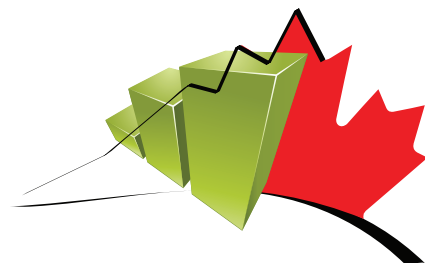## Economic and Social Reports

Immigration selection factors and the earnings of economic principal applicants

by Garnett Picot, Feng Hou, Li Xu and Aneta Bonikowska

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Immigration selection factors and the earnings of economic principal applicants

by Garnett Picot, Feng Hou, Li Xu and Aneta Bonikowska

This article summarizes a new report that updates empirical analysis intended to support the development of selection criteria for economic immigrants in Canada. The full report, *Which immigration selection factors best predict the earnings of economic principal applicants?*, was prepared by Immigration, Refugees and Citizenship Canada and Statistics Canada. A similar, earlier report served as the technical guide for the development of the current Comprehensive Ranking System (CRS) used to select applicants under the Express Entry immigration management system (Bonikowska et al., 2015). Significant policy developments and improved macroeconomic conditions during the 2010s raise the question of whether empirical results based on earlier cohorts of immigrants are still fully relevant. This follow-up study re-evaluates the role of several factors in predicting the earnings of economic immigrants. The earlier report was based on the earnings experience of economic principal applicants who landed from 1997 to 2004; the follow-up report is based on those who landed from 2005 to 2015, and their earnings from 2006 to 2017.

Specifically, the follow-up study asks which selection factors best predict the earnings of economic principal applicants. The analysis focuses on factors that are currently used in the selection of economic immigrants and are available in the Longitudinal Immigration Database. These factors, measured at landing, are age, education, official language ability, pre-landing Canadian work experience, pre-landing Canadian study experience, whether the applicant has a spouse, and the sociodemographic characteristics of the spouse.

Relative importance of current immigrant selection factors in predicting post-immigration earnings

The study first assesses the predictive power of these factors for short-term earnings (1 to 2 years after landing), medium-term earnings (5 to 6 years after landing) and longer-term earnings (10 to 11 years after landing). The information on the predictive power of each factor can be used to assist in determining the relative weights of various selection factors in the CRS.[1] The study also examines earnings differentials across the levels of a particular factor (i.e., the marginal effect), and this information is useful for assigning points across levels of a factor.[2]

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1. For instance, in the current CRS, the maximum points are 150 for education and 80 for pre-landing Canadian work experience (Immigration, Refugees and Citizenship Canada, Comprehensive Ranking System [CRS] Criteria, https://www.canada.ca/en/immigration-refugees-citizenship/services/immigrate-canada/express-entry/eligibility/criteria-comprehensive-ranking-system/grid.html).
2. For instance, in the current CRS, a doctoral degree receives 150 points, while a high school diploma receives 30 points (Immigration, Refugees and Citizenship Canada, Comprehensive Ranking System [CRS] Criteria, https://www.canada.ca/en/immigration-refugees-citizenship/services/immigrate-canada/express-entry/eligibility/criteria-comprehensive-ranking-system/grid.html).

The predictive power of a selection factor is indicated by the proportion of the variation in post-immigration earnings accounted for by the factor.[3] Together, the selection factors considered in this report accounted for about 15% of the variation in short-term earnings of principal applicants. The predictive power of these factors was at its best in the short term. It declined to about 10% in the medium term, and to 9% in the longer term.

Of the factors considered, years of pre-landing Canadian work experience (as acquired by temporary foreign workers and international students) made the largest unique contribution to the prediction of post-immigration earnings, particularly in the short term but also in the medium and longer term. Knowledge of official languages at landing was another key predictor of short-term earnings. Years of pre-landing Canadian work experience, language and age were the best predictors of medium-term earnings. Age and years of pre-landing Canadian work experience were the best predictors of longer-term earnings. Younger age at landing, which is often used as a proxy for fewer years of foreign work experience when education and pre-landing Canadian work experience are taken into account, was a better predictor in the longer term than in the short term.

The lower predictive power of selection factors in the longer term is likely caused, in part, by a convergence in the values of these factors that occurs as immigrants acquire experience in Canada. For example, some immigrants with poor official language skills at entry will improve after a few years. The language ability gap among immigrants will be reduced, as will the predictive power of official languages at landing.

The interaction of factors can also affect earnings. This occurs when the effect of one factor depends upon the observed value of another. For example, the effect of education on earnings could depend upon whether an immigrant has strong or weak language skills. In the current CRS, transferability factors are designed to reflect interaction effects.[4] Analysis of this report indicated that the effect of key interaction terms on the predictive power of the models was generally small. Only two interactions were relatively important: educational level at landing interacted with years of pre-landing Canadian work experience, as did age at landing.

These results are broadly similar to those of the earlier report (Bonikowska et al., 2015), but a few differences stand out. First, years of pre-landing Canadian work experience had a larger predictive power in the follow-up study than in the earlier report. This factor was the strongest predictor of short- and medium-term earnings, and it was among the strongest predictors of longer-term earnings in this study, while it was the strongest predictor only in the short term in the earlier study. Second, education was a minor predictor of short-, medium- and longer-term (10 to 11 years after immigration) earnings in this study, but it was a major predictor of longer-term earnings in the earlier study.

The importance of the level of pre-landing Canadian earnings

This report also examined the effect of pre-landing Canadian earnings, a factor that was not considered in the earlier report and not included in the current selection factors. When this factor was added to the model, along with the factors discussed above, the predictive power of the model improved considerably: the share of the variation in short-term earnings accounted for by the model increased from 15% to 26%. By far, the most effective predictor of post-immigration earnings in the short and medium term was pre-

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3. A factor's unique contribution is measured by the change in the R-squared value of a regression model predicting post-immigration earnings.
4. In the CRS, transferability factors assign additional points to a postsecondary degree and foreign work experience if the applicant also has good official languages proficiency or Canadian work experience (https://www.canada.ca/en/immigration-refugees-citizenship/services/immigrate-canada/express-entry/eligibility/criteria-comprehensive-ranking-system/grid.html).

landing Canadian earnings. Its predictive power declined with years in Canada, but it remained the strongest factor in the longer term.

Earnings differentials across the levels of each main selection factor

The marginal effects of the factors on earnings (e.g., higher and lower levels of education) were also estimated, and they resembled those observed in the earlier report. Earnings differences by educational level were small in the short term, but became larger in the longer term. Higher-educated immigrants do better in the longer run than those less educated.

Older immigrants (at landing) tended to earn less than younger immigrants, particularly in the longer term. Those aged 40 to 44 at landing earned 12% less than their counterparts aged 25 to 29 in the short term, and 23% less in the longer term (controlling for other factors).

Having some pre-landing Canadian work experience was strongly correlated with higher earnings after landing. For the 2005 to 2007 arrival cohorts, principal applicants with one year of pre-landing Canadian work experience earned 94% more than those without experience in the short term, and this advantage decreased to 43% in the longer term. However, among those with some pre-landing Canadian work experience, the earnings gain associated with an extra year of such experience was relatively small—generally below 10%.

In the first two years after immigration, principal applicants with a mother tongue other than English or French but who spoke English earned 29% less than their counterparts with English as mother tongue. The gap decreased to 24% 10 to 11 years after immigration.

The sociodemographic characteristics of spouses, such as education, language and age at landing, had weak effects on the earnings of principal applicants, suggesting that these factors contributed little to the prediction of earnings by principal applicants. However, the human capital factors of spouses were likely good predictors of their own earnings.

Finally, the effect of pre-landing Canadian earnings was not linear. Relative to those with no pre-landing Canadian earnings, immigrants with low pre-landing Canadian earnings had little or no post-immigration earnings advantage, but those with high pre-landing earnings experienced a large advantage (accounting for differences in other factors). These results suggest that it is the quality of Canadian work experience, as proxied by the level of pre-landing Canadian earnings, rather than simply having any pre-landing Canadian work experience that effectively predicts post-immigration earnings.

The full report, *Which immigration selection factors best predict the earnings of economic principal applicants?*, can be found at:
https://www.canada.ca/en/immigration-refugees-citizenship/corporate/reports-statistics/research/immigration-selection-factors-predict-earnings-economic-principal-applicants.html.

Authors

Garnett Picot and Li Xu are with the Research and Evaluation Branch at Immigration, Refugees and Citizenship Canada. Feng Hou and Aneta Bonikowska are with the Social Analysis and Modelling Division, Analytical Studies and Modelling Branch, at Statistics Canada.

Reference

Bonikowska, A., Hou, F., Picot, G. (2015). *Which human capital characteristics best predict the earnings of economic immigrants?* (Analytical Studies Branch Research Paper Series No. 368). Statistics Canada. https://www150.statcan.gc.ca/n1/pub/11f0019m/11f0019m2015368-eng.htm