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Canadian migration destinations of recent immigrants and interprovincial migrants: similarities, differences and explanations

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Abstract

Canadian Census data for 1981–2006 is used to document substantial differences in the destination locations of immigrants and interprovincial migrants. These differences have increased over time as have differences in the characteristics of the two migrant groups. Differences in age, education, and marital status of the two migrant groups explain little of the observed differences. Visible minority status and language differences are somewhat more important; however, much of the difference in migrant group destinations cannot be explained by measured characteristics.

Introduction

In economic models, both immigrants and interprovincial migrants move in the expectation that migration will improve their well-being. The choice to move is typically modelled as an investment decision where the potential migrant weighs the costs and benefits of migration based on the relative economic and non-economic advantages of the source and possible destination locations. Despite the similar decision problem, the destination locations of immigrants to Canada and Canadian interprovincial migrants are quite different. The purpose of the paper is to use Canadian census data for 1981–2006 to compare differences in the location outcomes of these two migrant groups, document how these outcomes have changed over time and to offer some explanations for the differences observed.

The puzzling differences in destination locations of the two groups of migrants is of interest in its own right as it may shed new light on migrant decision-making. In addition to academic interest, the differences may have implications for immigration policy. To the degree that both sets of migrants are equally well-informed about economic prospects across Canada but differ in qualifications and regional preferences, the observed differences may reflect optimal decisions by the migrants themselves, suggesting that policy aiming to change locational outcomes is unnecessary unless there some external effects associated with migrant locational choices. Alternatively, the very different locational distribution of immigrants could indicate suboptimal locational choices by one or both of the migrant groups. Perhaps, for example, interprovincial migrants are better informed about regional economic opportunities than new immigrants. If so, differences in the destinations of the two groups may reflect

uninformed locational choices by immigrants that result in suboptimal immigrant economic outcomes. Indeed a factor such as this may help explain the deterioration in immigrant outcomes documented in the literature, see, for example, Picot and Sweetman (2005). Such suboptimal outcomes would suggest that an immigrant locational distribution, more like that of interprovincial migrants, may be warranted. Another possibility, with similar policy implications, is that an overconcentration of immigrants in a few key cities may be harming the economic prospects of immigrants. Baglay (2012), for example, cites Canadian work suggesting that "immigrants who live in large cities tend to earn less and face greater challenges in finding work and housing." Baglay also notes that this "concentration may place greater strain on resources and services in major destination areas," which also suggests that immigrant locational outcomes may be problematic. Unless these problems are more than offset by other benefits to having immigrants clustered in their current most favored locations, policy aimed at altering immigrant choices may be able to improve well-being. In practice, the locational preferences of immigrants have other implications of concern to policy-makers. In Canada, the lack of immigration in some regions has raised concerns about the economic future of these regions. Little immigration means both a declining population share and an inability to use immigration to deal with regional skill shortages. These types of concerns have given rise to the Canadian government's Provincial Nominees Program, which aims to create a more balanced regional distribution of immigrants, see Baglay (2012) and Pandey and Townsend (2011).

Studies of actual locational outcomes and their determinants, like the present paper, may shed some light on the reasons for the differences in migrant locations and hint at whether a policy response like the Provincial Nominees Program is indeed warranted. The results may also suggest possible alternative approaches. If, for example, the differences in migrant location choices reflect skill differences between the two migrant groups, the observed location differences may truly represent the best set of outcomes given each group's skills. This might suggest that no policy is needed or, if policy is thought to be justified in order to achieve regional development goals, it might suggest changes to the selection mechanism for economic migrants that would result in a selection of immigrants that would give locational outcomes more like those of interprovincial migrants.

Migrant information in the Canadian Census

The paper uses Canadian Census public-use microdata files for 1981 through 2006. Each Census provides information on place of residence 5 years prior to the census year. This allows individuals to be classified as: non-movers; interprovincial migrants (whose past residence 5 years previously was in a different province); external migrants (whose residence 5 years earlier was outside of Canada); and intraprovincial migrants (those who moved within a province). This information on 5-year mobility status is used to identify the two migrant groups of interest: recent interprovincial and recent international (or external) migrants. Both migrant groups are further refined. The interprovincial migrant sample is restricted to the roughly 85% of this group who were Canadian born in order to make this group more distinct from international migrants. In a similar spirit, the external migrant group is refined to exclude (1) Canadian born external migrants; (2) external migrants whose information on year of immigration, or

age at immigration, indicated that original immigration had occurred more than 5 years prior to the census; and (3) non-permanent residents. The exclusion of these three groups of external migrants leaves only recent (i.e., within 5 years), foreign-born, external migrants (referred to hereafter as immigrants). Samples are further restricted to those aged 20–49 on the belief that migration motivation is likely to be quite different for the old and the very young. The restrictions above result in the main sample of recent migrants used in the work below.

Table 1 provides information on the size of the Canadian born interprovincial migrant and recent immigrant samples in each Census year and for each sex. The smallest sample sizes are for immigrants in the 1980s; however, even these have at least 1,953 observations. Immigrant samples are much larger from 1991–2006 when the minimum sample size was 5,143 for men in 1996. The interprovincial migrant samples are larger than those of immigrants in all years except 2006. The smallest interprovincial migrant sample is 5,304 observations for women in 1986, while the largest is 8,297 for men in 1991.

In order to better gauge the importance of the two types of migration, Table 1 also reports the number of each type of migrant as a share of the population aged 20–49, i.e., the population including both non-migrants and migrants. Interprovincial migrants accounted for 6.1% of men and 5.7% of women aged 20–49 in 1981, but this share declined over time reaching 3.5% for men and 3.4% for women in 2006. The recent immigrant share moved in the opposite direction, climbing from about 2% in 1981 to 3.5% in 2006 for men and 3.9% for women. The quite different time trend for the two migrant groups will partly reflect changes in federal immigration policy, which determines how many of those in the potential immigrant queue are allowed to become immigrants, see Ferrer et al. (2012). The interprovincial trend will reflect considerations such as variations in relative regional economic fortunes and regional demographic trends.

Table 1 Interprovincial migrant and recent immigrant samples age 20–49

	1981	1986	1991	1996	2001	2006
Men						
Recent Immigrants[a]						
Number observations	2043	1953	5434	5143	5499	6068
Share 20–49 sample[c]	0.020	0.017	0.029	0.029	0.031	0.035
Interprovincial migrants[b]						
Number	6362	5356	8297	6777	6815	6062
Share 20–49 sample[c]	0.061	0.046	0.044	0.038	0.039	0.035
Women						
Recent immigrants						
Number observations	2106	2075	5659	6015	5912	7017
Share 20–49 sample[c]	0.020	0.018	0.030	0.032	0.033	0.039
Interprovincial migrants[b]						
Number	5928	5304	8045	6801	6653	6107
Share 20–49 sample[c]	0.057	0.045	0.042	0.037	0.037	0.034

Source: Statistics Canada Public-use microdata files 1981–2006

[a] Recent immigrants resided outside of Canada 5 years before the Census, were not Canadian born and did not immigrate to Canada more than 5 years ago. Non-permanent residents are also excluded

[b] Interprovincial migrants are Canadian born individuals whose province of residence in the Census year differed from their province of residence 5 years before

[c] In each case, this is the number in the migrant group as a share of the entire population aged 20–49

The difference in the interprovincial migrant and immigrant share trends is notable. The decline in the interprovincial migrant share may be driven by an environment where migration has become less attractive. This could mean that immigrants later in the sample period were arriving at a "poor time" and the factors creating these poor conditions may help explain the relatively poor economic outcomes of these recent immigrants documented in the literature. Interestingly, a decline in internal migration, like that in Table 1, also occurred in the United States after 1980. Molloy et al. (2011) consider possible reasons for this decline, most of which suggest that US states may have become more alike in terms of opportunities and amenities. If this story also applies to Canada, it could explain the decline in interprovincial migration, and it could also imply that immigrants should be more evenly spread between the now more similar regions than in the past. The next section takes a first look at migrant location outcomes.

Comparing migrant destination locations: a first look

Additional file 1: Table S1 reports province of residence by sex and Census year for both sets of migrants and for Canadian-born non-migrants. The main trends for men are summarized in Figs. 1, 2, 3; patterns for women are similar. Figure 1 shows that interprovincial migrants are most likely to be found in Ontario, Alberta or British Columbia (BC) with each accounting for between 15 and 34% of interprovincial migrants in any given year. Quebec, although home to 27–32% of Canadian born non-migrants, accounts for only 5–9% of interprovincial migrants; the Ontario share (19–30%) is also consistently lower than its population share. Province specific results in the Additional file 1: Table S1 show that Manitoba, Saskatchewan, Nova Scotia (NS) and New Brunswick (NB) all account for a significant share of interprovincial migrants (roughly 4–7% each depending on the year).

The distributions for the recent immigrant group are quite different. Figure 2 shows that Ontario accounts for over half of immigrants in each year after 1981, peaking in 2001 at 57% for men (the peak for women is 56% in 2001, see Additional file 1: Table S1). After Ontario, the most popular location in each year is either Quebec (13–20%) or British Columbia (14–24%). Alberta, a popular destination for interprovincial migrants, accounted for less than 10% of immigrants in each Census year after 1986. Of the

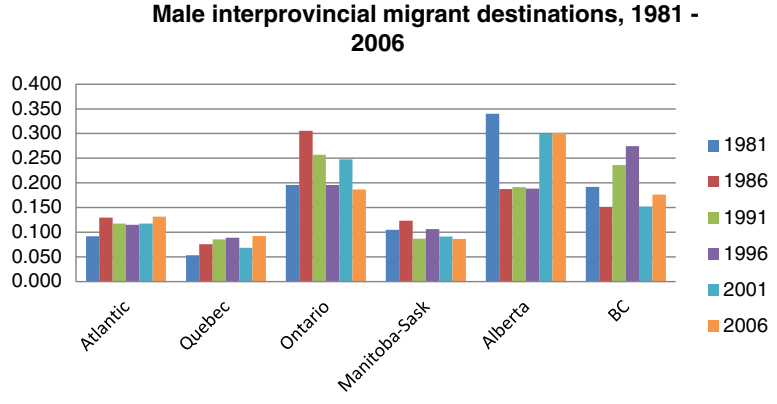

Fig. 1 Male interprovincial migrant destinations, 1981–2006

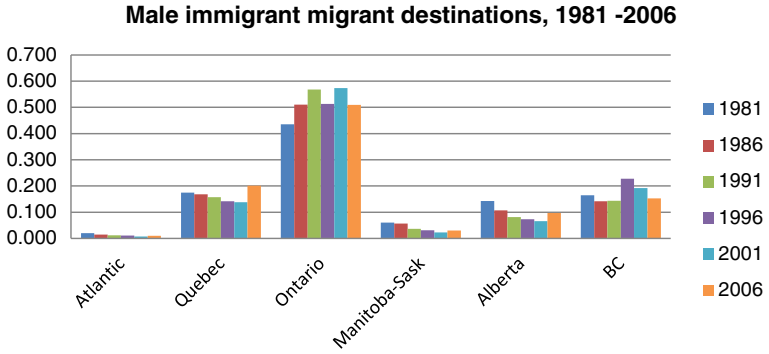

Fig. 2 Male immigrant migrant destinations, 1981–2006

remaining provinces, Manitoba accounts for the highest share of recent immigrants (over 4% in the 1980s), but this share, like those for Saskatchewan and the Atlantic provinces, fell substantially in the 1990s and 2000s. In fact the six smallest provinces together account for less than 4.5% of recent immigrants in 2006.

Duncan dissimilarity indices (DDIs) were calculated in each year and for each sex to provide a summary measure of the differences in destination locations of the two types of migrants. DDIs are also reported comparing non-migrant (NM) locations to those of each set of migrants. All three sets of DDIs are reported at the foot of Additional file 1: Table S1 and are illustrated in Fig. 4a and b. For both sexes, the interprovincial-immigrant (IP vs. IM) migrant DDI is highest in 2001 and is next highest in 2006, indicating that destinations of the two groups were least alike in those years. The lowest values are found in 1986, followed by 1981. Overall the indices indicate that migrant group destination differences have increased over time.

Interprovincial migrant locations also differ substantially from those of Canadian born non-migrants. Quebec and Ontario are far more common locations for non-migrants than interprovincial migrants, while the reverse holds for the eastern or western provinces, with differences especially large for Alberta and BC. Canadian born non-migrants are also much differently distributed than recent immigrants. Quebec is much more common for non-migrants than immigrants, while Ontario and BC are more popular among immigrants. In years other than 1981 and 1986, Alberta is more common for non-migrants than immigrants, the same holds true in all years for the smaller provinces.

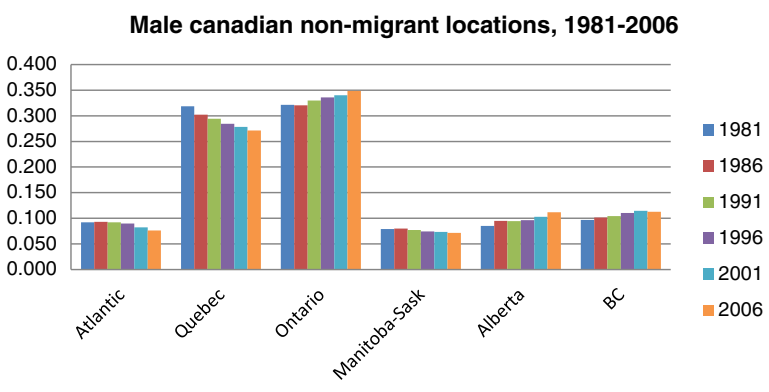

Fig. 3 Male canadian non-migrant locations, 1981–2006

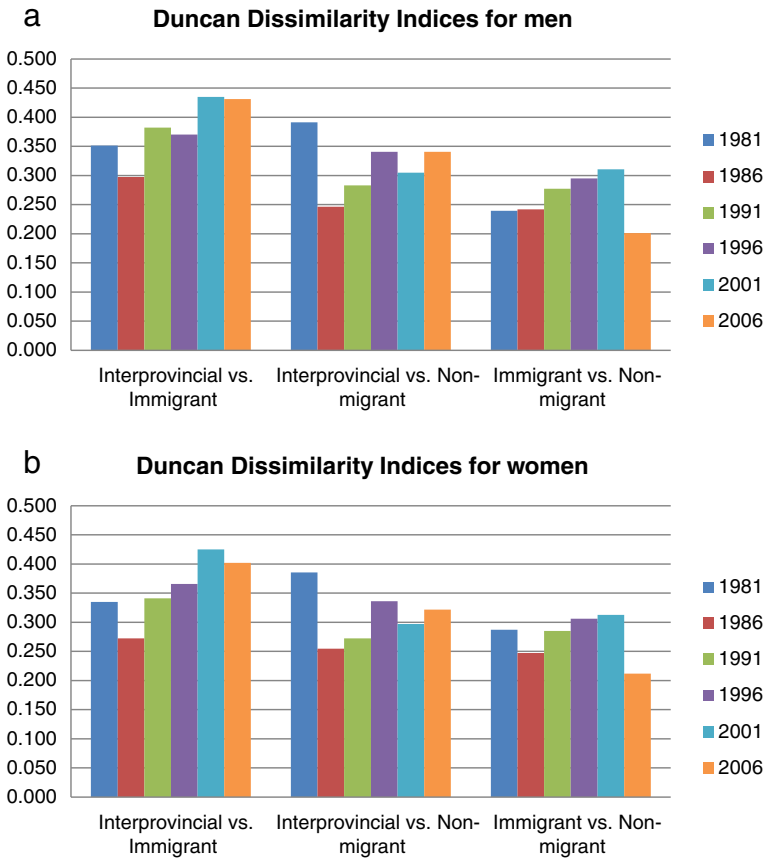

Fig. 4 a: Duncan Dissimilarity Indices for men. **b**: Duncan Dissimilarity Indices for women

DDI measures for immigrant vs. non-migrant locations are smaller than those for interprovincial migrants and immigrants in all years and for both sexes. The same is true for interprovincial migrants vs. non-migrant DDI in all years other than 1981. Differences between the interprovincial-immigrant DDIs and the other two DDIs are especially large in 2001 and 2006.

The results in Additional file 1: Table S1 and Figs. 1 and 2 show large differences in the destination locations of interprovincial migrants and immigrants. One possible explanation of the differences is a lack of comparability due to a kind of "source bias." An immigrant can be thought of as choosing between N destination locations so that their distribution by location provides information on how immigrants rank the N possible locales. Interprovincial migrants also compare possible locales; however, unlike immigrants, one of the N locations is their source location. So given that they have migrated, their choice is between the N-1 remaining locations rather than the N chosen from by immigrants. This "source bias" problem can depress the share of interprovincial migrants who locate in larger source provinces and could help explain the relatively low share of interprovincial migrants who locate in Ontario. For reference, the last two columns of Table 2 report the distribution of interprovincial migrants by source province.

To get some idea of the importance of this type of bias, a benchmark distribution is constructed that assumes interprovincial migrants are distributed across the N source

Table 2 Non-migrant location shares and benchmark[a]

	Men 2006		Women 2006		Interprovincial Migrant Source Provinces: Average 1981–2006	
	Non-migrants	Benchmark	Non-migrants	Benchmark	Men	Women
Nfld.	0.018	0.018	0.020	0.019	0.048	0.050
NS	0.031	0.031	0.034	0.033	0.069	0.064
NB	0.027	0.027	0.028	0.027	0.049	0.049
Quebec	0.271	0.279	0.270	0.272	0.108	0.116
Ontario	0.348	0.321	0.349	0.328	0.241	0.238
Manitoba	0.038	0.041	0.039	0.041	0.070	0.069
Sask.	0.034	0.033	0.034	0.033	0.077	0.080
Alberta	0.112	0.113	0.107	0.107	0.170	0.166
BC	0.113	0.131	0.112	0.132	0.140	0.139
PEI & Territories[b]	0.008	0.009	0.009	0.009	0.027	0.028

[a] See footnote 10 regarding how the benchmark is constructed
[b] The exercise was done for all years 1981–2006. PEI and Territories are combined for comparability with 1981

provinces as actually observed in each year, while each migrant from a specific source province is distributed among the remaining N-1 destination provinces in line with the non-migrant population share. The difference between the actual share of non-migrants by province and the benchmark distribution will reflect source bias. The results of this exercise for 2006 are reported in Table 2. As expected, "source bias" reduces the Ontario share; however, the effect is only 2.7 and 1.9 percentage points for men and women, respectively. This check suggests that adjusting for source bias would make interprovincial migrant shares slightly more like those of immigrants; however, the benchmark exercise suggests that the adjustment is small compared to the observed destination differences.

Thinking about location differences: the migration decision

What might explain the differences in interprovincial migrant and immigrant location decisions?

A simple economic model of the migration decision has the potential migrant compare well-being if they migrate to well-being if they do not, where well-being in the two states is determined by (1) relative job and pay prospects (measured by WK – anticipated weeks-worked and W – anticipated wages adjusted for cost of living between locations), (2) migration costs should they migrate (MC), and (3) some index of the non-economic amenities associated with the source and possible destination location (NE). The person will wish to migrate if migration improves well-being, where well-being as a migrant is associated with the most desirable post-migration location. The migration criterion can be stated as:

$$\max\left(W_{m1}WK_{m1} + NE_{m1} - MC_{m1}, \ldots W_{mn}WK_{mn} + NE_{mn} - MC_{mn}\right) > W_{non}WK_{non} + NE_{non}$$

where "m" and "non" subscripts denote migrant and non-migrant and there are 1…n possible migration locations. The values of each of the variables would be expected values reflecting information available to the potential migrant at the time the decision to migrate is made. Information regarding particular locations may differ between migrant types and between individual migrants of a given type. For example, a migrant

with family or friends in a possible destination may have better information than someone with no network in that location. The presence of social networks may also affect the type of job opportunities available as well as the non-economic attractiveness of a location.

For interprovincial migrants, the left-hand side focuses on outcomes in destinations other than their source province, while the no-migration outcome is that for the source province. Interprovincial migrants are a select group of the Canadian born for whom the above inequality holds. For immigrants, the left-hand side focuses on outcomes in all provinces, and the no-migration outcome is their best alternative outside of Canada. Immigrants also consist of the select group for whom the inequality holds. Furthermore, unlike interprovincial migrants, an immigrant's desire to migrate to a Canadian province is constrained by immigration policy and the immigrant selection process, making them in this sense an even more select group than the interprovincial migrants. Despite this difference it seems likely that once admitted to Canada the nature of the location choice problem between alternative destinations will be similar for the two migrant groups. This, of course, does not mean that location choices will be the same since the anticipated values of the variables determining the best choice (W, WKS, NE and MC) could differ substantially between interprovincial migrants and immigrants. If, for example, the two migrant groups differ in skill level and outcomes by skill level differ by region, then the two migrant groups could have quite different values for W and WKS across locations, possibly leading to different location outcomes. The fact that interprovincial migrants have a pre-migration source province is another possible difference. Having a source province likely increases the relative attractiveness of neighboring provinces via lower migration costs and perhaps via greater non-economic attractiveness of the near-source location. For immigrants, patterns of past immigration may mean that there is an established community of past-immigrants from their source country in some locations and this may boost the non-economic attractiveness of these locations. Networks working through past migrants could also mean better work opportunities. Thomas (2011) provides recent Canadian evidence on the importance of networks to immigrant pay and employment outcomes. Dependence between past and present immigrant locations is still more direct in the case of family class immigrants sponsored by a resident relative.

Molloy et al. (2011) suggest that job opportunities and amenities have become more alike across US regions, implying that fewer potential moves will generate gains in income and amenities large enough to offset the costs of moving. As noted earlier, one consequence is a decline in internal migration. This phenomenon could also mean an enhanced role in determining migrant locations for unalterable location characteristics, e.g., climate. For immigrants, regions within a country becoming more alike is less likely to drive down immigration as the gap in well-being relative to the source country may remain large; however, immigrant choice between locations within the country will depend less on the factors that have become more alike and more on factors like past immigration patterns and fixed location characteristics.

In short, differences in migrant location outcomes will reflect differences in wages, work prospects, non-economic attractiveness of regions as well as migration costs. To the degree that expected values of these variables for individual migrants are determined by observed characteristics (skill, source location, ethnicity, language), the framework

suggests that migrants from the two migrant groups with similar characteristics are likely to make similar location choices.

Migrant group characteristics: similarities and differences

How different are the characteristics of the two types of migrants? Tables 3 and 4 provide detailed information on personal characteristics of the two migrant groups by sex and year, while Figs. 5, 6, 7, 8 illustrate some of the key patterns from the table. In the 1980s, both migrant groups were concentrated in the youngest age groups, and the distribution of the two groups across age categories was quite similar. Figure 5a and b show the patterns for men. Distributions by age are also similar in 1991, but weight in both migrant groups had by then shifted towards those aged 30–49. After 1991 both migrant groups continued to age, but aging was greater for immigrants. Figure 5b shows that by 2006 only one quarter of recent male immigrants aged 20–49 were in their 20s (vs. nearly half in the 1980s) and roughly half were age 35–49; trends for immigrant women are similar.

The tables also show that immigrants are more likely to be married and less likely to be single (both sexes and in all years); moreover, this difference increased substantially starting in 1996.

Educational attainment rises for both groups of migrants over time (Fig. 6a and b illustrate the patterns for men). The increases are especially large for immigrants after 1996, likely reflecting changes in immigration rules aimed at attracting more skilled workers; see Ferrer et al. (2012). Shares with no qualifications fell by 20 percentage points or more for both migrant groups 1981–2006. Declines also occurred in the share of those with trade qualifications, with the drop being especially large for immigrant men. For male interprovincial migrants the increase over time is greatest in the share with non-university post-secondary qualifications, next comes high school and then bachelor's degrees. For female interprovincial migrants the increase in the share with a bachelor's degree is largest by far. For recent immigrants the increases are found across almost all university categories for both men and women, and these increases are much larger than those for interprovincial migrants. By 2001 these trends left the shares of immigrants in the university categories much higher than those for interprovincial migrants. Prior to 2001 interprovincial migrants were as, or more likely, to have bachelor's degrees, while recent immigrants were already more likely to have higher degrees. For men, migrant group shares with trades and non-university post-secondary qualifications diverge. The same holds for women with non-university post-secondary qualifications.

For those with a post-secondary qualification, there were substantial differences between the two groups of migrants in their field of study, with these differences larger for men than women. Furthermore, the differences grow over time (see Table 5). 2006 figures for those with any post-secondary qualifications show that immigrant men are more likely to have engineering degrees or to specialize in math/physical sciences or business. Male interprovincial migrants are much more likely to be in "trades and technology" as well as education and fields in the arts (humanities, social sciences and fine arts). The biggest differences for women are that immigrant women are more likely to be in engineering or math/physical sciences and less likely to be in health, education and arts fields. Fields of study are quite stable 1986–2006 for male interprovincial migrants, while for female interprovincial migrants shares in health and secretarial fields decline, while business

Table 3 Personal characteristics of Canadian-born interprovincial migrants and recent immigrants, men 1981–2006

	Interprovincial migrants						Recent immigrants					
	1981	1986	1991	1996	2001	2006	1981	1986	1991	1996	2001	2006
Age:												
20–24	0.283	0.219	0.162	0.172	0.179	0.186	0.193	0.228	0.155	0.150	0.114	0.123
25–29	0.294	0.290	0.269	0.237	0.238	0.242	0.292	0.247	0.222	0.187	0.157	0.134
30–34	0.186	0.211	0.231	0.218	0.192	0.196	0.240	0.228	0.241	0.215	0.238	0.233
35–39	0.113	0.144	0.165	0.175	0.171	0.150	0.140	0.164	0.187	0.183	0.207	0.230
40–44	0.073	0.086	0.106	0.118	0.131	0.128	0.087	0.080	0.128	0.148	0.167	0.168
45–49	0.051	0.052	0.066	0.080	0.090	0.098	0.048	0.051	0.068	0.117	0.118	0.111
Marital status:												
Married	0.604	0.586	0.611	0.554	0.563	0.553	0.680	0.632	0.654	0.656	0.739	0.740
Widow/divorced	0.065	0.073	0.066	0.072	0.066	0.051	0.043	0.039	0.037	0.039	0.031	0.034
Single	0.331	0.341	0.324	0.375	0.371	0.397	0.277	0.329	0.310	0.306	0.230	0.226
Education:[a]												
No qualifications	0.316	0.293	0.226	0.205	0.176	0.124	0.258	0.292	0.225	0.203	0.101	0.065
High school	0.205	0.206	0.230	0.232	0.232	0.268	0.170	0.216	0.258	0.230	0.162	0.163
Trades	0.161	0.156	0.165	0.138	0.149	0.126	0.187	0.117	0.130	0.092	0.066	0.046
Non-university PS	0.117	0.120	0.136	0.160	0.171	0.198	0.133	0.108	0.113	0.118	0.087	0.090
University LT Bach.	0.013	0.015	0.015	0.015	0.017	0.031	0.035	0.036	0.033	0.044	0.045	0.082
Bachelors	0.127	0.141	0.156	0.171	0.175	0.180	0.117	0.115	0.132	0.182	0.275	0.299
Undergrad. GT Bach.	0.015	0.013	0.015	0.014	0.015	0.012	0.020	0.018	0.027	0.032	0.057	0.056
Medical	0.009	0.010	0.006	0.010	0.009	0.006	0.014	0.015	0.008	0.012	0.010	0.013
Masters/Doctorate	0.044	0.053	0.057	0.065	0.066	0.063	0.083	0.104	0.088	0.105	0.235	0.207
Student	0.169	NA	0.163	0.172	0.167	0.168	0.244	NA	0.268	0.284	0.285	0.285

Table 3 Personal characteristics of Canadian-born interprovincial migrants and recent immigrants, men 1981–2006 (Continued)

Language knowledge												
English only	0.753	0.732	0.751	0.735	0.736	0.742	0.729	0.755	0.775	0.788	0.801	0.752
French only	0.010	0.009	0.011	0.007	0.007	0.010	0.061	0.049	0.040	0.037	0.031	0.057
French & English	0.237	0.259	0.238	0.258	0.257	0.248	0.134	0.109	0.100	0.092	0.117	0.135
Neither Fr. nor Eng.	0.000	0.000	0.000	0.000	0.000	0.000	0.075	0.088	0.085	0.083	0.052	0.055
Mother tongue												
English	0.844	0.875	0.892	0.837	0.841	0.845	0.388	0.299	0.250	0.125	0.104	0.102
French	0.123	0.093	0.095	0.125	0.125	0.119	0.050	0.036	0.035	0.028	0.035	0.037
French & English	NA	0.024	0.008	0.006	0.006	0.005	NA	0.002	0.003	0.001	0.000	0.000
Aboriginal	NA	0.002	0.002	0.004	0.004	0.005	NA	0.004	0.000	0.000	0.000	0.000
Other	0.033	0.006	0.004	0.027	0.024	0.027	0.562	0.660	0.712	0.846	0.861	0.860
Visible minority	NA	0.012	0.018	0.016	0.026	0.033	NA	0.616	0.710	0.722	0.722	0.726
Ethnicity												
British	0.522	0.432	0.373	0.301	0.262	0.108	0.253	0.097	0.052	0.038	0.023	0.020
French	0.156	0.152	0.137	0.088	0.076	0.039	0.037	0.018	0.010	0.016	0.016	0.013
Other Europe	0.166	0.114	0.117	0.093	0.084	0.069	0.198	0.268	0.224	0.168	0.155	0.100
Asian[b]	0.002	0.004	0.007	0.008	0.016	0.018	0.124	0.438	0.530	0.592	0.616	0.582
Other	0.049	0.008	0.003	0.005	0.005	0.004	0.367	0.098	0.111	0.088	0.076	0.094
Canadian[b]	NA	NA	0.037	0.143	0.189	0.158	NA	NA	0.001	0.003	0.004	0.001
Aborginal	NA	0.014	0.017	0.016	0.022	0.018	NA	0.001	0.000	0.000	0.000	0.000

[a] PS = post-secondary, Bach. = bachelors, GT,LT = greater than or less than

[b] In 1981 the category Asian includes only Chinese immigrants. Canadian ethnicity was not a category before 1991

Table 4 Personal characteristics of Canadian-born interprovincial migrants and recent immigrants, women 1981–2006

	Interprovincial migrants						Recent immigrants					
	1981	1986	1991	1996	2001	2006	1981	1986	1991	1996	2001	2006
Age:												
20–24	0.293	0.245	0.190	0.184	0.202	0.205	0.264	0.251	0.170	0.169	0.125	0.127
25–29	0.293	0.293	0.272	0.248	0.244	0.260	0.302	0.270	0.230	0.211	0.198	0.200
30–34	0.196	0.211	0.222	0.212	0.186	0.193	0.207	0.208	0.240	0.205	0.241	0.232
35–39	0.110	0.129	0.157	0.160	0.158	0.130	0.114	0.136	0.177	0.180	0.192	0.209
40–44	0.065	0.074	0.102	0.112	0.124	0.117	0.065	0.080	0.119	0.142	0.153	0.147
45–49	0.043	0.048	0.057	0.084	0.088	0.095	0.049	0.055	0.064	0.093	0.091	0.085
Marital status:												
Married	0.687	0.653	0.664	0.614	0.613	0.590	0.775	0.731	0.713	0.728	0.809	0.804
Widow/divorced	0.096	0.101	0.097	0.102	0.083	0.080	0.051	0.045	0.051	0.056	0.052	0.054
Single	0.216	0.245	0.239	0.284	0.304	0.330	0.174	0.224	0.236	0.216	0.139	0.142
Education:[a]												
No qualifications	0.305	0.285	0.203	0.171	0.137	0.084	0.322	0.336	0.248	0.222	0.130	0.077
High school	0.242	0.238	0.267	0.238	0.231	0.255	0.235	0.248	0.274	0.276	0.197	0.175
Trades	0.102	0.098	0.100	0.091	0.088	0.062	0.104	0.096	0.093	0.066	0.051	0.042
Non-university PS	0.177	0.184	0.205	0.225	0.231	0.239	0.149	0.122	0.139	0.136	0.109	0.114
University LT Bach.	0.027	0.021	0.021	0.019	0.023	0.041	0.041	0.031	0.044	0.048	0.074	0.103
Bachelors	0.110	0.130	0.153	0.189	0.211	0.235	0.094	0.107	0.129	0.161	0.266	0.296
Undergrad. GT Bach.	0.015	0.014	0.016	0.019	0.021	0.022	0.014	0.015	0.022	0.025	0.048	0.050
Medical	0.003	0.004	0.005	0.008	0.010	0.006	0.006	0.007	0.008	0.012	0.018	0.017
Masters/Doctorate	0.020	0.025	0.030	0.040	0.047	0.056	0.035	0.038	0.042	0.054	0.108	0.127
Student	0.159	NA	0.191	0.204	0.210	0.228	0.212	NA	0.287	0.310	0.301	0.291

Table 4 Personal characteristics of Canadian-born interprovincial migrants and recent immigrants, women 1981–2006 (Continued)

Language Knowledge:												
English only	0.765	0.736	0.742	0.729	0.715	0.711	0.745	0.737	0.756	0.763	0.780	0.721
French only	0.016	0.014	0.017	0.013	0.010	0.014	0.059	0.059	0.048	0.047	0.042	0.067
French & English	0.220	0.251	0.240	0.258	0.275	0.274	0.100	0.085	0.083	0.075	0.094	0.122
Neither Fr. nor Eng.	0.000	0.000	0.000	0.000	0.000	0.000	0.097	0.119	0.114	0.115	0.084	0.090
Mother tongue:												
English	0.846	0.877	0.890	0.834	0.835	0.840	0.443	0.333	0.269	0.123	0.099	0.091
French	0.116	0.091	0.099	0.126	0.121	0.119	0.048	0.033	0.034	0.022	0.029	0.029
French & English	NA	0.023	0.006	0.006	0.005	0.005	NA	0.003	0.001	0.001	0.001	0.001
Aboriginal	NA	0.003	0.003	0.006	0.004	0.007	NA	0.003	0.000	0.000	0.000	0.000
Other	0.038	0.006	0.002	0.027	0.034	0.028	0.509	0.627	0.696	0.853	0.871	0.879
Visible minority	NA	0.014	0.017	0.017	0.026	0.035	NA	0.587	0.703	0.744	0.731	0.737
Ethnicity:												
British	0.521	0.409	0.362	0.285	0.237	0.082	0.245	0.121	0.058	0.027	0.018	0.012
French	0.152	0.146	0.138	0.080	0.072	0.031	0.032	0.013	0.011	0.011	0.012	0.010
Other Europe	0.166	0.109	0.106	0.078	0.085	0.057	0.197	0.246	0.211	0.161	0.159	0.105
Asian[b]	0.002	0.005	0.006	0.010	0.014	0.018	0.125	0.419	0.551	0.612	0.617	0.592
Other	0.050	0.007	0.003	0.004	0.005	0.006	0.366	0.083	0.093	0.091	0.075	0.090
Canadian[b]	NA	NA	0.030	0.140	0.178	0.142	NA	NA	0.001	0.002	0.004	0.029
Aborginal	NA	0.016	0.021	0.019	0.022	0.023	NA	0.001	0.001	0.000	0.000	0.000

[a] PS = post-secondary, Bach. = bachelors, GT,LT = greater than or less than

[b] In 1981 the category Asian includes only Chinese immigrants. Canadian ethnicity was not a category before 1991

Fig. 5 a: Age of male interprovincial migrants. **b**: Age of recent male immigrants

and social sciences increase. Immigrant shares in math and physical sciences almost double, and shares in engineering also rise sharply 1986–2006. There is a sharp fall in the share of immigrant men in "technology and trades," while changes for immigrant women resemble those seen for interprovincial women (health declines, business increases). Overall, it appears that the two migrant groups are diverging with the divergence especially notable for men. Looking at field of study for only those with university qualifications shows male interprovincial migrants more likely to be in social sciences or humanities, while immigrant men are more likely engineers or in math and physical sciences. For women, interprovincial migrants are more likely to be in education or social science and less likely to be in business, engineering or math and sciences.

Information on school attendance is available in all years except 1986 (see Tables 3, 4). Students are defined here as anyone who reported attending school in the 9 months prior to the census. In all years, student shares are higher for immigrants than for interprovincial migrants. The gap is largest for men (10–12 percentage points 1991–2006). Shares in both groups are quite stable for men but rise for women, especially between 1981 and 1991.

Tables 3 and 4 also provide information on both “knowledge of official languages” and “mother tongue.” Almost all interprovincial migrants knew English or knew both English and French, while the share who knew only French was 1.7% or less in all years. These shares were reasonably stable over time. The share of immigrants with knowledge of only English was 72–80% similar to that for interprovincial migrants. By contrast, the

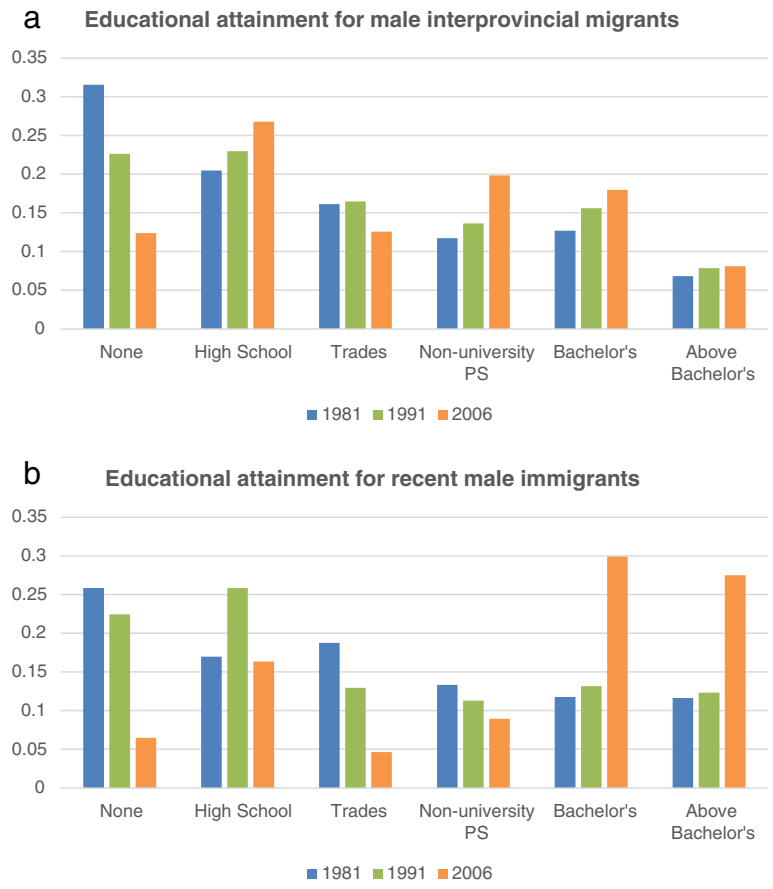

Fig. 6 a Educational attainment for male interprovincial migrants. **b**: Educational attainment for recent male immigrants

share of immigrants with knowledge of both official languages was much lower than that for interprovincial migrants in all years. This last difference was balanced by the higher share of immigrants who spoke neither English nor French or only spoke French. The latter undoubtedly contributes to the greater popularity of Quebec as a destination for immigrants. Interestingly, the share of immigrants with neither official language was lower in 2001 and 2006 than 1981–1996, consistent with changes in immigrant selection criteria.

Over 83% of interprovincial migrants had English as their mother tongue (both sexes and all years). This share declined somewhat 1991–96, balanced by increases in the shares with the mother tongue reported as French or "other language." Among immigrants, shares with English or French as the mother tongue are much lower than for interprovincial migrants for both sexes in all years (the patterns for immigrant men are illustrated in Fig. 7). Over time, the big story for immigrants is the large decline in the share with English mother tongue and the corresponding rise in the share whose mother tongue was neither English nor French. Indeed, by 2006, over 86% of recent immigrants reported a language other than French or English as their mother tongue.

The share of recent immigrants classified as a member of a visible minority rose 10 percentage points between 1986–91 but remained stable thereafter at around 70–73%. Visible minorities were rare among interprovincial migrants (1.3–3.5%).

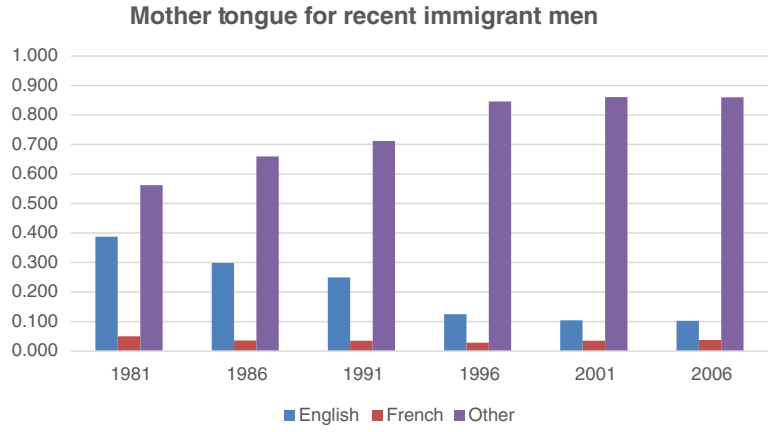

Fig. 7 Mother tongue for recent immigrant men

Ethnicity is reported at the bottom of Tables 3 and 4, while patterns for male immigrants are illustrated in Fig. 8. Comparisons across time are made difficult by changes in classifications and the treatment of multiple ethnicities. The introduction of a Canadian ethnicity category in 1991 and its growing popularity especially harms cross-time comparisons for interprovincial migrants. Despite these difficulties, after aggregating categories, the data can still reveal some key changes in immigrant composition. Immigrants of British ethnicity accounted for 25% of recent immigrants in 1981. This falls sharply between 1981–86 and continues to decline to 2006 when it is a negligible 1–2%. The share with European ethnicity other than British or French peaks in 1986 and then declines. The share of Asian immigrants makes up the difference, rising to roughly 60% of the total 1996–2006. Interprovincial migrants see sizeable declines in shares with European ethnicities (including British and French). This is made up by rising shares with Canadian ethnicity (a category starting in 1991) or with multiple ethnicities. The share of interprovincial migrants of Asian ethnicity is small in all years.

The comparisons of migrant group characteristics undertaken in this section reveal some substantial differences between the two migrant groups. Immigrants are older, better educated (with this gap appearing and widening after 1996) and are more likely to have engineering, math/physical science or business post-secondary qualifications.

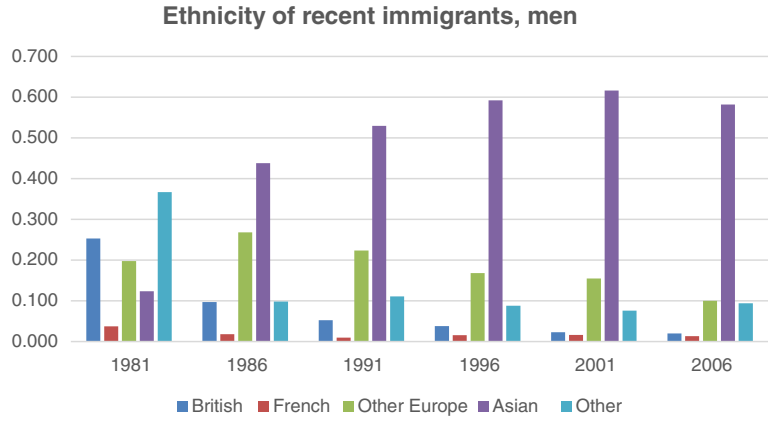

Fig. 8 Ethnicity of recent immigrants, men

Table 5 Field of study for those with post-secondary qualifications, 1986–2006[a]

	Interprovincial migrants				Immigrants			
	All Post-secondary		University only		All Post-secondary		University only	
	1986	2006[b]	1986	2006[b]	1986	2006[b]	1986	2006[b]
Men:								
Education	5.0	4.3	8.2	6.8	3.5	2.5	4.0	2.6
Fine and applied arts	3.4	3.6	2.2	3.4	4.4	1.8	2.9	1.1
Humanities	6.7	7.9	11.8	12.2	5.0	4.3	6.1	4.4
Social Sciences	11.3	12.5	18.7	19.4	6.4	6.3	10.3	6.7
Business	14.7	13.7	20.2	18.0	15.2	18.9	20.1	19.9
Secretarial	1.2	NA	NA	NA	1.6	NA	NA	NA
Biology, Agricultural sciences	5.1	6.0	6.2	5.2	6.9	4.1	6.3	3.6
Engineering	7.5	9.1	15.8	18.0	14.7	30.8	26.8	37.4
Trades and Technology	35.9	33.3	NA	NA	28.6	12.0	NA	NA
Health	3.8	4.1	5.2	5.2	5.2	5.1	8.0	5.2
Mathematics/physical sciences	5.3	5.5	10.7	11.1	8.5	14.3	14.0	16.9
Women:								
Education	13.1	11.9	22.1	14.9	10.1	7.2	13.4	7.2
Fine and applied arts	8.5	8.6	4.3	5.4	5.9	4.9	3.4	3.3
Humanities	7.7	9.7	14.7	14.3	9.3	11.2	16.1	12.4
Social Sciences	9.9	15.0	19.4	21.6	8.1	11.1	13.2	12.2
Business	11.9	23.0	11.1	15.5	12.4	24.9	14.4	23.3
Secretarial[c]	17.2	NA	NA	NA	16.0	NA	NA	NA
Biology, Agricultural sciences	5.1	5.2	7.6	4.8	7.7	5.5	9.5	5.5
Engineering	0.6	2.2	1.3	3.9	2.3	9.5	4.9	12.0
Trades and Technology[c]	4.0	4.8	NA	NA	5.8	3.1	NA	NA
Health	19.2	16.9	13.2	14.7	16.6	13.1	13.9	12.0
Mathematics/physical sciences	2.5	2.8	4.9	4.9	5.5	9.5	9.0	11.6

[a] Field of study information is unavailable in 1981
[b] Categories in 2006 are somewhat different than in the earlier years limiting comparability
[c] Secretarial and Trades and Technology are not university fields. Secretarial is not a category in the 2006 Census

Immigrants are also more likely to have a language other than English or French as their mother tongue and to be a member of a visible minority. By 1996 about 60% of recent immigrants had Asian ethnicity. Over time average characteristics of the two migrant groups diverged. Immigrants have become relatively more educated, more likely to hold post-secondary qualifications in engineering, math and physical sciences, more likely to be older, and less likely to have English as their mother tongue, while the share with neither English or French as their mother tongue has risen. The differences documented may account for some of the differences in migrant group location and, given that characteristics diverge, help explain the growing differences in destination locations identified earlier.

Migrant characteristics and destination location

The last section highlighted substantial and growing differences in the average characteristics of the two groups of migrants. Differences in age, education, and field of study

suggest skill differences, possibly implying that high payoff locations could differ substantially by migrant type. Alberta, for example, is a popular destination for male migrants without university qualifications a group underrepresented among immigrants in recent years. Characteristic differences could also imply much different preferences over non-economic attributes of the provinces. Language and cultural considerations, for example, may boost the attractiveness of Toronto or Vancouver to immigrants since both cities have large, established immigrant communities from a variety of source countries.

To what degree do the differences in characteristics of the two migrant groups help explain the differences in location? Two approaches are adopted to address this question. The first divides the sample into subgroups defined by migrant characteristics (age, education, etc.) and provides destination location distributions for each subgroup. If differences in characteristics are key to explaining different locational outcomes, then migrant group location shares should be more alike for subgroups than for the whole sample. In this first exercise the Duncan dissimilarity index is used as a summary measure of locational differences. The second approach estimates multinomial logit models of destination location outcomes and uses the estimated model to produce location outcome estimates that control for characteristic differences.

Destination by characteristics

Destination locations were initially generated for immigrants and interprovincial migrants by age, education, marital and student status (DDIs for these subsamples are reported in Table 6). In order to avoid small sample sizes, more aggregated categories are used for some characteristics than those reported in Tables 3 and 4. Results by age suggest no consistent pattern across time. Destinations by migrant group are somewhat more alike for 35 to 49-year-olds than 20 to 34-year-olds of both sexes in 1981, 1996 and 2006; the opposite held in 1986, while locations were similar across age groups in 2001 and for men in 1991. DDIs are sizeable for both age groups. Results for single migrants vs. non-singles are similar to those for age in that DDIs are fairly large for both groups in all years. With the exception of 1981, single women had lower DDIs than non-single women, while results by marital status for men were more mixed.

For women, Duncan dissimilarity measures are slightly lower for students during 1991–2006. For men, the student sample DDI is .06–.08 lower than that for non-students between 1981–2001. Interprovincial migrants with university degrees were more likely to be in Ontario or Quebec and less likely to be in Alberta than those with lower educational attainment, making their destinations somewhat more like those of immigrants. As a result DDIs were consistently lower for the university educated. For men, DDIs were especially low among the university educated with higher degrees. Indeed the higher degree subsamples for men in the 1980s have some of the smallest DDIs in the table. This finding suggests that some of the observed differences in migrant location may reflect differences in best location for higher skill groups.

The sample of migrants with post-secondary qualifications was further divided into subgroups with common fields of study. DDIs indicate that locations are most alike for those with arts degrees and, when further restricting the post-secondary sample to only those with university qualifications, to those with business as their field of study. Least

Table 6 Duncan dissimilarity indices for subsamples[a]

	Men						Women					
	1981	1986	1991	1996	2001	2006	1981	1986	1991	1996	2001	2006
Full sample	0.351	0.297	0.382	0.370	0.435	0.431	0.335	0.272	0.341	0.366	0.425	0.402
Age 20–34	0.368	0.291	0.380	0.392	0.437	0.462	0.344	0.258	0.354	0.386	0.422	0.423
Age 35–49	0.300	0.313	0.389	0.344	0.432	0.392	0.321	0.321	0.317	0.355	0.427	0.377
Single	0.367	0.303	0.368	0.390	0.415	0.486	0.415	0.267	0.313	0.366	0.383	0.375
Not single	0.349	0.295	0.389	0.363	0.448	0.413	0.330	0.283	0.350	0.366	0.443	0.418
Students	0.297	NA	0.316	0.308	0.387	0.434	0.333	NA	0.324	0.345	0.400	0.379
Non-students	0.362	NA	0.394	0.378	0.444	0.424	0.333	NA	0.340	0.365	0.429	0.406
No post-sec. or trades	0.375	0.324	0.412	0.392	0.449	0.428	0.356	0.294	0.371	0.392	0.462	0.418
PS Below Bachelors	0.383	0.297	0.399	0.395	0.457	0.446	0.336	0.263	0.350	0.383	0.456	0.421
Bachelors or higher	0.227	0.232	0.302	0.315	0.375	0.370	0.284	0.226	0.261	0.294	0.334	0.342
Higher degree only	0.183	0.201	0.253	0.249	0.387	0.298	0.289	0.175	0.257	0.313	0.348	0.289
Post-secondary by Field of Study												
Education	NA	0.303	0.480	0.401	0.429	0.446	NA	0.287	0.288	0.427	0.430	0.396
Arts[b]	NA	0.253	0.284	0.305	0.336	0.359	NA	0.194	0.271	0.350	0.372	0.350
Business	NA	0.269	0.295	0.321	0.421	0.380	NA	0.283	0.290	0.326	0.391	0.413
Engineering	NA	0.309	0.361	0.346	0.416	0.439	NA	0.433	0.337	0.354	0.338	0.291
Trades and Technology	NA	0.323	0.404	0.410	0.474	0.496	NA	0.294	0.358	0.438	0.434	0.419
Health	NA	0.297	0.333	0.252	0.450	0.379	NA	0.255	0.305	0.345	0.412	0.426
Science[c]	NA	0.235	0.379	0.399	0.432	0.418	NA	0.345	0.343	0.345	0.413	0.420
University by Field of Study												
Education	NA	0.331	0.469	0.413	0.463	0.490	NA	0.233	0.285	0.454	0.394	0.444
Arts[b]	NA	0.271	0.277	0.271	0.321	0.358	NA	0.182	0.221	0.315	0.321	0.317
Business	NA	0.259	0.270	0.277	0.401	0.356	NA	0.274	0.199	0.239	0.327	0.291

Table 6 Duncan dissimilarity indices for subsamples[a] (Continued)

Engineering	NA	0.328	0.345	0.343	0.423	0.431	NA	0.358	0.316	0.315	0.347	0.285
Health	NA	0.298	0.327	0.269	0.399	0.367	NA	0.257	0.273	0.294	0.385	0.399
Science[c]	NA	0.240	0.306	0.362	0.380	0.403	NA	0.372	0.338	0.356	0.408	0.396
Ethnicity:												
British	0.347	0.242	0.326	0.257	0.269	0.318	0.325	0.234	0.287	0.286	0.315	0.337
French	0.703	0.644	0.747	0.749	0.742	0.874	0.632	0.831	0.651	0.827	0.768	0.826
Other Europe	0.458	0.411	0.570	0.529	0.480	0.578	0.467	0.390	0.508	0.523	0.448	0.518
Asia[d]	0.347	0.218	0.219	0.226	0.266	0.334	0.292	0.379	0.083	0.284	0.201	0.143
Not Visible minority	NA	0.286	0.428	0.426	0.425	0.450	NA	0.255	0.372	0.425	0.415	0.419
Visible minority	NA	0.171	0.332	0.267	0.312	0.305	NA	0.253	0.230	0.221	0.285	0.218
Mother tongue:												
English	0.359	0.331	0.433	0.431	0.415	0.411	0.348	0.301	0.367	0.444	0.429	0.387
French	0.605	0.454	0.415	0.435	0.455	0.418	0.519	0.495	0.355	0.511	0.415	0.406
Other	0.431	0.338	0.196	0.420	0.253	0.340	0.392	0.375	0.152	0.410	0.313	0.236

[a] Duncan dissimilarity indices (DDIs) are calculated as ½ $\Sigma i|ip_i\text{-}im_i|$ where ip_i is the share of interprovincial migrants whose destination is province i and im_i is the share of immigrants with province i as their destination location

[b] Arts includes humanities, social sciences and fine arts

[c] Math, physical, biological, agricultural sciences

[d] In 1981 figure the figure for Asia indicates Chinese only

alike, and so with the highest DDIs, are those with "trades and technology" on samples of all who had post-secondary qualifications and education (men) or science (women) on the university educated sample.

Having French ethnicity pushed up the likelihood that Quebec would be the destination province for both immigrants (huge) and interprovincial migrants (substantial), while British ethnicity worked strongly in the opposite direction. British ethnicity also pushed up the Alberta and BC shares of immigrants. Having Asian ethnicity pushed up BC's share of migrants of both types as well as the share of interprovincial migrants who had Ontario as a destination. DDIs were lowest for those with Asian or British ethnicity, with Asian figures among the lowest in the table 1986–96 for men and 1991–2006 for women. The DDIs by ethnicity were highest for French or European ethnicity other than French or English. The very high DDIs for those of French ethnicity reflects the overwhelming preference for Quebec by such immigrants and the fact most interprovincial migrants of French origin have Quebec as their source province and so cannot have it as their destination.

Both migrant group samples were divided into samples defined by visible minority status and mother tongue. Being a visible minority pushed up the share of immigrants ending up in Ontario or BC. DDIs were consistently and substantially lower for those identifying themselves as members of a visible minority, and the differences were large for both sexes between 1991–2006 and in 1986 for men. A mother tongue that was not English or French did not have much of an effect on immigrant location compared to the entire immigrant group. However Duncan indices were consistently and substantially lower for those whose mother tongue was neither English nor French in most years. The small size of the interprovincial samples who are either members of a visible minority, have languages other than English or French or have Asian or Other ethnicity suggests caution in drawing strong conclusions from these results.

For men, the lowest DDIs in Table 6 are for subgroups with higher degrees, Asian ethnicity, visible minority status or mother tongue other than French or English in 1991, 2001 and 2006. For women the lowest scores are for samples with Asian ethnicity or for visible minorities. Women also had low DDIs in 1991 and 2006 if the mother tongue was neither French nor English. Higher education is only among the lowest DDIs for women in 1981 and 1986. Minimum DDIs on the single-characteristic subsamples are still in the .17–.30 range for men and .14–.28 for women, with the exception of Asian ethnicity in 1991, which reaches .083.

Each of the subgroups in Table 6 is defined by sex and a single additional characteristic. Additional insight may be obtained by focusing on more refined subgroups defined over multiple characteristics. These will be still more alike than the Table 6 subgroups, so if characteristic differences are indeed key to location differences, this exercise should give some quite low DDIs. To start, subgroups are defined on the basis of age (2 categories), education (3 categories), and single vs. not single (2 categories), giving 12 subgroups for each year-sex subsample. DDIs can then be calculated for each subgroup and the results used to identify subgroups whose locations were most or least alike. In the case of the 12 age-education-single status subgroups, an education effect was apparent since the lowest index subgroups typically had university qualifications. Neither age nor marital status was consistently identified with high or low Duncan index scores. The lowest DDIs among the age-education-marital status subgroups were .20–.22 pre-2001, rising to about .30

between 2001–2006, while the largest values for sizeable subgroups reached .50. The exercise was repeated adding visible minority status, mother tongue or ethnicity as additional subgroup-defining categories but with samples for men and women combined in order to boost subsample size. The lowest DDIs were found for visible minorities when subgroups were defined over this additional variable. More specifically, especially low DDIs were found for young, university educated, visible minorities (1986, 2001, 2006), but even on these samples, DDIs were still in the .18–.23 range. With mother tongue as an additional category, younger, university educated migrants with English as the mother tongue often had the lowest DDIs for a group of any size. Starting in the 1990s those with a mother tongue other than English or French also have low DDIs, especially if the migrants were also young and highly educated. Younger migrants with English as a mother tongue and low educational attainment were consistently among the highest DDI groups. With ethnicity added to the list already containing age, education, and marital status, the groups with the highest DDIs tended to be of European origins other than British or French with educational qualifications below university – these high scores were often around .6. The lowest DDIs were associated with British ethnicity in the earlier years; however, younger, university educated migrants with Asian ethnicities had the lowest DDIs in 2001 and 2006 (.16 and .20). Overall the subgroup exercise did not, however, reveal subgroups of any size with extremely low DDIs.

Multinomial logit estimates

Multinomial logit (MNL) models of migrant destination location were estimated to provide measures of the relationship between migrant characteristics and location outcomes. These have the advantage over the estimates in the last section of providing evidence on the effect of individual characteristics while controlling for other characteristics. The MNL estimates for one migrant group can then be used to predict counterfactual locational outcomes on the assumption that the location decision of the other type of migrant is determined in accordance with the MNL parameters of the first group. Comparing these counterfactuals to the actual outcomes can say something about the relative importance of characteristic differences and differences in model parameters in determining locations. Two such exercises are discussed below. In the first, MNL models are estimated by sex for each year on the immigrant sample, and the estimates are then applied to the interprovincial migrant sample to create a counterfactual set of location outcomes. These counterfactual outcomes are then compared to the actual location distribution of immigrants. The second exercise estimates separate MNL models on the interprovincial migrant samples from each source province. These MNL estimates are then applied to the immigrant sample. This gives a set of counterfactual location outcomes (one for each possible source province). These counterfactuals are combined into a single counterfactual using the actual distribution of interprovincial migrants by source provinces as weights. As in the first exercise estimates are generated for each year and both sexes, however, small samples sizes for some source provinces and a lack of interprovincial migrants with certain characteristics limit the list of characteristics that can be controlled for. Comparison of the counterfactual with the actual distribution of interprovincial migrants can give some idea of the importance of differences in group characteristics.

Exercises using the Immigrant MNL

The MNL models for immigrants allow for six possible locations: Atlantic provinces, Quebec, Ontario, Alberta, British Columbia, and Prairies (Manitoba-Saskatchewan). The most basic specification includes age (6, 5-year categories), educational attainment (9 categories), and marital status (3 categories). Data on each of these variables is available and comparable across years, and there are sufficient observations in each year-sex-destination sample to estimate their effects. An extended specification adds indicators of student status, language knowledge and mother tongue as well as visible minority status. Lack of data on some variables and differences in definitions across years mean that extended specification estimates are not available for all years. The MNLs are estimated separately for each year, and consequently location-specific effects, including those that vary with time, e.g., business conditions, are captured in the intercepts.

The immigrant MNL estimates are applied to the interprovincial migrant sample to generate the counterfactual, i.e., where immigrants would be if they had the same characteristics as interprovincial migrants or equivalently where interprovincial migrants would be if distributed among locations according to the immigrant MNL. If characteristic differences successfully explain migrant group location differences the counterfactual should be both substantially different from actual immigrant outcomes and more like interprovincial migrant location outcomes. Table 7 reports the counterfactual distribution (middle two columns for each sex), along with the actual interprovincial migrant (IP) and immigrant (IM) location distributions (first two columns for each sex). A comparison of actual immigrant locations with the counterfactuals gives some idea of the role of characteristics in explaining location differences. For 1981–1996 the immigrant and counterfactual distributions derived using the basic MNL specification are nearly identical, implying that differences in age, education, and marital status explain virtually none of the migrant group location outcome differences. In 2001 and 2006, the Ontario share is anywhere from 1.2 (women 2006) to 3.3 (men 2001) percentage points lower for the counterfactual, making it more similar to the Ontario share for interprovincial migrants. However, this effect is still small compared to the 27–29 percentage point differences between actual immigrant and actual interprovincial migrant shares for Ontario in these years. Moreover, DDIs for actual immigrant locations vs. the counterfactual locations are quite small (.002 to .033), consistent with characteristics explaining little.

An extended specification that adds language knowledge, visible minority status, mother tongue, and student status to the basic specification was estimated on almost the same samples as the basic specification but was only possible for the period 1991–2006 due to data availability and comparability problems across years. The additional variables do produce counterfactual outcomes that differ more substantially from actual immigrant outcomes than those generated using the basic specification. DDIs for immigrants vs. the extended specification counterfactual reach highs of .10–.12 for both men and women in 1996 and 2001; these values are about 1/3 the size of the DDI for actual location differences. However, the extended specification counterfactual gives locations more like those of interprovincial migrants only in 2001 and 2006. The extended specification results show that if immigrants had the same characteristics as interprovincial migrants, the share located in the Atlantic provinces would be higher (both sexes, all years) as would the share in Alberta in years other than 1991. Both of these changes move the counterfactual closer to the interprovincial migrant location distribution. In

Table 7 Actual location shares and multinomial logit counterfactual estimates

	Men: Actual outomes		Men: Immigrant MNL Counterfactuals[a]		Men: Interprovincial MNL Counterfactuals[d]		Women: Actual outomes		Women: Immigrant MNL Counterfactuals[a]		Women: Interprovincial MNL Counterfactuals[d]	
	IP	IM	Basic[b]	Extend[c]	Basic[b]	Basic, student & visible minority	IP	IM	Basic[b]	Extend[c]	Basic[b]	Basic, student & visible minority
1981												
Atlantic	0.066	0.020	0.017		0.072		0.083	0.022	0.023		0.089	
Quebec	0.057	0.175	0.182		0.062		0.062	0.133	0.130		0.065	
Ontario	0.211	0.437	0.434		0.218		0.220	0.473	0.475		0.220	
Alberta	0.366	0.143	0.141		0.342		0.323	0.143	0.142		0.315	
BC	0.206	0.165	0.166		0.210		0.219	0.170	0.171		0.216	
Prairies	0.094	0.060	0.061		0.096		0.093	0.059	0.060		0.094	
1986												
Atlantic	0.101	0.014	0.014		0.103		0.086	0.019	0.020		0.091	
Quebec	0.082	0.168	0.169		0.083		0.086	0.155	0.152		0.084	
Ontario	0.332	0.512	0.512		0.333		0.333	0.504	0.510		0.333	
Alberta	0.203	0.107	0.107		0.202		0.226	0.114	0.114		0.218	
BC	0.164	0.142	0.142		0.157		0.160	0.146	0.142		0.161	
Prairies	0.118	0.057	0.057		0.121		0.110	0.063	0.062		0.112	
1991												
Atlantic	0.087	0.012	0.012	0.029	0.090	0.112	0.093	0.013	0.013	0.044	0.096	0.106
Quebec	0.093	0.157	0.157	0.161	0.095	0.043	0.100	0.145	0.144	0.146	0.099	0.093
Ontario	0.280	0.569	0.568	0.640	0.285	0.312	0.297	0.558	0.561	0.597	0.294	0.348
Alberta	0.209	0.082	0.083	0.063	0.203	0.200	0.198	0.086	0.086	0.082	0.197	0.176
BC	0.257	0.144	0.144	0.080	0.253	0.277	0.240	0.165	0.164	0.104	0.239	0.242
Prairies	0.074	0.037	0.037	0.029	0.074	0.056	0.073	0.033	0.032	0.028	0.075	0.035

Table 7 Actual location shares and multinomial logit counterfactual estimates (Continued)

1996												
Atlantic	0.084	0.011	0.010	0.024	0.089	0.060	0.092	0.010	0.010	0.020	0.096	0.057
Quebec	0.097	0.142	0.146	0.195	0.099	0.106	0.094	0.138	0.139	0.181	0.100	0.112
Ontario	0.214	0.515	0.518	0.542	0.227	0.281	0.225	0.518	0.519	0.556	0.227	0.295
Alberta	0.206	0.073	0.075	0.083	0.198	0.195	0.203	0.072	0.072	0.083	0.194	0.129
BC	0.300	0.229	0.219	0.127	0.290	0.278	0.289	0.238	0.235	0.127	0.283	0.348
Prairies	0.098	0.031	0.032	0.029	0.097	0.078	0.097	0.026	0.025	0.034	0.099	0.059
2001												
Atlantic	0.081	0.007	0.008	0.017	0.087	0.074	0.090	0.007	0.009	0.020	0.093	0.101
Quebec	0.074	0.138	0.156	0.170	0.080	0.040	0.079	0.132	0.148	0.186	0.081	0.084
Ontario	0.270	0.574	0.541	0.536	0.304	0.370	0.274	0.565	0.536	0.534	0.296	0.344
Alberta	0.326	0.066	0.072	0.119	0.291	0.240	0.304	0.067	0.069	0.088	0.285	0.255
BC	0.166	0.192	0.195	0.111	0.153	0.207	0.165	0.205	0.213	0.125	0.158	0.162
Prairies	0.083	0.023	0.027	0.046	0.086	0.069	0.088	0.024	0.025	0.047	0.088	0.055
2006												
Atlantic	0.099	0.010	0.010	0.024	0.100	0.065	0.097	0.010	0.011	0.031	0.100	0.048
Quebec	0.100	0.201	0.217	0.169	0.111	0.116	0.099	0.185	0.190	0.176	0.102	0.112
Ontario	0.203	0.510	0.485	0.497	0.254	0.337	0.227	0.514	0.502	0.483	0.246	0.336
Alberta	0.327	0.096	0.094	0.108	0.271	0.230	0.301	0.099	0.094	0.123	0.288	0.258
BC	0.192	0.153	0.152	0.161	0.189	0.213	0.192	0.159	0.165	0.140	0.182	0.197
Prairies	0.079	0.031	0.042	0.040	0.074	0.039	0.083	0.032	0.038	0.046	0.080	0.050

[a] Generated using the MNL model estimated on the immigrant sample and characteristics of the interprovincial migrant sample
[b] Basic: includes controls for age, education and marital status
[c] Extended: includes controls for age, education, marital, student and visible minority status, mother tongue and lanuage knowledge
[d] Counterfactuals are constructed by combining estimates of MNL location models from interprovinical samples by source province with immigrant characteristics

2001 and 2006 the counterfactual shares in Ontario and the Prairies also lie between the immigrant and interprovincial distributions. The opposite holds in 1991 and 1996 when the counterfactual location distribution actually looks less like interprovincial outcomes than did immigrant locations. This is mainly driven by BC's low and Ontario's high counterfactual shares in 1991 and 1996 as well as Quebec's high share in 1996. However, even in the most successful years, it is still the case that the counterfactual location distribution is more like that for immigrants than interprovincial migrants, implying that characteristics differences explain only a small part of the actual location differences.

The key point then is that differences in education, age, marital, and student status appear to explain little of the observed differences in the locations of the two groups of migrants. Adding controls for visible minority status and language suggests that these variables can explain some differences; however, it is still differences in the multinomial logit model coefficient estimates rather than differences in characteristics that drive the actual location differences.

Exercises using interprovincial MNL estimates

The exercise just discussed is reversed by estimating separate MNL models for interprovincial migrants from each source location. As above, six locations are allowed for Atlantic, Quebec, Ontario, Alberta, BC, and Prairies. The estimated coefficients are then applied to the immigrant sample to create six sets of counterfactual destinations that assume immigrants are from each source province in turn. Lastly, these six counterfactual distributions are combined by assuming immigrants are distributed between source provinces in the same way as interprovincial migrants, i.e., the counterfactual outcomes from each source province MNL are weighted by the actual shares of interprovincial migrants from each source location. Differences between the actual destination location of interprovincial migrants and the counterfactual based on immigrant characteristics will reflect differences in characteristics of the two groups.

Notice that in this exercise it is necessary to estimate an MNL model on the sample of interprovincial migrants from each source province in each year. Some of the samples on which these models are estimated can be quite small, leaving few, if any, observations with a particular characteristic of interest. Consequences include inability to obtain estimates of the effects of particular characteristics as well as convergence problems. In other cases, coefficient estimates are obtained but are based on so few observations that they are of little use in generating reliable counterfactuals. To deal with this type of problem, more aggregated characteristic categories are used for education. Extended specifications must be more limited than those in the previous section, and the results based upon them interpreted cautiously. Only extended results that add visible minority and student status to the basic specification are reported.

The basic specification including age, education, and marital status as control variables can be estimated in all years and on the full samples in each year. The second last set of results for each sex in Table 7 reports destinations for the basic specification counterfactual. For 1981–1996 the counterfactual and the actual interprovincial migrant distributions are quite similar, implying that differences in age, education, and marital status can account for little of the location differences observed between the two groups of migrants. In 2001 and 2006 differences in characteristics are more important. For men, Ontario is

3.4–4.1 percentage points more popular in the counterfactual than in the interprovincial migrant sample, with most of the difference made up by a lower Alberta destination share. Results for women are similar. Consistent with characteristics differences explaining actual differences, this moves the counterfactual away from the actual interprovincial migrant location distribution and toward that for immigrants; however, this very basic set of characteristics only explains a very small part of the actual observed differences in location. This is much the same conclusion found using the immigrant MNL to create a counterfactual.

The specification that adds student and visible minority status to the basic specification can only be estimated on 1991 to 2006 samples. The addition of these characteristics, especially the addition of visible minority status, produces rather larger differences between actual interprovincial migrants and counterfactual destinations. Using immigrant in place of interprovincial migrant characteristics pushes the Ontario share up by 3.2 (5.1) points in 1991 for men (women). The difference between Ontario shares grows to 6.7 and 7% in 1996, 10 and 7% in 2001, and 13.4 and 10.9% in 2006. These changes bring the share closer to, but still well below, the actual share of recent immigrants going to Ontario. The counterfactual has consistently lower shares in the Prairies (3.3–3.8 points for women, 1.4–4 points for men). Alberta counterfactual shares were also lower than actual interprovincial shares, and although small for men in 1991 and 1996, it rose to 8.6 and 9.7% in 2001 and 2006. DDIs between actual interprovincial migrants and counterfactual destinations were larger than in the basic specification; indeed, the measure was 10–11 points higher in 2006. Even so, differences in characteristics at this level of detail explain a relatively small part of the overall differences in location. This too is in line with the Table 7 results using the immigrant MNL; however, the new results are subject to the problems associated with small numbers of visible minority interprovincial migrants mentioned above.

The results of both MNL exercises indicate that most of the observed differences in migrant locations reflect differences in MNL coefficients rather than differences in characteristics. In terms of a migration model framework, the coefficient estimate differences could indicate differences in how a given set of characteristics affects well-being. Perhaps, for example, education or age affect wages and work opportunities differently for the two migrant groups. Similarly, visible minority or language variables may have quite different effects on non-economic factors that affect well-being of the two groups. Alternatively, perhaps the coefficient estimate differences capture the effect of key omitted variables or measurement problems with the variables already present in the MNL models, e.g., education for the immigrant may occur outside of Canada and imply quite different skills than a similarly classified Canadian education (a similar argument could give very different age effects if proxying work experience in different countries). In short, it appears that it is these other factors that explain the bulk of the observed differences in outcomes.

Conclusions

The paper has documented sizeable and increasing differences in the destination locations of immigrants and interprovincial migrants who had migrated within five years of the Census date. These differences are somewhat puzzling from the perspective of

economic models of the migration decision. Surely those migrating in the same period will tend to favor locations with the best job prospects and non-economic amenities. If Alberta is booming, both groups of migrants will favor it, other things equal, while they will avoid more depressed areas. The location outcomes suggest other things are not equal and not equal in ways which produce much different location decisions. Indeed, a comparison between immigrant and interprovincial migrants reveals substantial differences in the characteristics of the two groups, and these differences have been increasing with time. Most notably, immigrants have become relatively better educated and older than interprovincial migrants. Changes in immigrant source country have also lead to large changes in ethnicity, visible minority status, language knowledge, and mother tongue. The paper asked whether migrant group characteristic differences could explain location differences. Generally, differences in age, marital status, and student status explained little of the differences. Subsamples with university-level education did have location distributions that were more alike; however, the multinomial logit exercises using the basic specification suggested that its explanatory power was also limited. Visible minority status and language were typically more successful; however, small sample sizes and overlap between these characteristics makes disentangling their separate effects difficult. Controlling for these characteristics partly explained why the Ontario immigrant share was so much higher than Ontario's interprovincial migrant share and why Atlantic shares were low. However, the MNL estimates suggested that even the extended specifications left much of the observed difference unexplained.

The apparent inability of age-education or field of study differences to explain location outcome differences suggests that it is not a combination of measured skill differences and differences in skill-bias of regional labor markets that drives the differences in migrant group locations. This suggests that changing immigrant selection rules to alter the age-skill mix of immigrants would not create a significantly more balanced regional distribution of immigrants. The greater importance of visible minority status and language suggest a possible role for information, family, and personal networks in determining immigrant decisions. Alternatively, it may be that these factors work through their effect on the non-economic attractiveness of different locations. These results also suggest that policies aimed at changing the language or ethnic composition of immigrants may have more of an impact on locational outcomes. Interprovincial migrant decisions may be influenced by factors like the location of home provinces (via migration costs or family, friend locations) driving Western and Atlantic source migrants to stay within their region. To the degree that Molloy et al.'s (2011) suggestion that locations in the US have become more alike in terms of amenities and job opportunities also holds for Canada, it may explain why these other factors have become more prominent in determining outcomes. Overall, it seems that it is unobserved differences in characteristics, or migrant group differences in how characteristics translate into well-being in different locations that drive the results.

The differences and divergence in migrant group location outcomes examined in the paper suggests that future work examining the link between these differences and other economic outcomes may be worthwhile. Perhaps, for example, these growing location differences have contributed to the relatively poor outcomes of recent immigrants documented in the Canadian literature. Such work might also shed additional light on whether migrant outcomes are indeed optimal or whether a policy response might be worthwhile.

The apparent importance of ethnicity, language and visible minority status in determining immigrant locations could indicate that immigrants are trading economic well-being against non-economic advantages linked to these characteristics or alternatively that these characteristics are key to determining which locations offer the best economic opportunities to immigrants. A look at simple measures of labor market outcomes by location for the two groups is suggestive. In the years studied, either Alberta or Ontario ranks first in employment rate levels, weeks worked, hours worked and wage levels for both sets of migrants. In 2006 Alberta is best in all outcome categories for immigrant women and in all outcomes except wages for immigrant men. Patterns for interprovincial migrants are more mixed, with Ontario ranked first for wages and hours. Despite the apparent economic advantages of Alberta for immigrants, it is interprovincial migrants who show the stronger preference for that province, suggesting that other factors offset Alberta's apparent advantages.

Endnotes

[1]Work by Pandey and Townsend (2011, 2013) suggests that the Provincial Nominees Programs have been successful in altering immigrant locations and provides some evidence that immigrants brought in under these programs have done somewhat better than other economic immigrants. This latter finding suggests that policy may be able to produce better outcomes; however, it is unclear whether the better results are due primarily to location or other selection criteria of these programs.

[2]Interprovincial and international mobility status could also be defined based on place of birth vs. current place of residence — unfortunately the 2006 Census public use file does not provide information on province of birth.

[3]Using other census immigration status questions confirms that the remaining sample are indeed immigrants.

[4]Many of the main results were also generated on two other samples. One excludes those who report being students during the census year. The second excludes interprovincial migrants who are returning to their birth province ("returnees"). These latter two subsamples cannot be constructed in all Census years; specifically, the non-student samples must exclude 1986, while the samples excluding returnees must leave out 2006.

[5]Indeed, if changing age structure between 1981–2006 is allowed for, the decline in the interprovincial migrant share still occurs but is absolutely smaller. Dividing the 20–49 sample into six, 5-year age groups and holding population age shares at their 1981 level gives a -.018 decline in the interprovincial share for women vs. -.023 actually seen. The comparable figures for men are -.022 vs. -.026.

[6]Picot and Sweetman (2005) review the literature on deterioration in immigrant outcomes. Green and Worswick (2012) provide a recent example. This story is also consistent with Green and Worswick's observation that all new entrants did worse during the period of deteriorating immigrant outcomes.

[7]The Ontario share ranges from 19–30% and is the highest of all provinces in 1986 and 1991. Alberta has a range similar to Ontario and has the highest share in 1981, 2001 and 2006. BC shares range from 15–28%, and BC accounts for the highest share of interprovincial migrants in 1996. Variation across years lines up reasonably well with patterns of provincial boom and bust.

[8]The index is ½ $\sum_i |ip_i - im_i|$, where ip_i is the share of interprovincial migrants whose destination is province i, and im_i is the share of immigrants with province i as their destination location. It measures the share of one group that would have to change locations to make its location distribution match that of the other group.

[9]Ontario is the most common source province, averaging about 24% of interprovincial migrants between 1981–2006. Alberta (17%), BC (14%), and Quebec (11%) follow. These are averages across the six census years. This ranking can differ in specific years and will reflect local economic conditions. For example, Alberta sees more outmigration during the bust of the mid-1980s when its share jumps to nearly 25% (1986). BC's share reaches almost 20% in 2001, while Ontario's share is especially high in 1981.

[10]Formally define: N_{IP} = number of interprovincial migrants in a given year; s_i = share of interprovincial migrants from source province i; m_{ij} = share of migrants from source i going to destination j. Then the number of interprovincial migrants going from source province i to destination province j is $s_i\ m_{ij}\ N_{IP}$ and the share of interprovincial migrants with destination j is $\sum_{i \neq j} s_i\ m_{ij}\ N_{IP} / N_{IP} = \sum_{i \neq j} s_i\ m_{ij}$. In the benchmark exercise, the actual m_{ij} are replaced by the non-migrant provincial population shares $nm_{ij} = NM_j /(NM\text{-}NM_i)$ (where NM is the total number of non-migrants and NM_j the number of non-migrants in province j). The benchmark will be subject to source bias just like the actual interprovincial shares but will not mix it with differences between m_{ij} and non-migrant population shares. As a result, the differences in location between the benchmark and non-migrants will give some idea of the size of the source bias.

[11]Citizenship and Immigration Canada data show that the share of family class immigrants was stable at 22–23% of the total 1997–2009. The share had been as high as 40% in 1993.

[12]The framework also suggests the possibility of tradeoffs between the determinants of well-being. A location with lower wages and poorer job prospects (low WK) may, for example, still be chosen if its relative non-economic attractiveness (NE) is high enough to compensate for these disadvantages. Such tradeoffs might explain some of the deterioration in immigrant outcomes over time.

[13]Field of study information is unavailable for 1981.

[14]Lack of detail on origins for residents of the Atlantic provinces and Territories in several years and comparability problems across years made use of aggregated categories necessary. Chinese and South Asian ethnicities were the most common identifiable groups among those with Asian ethnicity. Chinese is the only Asian ethnicity that can be identified in the 1981 public-use file and accounted for 12.5% of all immigrants. The Chinese share had risen to 18% by 2006 but had been higher still in 1996 (27%). South Asian immigrants accounted for 20% of all immigrants in 2006, substantially higher than their 11% shares in 1986 and 1991.

[15]By age, young interprovincial migrants were more likely to be in Alberta, while immigrants age 35–49 were more likely to have BC as a destination. However the differences from the Table 2 results were not large. DDIs for 20–29, 30–39, and 40–49 age groups were also calculated. They too are sizeable for all three age groups and show no consistent patterns in relative size across time.

[16]Students were more likely to be in Quebec (both sexes and migrant groups) and Ontario if they were interprovincial migrants. Alberta was a less likely destination for student interprovincial migrants as was BC if a student immigrant.

[17]The Asian ethnicity figures for 1981 include Chinese only and so, though of interest compared to other groups in 1981, are not comparable to figures in other years.

[18]Sample sizes could be quite small for some minority, ethnic, and language categories especially on the interprovincial samples. This placed limits on the ability to make comparisons between subgroups defined by these variables. The discussion focuses on subgroups with at least 50 migrants of each type since results for very small subgroups are unreliable and can have very high or very low DDIs.

[19]The smaller provinces are combined into Atlantic and Prairie regions due to the relatively small sample sizes in most years. Observations from the Territories and PEI are excluded.

[20]A version which added controls for ethnicity was also estimated. Definitional differences across time required that this exercise be restricted to a more select subsample, raising questions regarding the comparability of the results with those from other specifications. Consequently, these results are not presented in Table 6. Generally these results suggested that ethnicity could help explain some of the differences in locational outcomes between the two migrant groups.

[21]These DDIs measure the similarity in locations between immigrants and the counterfactual but do not indicate whether the counterfactual outcomes are more like actual interprovincial migrant outcomes than are actual outcomes for immigrants. A low immigrant vs. counterfactual DDI will imply that migrant characteristic differences explain little of observed location differences. However, a large immigrant vs. counterfactual DDI will only indicate that characteristics successfully explain the differences between actual migrant locations if the counterfactual outcomes are also closer to the actual interprovincial migrant outcomes. This can be checked by calculating a DDI, comparing the counterfactual to interprovincial migrant outcomes, and seeing if it is smaller than the DDI comparing actual migrant locations.

[22]Observations with aboriginal mother tongue or both French and English as mother tongues are deleted due to a lack of observations with these characteristics in some years and provinces. Unavailability of student status and visible minority status information mean that this version cannot be estimated on the 1981 and 1986 samples.

[23]As mentioned in footnote 20, versions with ethnicity controls were also estimated, albeit on somewhat different samples. The comparison of immigrant locations with the interprovincial counterfactual suggests that differences in ethnicity contribute to differences in the location outcomes but that they are capturing effects like those captured by visible minority status and language variables in the extended specification above. Controlling for ethnicity produces smaller Ontario shares than did the previous two counterfactuals, moving it closer to actual interprovincial migrant locations. As with the extended specification, Atlantic provinces' shares are consistently higher, also making outcomes more like those of interprovincial migrants, while higher counterfactual shares in Alberta have the same effect in years other than 1991. The Quebec share is higher than that of actual immigrants in 1991–2001, making it less like actual interprovincial migrant locations. The gap between the "extended specification with ethnicity" counterfactual and the actual interprovincial location distribution remains large, suggesting that even with ethnicity controls, much of the actual location differences cannot be explained by characteristics differences.

[24]This problem is especially severe for ethnicity, some language categories, and visible minority status. In initial attempts to measure the effect of these characteristics on

interprovincial migrant location, it was found that MNL coefficients for characteristics such as these with few underlying observations could be absolutely large and imprecisely estimated. Since differences in immigrant and interprovincial shares with these characteristics are often quite substantial, applying these large coefficients to the immigrant sample gave counterfactuals that could be much different from actual interprovincial migrant locations; however, these comparison are of dubious reliability given the imprecision of the underlying coefficient.

[25]Those with university degrees above the Bachelors level are combined into a single higher degree category, while those with university degrees at less than the Bachelors level are combined with those with non-university post-secondary qualifications.

Additional file

Additional file 1: Table S1. Migrant Distributions by Province of Residence and Census Year.

Competing interests
The IZA Journal of Migration is committed to the IZA Guiding Principles of Research Integrity. The author declares that he has observed these principles.

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