Intergenerational Education Mobility among the Children of Canadian Immigrants

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Dans cet article, nous montrons que, sur le plan du degré de scolarité, la situation des enfants nés au Canada de parents immigrants n'est que faiblement reliée au degré de scolarité de leurs parents : ce lien intergénérationnel est en effet environ trois fois plus important dans la population en général. Nous montrons également que la transmission intergénérationnelle du degré de scolarité n'a pas changé parmi les cohortes de naissance de la période d'après-guerre, et que l'on est plus susceptible d'observer une mobilité croissante de la fréquentation scolaire chez les Canadiens élevés par des immigrants ayant un faible degré de scolarité que chez les Canadiens élevés par des parents nés au pays. L'aspect positif de cette vision d'ensemble de la mobilité sociale entre les générations chez les immigrants doit toutefois être tempéré par le fait que certains enfants, et en particulier les garçons de certaines communautés, font face à des obstacles importants pour réussir à améliorer leur situation.

Mots clés : immigrants, scolarité, mobilité intergénérationnelle

The education outcomes of children born in Canada to immigrants are only weakly associated with the education levels of their parents. The intergenerational association in schooling levels is about three times as strong for the general population. We also find that the intergenerational transmission of education has not changed across the birth cohorts of the post-war period, and that upward mobility of educational attainment is more likely among second-generation Canadians raised by immigrant parents with low education than among Canadians with native-born parents. This overall positive view of mobility across the generations among immigrants is tempered by the fact that some children, particularly boys from certain communities, face significant challenges in making progress.

Keywords: Immigrants, education, intergenerational mobility

Introduction

The schooling of immigrant children is often cited as an important outcome related to their capacities to succeed in the labour market and to adapt to the values of the mainstream. The research summarized in this paper explores this topic by using a growing literature on generational mobility of earnings and education as its frame of reference. By examining the strength of the tie between the situation of immigrants and the adult outcomes of their children, the so-called second generation, this literature has come to complement the large number of studies on the social and economic position of immigrants.

For example, Borjas (1992, 1993); Card, DiNardo, and Estes (2000); and Card (2005) examine both the education and earnings outcomes for the children of immigrants born in the United States, and in particular, how well they do, relative both to their parents and to children whose parents were also born in the US. Similar issues have also been studied in Europe, including among others: Van Ours and Veenman (2003) for the Netherlands; Hammarstedt and Palme (2005), Osterberg (2000), and Rooth and Ekberg (2003) for Sweden; Nielson et al. (2003) for Denmark; Bauer and Riphahn (2007) for Switzerland; Dustmann and Theodoropoulos (2005) for Britain; and Gang and Zimmerman (2000), Riphahn (2002, 2003), and Fertig and Schmidt (2002) for Germany.

Canada is often held up as an international success story in terms of its integration of immigrants. While the relative decline in the economic status of immigrants, and particularly recent immigrants, has been well documented in Canada—as for example by, among many others, Aydemir and Skuterud (2005); Baker and Benjamin (1994); Bloom, Grenier, and Gunderson (1995); Frenette and Morissette (2003); Grant (1999); Green and Worswick (2012)—relatively less attention has been paid to the long-run attainments of the children of migrants. Soroka, Johnston, and Banting (2007) and Reitz and Banerjee (2007) study aspects of intergenerational dynamics in Canada other than education, but the analysis we pursue using Canadian data is closest in spirit to Aydemir, Chen, and Corak (2009), who examine the intergenerational earnings mobility of immigrants to Canada.

We use two alternative data sources, the *Census of Canada* and the *Ethnic Diversity Survey* (EDS) (Statistics Canada 2003), to address two questions that are relevant in appreciating both the accomplishments of the past and the challenges of the future. First, what is the degree of generational education mobility, and is it different among immigrants and their children? Second, has the strength of the tie between the education of immigrant parents and their Canadian-born children changed over time?

The empirical analysis estimates regression to the mean models of intergenerational mobility in years of schooling, using a grouped estimator from the census and individual information from the *Ethnic Diversity Survey*. The results paint a positive view of the immigrant integration experience: the tie between parent and child years of schooling is rather loose, and in fact much looser than for Canadian-born children of Canadian-born parents. We also find that the intergenerational elasticity between parent-child years of schooling has not changed across birth cohorts of the post-war era, and that immigrants and their children have, on average, more years of schooling than Canadians who have been in the country for more than two generations.

The final sections of the paper stress, however, that these descriptive results are societal averages, offering a summary measure of the relationship between outcomes and family background. Children, particularly boys, in some immigrant communities face special challenges to making progress, and this suggests the need for more focused study and public policy.

A Descriptive Overview

Our analysis is based upon the 2001 Canadian census, and on an associated post-censual survey conducted in 2002, the *Ethnic Diversity Survey*.

The census analysis relies upon a question referring to the birthplace of the respondent's parents. The so-called "long form" of the census questionnaire, administered to 20 percent of the population, asks all persons aged 15 and over in which country their father and mother were born. On this basis, it allows for the precise identification of immigrants, second-generation Canadians, and others born in Canada (which we refer to as third-generation or higher). The *Ethnic Diversity Survey* uses the long-form respondents as a sampling frame, over-sampling those with an ethnic origin that is non-Anglo-Saxon, and permitting a more detailed analysis of Canadians by their ethnic and cultural background (Statistics Canada 2003). It also contains the same information as the census on parental place of birth, allowing an analysis of immigrants and second-generation immigrants, in addition to the general population.

The census offers a detailed overview of the Canadian population that places second-generation Canadians and their educational attainment in a broader context. In 2001, almost 65 percent of the Canadian population aged 16 to 65 was of aboriginal origin or third-generation, and in the neighbourhood of 20 percent were immigrants.[1] The groups we are focusing on—those with both parents born outside the country—represent about 7.5 percent of the population. This focus places the attention upon a subcategory that is likely harder to integrate than those having one Canadian-born parent. This said, these second-generation Canadians tend to have more education—those with both parents born elsewhere having on average about 14 years of schooling, one year more than third-generation Canadians. Around one-third have at least 16 years of education, with over 20 percent of men and almost one-quarter of women having at least an undergraduate university degree. About 22 percent of third-generation Canadians have this many years of education, while less than 15 percent have at least an undergraduate university degree.

These comparisons continue to favour second-generation Canadians, even when they are done within birth cohorts. Every ten-year age cohort of second-generation Canadians with both parents born elsewhere has a higher proportion—16 or more years of education—than third-generation Canadians. This is particularly so for the younger cohorts. Over 44 percent of men aged 25–34 with both parents born abroad have at least 16 years of education, compared to 30 percent of those with parents born in Canada. Slightly over one-half of second-generation women in this age group have at least this many years of schooling, versus 35 percent of their third-generation counterparts, a higher level of education than any other birth cohort across both genders. While this group of women have considerably more education than their male counterparts of the same age, in older cohorts (particularly the oldest) men tend to be more educated.

Our analysis is based essentially, but not entirely, upon this younger cohort. They are at once an old-enough group for which we can reasonably begin to assume that the schooling process has been completed, yet young enough to permit an analysis across generations by using information on their parents from the 1981 census.

Data and Framework for the Analysis

The empirical approach is motivated by the regression to the mean model used in economic analysis to measure mobility in earnings, income, and other indicators of socio-economic status across generations as described, for example, in Corak (2004) and Mulligan (1997). This is depicted in equation (1), where Y represents an outcome of interest, in our case years of education, and t is an index of generations:

$$Y_{i,t} = \alpha_t + \beta\, Y_{i,t-1} + \varepsilon_{i,t} \qquad (1)$$

To use the example of education, in this equation the educational attainment of family i's child would be $Y_{i,t}$, which is roughly speaking equal to the average years of education of generation t children, as

represented by α_t, plus two factors determining the deviation from this average: a fraction of parental education ($\beta\ Y_{i,t-1}$) and other influences not associated with parental education ($\varepsilon_{i,t}$).

To be clear, this is not a causal model, and the absence of any covariates places the emphasis on the fact that our objective is to derive a descriptive statistic addressing the degree of intergenerational mobility. Average educational attainment will evolve through time, and it is very likely that many or all members of a generation will have more education than their parents. This is captured in equation (1) by the value of α. However, and just as importantly, the equation reflects the idea that an individual's education is nonetheless associated with his or her parents' education. This is captured by the value of β, which represents the fraction of education advantage that is on average transmitted across the generations. In other words, β summarizes in a single number the degree of generational education mobility in a society. It could conceivably be any real number, but published research shows that it has always been found to be positive, though varying significantly across countries and with the level of development (Hertz et al. 2007).[2]

We implement this framework in two separate ways: indirectly using a grouped estimator from the census, and directly using reported individual information on parental education from the EDS. We follow the US analysis of Card, DiNardo, and Estes (2000) and define the second generation as those Canadian-born individuals whose mother and father were both born outside of Canada. First-generation Canadians are defined as those who immigrated to Canada regardless of the age of arrival. It should be underscored that the 2001 census does not permit a direct link between the adult outcomes of children and the status of their parents when they were raising their families. But it does permit the construction of a "grouped" estimator, relating the average outcomes of second-generation adults in 2001 with the average background characteristics of immigrant-adults from the 1981 census who were potentially their parents. An analysis of the generational mobility of immigrants using detailed country of origin along these lines is also offered for the US in Borjas (1993) and Card, DiNardo, and Estes (2000), and in the research on the generational earnings mobility of the children of Canadian immigrants in Aydemir, Chen, and Corak (2009).

The analytical files from the census are constructed as follows. Immigrant fathers are drawn from the 1981 census and restricted to those individuals whose spouse is also an immigrant, and who have Canadian-born children between the ages of five and 17 years. Using least-squares regression, we computed predicted values of $Y_{i,t-1}$ for each country of origin for individuals matching these criteria. Correspondingly, the second-generation sample consists of individuals between 25 and 37 years of age in 2001 whose parents are both immigrants. Similarly, predicted values of $Y_{i,t}$ are calculated for each country that respondents report their fathers came from. The construction of our analytical file is described in Aydemir, Chen, and Corak (2008), and leads to observations for 70 countries for each gender.

This grouped data estimator of equation (1) has both advantages and disadvantages. These are discussed in Card, DiNardo, and Estes (2000). The most obvious disadvantage includes the potential slippage between the generations. The "parents" are the potential parents of the children, and there could be a slippage in how representative they are of the actual parents due to death or emigration. At the same time, however, it should be noted that the large sample size available to us through the use of the full 20 percent census file reduces this problem to the largest extent possible in the literature with which we are familiar. In particular, this is a tighter fit than is possible with US data. For example, Card, DiNardo, and Estes (2000) are able to develop a similar structure for only 30 source countries, and the data requires them to relate the earnings and education of all immigrants to all second-generation individuals. Furthermore, as discussed in Aydemir

and Borjas (2011), since the within-cell means are based upon calculations that are samples, their accuracy will vary with the number of observations available. The implication is that the sampling variation associated with the independent variable will cause an attenuation bias. Aydemir and Borjas (2011) examine the nature and extent of this bias, and also show that the use of the 20 percent census file, as opposed to smaller sampling rates available in public use versions of the census, affords a sufficiently large sample size to minimize its impact.

On the other hand, the estimator is more robust to measurement error due to the errors-in-variable problem. This is a particularly important concern in the analysis of the intergenerational-transmission-of-earnings inequality as discussed, for example, in Solon (1992, 1999). In this literature, researchers are faced with the difficulty of having to infer information on permanent income from annual earnings, and of trying to minimize a classical errors-in-variables problem through instrumental variables or through multi-year averages from panel data on individual annual earnings. At first glance it might be reasonable to suppose that the measurement-error problems in an outcome like education are not as severe as with earnings. Much of the literature implicitly and even explicitly assumes that in fact it is absent, but Ermisch and Francesconi (2004), using UK data on a commonly employed measure of socio-economic status, point out that this need not be the case.

All of this said, we use the census jointly with, and as a complement to, the *Ethnic Diversity Survey*, which has the advantage of offering individual-level information on educational attainment across two generations. As such this also offers an assessment of the robustness of the grouped-data estimator. The EDS is a post-censual survey representative of the entire population, but with the objective of providing information on the ethnic and cultural background of Canadians (Statistics Canada 2003). The limitations of the *Ethnic Diversity Survey* are that there is no information on earnings and income of parents, and the smaller sample size limits somewhat the degree to which specific countries of origin can be examined. It is in these ways that the census can be a useful complement. The advantages of the EDS over the census are the retrospective information on parental education collected from survey respondents, and the capacity to estimate equation (1) for the children of immigrants, for the entire population of Canadians, and for different birth cohorts.

The *Ethnic Diversity Survey* contains all the information from the 2001 census for each survey respondent, including (most importantly for our purposes) the years of education attained.[3] A summary of this information by broad region of origin is offered in Table 1, along with information from the census. The average years of education for second-generation men and women in panels 3 and 4 of the table are essentially the same across the two data sources, never differing by more than 0.3 to 0.4 of a year. This is not surprising, since the survey information is extracted from the census, the differences likely reflecting sampling error. Second-generation Canadians, regardless of the region of the world in which their parents were born, all have more years of education than Canadians with parents also born in Canada. The advantage is greatest for those with African and Asian origins.

The information as a whole suggests that all groups made gains over their parents. Canadians 25 to 37 years of age with Canadian-born parents have roughly two to three more years of education on average than their parents. Gains are also made by second-generation Canadians, though in some cases not as great in absolute levels because of the higher starting point of their parents. However, the gains are particularly high for those whose parents were born in southern and Eastern Europe. On average, fathers had just less than nine years of schooling, but the children obtained 15 years. Those with parents born in Asia also obtained significantly more education than their parents, about two to three years more on average. A more refined examination of this type of mobility, in the context of equation (1), using

TABLE 1
Years of Schooling by Parent's Region of Origin for Second-Generation Men and Women Aged 25–37, and their Parents

	Census	*Ethnic Diversity Survey*
1. Fathers		
North America, Northern and Western Europe	13.9	13.8
Caribbean, Central and South America, and Oceania	13.0	13.4
Southern and Eastern Europe	8.8	8.7
Africa	14.9	16.1
Asia	13.6	14.3
Canadian born	11.3	11.9
2. Mothers		
North America, Northern and Western Europe	12.9	12.8
Caribbean, Central and South America, and Oceania	12.0	13.0
Southern and Eastern Europe	8.1	8.2
Africa	12.9	13.6
Asia	12.1	13.5
Canadian born	11.6	11.4
3. Second generation men		
North America, Northern and Western Europe	14.8	14.5
Caribbean, Central and South America, and Oceania	14.8	14.8
Southern and Eastern Europe	14.8	15.1
Africa	16.3	16.4
Asia	16.3	16.1
Canadian born, third generation or more	14.0	14.2
4. Second generation women		
North America, Northern and Western Europe	15.2	15.1
Caribbean, Central and South America and Oceania	15.6	15.8
Southern and Eastern Europe	15.4	15.0
Africa	16.8	16.9
Asia	16.6	16.4
Canadian born, third generation or more	14.6	14.5

Notes: For information from the census, "Fathers" and "Mothers" in panels 1 and 2 refer to "potential" fathers and mothers from the 1981 census as described in the text; while from the *Ethnic Diversity Survey*, the same labels refer to retrospective information reported by the survey respondents with categorical information on parental education converted to years as described in the text. "Second generation" men and women refer to those 25–37 years of age in 2001, with both parents born outside of Canada. The sample size from the 1981 census for panels 1 and 2 is 80,651. For panels 3 and 4 it is 45,415 and 41,927 for the second generation. The sample size used from the *Ethnic Diversity Survey* is 1,673 (789 men and 884 women).

Sources: Authors' calculations using Statistics Canada data from the census and the *Ethnic Diversity Survey* (2003).

both grouped data and individual data, is discussed in the next section.

Results

The Degree and Nature of Intergenerational Education Mobility

Table 2 offers least-squares results from the estimation of equation (1), using both the grouped data estimator from the census and individual-level information from the *Ethnic Diversity Survey* for men and women aged 25 to 37. This is done using father's years of education as the regressor in the first panel, and mother's education, in the second. For men 25 to 37 years of age, every additional year of education their fathers have is associated with about 0.13 years of more education. This estimate is virtually the same, regardless of whether the census estimate or the EDS estimate is relied upon. This suggests that the grouping estimator does not suffer from undue problems associated with the use of potential as opposed to actual fathers, and that there is likely little measurement error in this information. For women, the point estimates are different at 0.102 and 0.163, but the standard error is 0.03, suggesting that the confidence intervals overlap. Further, all these estimates appear to be about the same—within one standard error—whether the mother's education or father's is used as the right-hand-side variable.

The second result from this table is that at 0.13 and 0.16, the estimates are lower than those for third-generation Canadians of the same age cohort. The educational attainment of men and women whose parents were born in Canada is much more strongly tied to that of their fathers and mothers than it is for second-generation Canadians. For every additional year of parental education, the child's education is in the neighbourhood of 0.37 to 0.4 years higher, triple the estimate for Canadian-born children whose parents were immigrants. These results are also robust to using mother's education as the regressor. This contrasts with the finding in Aydemir, Chen, and Corak (2009) showing that the intergenerational elasticity of annual earnings, estimated to be about 0.2, is the same among second-generation Canadians as it is among the population as a whole.[4]

The comparison of the findings between the different populations across the columns of this table needs to take into account not only the slope coefficient, but also the constant. The estimated magnitude of the constant is always much higher for immigrants than for the third-generation population. The slope coefficients indicate that the immigrant population is converging to its mean faster than the native-born population, but that this mean is much higher to begin with. Further, since educational attainment has a distinct maximum value, the finding of a lower slope may reflect this limit, combined with relatively little downward mobility, for a sample that is more highly educated.

Changes in the Intergenerational Association of Education

Tables 3 and 4 offer an expanded version of the EDS results presented in Table 2 by fully interacting equation (1) with birth-cohort effects. The base case is the cohort 25 to 34 years of age, and separate intercepts and slopes are added for those 35 to 44 years, 45 to 64 years, and finally those 65 and older.[5] Three results follow from this exercise for both men and women.

First, for both the second- and third-generation populations, the slope coefficients seem to be the same across all birth cohorts. Rarely are the estimated coefficients for the interaction terms with paternal education greater than one standard error, and they are never greater than two standard errors. Individually these coefficients are not statistically significant from zero, and F-tests do not reject the null hypothesis that collectively they equal zero.

Second, the estimates of the constant term make clear that second-generation Canadians obtain more years of schooling than those born in the country with Canadian-born parents. To be precise,

TABLE 2
Least-Squares Estimates of Regression to the Mean Models of Education Mobility across Generations: Men and Women, Aged 25–37

	Census	*Ethnic Diversity Survey*		
	Second Generation	*Second Generation*	*Entire Population of 25–37-Year-Olds*	*Third Generation and Higher*
Men				
1. Father's education	0.136	0.134	0.329	0.400
	0.038	0.031	0.023	0.031
Constant	13.6	16.3	6.40	3.13
	0.433	9.38	5.74	7.10
Sample size	70	739	2,965	1,455
R-squared	0.30	0.111	0.145	0.170
2. Mother's education	0.122	0.162	0.309	0.381
	0.030	0.036	0.028	0.038
Constant	14.0	21.6	9.31	6.33
	0.376	9.39	5.94	7.34
Sample size	70	729	2,946	1,443
R-squared	0.22	0.106	0.095	0.115
Women				
1. Father's education	0.102	0.163	0.292	0.370
	0.031	0.033	0.021	0.029
Constant	14.4	10.0	3.76	1.04
	0.365	12.2	5.78	6.96
Sample size	70	815	3,481	1,734
R-squared	0.22	0.078	0.128	0.162
2. Mother's education	0.092	0.128	0.298	0.403
	0.030	0.036	0.026	0.034
Constant	14.7	6.21	3.46	2.71
	0.316	12.3	5.83	7.02
Sample size	70	824	3,553	1,768
R-squared	0.16	0.043	0.109	0.154

Note: Least-squares coefficient estimates are offered as the top entry in each panel, and standard errors as the lower. Census results are based on weighted least squares.

Sources: Authors' calculations using Statistics Canada data from the census and the *Ethnic Diversity Survey* (2003).

TABLE 3
Least-Squares Estimates of Regression to the Mean Models of Education Mobility across Generations: Fully Interacted Model with Birth Cohorts, Men Aged 25–37

	Second Generation	*Entire Population*	*Third Generation and Higher*
Father's education	0.104	0.307	0.371
	0.034	0.0255	0.0349
Father's education x 35 to 44 years of age	0.077	–0.0198	–0.0286
	0.053	0.0362	0.0489
Father's education x 45 to 64 years of age	0.052	0.0556	0.0253
	0.082	0.0419	0.0531
Father's education x 65 years of age	0.106	0.0699	0.0609
	0.099	0.0642	0.0914
Constant	14.2	11.2	10.2
	0.45	0.339	0.454
35 to 44 years of age	–0.944	0.081	0.231
	0.637	0.441	0.584
45 to 64 years of age	–1.06	–1.05	–0.653
	0.875	0.469	0.594
65 or more years of age	–3.73	–2.95	–2.76
	0.964	0.656	0.908
Sample size	1,770	9,180	4,755
R-squared	0.197	0.187	0.198
F-test for slope interactions = 0	0.92 (0.430)	1.48 (0.218)	0.54 (0.653)
F-test for intercept interactions = 0	5.03 (0.0018)	9.30 (0.00)	4.30 (0.0049)
F-test for all interactions = 0	14.7 (0.00)	24.4 (0.00)	12.1 (0.00)

Note: Least-squares coefficient estimates are offered as the top entry in each panel, and standard errors as the lower. The marginal significance levels of the F-tests are reported in parentheses.

Source: Authors' calculations using Statistics Canada's Ethnic Diversity Survey (2003).

TABLE 4
Least-Squares Estimates of Regression to the Mean Models of Education Mobility across Generations: Fully Interacted Model with Birth Cohorts, Women Aged 25–37

	Second Generation	*Entire Population*	*Third Generation and Higher*
Father's education	0.157	0.246	0.311
	0.036	0.024	0.032
Father's education x 35 to 44 years of age	0.0067	0.060	0.0250
	0.055	0.037	0.049
Father's education x 45 to 64 years of age	–0.0067	0.0509	0.0173
	0.076	0.035	0.044
Father's education x 65 years of age	0.130	0.106	0.0847
	0.072	0.055	0.085
Constant	13.8	12.3	11.4
	0.46	0.32	0.43
35 to 44 years of age	–0.626	–1.34	–0.909
	0.62	0.43	0.57
45 to 64 years of age	–0.727	–1.82	1.35
	0.81	0.41	0.52
65 or more years of age	–4.67	–4.12	–3.92
	0.76	0.54	0.79
Sample size	1,952	10,892	5,703
R-squared	0.258	0.231	0.238
F-test for slope interactions = 0	1.74 (0.156)	1.76 (0.153)	0.36 (0.784)
F-test for intercept interactions = 0	13.9 (0.00)	20.0 (0.00)	8.50 (0.00)
F-test for all interactions = 0	32.1 (0.00)	65.0 (0.00)	36.8 (0.00)

Note: Least-squares coefficient estimates are offered as the top entry in each panel, and standard errors as the lower. The marginal significance levels of the F-tests are reported in parentheses.

Source: Authors' calculations using Statistics Canada's *Ethnic Diversity Survey* (2003).

for those 25 to 34 years of age, the difference in years of schooling for men is four years in favour of second-generation Canadians; for women it is almost 2.5 years.[6]

Third, the separate intercepts for each birth cohort suggest that only in the case of the very oldest cohort, those older than 65 years in 2001, are the years of schooling different. This cohort obtained from 2.75 to 4.6 fewer years of schooling than all younger cohorts. This could reasonably be attributed to changes in school-leaving legislation, as these individuals would have been 15 years of age at some point before 1950 (Oreopoulos 2006). It is the statistically significant result for this single cohort that drives the results of F-tests to a point where we cannot reasonably reject the null that all intercepts are collectively equal to zero.

With the possibility of this last exception, the results from this model show that, for both men and women, the intergenerational association in educational attainment, including overall average attainment, has been stable across all birth cohorts. None of the findings associated with Table 2 need be modified: Canadian-born sons of immigrants obtain about 0.13 years more schooling for every additional year that their fathers have, and daughters obtain about the same at 0.16. This is significantly lower than the tie between the Canadian-born children of Canadian-born parents, who obtain an additional 0.3 to 0.4 years of schooling for each additional year. In particular, the degree of intergenerational mobility among most recent second-generation Canadians is no stronger or weaker than it has always been, and has not changed relative to third-generation Canadians. The overall constant term, however, is much more similar across the different samples, and in a rough sense makes a direct comparison of the slope coefficients as a marker of mobility more applicable. This echoes the descriptive finding in Corak (2008, Figure 5), using the same EDS data as used in this table—that immigrants are different in that there is more upward education mobility for children with less educated parents.

Some Refinements

These findings all pertain to averages, speaking to the overall patterns in the country. However, the large sample size of the census allows us to explore the variation in the data in more detail than would be possible with any other data source. The underlying data make clear that for the strong majority of countries immigrant fathers have more than the average education of Canadian-born fathers, and this advantage is passed on to the next generation, with both sons and daughters having more years of schooling than the Canadian-born cohort with Canadian-born parents. In only four countries do immigrants have an education disadvantage that continues to be reflected in the next generation of sons and daughters. For all other countries in which the father's education is less than the average, the children make relative gains and exceed the Canadian average.

Corak (2008) combines the education data for each of the 70 countries with similar information on weekly earnings in Aydemir, Chen, and Corak (2009) to highlight particular communities of concern. Table 5 reproduces a table in Corak (2008). Panel 1 lists countries of origin in which fathers have, on average, more years of schooling than their Canadian counterparts; panel 2 lists those in which they have less. There are no cases of downward education mobility across generations: if fathers have above-average education, so do their sons. Second, in 57 out of 70 countries, the fathers have above-average education, and in two-thirds of these they also have above-average earnings. But in 11 of these 38 cases, the sons go on to earn less than the Canadian average in spite of having above-average education. Only a very small number of countries representing a small total population occupy this potentially challenging position. That said, these are dominated by the Caribbean countries, and with the addition of West Africa, likely represent a visible-minority group highlighted by Reitz and Banerjee (2007), and the basis for their rather pessimistic perspective on the integration of second-generation immigrants.[7]

TABLE 5

Countries and Regions of Father's Birthplace Categorized by Father's Status and Son's Outcomes for Second-Generation Canadians Relative to Average Outcome for Canadians and Third-Generation Canadians: 70 Countries from the Census

	Son's Education Greater than Canadian Average		*Son's Education Less than Canadian Average*	
	Earnings Less than Average	*Earnings Greater than Average*	*Earnings Less than Average*	*Earnings Greater than Average*
1. Father's education greater than Canadian average				
a. Earnings less than Canadian average	BARBADOS COLOMBIA OCEANIA GRENADA GUYANA HAITI JAMAICA JAPAN ST LUCIA TRINIDAD WEST AFRICA	ARGENTINA BRAZIL/CHILE HONG KONG INDIA IRAN/IRAQ ISRAEL KENYA KOREA MOROCCO NETHERLANDS OTHER N AFRICA OTHER S AMERICA OTHER WEST ASIA OTHER W EUROPE PAKISTAN/NEPAL PHILLIPINES POLAND ROMANIA RUSSIA SPAIN/OTHER SOUTH EUROPE SRI LANKA SWITZERLAND SYRIA TAIWAN TANZANIA TURKEY UGANDA		
b. Earnings greater than Canadian average	OTHER CARIBBEAN OTHER EAST/ CENTRAL AFRICA UNITED STATES	AUSTRALIA AUSTRIA CZECH/BULGARIA DENMARK EGYPT FRANCE GERMANY HUNGARY INDONESIA IRELAND MALAYSIA/ SINGAPORE NEW ZEALAND NORWAY SOUTH AFRICA SWEDEN UNITED KINGDOM		
2. Father's education less than Canadian average				
a. Earnings less than Canadian average	CYPRUS GREECE	CHINA ITALY LEBANON MALTA OTHER E ASIA YUGOSLAVIA		ECUADOR OTHER C AMERICA PARAGUAY PORTUGAL
b. Earnings greater than Canadian average	FINLAND			

Source: Excerpt from Corak, "Immigration in the Long Run," *IRPP Choices* 14, no. 13 (2008, Table 5).

There are only 12 countries in which fathers have less-than-average years of schooling and less-than-average earnings, and in all but two of these cases the sons go on to have above-average earnings, breaking out of this potentially challenging starting point. Some of these sons do this by having above-average education (six of ten), while others continue to have below-average education in spite of having higher earnings. There are only two cases of an intergenerational transmission of disadvantage in earnings, though not of education: Cyprus and Greece, and neither of these countries has been highlighted by the existing literature as being particular flashpoints for discontent.

A similar analysis for daughters shows only one case of downward education mobility, Norway, and only one case in which fathers with above-average education and below-average earnings have daughters who grow up to also have above-average education and below-average earnings. There are no examples of the intergenerational transmission of relative disadvantage in education and earnings. There are 13 countries of origin in which fathers on average have less education than the Canadian average. In 12 of these, they also have below-average earnings. But there is only one case in which the daughters find themselves with below-average education and earnings (Corak 2008, Table 5).

Conclusion

Our analysis of the degree and nature of intergenerational education mobility among the Canadian-born children of immigrants suggests a rather positive view. We find that the elasticity between parent and child years of schooling is rather loose among immigrants and their children, and indeed much looser than it is for the Canadian-born children of Canadian-born parents. We find that the strength of the tie between parent and child years of schooling has not changed across the birth cohorts of the post-war era. All of this also plays out in a context in which immigrants and their children have, on average, more years of schooling than Canadians who have been in the country for more than two generations. Our findings are robust to the use of different statistical procedures from two different data sets.

At the same time it should be stressed that our analysis cannot, and is not intended to, uncover or outline the reasons for these patterns. Berman and Rzakhanov (2000) and Zhou and Kim (2006), to cite two very contrasting examples, point out that immigrants can indeed be self-selected on intergenerational altruism, an aspect that would be particularly important in the context of human capital investment. In this regard, it should be noted that the youngest second-generation cohort in our analysis, those 25 to 34 years of age in 2000, were born, on average, in 1970 and no earlier than 1966. In other words, this cohort was born just after the implementation of important policy changes that led to the removal of the national-origin quota system as a means of selecting immigrants. Therefore, their parents likely entered the country before this system was replaced by a points-based policy geared to labour market integration. As such, the extent to which these findings can be extrapolated into the future is an open question, but to the extent that more recent cohorts of immigrants have even higher levels of education, the suggestion is that future analyses of these cohorts are not likely to reverse our general conclusions.

We also underscore the fact that our descriptive results are global, referring to societal averages, and offer an overall view of how Canadian society functions with respect to the schooling of children and children of immigrants. This is not to say that there are not particular challenges to be faced, and the use of detailed census data permits us to highlight their nature. We highlight the fact that some children from some communities have higher-than-average education, but lower-than-average earnings as adults, a pattern that echoes the situation faced by their parents. This applies to the sons of immigrants from a small number of countries, particularly the

Caribbean and West Africa. Though this is similar to the major messages in Reitz and Banerjee (2007), our interpretation is less pessimistic since these groups represent a small fraction of the total population. It is certainly important to also understand the nature of the intergenerational process underlying their outcomes, and this can likely be more fruitfully studied by detailed analyses specific to these communities, without at the same time implying a change in our broad conclusions.

Notes

Earlier versions of this paper were presented at the annual meetings of the Canadian Economics Association; the Canadian Labour Market and Skills Researcher Network; and at meetings of the Population Association of New Zealand in Wellington, New Zealand; also at the IZA-sponsored workshop on the intergenerational transmission of socio-economic outcomes held in Bonn Germany, and at seminars at the University of Western Ontario and the University of Ottawa. We thank participants at all of these venues, as well as an anonymous referee, for their comments and feedback.

[1] The working-paper version of our research offers detailed tabulations illustrating the information in this section. See Aydemir, Chen, and Corak (2008).

[2] Intergenerational mobility in education has, of course, been a longstanding concern in both economics and sociology. Some of the most related Canadian work in this area includes de Broucker and Lavallée (1998) using the *International Adult Literacy Survey*; Fournier, Butlin, and Giles (1995) using the *Survey of Labour and Income Dynamics*; and Sen and Clemente (2006) using the *General Social Survey*. The latter is closest in spirit to the methodology we employ, but all these studies find a strong, positive association between parent and child education, though none focuses on immigrants. More recently, attention has also shifted to the relationship between family background and actual literacy and numeracy outcomes for children, as opposed to formal schooling. See, for example, OECD and UNESCO (2003) based upon the *Programme for International Student Assessment*.

[3] The details of how we converted the nine categories for parental education recorded in this survey to actual years of schooling are described in the working-paper version of our research (Aydemir, Chen, and Corak 2008).

[4] We also undertook estimations including the education of both fathers and mothers, but found the census results to be affected by multicollinearity. These results are available in the working-paper version.

[5] Our original inclination was to use ten-year age cohorts, but the group 55 to 64 represented about 7 percent of the samples, and we decided to aggregate it with 45- to 54-year-olds after preliminary regressions revealed no statistically significant results.

[6] It should again be noted that these results pertain to the reference case of those living in Ontario.

[7] The fact that Japan is also included in this group might be an anomaly. A closer look at the data shows that with respect to weekly earnings the data for both fathers and sons are essentially the same as the Canadian average, differing by less than 0.01 log points. Japan could be categorized as above the average, just as easily as below.

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