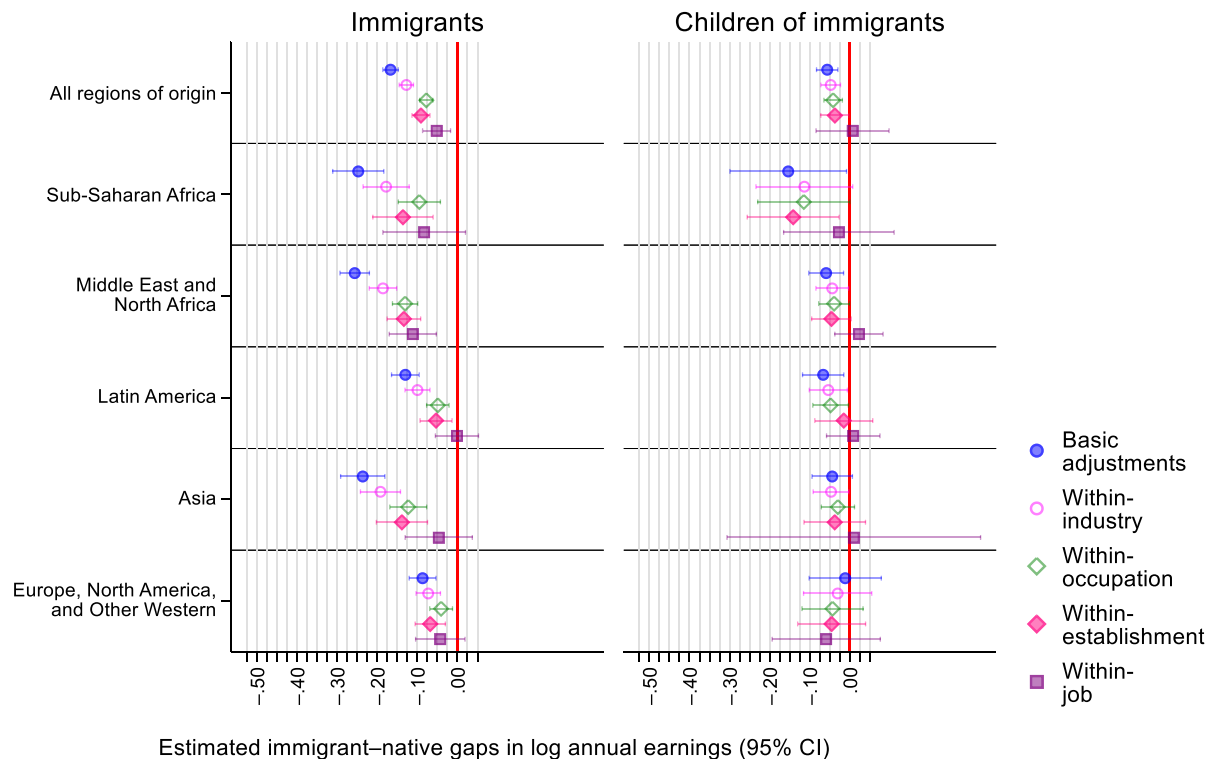
2275 *Note:* Each estimate represents the coefficient from a separate model estimating the difference between the logged annual earnings of immigrants and natives ages  
 2276 25–60 years, with negative coefficients indicating that immigrants earn less than natives, for all world regions combined and separately by world region of origin.  
 2277 Following standard conventions, we interpret these coefficients as the relative difference between the average immigrant and native earnings, but more formally  
 2278 they indicate the difference in relative geometric means for unlogged earnings (which is the absolute difference in the arithmetic means of logged earnings). The  
 2279 basic adjustment model reports differences from a model that controls for age, age squared, education, gender, and geographic region. Subsequent models provide  
 2280 estimates of within-industry, within-occupation, within-establishment, and within-job (occupation–establishment units) immigrant–native differences by  
 2281 introducing fixed effects for industry, occupation, establishment, and occupation–establishment units.



2282

2283 **Figure S11.** German estimates of immigrant–native differences in annual earnings after basic adjustments and within industry, occupation,  
 2284 establishment, and jobs, for all world regions and separately by region of origin, used in main analysis.

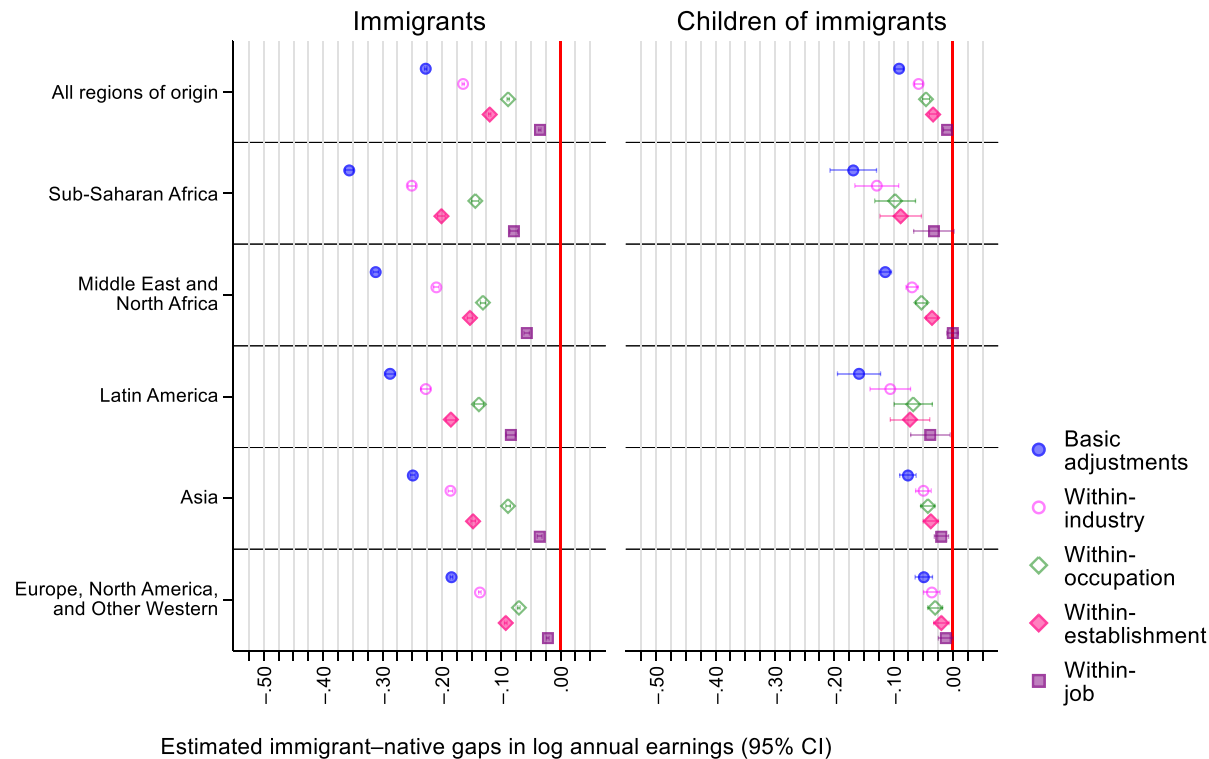
2285 *Note:* Each estimate represents the coefficient from a separate model estimating the difference between the logged annual earnings of immigrants and natives and  
 2286 children of immigrants and natives ages 25–60 years, with negative coefficients indicating that (children of) immigrants earn less than natives, for all world regions  
 2287 combined and separately by world region of origin. Following standard conventions, we interpret these coefficients as the relative difference between the average  
 2288 (children of) immigrant and native earnings, but more formally they indicate the difference in relative geometric means for unlogged earnings (which is the absolute  
 2289 difference in the arithmetic means of logged earnings). The basic adjustment model reports differences from a model that controls for age, age squared, education,  
 2290 gender, and geographic region. Subsequent models provide estimates of within-industry, within-occupation, within-establishment, and within-job (occupation–  
 2291 establishment units) (children of) immigrant–native differences by introducing fixed effects for industry, occupation, establishment, and occupation–establishment  
 2292 units.



2293

2294 **Figure S12.** Dutch estimates of immigrant–native differences in annual earnings after basic adjustments and within industry, occupation,  
 2295 establishment, and jobs, for all world regions and separately by region of origin, used in main analysis.

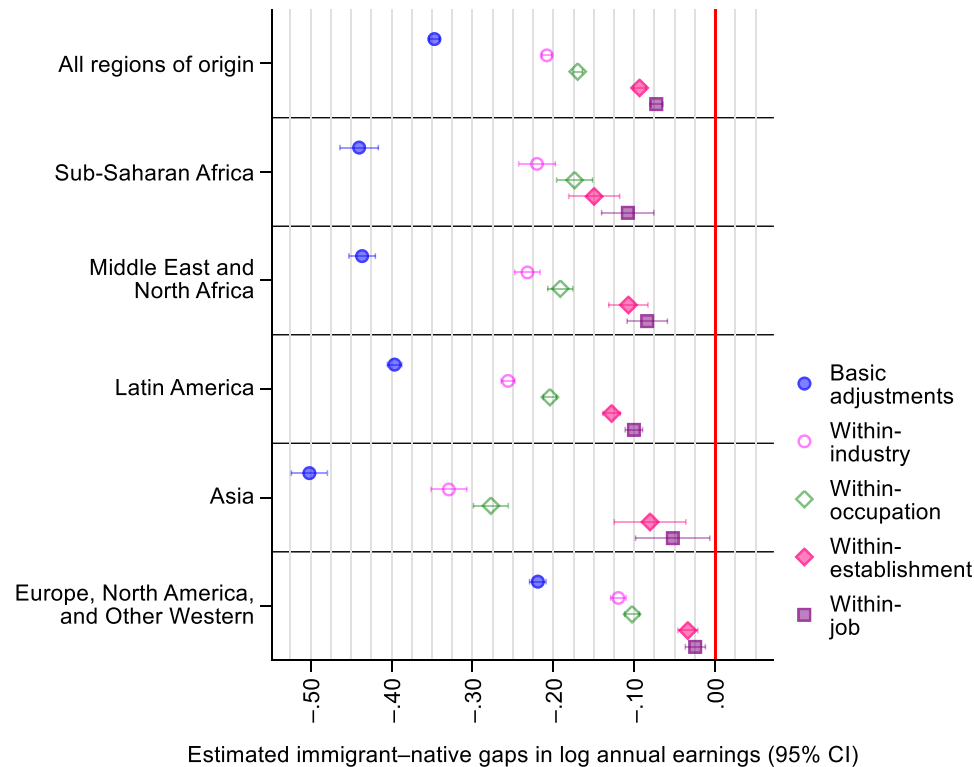
2296 *Note:* Each estimate represents the coefficient from a separate model estimating the difference between the logged annual earnings of immigrants and natives and  
 2297 children of immigrants and natives ages 25–60 years, with negative coefficients indicating that (children of) immigrants earn less than natives, for all world regions  
 2298 combined and separately by world region of origin. Following standard conventions, we interpret these coefficients as the relative difference between the average  
 2299 (children of) immigrant and native earnings, but more formally they indicate the difference in relative geometric means for unlogged earnings (which is the absolute  
 2300 difference in the arithmetic means of logged earnings). The basic adjustment model reports differences from a model that controls for age, age squared, education,  
 2301 gender, and geographic region. Subsequent models provide estimates of within-industry, within-occupation, within-establishment, and within-job (occupation–  
 2302 establishment units) (children of) immigrant–native differences by introducing fixed effects for industry, occupation, establishment, and occupation–  
 2303 establishment units.



2304

2305 **Figure S13.** Norwegian estimates of immigrant–native differences in annual earnings after basic adjustments and within industry, occupation,  
 2306 establishment, and jobs, for all world regions and separately by region of origin, used in main analysis.

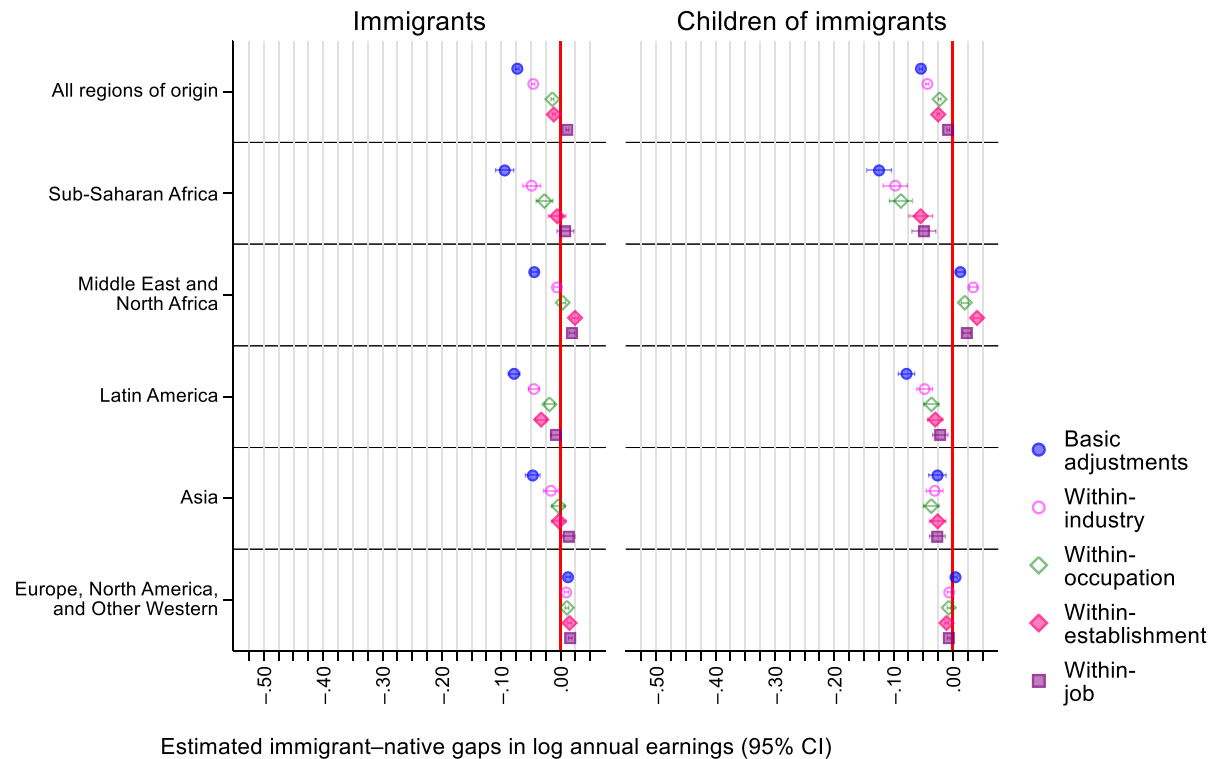
2307 *Note:* Each estimate represents the coefficient from a separate model estimating the difference between the logged annual earnings of immigrants and natives and  
 2308 children of immigrants and natives ages 25–60 years, with negative coefficients indicating that (children of) immigrants earn less than natives, for all world regions  
 2309 combined and separately by world region of origin. Following standard conventions, we interpret these coefficients as the relative difference between the average  
 2310 (children of) immigrant and native earnings, but more formally they indicate the difference in relative geometric means for unlogged earnings (which is the absolute  
 2311 difference in the arithmetic means of logged earnings). The basic adjustment model reports differences from a model that controls for age, age squared, education,  
 2312 gender, and geographic region. Subsequent models provide estimates of within-industry, within-occupation, within-establishment, and within-job (occupation–  
 2313 establishment units) (children of) immigrant–native differences by introducing fixed effects for industry, occupation, establishment, and occupation–  
 2314 establishment units.



2315

2316 **Figure S14.** Spanish estimates of immigrant–native differences in annual earnings after basic adjustments and within industry, occupation,  
 2317 establishment, and jobs, for all world regions and separately by region of origin, used in main analysis.

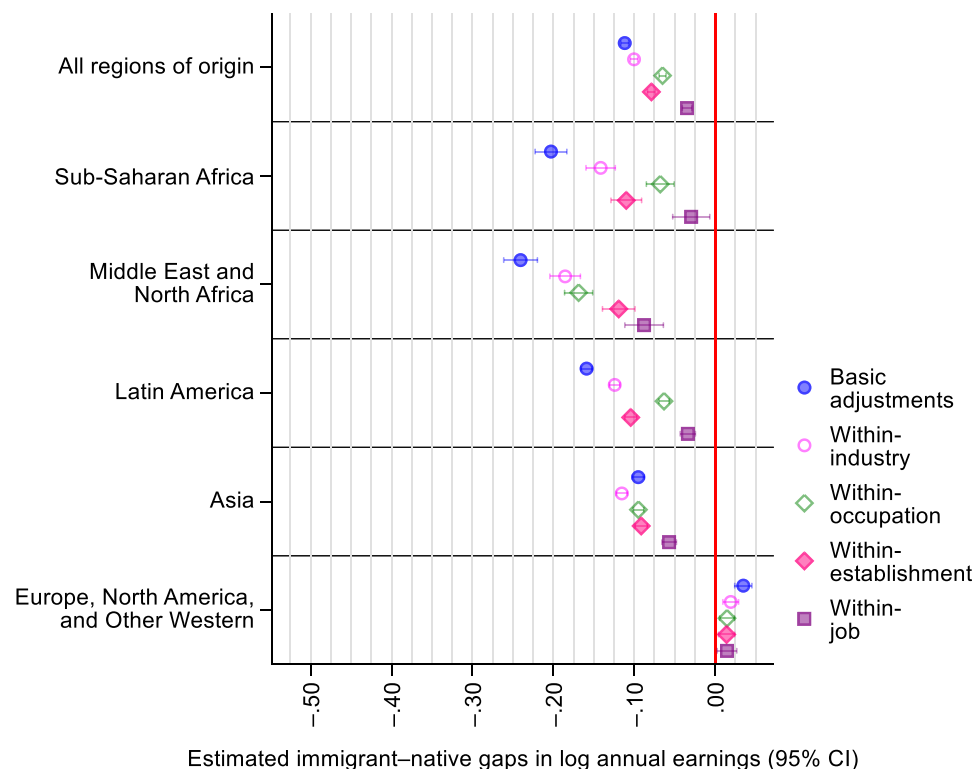
2318 *Note:* Each estimate represents the coefficient from a separate model estimating the difference between the logged annual earnings of immigrants and natives ages  
 2319 25–60 years, with negative coefficients indicating that immigrants earn less than natives, for all world regions combined and separately by world region of origin.  
 2320 Following standard conventions, we interpret these coefficients as the relative difference between the average immigrant and native earnings, but more formally  
 2321 they indicate the difference in relative geometric means for unlogged earnings (which is the absolute difference in the arithmetic means of logged earnings). The  
 2322 basic adjustment model reports differences from a model that controls for age, age squared, education, gender, and geographic region. Subsequent models provide  
 2323 estimates of within-industry, within-occupation, within-establishment, and within-job (occupation–establishment units) immigrant–native differences by  
 2324 introducing fixed effects for industry, occupation, establishment, and occupation–establishment units.



2325

2326 **Figure S15.** Swedish estimates of immigrant–native differences in annual earnings after basic adjustments and within industry, occupation,  
 2327 establishment, and jobs, for all world regions and separately by region of origin, used in main analysis.

2328 *Note:* Each estimate represents the coefficient from a separate model estimating the difference between the logged annual earnings of immigrants and natives and  
 2329 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  
 2330 combined and separately by world region of origin. Following standard conventions, we interpret these coefficients as the relative difference between the average  
 2331 (children of) immigrant and native earnings, but more formally they indicate the difference in relative geometric means for unlogged earnings (which is the absolute  
 2332 difference in the arithmetic means of logged earnings). The basic adjustment model reports differences from a model that controls for age, age squared, education,  
 2333 gender, and geographic region. Subsequent models provide estimates of within-industry, within-occupation, within-establishment, and within-job (occupation–  
 2334 establishment units) (children of) immigrant–native differences by introducing fixed effects for industry, occupation, establishment, and occupation–  
 2335 establishment units.



2336

2337 **Figure S16.** US estimates of immigrant–native differences in annual earnings after basic adjustments and within industry, occupation,  
 2338 establishment, and jobs, for all world regions and separately by region of origin, used in main analysis.

2339 *Note:* Each estimate represents the coefficient from a separate model estimating the difference between the logged annual earnings of immigrants and natives ages  
 2340 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.  
 2341 Following standard conventions, we interpret these coefficients as the relative difference between the average immigrant and native earnings, but more formally  
 2342 they indicate the difference in relative geometric means for unlogged earnings (which is the absolute difference in the arithmetic means of logged earnings). The  
 2343 basic adjustment model reports differences from a model that controls for age, age squared, education, gender, and geographic region. Subsequent models provide  
 2344 estimates of within-industry, within-occupation, within-establishment, and within-job (occupation–establishment units) immigrant–native differences by  
 2345 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.

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

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.

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

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.

	Basic adj.	Fixed effect for:				Proportion within job
		Ind	Occ	Est	Occ-Est	
	(1)	(2)	(3)	(4)	(5)	(6)
<b>Panel A: Immigrants</b>						
Sub-Saharan Africa	-.298 (.040)	-.195 (.028)	-.124 (.024)	-.149 (.022)	-.079 (.015)	.27
Middle East and North Africa	-.270 (.039)	-.186 (.028)	-.140 (.023)	-.121 (.022)	-.074 (.015)	.27
Asia	-.230 (.040)	-.166 (.028)	-.112 (.024)	-.109 (.022)	-.048 (.015)	.21
Latin America	-.207 (.039)	-.150 (.028)	-.100 (.023)	-.115 (.022)	-.064 (.015)	.31
Europe, North America, and other Western	-.099 (.039)	-.066 (.028)	-.041 (.023)	-.044 (.022)	-.019 (.014)	.20
<b>Panel B: Children of immigrants</b>						
Sub-Saharan Africa	-.126 (.020)	-.091 (.016)	-.078 (.013)	-.068 (.015)	-.036 (.010)	.28
Middle East and North Africa	-.081 (.017)	-.053 (.014)	-.044 (.011)	-.037 (.013)	-.013 (.009)	.16
Asia	-.063 (.017)	-.056 (.014)	-.047 (.011)	-.049 (.014)	-.032 (.009)	.50
Latin America	-.109 (.018)	-.082 (.015)	-.060 (.012)	-.064 (.015)	-.033 (.010)	.30
Europe, North America, and other Western	-.026 (.017)	-.017 (.014)	-.012 (.011)	-.015 (.013)	-.006 (.008)	.24

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

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

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:					Proportion within job (6)
	Basic adj. (1)	Ind (2)	Occ (3)	Est (4)	Occ-Est (5)	
<b>Panel A: Immigrants</b>						
Sub-Saharan Africa	-.287 (.047)	-.199 (.038)	-.124 (.030)	-.159 (.033)	-.081 (.022)	.28
Middle East and North Africa	-.249 (.047)	-.178 (.038)	-.126 (.030)	-.130 (.033)	-.074 (.021)	.30
Asia	-.218 (.047)	-.157 (.038)	-.094 (.030)	-.124 (.033)	-.047 (.022)	.21
Latin America	-.181 (.047)	-.137 (.038)	-.087 (.030)	-.117 (.033)	-.062 (.021)	.34
Europe, North America, and other Western	-.105 (.047)	-.075 (.038)	-.043 (.030)	-.056 (.033)	-.023 (.021)	.22
<b>Panel B: Children of immigrants</b>						
Sub-Saharan Africa	-.126 (.020)	-.091 (.016)	-.078 (.013)	-.068 (.015)	-.036 (.010)	.28
Middle East and North Africa	-.081 (.017)	-.053 (.014)	-.044 (.011)	-.037 (.013)	-.013 (.009)	.16
Asia	-.063 (.017)	-.056 (.014)	-.047 (.011)	-.049 (.014)	-.032 (.009)	.50
Latin America	-.109 (.018)	-.082 (.015)	-.060 (.012)	-.064 (.015)	-.033 (.010)	.30
Europe, North America, and other Western	-.026 (.017)	-.017 (.014)	-.012 (.011)	-.015 (.013)	-.006 (.008)	.24

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.

	Basic adj.	Fixed effect for:				Proportion within job
		Ind	Occ	Est	Occ-Est	
	(1)	(2)	(3)	(4)	(5)	(6)
Immigrants	-.201 (.001)	-.147 (.001)	-.088 (.001)	-.102 (.001)	-.038 (.001)	.19
Children of immigrants	-.046 (.001)	-.033 (.001)	-.021 (.001)	-.026 (.001)	-.011 (.001)	.24

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.

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

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

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.

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

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

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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.

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

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

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)
<b>Panel A: Immigrants</b>					
Canada	-.199 (.003)	-.216 (.005)	-.352 (.006)	-.289 (.006)	-.116 (.005)
Denmark	-.056 (.005)	-.120 (.011)	-.112 (.006)	-.092 (.008)	-.021 (.003)
France	-.027 (.089)	-.065 (.055)	-.048 (.027)	-.105 (.032)	-.045 (.023)
Germany	-.154 (.018)	-.138 (.014)	-.147 (.014)	-.199 (.020)	-.089 (.005)
Norway	-.118 (.004)	-.182 (.008)	-.185 (.005)	-.180 (.005)	-.048 (.002)
Sweden	-.006 (.030)	-.101 (.028)	-.041 (.012)	-.030 (.027)	-.042 (.011)
United States	-.180 (.010)	-.094 (.014)	-.279 (.023)	-.048 (.022)	-.059 (.017)
<b>Panel A: Immigrants</b>					
Canada	-.089 (.002)	-.074 (.004)	-.179 (.005)	-.108 (.005)	-.031 (.003)
Denmark	-.021 (.003)	-.056 (.009)	-.035 (.004)	-.054 (.006)	-.007 (.002)
France	-.087 (.031)	-.072 (.025)	-.077 (.010)	-.106 (.012)	-.026 (.012)
Germany	-.039 (.017)	-.070 (.013)	-.033 (.005)	-.080 (.013)	-.034 (.006)
Norway	-.002 (.003)	-.045 (.005)	-.032 (.003)	-.004 (.004)	-.013 (.001)
Sweden	.023 (.017)	-.016 (.011)	-.004 (.007)	-.016 (.025)	.007 (.004)
United States	-.025 (.006)	-.043 (.007)	-.018 (.017)	-.012 (.015)	.048 (.010)
<b>Panel A: Immigrants</b>					
Canada	-.046 (.003)	-.054 (.004)	-.091 (.006)	-.057 (.008)	-.009 (.003)
Denmark	.014 (.006)	-.088 (.022)	-.034 (.005)	-.026 (.010)	.001 (.004)
France	-.017 (.025)	-.054 (.027)	-.028 (.012)	-.043 (.022)	-.029 (.015)
Germany	-.127 (.055)	.003 (.018)	-.022 (.007)	-.027 (.048)	-.021 (.009)
Norway	.009 (.004)	-.013 (.009)	.019 (.004)	.003 (.009)	.010 (.003)
Sweden	.014 (.006)	-.003 (.005)	.027 (.003)	.013 (.008)	.020 (.002)
United States	-.025 (.008)	-.010 (.006)	-.012 (.023)	-.063 (.028)	.010 (.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:					Proportion within job (6)
	Basic adj. (1)	Ind (2)	Occ (3)	Est (4)	Occ-Est (5)	
<b>Panel A: Immigrants</b>						
Canada	-.338 (.002)	-.260 (.002)	-.197 (.002)	-.194 (.002)	-.106 (.002)	.31
Denmark	-.103 (.002)	-.075 (.002)	-.034 (.002)	-.055 (.002)	-.019 (.002)	.18
France	-.220 (.006)	-.139 (.005)	-.101 (.005)	-.066 (.007)	-.045 (.008)	.20
Germany	-.246 (.005)	-.159 (.005)	-.108 (.004)	-.122 (.004)	-.058 (.003)	.24
Netherlands	-.235 (.014)	-.186 (.013)	-.140 (.012)	-.135 (.021)	-.135 (.036)	.57
Norway	-.252 (.001)	-.174 (.001)	-.100 (.001)	-.118 (.001)	-.037 (.001)	.15
Spain	-.376 (.004)	-.224 (.004)	-.186 (.004)	-.078 (.006)	-.056 (.006)	.15
Sweden	-.100 (.002)	-.057 (.002)	-.014 (.002)	-.013 (.002)	.013 (.002)	.00
United States	-.107 (.003)	-.090 (.003)	-.059 (.003)	-.068 (.004)	-.029 (.005)	.27
<b>Panel B: Children of immigrants</b>						
Canada	-.037 (.002)	-.016 (.002)	-.017 (.002)	-.033 (.002)	-.027 (.002)	.73
Denmark	-.078 (.005)	-.055 (.005)	-.034 (.005)	-.032 (.005)	-.013 (.005)	.17
Germany	-.104 (.010)	-.065 (.008)	-.044 (.008)	-.043 (.005)	-.016 (.005)	.15
Netherlands	-.113 (.020)	-.083 (.018)	-.076 (.017)	-.046 (.024)	-.011 (.034)	.10
Norway	-.116 (.005)	-.073 (.005)	-.060 (.005)	-.038 (.005)	-.015 (.005)	.13
Sweden	-.078 (.002)	-.059 (.002)	-.031 (.002)	-.035 (.002)	-.012 (.002)	.15

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:					Proportion within job (6)
	Basic adj. (1)	Ind (2)	Occ (3)	Est (4)	Occ-Est (5)	
<b>Panel A: Immigrants</b>						
Canada	-.296 (.002)	-.226 (.002)	-.143 (.002)	-.180 (.002)	-.088 (.002)	.30
Denmark	-.089 (.002)	-.058 (.002)	-.027 (.002)	-.046 (.002)	-.022 (.002)	.25
France	-.180 (.007)	-.131 (.006)	-.094 (.006)	-.099 (.006)	-.069 (.007)	.38
Germany	-.170 (.007)	-.102 (.006)	-.059 (.006)	-.084 (.005)	-.042 (.005)	.25
Netherlands	-.106 (.013)	-.076 (.012)	-.026 (.011)	-.075 (.016)	-.013 (.027)	.13
Norway	-.196 (.001)	-.149 (.001)	-.074 (.001)	-.112 (.001)	-.031 (.001)	.16
Spain	-.311 (.005)	-.189 (.005)	-.152 (.005)	-.113 (.006)	-.095 (.006)	.31
Sweden	-.043 (.002)	-.031 (.002)	-.010 (.002)	-.007 (.002)	.009 (.002)	.00
United States	-.118 (.003)	-.111 (.003)	-.070 (.003)	-.088 (.004)	-.040 (.005)	.34
<b>Panel B: Children of immigrants</b>						
Canada	.002 (.002)	-.002 (.002)	-.002 (.002)	-.018 (.002)	-.009 (.002)	–
Denmark	-.028 (.004)	-.019 (.004)	-.011 (.004)	-.009 (.004)	-.002 (.004)	.08
Germany	-.056 (.008)	-.041 (.008)	-.024 (.007)	-.035 (.006)	-.014 (.005)	.24
Netherlands	-.017 (.018)	-.031 (.017)	-.023 (.016)	-.028 (.023)	-.018 (.034)	1.00
Norway	-.059 (.005)	-.038 (.005)	-.029 (.004)	-.025 (.005)	-.005 (.005)	.09
Sweden	-.030 (.002)	-.026 (.002)	-.012 (.002)	-.014 (.002)	-.002 (.002)	.08

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.

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

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

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)

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

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

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)

	Basic adj.	Sensitivity: Coarsened occupation, 3-digit		Main analysis		Difference in Occ-Est estimates relative to main analysis	Proportion within job (coarsened)	Proportion within job (main analysis)
		Fixed effect for		Fixed effect for				
		Occ	Occ-Est	Occ	Occ-Est			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	
<b>Panel A: Immigrants</b>								
Denmark	-0.096 (.001)	-0.033 (.001)	-0.025 (.001)	-0.033 (.001)	-0.023 (.001)	-0.002	.26	.24
Germany	-.218 (.004)	-.107 (.004)	-.070 (.003)	-.091 (.004)	-.054 (.003)	-.016	.32	.25
Norway	-.227 (.001)	-.095 (.001)	-.039 (.001)	-.088 (.001)	-.035 (.001)	-.005	.17	.15
Sweden	-.073 (.001)	-.019 (.001)	.009 (.001)	-.014 (.001)	.012 (.001)	-.002	1.00	1.00
<b>Panel B: Children of immigrants</b>								
Denmark	-.053 (.003)	-.023 (.003)	-.009 (.003)	-.023 (.003)	-.007 (.003)	-.001	.17	.14
Germany	-.081 (.007)	-.041 (.005)	-.023 (.004)	-.035 (.005)	-.015 (.004)	-.007	.28	.19
Norway	-.091 (.004)	-.050 (.003)	-.015 (.003)	-.045 (.003)	-.010 (.003)	-.006	.17	.11
Sweden	-.054 (.001)	-.025 (.001)	-.010 (.001)	-.022 (.001)	-.008 (.001)	-.003	.19	.15

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

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

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

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		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)
	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)
<b>Panel A: Immigrants</b>											
Canada	-0.169 (.001)	-0.106 (.001)	-0.083 (.001)	-0.116 (.001)	-0.064 (.001)	-0.322 (.001)	-0.099 (.001)	.153	.035	.38	.31
Denmark	-0.135 (.001)	-0.095 (.001)	-0.047 (.001)	-0.086 (.001)	-0.038 (.001)	-0.096 (.001)	-0.023 (.001)	-0.039	-0.015	.28	.24
France	-0.210 (.004)	-0.103 (.004)	-0.074 (.004)	-0.087 (.004)	-0.062 (.005)	-0.207 (.005)	-0.056 (.005)	-0.003	-0.006	.29	.27
Germany	-0.272 (.004)	-0.130 (.004)	-0.069 (.003)	-0.122 (.003)	-0.055 (.003)	-0.218 (.004)	-0.054 (.003)	-0.054	-0.002	.20	.25
Netherlands	-0.179 (.011)	-0.103 (.009)	-0.040 (.008)	-0.091 (.012)	-0.048 (.018)	-0.167 (.010)	-0.052 (.018)	-0.012	.004	.27	.31
Norway	-0.235 (.001)	-0.146 (.001)	-0.070 (.001)	-0.114 (.001)	-0.034 (.001)	-0.227 (.001)	-0.035 (.001)	-0.008	.001	.14	.15
Spain	-0.387 (.003)	-0.173 (.003)	-0.129 (.003)	-0.092 (.004)	-0.072 (.004)	-0.347 (.003)	-0.073 (.004)	-0.039	.000	.19	.21
Sweden	-0.081 (.002)	-0.051 (.001)	-0.006 (.001)	-0.029 (.001)	.010 (.001)	-0.073 (.001)	.012 (.001)	-0.009	-0.002	.00	.00
United States	-0.037 (.003)	-0.008 (.002)	.034 (.002)	-0.031 (.003)	.015 (.003)	-0.112 (.002)	-0.035 (.003)	.074	.050	.00	.31
<b>Panel B: Children of immigrants</b>											
Canada	.110 (.002)	.091 (.002)	.052 (.001)	.009 (.002)	-.004 (.002)	-.019 (.002)	-.017 (.002)	.129	.013	–	.89
Denmark	-.029 (.003)	-.022 (.003)	-.010 (.003)	-.029 (.003)	-.010 (.003)	-.053 (.003)	-.007 (.003)	.024	-0.003	.36	.14
Germany	-.075 (.007)	-.037 (.006)	-.018 (.006)	-.042 (.004)	-.015 (.004)	-.081 (.007)	-.015 (.004)	.005	.000	.20	.19
Netherlands	-.075 (.015)	-.052 (.013)	-.031 (.012)	-.074 (.019)	-.003 (.046)	-.056 (.014)	.007 (.046)	-0.018	-0.010	.04	.00
Norway	-.040 (.004)	-.018 (.004)	-.018 (.003)	-.036 (.003)	-.011 (.003)	-.091 (.004)	-.010 (.003)	.050	-0.001	.27	.11
Sweden	-.039 (.001)	-.035 (.001)	-.010 (.001)	-.038 (.001)	-.010 (.001)	-.054 (.001)	-.008 (.001)	.015	-0.002	.25	.15

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 (8)	Difference in Occ-Est estimates relative to main analysis (9)	Proportion within job (no adjustment for age) (10)	Proportion within job (main analysis) (11)
	Basic adj. (1)	Fixed effect for:				Basic adj. (6)	Fixed effect Occ-Est (7)				
		Ind (2)	Occ (3)	Est (4)	Occ-Est (5)						
<b>Panel A: Immigrants</b>											
Canada	-0.275 (.001)	-0.199 (.001)	-0.130 (.001)	-0.142 (.001)	-0.059 (.001)	-0.322 (.001)	-0.099 (.001)	.047	.040	.22	.31
Denmark	-.141 (.001)	-.111 (.001)	-.066 (.001)	-.090 (.001)	-.046 (.001)	-.096 (.001)	-.023 (.001)	-.045	-.022	.32	.24
France	-.191 (.005)	-.116 (.004)	-.081 (.004)	-.063 (.005)	-.039 (.005)	-.207 (.005)	-.056 (.005)	.016	.017	.20	.27
Germany	-.226 (.004)	-.145 (.004)	-.099 (.004)	-.116 (.003)	-.060 (.003)	-.218 (.004)	-.054 (.003)	-.008	-.006	.26	.25
Netherlands	-.158 (.010)	-.114 (.009)	-.064 (.009)	-.081 (.012)	-.039 (.018)	-.167 (.010)	-.052 (.018)	.009	.013	.25	.31
Norway	-.234 (.001)	-.162 (.001)	-.078 (.001)	-.115 (.001)	-.023 (.001)	-.227 (.001)	-.035 (.001)	-.006	.012	.10	.15
Spain	-.366 (.003)	-.216 (.003)	-.174 (.003)	-.090 (.004)	-.069 (.004)	-.347 (.003)	-.073 (.004)	-.019	.003	.19	.21
Sweden	-.111 (.001)	-.079 (.001)	-.037 (.001)	-.046 (.001)	-.010 (.001)	-.073 (.001)	.012 (.001)	-.038	-.021	.09	.00
United States	-.083 (.002)	-.073 (.002)	-.040 (.002)	-.053 (.003)	-.008 (.003)	-.112 (.002)	-.035 (.003)	.029	.026	.10	.31
<b>Panel B: Children of immigrants</b>											
Canada	-.011 (.002)	-.002 (.002)	-.003 (.002)	-.017 (.002)	-.012 (.002)	-.019 (.002)	-.017 (.002)	.009	.005	1.00	.89
Denmark	-.222 (.004)	-.198 (.003)	-.158 (.003)	-.172 (.003)	-.124 (.003)	-.053 (.003)	-.007 (.003)	-.169	-.116	.56	.14
Germany	-.096 (.007)	-.066 (.006)	-.047 (.005)	-.051 (.004)	-.024 (.004)	-.081 (.007)	-.015 (.004)	-.016	-.009	.25	.19
Netherlands	-.118 (.014)	-.098 (.013)	-.087 (.012)	-.082 (.018)	-.032 (.044)	-.056 (.014)	.007 (.046)	-.062	-.039	.27	.00
Norway	-.232 (.004)	-.181 (.004)	-.138 (.003)	-.144 (.004)	-.085 (.003)	-.091 (.004)	-.010 (.003)	-.141	-.076	.37	.11
Sweden	-.100 (.001)	-.084 (.001)	-.050 (.001)	-.063 (.001)	-.030 (.001)	-.054 (.001)	-.008 (.001)	-.046	-.022	.30	.15

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 (8)	Difference in Occ-Est estimates relative to main analysis (9)	Proportion within job (broader age range) (10)	Proportion within job (main analysis) (11)
	Basic adj. (1)	Fixed effect for:				Basic adj. (6)	Fixed effect Occ-Est (7)				
		Ind (2)	Occ (3)	Est (4)	Occ-Est (5)						
<b>Panel A: Immigrants</b>											
Canada	-.288 (.001)	-.223 (.001)	-.158 (.001)	-.170 (.001)	-.093 (.001)	-.322 (.001)	-.099 (.001)	.034	.006	.32	.31
Denmark	-.087 (.001)	-.064 (.001)	-.030 (.001)	-.051 (.001)	-.021 (.001)	-.096 (.001)	-.023 (.001)	.009	.002	.24	.24
France	-.209 (.004)	-.141 (.004)	-.103 (.004)	-.082 (.005)	-.054 (.005)	-.207 (.005)	-.056 (.005)	-.002	.002	.26	.27
Germany	-.215 (.004)	-.135 (.004)	-.088 (.003)	-.105 (.003)	-.050 (.003)	-.218 (.004)	-.054 (.003)	.003	.003	.23	.25
Netherlands	-.159 (.009)	-.111 (.008)	-.064 (.008)	-.087 (.011)	-.025 (.015)	-.167 (.010)	-.052 (.018)	.008	.028	.15	.31
Norway	-.215 (.001)	-.151 (.001)	-.078 (.001)	-.107 (.001)	-.028 (.001)	-.227 (.001)	-.035 (.001)	.012	.007	.13	.15
Spain	-.311 (.003)	-.184 (.003)	-.149 (.003)	-.078 (.004)	-.058 (.004)	-.347 (.003)	-.073 (.004)	.036	.014	.19	.21
Sweden	-.075 (.001)	-.052 (.001)	-.021 (.001)	-.019 (.001)	.003 (.001)	-.073 (.001)	.012 (.001)	-.002	-.009	.00	.00
United States	-.106 (.002)	-.096 (.002)	-.063 (.002)	-.075 (.002)	-.030 (.003)	-.112 (.002)	-.035 (.003)	.006	.005	.28	.31
<b>Panel B: Children of immigrants</b>											
Canada	-.042 (.002)	-.029 (.001)	-.025 (.001)	-.038 (.001)	-.027 (.001)	-.019 (.002)	-.017 (.002)	-.023	-.010	.64	.89
Denmark	-.066 (.003)	-.048 (.003)	-.033 (.003)	-.029 (.003)	-.017 (.003)	-.053 (.003)	-.007 (.003)	-.013	-.009	.26	.14
Germany	-.081 (.006)	-.055 (.005)	-.037 (.005)	-.041 (.004)	-.017 (.003)	-.081 (.007)	-.015 (.004)	-.001	-.002	.21	.19
Netherlands	-.033 (.012)	-.021 (.011)	-.018 (.011)	-.013 (.015)	.013 (.024)	-.056 (.014)	.007 (.046)	.023	.006	.00	.00
Norway	-.118 (.003)	-.072 (.003)	-.054 (.003)	-.045 (.003)	-.018 (.003)	-.091 (.004)	-.010 (.003)	-.027	-.009	.16	.11
Sweden	-.058 (.001)	-.047 (.001)	-.029 (.001)	-.030 (.001)	-.013 (.001)	-.054 (.001)	-.008 (.001)	-.004	-.005	.23	.15

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)
	Basic adj.	Fixed effect for:				Basic adj.	Occ-Est				
		Ind	Occ	Est	Occ-Est						
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	
<b>Panel A: Immigrants</b>											
Canada	-.237 (.001)	-.186 (.001)	-.127 (.001)	-.135 (.001)	-.061 (.001)	-.322 (.001)	-.099 (.001)	.085	.038	.26	.31
Denmark	-.063 (.001)	-.048 (.001)	-.015 (.001)	-.035 (.001)	-.007 (.001)	-.096 (.001)	-.023 (.001)	.034	.016	.12	.24
France	-.172 (.005)	-.125 (.005)	-.087 (.004)	-.073 (.004)	-.047 (.005)	-.207 (.005)	-.056 (.005)	.035	.009	.27	.27
Germany	-.150 (.004)	-.101 (.004)	-.057 (.004)	-.082 (.003)	-.028 (.003)	-.218 (.004)	-.054 (.003)	.069	.025	.19	.25
Netherlands	-.131 (.010)	-.106 (.009)	-.059 (.009)	-.076 (.012)	-.013 (.017)	-.167 (.010)	-.052 (.018)	.036	.039	.10	.31
Norway	-.209 (.001)	-.151 (.001)	-.075 (.001)	-.107 (.001)	-.022 (.001)	-.227 (.001)	-.035 (.001)	.018	.013	.10	.15
Spain	-.181 (.004)	-.104 (.004)	-.077 (.003)	-.024 (.005)	-.015 (.005)	-.347 (.003)	-.073 (.004)	.166	.058	.08	.21
Sweden	-.063 (.001)	-.040 (.001)	-.011 (.001)	-.009 (.001)	.013 (.001)	-.073 (.001)	.012 (.001)	.010	.002	.00	.00
United States	-.091 (.002)	-.088 (.002)	-.058 (.002)	-.067 (.002)	-.025 (.003)	-.112 (.002)	-.035 (.003)	.020	.009	.28	.31
<b>Panel B: Children of immigrants</b>											
Canada	-.020 (.002)	-.011 (.002)	-.011 (.001)	-.020 (.001)	-.014 (.002)	-.019 (.002)	-.017 (.002)	-.001	.003	.72	.89
Denmark	-.037 (.003)	-.027 (.003)	-.013 (.003)	-.014 (.003)	.000 (.003)	-.053 (.003)	-.007 (.003)	.016	.007	.00	.14
Germany	-.058 (.007)	-.041 (.006)	-.023 (.005)	-.030 (.004)	-.007 (.004)	-.081 (.007)	-.015 (.004)	.023	.008	.13	.19
Netherlands	-.043 (.013)	-.040 (.012)	-.033 (.012)	-.025 (.019)	.022 (.048)	-.056 (.014)	.007 (.046)	.014	.015	.00	.00
Norway	-.085 (.004)	-.053 (.003)	-.041 (.003)	-.028 (.003)	-.006 (.003)	-.091 (.004)	-.010 (.003)	.006	.004	.07	.11
Sweden	-.047 (.001)	-.038 (.001)	-.018 (.001)	-.022 (.001)	-.006 (.001)	-.054 (.001)	-.008 (.001)	.007	.001	.14	.15

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 (8)	Difference in Occ-Est estimates relative to main analysis (9)	Proportion within job (adjustment for part-time) (10)	Proportion within job (main analysis) (11)
	Basic adj. (1)	Fixed effect for:				Basic Adj. (6)	Fixed effect for: Occ-Est (7)				
		Ind (2)	Occ (3)	Est (4)	Occ-Est (5)						
<b>Panel A: Immigrants</b>											
Canada	-.303 (.001)	-.230 (.001)	-.166 (.001)	-.176 (.001)	-.092 (.001)	-.322 (.001)	-.099 (.001)	.019	.007	.30	.31
Denmark	-.087 (.001)	-.067 (.001)	-.038 (.001)	-.056 (.001)	-.030 (.001)	-.096 (.001)	-.023 (.001)	.009	-.006	.34	.24
France	-.199 (.004)	-.128 (.004)	-.093 (.004)	-.076 (.005)	-.052 (.005)	-.207 (.005)	-.056 (.005)	.008	.004	.26	.27
Germany	-.210 (.004)	-.134 (.004)	-.091 (.003)	-.107 (.003)	-.054 (.003)	-.218 (.004)	-.054 (.003)	.008	.000	.26	.25
Netherlands	-.177 (.009)	-.133 (.008)	-.091 (.008)	-.106 (.011)	-.041 (.017)	-.167 (.010)	-.052 (.018)	-.010	.011	.23	.31
Norway	-.186 (.001)	-.141 (.001)	-.082 (.001)	-.099 (.001)	-.033 (.001)	-.227 (.001)	-.035 (.001)	.041	.002	.18	.15
Spain	-.305 (.003)	-.188 (.003)	-.156 (.003)	-.084 (.004)	-.068 (.004)	-.347 (.003)	-.073 (.004)	.042	.005	.22	.21
United States	-.090 (.002)	-.086 (.002)	-.060 (.002)	-.069 (.002)	-.036 (.003)	-.112 (.002)	-.035 (.003)	.022	-.002	.41	.31
<b>Panel B: Children of immigrants</b>											
Canada	-.013 (.002)	-.004 (.001)	-.004 (.001)	-.020 (.001)	-.012 (.001)	-.019 (.002)	-.017 (.002)	.006	.005	.88	.89
Denmark	-.047 (.003)	-.036 (.003)	-.025 (.003)	-.023 (.003)	-.011 (.003)	-.053 (.003)	-.007 (.003)	.005	-.004	.24	.14
Germany	-.078 (.006)	-.051 (.005)	-.034 (.005)	-.037 (.004)	-.014 (.003)	-.081 (.007)	-.015 (.004)	.003	.001	.18	.19
Netherlands	-.040 (.012)	-.036 (.011)	-.028 (.011)	-.034 (.016)	.079 (.029)	-.056 (.014)	.007 (.046)	.017	.072	.00	.00
Norway	-.070 (.003)	-.048 (.003)	-.039 (.003)	-.023 (.003)	-.006 (.003)	-.091 (.004)	-.010 (.003)	.020	.004	.08	.11

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.

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

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

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).

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

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	Fixed effect for:			Proportion within job	
	education	Ind	Occ	Est		Occ-Est
	(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.

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

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).

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

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).

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

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

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.

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

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.

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

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

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.

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