DISCUSSION PAPER SERIES

Intergenerational Mobility of Immigrants by Refugee Status: An Analysis of Linked Landing Files and Tax Records

Wifag Adnan
Jonathan Zhang
Angela Zheng

DISCUSSION PAPER SERIES

Intergenerational Mobility of Immigrants by Refugee Status: An Analysis of Linked Landing Files and Tax Records

Wifag Adnan
New York University Abu Dhabi and IZA

Jonathan Zhang
McMaster University

Angela Zheng
McMaster University and IZA

ABSTRACT

Intergenerational Mobility of Immigrants by Refugee Status: An Analysis of Linked Landing Files and Tax Records[*]

A large literature shows that the children of immigrants have high upward mobility. However, immigrants vary vastly in how they are selected: while economic immigrants are chosen based on skill and education, refugees migrate at times of conflict and war. In this paper, we study the mobility of immigrants by admission class. Using administrative data linking the universe of immigrant landing documents with tax records in Canada, we estimate intergenerational mobility outcomes by refugee status. We find that for immigrant parents at the 25th percentile of the income distribution, refugee children have an expected rank of 47 percentiles, while the corresponding estimate for non-refugee children is 51 percentiles. Approximately 60% of this gap can be explained by differences in parental attributes upon arrival, indicating that selection contributes to higher mobility. Finally, we show that when correcting for the underplacement of immigrant parents, the absolute upward mobility of refugees at p25 is largely unaffected while that of non-refugees falls by around 2 percentiles..

Corresponding author:
Angela Zheng
McMaster University
1280 Main St W
Hamilton, ON L8S 4L8
Canada

E-mail: zhenga17@mcmaster.ca

1. Introduction

Recent work has established that relative to the native-born population, immigrants experience high intergenerational income mobility. For instance, Abramitzky et al. (2021) find that both historically and contemporaneously, children of US immigrants near the bottom of the income distribution outperform their native-born counterparts.[1] The same has been found in Canada (Connolly et al., 2022). One potential explanation is that immigrants who voluntarily choose to emigrate are often positively selected in terms of observable characteristics such as education, prior work experience, or family connections. A remaining question is whether all immigrants experience high rates of mobility, including those who are less positively selected.

One such group are refugees. A refugee is "forced to leave his or her country because of persecution, war or violence" (UNHCR); this makes them fundamentally different from economic immigrants who voluntarily leave to seek a better life—for themselves and their families—and who come to host countries having met rigorous criteria on educational attainment, language proficiency, and work experience. The number of refugees globally has been growing[2]; however, research on refugees and their children is scant. This is largely due to data limitations. Typically, immigration status is not observed in administrative datasets and refugees are underrepresented in surveys, which are seldom linked to tax records.[3]

We fill this major gap in the literature by documenting the intergenerational income mobility of immigrants by refugee status. We refer to refugees as UNHCR refugees, asylum seekers who are granted refugee status, and humanitarian immigrants.[4] Our setting is Canada, one of the largest immigrant nations in the world. Immigrants make up 23% of

---

[1]Specifically, children of US immigrants born between 1984-2006 to parents in the 25th percentile of the income distribution join the the 47th percentile as adults; in comparison, children of the US-born end up in the 43rd percentile.

[2]Globally, the number of refugees has rapidly increased almost threefold from 10.5 million in 2012 to 29.4 million in 2022. The total number of forcibly displaced people (including refugees and internally displaced) has surpassed 100 million for the first time in 2022. (UNHCR, 2013, 2023)

[3]In the US, immigrant status is not observed for immigrants who become naturalized citizens. Surveys like the New Immigrant Survey are not linked to administrative income sources and have only 810 children participants in the baseline wave.

[4]Humanitarian immigrants are a class of immigrants that Canada admits based on "humanitarian and compassionate grounds". The factors that make an immigrant eligible are similar to those required of refugees; see here for more information.

Canada's population (Canada, 2022) and Canada has the second highest refugee admission rate per capita among G7 nations. We use immigrant landing files (application information validated by Immigration, Refugees and Citizenship Canada) linked to tax records for all immigrants since 1980. The landing files provide us a view of the immigrant's pre-immigration characteristics, including educational attainment, language proficiency, intended occupation, among others. Crucially, this data includes family identifiers allowing us to study immigrant intergenerational outcomes. Our sample contains the universe of the "1.5 generation" of immigrant children to Canada (those born outside of Canada) and their parents.[5,6]

To start, we verify that refugees to Canada are less positively selected than non-refugee immigrants.[7] Compared to non-refugees, refugees have lower educational attainment, worse language proficiency, and perform lower on other socioeconomic measures at the time of arrival. Moreover, leveraging detailed socioeconomic measures in the immigrant landing file compared to IPUMS census data on individuals from origin countries that do not emigrate (stayers), we show that refugees more closely resemble stayers than non-refugees from the same origin country. Against this background, we establish four main findings on immigrant mobility.

Our first finding is that despite being less selected, refugee immigrants are highly mobile. Children of refugees and non-refugees with parents in the 25th percentile of the Canadian income distribution go on to have incomes at the 47th and 51st percentiles as adults (absolute upward mobility), respectively. These figures surpass the absolute upward mobility rate (46th percentile) for the overall Canadian population (Connolly et al., 2019). The same statistics for children with parents in the 50th percentile are 54 for refugees and 56 for non-refugees. Rank-rank correlations between parental and child income are 0.263 and 0.205 for refugees and non-refugees; native-born Canadians have a rank-rank slope of 0.286, and US immigrants have a slope of 0.21 (Abramitzky et al., 2021). Further, we show that refugee children with

---

[5]Many of the children in our sample arrive in Canada very young; twenty percent of children arrive at the age of five or younger.

[6]We also observe and are able to link children and family members who arrive separately (e.g., after the first family member arrives).

[7]Past studies have shown that upon arrival, refugees are less positively selected than other immigrants in the United States (Cortes, 2004; Chin and Cortes, 2015; Capps et al., 2015; Evans and Fitzgerald, 2017), in Canada (Kaida et al., 2022), in the United Kingdom (Ruiz and Vargas-Silva, 2018), and in Europe (Dumont et al., 2016; Dustmann et al., 2017; Fasani et al., 2022).

parents in the top quintile perform equally as well as their non-refugee counterparts.

Second, examining heterogeneity in intergenerational mobility, we find meaningful differences by world area of birth. Specifically, not only do European refugees have the highest mobility rates among refugees, but their mobility rates are comparable to their non-refugee counterparts. On the other hand, refugees from East Asia, and Africa and the Middle East have lower mobility rates, both compared to refugees from Europe and to non-refugees from the same areas.

Third, we investigate what accounts for the absolute upward mobility gap between refugees and non-refugees. The majority (60%) of the four percentile rank difference between refugees and non-refugees at the 25th percentile is explained by controlling for pre-immigration factors. The key drivers are language skills, world area of birth, and most importantly, intended occupation. At the 50th percentile of parental income, controlling for these factors almost completely eliminates the mobility gap between the two groups.

Finally, we investigate whether our high mobility estimates are due to parental incomes being suppressed, a common concern in the immigration literature ("underplacement" in Abramitzky et al. (2021) and "downgrading" in Dustmann et al. (2013)). We predict immigrants' income potential using a two-step process. First, we estimate Mincer regressions of income on gender, education, occupation, and metropolitan area for native-born Canadians using the Census. Next, using immigrants' observable characteristics measured at landing from their immigrant files (i.e., gender, education, intended occupation, and landing metropolitan area), we fit predicted income had they been native-born. Perhaps surprisingly, correcting for underplacement increases relative mobility—measured by rank-rank correlation—for immigrants. However, this is largely driven by the downward mobility of immigrants from the top to the middle of the income distribution. For immigrant parents who arrive at the 25th percentile of the distribution, correcting for underplacement has little impact on the mobility of refugees but has a larger effect on the mobility of non-refugees—who are more positively selected based on language, education, and work experience. This is most evident in non-refugees from Africa and the Middle East where adjusting for underplacement reduces their absolute upward mobility rates (at p25) by five percentile ranks.

Taken together, our findings suggest that despite the difficult conditions under which

refugees immigrate to Canada, refugee children have similar economic opportunities as non-refugee ones, conditional on parental income. For non-refugee children, despite the under-placement experienced by their parents, they still have greater upward mobility than natives. At a time when Canada is set to expand the number of immigrants they will accept (IRCC, 2022), our work emphasizes that Canada is a place of opportunity for newcomers.

Our work relates to a broad literature on intergenerational mobility (Chetty et al., 2014; Alesina et al., 2021; Jácome et al., 2022) and more specifically, the mobility of immigrants (Aydemir et al., 2009; Abramitzky et al., 2021; Borjas, 1993; Card, 2005; Connolly et al., 2019, 2022, 2023; Ward, 2020; Foged et al., 2023). These papers do not and cannot distinguish between different immigrant classes. To the best of our knowledge, we are the first to document intergenerational income mobility by immigrant class of admission. Our detailed pre-immigration variables also allow us to investigate the factors that explain the immigrant mobility gap by refugee status. Furthermore, by investigating heterogeneity in intergenerational mobility by world area of birth, our work relates to a growing literature that examines economic opportunity by race (Davis and Mazumder, 2018; Chetty et al., 2020).

In addition, we contribute to the study of refugee outcomes. For an overview on the economics of refugee migration, see Chin and Cortes (2015); Dumont et al. (2016); Brell et al. (2020). To date, most work on refugees has focused on their integration into the labor market (Evans and Fitzgerald, 2017; Ruiz and Vargas-Silva, 2018; Kaida et al., 2020; Fasani et al., 2022; Foged et al., 2022b,a), in addition to investigating how they affect the local labor markets of host countries (Tumen, 2016; Borjas and Monras, 2017; Verme and Schuettler, 2021). Focusing on Canada, Sweetman and Warman (2013) study the economic integration among different classes of immigrants, including refugees.[8] We build on this literature by studying the economic opportunities of refugee children, and in particular, how their income depends on parental income and pre-immigration characteristics.

Finally, we join a long line of work studying how to accurately measure intergenerational mobility of income potential or economic class (Solon, 1989; Deutscher and Mazumder,

---

[8]Warman et al. (2019) study the outcomes of immigrant children by immigrant class and control for parental characteristics. Their main finding is that skilled economic immigrant children outperform refugee children even after conditioning on parental education, language, and country of origin.

2023),[9] including for immigrants who may experience downward occupational mobility (Abramitzky et al., 2021; Akresh, 2008; Wanner, 2003; Dustmann et al., 2013; Imai et al., 2019). We contribute to this literature by measuring and correcting for immigrant underplacement using intended occupation and other pre-immigration variables to predict their income potential.

The rest of this paper proceeds as follows. Section 2 describes the Canadian immigration system. Section 3 details our linked intergenerational administrative data and sample construction; Section 4 describes the empirical specification. The results are presented in Section 5 and the last section discusses and concludes.

2. Canadian Immigration Process

Canada is one of the largest immigrant nations in the world. In 2021, 23% of Canada's population was foreign born (Statistics Canada, 2022a)—the highest among G7 nations— compared to 13.6% in the United States. In the past century, immigration policy in Canada has undergone several changes. Before 1967, Canada had preferences for immigrants from Western countries, such as the United Kingdom and the United States (Department of Justice Canada, 2022). In 1967, Canada implemented changes that no longer considered country of origin as a factor but instead placed value on skilled immigrants (Green and Green, 2004; Department of Justice Canada, 2022).[10]

The immigrants in our sample landed between 1980 and 2006. During that time, immigrants coming to Canada for non-refugee or non-family reasons were assessed under the Canadian "points system" which emphasized immigrant skills (Green and Green, 2004; Department of Justice Canada, 2022). These "economic immigrants" were ranked based on factors such as education, proficiency in English/French, and work experience, resulting in immigrants to Canada being more likely to work in professional and skilled occupations

---

[9]A body of studies have focused on measurement bias such as life-cycle bias and attenuation bias (Acciari et al., 2022; Bhattacharya and Mazumder, 2011; Chadwick and Solon, 2002; Francesconi and Nicoletti, 2006; Lee and Solon, 2009; Nybom and Stuhler, 2016; Solon, 1989, 1992; Zimmerman, 1992).

[10]This reform is similar to the 1965 Immigration and Nationality Act in the US, which was created to promote a more egalitarian immigration policy by abolishing the National Origins Formula (Greenwood and Ward, 2015; Massey, 2016).

(Green and Green, 2004; Green, 1999).[11] Separately, Canada also placed a high value on immigration for family reunification purposes. As such, economic immigrants and family immigrants were highly positively selected: either they were very skilled workers, or they had family members that could help them once in Canada.

2.1 Refugees

Refugees on the other hand, faced a very different immigration process. As less is usually known about their admission, we outline below several institutional details on how refugees come to Canada. Formally, the 1976 Immigration Act defined refugees as those displaced from their home country and unable to return safely due to "a well-founded fear of persecution for reasons of race, religion, nationality, membership in a particular social group or political opinion" (Library and Archives Canada, 1976). While refugees are thus admitted under humanitarian grounds, between 1976 and 2002, Canada nevertheless still required prospective refugees to show economic independence within a certain period of arrival (Kaida et al., 2022). Since 2002, the Immigration Refugee and Protection Act (IRPA) placed more emphasis on humanitarian reasons for admitting refugees. During our sample period, Canada accepted an average of 28,092 refugees per year (Figure B.1a), which until recently was more refugees per capita than any other nation (Treviranus and Casasola, 2003).[12]

The majority of refugees come to Canada through resettlement. Typically, refugees flee from their home to a neighboring country (country of asylum) and then receive aid from the United Nations High Commissioner for Refugees (UNHCR). The UNHCR identifies refugees who need resettlement, a process by which they are accepted by another country and offered permanent residence.[13] Refugees are selected for resettlement by the UNHCR based on several criteria such as: those at risk of *refoulement* (where the asylum country forcibly returns the refugee to its home country); those who are victims of violence; those with urgent medical needs; those vulnerable due to their gender; and those who are separated

---

[11]Note that the province of Québec has their own immigration policy (Gagne et al., 1983). The "Canada Québec Accord relating to Immigration and Temporary Admission of Aliens" gives Quebec the right to select its own immigrants.

[12]In per capita terms, Canada is only second to Germany in G7 nations, including Australia, during this period Figure B.1b.

[13]See https://www.unhcr.org/resettlement.html for more information.

from their family members (UNHCR, 2020).

After identifying refugees eligible for resettlement, the UNHCR sends applications to potential host countries, such as Canada, who set quotas for the number of available refugee slots (Newland, 2002). While the UNHCR chooses those eligible for resettlement, the ultimate decision on whether refugees are invited lies with the host country. Immigration officers from Canada select refugees who will receive permanent residency through an interview process. An officer reassesses the validity of the refugee claim, and inquires about their ability to resettle in Canada, considering factors such as linguistic ability. Thus, while there are still selection criteria for refugees, they are subject to significantly weaker criteria than economic immigrants. For example, a refugee interview guidebook for immigration officers from 2009 highlights that factors such as having previously taught languages, being fluent in their own language, or knowing more than one language (irrespective of whether they are English and French) all point to linguistic ability (Citizenship and Immigration Canada, 2009). In addition, keeping families together is an important part of the resettlement program (Citizenship and Immigration Canada, 2009).

A refugee selected for government assistance will typically be allowed to move to Canada with their immediate family members. In determining where in Canada a refugee will settle, an immigration officer has to consider quotas in refugee resettlement across Canadian destinations. They also account for whether refugees have any family or friends in Canada that could help with the resettlement process (Simich et al., 2002).

3.   Data

In this section, we describe the main details of the data, as well as sample and variable construction (for more details, see Appendix A).

3.1   Immigration Data

Immigrant landing files for all new permanent residents since 1980 come from the Longitudinal Immigration Database (IMDB). A key feature of the IMDB is that it includes family identifiers which allow us to link immigrant parents and children; the file also specifies the

main parent.[14] The IMDB includes standard demographic variables (e.g., sex and date of birth), variables on country of origin, birth, and prior residence, and immigrant class of admission (e.g., refugee and humanitarian, economic, business class, etc.). Since the landing file data is derived from immigrant application files, we also observe unique measures—that are seldom observed by researchers—such as self-reported mother tongue, fluency in English and French, years of schooling, and intended occupation. These variables are populated by the applicant and then verified by an Immigrant, Refugee and Citizenship Canada (IRCC) officer through supporting documentation and an interview process.[15] We discuss these pre-immigration variables in more detail in subsection 3.3.

3.2 Tax Data

Immigration landing files are linked to individual income tax returns (T1 Family File, T1FF) from 1982 to 2020 and third-party information returns (T4 wage slips issued by employers) from 1997 to 2020. These two sources are analogous to 1040 forms and W-2 forms in the United States. Linkages are formed by Statistics Canada using probabilistic linkages. Of immigrants admitted between 1980 and 2020, over 85.3% had at least one T1FF record (during the period 1982-2020) and over 70.3% were linked to at least one T4 record (during the period 1997-2020). In cases where earnings are reported by both individual and third-parties, earnings were matched 93% of the time and the average overall difference between the two measures is 1.8% (Statistics Canada, 2022b).

We also have administrative tax data on a 20% sample of all annual T1FF filers in Canada for each year in our study period, called the Longitudinal Administrative Data (LAD). We use this data to construct individual and household income percentiles for the overall Canadian population which we use to rank immigrant child and parental household incomes.

---

[14]Note that we do not observe any children born in Canada.

[15]Lying on an application or in an interview with an IRCC officer or document fraud is a serious crime and can lead to removal from Canada or bans from entering the country. https://www.canada.ca/en/immigration-refugees-citizenship/services/protect-fraud/document-misrepresentation.html

3.3   Sample and Variable Definitions

Our primary sample consists of all immigrant children arriving in Canada as permanent residents before the age of 18 for whom we observe both, their income and their parents' income. Specifically, this includes all children who (1) arrive in Canada after 1982, (2) have filed at least one tax record between the ages of 30 and 34, and (3) whose main parent filed at least one tax record between the ages of 45 and 49. This results in 484,340 children[16] born between the years of 1963 and 1989, and who have arrived to Canada between 1980 and 2006.

Child Income   Child adult income is measured at ages 30-34 as intergenerational mobility measures tend to be more stable with child earnings in their early 30's (Chetty et al., 2014; Connolly et al., 2019). Individual income[17] across this age range is averaged and ranked against all tax filers in Canada (immigrant and non-immigrant) in the same birth cohort, in the same year (i.e., others who also turn 30 in the same year) using the LAD. We impute missing years as zero, keep zero income and impute the average percentile rank (e.g., if 5% of tax filers in Canada have zero income, an immigrant with zero income will be given an income rank of 2.5). When calculating intergenerational elasticities (i.e., log-log models), we consider various methods of dropping and imputing zero incomes.

Parental Income   In our preferred specification, we measure parental income when the main parent is 45-49. This age is chosen to more closely capture the immigrant parent's earning potential, which may be mechanically depressed upon arrival (at the average age of 37-40). As with child income, parental incomes are also ranked against a sample of all Canadian *parents* (immigrant and non-immigrant) who are aged 45-49 in the same year. We check whether our findings are sensitive to the use of alternative measures of parental and child income when estimating intergenerational mobility rates. This includes parental incomes measured at different ages of the parent and the child, individual versus household

---

[16]Sample sizes are rounded to the nearest tenth due to Statistics Canada vetting rules.

[17]We use individual income as it is a more accurate measure of the economic success of the child and is consistent with previous studies on intergenerational mobility of immigrants (Abramitzky et al., 2021; Connolly et al., 2022).

income, and also income measured at a certain number of years after arrival in Canada.

Pre-Immigration Variables As mentioned earlier, pre-immigration variables from the IMDB are from immigration applications that are verified by the IRCC. Immigrants are required to supply proof of variables such as the highest level of education. An important variable for our study is the intended occupation variable. This variable is meant to be a proxy for the applicant's intended career in Canada, considering their most recent source-country occupation. While there may be some incentives to misreport or overinflate their intended occupation, Green and Green (1995) argue that this is rare in practice because Canada has strong incentives to prevent misrepresentation. IRCC validates this variable using both proof of education qualifications as well as requiring at least one year of experience in the field. Individuals without work experience are classified as new workers. This intended occupation variable strongly predicts realized income and occupation in Canada. Figure B.2 shows that across intended occupation categories, the correlation between actual immigrant household income and actual Canadian-born household income is high (0.80) and indicates rank order consistency between the intended occupation of immigrants and the occupation of the Canadian-born.[18]

In addition, we perform a further validation of the intended occupation variable using the Longitudinal Survey of Immigrants to Canada (LSIC). This survey is conducted on a subsample of 12,000 immigrants after landing in 2000-2001. It contains information on immigrants' past occupation in the country of origin, the intended occupation in Canada as recorded in the survey conducted six months after landing, in addition to the intended occupation listed on their landing file.[19] Figure B.3 shows a heat map that displays the extent to which an individual's intended occupation, as stated on her landing file (x-axis), matches her occupation when surveyed (y-axis). If the intended occupation variable in the LSIC is missing, we use the past occupation in the country of origin instead. Occupations are at the one-digit level. The heat map shows that for immigrants, the one-digit intended occupation on the landing file correlates highly with either their past occupation or the

---

[18]For example, Canadian natives (immigrants) who state their (intended) occupation is "professional occupations in health–except nursing" do go on to earn higher incomes than those with an (intended) occupation of "assisting occupations in support of health services" at ages 45-49.

[19]We go into further details on the construction of the LSIC sample in Appendix A.

occupation stated in the survey. This high correlation is reassuring: while immigrants may have incentives to inflate their occupation on their landing file (despite there being harsh penalties for doing so), there are no incentives to lie on a survey six months *after* arriving in Canada.

4. Empirical Specification

4.1 Measuring Intergenerational Mobility

Labor economists have long been interested in intergenerational mobility in societies (see Deutscher and Mazumder, 2023, for a recent discussion). Economic mobility has typically been measured using total income, which is a salient measure of poverty, resources, and privilege. This has been operationalized with rank-rank regressions (Dahl and DeLeire, 2008; Chetty et al., 2014; Jácome et al., 2022):

$$Rank_i^{Child} = \beta_0 + \beta_1 Rank_i^{Parent} + \epsilon_i. \tag{1}$$

Specifically, we regress child individual income rank at ages 30-34 on their parent's household income rank at ages 45-49. The intercept parameter β_0 measures the *absolute* mobility if a child is born to parents at the bottom of the income distribution. The slope parameter β_1 measures *relative* mobility and identifies the correlation between a child's position and their parent's position in the income distribution. Note that high (low) positive estimates of β indicate a strong (weak) correlation between the income of the child and the parental income, which implies low (high) mobility. In addition to the rank-rank correlation, we estimate the expected income rank of child immigrants if their parents were at the 25th percentile of the household income distribution (referred to as "absolute upward mobility", Chetty et al., 2014). Equation 1 will be estimated on the full sample of immigrants as well as on refugee and non-refugee immigrants separately. We also consider measures of intergenerational elasticity with log-log specifications.

4.2 The Mobility Gap Between Refugees and Non-Refugees

In addition to measuring intergenerational mobility for refugee and non-refugee immigrants, we are also interested in investigating the mobility gap between these two groups. Towards this end, we follow Abramitzky et al. (2021) by estimating a regression that allows refugee and non-refugee intercepts and slopes to differ, as well as introducing additional controls:

$$Rank_i^{Child} = \beta_0 + \beta_1 Refugee_i + \beta_2 Rank_i^{Parent} + \beta_3 Refugee_i \times Rank_i^{Parent} + X_i'\theta + \epsilon_i. \quad (2)$$

The intercept term β_0 captures the absolute rank mobility of children of non-refugee immigrants born to parents at the lowest percentile of the income distribution (relative to all Canadians). The parameter β_1 captures the difference in expected rank between refugee and non-refugee immigrants. The parameters β_2 and β_3 capture the relative mobility of non-refugee children and the degree to which this correlation is different for refugee children, respectively. Therefore, the intergenerational gap in absolute upward mobility between refugees and other immigrants at the 25th percentile is measured by $\beta_1 + \beta_3 \times 25$. We include controls X_i pertaining to children characteristics (such as landing age and country of birth) and parental characteristics (e.g., intended occupation, language ability) to probe which factors can explain the intergenerational absolute mobility gap between refugee and non-refugee immigrants.

4.3 Adjusting for Underplacement

It is well-documented that immigrants experience occupational downgrading upon landing (Dustmann et al., 2013; Eckstein and Weissd, 2004). This has led to concerns that immigrants are underplaced (Abramitzky et al., 2021) and therefore income rank is not an accurate measure of true income potential. Moreover, recent work has shown that factors beyond parental income, such as parental education and occupation, explain a meaningful proportion of the variation in child earnings (Deutscher and Mazumder, 2023).

We adjust for underplacement of immigrants and account for key parental factors that may influence child outcomes by leveraging pre-immigration parental (intended) occupation, educational attainment, and marital status to predict income potential of immigrants, if they

had been Canadian-born. Specifically, we first estimate Mincer regressions (Mincer, 1958) of total household income on observable covariates using five Census waves (1991, 1996, 2001, 2006, and 2011):

$$LogIncome_j = \beta_1 NOC_j \times Female_j + \beta_2 Educ_j \times Female_j \tag{3}$$
$$+ \beta_3 Year_j + \beta_4 Female_j + \beta_5 Married_j + \epsilon_j.$$

This regression is estimated on Canadian-born individuals (with children) between the ages of 45-49 with positive incomes. The variable *LogIncome* is the log of total household income,[20] *NOC* is the 2-digit national occupation classification code of 2011[21]; *Educ* is years of schooling bins (< 12, 12, 13-15, 16, > 16) , *Year* is the census year at which income is measured, and *Female* and *Married* are indicator variables for female sex and being married. The interaction terms between occupation and sex, and schooling and sex, account for differences in returns to occupation/schooling by sex.

Using the estimated coefficients from Equation 3, we then calculate the predicted household income of immigrant parents using their pre-immigration characteristics verified by the IRCC. Importantly, we use the "Intended Occupation" (2-digit NOC 2011 code) of immigrants. For immigrants who report an intended occupation of "new worker" (immigrants without work experience would receive this value), we impute their occupation as manual laborer (the lowest earning occupation observed in the Census), and in a robustness test we drop these individuals. Finally, we calculate the predicted household income rank for immigrants among all Canadian parents and estimate Equation 1 by keeping the actual income rank of the child and replacing the actual realized parental income rank with the predicted parental income rank. The predicted parental income value reflects the counterfactual income if they were Canadian-born, and is likely an overestimate of true income potential.[22]

---

[20]Household income is self-reported in the census prior to 2006. Starting in 2006 census respondents were given the option to have their census answer linked to their tax files. Approximately 80% of individuals agreed to share tax data in 2006 (Brochu et al., 2014).

[21]We convert occupation codes in the census to NOC 2011 2-digit occupation codes to line up with the intended occupation variable in the immigration dataset. There are 40 two-digit NOC occupation codes.

[22]This value is an overestimate because the prediction exercise implicitly assumes that the immigrant has the language skills, work experience, professional networks and required accreditation of the average Canadian.

14

We refer to the difference between predicted income potential rank and realized actual income rank as "underplacement".[23] Therefore, we view this adjustment exercise along with the realized rank-rank slopes in Equation 1 as providing bounds on the true intergenerational mobility of immigrants.

Parallels to other approaches Our approach of predicting income using observable characteristics is not new. It is related to concerns around mismeasurements of parental endowment with earnings dating back to Solon (1989) and Mulligan (1997). These papers propose instrumenting for parental earnings with father characteristics such as education (Solon, 1992). Through this lens, our approach can be viewed as a two-sample 2SLS approach where pre-immigrant characteristics are used to instrument for income using a separate sample of the Canadian-born (Inoue and Solon, 2010).

Our approach is also related to recent work on historical intergenerational mobility where income rank is constructed using occupations (Collins and Wanamaker, 2022; Abramitzky et al., 2021; Jácome et al., 2022; Song et al., 2020). More directly, occupational mobility measures are also commonly studied in economics (Long and Ferrie, 2013) and sociology (Erikson and Goldthorpe, 1992); researchers have also studied educational mobility (e.g., Alesina et al., 2021). Our approach uses these same (pre-immigration) variables and maps it into a scalar (using the native-born data as the projection). Finally, intended occupation is validated by IRCC using proof of education and work experience, which makes it more likely to reflect a long-run permanent occupation (i.e., "career") as opposed to a transitory snapshot of their occupation (i.e., upon arrival to Canada). This alleviates concerns around measurement biases dating back to Solon (1989) and more recently emphasized by Ward (Forthcoming).

5.   Results

In this section, we first provide summary statistics on our main sample of 121,000 refugee and humanitarian immigrants and 363,340 non-refugee immigrants arriving in Canada be-

---

[23]Specifically, the $Rank(\widehat{LogIncome_j}) - Rank(Income_j)$, where rank is calculated based on the same sample of Canadian parents.

tween 1980 and 2006. We proceed by comparing refugees to non-refugees and stayers before examining the intergenerational mobility of immigrants.

5.1 Refugee and Non-Refugee Immigrant Selection

Refugees versus Non-Refugees   Table 1 provides evidence that refugee children and parents are more disadvantaged than non-refugee immigrants in their human capital acquisition, language proficiency, intended occupation, and previous work experience. This corroborates the findings in the literature that refugees are generally less positively selected than other immigrants (Cortes, 2004; Ruiz and Vargas-Silva, 2018; Dustmann et al., 2017; Kaida et al., 2022).

In our sample, only 31% (vs 64% for non-refugees) of refugee parents speak any English, 17% (vs 34%) have at least 16 years of schooling—a proxy for a bachelor's degree—9% (vs 38%) report an intended occupation of a managerial or professional role, and 39% (vs 11%) arrive as new workers. With respect to income, Table 1 shows that ten years after arriving in Canada, refugee parents have an average household income of $59,100 versus $83,400 for non-refugee parents. When comparing parental incomes for the two immigrant groups at ages 45-49—our parental income measure of interest—the non-refugee advantage remains the same. In subsection 5.2, we investigate whether these disadvantages for refugee parents persist into the next generation.

Refugees, Non-Refugees and Stayers   To get a sense of how Canadian immigrants are selected, Table 2 presents average educational attainment for refugees, non-refugees, and stayers by country of origin using the IMDB for immigrants and the IPUMS census for stayers. It is immediate that non-refugees are more educated than refugees and that refugees' educational attainment is closer to stayers.

For example, Vietnam is the top refugee sending country in our sample (14,750 refugees) and the 11th non-refugee sending country (8,290 non-refugees); 33.3% of non-refugee immigrants from Vietnam have at least a high school degree compared to 24.2% for refugees and 14.9% for stayers. The percentage with at least a college degree is 7.7%, 4.5% and 3.2% for non-refugees, refugees, and stayers, respectively. This pattern holds in almost all the top

refugee nations across different world areas.[24] For example, only 18.9% of Iranian refugees have a college degree, compared to 11.4% of stayers and 68.6% of non-refugees.

5.2 Intergenerational mobility of immigrants

To what degree do the economic outcomes of Canadian immigrant children depend on that of their parents' and how does this differ by refugee status? Table 3 reports different measures of intergenerational mobility for all immigrants and separately by refugee status. The first row displays log-log estimates (intergenerational elasticity of 0.172) and the second row estimates Equation 1, the correlation between the child individual income rank and the parental household income rank. The estimate of the rank-rank correlation is 0.223. Table B.1 shows that the estimate of intergenerational mobility is stable when considering other measures of child economic outcomes (income vs earnings), parental income (main parent, top earning parent), and different periods of measurement (based on parental age, child age, and number of years after landing).

Our rank-rank slope of 0.223 indicates that children of Canadian immigrants have high relative intergenerational income mobility. For comparison, the rank-rank correlation for Canadian-born parents provided by Marie Connolly is 0.286.[25] Our finding that immigrant children have higher income mobility than natives complements work studying other countries. For example, Abramitzky et al. (2021) estimate rank-rank slopes of 0.21 and 0.25 for sons born to immigrant fathers in 1984–2006 and 1978–1983 respectively, while the corresponding estimates for American-born fathers are 0.29 and 0.33.

When looking at differences by immigration status, refugees have lower relative mobility with a rank-rank slope of 0.263 compared to 0.205 for non-refugees. As discussed in Chetty et al. (2014), the rank-rank slope masks heterogeneity in outcomes across the income distribution. To get a fuller picture of immigrant mobility, Figure 1 plots a binned scatterplot

---

[24]The one exception being Poland in that Polish refugees to Canada are more educated than non-refugees. This can be attributed to the social, economic and political hardships in Poland during the 1980's and early 1990's, coupled with the high (state-imposed) cost of emigration During this period, the majority of Polish emigrants—many of whom were political dissidents and highly educated—were granted refugee status in Canada (Krywult-Albańska, 2011).

[25]These estimates are for birth cohorts 1975 to 1985 using the Intergenerational Income Database and Census linkage.

of percentile income ranks for children and parents by refugee status. The gray-dashed line provides an estimate of the rank-rank relationship for Canadian-born, provided by Marie Connolly using the Intergenerational Income Database linked to the Census.

The binned scatterplot highlights that the non-refugee advantage is driven by the fact that non-refugee children from the bottom of the income distribution outperform their refugee counterparts. In fact, in the top quintile of the parental income distribution, refugee children perform just as well on average as non-refugee children.

Thus, the remainder of this paper focuses on two measures of absolute upward mobility, the expected outcome of children born to parents at the 25th percentile and 50th percentile of the income distribution. Refugee children with parents in the 25th percentile have average individual incomes in the 47th percentile of the overall Canadian income distribution, at ages 30-34. Refugee children of parents at the median of the income distribution go on to have individual income at the 54th percentile. Non-refugee children with parents at p25 and p50 have individual incomes at the 51st and 56th percentiles, respectively. In addition, both non-refugees and refugees have higher absolute upward mobility than the Canadian-born. At the 25th percentile of parental income, the upward mobility estimate for natives is 44 percentiles. The difference in economic opportunity between immigrants and natives narrows as parental income increases.

5.3   Heterogeneity

Next, we examine heterogeneity in economic mobility among refugee and non-refugee immigrants. Figure 2 plots the absolute upward mobility rate (at p25) for each immigrant group by census metropolitan area (CMA) of landing, visible minority composition of census tract ("minority neighborhood" henceforth[26]), world area of birth, intended occupation, language proficiency, and child landing age. For both immigrant groups, those residing in Calgary and especially, Edmonton experience higher upward mobility than those in Montreal, Toronto, and Vancouver.[27] On average, children of non-refugees consistently outperform refugees by

---

[26]Minority neighborhood is defined as a census tract with a non-white share of the total population that is above the national average based on the nearest census year.

[27]One possible explanation for the success of Calgary and Edmonton is the economic growth of Alberta's energy and natural resources sector.(Agrawal and Yu, n.d.)

3-5 percentile income ranks regardless of which CMA they land in. Moreover, the mobility gap is only slightly changed when accounting for the racial composition of the immigrants' neighborhood; the mobility gap is slightly higher for immigrants who live in neighborhoods where there is a higher proportion of non-Whites.

In contrast, heterogeneity by world area of birth depends noticeably on refugee status. For example, with the exception of South and Central Americans, there is little to no heterogeneity among non-refugees. For refugees, however, mobility gaps vary considerably by region of birth. In fact, children of European refugees are more mobile than children of Middle East and African refugees by 8 percentile ranks. Figure 3 further investigates this heterogeneity by plotting expected child income rank for each quintile of parental income rank, across world region of birth. Refugees from East Asia, and Africa and the Middle East, consistently have lower economic mobility than their non-refugee counterparts, across the entire parental income distribution. For refugees from South Asia and Oceania, the refugee mobility gap shrinks with income.[28]

Intended occupation exhibits the most heterogeneity for both immigrant groups. Children of refugees whose parents had work experience in managerial and professional roles, have around seven percentile income ranks more than children of refugees whose parents are "new workers". The corresponding figure for non-refugees is roughly eight percentile income ranks. Remarkably, the mobility gap by refugee status is not linear with respect to intended occupation. For example, among those who reported the highest intended occupation category—managers and professionals—there is virtually no difference between children of refugees and children of economic immigrants. In contrast, the highest mobility gap by refugee status is experienced by children of immigrants whose parents reported the second highest intended occupation—skilled and technical occupations. One interpretation of this result may be that some occupations have more worker heterogeneity (e.g., substantial variation in language proficiency) than others, which contributes to the mobility gap.

Upward mobility for refugees does not greatly differ by proficiency of parents' in English; however, for non-refugees, those whose parents spoke English experience higher mobility by

---

[28]Meanwhile, immigrants from Europe and South/Central America experience negligible differences in mobility by refugee status throughout the parental income distribution.

6 percentile income ranks.[29] In addition, we find that child landing age exhibits significant variation in absolute upward mobility: refugee and non-refugee children landing under the age of 10 perform better than those landing at older ages.[30] This suggests that immigrant assimilation is more likely for those with early childhood exposure (Chetty et al., 2016; Connolly et al., 2023) in the host country.

By and large, the mobility gaps estimated at the 50th percentiles of the parental income distribution (Figure B.4) and the 75th percentile (Figure B.5) corroborate the general patterns we document above. It is noticeable however that as parental income rank increases, the mobility gap by refugee status wanes substantially from p25 to p50 to p75 for some groups while persistent for others. For example, the mobility gap is reduced for all intended occupation categories, CMAs, living in a minority neighborhood, and English language proficiency. In contrast, mobility gaps are notably persistent for many other groups—including Middle East and African immigrants, East Asian immigrants and those arriving in the age range of 15-17.

5.4   Why are refugees less upwardly mobile?

Heterogeneity in the refugee vs non-refugee mobility gap across different subgroups suggests that observable differences between the two groups may explain their different mobility estimates. We formally test this hypothesis by estimating Equation 2. Figure 4 presents estimates of the intergenerational gap in absolute mobility between refugees and other immigrants at the parental rank of p25 (dark bars) and p50 (light bars). To start, we focus on the gap at the 25th percentile. The first bar presents the raw gap which is -3.96 percentile ranks. Next, we include different controls, one at a time (i.e., bivariate regressions), to assess what factors explain the gap between refugees and other immigrants. A few facts emerge from this exercise.

First, observed pre-immigration characteristics are able to explain around 60% of the mobility gap at p25 between refugees and non-refugees. Looking at the last set of bars,

---

[29]This is consistent with recent work showing that children of refugees who received additional language training go on to have higher educational attainment (Foged et al., 2023).

[30]In related work, Connolly et al. (2023) assess the causal effect of immigrant landing age in Canada on child income and find positive effects for those immigrating at younger ages.

when we include all pre-immigration controls (region of birth, education, intended occupation, main parent landing age, and marital status), the intergenerational gap between refugees and non-refugees falls from -3.96 to -1.5 percentile ranks. Second, the characteristic with the largest effect on the gap by refugee status is intended occupation, which explains roughly half of the gap. This implies that differences between the skill and work experience between refugees and non-refugees ("selection on skill") explains around half of the mobility gap at p25. Language proficiency and parental educational attainment also play important roles. In contrast, region of birth explains only 13% of the gap.

Indeed, refugee and non-refugee children whose parents have a similar educational background or are from the same region of the world are more similar in terms of mobility (Aydemir et al., 2009; Aydemir, 2011). For the gap at p50, intended occupation again explains the majority of the gap, reducing it from -2.54 to -0.96. Including all controls at p50 explains 85% of the gap, leaving us with an unexplained gap of only -0.38 percentile ranks.

To gauge whether host country and child characteristics affect the mobility gap, we include controls for location, minority neighborhood, and child landing age (Figure B.6) and find there is little to no effect on the absolute mobility gap.[31] While location (i.e., neighborhood effects) has played a major role in explaining absolute mobility gaps in the literature, we contend that this may be attributed to studying groups that are usually residentially segregated from each other.[32]

5.5 Mobility rates adjusted for underplacement

The above results show that both refugee and non-refugee immigrants in Canada have high upward mobility. In this section, we assess the extent to which underplacement contributes to the upward mobility of immigrants.

Who is underplaced? In Table 4, we study which pre-immigration variables are associated with underplacement, separately for refugees (columns 1-4) and non-refugees (columns

---

[31]We include 41 dummies for census metropolitan areas, each of which has at least 30 observations.

[32]In fact, location plays a primarily role in reducing the mobility gap between natives and immigrants (Abramitzky et al., 2021) as well as ethnic wage gaps among immigrant groups (Ward, 2020, 2022) for US immigrants that arrived at the end of the 19th century.

5-8). More specifically, we regress the difference in predicted and realized parental income rank (based on Equation 3) on a set of covariates that were not used to compute predicted income rank: world area of birth (columns 1 and 5), language skills (columns 2 and 6), parental landing age (columns 5 and 7), and all covariates together (columns 4 and 8).

The omitted groups are immigrants born in Africa and the Middle East, immigrants who neither speak English nor French, and immigrants who landed before age 30. For refugees, immigrants from Africa and the Middle East are the most likely to be underplaced: the average difference in their predicted and realized rank is 11 percentile ranks. For non-refugees, however, East Asians are the most likely to be underplaced such that the difference between predicted and realized income is 37 rank percentiles on average; non-refugees from the Middle East/Africa and South Asia also experience high degrees of underplacement.[33] In comparison, European and South and Central American immigrants (refugees and non-refugees) experience some of the lowest rates of underplacement.

For refugees who speak English or French, they are less likely to be underplaced compared to those without these language skills. On the other hand, non-refugees who speak one of the official languages are more underplaced, with an average rank difference of 5 percentiles. Lastly, both refugees and non-refugees are more likely to underplace when they land at an older age, in line with them having less time to assimilate in the labor market.

Adjusting for underplacement: We now turn to studying how our estimates of intergenerational mobility change when correcting for underplacement. Following the methodology described in subsection 4.3, Figure 5 displays the distribution of actual income and predicted income potential, as well as binned scatterplots of child and parental income ranks for refugees and non-refugees. In the left column in Figure 5, we plot the histograms of realized actual immigrant parental income ventiles and binscatter plots of child rank ver-

---

[33]For certain groups, the extent of underplacement is large, which may suggest that using native-born outcomes to predict income potential may be an overestimate of their true income potential. Therefore, we view actual income and predicted income as lower and upper bounds of an immigrant's true income potential. Another possibility for the large underplacement for minorities may be discrimination; however, Mattoo et al. (2008) conclude that country-specific factors, such as the quality of tertiary education and the medium of instruction (i.e., not English), may complicate the ability of workers to transfer their skills. These findings also tie into work on the visible minority gap in earnings in Canada such as Skuterud (2010) and Oreopoulos (2011).

sus parental rank; the right column displays predicted income potential. Not surprisingly, predicted income potential shifts the mass of refugee and non-refugee immigrants towards higher incomes. However, the shift is starker for non-refugees, reflecting that these immigrants experience more underplacement. This finding is in line with non-refugees being a more positively selected group.

Examining the change in the binned scatterplots, we see that using predicted parental income ventiles lowers the intercept for non-refugees and flattens the slope for both groups, especially at higher ventiles. To quantify these differences more clearly, Table 5 displays estimates of Equation 1 using realized income and predicted income.[34]

Our results indicate that the rank-rank slope is lower when adjusting for underplacement, changing from 0.264 to 0.200 for refugees and 0.206 to 0.152 for non-refugees. This implies that on average, children of immigrants may have *greater* relative mobility than our previous estimates indicate. However, this is not driven by greater mobility from low ventiles to high ventiles, but from high ventiles to low ventiles. We can infer this directly from the bottom of Table 5, where the underplacement-adjusted absolute upward mobility at p25 is lower by roughly one percentile for refugees and two percentiles for non-refugees. The corresponding figures for p75 are more striking, at around 4 percentiles for refugees and 4.6 percentiles for non-refugees.

Thus, when correcting for underplacement, immigrants experience lower absolute upward mobility and greater relative mobility. Furthermore, comparing our estimates to mobility studies focused on the native-born Canadian population, stipulates that correcting for the underplacement of adult immigrants can bridge a non-negligible portion of the upward mobility gap between children of immigrants and children of natives.[35]

---

[34]Table B.2 repeats the underplacement exercise dropping new workers and the upward mobility estimates are very similar.

[35]To be more specific, the rank-rank intercept (36.536) and slope (0.286) for native-born Canadians using a linkage between the Intergenerational Income Database and the Census, was kindly provided to us by Marie Connolly (Connolly et al., 2023). This implies absolute upward mobility estimates for native-born Canadians are: p25=43.7, p50=50.8, and p75=58.0. When correcting for underplacement, the mobility gap between children of refugees and children of natives is almost fully bridged at p50 (51.4 vs 50.8) and reverses at p75 (56.4 vs 58). The mobility gap at p25 is reduced from 3.5 percentile ranks to 2.7 percentile ranks.

Adjusting for underplacement by subgroup: To identify which subgroups' mobility estimates are most affected by correcting for underplacement, Figure 6 presents absolute upward mobility at p25 for refugees (left) and non-refugees (right). Upward mobility estimates using actual income are in solid dark points and estimates using predicted income adjusted for underplacement are in transparent points. A few results stand out. To start, using predicted instead of realized income ranks has larger changes on the upward mobility for non-refugees. For refugees, most groups experience a one to two percentile rank decrease in upward mobility when adjusting for underplacement. Moreover, differences in realized and adjusted mobility estimates are largely similar across subgroups.

In contrast, there are starker differences for non-refugees. This result lines up with our findings in Table 4, highlighting that non-refugees are more likely to be underplaced. Focusing more on how underplacement affects IGM estimates for non-refugees, we see that some of the starkest drops in upward mobility occur across certain world regions of birth. Correcting for underplacement, the mobility estimates for non-refugees from Africa and Middle East drop by five percentile ranks. The mobility rates of non-refugees from Eastern and Southern Asia are also overstated. Unlike all other nonrefugee groups, the mobility rates of Europeans are understated.

Correcting for underplacement also reduces the adjusted mobility estimates for other subgroups, such as those whose parents speak English, or those with a main parent that reported a skilled and technical occupation as the intended occupation. These results are consistent with Friedberg (2000), who shows that higher levels of education and skill are not easily transferable, especially for immigrants from Asia and Africa. This exercise demonstrates that the large mobility gap by refugee status is highly overstated for some groups (e.g. Middle East and African immigrants, skilled and technical workers, and workers who speak English) but only slight affected or even understated for other groups (e.g., Oceania and other Asia, Europeans). Note that we also see a noticeable reduction in upward mobility for non-refugee immigrants landing in Montreal, which could be related to Montreal having a larger share of immigrants from French-speaking African countries (Brabant, 2017).

6. Discussion and Conclusion

This paper studies the intergenerational mobility of immigrants by refugee status using landing files linked with tax records. We find that even though refugees are less selected in terms of educational attainment and language skills, they have great economic opportunity: children of refugees with parents in the 25th percentile of the Canadian income distribution have incomes in the 47th percentile, while for non-refugees the comparative number is 51. Both refugees and non-refugees immigrants have greater economic opportunity than Canadian-born natives (44th), highlighting the success of the Canadian immigration system.

Our exercises into the heterogeneity of immigrant upward mobility highlighted that for refugees, there is substantial variation in economic opportunity by world area of birth, intended occupation of the main parent, and child landing age. In addition, we find that parental human capital—accumulated prior to immigration—such as English language skills, years of schooling and occupation, accounts for the majority of the gap in upward mobility between refugees and non-refugees.

Lastly, we study the extent to which our upward mobility estimates are affected by the underplacement of adult (parent) immigrants. Changes in the mobility estimates before and after correcting for underplacement, accounted to less than one percentile for refugees and two percentiles for non-refugees. However, since non-refugees from East Asia, South Asia and the Middle East and Africa were the most likely to be underplaced, the changes in their mobility rates were particularly stark. In fact, for non-refugees from the Middle East and Africa, correcting for underplacement led to a five percentile reduction in their upward mobility estimate.

These findings imply that a large share of non-European immigrants are unprepared for the Canadian labor market. What is more problematic is that many underplaced immigrants are also from highly educated and skilled backgrounds. Similar arguments have been made about immigrants in Israel (Friedberg, 2000), the UK (Dustmann et al., 2013) and the US (Mattoo et al., 2008). Host countries may benefit from regulations that assess the transferability of immigrant skills and provide feedback for what is needed in the host country

labor market.[36]

At a high-level, our main finding is that immigrants in Canada are highly mobile, even adjusting for underplacement. One implication of this finding is that high immigrant mobility in countries like the United States (Abramitzky et al., 2021) may be robust to adjusting for underplacement. A remaining question for future research is to understand the factors that make immigrants more mobile than natives. For example, while prior research has found location effects to be particularly strong in the US (Chetty et al., 2016) and Africa (Alesina et al., 2021), location plays a smaller role in explaining the higher upward mobility of immigrants relative to natives in younger cohorts (Abramitzky et al., 2021). Thus, are the drivers of mobility for natives and immigrants the same across countries? Do they differ by immigrant class of admission? These are important questions for future research.

---

[36]For example, in Germany, there is a protocol for recognizing foreign qualifications that ultimately provides immigrants with equivalency. Immigrants are allowed to apply for occupational recognition even before arrival. While the process is cumbersome, the returns to occupational recognition are large (Brücker et al., 2021).

References

Abramitzky, Ran, Leah Boustan, Elisa Jácome, and Santiago Pérez, "Intergenerational Mobility of Immigrants in the US over Two Centuries," *American Economic Review*, 2021, *111* (2), 580–608.

Acciari, Paolo, Alberto Polo, and Giovanni L Violante, "And yet it moves: Intergenerational mobility in Italy," *American Economic Journal: Applied Economics*, 2022, *14* (3), 118–163.

Agrawal, Sandeep and DengDeng Yu, "Albertas boom and bust times: How did immigrants perform economically in Edmonton and Calgary?"

Akresh, Ilana Redstone, "Occupational trajectories of legal US immigrants: Downgrading and recovery," *Population and development review*, 2008, *34* (3), 435–456.

Alesina, Alberto, Sebastian Hohmann, Stelios Michalopoulos, and Elias Papaioannou, "Intergenerational mobility in Africa," *Econometrica*, 2021, *89* (1), 1–35.

Aydemir, Abdurrahman, "Immigrant selection and short-term labor market outcomes by visa category," *Journal of Population Economics*, 2011, *24*, 451–475.

_ , **Wen-Hao Chen, and Miles Corak**, "Intergenerational earnings mobility among the children of Canadian immigrants," *The Review of Economics and Statistics*, 2009, *91* (2), 377–397.

Bhattacharya, Debopam and Bhashkar Mazumder, "A nonparametric analysis of black–white differences in intergenerational income mobility in the United States," *Quantitative Economics*, 2011, *2* (3), 335–379.

Borjas, George J, "The intergenerational mobility of immigrants," *Journal of labor economics*, 1993, *11* (1, Part 1), 113–135.

_ **and Joan Monras**, "The labour market consequences of refugee supply shocks," *Economic Policy*, 2017, *32* (91), 361–413.

Brabant, Annick, "Maghrebi Immigration to Montréal," 2017.

Brell, Courtney, Christian Dustmann, and Ian Preston, "The labor market integration of refugee migrants in high-income countries," *Journal of Economic Perspectives*, 2020, *34* (1), 94–121.

Brochu, Pierre, Louis-Philippe Morin, and Jean-Michel Billette, "Opting or Not Opting to Share Income Tax Information with the Census: Does It Affect Research Findings?," *Canadian Public Policy*, 2014, *40* (1), 67–83.

Brücker, Herbert, Albrecht Glitz, Adrian Lerche, and Agnese Romiti, "Occupational recognition and immigrant labor market outcomes," *Journal of Labor Economics*, 2021, *39* (2), 497–525.

Canada, Statistics, "Immigrants make up the largest share of the population in over 150 years and continue to shape who we are as Canadians," *The Daily*, 2022.

Capps, Randy, Kathleen Newland, Susan Fratzke, Susannah Groves, Greg Auclair, Michael Fix, and Margie McHugh, "Integrating refugees in the United States: The successes and challenges of resettlement in a global context," *Statistical Journal of the IAOS*, 2015, *31* (3), 341–367.

Card, David, "Is the new immigration really so bad?," *The economic journal*, 2005, *115* (507), F300–F323.

Chadwick, Laura and Gary Solon, "Intergenerational income mobility among daughters," *American Economic Review*, 2002, *92* (1), 335–344.

Chetty, Raj, Nathaniel Hendren, and Lawrence F Katz, "The effects of exposure to better neighborhoods on children: New evidence from the moving to opportunity experiment," *American Economic Review*, 2016, *106* (4), 855–902.

_ , _ , Maggie R Jones, and Sonya R Porter, "Race and economic opportunity in the United States: An intergenerational perspective," *The Quarterly Journal of Economics*, 2020, *135* (2), 711–783.

_ , _ , Patrick Kline, and Emmanuel Saez, "Where is the Land of Opportunity? The Geography of Intergenerational Mobility in the United States," *Quarterly Journal of Economics*, 2014, *129* (4).

Chin, Aimee and Kalena E Cortes, "The refugee/asylum seeker," in "Handbook of the economics of international migration," Vol. 1, Elsevier, 2015, pp. 585–658.

Citizenship and Immigration Canada, "Overseas Selection and Processing of Convention Refugees Abroad Class and Members of the Humanitarian-protected Persons Abroad Classes," https://overseastudent.ca/migratetocanada/IMMGuide/CICManual/op/op05-eng.pdf 2009.

Collins, William J. and Marianne H. Wanamaker, "African American Intergenerational Economic Mobility since 1880," *American Economic Journal: Applied Economics*, 2022, *14* (3), 84–117.

Connolly, Marie, Catherine Haeck, and Anne Mei Le Bourdais-Coffey, "Age at Immigration and the Intergenerational Income Mobility of the 1.5 Generation," Technical Report 2023.

_ , _ , and Jean-William Laliberté, "Parental Education and the Rising Transmission of Income between Generations," *NBER*, 2022. Working paper (online).

_ , Miles Corak, and Catherine Haeck, "Intergenerational Mobility Between and Within Canada and the United States," *Journal of Labor Economics*, 2019, *37* (S2).

Cortes, Kalena E, "Are refugees different from economic immigrants? Some empirical evidence on the heterogeneity of immigrant groups in the United States," *Review of Economics and Statistics*, 2004, *86* (2), 465–480.

Dahl, Molly W and Thomas DeLeire, *The association between children's earnings and fathers' lifetime earnings: estimates using administrative data*, University of Wisconsin-Madison, Institute for Research on Poverty Madison , 2008.

Davis, Jonathan and Bhashkar Mazumder, "Racial and ethnic differences in the geography of intergenerational mobility," *Available at SSRN 3138979*, 2018.

Department of Justice Canada, "Cultural Diversity in Canada: The Social Construction of Racial Difference," 2022.

Deutscher, Nathan and Bhashkar Mazumder, "Measuring Intergenerational Income Mobility: A Synthesis of Approaches," *Journal of Economic Literature*, 2023, *61* (3), 988–1036.

Dumont, Jean-Christophe, Thomas Liebig, Jörg Peschner, Filip Tanay, and Theodora Xenogiani, "How are refugees faring on the labour market in Europe?: a first evaluation based on the 2014 EU Labour Force Survey ad hoc module," 2016.

Dustmann, Christian, Francesco Fasani, Tommaso Frattini, Luigi Minale, and Uta Schönberg, "On the economics and politics of refugee migration," *Economic policy*, 2017, *32* (91), 497–550.

_ , **Tommaso Frattini, and Ian P Preston**, "The effect of immigration along the distribution of wages," *Review of Economic Studies*, 2013, *80* (1), 145–173.

Eckstein, Zvi and Yoram Weissd, "On the Wage Growth of Immigrants: Israel, 1990-2000," *Journal of the European Economic Association*, 2004, *2* (4), 665–695.

Erikson, Robert and John H. Goldthorpe, *The constant flux : a study of class mobility in industrial societies*, Oxford University Press, 1992.

Evans, William N and Daniel Fitzgerald, "The economic and social outcomes of refugees in the United States: Evidence from the ACS," Technical Report, National Bureau of Economic Research 2017.

Fasani, Francesco, Tommaso Frattini, and Luigi Minale, "(The Struggle for) Refugee integration into the labour market: evidence from Europe," *Journal of Economic Geography*, 2022, *22* (2), 351–393.

Foged, Mette, Janis Kreuder, and Giovanni Peri, "Integrating Refugees by Addressing Labor Shortages? A Policy Evaluation," Technical Report, National Bureau of Economic Research 2022.

_ , **Linea Hasager, and Giovanni Peri**, "Comparing the effects of policies for the labor market integration of refugees," Technical Report, National Bureau of Economic Research 2022.

_ , _ , _ , **Jacob Nielsen Arendt, and Iben Bolvig**, "Intergenerational spillover effects of language training for refugees," *Journal of Public Economics*, 2023, *220*, 104840.

Francesconi, Marco and Cheti Nicoletti, "Intergenerational mobility and sample selection in short panels," *Journal of Applied Econometrics*, 2006, *21* (8), 1265–1293.

Friedberg, Rachel M, "You can't take it with you? Immigrant assimilation and the portability of human capital," *Journal of labor economics*, 2000, *18* (2), 221–251.

Gagne, M, M Baillargeon, C Benjamin, and B Audet, "Determining a level of immigration for Quebec: why and how?," *Cahiers quebecois de demographie*, 1983, *12* (2), 207–215.

Green, Alan G. and David A. Green, "Canadian Immigration Policy: The Effectiveness of the Point System and Other Instruments," *The Canadian Journal of Economics*, 1995, *28* (4b), 1006–1041.

Green, Alan G and David Green, "The goals of Canada's immigration policy: A historical perspective," *Canadian Journal of Urban Research*, 2004, pp. 102–139.

Green, David A., "Immigrant OccupationalAttainment: Assimilation andMobility over Time," *Journal of Labor Economics*, 1999, *17* (1).

Greenwood, Michael J and Zachary Ward, "Immigration quotas, World War I, and emigrant flows from the United States in the early 20th century," *Explorations in Economic History*, 2015, *55*, 76–96.

Imai, Susumu, Derek Stacey, and Casey Warman, "From engineer to taxi driver? Language proficiency and the occupational skills of immigrants," *Canadian Journal of Economics/Revue canadienne d'économique*, 2019, *52* (3), 914–953.

Immigration, Refugees and Citizenship Canada , "2022 Annual Report to Parliament on Immigration," 2022.

Inoue, Atsushi and Gary Solon, "Two-Sample Instrumental Variables Estimators," *The Review of Economics and Statistics*, 2010, *92* (3), 557–561.

Jácome, Elisa, Ilyana Kuziemko, and Suresh Naidu, "Mobility for All: Representative Intergenerational Mobility Estimates over the 20th Century," Working Paper 2022.

Kaida, Lisa, Feng Hou, and Max Stick, "The long-term economic integration of resettled refugees in Canada: A comparison of privately sponsored refugees and government-assisted refugees," *Journal of Ethnic and Migration Studies*, 2020, *46* (9), 1687–1708.

_ , **Max Stick, and Feng Hou**, "Changes in selection policy and refugee welfare use in Canada," *International Migration*, 2022, *60* (5), 38–59.

Krywult-Albańska, Małgorzata, "Caught in a fever? The social and economic background of emigration from Poland in the 1980s," *Polish American Studies*, 2011, *68* (2), 107–126.

Lee, Chul-In and Gary Solon, "Trends in intergenerational income mobility," *The review of economics and statistics*, 2009, *91* (4), 766–772.

Library and Archives Canada, "Statues of Canada. An Act Respecting Immigration to Canada," https://pier21.ca/research/immigration-history/immigration-act-1976 1976.

Long, Jason and Joseph Ferrie, "Intergenerational Occupational Mobility in Great Britain and the United States Since 1850," *American Economic Review*, 2013, *103* (4), 1109–1137.

Massey, Catherine G, "Immigration quotas and immigrant selection," *Explorations in Economic History*, 2016, *60*, 21–40.

Mattoo, Aaditya, Ileana Cristina Neagu, and Çağlar Özden, "Brain waste? Educated immigrants in the US labor market," *Journal of development economics*, 2008, *87* (2), 255–269.

Mincer, Jacob, "Investment in Human Capital and Personal Income Distributio," *Journal of Political Economy*, 1958, *66* (4), 281–302.

Mulligan, Casey B., *Parental Priorities and Economic Inequality*, The University of Chicago Press, 1997.

Newland, Kathleen, "Refugee Resettlement in Transition," 2002.

Nybom, Martin and Jan Stuhler, "Heterogeneous income profiles and lifecycle bias in intergenerational mobility estimation," *Journal of Human Resources*, 2016, *51* (1), 239–268.

Oreopoulos, Philip, "Why Do Skilled Immigrants Struggle in the Labor Market," *American Economic Journal: Economic Policy*, 2011, *3* (4), 148–171.

Ruiz, Isabel and Carlos Vargas-Silva, "Differences in labour market outcomes between natives, refugees and other migrants in the UK," *Journal of Economic Geography*, 2018, *18* (4), 855–885.

Simich, Laura, Morton Beiser, and Farah Mawani, "Paved with good intentions: Canada's refugee destining policy and paths of secondary migration," *Canadian Public Policy/Analyse de Politiques*, 2002, pp. 597–607.

Skuterud, Mikal, "The visible minority earnings gap across generations of Canadians," *Canadian Journal of Economics/Revue canadienne d'économique*, 2010, *43* (3), 860–881.

Solon, Gary, "Biases in the estimation of intergenerational earnings correlations," *The Review of Economics and Statistics*, 1989, pp. 172–174.

_ , "Intergenerational income mobility in the United States," *The American Economic Review*, 1992, pp. 393–408.

Song, Xi, Catherine G. Massey, Karen A. Rolf, Joseph P. Ferrie, Jonathan L. Rothbaum, and Yu Xie, "Long-term decline in intergenerational mobility in the united states since the 1850s," *Proceedings of the National Academy of Sciences*, 2020, *117* (1), 251–258.

Statistics Canada, "Immigrants make up the largest share of the population in over 150 years and continue to shape who we are as Canadians," Technical Report 2022.

_ , "Longitudinal Immigration Database(IMDB) Technical Report, 2021," 2022.

Sweetman, Arthur and Casey Warman, "Canadas immigration selection system and labour market outcomes," *Canadian Public Policy*, 2013, *39* (Supplement 1), S141–S164.

Treviranus, Barbara and Michael Casasola, "Canadas private sponsorship of refugees program: A practitioners perspective of its past and future," *Journal of International Migration and Integration/Revue de l'integration et de la migration internationale*, 2003, *4*, 177–202.

Tumen, Semih, "The economic impact of Syrian refugees on host countries: Quasi-experimental evidence from Turkey," *American Economic Review*, 2016, *106* (5), 456–460.

UNHCR, "UNHCR Global Trends 2012," Technical Report 2013.

_ , "Refugee Resettlement," https://www.unhcr.org/5fe06e8b4 2020.

_ , "Five Takeaways from the 2022 UNHCR Global Trends Report," 2023.

Verme, Paolo and Kirsten Schuettler, "The impact of forced displacement on host communities: A review of the empirical literature in economics," *Journal of Development Economics*, 2021, *150*, 102606.

Wanner, Richard A, "Entry class and the earnings attainment of immigrants to Canada, 1980-1995," *Canadian Public Policy/Analyse de Politiques*, 2003, pp. 53–71.

Ward, Zachary, "The not-so-hot melting pot: The persistence of outcomes for descendants of the age of mass migration," *American Economic Journal: Applied Economics*, 2020, *12* (4), 73–102.

_ , "Internal Migration, Education, and Intergenerational Mobility Evidence from American History," *Journal of Human Resources*, 2022, *57* (6), 1981–2011.

_ , "Intergenerational Mobility in American History: Accounting for Race and Measurement Error," *American Economic Review*, Forthcoming.

Warman, Casey, Matthew D Webb, and Christopher Worswick, "Immigrant category of admission and the earnings of adults and children: how far does the apple fall?," *Journal of Population Economics*, 2019, *32*, 53–112.

Zimmerman, David J, "Regression toward mediocrity in economic stature," *The American Economic Review*, 1992, pp. 409–429.

Tables and Figures

Table 1: Summary Statistics for Refugee and Non-Refugees

	Refugee (N=121,000)	Non-Refugees (N=363,340)
Child Landing Variables		
Age at landing	9.18 (4.72)	10.09 (4.45)
Birth Country: Africa and Middle East	0.19	0.15
Birth Country: Eastern Asia	0.04	0.21
Birth Country: Europe	0.25	0.25
Birth Country: Oceania and other Asia	0.24	0.13
Birth Country: South and Central America	0.17	0.14
Birth Country: Southern Asia	0.10	0.10
Landing Metro Area: Toronto	0.31	0.43
Landing Metro Area: Montreal	0.16	0.15
Landing Metro Area: Vancouver	0.07	0.14
Landing Metro Area: Calgary	0.04	0.04
Landing Metro Area: Edmonton	0.04	0.03
Child Outcome Variables (ages 30-34)		
Individual Income	44,400 (35,500)	51,800 (41,800)
Pct	49.8 (27.5)	54.7 (28.9)
Household Income	77,900 (64,300)	96,300 (78,700)
Pct	55.1 (29.3)	62.1 (29.6)
Parental Variables		
Mother on landing file	0.75	0.87
Father on landing file	0.58	0.72
Mother and father on landing file	0.52	0.68
Main parent is father	0.62	0.64
Speaks any English	0.31	0.64
Speaks any French	0.08	0.09
Household income 10Y after landing	59,100 (43,900)	83,400 (70,500)
Pct	35.5 (23.5)	45.5 (27.6)
Household income when main parent is 45-49	60,200 (48,500)	75,400 (69,300)
Pct	34.8 (24.4)	41.2 (28.0)
Household income when child is 15-19	51,400 (39,300)	69,600 (63,300)
Pct	32.5 (22.4)	40.2 (26.8)
Years of schooling (max of both parents)	11.1 (4.5)	13.2 (4.2)
At least 16Y education (proxy for college)	0.17	0.34
Intended Occupation: Managerial and Professional	0.09	0.38
Intended Occupation: Skilled and Technical	0.21	0.29
Intended Occupation: Clerical and Laborer	0.22	0.11
Intended Occupation: New Workers	0.39	0.11
Intended Occupation: Non-Workers (e.g., retired, student)	0.09	0.10

Notes: This table reports summary statistics for the main baseline sample for refugee immigrants (column 1) and non-refugee immigrants (column 2). Means are reported and standard deviations (where appropriate) are in parentheses. Incomes are in 2020 dollars. Sample sizes are rounded to the nearest tenth and income values to the nearest hundredth in accordance with Statistics Canada vetting rules.

Table 2: Education Level Across Immigrants and Stayers by Country of Birth of Child

Country (Sample Size)	At Least High School			At Least College		
	Non-Refugee (NR)	Refugee (R)	Stayers	Non-Refugee (NR)	Refugee (R)	Stayers
Top Refugee & Non-Refugee Countries:						
Vietnam (NR=8290, R=14750)	0.333	0.242	0.149	0.077	0.045	0.032
Poland (NR=6610, R=11820)	0.647	0.738	0.420	0.185	0.278	0.097
Sri Lanka (NR=5830, R=6530)	0.471	0.453		0.147	0.079	
Iran (NR=7160, R=4860)	0.941	0.762	0.323	0.686	0.189	0.114
Yugoslavia (NR=4440, R=3640)	0.766	0.707		0.387	0.170	
P.R. China (NR=17830, R=2730)	0.643	0.136	0.202	0.318	0.022	0.016
Pakistan (NR=9920, R=2710)	0.805	0.431	0.082	0.462	0.120	0.045
India (NR=20520, R=1970)	0.608	0.274		0.331	0.086	
Romania (NR=6900, R=1330)	0.851	0.759	0.595	0.592	0.361	0.092
Hong Kong (NR=35250, R=1300)	0.573	0.077		0.199	0.011	
Top Refugee Countries:						
El Salvador (R=8890)		0.449	0.179		0.119	0.032
Afghanistan (R=4770)		0.692			0.262	
Bosnia and Herzegovina (R=3950)		0.678			0.263	
Thailand (R=3390)		0.109	0.145		0.015	0.057
Somalia (R=3210)		0.479			0.093	
Top Non-Refugee Countries:						
Philippines (NR=28560)	0.761		0.487	0.182		0.149
United Kingdom (NR=21730)	0.630		0.339	0.280		0.259
Taiwan (NR=13570)	0.884			0.422		
Jamaica (NR=10980)	0.335		0.207	0.062		0.019
South Korea (NR=9860)	0.922			0.577		

Notes: This table examines summarizes education levels of immigrants and stayers across top sending countries (the country the child immigrant was born in). Immigrant education is computed using IMDB with "at least high school" and "at least university" corresponding to at least 12 years and 16 years of schooling. Non-immigrant ("stayer") education is calculated using IPUMS census that is closest to the modal landing year observed in the IMDB and responses for individuals aged 25 to 49. Not all sending countries have censuses in IPUMS. The definitions of "at least high school" and "at least university" are established using the `edattaind` variable. In instances where multiple IPUMS years exist, the year closest to the modal landing year in IMDB is reported. The top ten refugee and non-refugee sending countries with at least 1,000 of each category in our data are reported, followed by the next top five refugee countries, and the next top five non-refugee countries. Total number of refugees or non-refugees are rounded and reported in our sample are reported in parentheses.

Table 3: Intergenerational Mobility Estimates for Immigrants

Child's Income	Parent's Income	Estimate	N=
All Immigrants			
1. Log individual income (excl. zeros)	Log family income age 45-49 (excl. zeros)	0.172 (0.002)	470,220
2. Individual income rank	Family income rank age 45-49	0.223 (0.001)	484,350
3. Individual income rank	Family income when child is 15-19	0.231 (0.002)	480,700
4. Individual income rank	Top parent's family income rank at age 45-49	0.247 (0.001)	485,540
5. Individual income rank	Family income rank 10 years post arrival	0.264 (0.001)	484,140
6. Individual earnings rank	Family income rank age 45-49	0.197 (0.001)	484,350
Refugees			
7. Individual income rank	Family income rank age 45-49	0.263 (0.003)	121,000
Non-Refugees			
8. Individual income rank	Family income rank age 45-49	0.205 (0.002)	363,340

Notes: This table reports intergenerational mobility estimates for immigrants to Canada using varying definitions of child and parent income. Each estimate is obtained from a univariate ordinary least squares regression of child income on parent income. Estimated slope coefficients are reported along with its standard error in parentheses. Child income is always measured as the average between ages 30-34 (inclusive). Parent income ranks are ranked against all parents in Canada except where stated. Sample sizes are rounded to the nearest tenth due to StatCan vetting rules. Row 2 is our preferred baseline measure of relative intergenerational mobility. See Appendix A for more details.

Table 4: Predictors of Underplacement

| | *Dependent Variable*: Predicted Income Rank − Realized Income Rank | | | | | | | |
| | Refugees | | | | Non-Refugees | | | |
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Eastern Asia	-1.66***			-1.49***	6.85***			8.17***
	(0.46)			(0.46)	(0.18)			(0.17)
Europe	-1.62***			-2.61***	-23.6***			-18.77***
	(0.24)			(0.243)	(0.174			(0.17)
Oceania	-7.17***			-6.53***	-22.5***			-20.81***
	(0.24)			(0.25)	(0.20)			(0.19)
South and Central America	-6.87***			-6.39***	-22.99***			-17.30***
	(0.26)			(0.26)	(0.20)			(0.19)
Southern Asia	-6.72***			-7.98***	-5.99***			-6.60***
	(0.31)			(0.30)	(0.21)			(0.21)
Any English or French		-0.97***		-2.22***		4.78***		6.94***
		(0.16)		(0.17)		(0.12)		(0.11)
Landing Age 30-44			10.75***	10.45***			19.86***	14.40***
			(0.19)	(0.19)			(0.17)	(0.17)
Landing Age 45+			25.42***	25.09***			48.15***	39.06***
			(0.35)	(0.35)			(0.22)	(0.22)
Intercept	11.47***	7.67***	-1.87***	3.44***	30.03***	15.38***	-2.17***	7.19***
	(0.18)	(0.10)	(0.16)	(0.25)	(0.14)	(0.10)	(0.16)	(0.22)
N=	121,820	121,820	121,620	121,620	361,780	361,780	361,330	361,330

Notes: This table reports output from regressions of underplacement of the main parent (predicted income potential minus realized income) on world area of birth, language proficiency, and age of landing. Regressions are estimated separately for refugees (columns 1-4) and non-refugees (columns 5-8). Predicted income potential is detailed in subsection 4.3. We use the five waves of the Canadian Census from 1991 to 2011 to calculate what income percentile in Canada would the immigrant parents have earned if they were natives with the observable characteristics (years of schooling, 3-digit occupation code, age, year) that the parents had in the source country. Realized income is calculated at ages 45-49. Omitted categories are 'Africa and Middle East' for world area of origin, no English and no French proficiency at all, and landing in Canada before age 30. Sample sizes are rounded to the nearest tenth per Statistics Canada vetting rules. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 5: Rank-Rank Regressions Adjusting for Underplacement

| | Dependent Variable: Child Income Rank at 30-34 | | | |
| | Refugees | | Non-Refugees | |
	Realized Income (1)	Predicted Income Potential (2)	Realized Income (3)	Predicted Income Potential (4)
Intercept	40.56***	41.38***	46.25***	45.69***
	(0.132)	(0.173)	(0.083)	(0.130)
Slope	0.264***	0.200***	0.206***	0.152***
	(0.003)	(0.004)	(0.002)	(0.002)
N=	123,610	121,820	363,880	284,400
E[Y|X=p25]	47.16	46.38	51.40	49.49
E[Y|X=p50]	53.76	51.38	56.55	53.29
E[Y|X=p75]	60.36	56.38	61.70	57.09

Notes: This table reports child income rank and parent income rank regressions for the baseline sample and adjusted for underplacement for refugees and non-refugees. Columns 1-2 correspond to refugees and columns 3-4 correspond to non-refugee immigrants. Columns 1 and 3 correspond to the baseline sample where parental income measured at ages 45-49. In columns 2 and 4 parental income is predicted income potential using a two step process (detailed in subsection 4.3). First, we use the six waves of the Canadian Census from 1986 to 2011 to calculate what income percentile in Canada would the immigrant parents have earned if they were natives with the observable characteristics (years of schooling, 3-digit occupation code, age, year) that the parents had in the source country. Then we compute the mobility rates by keeping the actual income of the child and replacing the actual parental income rank with the predicted income rank estimate obtained from the Census waves. The dependent variable is child income rank measured at ages 30-34 for all regressions. Immigrants who report "new worker" as their intended occupation have labourer imputed as their census occupation code. As a robustness exercise, Table B.2 does not impute new workers and drops them instead. Intercept and slope coefficients from Equation 1 are displayed; standard errors are in parentheses. Sample sizes are rounded to the nearest tenth per Statistics Canada vetting rules. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Figure 1: Intergenerational Mobility: Child Individual Income Rank vs Parent Household Income Rank
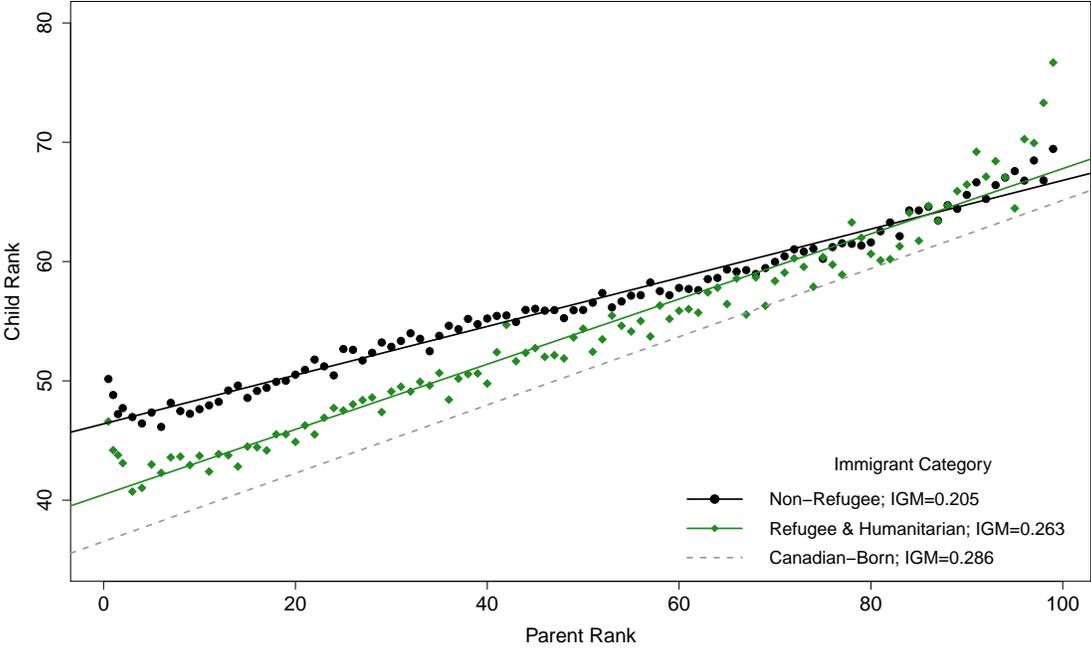

Notes: Binned scatterplots of individual income rank at ages 30-34 against main parent's household income rank (ranked against household income of all parents in Canada). The green diamonds correspond to refugee and humanitarian immigrants and black circles correspond to non-refugee immigrants. The dashed grey line corresponds to estimates for the Canadian-born population obtained from Marie Connolly for children born between 1975–1985 (Connolly et al., 2023). The rank-rank slope coefficient from Equation 1 is displayed in the legend.

Figure 2: Absolute Upward Mobility by Immigrant Characteristics
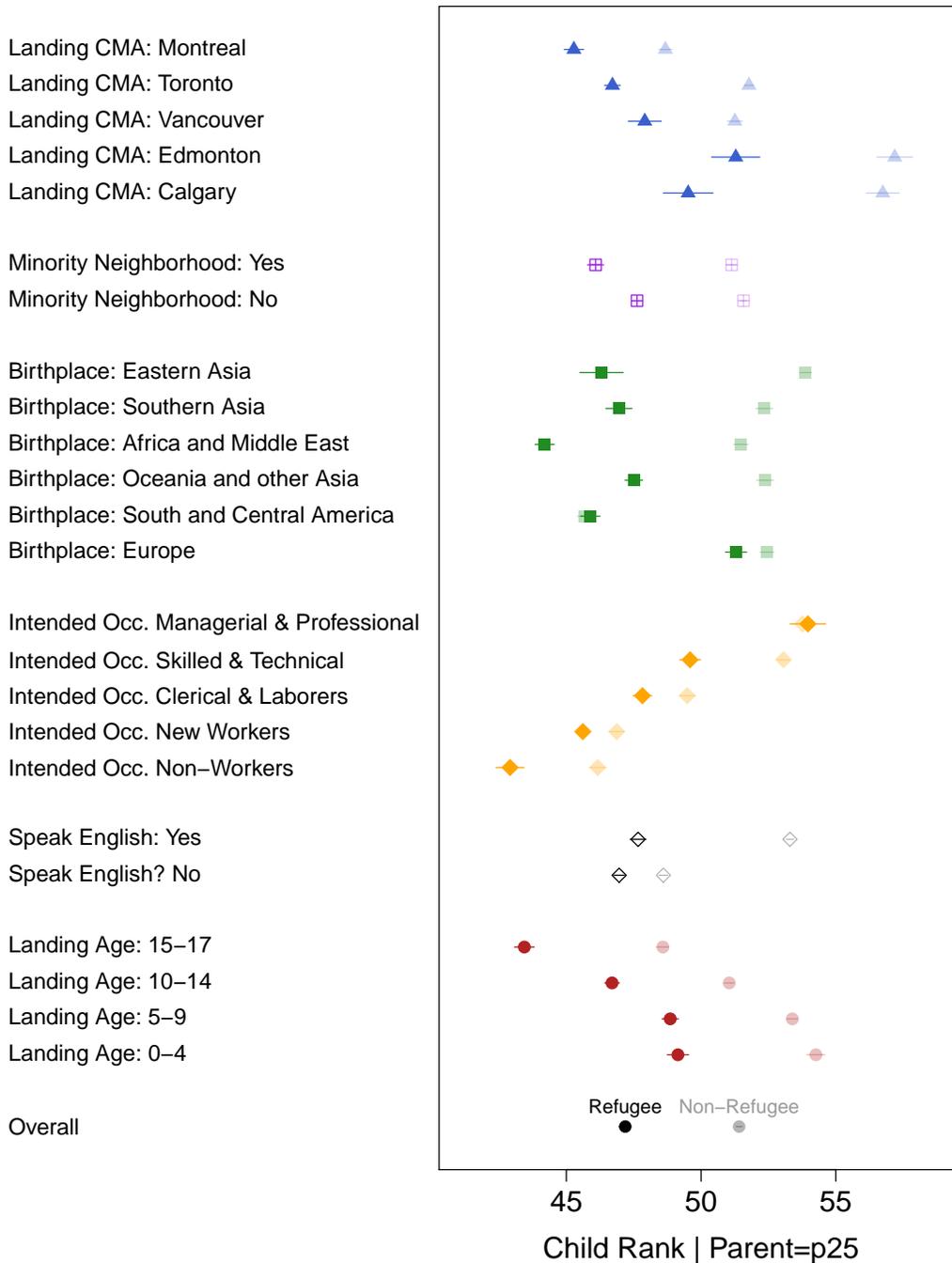
Notes: This figure displays "absolute upward mobility" estimates for different samples. Absolute upward mobility is calculated as the expected rank of child individual income rank conditional on their main parent's household income rank at ages 45-49 being at the 25th percentile. This estimate is obtained by fitting a rank-rank regression of Equation 1 and predicting child outcome at parent household income percentile of 25. The regression is estimated for heterogeneous subsamples by: census metropolitan area (CMA) of landing, indicator for landing in a census tract where the non-white population is above the national average based on the nearest census year ("minority neighborhood"), world area of birth, intended occupation, language skills, and child age at landing. The solid dark points correspond to estimates for the refugee subsample and the transparent points correspond to estimates for the non-refugee subsample.

Figure 3: Heterogeneity: World Area of Birth
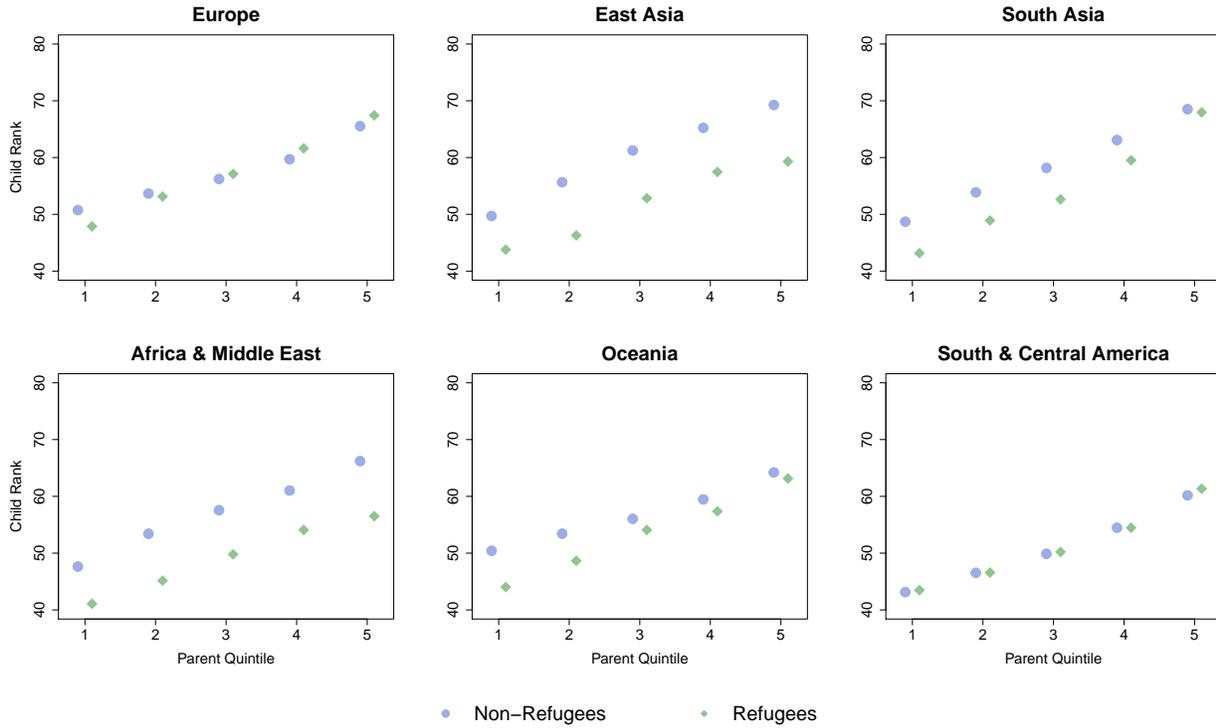
Notes: This figure displays binned scatterplots of child income rank against main parent's household income rank by world area of birth. The green diamonds correspond to refugee and humanitarian immigrants and the blue circles correspond to non-refugee immigrants. Parental income (x-axis) is grouped into quintiles because of Statistics Canada minimum sample size rules.
*Source: IMDB - T1FF files from IRCC and Statistics Canada.*

Figure 4: Explaining the Absolute Upward Mobility Gap Between Refugees and Non-Refugees
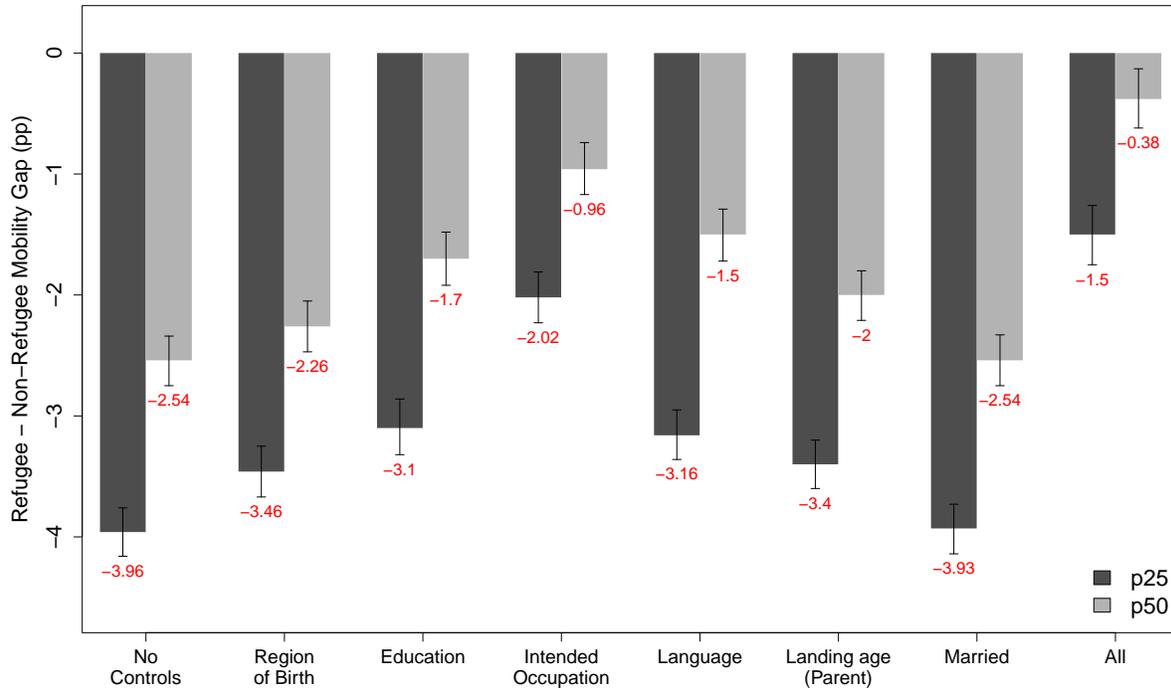
Notes: This figure displays the mobility gap in income rankings between children of refugee immigrants versus children of other immigrants, conditional on their parents being at the 25th and 50th percentile of the household income distribution. The gap is estimated following Equation 2. The raw gap is presented in "No Controls". Then pre-immigration covariates are added one at a time, individually (i.e., univariate regressions). These pre-immigration covariates are: world region of birth, schooling fixed effects (<12, 12, 13-15, 16, >16), intended occupation (2-digit NOC 2011 code), any English or French, landing age of the parent bins (≤ 40, >40), and whether the main parent is married at arrival. The final bars corresponds to a regression when all the above controls are included.
*Source: IMDB - T1FF files from IRCC and Statistics Canada.*

Figure 5: Intergenerational Mobility Adjusting for Underplacement and Distribution of Realized and Predicted Parental Incomes
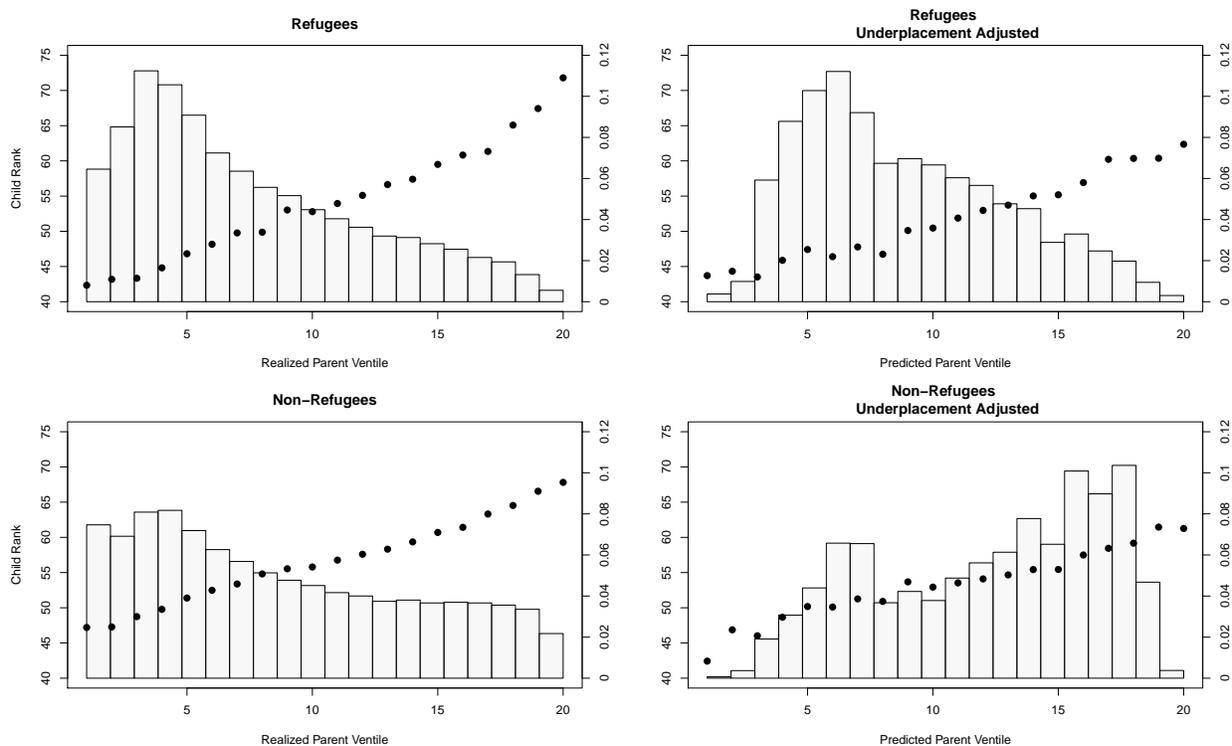
Notes: This figure displays changes to intergenerational mobility before and after adjusting for underplacement using the predicted income potential approach. Average child income rank is plotted against realized or predicted parental income ventile. The left panels use realized parental income at ages 45-49. The right panels use predicted income potential using a two-step process (detailed in subsection 4.3). First, we use the five waves of the Canadian Census from 1991 to 2011 to calculate what income percentile in Canada would the immigrant parents have earned if they were natives with the observable characteristics (years of schooling, 3-digit occupation code, age, year) that the parents had in the source country. Then we compute the mobility rates by keeping the actual income of the child and replacing the actual parental income rank with the predicted income rank estimate obtained from the Census waves. The top panels correspond to refugees and bottom panels correspond to non-refugees. The histogram behind the binned scatterplot plots the distribution of realized or predicted parental income.
Source: IMDB - T1FF files from IRCC and Statistics Canada.

Figure 6: Absolute Upward Mobility Adjusted for Underplacement, by Immigrant Characteristics
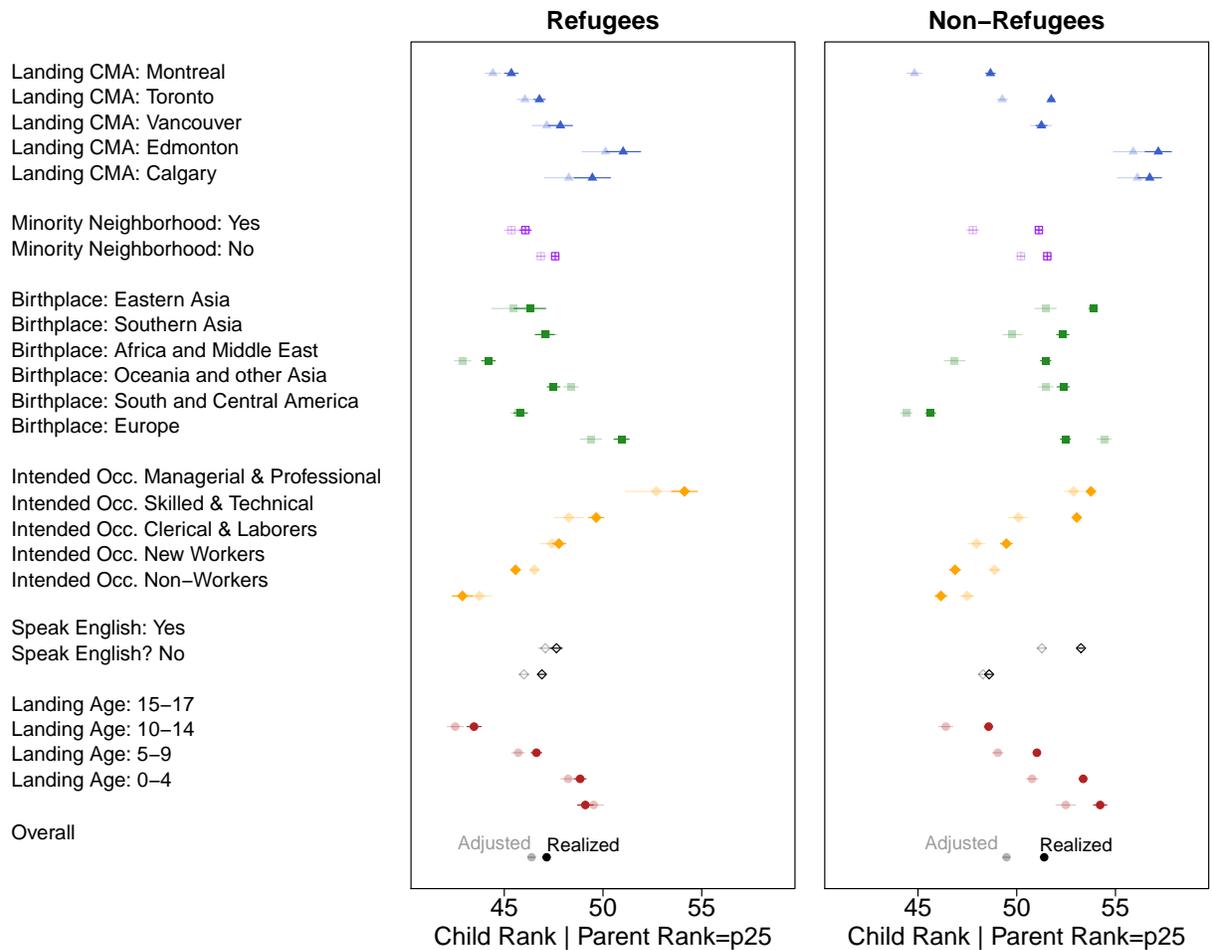
Notes: This figure displays "absolute upward mobility" estimates before and after adjusting for underplacement for different samples of refugees (left) and non-refugees (right). The realized (unadjusted) estimates are displayed in solid dark points. The transparent points correspond to estimates after adjusting for underplacement using a two-step process (detailed in subsection 4.3). First, we use the six waves of the Canadian Census from 1986 to 2011 to calculate what income percentile in Canada would the immigrant parents have earned if they were natives with the observable characteristics (years of schooling, 3-digit occupation code, age, year) that the parents had in the source country. Then we compute the mobility rates by keeping the actual income of the child and replacing the actual parental income rank with the predicted income rank estimate obtained from the Census waves. Absolute upward mobility is calculated as the expected rank of child individual income rank conditional on their main parent's realized or predicted income rank at ages 45-49 being at the 25th percentile.

Appendix (For Online Publication Only)

A. Detailed Data Description

We begin with the universe of immigrant children born outside of Canada and arriving in Canada prior to their 18th birthday from the Longitudinal Immigration Database (IMDB). Family linkages are determined either by the initial immigration application (e.g., family applying together) or via subsequent spouse/dependent applications (e.g., sponsoring a family member). The IMDB is then linked with family tax records by Statistics Canada.

IMDB: The IMDB includes data on landing year, birth year, gender, country of origin, country of birth, education, intended occupation, languages spoken, intended landing location, immigrant class, and parent identifiers (and thus the same variables for parents). The immigration application also specifies a main parent, which we use to construct parent variables.

Tax Records: See Connolly et al. (2019, 2022) for more details.

Sample Construction: The IMDB contains all immigrants arriving in Canada between 1980 and 2019. Since we analyze children's income when they turn 30, we focus on all children arrival year and age at arrival pairs where they are at least 30 by 2019, the most recent year of our tax records.[1] Next, we exclude children and parent immigrants who do not file taxes, some of whom may have left Canada. Specifically, we drop children who do not file any taxes in the five year period between ages of 30-34. We also exclude parents who do not file any taxes in the first 10 years after arriving in Canada. Finally, we further restrict our sample to those with at least one main parent tax filing when the main parent is between the ages of 45-49. This forms our baseline sample of 487,000 children. Note that the last step changes our sample when we move between alternate parent income measures; we describe this in more detail below.

---

[1]For example, a child arriving in Canada in 2000 must be at least 11 years of age for us to observe one tax record at age 30.

Income Measures: We construct child and parent individual and household incomes following Connolly et al. (2022); Chetty et al. (2014). Our measure of income is the Canada Revenue Agency's definition of total pre-tax income (TIRC). TIRC includes total employment income, business income, farming income, capital gains/losses, dividends, pensions and benefits.

Child Incomes: Our primary measure of child income is average total individual income (TIRC) between ages 30-34. We also construct child average total household income between ages 30-34 and child average total individual employment income between ages 30-34. For all income measures, we impute missing years as zero and take averages over the entire period. Immigrant child income ranks (percentiles) are obtained by ranking against analogous incomes for all tax filers in Canada (immigrant and non-immigrant) in the same birth cohort, in the same calendar year (i.e., others who also turn 30 in the same year). Canadian income percentiles come from the Longitudinal Administrative Data (LAD) which comprises of a 20% sample of the annual T1 Family Filers.

Parent Incomes: Our primary measure of main parent income is average total household income (TIRC) between ages 45-49. We also construct average total household income between ages 40-49; average total household income of the top parent earner between ages 45-49; average total household income when the child is age 15-19; average total household income when the child is age 10-19; average total household income in years 3-7 after landing ("5 years after landing"); and average total household income in years 8-12 after landing ("10 years after landing"). Immigrant parent income ranks (percentiles) are obtained by ranking against analogous incomes for all *parents* in Canada (immigrant and non-immigrant) in the same relevant year, parent age, child age, or years since landing, wherever applicable. We also construct alternate ranks comparing immigrant parent incomes to all *households* in Canada (immigrant and non-immigrant).

Longitudinal Survey of Immigrants to Canada: The Longitudinal Survey of Immigrants to Canada (LSIC) interviews immigrants over the ages of 15, post-arrival, landing in Canada between October 2000 and September 2001. We use survey responses from Wave 1 of the LSIC, which was administered at six-months post landing. The LSIC combines

information from survey responses in addition to information recorded on the landing file. It asks individuals what their intended occupation is in Canada, and what their past occupation was in their country of origin. In addition, the LSIC is linked to information from an individual's official immigration records.

We verify the degree to which an individual's intended occupation from their landing file matches either their intended occupation from the survey or their past occupation. Occupations are grouped at the one-digit NOC 2006 occupation code, and we drop those whose intended occupation in the LSIC survey is missing or stated as students or retirees. For one-digit intended occupation group from the landing file, we calculate the share matching either their intended and past occupations from the survey. These transitions shares are then plotted as a heatmap in Figure B.3.
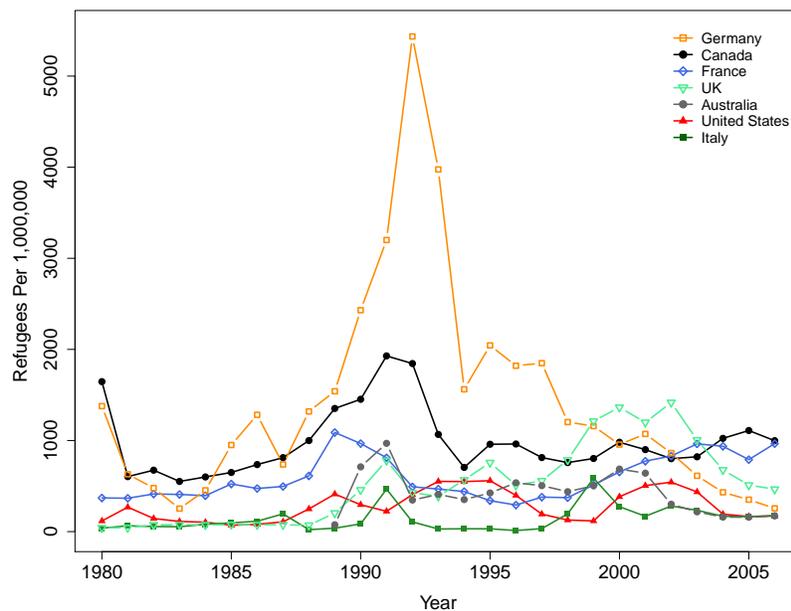
B. Additional Exhibits

Figure B.1: Refugee Admissions, 1980-2006

(a) Refugees landing in Canada
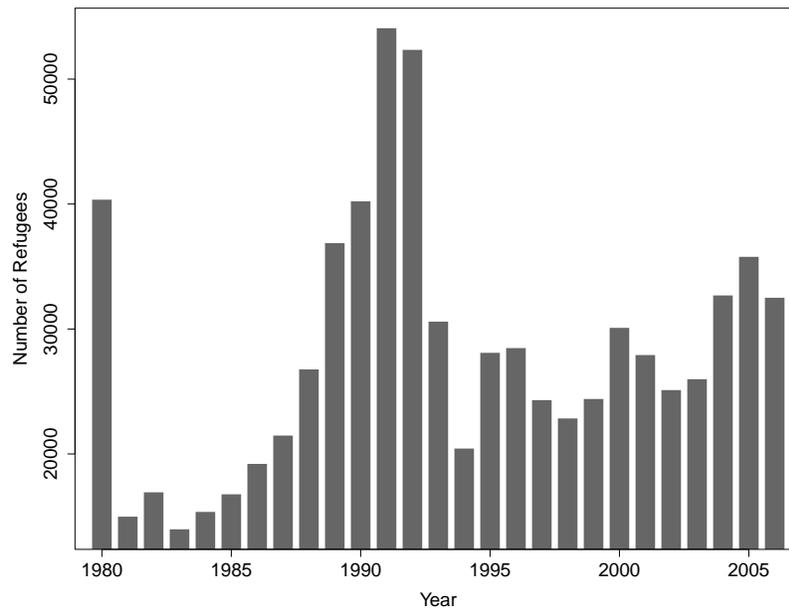
(b) Time series of refugee admissions per 1,000,000 residents

Notes: Panel a displays the number of refugees admitted and landing in Canada between 1980 and 2006 (our sample period). Panel b displays the number of refugee admitted divided by country's population each year for G7 countries and Australia. Japan is excluded (despite being a G7 nation) since its refugee numbers never exceed 2,200 in any given year. Data for Canada comes from Citizenship and Immigration Canada and data for the other countries come from The UN Refugee Agency (UNHCR) Forced Displacement Flow dataset.

Figure B.2: Correlation between Actual Canadian-born Income and Actual Immigrant Income for each Intended Occupation
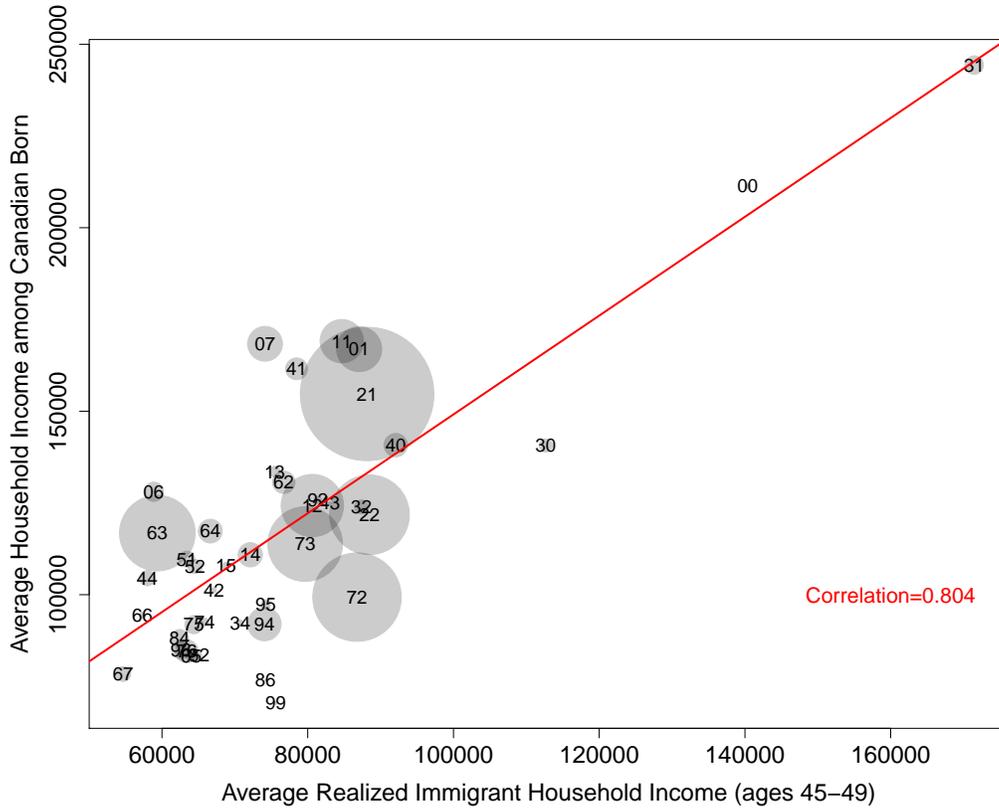

Notes: This figure plots the correlation between average actual household income for immigrants who report each intended occupation on the x-axis and the average household income among Canadian born, ages 45-49, who report the same *actual* occupation in the 1991, 1996, 2006, and 2011 census, on the y-axis. Occupations are based on 2-digit NOC2011 codes (see Table B.3). Income values are in 2020 dollars. The size of the points are proportional to the log number of immigrants reporting each intended occupation in our baseline sample. Table B.3 provides a crosswalk for the occupations.

Figure B.3: Correlation Heat Map Between Intended Occupation in Administrative Landing Records (IMDB) and Survey Conducted Six Months Post-Landing (LSIC)
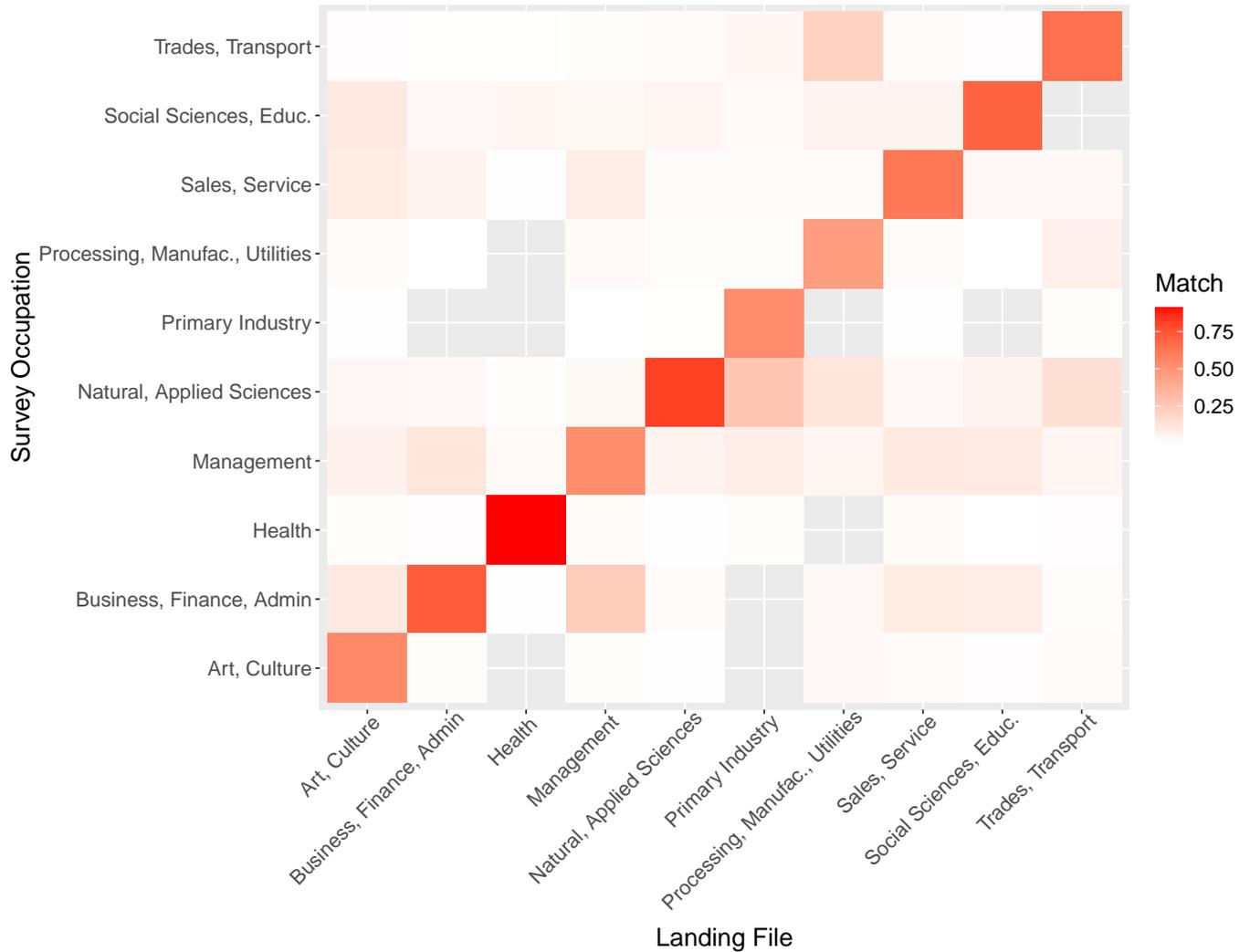

Notes: This figure plots a heat map of an immigrant's intended occupation as recorded on their landing file in the IMDB (x-axis) versus their intended occupation as recorded in the LSIC. If the intended occupation variable in the LSIC is missing, we use the past occupation (in their origin country) from the LSIC. Occupations are at the one-digit 2006 NOC level.

Figure B.4: Absolute Upward Mobility: Parental Income at p50
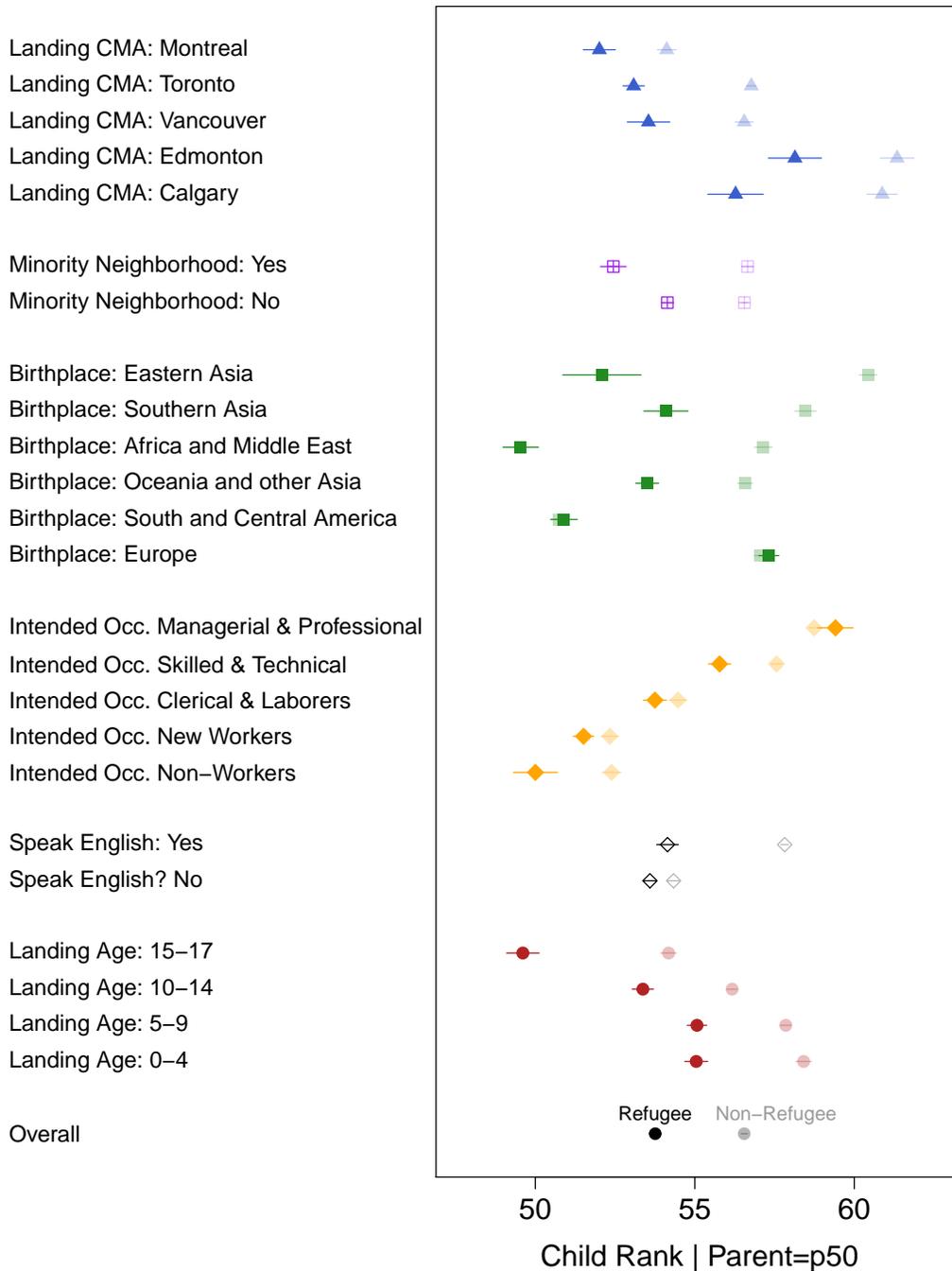
Notes: This figure repeats Figure 2 at parental income values of p50. Absolute upward mobility is calculated as the expected rank of child individual income rank conditional on their main parent's household income rank at ages 45-49 being at the 50th percentile. This estimate is obtained by fitting a rank-rank regression of Equation 1 and predicting child outcome at parent household income percentile of 25. The regression is estimated for heterogeneous subsamples by: census metropolitan area (CMA) of landing, indicator for landing in a census tract where the non-white population is above the national average based on the nearest census year ("minority neighborhood"), world area of birth, intended occupation, language skills, and child age at landing. The solid dark points correspond to estimates for the refugee subsample and the transparent points correspond to estimates for the non-refugee subsample.

Figure B.5: Absolute Upward Mobility: Parental Income at p75

Child Rank | Parent=p75
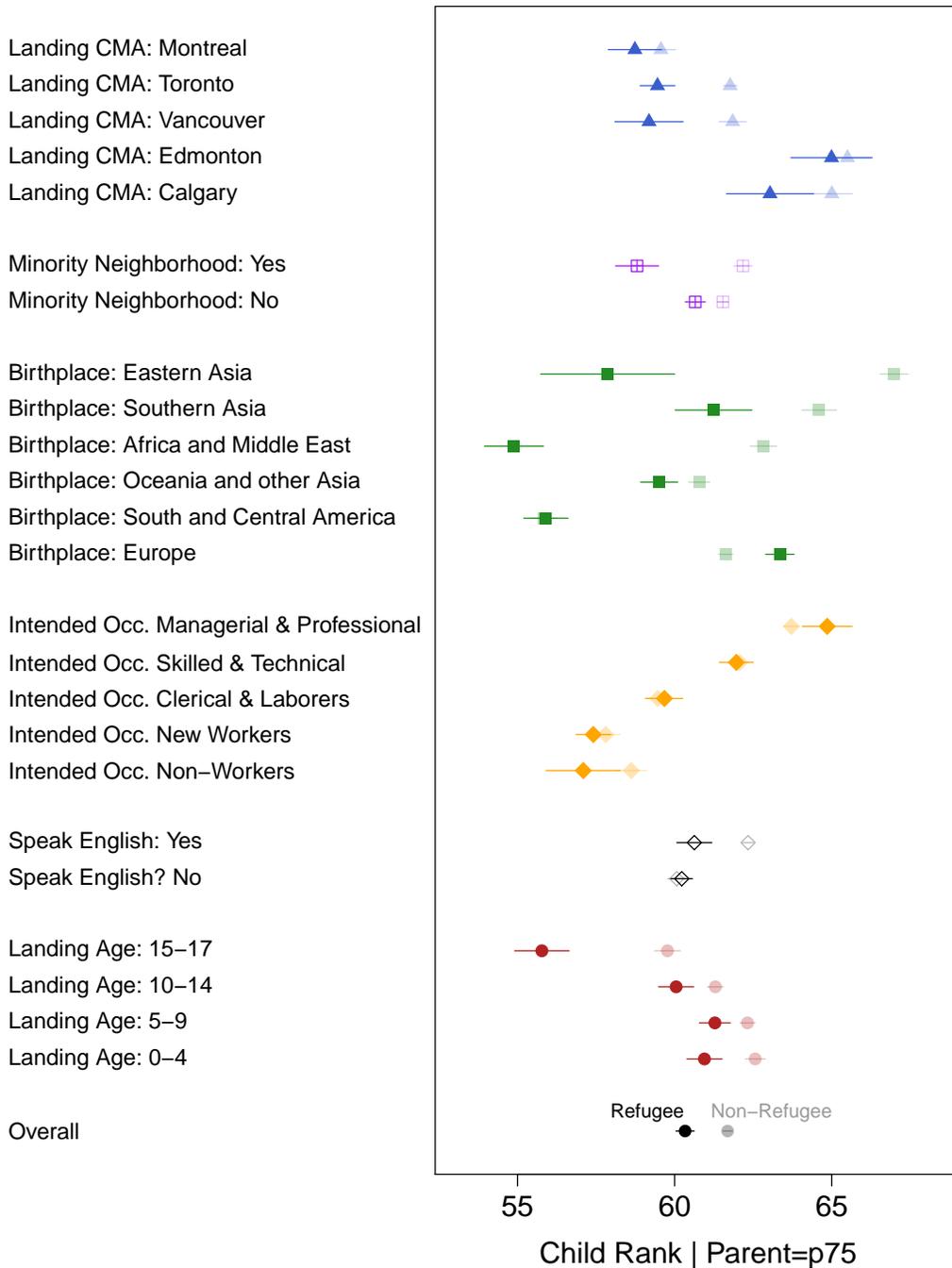
Notes: This figure repeats Figure 2 at parental income values of p75. Absolute upward mobility is calculated as the expected rank of child individual income rank conditional on their main parent's household income rank at ages 45-49 being at the 50th percentile. This estimate is obtained by fitting a rank-rank regression of Equation 1 and predicting child outcome at parent household income percentile of 25. The regression is estimated for heterogeneous subsamples by: census metropolitan area (CMA) of landing, indicator for landing in a census tract where the non-white population is above the national average based on the nearest census year ("minority neighborhood"), world area of birth, intended occupation, language skills, and child age at landing. The solid dark points correspond to estimates for the refugee subsample and the transparent points correspond to estimates for the non-refugee subsample.

Figure B.6: Explaining the Absolute Upward Mobility Gap Between Refugees and Non-Refugees
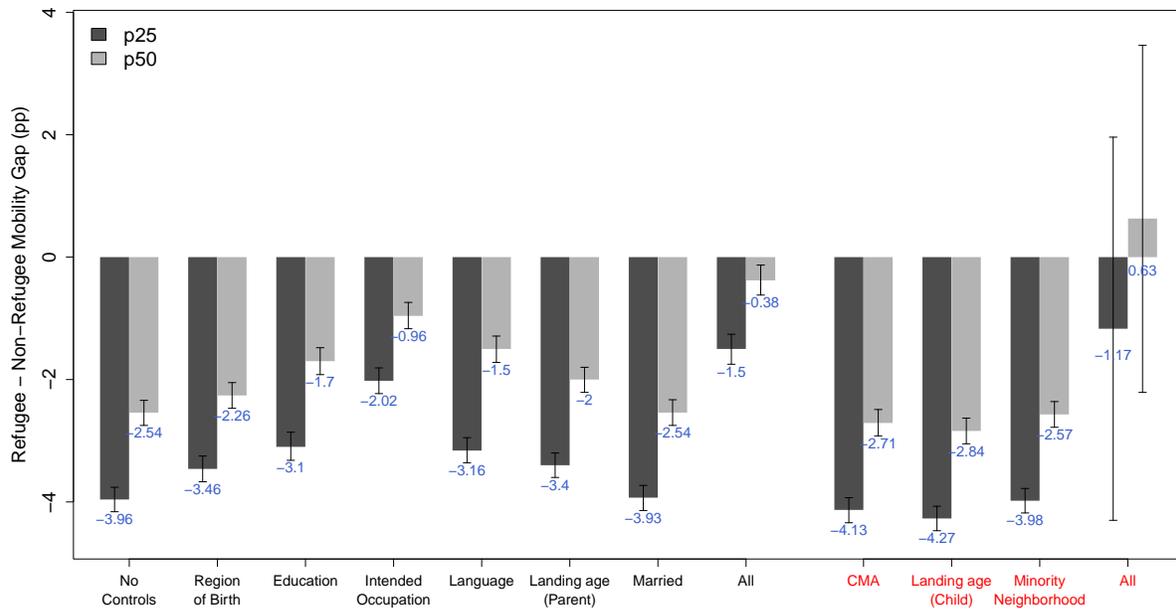
Notes: This figure displays the mobility gap in income rankings between children of refugee immigrants versus children of other immigrants, conditional on their parents being at the 25th, and 50th percentile of the household income distribution. The gap is estimated following Equation 2. This figure includes additional covariate controls (in red) on top of those in Figure 4. "CMA" is the Census Metropolitan Area the refugee resides in. "Landing age (Child)" is bins of landing age of the child, and "minority neighborhood" is residing in a census tract where the non-white population is above the national average based on the nearest census year, The last bars ('All' in red) include *all* controls, from "region of birth" to "minority neighborhood". *Source: IMDB - T1FF files from IRCC and Statistics Canada.*

Figure B.7: Heterogeneity: Child Age at Arrival
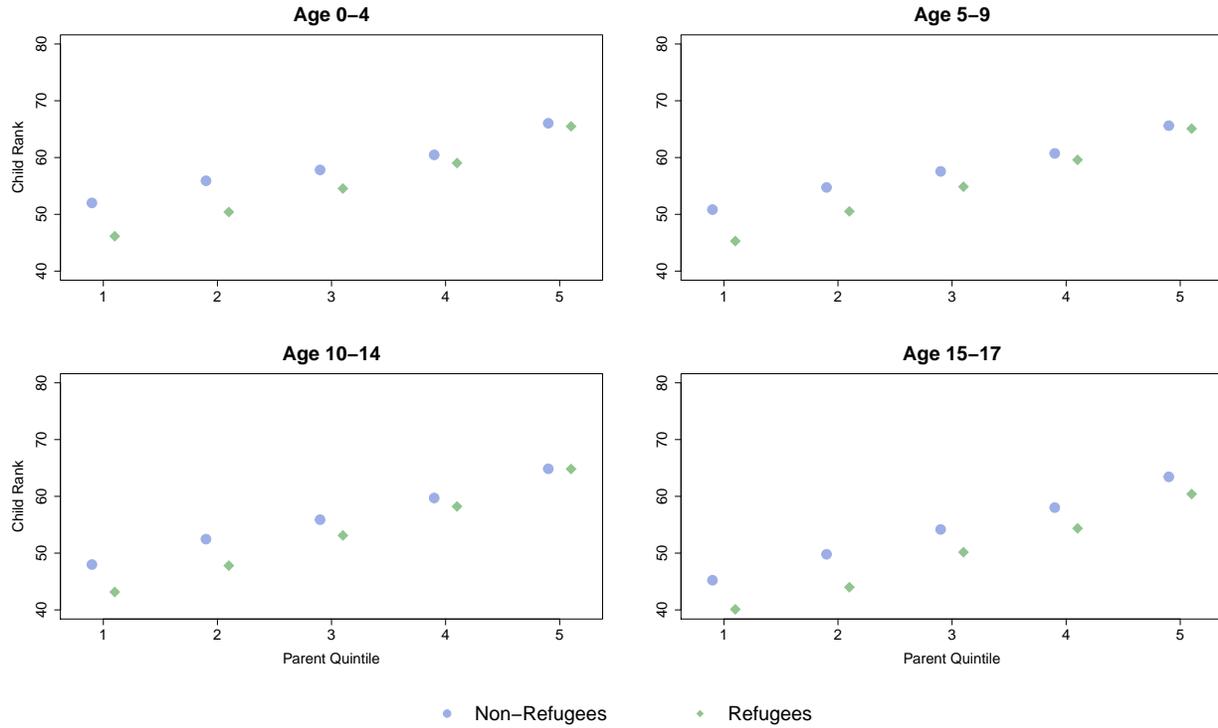
Notes: This figure displays binned scatterplots of individual income rank at ages 30-34 against main parent's household income rank by child age at arrival. The green diamonds correspond to refugee and humanitarian immigrants and the blue circles correspond to non-refugee immigrants. Parental income (x-axis) is grouped into quintiles because of Statistics Canada minimum sample size rules.
Source: IMDB - T1FF files from IRCC and Statistics Canada.

Table B.1: Alternate Measures of Intergenerational Mobility Estimates

	Child's Income	Parent's Income	Estimate	N=
		All Immigrants		
1.	Log family income (excl. zeros)	Log family income age 45-49 (excl. zeros)	0.256 (0.001)	477,980
2.	Log individual income (recoding zeros with $1)	Log family income age 45-49 (recoding zeros with $1)	0.123 (0.002)	489,880
3.	Log individual income (recoding zeros with $1,000)	Log family income age 45-49 (recoding zeros with $1,000)	0.176 (0.002)	489,880
4.	Individual income rank	Family income rank age 45-49 (ranked against all households)	0.224 (0.001)	484,350
5.	Individual income rank	Family income when child is 10-19	0.226 (0.002)	457,960
6.	Individual income rank	Family income rank 5 years post arrival	0.242 (0.002)	489,530
7.	Household income rank	Family income rank age 45-49	0.320 (0.001)	484,350
		Refugees		
8.	Household income rank	Family income rank age 45-49	0.381 (0.003)	121,000
		Non-Refugees		
9.	Household income rank	Family income rank age 45-49	0.294 (0.002)	363,340

Notes: This table reports additional measures of intergenerational mobility estimates (in addition to those in Table 3) for immigrants to Canada using varying definitions of child and parent income. Each estimate is obtained from a univariate ordinary least squares regression of child income on parent income. Estimated slope coefficients are reported along with its standard error in parentheses. Child income is always measured as the average between ages 30-34 (inclusive). Parent income ranks are ranked against all parents in Canada except where stated (row 4 when it is ranked against all Canadian households). Sample sizes are rounded to the nearest 10 due to StatCan vetting rules. See Appendix A for more details.

Table B.2: Adjusting for Underplacement: Predicted Income Potential Without New Worker Imputation

	Dependent Variable: Child Income Rank at 30-34	
	Refugees	*Non-Refugees*
	(1)	(2)
Intercept	43.10***	47.66***
	(0.349)	(0.202)
Slope	0.177***	0.126***
	(0.006)	(0.003)
N=	62,260	284,400
E[Y|X=p25]	48.53	50.81
E[Y|X=p50]	51.95	53.96
E[Y|X=p75]	56.38	57.11

Notes: This table repeats the predicted income potential adjustment exercise in columns 2 and 4 of Table 5 without imputing census occupation for new workers. In other words, immigrants with an intended occupation of "new worker" are dropped. Sample sizes are rounded to the nearest 100 per Statistics Canada vetting rules. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table B.3: 2011 NOC 2-Digit Occupation Codes

00   Senior Management Occupations
01   Specialised Middle Management Occupations (01-05)
06   Middle management occupations in retail and wholesale trade and customer services
07   Middle management occupations in trades, transportation, production, and utilities (07-09)
11   Professional Occupations in Business and Finance
12   Administrative and financial supervisors and administrative occupations
13   Finance, insurance, and related business administrative occupations
14   Office support occupations
15   Distribution, tracking, and scheduling co-ordination occupations
21   Professional Occupations in Natural and Applied Sciences
22   Technical Occupations Related to Natural and Applied Sciences
30   Professional occupations in nursing
31   Professional Occupations in Health (except nursing)
32   Technical Occupations in Health
34   Assisting Occupations in Support of Health Services
40   Professional occupations in education services
41   Professional occupations in law, social, community, and government services
42   Paraprofessional occupations in legal, social, community, and education services
43   Occupations in front-line public protection services
44   Care providers and educational, legal, and public protection support occupations
51   Professional Occupations in Art and Culture
52   Technical Occupations in Art, Culture, Recreation, and Sport
62   Retail sales supervisors and specialised sales occupations
63   Service supervisors and specialised service occupations
64   Sales representatives and salespersons wholesale and retail trade
65   Service representatives and other customer and personal service occupations
66   Sales support occupations 67 Service support and other service occupations, N.E.C.
72   Industrial, electrical, and construction trades 73 Maintenance and equipment operation trades
74   Other installers, repairers, and service and material handlers
75   Transport and heavy equipment operation and related maintenance occupations
76   Trades Helpers, Construction Labourers, and Related Occupations
82   Supervisors and technical occupations in natural resources, agriculture, and related production
84   Workers in natural resources, agriculture, and related production
86   Harvesting, landscaping, and natural resources labourers
92   Processing, manufacturing, and utilities supervisors and central control operators
94   Processing and manufacturing machine operators and related production workers
95   Assemblers in manufacturing
96   Labourers in processing, manufacturing, and utilities
99   Not stated

Notes: This table lists all 2-digit National Occupation Classification (NOC) 2011 codes. N.E.C stands for not elsewhere classified.