



Key Findings from the Second Cycle of the Metropolis National Research Competition

Macroeconomic Impacts of Canadian Immigration: An Empirical Analysis Using the FOCUS Model

In 2008, the second cycle of the National Metropolis Research Competition was awarded to a team of researchers from Toronto exploring the macroeconomic impacts of immigration. Dr. Tony Fang (York University), Dr. Peter Dungan (University of Toronto) and Dr. Morley Gunderson (University of Toronto) employed advanced modeling techniques to simulate the effects of increasing immigration levels by 100,000 additional immigrants on the Canadian economy.

Fang, Dungan and Gunderson adapted the FOCUS model developed by the Policy and Economic Analysis program at the University of Toronto to measure the impact of increased immigration on GDP, unemployment, aggregate demand, investment, productivity, government expenditures, taxes and net government balances. Simulations were carried out to model these impacts over the period from 2012 to 2021.

Consistent with the international literature, the findings from this model indicate no negative impact on the Canadian economy. In fact, the researchers noted several positive impacts including an increase in real GDP, increased productivity and a general growth in the economy due to an increased demand for goods and services. Additionally, while government expenditures would increase, this would be offset by the increase in taxes paid by immigrants.

The key findings from this research include:

- Real GDP increases by 2.3% by 2021, the end of the 10-year simulation period
- Population increases by 2.6% because of the additional one million immigrants over the period, so that real GDP *per capita* falls slightly. This occurs largely because of assumptions that were incorporated in the model reflecting the fact that immigrants are initially paid below the level of the domestic or 'base-case' workforce and recent cohorts only slowly assimilate into the labour market (based on evidence from the literature).
- Unemployment is not affected, reflecting the fact that immigrants increase aggregate demand for goods and services (especially housing) and this roughly offsets any increase in unemployment as they enter the labour market and search for employment.
- The initial increase in aggregate demand comes mainly from housing and consumption. In later years it also comes from an increase in non-residential and machinery-and-equipment investment, stimulated by various factors:
 - the overall growth in the economy

- the generation of new capital to work with the new immigrants
 - the positive impact on corporate profits, which tend to expand in advance of the overall economy.
- Productivity for both domestic workers and new immigrants is increased because of the increase in investment relative to consumption and the fact that the average workers in the investment sector (residential and nonresidential) are somewhat more productive than those in the consumer sector. This effect partly, but only partly, offsets the assumed lower productivity of new immigrant workers as they are not placed on jobs commensurate with their skills.
 - Governments' expenditures increase in response to new immigration (although some like OAS and CPP only by a small amount and with a long lag). Taxes and CPP contributions increase sooner as the new immigrants begin work. The increase in expenditures is less than the increase in taxes paid by immigrants since:
 - The taxes are more immediate while many of the expenditures come later
 - There are economies of scale in the provision of government services
 - Immigrants tend to enter in the tax-paying years of their lifecycle
 - Because taxes paid by immigrants exceed expenditures, immigration adds to overall government balances (i.e., by \$14 billion in total and by roughly \$8 billion at the federal level by the 10th year of the simulation). This represents a significant reserve against future needs or could perhaps be redeployed into additional social programs or tax cuts.
 - In an alternative simulation, the authors assume that new immigrants earn and contribute to GDP at the same rate as the base-case work force. The purpose of this simulation is to indicate what gains could be had from integrating immigrants more quickly and fully into the economy or finding immigrants who can be more quickly integrated. In this case, after 10 years:
 - Real GDP growth is greater than population growth so that real GDP per capita increases
 - There is a greater net gain in productivity from accumulation of new capital and the reorientation of output in the economy to investment goods and to net exports
 - Government balances are \$22 billion higher than in the base case
 - Again, there is no negative impact on the unemployment rate as the demand directly or indirectly associated with new immigrants meets their addition to the potential supply capacity of the economy

While the scope of this research is broad and the model cannot account for such things as regionally specific labour-market differences, global recessions, onward migration, etc, the findings of this study form an important contribution to the literature supporting immigration as a tool for economic recovery. This research suggests that increasing immigration levels is likely to have a positive impact on the Canadian labour market and economy in general. These findings are particularly important at a time when national opinions of immigration in Canada are particularly low.