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du Canada

# Boosting Retirement Readiness and the Economy Through Financial Advice.



## **Boosting Retirement Readiness and the Economy Through Financial Advice**

Pedro Antunes, Alicia Macdonald, and Matthew Stewart

### **Preface**

*Boosting Retirement Readiness and the Economy Through Financial Advice* examines how financial advice can boost saving rates, which leads to better retirement readiness and lifts economic output.

This report reviews the literature that examines the link between individuals obtaining financial advice and their savings and investment decisions. Based on the information gathered, the report then examines the long-term impacts of increased savings on the economy. A scenario was created in which more individuals receive financial advice and, therefore, save a larger share of their income. Assumptions were made regarding the impact of this increase in savings, including the investment income it earns and the domestic business investment it spurs. These assumptions were used to “shock” the Conference Board’s national economic model to quantify the impact of increased savings on a wide range of economic variables over a long-term forecast horizon.

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## EXECUTIVE SUMMARY

# Boosting Retirement Readiness and the Economy Through Financial Advice

### At a Glance

- Population aging is raising questions regarding retirement readiness and also resulting in slower potential economic output growth.
- The use of financial advisors can increase household savings.
- Higher savings would help to alleviate retirement readiness concerns while also boosting potential economic output.
- An increase in domestic savings is found to lower real GDP growth in the short term but leads to economic gains over the longer term.

**Canada is entering an era of population aging. Many challenges face the country as the economy and society adapt to this change. The financial readiness of Canadians entering retirement over the next few decades is a popular topic for politicians and the media in light of ample evidence that suggests many individuals are not saving enough to fund their retirement. Not as popular in the media, but certainly a current topic among economists and policy advisors, is the impact that population aging will have on the country's economic growth potential, and the ramifications resulting from that slower growth.**

This report explores the link between the use of financial advisors and retirement readiness, as well as the less intuitive link between financial advice and the country's long-term economic growth potential.

A great deal of research exists questioning the merits of obtaining financial advice based on the idea that advisors are unable to achieve equal or superior returns after accounting for their fees. But research suggests that this line of inquiry may be missing the point—that is, that the real benefit of having an advisor may not be performance-related at all. It may have more to do with engendering beneficial savings behaviour among clients.<sup>1</sup> A literature review suggests that by creating discipline in the ability of individuals to save, a financial advisor is able to increase savings rates, which in turn will lead to better asset allocation. Higher savings rates would also help to alleviate some of the undersaving that is currently occurring, thus better preparing individuals for retirement.

<sup>1</sup> See, for example, Montmarquette and Viennot-Briot, *Econometric Models on the Value of Advice of a Financial Advisor*.

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An increase in savings would result in a boost to Canada's potential economic output.

The second part of our literature review examines the link between domestic savings and domestic investment. The relationship between domestic savings and investment has been a popular and often controversial topic in the academic literature for almost 35 years. When the link between domestic savings and investment was first investigated, the hypothesis was that the correlation between them is a sign of low capital mobility between countries. In other words, there was an apparent bias for savings to stay in its home country. As capital mobility improved, different models were used to explore this correlation as a means of showing that the link between domestic savings and investment was declining in lockstep with an increase in capital mobility among developed countries.

Yet, despite the fact that the degree of correlation was declining, a relationship was still observed.

A new branch in the literature emerged suggesting that savings and investment in a domestic economy could deviate over the short term thanks to a large degree of capital mobility, but that in the long term, savings and investment must be equal in order to satisfy certain theoretical foundations defined in the macroeconomic literature.<sup>2</sup>

While there is no conclusive agreement to be found in the literature regarding the relationship between domestic savings and investment, there is substantial evidence to support the hypothesis that domestic savings influence domestic investment. Assuming this is the case, an increase in savings would result in a boost to Canada's potential economic output, as capital investment directly affects a country's growth potential.

To quantify the potential impact of an increase in savings on the economy over the long term, we constructed a hypothetical scenario. Survey data from Montmarquette and Viennot-Briot provided to the Conference Board detailed, by age cohort, average savings, average income, and the

2 Here we are referring to a country's intertemporal budget constraint, which we discuss in Chapter 2.

presence of a financial advisor. According to the survey and the results produced by Montmarquette and Viennot-Briot, households that retain a financial advisor are more disciplined in their savings behaviour. Our analysis assumes that, over the long term, 10 per cent of individuals who currently do not have a financial advisor (excluding those considered active traders) begin a relationship with a financial advisor and thereby take on the savings patterns of those who have financial advisors. In other words, these individuals are assumed to increase their savings to match the higher rates of those who do receive financial advice. The 10 per cent figure was arbitrarily chosen as a feasible target for the financial advice industry. In essence, a scenario was created where there was increased use of financial advisors and, therefore, higher aggregate savings in the economy.

The Conference Board used its national econometric forecasting model to quantify the impact of the increase in savings (which essentially results in a decline in household spending), the increase in investment income earned on those savings when withdrawn to fund retirement, and the increase in business investment spurred by the increase in domestic savings.

Results from our hypothetical scenario where savings are increased show the following:

- Real GDP is lower for the first few years of the forecast, as the reduction in consumer spending is larger than the increase in private investment.
- The near-term decline in economic activity softens price inflation and lowers the value of the Canadian dollar, helping to boost exports over the medium term.
- Real GDP impacts are positive in the long term, thanks to increased investment and higher consumption as accumulated savings are withdrawn during retirement.
- A large stock of savings is accumulated, resulting in increased investment income available to retirees, thus improving Canadians' financial readiness for retirement.
- Potential output is higher over the long term, representing a permanent increase in income and profits in the economy.

## CHAPTER 1

# Introduction

### Chapter Summary

- Canadians are not saving enough for retirement.
- Increased use of financial advisors can improve retirement readiness and have a positive impact on our economy.

**Canada is entering an era of significant population aging. This aging will have an impact on our economy and society in a number of ways, and approaches to cope with this change are prominent in policy discussions. Two often-discussed topics under the umbrella of population aging are retirement readiness and the shrinking of our potential economic output growth, along with the challenges that result from slower growth.**

At first blush, there is not an intuitive link between financial advice and potential economic growth, but financial advice does have the ability to influence both retirement readiness and potential economic output growth through its ability to increase savings. Exploring the impact of financial advice on retirement readiness and potential economic output growth is the focus of this report.

The first link, between financial advice and retirement readiness, is important in the context of an aging population that is not saving enough for retirement. The life-cycle hypothesis suggests that individuals will manage their savings and consumption in an effort to smooth consumption over their lifetime. But research on Canadian savings habits points to the fact that Canadians are not saving enough money for retirement, and are therefore potentially setting themselves up for a drop in consumption during their retirement years.

A 2012 report by McKinsey & Company found that almost one-quarter of Canadians are not saving enough for retirement.<sup>1</sup> Similar results were found in the Ageon Retirement Readiness Survey 2013.<sup>2</sup> The findings from these studies are corroborated by recent data from the Canada Revenue Agency, which show that about 37 per cent of tax-filers who

1 McKinsey & Company, *Are Canadians Ready for Retirement?*

2 Ageon, *Canada Fact Sheet, The Changing Face of Retirement.*

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Some Canadians are not saving enough for retirement, and they would likely save more if they had financial advice.

currently make more than \$20,000 a year contribute to a pension plan. Excluding those with a pension plan, just 23 per cent contribute to RRSPs. That leaves approximately 40 per cent of those making more than \$20,000 without a pension plan and not contributing to an RRSP.<sup>3</sup> Even for those who contribute, the average contribution was well below the average contribution to a defined benefit plan.

Financial advice can improve financial retirement readiness. In fact, recent research suggests that having a financial advisor is strongly correlated with discipline around savings and has a positive impact on asset accumulation. A 2012 Canadian study by Montmarquette and Viennot-Briot found that after controlling for over 50 potential influencing factors, having financial advice for 15 years or more increased household assets by 173 per cent compared with those households without a financial advisor.<sup>4</sup> Even after accounting for factors such as income (which would lead to a selection bias), their research found that one explanation for this increased asset accumulation is more disciplined savings behaviour. Simply put, people with a financial advisor tend to save a higher percentage of their income. A possible reason for this is that when individuals are presented with a financial picture of their retirement under different rates of savings and asset allocations, they are more inclined to save for retirement.

From the results of the aforementioned research, we know that some Canadians are not saving enough for retirement and that they would likely save more if they had financial advice. This leads to the question: What would happen if more Canadians received financial advice and therefore saved more? An increase in savings achieved through increased uptake of financial advice would improve retirement readiness in Canada. It would also have a positive impact on the economy.

3 Data calculations are from the Canada Revenue Agency's *Final Statistics 2010*, using Tables 2 and 11A–11D.

4 Montmarquette and Viennot-Briot, *Econometric Models on the Value of Advice of a Financial Advisor*.

It is expected that Canada will face a number of challenges as we enter an era of population aging. Of pressing concern is the fact that the aging of our population will lead to a reduction in the share of the working-age population. This, in turn, will slow labour force growth and lower our potential economic output growth at a time when demand for government services, such as health care, is increasing. One solution to this issue is to increase our economic growth potential, which is the combination of our labour and capital inputs, as well as the technological efficiency with which capital and labour are transformed into output. Increased savings in the economy can help to increase our potential economic growth by increasing the amount of capital in the economy. The research conducted for this report seeks to quantify the economic impact associated with a potential increase in savings.

Chapter 2 contains a two-part literature review. The first part focuses on the link between financial advice and retirement readiness by reviewing the literature on the benefits of financial advice. The second part focuses on exploring the link between domestic savings and domestic investment.

Chapter 3 outlines the methodology used to conduct this analysis, as well as the assumptions that have been made. The approach taken in this report has been to build on the work done by Montmarquette and Viennot-Briot in 2012, which found that households with a financial advisor have higher savings rates. A hypothetical scenario was constructed where changes in savings behaviour are based on the incidence of financial advice. The economic impacts of these additional savings were quantified using the Conference Board's national econometric forecasting model. Simulations were performed over a long time horizon to determine the impact on domestic investment and the resulting impact on potential economic output.

Chapter 4 presents the results of the economic impact simulation. A brief summary of the study is contained in Chapter 5.

## CHAPTER 2

# Literature Review

### Chapter Summary

- Financial advisors add value by encouraging more disciplined saving and investment behaviour; as a result, individuals who receive financial advice save a larger portion of their income.
- Despite recent increases in capital mobility, evidence suggests that domestic savings influence domestic investment, especially over a long-time horizon.
- An increase in investment boosts potential economic output.

**Canada's population is aging and recent research points to the fact that Canadians are not saving enough for retirement. Additional research has shown that by encouraging more disciplined savings behaviour, financial advice can improve asset accumulation. In this chapter, we explore how financial advice can influence savings behaviour, thus making individuals better prepared for retirement. Additional retirement savings also influence domestic investment, which in turn affects the country's potential economic output—an important consideration given that potential output growth will decelerate as the population ages. The link between savings and domestic investment is explored in the second part of this literature review.**

### **Link to Retirement Readiness: Benefits of Financial Advice**

Any purchased good or service requires an individual to decide if the benefit is greater than the cost. Given that financial advice is a paid service, is such a service worth the cost? Skeptics would argue that it is impossible to consistently outperform the market over the long term and therefore, the cost of obtaining advice is greater than the derived benefit, where performance is defined as the main benefit. Indeed, on this basis alone, a large volume of literature focuses on the notion that the cost of obtaining financial money management advice outweighs the benefit.

Del Guercio and Reuter found that actively managed funds sold through brokers underperform relative to an index fund, after accounting for fees.<sup>1</sup> They also found that, after accounting for fees, direct-sold actively managed funds perform as well as index funds, therefore suggesting that funds sold through a broker will earn a smaller return compared with an investable index mutual fund.

One of the issues examined in a 2012 study using German data was the relative performance of investment accounts that were directed individually against those that were managed by a financial advisor.<sup>2</sup> Based on the results from their analysis, the authors suggested that in many cases the fees and commissions collected by financial advisors were more than the value that they added to an investor's portfolio. Similar results were also found in research by Chalmers and Reuter, which looked at investments based on the presence of financial advice in the Oregon University System's defined contribution plan.<sup>3</sup> This research found that plan members who chose to obtain financial advice earned a lower return compared with those who selected their own investments.

While rates of return on managed portfolios are certainly an important metric, the above research assumes that those with an advisor and those without invest the same amount of money. Recent research points to the notion that those with an advisor tend to save and invest more because the advisor not only helps the investor set financial goals, but also creates the discipline for the investor to save in order to achieve those goals. This ability to provide guidance and discipline to savings and investment behaviours is where the value of having a financial advisor appears to be realized.

The premise for the research conducted for this report relies on earlier work by Montmarquette and Viennot-Briot, which found that financial advice leads to better asset accumulation through higher savings rates

- 1 Del Guercio and Reuter, "Mutual Fund Performance and the Incentive to Generate Alpha."
- 2 Hackethal, Haliassos, and Jappelli, "Financial Advisors: A Case of Babysitters?"
- 3 Chalmers and Reuter, *What Is the Impact of Financial Advisors on Retirement Portfolio Choices and Outcomes?*

and a greater allocation into non-cash investments. In addition to this finding, the authors note that having a financial advisor increases an individual's confidence that they will be able to retire comfortably.<sup>4</sup>

Similar to the results from Montmarquette and Viennot-Briot in Canada, a 2011 report by KPMG using Australian data found that individuals with a financial advisor had higher savings, as the tailored financial plan created by an advisor led to more disciplined savings behaviour. After accounting for other factors that can influence savings behaviour, along with the cost to develop a financial plan, this study estimated that individuals with a financial advisor accumulated greater assets over time compared with those without an advisor. The authors also found that the longer one receives financial advice, the more assets one will accumulate.<sup>5</sup> Similar results were found in a recent study in Quebec, which found that Quebecers who had a business relationship with an advisor showed greater retirement readiness compared with those without an advisor.<sup>6</sup>

In a 2013 research note, Vanguard suggested that the value-added from financial advisors stemmed from their ability to act as wealth managers who provide discipline and logic to clients who are often emotional and undisciplined.<sup>7</sup> This study went on to say that financial advisors provide value through a number of channels, including the development of an asset allocation strategy based on an individual's goals and constraints, investment implementation strategies (actively managed or index funds), and tax management strategies. In summary, the study suggested that financial advisors provide value to clients through the experience and stewardship they offer, in light of the fact that individuals often lack the experience and discipline required to achieve investment success.<sup>8</sup>

4 Montmarquette and Viennot-Briot, *Econometric Models on the Value of Advice of a Financial Advisor*, 9.

5 KPMG EconTECH, *Value Proposition of Financial Advisory Networks—Update and Extension*.

6 Gauthier, *Indice Autorité*, 112.

7 Bennyhoff and Kinniry Jr., *Advisor's Alpha*, 3.

8 *Ibid.*, 10.

These studies share a similar theme: Financial advisors provide value through their ability to encourage more disciplined savings and investment behaviours. This suggests that those who receive financial advice are likely to save more and better allocate those savings into appropriate investments, because they exhibit more disciplined savings and investment behaviour.

An evaluation of these results in the context of a population that is aging and not saving enough for retirement suggests that increased use of financial advisors could result in higher household savings. Higher savings would, in turn, better prepare Canadians for retirement.

## **Link to Potential Output: The Relationship Between Domestic Savings and Investment**

### **Is There a Link Between Domestic Savings and Domestic Investment?**

In 1980, Feldstein and Horioka published a paper that seemingly contradicted open market economic theories with respect to capital flows by finding that a large portion of incremental savings stayed within their country of origin.<sup>9</sup> The inherent link between domestic savings and investment has been dubbed the “Feldstein-Horioka puzzle” since it does not fit with standard economic theory of how open market economies should operate, given that capital is mobile.

Since this finding goes against what open market economic theory would suggest, it has been a popular topic for international finance and economic academics to pursue. Even though it has been almost 35 years since Feldstein and Horioka published their original paper, there has not been one generally accepted explanation for the observed correlation between domestic savings and investment. Given the large body of literature on the subject, it was decided for this review to focus

9 Feldstein and Horioka, “Domestic Saving and International Capital Flows”.

on studies relevant to Canada and on more current studies that include recent data, since international capital markets have evolved significantly since that original 1980 paper.

As part of a 2002 research paper, Industry Canada conducted a simple test to examine the link between domestic savings and investment in Canada. Its results showed a Canadian savings retention ratio<sup>10</sup> of between 64 and 73 per cent over the 1961–98 sample period.<sup>11</sup>

A 2007 study by Fouquau, Hurlin, and Rabaud using data for 24 OECD countries (including Canada) employed a variety of panel method smooth transition regression models to test the impact of different threshold variables on savings retention coefficients.<sup>12</sup> A number of different estimates were put forward in this paper for Canada (specific to individual transition variables), with savings retention ratios ranging between 54 and 78.4 per cent. While the authors did not provide time-specific estimates, they did note that the savings retention coefficients declined between 1960 and 2000 for most countries in their sample, which suggests a weakening of the relationship over time.

A 2008 working paper published by the European Central Bank attempted to explain the Feldstein-Horioka puzzle using a general equilibrium framework where global shocks were allowed to have heterogeneous impacts on different countries.<sup>13</sup> This study found that before 1980, there was significant correlation between domestic savings and investment. But the authors also stated that when savings and investment in each country were allowed to have heterogeneous responses to a global shock (i.e., all countries were not assumed to respond to the shock in the same manner), the savings retention

10 Academics studying the Feldstein-Horioka puzzle use regression analysis with a country's savings rate as an explanatory variable for the investment rate (the dependant variable) with different studies using different estimators or equation specifications (i.e. including other variables). The coefficient on the savings rate variable is often dubbed the savings retention ratio or simply the savings coefficient.

11 Hejazi and Pauly, *Foreign Direct Investment and Domestic Capital Formation*, 14.

12 Fouquau, Hurlin, and Rabaud, "The Feldstein-Horioka Puzzle."

13 Giannone and Lenza, *The Feldstein-Horioka Fact*.

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## A relationship between domestic savings and investment exists in Canada.

coefficient in OECD countries decreased over time, becoming very small over the last two decades as capital became more mobile. The authors suggested that other studies using current data that found a link may have obtained those results because general equilibrium effects or the heterogeneity of responses were not taken into account.

All of this previous research indicates that a relationship between domestic savings and investment exists in Canada, with the latter two studies—by Fouquau, Hurlin, and Rabaud; and the European Central Bank—showing a decline over time in the savings retention ratio among OECD countries, including Canada. This seems to fit with the general knowledge that a reduction in capital controls has increased capital mobility in these countries over the last few decades. With evidence of both an increase in capital mobility and a still-observable relationship between domestic savings and investment, an alternative interpretation of the correlation has emerged in the literature.

An interesting study with this alternative interpretation was published by the Bank of Canada.<sup>14</sup> The study, which builds on previous work in this area, hypothesized that the correlation between savings and investment over a long period does not reflect a low degree of capital mobility (as suggested by Feldstein and Horioka), but rather a country's long-term budget constraint. In this interpretation, a country cannot indefinitely amass a current account deficit (or surplus); therefore, the level of savings and investment must be related in the long term.<sup>15</sup> Indeed, using a variety of different tests, the authors found that savings and investment rates are co-integrated in the long run.

The authors also looked at the degree to which savings and investment are related in the short term and, using a panel error correction model, the speed at which the short-term coefficient converges with the long-term coefficient. The weak short-term correlations between savings and

14 Pelgrin and Schich, *National Saving–Investment Dynamics and International Capital Mobility*.

15 For a simple explanation of why indefinite current account imbalances are not feasible, see Ghosh and Ramakrishan, “Do Current Account Deficits Matter?”

It is important to separate the short- and long-term relationship between domestic savings and investment.

investment as well as the slow convergence between short- and long-term coefficients are interpreted as a sign of capital mobility. The authors tested their results using a rolling sample to determine if the correlation diminished over time—as some studies have suggested—and found that the short-term coefficients declined as capital mobility increased. They also found, however, that the long-term coefficients move closer to 1 as the sample period increases. Their interpretation was that the intertemporal budget constraint becomes more relevant as the sample time frame increases. This study showed a long-range savings coefficient of between 0.82 and 1.02, with short-term coefficients ranging from 0.17 to 0.25.

Similar results were also found by Dar and others in their 2005 study of G7 countries. They found that, in the long term, savings and investment are co-integrated and that for all G7 countries except Germany, the current account is stationary—fluctuating around zero.<sup>16</sup> The authors concluded that these findings, taken together, imply that in the long term, investments must be self-financed, that is, domestic savings must equal domestic investment.

The research reviewed here suggests that empirical evidence points to a link between domestic savings and investment in Canada. It also suggests that this link has been diminishing over time for OECD countries, leaving some to wonder if the correlation exists today. Additional research—which approaches the issue through the lens of an intertemporal budget constraint that says an economy running a string of current account deficits (or surpluses) must eventually offset those with current account surpluses (or deficits)—suggests it is important to separate the short- and long-term relationship between domestic savings and investment. This finding supports the theory that the savings retention ratio would be high in the very long term but lower

16 Dar, AmirKhalkhali, and AmirKhalkhali, “The Current Account and the Intertemporal Budget Constraint.”

in the short term, as capital mobility allows a country to run a current account imbalance. Such a theory fits with both the observed increase in capital mobility and the link between domestic savings and investment.

As evidenced by the volume of academic literature on the subject, the relationship between domestic savings and investment is complex. Nonetheless, there is enough compelling evidence in the literature to support the assumption that domestic savings do, in fact, influence domestic investment over the long term.

### **How Investment Affects Potential Economic Output**

All else being equal, any increase in domestic investment that is spurred by domestic savings will boost an economy's potential economic output, which measures the highest level of economic activity an economy can reach without surpassing its capacity limits and igniting inflation. Potential output determines how fast an economy can grow when all factors of production—namely, labour and capital—are employed at maximum efficiency. In essence, it is simply a function of the available labour force, the level of fixed capital, and the overall technical efficiency with which capital and labour are transformed into output. Increasing the amount of capital accumulated in an economy will lift its potential output.

An increase in potential output simply means lifting its productive capacity, which translates into additional profits, wages, and tax revenues. Given the link between domestic savings and investment observed in the literature, an increase in domestic savings can have far-reaching implications for our economy through its ability to lift investment and income.

## CHAPTER 3

# Methodology

### Chapter Summary

- Savings rates differ based on age and the use of financial advice.
- Long-term income is projected using average income by age to account for demographic changes that occur over the next few decades.
- The additional savings resulting from increased use of financial advisors is assumed to be invested and then withdrawn at an increasing rate to supplement retirement incomes as the population ages.
- Domestic investment is assumed to increase because of the increase in domestic savings.

**In our analysis, we created a hypothetical situation where savings behaviour changes in the presence of financial advice, and then we determined the resulting economic impact from this change in behaviour. It was necessary to produce the analysis over a long time horizon to capture the linkages between these changes and investment and potential output. That said, producing an analysis over a significant period presents challenges. The main challenge in this case is that savings and income are dependent on age, and therefore demographic changes must be factored into the income projections.**

Prior to running the economic impact scenario, it was necessary to build the data that would be used to shock the Conference Board's national forecasting model.<sup>1</sup> The steps required to build these data can be grouped into four broad categories: evaluating savings and income across age cohorts; creating a profile of long-term income by age and type of saver; calculating the extra savings from a change in savings behaviour; and forming assumptions regarding the rate of return on investments and the link between domestic savings and investment.

## **Evaluating Savings and Income Across Age Cohorts**

Professor Claude Montmarquette provided the Conference Board with survey data utilized in his analysis. The data containing average income and savings were broken down into three age groups (25–44, 45–54, and 55–64) and three types of savers (those who receive advice [advised];

<sup>1</sup> A model shock involves introducing a change to our baseline scenario. Model shocks are a common tool for evaluating the impact of different policy scenarios.

those who do not receive advice but actively trade on their own behalf [traders]; and those who do not receive financial advice [non-advised]). (See Table 1.) A number of clear patterns emerged from the analysis:

- Those who seek financial advice have higher incomes as well as higher savings rates.
- The savings rates among all three types of savers change between the different age cohorts.
- The three types of savers do not have identical shares in the sample: Active traders make up 6 per cent; non-advised savers account for 44 per cent; and advised savers comprise 49 per cent.

**Table 1**  
**Income and Savings Characteristics, by Age Cohort**

Age cohort	25–44		45–54		55–64	
	Average income (\$)	Savings rate (%)	Average income (\$)	Savings rate (%)	Average income (\$)	Savings rate (%)
With a financial advisor	78,622	10.6	87,862	11.4	88,850	13.7
Non-advised	63,018	8.5	66,129	8.2	65,882	9.2
Non-advised, active trader	77,381	12.6	88,634	14.0	86,653	14.1

Source: Special tabulation of data used in Montmarquette and Viennot-Briot, *Econometric Models*.

The data clearly show that savings and income are dependent on age. To account for the shift in income and savings that will result from an aging population, the Conference Board needed to create a long-term projection of income by age and then by type of saver.

## Long-Term Income Projection by Age and Type of Saver

The first step was to collect average income by age data from Statistics Canada, then group the data into five age cohorts: 0–24, 25–44, 45–54, 55–64, and 65+.<sup>2</sup> The data were then extended forward using our

2 Statistics Canada, *CANSIM Table 202-0407*.

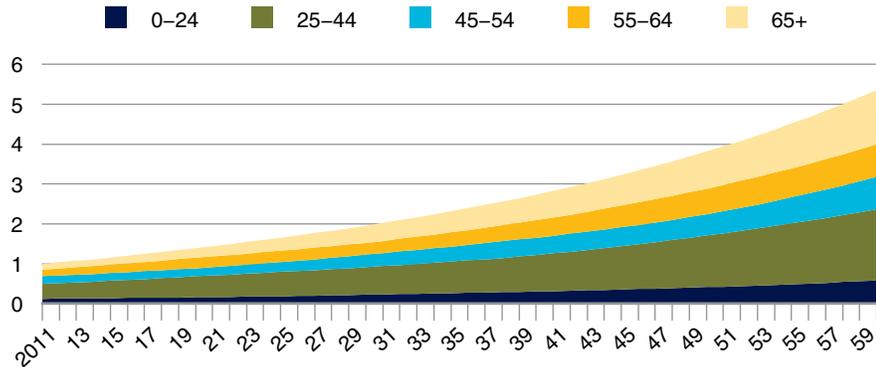
long-term forecast for wages and salaries per employee. Income growth was assumed to be the same across all age cohorts, given that we did not have alternative information about the evolution of wages by age cohort; this assumption, however, still allowed us to account for the level difference between average incomes across age cohorts. Average income by age cohort was then multiplied by our long-term forecast for population by age. In this way, we were able to derive total income shares by age category over the long term—enabling us to account for the demographic shift that will occur over the next few decades. For example, even though income growth is assumed to be the same over all age cohorts, the share of income accruing to those 65+ will increase from 15 per cent in 2014 to 25 per cent by 2060, as a larger share of the population moves into this age cohort.

These income shares were then applied to the Conference Board’s long-term forecast for disposable income to derive estimates of disposable income by age cohort. (See Chart 1.)

**Chart 1**

**National Disposable Income, by Age Cohort**

(\$ trillions)



Sources: The Conference Board of Canada; Statistics Canada.

The next step was to calculate, over the long term, the amount of disposable income that should be allocated to each type of saver (advised, trader, non-advised) in each age cohort covered in Montmarquette's data set. As a first step, we calculated, by cohort, the share of income in the sample for each type of saver. We then applied these income shares to the long-term forecast for disposable income for each matching age cohort, to derive disposable income by age cohort and type of saver.

## Calculating the Change in Long-Term Savings

The savings rates for each age cohort and type of saver were applied to the corresponding disposable income series in order to derive savings estimates by age cohort. They were then summed to derive an estimate of the national savings rate.

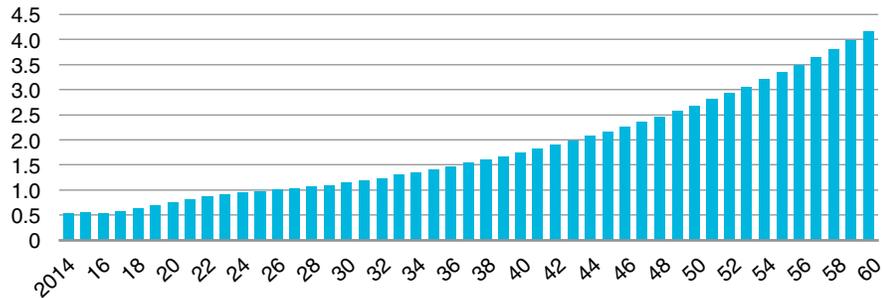
With estimates of savings and income by age cohort based on different savings rates for each type of saver, the next stage of the analysis was to ask the hypothetical question: What would be the economic impact if a portion of the currently non-advised sample (excluding traders) were to receive financial advice and therefore start saving at the same rate as those with a financial advisor? This scenario arbitrarily assumes that 10 per cent of the income of non-advised savers (across the three age cohorts spanning 25–64) who are not active traders is now saved at the higher rate of those who do receive financial advice. The 10 per cent of income choice was based on the assumption that this outcome is achievable by the financial advice industry.

A new stream of national savings was calculated based on 10 per cent of non-advised savers (excluding traders) increasing their savings rate to equal the rate of advised savers. We applied the percentage difference between this savings rate and the baseline savings rate calculated above

to the Conference Board’s long-term savings rate forecast in order to derive a new savings rate consistent with the savings rate definition used in the Board’s forecasting model.<sup>3</sup>

The difference between household savings with the baseline savings rate and this new savings rate multiplied by our baseline forecast for disposable income provides an estimate of the additional savings that could occur in the economy if 10 per cent of non-advised savers use the services of a financial advisor. (See Chart 2.)

**Chart 2**  
**Annual Increase in Savings**  
(\$ billions)



Sources: The Conference Board of Canada; special tabulation of data used in Montmarquette and Viennot-Briot, *Econometric Models*; Statistics Canada.

## Assumptions Used in Economic Impact Simulation

These additional savings create further impacts. In light of the fact that additional savings will presumably be invested, in this scenario, it was assumed that these savings would earn a nominal return of 6 per cent per year, net of management fees. Assuming an average management

3 The percentage increase was applied to the Conference Board’s baseline savings rate forecast, as the savings rates from the data set do not match the personal savings rate from Statistics Canada’s national accounts. We required an estimate that was consistent with our baseline scenario.

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It is assumed in this analysis that 50 per cent of the annual savings in the domestic economy will be used to fund domestic business investment.

expense ratio of 1.8 per cent, the return was assumed to be 7.8 per cent per year—which would probably be reinvested. Given an aging population, it is also necessary to make assumptions regarding the drawdown of savings that will occur as people withdraw money from these savings to fund their retirement. Based on previous work done at the Conference Board, the stock of savings is expected to begin to be withdrawn, starting in 2023, with the rate of drawdown accelerating slowly over time.

The final assumption in this analysis concerns the link between domestic savings and investment. Given the literature that supports the correlation, especially over the long term, it is assumed in this analysis that 50 per cent of the annual savings in the domestic economy will be used to fund domestic business investment.<sup>4</sup>

In total, this scenario involved three coinciding shocks to the Conference Board's national forecasting model:

1. a negative consumption shock equal to the increase in household savings;
2. a positive household investment income shock to account for the drawdown in the stock of savings that is assumed to begin in 2023;
3. a positive shock to private business investment equal to half of the annual increase in domestic savings split across the investment categories based on their respective shares in the baseline scenario.

4 Fifty per cent was chosen as the share of domestic savings that funds domestic investment. This allows for some savings to flow out of the country—reflecting capital mobility—while providing a conservative estimate of the correlation between the variables that were observed over the long term.

## CHAPTER 4

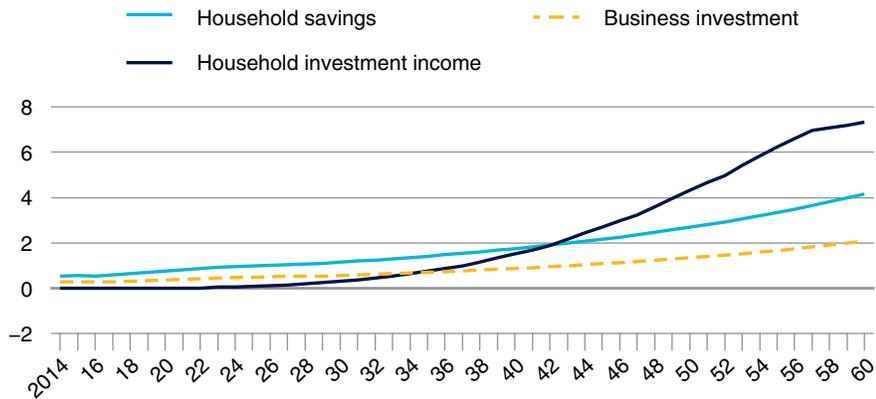
# Results

### Chapter Summary

- A number of assumptions were made to simulate the impact of increased savings on the national economy.
- The impact on real GDP is negative at first, due to a sharp decline in consumer expenditures because a larger share of income is diverted to savings.
- Business investment is boosted by the increased savings and, as a result, real GDP is higher over much of the forecast period.
- Consumer expenditures turn positive over the second half of the forecast as the stock of accumulated savings is drawn down and used to supplement incomes.
- The stock of household savings remains higher over the entire forecast.

This chapter provides details on the results that were obtained from the multivariate economic shock (outlined in chapter 3). The goal of this study is to determine how a change in savings behaviour affects the economy in the medium and long term. As discussed previously, the change in savings behaviour is assumed to result in an increase in savings (modelled as a decline in consumption), an increase in household investment income, and an increase in business investment. (See Chart 3.)

**Chart 3**  
**Shock Variables**  
 (\$ billions)



Sources: The Conference Board of Canada; special tabulation of data used in Montmarquette and Viennot-Briot, *Econometric Models*; Statistics Canada.

The impact of the change in these three variables—including direct, indirect, and induced impacts<sup>1</sup>—was modelled over the 2014 to 2060 period using the Conference Board’s national econometric forecasting model. (For more information on how to interpret the results of a model shock, see “What Is a Model Shock?”) Given the extended time frame of the analysis, the medium- and long-term impacts associated with this shock are discussed separately.<sup>2</sup>

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### What Is a Model Shock?

A model shock is a common econometric tool used to evaluate how a change in one (or many) variables has an impact on an economic forecast. The Conference Board regularly produces economic forecasts, and our most recent applicable forecast serves as the base-case scenario for any model shock we undertake. In this case, the Conference Board’s latest long-term national economic forecast (extended to 2060) serves as the base-case scenario for this analysis. The three variables of interest are changed, (consumption decreased and business investment and household investment income increased) and the model is simulated. The difference between the results of this new simulation and the original base-case scenario are the estimated economic impacts that would occur from the change in the three variables of interest.

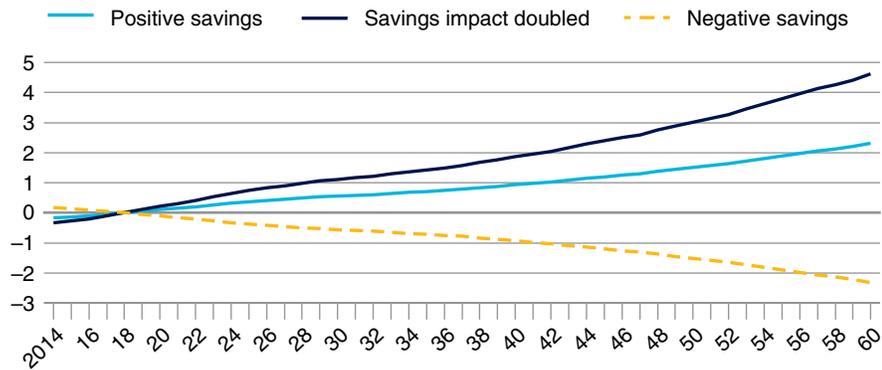
Results from the Conference Board’s forecasting model are generally linear. That means that if you take the exact same change in each of the variables but reverse the sign (from positive to negative or negative to positive), the results would remain the same but would change signs. In this case, a decrease in savings that results in higher consumption but lower business investment and

- 1 The total economic impact thus covers the initial shock, the resulting supply chain impacts, and the resulting consequences of more (or less) income and profits in the economy.
- 2 All of the results are relative to the base-case Conference Board forecast. Shocking the model with the three variables of interest in this study results in an alternative scenario; the difference between this new scenario and the base-case forecast are the impacts that result from the assumed change in savings behaviour.

lower household investment income would have the same overall impacts discussed below but with the opposite sign. (See chart “An Example of Model Linearity.”) Similarly, if the savings and investment impacts were, for example, double what was assumed in this analysis, the final impacts on GDP would also increase twofold.

### An Example of Model Linearity

(GDP impacts under different shock assumptions, 2007 \$ billions)



Source: The Conference Board of Canada.

## Medium-Term Impacts

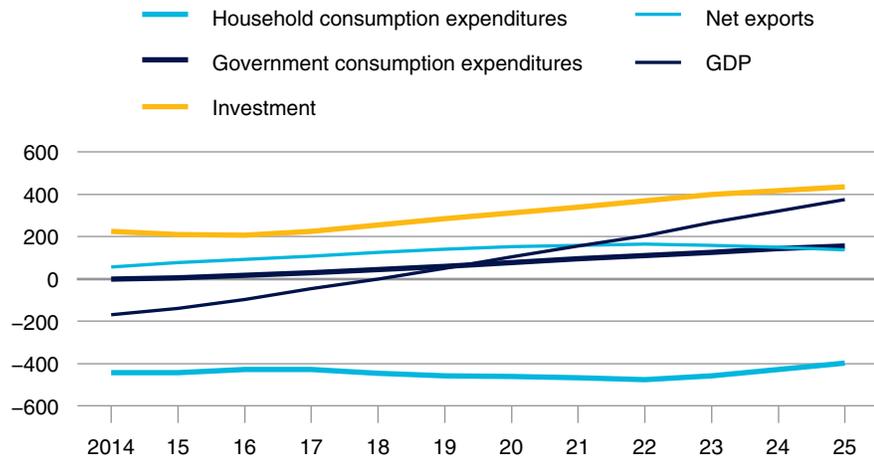
The impact of the increase in savings is negative during the first few years of this scenario.<sup>3</sup> Real GDP remains below the base-case scenario until 2018, due to the decline in consumer spending as households shift a greater portion of their disposable income away from consumption and toward savings. The decline in real GDP shrinks steadily due to higher investment and an improvement in trade. (See Chart 4.)

3 Summary tables of the results can be found in Appendix A.

### Chart 4

#### Medium-Term Impacts

(difference from base-case scenario, 2007 \$ millions)



Source: The Conference Board of Canada.

The diversion away from consumption toward savings keeps household consumption expenditures below the base-case scenario over the entire medium term. But the positive impacts stemming from higher investment spending and improved trade help lift the overall impact above the base-case relatively quickly. The decline in domestic demand stemming from reduced consumer expenditures results in job losses, with employment below the base-case scenario level throughout 2022. But job losses are relatively small, peaking at 1,905 in 2016.

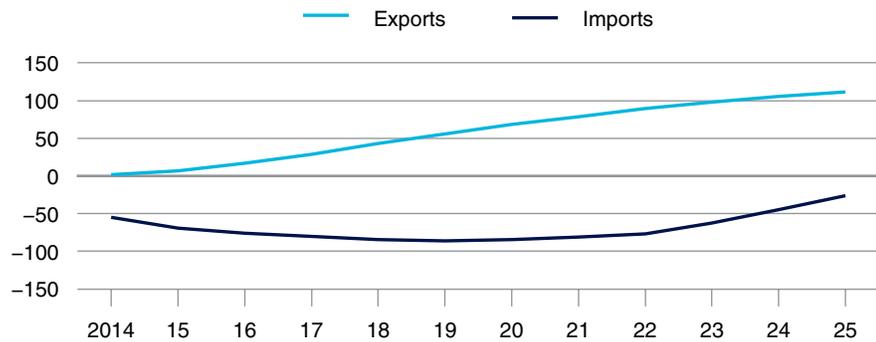
Business investment is positively affected, as this analysis assumes that half of the annual additional flow of domestic savings will be used by businesses domestically for investment purposes. But, as Chart 4 shows, there is a slight dip in the impact during the early years of the scenario, as the decline in domestic demand results in firms scaling back to adjust to this lower demand. In all years, the positive impact from additional savings being funnelled into domestic investment outweighs the negative pressures from a reduction in demand. The government sector expands in real terms, as constant nominal expenditures combined with lower prices allow the government to spend more in inflation-adjusted terms.

The trade sector realizes a positive impact over the medium term due to increased savings in the economy. Monetary policy in the model is guided by a central bank reaction function.<sup>4</sup> Softer consumer spending leaves the economy below capacity, helping to ease pressure on inflation. Less pressure from inflation results in the Bank of Canada adopting a more accommodative monetary policy, which in turn leads to a marginal decline in interest rates. These lower interest rates lead to a mild depreciation of the Canadian dollar, which stimulates export demand. At the same time, the depreciation of the dollar leads to higher import prices. Higher prices and softer demand from consumers result in a notable drop in imports. Although part of that decline is alleviated by increased demand for imports from businesses, the impact on imports remains negative during this period. (See Chart 5.)

**Chart 5**

**Medium-Term Impacts on Trade**

(difference from base-case scenario, 2007 \$ millions)



Source: The Conference Board of Canada.

The impacts by industry vary considerably over the medium term. (See Chart 6.) Services that cater to household consumers, as opposed to businesses, are harder hit. The reduction in household spending has

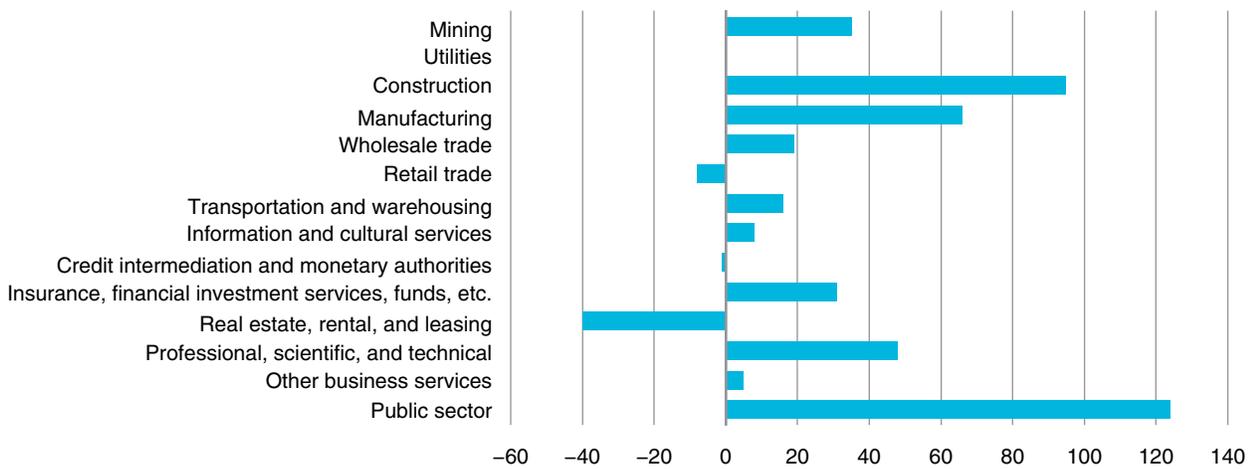
4 The Conference Board’s national model incorporates a standard Taylor-rule equation, which defines the bank rate as a function of the output gap and inflation.

an impact on a wide range of services, including retail trade, real estate, and credit intermediation. Real output in insurance, financial investment services, and funds increases in light of our assumption that the increase in savings examined in this scenario is a result of increased use of financial advisors.

**Chart 6**

**Medium-Term Impacts, by Sector, 2025**

(difference from base-case scenario, 2007 \$ millions)



Source: The Conference Board of Canada.

The goods side of the economy experiences positive impacts even over the medium term, thanks to the increase in business investment spending and the downward pressure on the Canadian dollar. Manufacturing is up by \$66 million in 2025, as the lower value of the dollar improves its international competitiveness. Construction is also up significantly, as the increase in domestic savings spurs domestic investment.

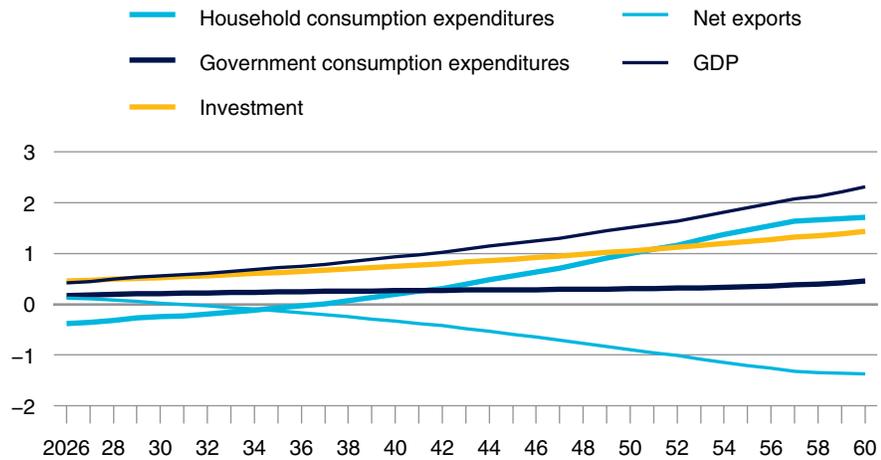
## Long-Term Impacts

Under the increased savings scenario, real GDP surpasses the base-case scenario early on and continues to gain relative to the base-case throughout the long term. By 2060, real GDP is \$2.3 billion above the base-case scenario, due to the impacts resulting from increased savings in the economy. A number of factors drive real GDP above the base-case scenario level in this study. (See Chart 7.)

Chart 7

### Long-Term Impacts

(difference from base-case scenario, 2007 \$ billions)



Source: The Conference Board of Canada.

While household consumption remains below the base-case scenario until 2037, the decline in household spending begins to soften in 2023, as the stock of additional savings that has accumulated since 2014 begins to be slowly withdrawn to supplement retirement incomes. An additional smaller boost is provided by an improvement in employment, which turns positive in 2023, as the domestic economy improves. In this scenario, it is assumed that the rate of withdrawal on the stock of accumulated savings accelerates as more people

reach retirement age. As more income continues to be drawn from the stock of savings, consumer spending increases. By 2060, real household consumer spending is up by \$1.7 billion relative to the base-case scenario.

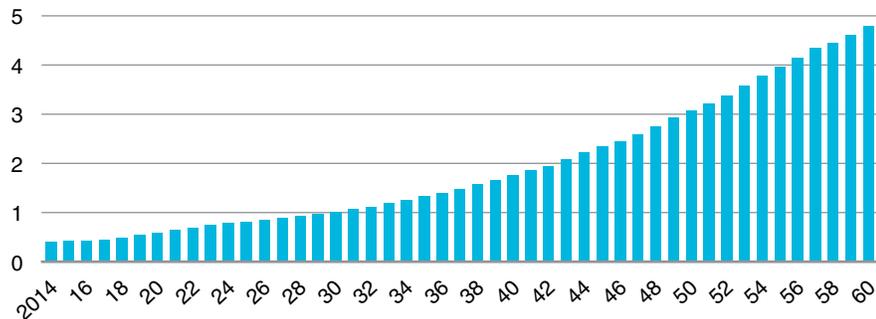
Government consumption spending is also up, as real spending increases in tandem with the overall increase in the economy. Taken together, overall real consumption expenditures are up by \$2.1 billion in 2060 relative to the base-case scenario. The increase in economic activity over the long term has a positive impact on government balances. By 2060, the federal government balance is \$1.7 billion above the base-case and provincial government balances improve by \$1.1 billion.<sup>5</sup>

Even with the assumption that part of the accumulated stock of savings will be withdrawn to supplement retirement income, higher savings rates significantly alter the path of household savings over the duration of the forecast. (See Chart 8.) By 2060, nominal household savings are \$4.8 billion higher. Despite the drawdown occurring over the forecast

### Chart 8

#### Increase in Household Net Savings

(difference from base-case scenario, 2007 \$ billions)



Source: The Conference Board of Canada.

5 Government balances are in nominal dollars.

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Thanks to the additional domestic savings, real investment spending increases throughout the forecast horizon.

period, there is still a substantial stock of additional savings that can be drawn upon by future retirees. Not surprisingly, higher savings rates—which start in 2014—help to better prepare Canadians for retirement: More income becomes available to individuals reaching retirement age during the time frame of the analysis, yet there is still a large accumulated stock of savings left to benefit individuals retiring after the forecast time frame.

Exports continue to be higher relative to the base-case scenario throughout the forecast horizon. However, as consumer spending and investment accelerates, there is a corresponding increase in the imports of goods and services to satisfy this additional demand. A stronger domestic economy reverses the depreciation in the dollar observed during the medium term, with the currency beginning to appreciate vis-à-vis the U.S. dollar by 2030. The appreciating currency exerts negative pressure on the export sector, which results in a slowly decelerating gain in exports relative to the base-case scenario. Nonetheless, exports remain positive due to the extra capacity that results from higher investment spending. By 2031, the level difference in imports exceeds that of exports and the contribution from net trade turns negative.

Thanks to the additional domestic savings, of which half are assumed to fund domestic business investment, real investment spending increases throughout the forecast horizon. This increase in investment is further augmented as businesses invest in capacity increases to supply the increase in domestic demand. In the medium term, we see reduced consumer spending exert negative downward pressures on investment spending as businesses cut back in the face of reduced demand. But in the long term, we see higher domestic demand, created when the previously saved funds are withdrawn and used to support consumption during retirement—thereby providing the incentive for business investment to supply this increase in demand.

As discussed in Chapter 2, an increase in investment has a direct impact on an economy's potential economic growth. This is indeed the case in this scenario where potential output increases by \$2.6 billion in 2060—equivalent to a 0.07 per cent increase. This lift to potential economic output represents a permanent increase in real income and profits in Canada. The lift to potential output is achieved through improved productivity and an increase in the capital-to-worker ratio. As a result, there is not a large impact on employment in this scenario, with total employment up by only 1,895 in 2060.

With the domestic economy faring much better over the long term, all industries have higher output relative to the base-case scenario by 2060. Real construction output is above the baseline forecast thanks to the ongoing domestic investment spurred by the increase in savings, along with the increase in consumer demand that occurs in the second half of the forecast. Increases in consumer demand, as well as increased demand to supply business investment needs, results in an increase in manufacturing output of \$50 million relative to the base-case scenario in 2060. The service sector is the largest beneficiary of the increase in domestic demand, with real output in business services up by \$1.5 billion by 2060.

## CHAPTER 5

# Conclusion

### Chapter Summary

- A scenario where savings are increased as more individuals utilize financial advisors leads to higher household savings.
- Higher household savings result in increased household income over the long term.
- A large stock of savings remains at the end of the forecast time frame, which will benefit those retiring after the studied time frame.
- Through its impact on investment, higher savings result in a higher level of potential economic output.

**In this report, we explored the links between financial advice and increased savings, potential economic output, and retirement readiness. With Canada set to undergo a period of significant population aging, current information indicates that many people are ill prepared financially to enter retirement. Previous research has shown that utilizing a financial advisor results in more disciplined savings behaviour and higher savings rates. By encouraging higher savings rates and better asset allocation, the use of financial advisors provides a means to better prepare Canadians for their retirement.**

This report also examined the link between domestic savings and investment. Working under the assumption that domestic savings does impact investment, especially over the long term, we created a hypothetical scenario that examined how an increase in savings could affect the economy.

Using survey data that contained savings rates specific to those with a financial advisor and those without, long-term income was projected by age and type of saver (advised, non-advised, and traders). A scenario was created where it was assumed that 10 per cent of those without a financial advisor (and who are not active traders) would begin to use a financial advisor and save at the same higher rate as those with an advisor; savings, household investment income, and business investment resulting from these additional savings was estimated. A model simulation using the Conference Board's long-term national forecasting model was prepared to quantify the economic impact of the increase in savings over the long term.

Results from the model simulation suggest that over the first few years of the forecast, the overall impact on the economy is negative. Decreases in consumption outweigh improvements in business

investment and exports. Over the longer term, real GDP is positively affected by an increase in savings. Consumption recovers once investment income earned on the accumulated stock of savings is withdrawn in light of accelerated retirements. Business investment remains positive thanks to a steady increase in household savings. Exports also remain positive throughout the long term, but net trade becomes a drag on growth as higher domestic demand fuels growth in imports.

Overall, a scenario where savings are increased over the long term results in a large accumulation in savings, which Canadians can use to supplement their retirement incomes. It also has a positive impact on Canada's potential economic output, which results in a permanent increase in income and profits in the economy.

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## APPENDIX A

# Summary Tables

**Table 1**

### Key Economic Indicators

(level difference—shock minus base-case, unless otherwise indicated)

	2015	2020	2025	2030	2035	2040	2045	2050	2055	2060
Real GDP (2007 \$ millions)	-138	106	375	556	716	932	1,200	1,509	1,896	2,310
GDP (\$ millions)	-226	-454	-629	-711	-719	-624	-408	-153	-48	-775
GDP deflator (percentage difference)	-0.00	-0.02	-0.04	-0.04	-0.04	-0.04	-0.04	-0.05	-0.05	-0.06
Consumer price index (percentage difference)	-0.00	-0.02	-0.04	-0.05	-0.06	-0.06	-0.06	-0.06	-0.06	-0.07
Average weekly wages (percentage difference)	-0.00	-0.02	-0.03	-0.04	-0.04	-0.04	-0.04	-0.04	-0.04	-0.04
Employment (000s)	-1.85	-0.61	0.55	0.81	0.76	1.01	1.34	1.54	1.83	1.89
Unemployment rate	0.01	0.00	-0.00	-0.00	-0.00	-0.00	-0.01	-0.01	-0.01	-0.01
Disposable income (\$ millions)	-122	-306	-460	-479	-283	211	1,074	2,265	3,576	3,891
Corporate profits before tax (\$ millions)	-27	-85	-61	17	112	209	320	432	509	418
90-day Treasury bill rate	-0.01	-0.02	-0.01	-0.01	-0.00	-0.00	-0.00	-0.00	-0.00	-0.01
Current account balance (\$ millions)	80	115	179	190	53	-333	-1,073	-2,261	-3,924	-5,603
Personal income tax (\$ millions)	-31	-79	-127	-144	-101	33	293	679	1,133	1,251
Corporate income tax (\$ millions)	-9	-27	-20	6	37	69	106	144	169	136
Taxes on products (\$ millions)	-51	-80	-107	-120	-122	-106	-66	-5	60	52
Federal government balance (\$ millions)	-38	-31	-59	-85	-59	57	312	732	1,305	1,735
Provincial government balance (\$ millions)	-26	1	-21	-60	-63	-4	143	409	790	1,076
Real disposable income (2007 \$ millions)	-71	35	234	470	785	1,229	1,809	2,489	3,209	3,627
Exchange rate (percentage difference)	-0.00	-0.02	-0.02	0.01	0.03	0.04	0.04	0.04	0.04	0.03
Canada, federal bonds: long-term	-0.00	-0.02	-0.01	-0.01	-0.00	-0.00	-0.00	-0.00	-0.00	-0.01
Household net savings	413	593	812	1,015	1,327	1,763	2,338	3,070	3,958	4,798

Source: The Conference Board of Canada.

Table 2

**GDP at Market Prices**

(difference—shock minus base-case, 2007 \$ millions)

	2015	2020	2025	2030	2035	2040	2045	2050	2055	2060
<b>Final consumption expenditure</b>	-426	-368	-218	-20	183	457	819	1,247	1,729	2,088
Household consumption expenditure	-442	-462	-397	-250	-73	192	560	1,000	1,467	1,714
Non-profit consumption expenditure	-0	1	2	3	4	5	7	8	10	13
General government consumption expenditure	6	78	157	209	241	265	283	304	348	452
<b>Investment</b>	212	312	437	525	626	748	890	1,050	1,237	1,434
Business investment	213	314	440	530	631	756	901	1,064	1,254	1,456
Residential structures	78	96	107	107	113	119	125	130	136	142
Non-residential structures	65	96	131	157	185	220	261	306	359	416
Machinery and equipment	46	79	137	196	269	366	493	652	851	1,066
Intellectual property products	22	45	74	92	108	125	144	165	189	216
General governments	0	0	0	0	0	0	0	0	-0	-1
<b>Final domestic demand</b>	-212	-51	224	511	813	1,209	1,712	2,300	2,969	3,526
<b>Investment in inventories</b>	-0	6	9	7	11	17	24	31	38	31
<b>Exports of goods and services</b>	7	68	112	109	85	59	31	7	14	90
<b>Imports of goods and services</b>	-70	-84	-26	85	221	396	625	904	1,219	1,466
<b>Real net exports</b>	77	153	137	24	-136	-336	-594	-897	-1,205	-1,376
<b>GDP at market prices</b>	-138	106	375	556	716	932	1,200	1,509	1,896	2,310

Note: Totals created using Fisher aggregation.  
 Source: The Conference Board of Canada.

Table 3

**GDP at Basic Prices**

(difference—shock minus base-case, 2007 \$ millions)

	2015	2020	2025	2030	2035	2040	2045	2050	2055	2060
<b>Real GDP</b>	-133	113	403	618	815	1,063	1,355	1,674	2,045	2,413
<b>Total goods</b>	36	127	202	230	248	271	294	314	346	414
Agriculture, forestry, and fishing	0	3	6	7	7	7	7	6	4	5
Mining	4	18	35	46	54	63	70	76	81	87
Utilities	-7	-4	0	3	6	8	11	13	16	18
Construction	48	71	95	112	130	152	176	201	228	254
Manufacturing	-9	38	66	63	50	41	30	19	17	50
<b>Business services</b>	-158	-63	77	209	349	536	771	1,037	1,330	1,548
Wholesale and retail trade	-42	-21	11	45	85	141	216	306	412	501
Wholesale trade	-10	4	19	31	44	61	84	111	144	177
Retail trade	-32	-25	-8	14	41	80	132	196	268	325
Transportation and warehousing	-9	2	16	26	34	46	58	72	86	99
Information and cultural services	-9	-1	8	16	23	32	44	56	71	84
Finance, insurance, and real estate	-70	-51	-11	35	87	157	245	342	442	491
Credit intermediation and monetary authorities	-20	-13	-1	11	24	43	67	93	122	141
Insurance carriers and related financial investment services, funds, and other financial vehicles	14	22	31	38	48	61	76	94	113	128
Real estate, rental, and leasing	-65	-60	-40	-13	15	53	102	155	206	222
Professional, scientific, and technical	6	25	48	63	77	93	112	132	156	187
Other business services	-34	-18	5	24	43	67	97	129	163	187
<b>Public sector</b>	-11	50	124	178	218	255	289	322	370	451

Source: The Conference Board of Canada.

Table 4

**Labour Market**

(difference—shock minus base-case, 000s)

	2015	2020	2025	2030	2035	2040	2045	2050	2055	2060
<b>Total employment</b>	-1.85	-0.61	0.55	0.81	0.76	1.01	1.34	1.54	1.83	1.89
Primary	-0.02	-0.01	-0.03	-0.07	-0.11	-0.14	-0.18	-0.23	-0.27	-0.31
Construction	0.50	0.64	0.72	0.69	0.69	0.71	0.72	0.72	0.70	0.66
Utilities	-0.03	-0.01	0.00	0.01	0.02	0.02	0.03	0.04	0.04	0.04
Manufacturing	-0.15	0.12	0.11	-0.16	-0.46	-0.70	-0.93	-1.15	-1.32	-1.32
Other commercial services	-0.89	-0.71	-0.52	-0.56	-0.69	-0.70	-0.71	-0.79	-0.91	-1.20
Wholesale and retail trade	-0.74	-0.69	-0.58	-0.48	-0.33	-0.04	0.36	0.81	1.27	1.46
Transportation and storage	-0.06	-0.10	-0.19	-0.30	-0.41	-0.53	-0.65	-0.79	-0.95	-1.11
Finance, insurance, and real estate	-0.24	-0.33	-0.35	-0.36	-0.37	-0.35	-0.31	-0.27	-0.27	-0.39
Public sector	-0.20	0.48	1.39	2.03	2.42	2.73	2.99	3.21	3.53	4.06
Unemployed	1.61	0.63	-0.40	-0.70	-0.70	-0.95	-1.27	-1.48	-1.77	-1.86
Unemployment rate	0.01	0.00	-0.00	-0.00	-0.00	-0.00	-0.01	-0.01	-0.01	-0.01

Source: The Conference Board of Canada.

## APPENDIX B

# Bibliography

Aegon. *Canada Fact Sheet: The Changing Face of Retirement—The Aegon Retirement Readiness Survey 2013*. The Hague: Aegon, 2013. [https://www.transamericacenter.org/docs/default-source/resources/global-survey/TCRS2013\\_CR\\_GlobalCA.pdf](https://www.transamericacenter.org/docs/default-source/resources/global-survey/TCRS2013_CR_GlobalCA.pdf) (accessed March 23, 2014).

Bennyhoff, Donald G., and Francis M. Kinniry Jr. *Advisor's Alpha*. Valley Forge, PA: The Vanguard Group Inc., 2013. <https://advisors.vanguard.com/iwe/pdf/ICRAA.pdf?cbdForceDomain=true> (accessed March 24, 2014).

Canada Revenue Agency. *Final Statistics 2010—2008 Tax Year. Tables 2 and 11A–11D*. Ottawa: Canada Revenue Agency, 2010. [www.cra-arc.gc.ca/gncy/stts/gb08/pst/fnl/tbls-eng.html#tables1to12](http://www.cra-arc.gc.ca/gncy/stts/gb08/pst/fnl/tbls-eng.html#tables1to12) (accessed May 30, 2014).

Chalmers, John, and Jonathan Reuter. *What Is the Impact of Financial Advisors on Retirement Portfolio Choices and Outcomes?* Working paper, May 6, 2014 (current draft). [www2.bc.edu/jonathan-reuter/research/ORP\\_201405.pdf](http://www2.bc.edu/jonathan-reuter/research/ORP_201405.pdf) (accessed August 12, 2014).

Dar, A., Atul, Sal AmirKhalkhali, and Samad AmirKhalkhali. "The Current Account and the Intertemporal Budget Constraint: Evidence from G7 Countries." *International Business and Economics Research Journal* 4, no. 10 (2005): 67–72. [www.cluteinstitute.com/ojs/index.php/IBER/article/view/3627/3672](http://www.cluteinstitute.com/ojs/index.php/IBER/article/view/3627/3672) (accessed August 13, 2014).

Del Guercio, Diane, and Jonathan Reuter. “Mutual Fund Performance and the Incentive to Generate Alpha.” *Journal of Finance*, (forthcoming). [www2.bc.edu/jonathan-reuter/research/active\\_201208.pdf](http://www2.bc.edu/jonathan-reuter/research/active_201208.pdf) (accessed July 11, 2014).

Feldstein, Martin, and Charles Horioka. “Domestic Saving and International Capital Flows.” *The Economic Journal* 90, no. 358 (1980): 314–29. [www9.georgetown.edu/faculty/mh5/class/econ489/Feldstein-Horioka-Puzzle.pdf](http://www9.georgetown.edu/faculty/mh5/class/econ489/Feldstein-Horioka-Puzzle.pdf) (accessed March 23, 2014).

Fouquau, Julien, Christophe Hurlin, and Isabelle Rabaud. “The Feldstein-Horioka Puzzle: A Panel Smooth Transition Regression Approach.” *Economic Modelling* 25 (2008): 284–99. <http://economics.ca/2007/papers/0345.pdf> (accessed April 2, 2014).

Ghosh, Atish, and Uma Ramakrishan. “Do Current Account Deficits Matter?” *Finance and Development* 43, no. 4 (December 2006). [www.imf.org/external/pubs/ft/fandd/2006/12/basics.htm](http://www.imf.org/external/pubs/ft/fandd/2006/12/basics.htm) (accessed April 20, 2014).

Gauthier, Sylvain. *Indice Autorite, Rapport d’analyse—Vague 2*. Montréal: CROP, 2014. [www.lautorite.qc.ca/files/pdf/publications/autorite/etudes-sondages/rapport\\_analyse\\_indice\\_avril-2014.pdf](http://www.lautorite.qc.ca/files/pdf/publications/autorite/etudes-sondages/rapport_analyse_indice_avril-2014.pdf) (accessed August 13, 2014).

Giannone, Domenico, and Michele Lenza. *The Feldstein-Horioka Fact*. Frankfurt, Germany: European Central Bank, 2008. [www.ecb.europa.eu/pub/pdf/scpwps/ecbwp873.pdf](http://www.ecb.europa.eu/pub/pdf/scpwps/ecbwp873.pdf) (accessed April 13, 2014).

Hackethal, Andreas, Michael Haliassos, and Tullio Jappelli. “Financial Advisors: A Case of Babysitters?” *Journal of Banking and Finance* 36, no. 2 (2012): 509–24.

Hejazi, Walid, and Peter Pauly. *Foreign Direct Investment and Domestic Capital Formation*. Ottawa: Industry Canada, 2002. [www.ic.gc.ca/eic/site/eas-aes.nsf/vwapj/wp36e.pdf/\\$file/wp36e.pdf](http://www.ic.gc.ca/eic/site/eas-aes.nsf/vwapj/wp36e.pdf/$file/wp36e.pdf) (accessed April 6, 2014).

KPMG EconTECH. *Value Proposition of Financial Advisory Networks— Update and Extension*. Australia: KPMG, 2011. [www.ific.ca/wp-content/uploads/2013/09/KPMGReport\\_ValuePropOfFinAdvisoryNetworks.pdf/4566/](http://www.ific.ca/wp-content/uploads/2013/09/KPMGReport_ValuePropOfFinAdvisoryNetworks.pdf/4566/) (accessed April 5, 2014).

McKinsey & Company. *Are Canadians Ready for Retirement? Current Situation and Guiding Principles for Improvement*. Toronto: McKinsey & Company, 2012. [http://www.mckinsey.com/~media/McKinsey%20Offices/Canada/Latest%20thinking/PDFs/Are\\_Canadians\\_ready\\_for\\_retirement](http://www.mckinsey.com/~media/McKinsey%20Offices/Canada/Latest%20thinking/PDFs/Are_Canadians_ready_for_retirement) (accessed March 23, 2014).

Montmarquette, Claude, and Nathalie Viennot-Briot. *Econometric Models on the Value of Advice of a Financial Advisor*. Montreal: Centre interuniversitaire de recherche en analyse des organisations, 2012. [www.cirano.qc.ca/pdf/publication/2012RP-17.pdf](http://www.cirano.qc.ca/pdf/publication/2012RP-17.pdf) (accessed December 15, 2013).

Pelgrin, Florian, and Sebastian Schich. *National Saving—Investment Dynamics and International Capital Mobility*. Ottawa: Bank of Canada, 2004. [www.bankofcanada.ca/wp-content/uploads/2010/02/wp04-14.pdf](http://www.bankofcanada.ca/wp-content/uploads/2010/02/wp04-14.pdf) (accessed April 20, 2014).

Statistics Canada. *CANSIM Table 202-0705*. Ottawa: Statistics Canada, n.d. [www.statcan.gc.ca/pub/11-008-x/2006003/t/4097805-eng.htm](http://www.statcan.gc.ca/pub/11-008-x/2006003/t/4097805-eng.htm) (accessed August 13, 2014).

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