

Expansion of the Canada Pension Plan and the Unintended Effect on Domestic Investment

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Executive Summary

Beginning in 2019, mandatory contributions by Canadian workers to the Canada Pension Plan (CPP) will increase, step by step, over seven years. While the expansion of the CPP may be well intentioned, it will result in several unintended consequences. One consequence is a reduction in the amount that Canadians save voluntarily in their private accounts such as RRSPs and TFSAs. Previous research has found that, when mandatory CPP contributions were raised in the past, there was a concurrent reduction in private voluntary savings.

The substitution of savings away from private voluntary modes to the CPP will have important consequences, one of which will be a reduction in the amount of money available for investment in Canada. This is likely to occur because, unlike the financial assets held by Canadian households, the portion of CPP contributions that are invested is heavily invested abroad. Indeed, the vast majority of invested CPP contributions, which are managed and invested by the Canada Pension Plan Investment Board (CPPIB), are invested in foreign markets. For instance, in 2016/17, 83.5% of the CPP fund's assets were invested abroad, while only 16.5% were invested within Canada; and the foreign share has steadily increased over time. Canadian households, on the other hand, demonstrate a greater "home bias" towards the location of their savings and financial assets, with 82.2% of their financial assets being invested within Canada, while only 17.8% are invested abroad.

As Canadian households are forced to increase their CPP contributions, they will reduce their levels of private saving, and the majority of those substituted private savings would have been invested within Canada. This means that there will be a reduction in the amount of money available for investment in Canada, compared to what would have been the case if the CPP was not expanded.

The reduction in the money available for investment in Canada as the CPP expands will depend on the extent to which Canadian households reduce their private voluntary savings in response to higher mandatory CPP contributions. The effect of past CPP expansion suggests the substitution rate will be 89.5%, meaning that every additional dollar of CPP contributions will result in a reduction in private savings of 89.5¢. Based on this rate of substitution, in 2019, investment in Canadian funds would be lower by

approximately \$1.13 billion (all figures are in nominal dollars). By 2030, five years after the CPP expansion is fully implemented, the annual reduction in the financial assets invested by Canadian households in the domestic market will be \$14.8 billion. Under a scenario where Canadian households offset 75% of their increased CPP contributions with reductions in their private voluntary savings, in 2030 Canadian household assets invested in the domestic market would be approximately \$11.8 billion lower. In a scenario where households offset their higher CPP contributions with a 50% reduction in private savings, in 2030 the amount of money available for investment in Canada would fall by approximately \$6.5 billion.

Over time, the annual reductions in assets available for investment in Canada will add up. By 2030, depending on the extent to which increased CPP contributions are offset with reduced private savings, the cumulative reduction in these assets could range from \$49.9 billion to \$114.4 billion.

A decline in investment within Canada will have negative effects on the Canadian economy, as investment is critical to making workers more productive, increasing wages and improving living standards. The decline in investment will also come at a time when business investment in Canada is already decreasing and lagging behind other industrialized countries.

To be clear, the authors do not recommend imposing domestic investment requirements on the CPPIB in response to the CPP expansion and the resulting reduction in the money available for investment in Canada. When the CPPIB is allowed to invest free of any domestic requirements, it is able to invest more broadly into assets which generate the highest risk-adjusted rate of return. This is generally positive (assuming risks are properly accounted for), since it enhances the performance of pension funds. Instead, the recommendation is that governments can help offset the looming reduction in domestic investment by pursuing policies that encourage investment in Canada. This includes policy reforms such as reducing capital gains taxes and lowering taxes on business investment to help spur investment. Indeed, such tax policies are sound and effective independent of the reductions in domestic investment that will result from the CPP expansion.

Introduction

In June 2016, the federal and provincial governments announced that the Canada Pension Plan (CPP) will be expanded. With this expansion, Canadian workers will be required to increase their mandatory contributions to the program, step by step, over seven years beginning in 2019. While the expansion of the CPP may be well intentioned, it will result in several unintended consequences, one of which is a reduction in the amount that Canadians save voluntarily in their private accounts such as RRSPs and TFSAs. Indeed, previous research has found that, when mandatory CPP contributions were raised in the past, there was a concurrent reduction in private voluntary savings (Vaillancourt, Lammam, Herzog, and Ebrahimi, 2015).

The substitution of savings by way of the CPP for private voluntary modes will have important consequences that have not received sufficient public attention. This paper explores the reduction in the amount of money available for investment in Canada. A reduction in domestic investment is likely to occur because, unlike the financial assets held by Canadian households, the portion of CPP contributions that are invested tends to be heavily invested abroad. As Canadian households are required to increase their CPP contributions, they will reduce their levels of private saving, leading to a reduction in the assets available for investment in Canada.

The purpose of this study is to examine the effect that the CPP expansion will have on the level of assets available for investment in Canada. The study is organized as follows. The first section reviews the current structure of the CPP program and previous research finding that households respond to increased mandatory savings by reducing their private voluntary savings. The next section provides a brief overview of the evolution of the Canada Pension Plan Investment Board (CPPIB), the organization that oversees and invests CPP assets, and presents data on the foreign and domestic allocation of the CPP fund's assets. The third section presents data on the foreign and domestic allocation of financial assets held by Canadian households. [1] The fourth section provides a range of estimates of the reduction in aggregate domestic savings as a result of the CPP's expansion. The fifth section discusses some policy reforms that could help counteract the decline in the amount of money available for investment in Canada.

[1] In this study, "assets" refer to financial assets, which exclude the value of physical assets like real estate.

Substituting Private Savings with CPP Contributions

Under the current CPP system, Canadian workers contribute 9.9% of their eligible earnings between a basic exemption of \$3,500 and an annual earnings limit, called the “Year’s Maximum Pensionable Earnings” (YMPE), currently set at \$55,900. CPP contributions are notionally split between the employee and employer, except for the self-employed, who pay the full share directly (Canada, 2016, 2017). In fact, the burden of paying the entire amount of CPP contributions falls on the employee as contributions are effectively paid out of the total compensation the employer pays an employee.

Once the expansion of the CPP is fully phased in, workers will contribute 11.9% of their earnings up to the YMPE. In addition, Canadian workers who earn more than the YMPE will have to contribute an additional 8% of their earnings on income up to a threshold that is 14% above the YMPE for the year. For example, based on projections from the Department of Finance, in 2025 when the extra contributions for CPP enhancement are fully phased in, workers will contribute 11.9% of their earnings up to \$72,500 [2] to the CPP, while also contributing an additional 8% of their earnings between \$72,500 and \$82,700 (Canada, Dep’t of Finance, 2016). That year the maximum CPP contributions for an individual will total approximately \$9,000.

The stated purpose of CPP expansion is to increase payouts to Canadian workers during their retirement years. Currently, the CPP replaces a maximum of 25% of income up to the YMPE. Under the new plan, the CPP benefit would be increased from 25% to 33% of the YMPE, although the amounts paid out to individuals will be dependent on how long and how much they have contributed to the enhanced portion of the CPP. Individuals will receive the fully increased benefit once they have contributed to the enhanced CPP for 40 years, meaning that the full benefits of the expanded CPP will have a very long phase in (Canada, 2017).

While the intention of the CPP expansion is to force Canadians to save more for their retirement, previous research has found that when Canadians are forced by

[2] The YMPE grows according to a specific formula; this value is an estimate of the YMPE in 2025.

governments to save more for retirement, they respond by reducing their voluntary contributions to their private savings. This means that they do not increase their overall savings by an amount equivalent to the forced savings. Indeed, economic theory suggests that people choose how much of their income they save for the future and consume today based on their preferences for each (Friedman, 1957; Modigliani, 2005). If their income and preferences for saving and spending do not change, and the government mandates higher contributions to government-run pension plans, individuals will simply reduce their private savings and investments in assets such as RRSPs, TFSAs, mutual funds, and so on. The result would be that overall savings will not change much, or at all, but rather there will be a reshuffling, with more money going to forced (government) savings and less to voluntary (private) savings.

This “substitution effect” has been highlighted in a number of international studies. Vaillancourt, Lamnam, Herzog, and Ebrahimi (2015) estimated the substitution effect between voluntary and forced savings for Canadian households by examining the effect on private savings when Canadians were forced to contribute more to the CPP in the past. The analysis focused on major changes to the CPP between 1996 and 2004, when the total contribution rate rose from 5.6% to 9.9% of insurable earnings. It found that increases in the mandatory CPP contribution rate were followed by decreases in the private-savings rate of Canadian households. [3] Specifically, with each percentage-point increase in the total CPP contribution rate, there was a 0.895 percentage-point drop in the private-savings rate of the average Canadian household. The results suggest that for every one dollar increase in CPP contributions, the average Canadian household reduced private savings by almost 90¢. For the most part, households did not necessarily save more overall—they just saved differently.

Based on the work of Vaillancourt and colleagues (2015) and other international scholars, [4] the forthcoming expansion of the CPP will more than likely have the unintended effect of reducing the private voluntary savings of Canadians. If Canadian households, unlike the CPPIB, tend to invest their financial assets domestically, an additional consequence from the substitution effect will be a reduction in the assets available for investment in Canada. The following sections examine the extent to which a reduction in domestic investment could occur.

[3] The analysis accounted for changes in the interest rate and demographic shifts in age, income and home ownership.

[4] See, for example, Feldstein, 1974; Page, 1998; Attanasio and Brugiavini, 2003; Attanasio and Rohwedder, 2003; and Bottazzi, Jappelli, and Padula, 2006.

Evolution of the CPP Investment Board and Its Investments

The first step in estimating how expansion of the CPP will affect aggregate household savings and the supply of money available for investment in Canada is to examine how the CPP's funds are currently invested. The CPP's assets are managed by the Canada Pension Plan Investment Board (CPPIB), which operates independently of the CPP and at arm's length of federal and provincial governments (CPP, 2016). The objective of the CPPIB is to invest the CPP's assets on behalf, and for the benefit, of the CPP's 20 million contributors and beneficiaries in such a way as to “maximize returns without undue risk of loss” (CPPIB, 2017: 10).

In the mid-1990s, amid concerns around the sustainability of the CPP—whose assets were depleting as of 1993—the CPP was reformed (in 1996) and the CPPIB created (in 1997). The CPP's contribution rates were increased to create funds in excess of the CPP's current benefit obligations and to produce a larger pool of assets for the newly established CPPIB to manage. Critically, however, despite the reforms, the overwhelming majority of current CPP contributions continued to fund the benefits of current retirees with only a small percentage being invested by the CPPIB to help finance the benefits of future retirees. Although most of the CPPIB's assets are currently generated through its investment returns, as opposed to new net contributions, the net transfer of CPP contributions to the CPPIB has averaged about \$5 billion per year over the last five years.

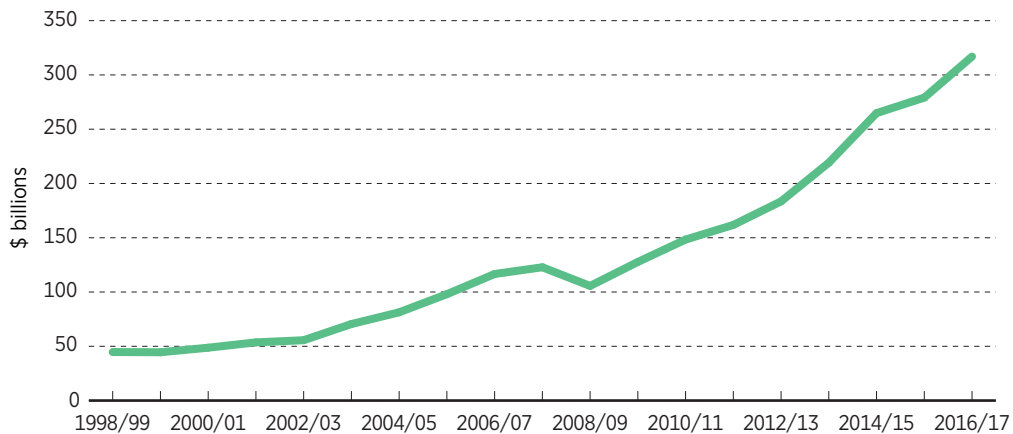
Initially, the CPPIB was constrained to passive investments and, like all Canadian investors, had a strict limit on the amount of foreign investment allowed. Passive investments are those that are bought and held for long periods in contrast to active investments, which involve more frequent buying and selling of assets. The foreign property rule [5] was eliminated in 2005 and an important reform was introduced in 2006 that allowed the CPPIB to pursue a more active investment management strategy for its investable assets. [6] Ever since, the CPP fund's portfolio, as managed by the CPPIB, has steadily shifted from predominantly Canadian assets to predominantly foreign assets.

[5] The foreign property rule limited the amount of foreign holdings that investors could have in their portfolios. At the time when the rule was removed, only 30% of the CPPIB's holdings could be foreign.

[6] For a timeline of important reforms and changes made to the CPPIB, see CPPIB, 2018.

Figure 1 displays the growth of the CPP fund's value from the beginning years when the CPPIB took over the fund's management. Since 1998/99, the value of the CPP fund has grown markedly, from \$44.7 billion in 1998/99 to \$316.9 billion in 2016/17. [7]

Figure 1: Value (\$ billions) of CPP fund, 1998/99–2016/17



Sources: CPPIB, 2000–2017: *Annual Reports*, 2007, 2008, 2009, 2014, 2016, 2017.

Critically, in addition to the growth of the CPP fund over time, there have also been changes in the Canadian and foreign shares of the CPP fund's assets. [8] Table 1 displays the dollar amounts of Canadian and foreign assets held by the CPPIB. The nominal value of Canadian assets managed by the CPPIB has increased comparatively little from 1998/99 to 2016/17, rising only 16.8%, from \$44.7 billion to \$52.2 billion over the period. Canadian assets in the CPPIB fund peaked at \$71.7 billion in 2010/11 but have generally declined since then. Meanwhile, the growth in the value of foreign assets has been quite pronounced. After the foreign property rule was eliminated in 2005, the amount of foreign assets in the CPP fund's portfolio increased steadily from \$35 billion in 2005/06 to \$264.7 billion in 2016/17, representing total growth of over 650%.

For further perspective on the composition of the CPP fund's foreign and domestic asset allocations, consider the percentage of assets invested in domestic and foreign markets (figure 2). In 2016/17, 83.5% of the CPP fund's assets were invested abroad, compared to just 16.5% invested domestically. The allocations in 2016/17 represent a marked shift from the foreign and domestic allocations in 1998/99: 0% foreign and 100% domestic.

[7] Part of the CPP fund's growth over time is driven by annual net contributions to the fund and part of it is driven by returns on existing investments.

[8] It is difficult to define effectively and fairly what constitutes "Canadian" and "foreign" assets as many Canadian firms have a strong global presence and many firms that operate in Canada may be considered wholly "foreign". We have used the division used by the CPPIB of "Canadian" and "International" assets (CPPIB, 2017: 12).

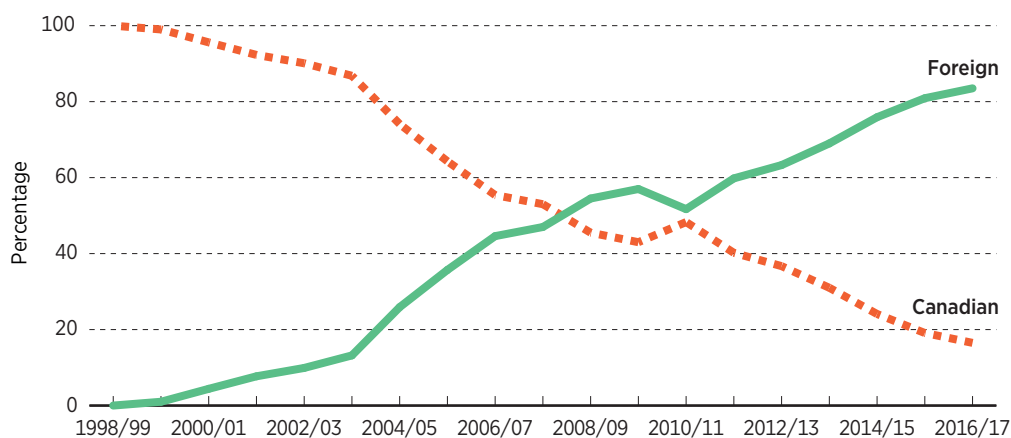
Table 1: CPP Investment Board's portfolio in Canadian and foreign markets (\$ billions), 1998/99–2016/17

	Canadian assets	Foreign assets		Canadian assets	Foreign assets
1998/99	44.7	0.0	2008/09	48.0	57.6
1999/00	44.1	0.4	2009/10	54.9	72.8
2000/01	46.6	2.1	2010/11	71.7	76.6
2001/02	49.5	4.1	2011/12	65.1	96.7
2002/03	50.1	5.5	2012/13	67.4	116.1
2003/04	61.2	9.3	2013/14	68.0	151.1
2004/05	60.2	21.1	2014/15	63.8	201.0
2005/06	63.0	35.0	2015/16	53.3	225.8
2006/07	64.6	52.0	2016/17	52.2	264.7
2007/08	65.1	57.7			

Sources: CPPIB, 2000–2017: *Annual Reports*, 2000, 2002–2009, 2014, 2016, 2017.

As the CPP expansion begins in 2019 and Canadian workers are forced to contribute additional funds that will virtually all be invested by the CPPIB, these funds will likely be invested in foreign assets. That by itself is not necessarily a bad thing. As economic theory suggests, in the absence of restrictions, differential costs to capital and information, and so on, capital should flow to where it receives the highest rate of return. The question this paper seeks to ask, however, is not whether the CPPIB's or Canadian households investing strategy is optimal from the perspective of the risk-adjusted rate of return. The analysis is interested in exploring how the substitution response to higher mandatory savings from Canadian households might reduce the assets available for investment in Canada.

Figure 2: Percentage of CPPIB portfolio in Canadian and foreign markets, 1998/99–2016/17

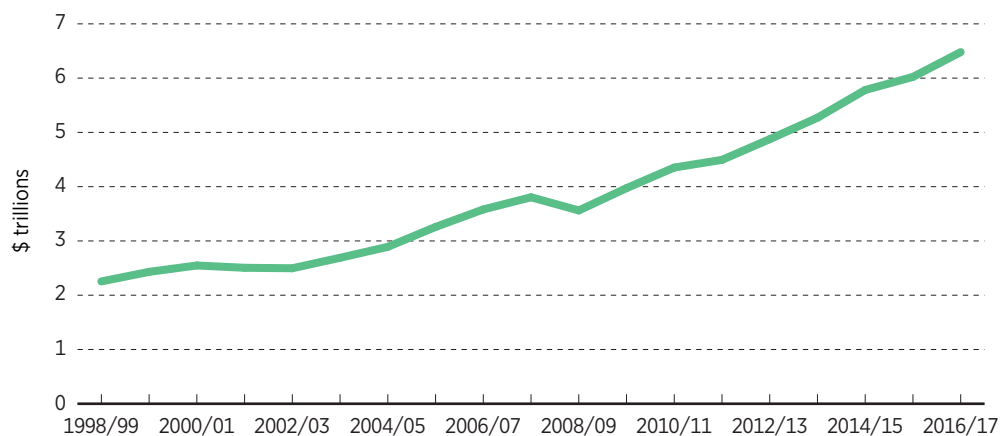


Sources: CPPIB, 2000–2017: *Annual Reports*, 2000, 2002–2009, 2014, 2016, 2017.

Financial Assets of Canadian Households

We now turn to an overview of the allocation of financial assets by Canadian households. Recall that past CPP expansion, as well as international experience with increased forced savings, suggests that Canadians will more than likely respond to higher CPP contributions by reducing their private savings. This could affect the availability of assets for investment in Canada if the CPP fund's investments, unlike those of Canadian households, are disproportionately located abroad. With the exception of the great recession, over the past two decades Canadian households have seen their financial assets increase steadily. The total financial assets of Canadian households increased from \$2.3 trillion in 1998/99 to \$6.5 trillion in 2016/17 (figure 3).

Figure 3: Total financial assets (\$ trillions) of Canadian households, 1998/99–2016/17



Source: Statistics Canada, 2017: CANSIM Table 378-0121.

Table 2 presents the value of Canadian and foreign financial assets held by Canadian households from 1998/99 to 2016/17. [9] In every year over the last two decades, the

[9] As noted above, the definitions of what is “Canadian” and what is “foreign” are inexact. For households we rely on the categories in the National Balance Sheet Accounts. Canadian assets consist of Canadian currency and deposits, Canadian short-term paper, Canadian bonds and debentures, Loans, Listed shares, Unlisted shares, Mutual fund shares, Life insurance and pensions, and Other accounts receivable. Foreign assets consist of foreign currency and deposits, foreign short-term paper, foreign bonds, and foreign

Table 2: Canadian and foreign financial assets held by Canadian households (\$ trillions), 1998/99–2016/17

	Canadian assets	Foreign assets		Canadian assets	Foreign assets
1998/99	2.0	0.2	2008/09	3.2	0.4
1999/00	2.1	0.3	2009/10	3.5	0.5
2000/01	2.2	0.4	2010/11	3.8	0.5
2001/02	2.2	0.3	2011/12	4.0	0.5
2002/03	2.2	0.3	2012/13	4.3	0.6
2003/04	2.4	0.3	2013/14	4.5	0.8
2004/05	2.5	0.3	2014/15	4.8	0.9
2005/06	2.9	0.4	2015/16	4.9	1.1
2006/07	3.1	0.5	2016/17	5.3	1.2
2007/08	3.2	0.6			

Source: Statistics Canada, 2017: CANSIM Table 378-0121.

value of household financial assets based domestically has been considerably larger than those held abroad. [10] For example, in 2016/17 the domestic financial assets of Canadian households totaled \$5.3 trillion, while foreign assets totaled only \$1.2 trillion.

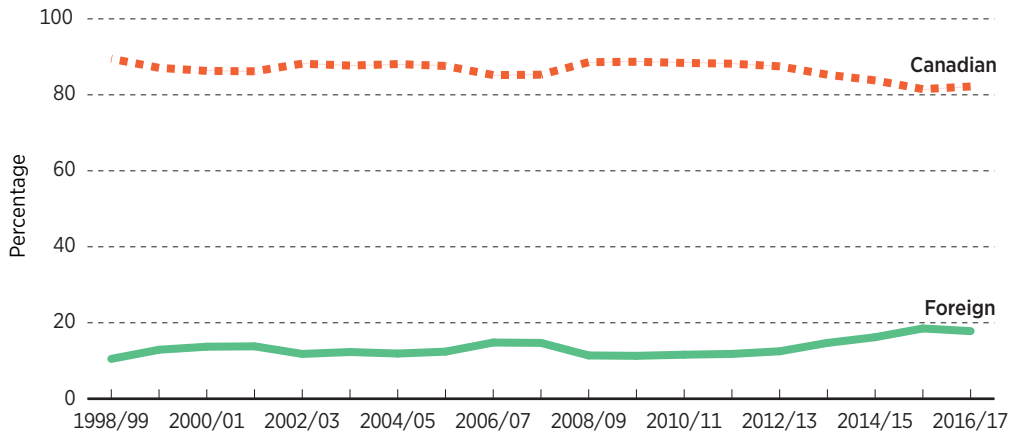
Figure 4 displays the share of household financial assets that are foreign and domestic. Over the past two decades, the share of household assets that are domestic has been relatively stable, hovering between 81.5% and 89.5%, leaving only between 10.5% and 18.5% of household assets in foreign markets. This stands in stark contrast to how the CPPIB invests the assets in the CPP fund. In 2016/17, for example, only 17.8% of Canadian household assets were in foreign markets, while 83.5% of the CPPIB's portfolio was invested in foreign markets.

Consider a subset of Canadian household financial assets: equity and investment fund shares. These types of assets make up almost 40% of household financial assets (figure 5). Equity and investment fund shares warrant special consideration because

equity investments. Further, Canadian and foreign shares of household financial assets as discussed in this report are adjusted to account for the fact that households hold foreign assets in mutual funds and pensions. Foreign assets within the "mutual funds" and "life insurance and pensions" categories in CANSIM table 378-0121 that can reasonably be attributed to assets owned by households are used to lower household Canadian, and increase household foreign, financial assets as reported here.

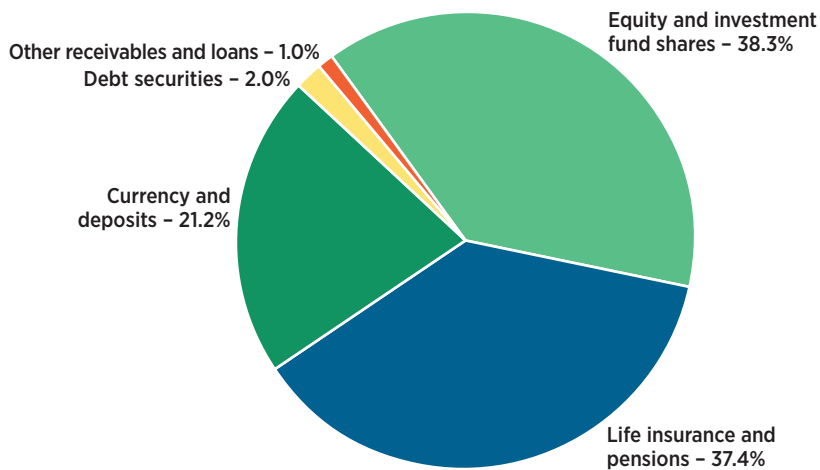
[10] It is worth noting that in more recent years the growth in foreign financial assets held by households has been greater than the growth of domestic household financial assets.

Figure 4: Percentage of household financial assets in Canadian and foreign markets, 1998/99–2016/17



Source: Statistics Canada, 2017: CANSIM Table 378-0121.

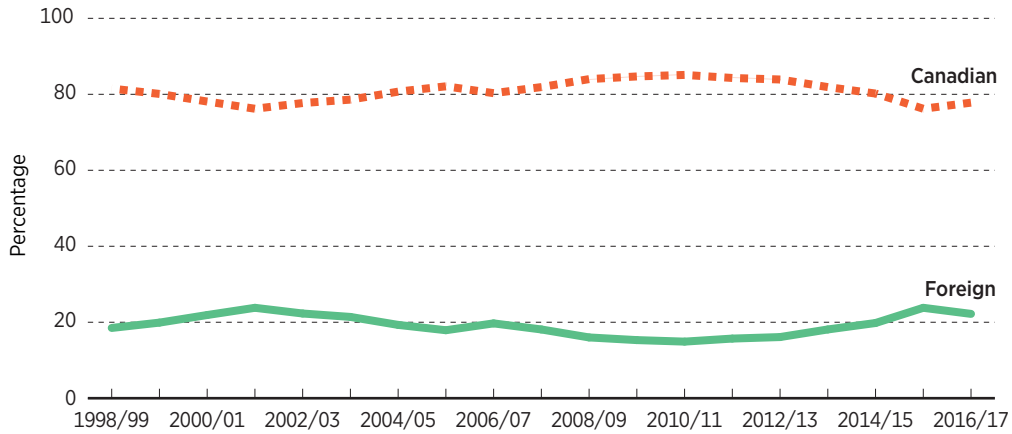
Figure 5: Breakdown (%) of household financial assets in Canada, 2017



Source: Statistics Canada, 2017: CANSIM Table 378-0121.

it is within this type of asset class that the vast majority of the financial assets that Canadian families have saved for their retirement will be contained. In addition, equity and investment fund shares is the asset category that households would likely substitute away from as mandatory CPP contributions increase. As figure 6 shows, in 2016/17, 77.8% of equity and investment fund shares held by households were located in Canada, meaning the likelihood of reduced domestic investment due to CPP expansion is significant, especially for this asset category of private savings.

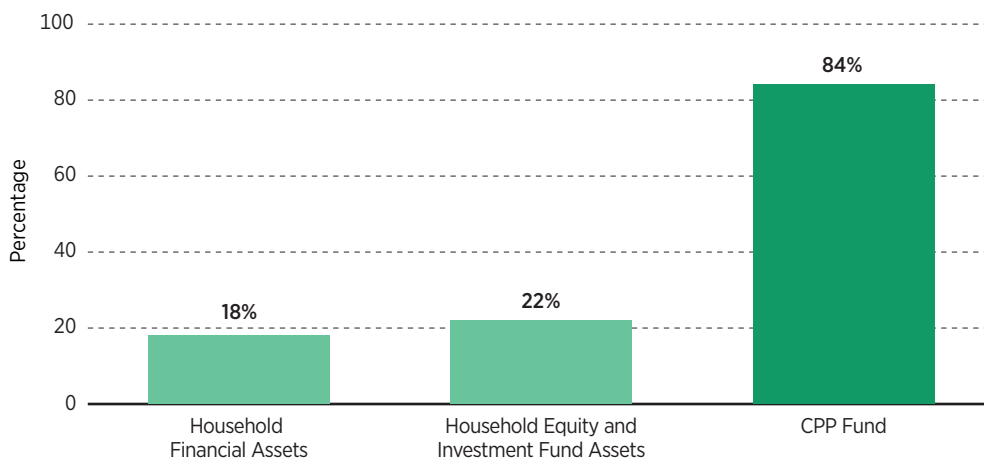
Figure 6: Percentage of equity and investment fund shares held by households in Canadian and foreign markets, 1998/99–2016/17



Source: Statistics Canada, 2017: CANSIM Table 378-0121.

In sum, a much larger percentage of household savings and financial assets are held domestically rather than abroad compared to the CPPIB’s holdings. Indeed, while only about 20% of household assets are invested in foreign markets, more than 80% of the CPPIB’s assets are invested abroad (figure 7). This suggests that, at least in the short term, if Canadian households adjust to higher mandatory CPP contributions by reducing their savings in private financial assets, we can expect a fall in the amount of money available for investment in Canada, compared to what would have been the case if the CPP was not expanded.

Figure 7: Percentage of assets invested in foreign markets, 2016/17



Sources: CPPIB, 2017; Statistics Canada, 2017: CANSIM Table 378-0121.

Household investments and “home bias”

It is important to understand why households invest more of their assets in domestic markets instead of foreign markets. In theory, in the long term and in the absence of restrictions and differential costs to capital and information, capital should flow to where it receives the highest risk-adjusted rate of return, regardless of whether the asset is foreign or domestic. However, a large body of literature has found that there tends to be a strong “home bias” for investment, in that people tend to have a preference for investments in their home country (French and Poterba, 1991; Coval and Moskowitz, 1999; Obstfeld and Rogoff, 2000; Strong and Xu, 2003). For example, an early study by French and Poterba (1991) found that by the end of 1989 roughly 94% of American equity wealth was held within the United States. At the same time, the corresponding figure for Japan was 98%, and for the United Kingdom, 82%.

There has been a lot of disagreement amongst economists as to the reasons for the observed “home bias” in investments. One possible reason is the asymmetry of the information domestic and foreign investors have about the economic performance of domestic firms (Coval and Moskowitz, 1999). This asymmetry influences investors’ decisions towards geographic areas for which they have more information. For example, investors may have access to information about local companies and thus would prefer to invest in local firms rather than in distant ones about which they have less information. They may also be more aware of local opportunities for investment (Lammam, Gainer, and Veldhuis, 2010). In addition, the use of domestic assets to hedge against domestic-specific risks and high costs relative to the gains of acquiring foreign assets have also been put forth as explanations for the “home bias” in investment; although there have been questions raised about their explanatory power (Lewis, 1999).

Analysis of the Potential Decline in Domestically Investable Assets

This section estimates what impact the expansion of the CPP will have on the assets available for investment in Canada, given that households will more than likely reduce their private savings in response to higher mandatory savings and that Canadian households invest a much higher percentage of their financial assets domestically than does the CPPIB. Before presenting the estimates, it is important to discuss the link between household savings and investment.

Link between household savings and investment

Thus far we have discussed how the savings, and in particular the financial assets, of Canadian households tend to be located within Canada, while the assets managed by the CPPIB tend to be located outside of Canada. However, what has not been discussed is the relationship between savings and investment. In the case of individual households, savings (that is, income minus consumption) can be used to invest in financial, physical, or some other type of asset. This link between household savings and investment also translates to the national level and economists have long understood that there is a relationship between the level of savings and investment in the broader economy. For example, Feldstein and Horioka (1980) found a strong correlation between the level of domestic savings and investment in a country. Subsequent work has also found a relatively strong correlation between national savings and investment (Obstfeld and Rogoff, 2000).

Since the focus of this study is on household financial assets, it is critical to understand how domestic savings held in financial assets by Canadian households are related to domestic investment throughout Canada's economy, which is a key driver of worker productivity and overall economic well-being. One way to think about the link between savings and investment is to think of savings as the resources for investment. When an individual purchases a financial asset like a stock, bond, or mutual fund, they are in effect allowing another individual or a firm to use their invested funds for their own purposes (Atkinson, 1956). For example, a firm can raise capital by issuing shares in the company (equity financing), which can then be purchased as financial assets with the savings of households or other financial intermediaries that manage the

savings of households. By raising the new capital, the firm can invest in new machinery, equipment, and other technologies, while also financing research and development that can allow firms and the economy to grow. These types of investments make workers more productive, leading ultimately to higher wages; they also result in a stronger economy and improved living standards (Cross, 2017). Similarly, from the perspective of households, investment (that is, savings) also generates returns that can be used to finance future consumption, for example, in retirement. Thus, a fall in domestic savings and investable assets resulting from the CPP expansion could have a negative effect on Canada's economy. Given the link between savings and investment, the analysis below assumes that a reduction in domestic savings effectively equals a reduction in domestic investment.

Impact of CPP expansion on domestic investment

We now turn to estimating how a decline in private savings as a result of the expansion of the CPP will also translate into a broader reduction of investable assets within Canada. To estimate the impact on Canadian household assets invested in the domestic market, the analysis uses estimates from the Office of the Superintendent of Financial Institutions (OSFI, 2016) of the additional contributions that will be generated from expansion of the CPP (table 3). The analysis extends to 2030 and thus allows estimates of the impact of CPP expansion on domestically investable assets for five years after the CPP expansion is fully implemented. From 2019 (when Canadian workers first begin paying the expanded contribution rates) to 2030, the nominal value of the additional CPP contributions from the expansion will rise from \$1.58 billion to \$20.66 billion. Importantly, unlike existing CPP contributions, virtually all of the additional CPP contributions from expansion will be invested by the CPPIB.

Table 3: Additional CPP contributions (\$ billions) from CPP expansion, 2019–2030

2019	1.58	2023	12.28	2027	18.44
2020	3.27	2024	14.68	2028	19.15
2021	5.68	2025	17.12	2029	19.91
2022	8.85	2026	17.77	2030	20.66

Sources: OSFI (2016); authors' calculations.

The analysis uses the empirical estimate by Vaillancourt, Lammam, Herzog, and Ebrahimi (2015) of the reduction in private savings (that is, the substitution rate) in response to past CPP expansion to project what share of the additional forced CPP contributions will lead to a substitution away from private funds. Vaillancourt and his

colleagues also review a range of substitution estimates that draw from international evidence. Among these, the range of substitution-rate estimates tends to cluster around 50%, while Vaillancourt and colleagues find a rate of 89.5% based on Canadian data. Thus, the analysis in this publication includes estimates under rates of substitution at 50%, 75%, and 89.5%. Providing a range of estimates gives a sense of the reductions in the amount of money available for investment in Canada that could occur should behavioural responses not be the same as during the previous CPP expansion in the 1990s and early 2000s. [11]

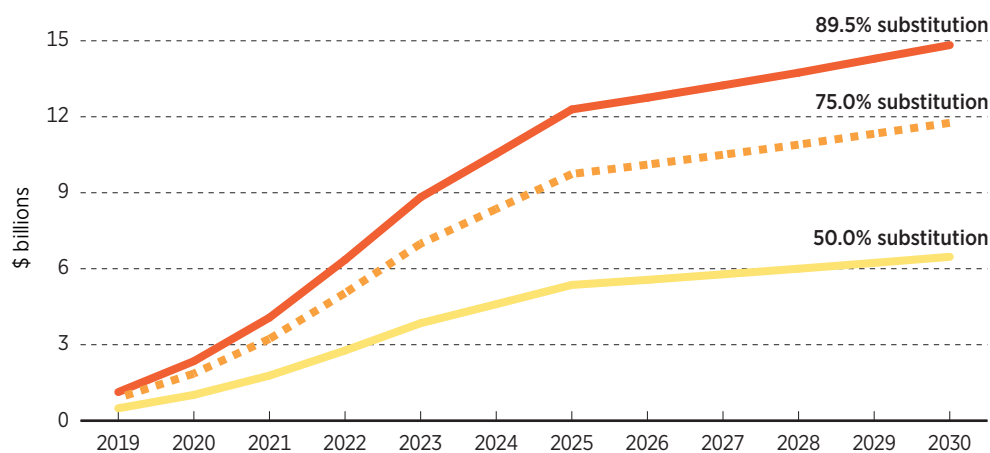
The analysis was conducted in the following manner. First, based on projections by the Office of the Superintendent of Financial Institutions (OSFI) (2016) of the additional contributions from workers to the CPP (see table 3), we estimated what proportions of those additional contributions would be substituted from private household savings under the substitution scenarios outlined above. We then estimated what share of the substituted funds would have been invested in Canada on the basis of the past three-year average of the share of Canadian household assets that are held domestically. These figures were then offset somewhat to account for the possibility that some of the additional CPP contributions that are not being substituted from private savings may be invested in Canada by the CPPIB. For the purpose of this analysis, we assumed that the CPPIB would invest a portion of the non-substituted additional CPP contributions domestically. The share of non-substituted additional CPP contributions that could be invested by the CPPIB in Canada was assumed to be equivalent to the previous three-year average share of the CPPIB's assets that are located in Canada. [12]

Figure 8 and table 4 present the results. Using a substitution rate of 89.5%, in 2019 domestic investment in Canada would be reduced by approximately \$1.1 billion (all

[11] The substitution estimates of Vaillancourt, Lammam, Herzog, and Ebrahimi (2015) are higher than similar international studies. There are two key reasons for this. One is that the increase in forced CPP contributions was quite large. This led to a comparatively large reduction in the private voluntary savings of Canadian workers. The second reason is a change in the expectations of Canadian workers about the long-term viability of the CPP program. Before the increase in the contribution rate, there were serious questions as to whether CPP benefits would be available in the future. After the changes to CPP contribution rates and other changes to the program, Canadian workers began to expect that benefits would be paid out in the future and that they therefore needed to rely less on their private retirement savings.

[12] It is important to note that the value of Canadian assets held by the CPPIB has been falling steadily since 2013. If this is an indication that the CPPIB is either investing only very little into Canada or not at all, then our estimates of the reduction in Canadian investment would be conservative, given that they account for the possibility that the CPPIB might invest some of the non-substituted additional contributions into Canada.

Figure 8: Estimated annual reduction (\$ billions) in domestic investment as a result of the expansion of the CPP, 2019–2030



Sources: OSFI, 2016; Vaillancourt, Lammam, Herzog, and Ebrahimi 2015; authors' calculations.

figures are in nominal dollars). In 2030, five years after the CPP expansion is fully implemented, the annual reduction in Canadian household financial assets invested in the domestic market rises to \$14.8 billion. Under a scenario where Canadian households offset 75% of their increased CPP contributions with reduced private voluntary savings, in 2030, Canadian household assets invested in the domestic market would be approximately \$11.8 billion lower. In a scenario where households offset their higher CPP contributions with reductions in private savings of 50%, in 2030, Canadian household assets invested in the domestic market would decrease by approximately \$6.5 billion.

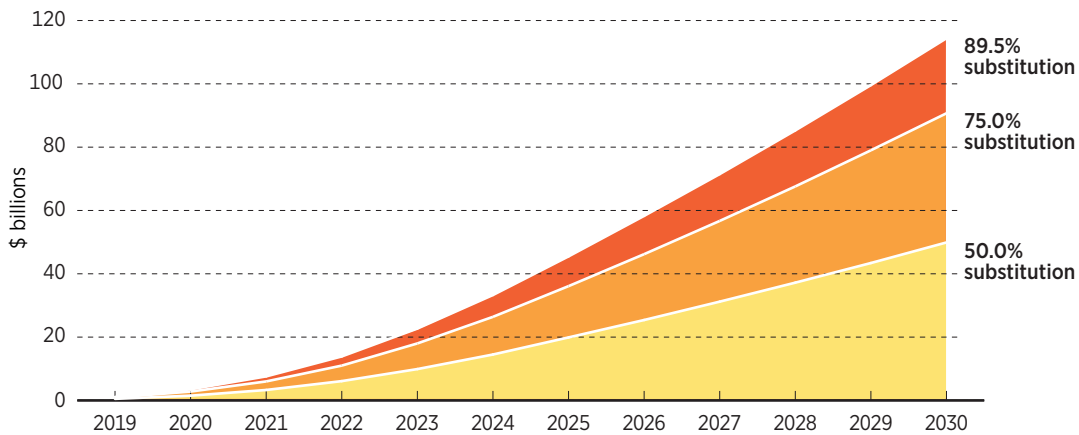
Table 4: Estimated annual reduction (\$ billions) in domestic investment as a result of the CPP expansion and substitution at 89.5%, 75%, and 50%, 2019–2030

	Substitution rate			Substitution rate			
	89.5%	75%	50%	89.5%	75%	50%	
2019	1.1	0.9	0.5	2025	12.3	9.7	5.4
2020	2.3	1.9	1.0	2026	12.8	10.1	5.6
2021	4.1	3.2	1.8	2027	13.2	10.5	5.8
2022	6.4	5.0	2.8	2028	13.7	10.9	6.0
2023	8.8	7.0	3.8	2029	14.3	11.3	6.2
2024	10.5	8.4	4.6	2030	14.8	11.8	6.5

Sources: OSFI, 2016; Vaillancourt, Lammam, Herzog, and Ebrahimi 2015; authors' calculations.

Figure 9 shows the cumulative impact on the amount of money available for investment in Canada as a result of Canadian households' reducing their private savings in response to higher CPP contributions. [13] By 2030, depending on the extent to which increased CPP contributions are offset with reduced private savings, the cumulative reduction could range from \$49.9 billion to \$114.4 billion.

Figure 9: Estimated cumulative reduction (\$ billions) in domestic investment as a result of the expansion of the CPP, 2019–2030



Sources: OSFI, 2016; Vaillancourt, Lammam, Herzog, and Ebrahimi 2015; authors' calculations.

[13] As noted earlier in this study, in the long term and in the absence of restrictions, differential costs to capital and information capital should flow to where it receives the highest return, whether this is foreign or domestic. This suggests that over time Canadian households may shift the location of their financial assets abroad in search of higher returns, thereby reducing the cumulative impact that the CPP changes would have on the availability of domestic investment in Canada, given that the investment would have likely gone abroad anyway. However, a wide body of literature has found that there tends to be a strong “home bias” for investment, in that people tend to have a preference for their investments to be in their home country (see discussion on page 11). Given this preference, it is likely that over time the mix of domestic and foreign financial assets held by Canadian households will not dramatically change, meaning that the impact of the CPP changes on domestic investment over time should remain relatively stable, should substitution levels hold constant.

Policy Reforms to Counteract the Reduction in Domestic Investment

As a result of increasing mandatory CPP contributions, investment of Canadian household savings into Canadian-based assets will likely decline from what they would have been if the CPP were not expanded. Indeed, by 2030 the amount of money available for investment in Canada could be lower by up to \$114 billion. The decline of investment will come at a time when (non-residential) business investment in Canada is already decreasing and lagging behind that in other OECD countries (Cross, 2017). As a response to the possibility of lower investment from CPP expansion, policy makers could consider a number of tax policy reforms that would help spur investment in Canada.

To be clear, imposing domestic investment requirements on the CPPIB is not recommended. When the CPPIB is allowed to invest free of any domestic requirements, it is able to invest more broadly into assets which generate the highest risk-adjusted rate of return. This is generally positive (assuming risks are properly accounted for), since it enhances the performance of pension funds. Instead, the recommendation is that governments can help offset the looming reduction in domestic investment by pursuing policies that encourage investment in Canada. This includes policy reforms such as reducing capital gains taxes and lowering taxes on business investment to help spur investment. Indeed, these tax policy recommendations are sound and effective independent of the domestic investment reductions that will result from the CPP expansion.

Capital gains tax

Reforming capital gains taxes is one critical measure that governments could undertake to increase the level of investment in Canada. A wide body of economic research has found that capital gains taxes impose considerable costs on the economy by distorting individual economic decision-making and inhibiting the supply of and demand for investment. This effect on the supply and demand of investment results from the reduction that these taxes impose on rates of return. On the supply side, when investors receive a lower rate of return on their capital, they are less likely to invest and risk that capital. On the demand side, capital gains taxes reduce the expected pay-off from

entrepreneurship, so that fewer people will take entrepreneurial risks. [14] Capital gains taxes, which raise little revenue for governments, cause investors to “lock in” or retain their current capital instead of reinvesting it in more productive alternatives. Moreover, capital gains taxes also make capital investments more expensive and, therefore, less investment occurs.

In 2016, Canada’s weighted-average top marginal capital-gains tax rate was uncompetitive compared to rates in most of the countries in the Organisation for Economic Co-operation and Development (OECD). Figure 10 displays the top personal marginal capital-gains tax rate on securities, investments, shares, and so on, for 2016/17 in 35 OECD countries. Canada’s average top capital-gains tax rate of 26.5% ranked as the twelfth highest in the OECD and was higher than the OECD average. [15] In 2016/17, seven OECD countries do not levy personal capital gains taxes.

In an effort to spur investment, Canadian governments could reform their capital gains taxes in a number of ways. One option would be to eliminate capital gains taxes altogether. As discussed briefly above, capital gains taxes impose high costs on the economy and tend to represent a small share of tax revenues for governments. In other words, eliminating the capital gains tax could provide a considerable boost for investment at a small fiscal cost.

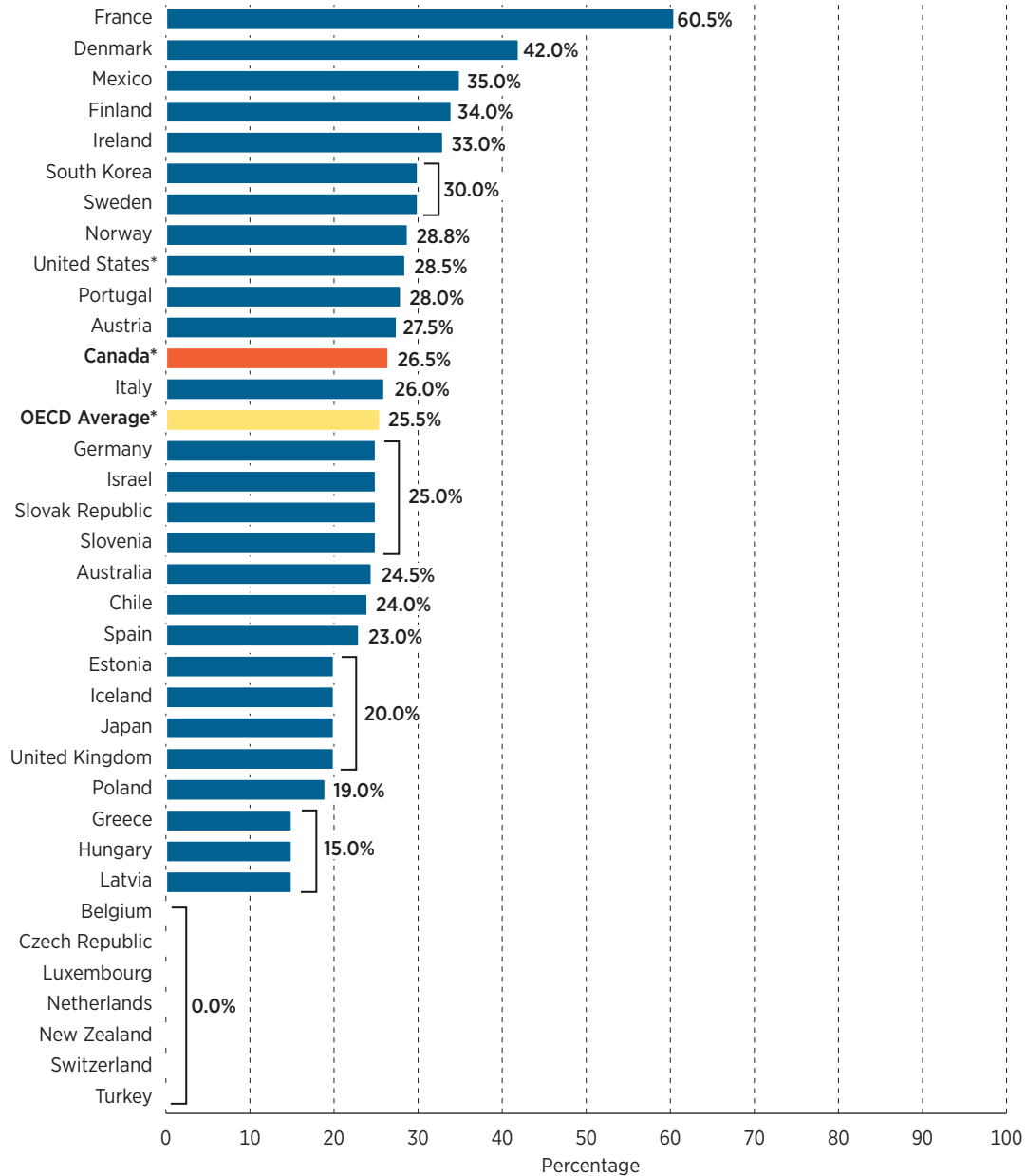
Another option to spur investment would be to lower the capital-gains inclusion rate. In Canada, capital gains are treated as taxable income, meaning that capital gains are taxed under personal marginal income-tax rates. However, there is currently a 50% inclusion rate, meaning that only 50% of a capital gain is taxable. This effectively means that the top marginal tax rate on capital gains in Canada is 50% of the top combined (federal and provincial) marginal personal tax rate. Thus, Canada could lower its capital gains taxes by lowering the inclusion rate.

A third option for Canadian governments to spur investment in response to the effects of the CPP expansion, would be to allow for a capital gains rollover. Introducing a rollover mechanism would effectively keep the basic parameters of the capital gains tax regime in place but allow for a deferral of capital gains taxes for individuals on the sale

[14] See Clemens, Lammam, and Lo (2014) for a detailed overview of the negative impact that capital gains taxes can have on investment.

[15] Canada’s top capital-gains tax rate is representative of a population-weighted, combined federal and provincial average.

Figure 10: Top marginal capital gains tax rate (%) in OECD countries, 2016/17



Notes: * = population-weighted average. **France**—the capital gains tax rates include the special social security surcharges of approximately 15.5%. **Israel**—if one is a material shareholder of traded securities (10% or greater), capital gains on the disposal of the asset are subject to a 30% tax. **Luxembourg**—there is a capital gains tax rate on substantial shareholdings (10% or more), which are fully subject to income tax. However, if the asset is sold after a six-month holding period, the gain is taxed at half the average tax rate, up to 21.8%. **Mexico**—Capital gains from the sale of shares or real estates are treated as income and subject to ordinary income-tax rates. If, however, the gain is derived from the sale of either a Mexican or foreign company listed on Mexican stock exchanges, it is subject to a 10% income tax (before 2014 these gains were exempt). **Netherlands**—while most capital gains are not taxed, gains derived from the sale of a substantial share of a company (5% of shares) are taxed at a rate of 25%, while gains from the liquidation of a company are subject to normal income tax rates. **Slovenia**—capital gains are taxed at a top rate of 25% with a reduction in the rate of 5% for each five-year period that the asset is held. For example, if an asset was sold after being held for 20 years, the tax rate on the gain would be zero percent. If an asset was sold after being held for 10 years the tax on the gain would be 10%. **South Korea**—capital gains derived from the sale of shares in a company listed on the Korean stock market are not taxable. However, for other types of income derived from securities and shares, the capital gains tax rates can range from 10% to 30%. The top possible rates have been included in the graph above.

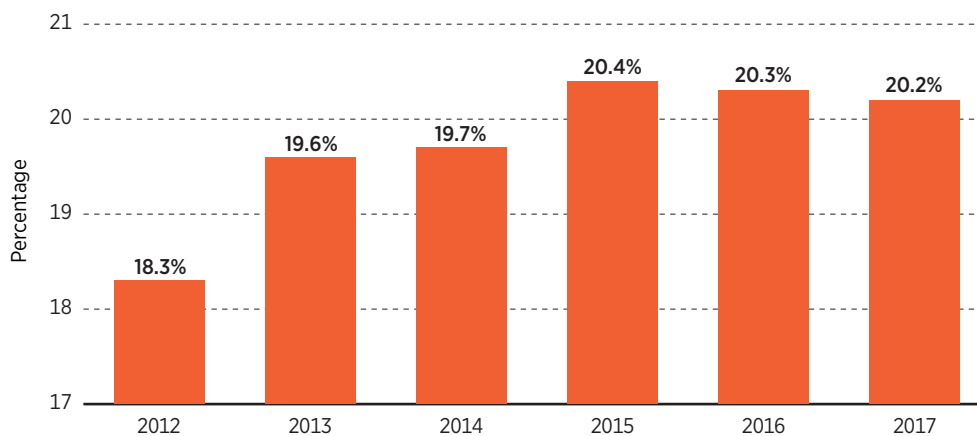
Sources: Deloitte, 2016; EY, 2016.

of assets when the proceeds are reinvested within a certain time frame, perhaps six months. Such a policy would mitigate some of the negative effects that capital gains taxes have in terms of keeping capital locked into current investments. [16]

Business taxes

More broadly, reform of business taxes could help boost Canada's investment levels. In recent years, Canada's overall business-tax regime, as measured by the marginal effective tax rate (METR) on investment, [17] has become less competitive. As countries compete for capital investment, a higher METR—the overall tax rate on new investment after accounting for statutory corporate income tax rates, deductions, credits, and other taxes on production—results in entrepreneurs undertaking fewer additional investments in Canada. As figure 11 shows, from 2012 to 2015, Canada's METR increased every year, rising from 18.3% in 2012 to 20.4% in 2015. In 2016 and 2017, Canada's METR stabilized, although it is still well above where it was in 2012. During this period when Canada's METR has been rising, most other countries have been reducing taxes on investment, placing Canada at a competitive disadvantage (Bazel, Mintz, and Thompson, 2018). Bazel, Mintz, and Thompson suggest that Canada could improve its competitiveness on business taxation by increasing the tax neutrality between different business sectors and sizes, creating a level playing field by reducing

Figure 11: Canada's marginal effective tax rate (%) on capital, 2012–2017



Note: excludes transfer taxes.
Sources: Bazel, Mintz, and Thompson, 2018.

[16] See Clemens and Lammam (2014) and Mintz and Wilson (2006) for a detailed discussion of capital gains rollovers.

[17] For a description of METRs, see Bazel, Mintz, and Thompson, 2018.

subsidies to businesses, and lowering the corporate income tax rate. They also suggest that those provinces that have not harmonized their sales taxes with the federal GST should consider doing so.

Recent tax reforms in the United States provide an additional reason for Canadian governments to lower the tax burden on new investment. Indeed, as part of the US tax changes implemented in 2018, the federal statutory corporate income tax (CIT) rate decreased from 35% to 21%. This compares to a federal CIT rate of 15% in Canada. When the federal CIT rates are combined with state and provincial rates, the average combined CIT rate in the United States is now 26%, while Canada's average combined CIT rate is 26.7%, eliminating the tax advantage Canada previously had based on statutory rates. More important, however, is how the US tax reform has affected the METR on new investment in the country. After the changes, the METR on new investment will drop from 34.6% to 18.8%. This compares to an METR of 20.2% in Canada. The recent US tax changes have erased the long held competitive advantage that Canada had when it came to the taxation of new investment, providing further incentive for Canadian governments to reform their tax policies affecting investment.

The two tax policy responses outlined above could help spur investment in Canada given that domestic investment will likely decline further as changes to the CPP come into effect. By no means, however, is this an exhaustive list. Governments may also want to consider policies such as regulatory reform and those directed at attracting foreign direct investment, in response to lower domestic investment levels.

Conclusion

The expansion of the CPP will have the unintended consequence of reducing the amount of money available for investment in Canada. This will result from Canadians responding to the higher mandatory savings through the CPP by reducing their private savings. The majority of those substituted private savings would have been invested within Canada, unlike assets held by the CPPIB, which tend to be almost exclusively invested in foreign markets. Our estimates suggest that cumulatively from 2019 to 2030 investment by Canadian households into Canada could be between \$49.9 and \$114.4 billion lower due to CPP expansion.

Whether this effect will hold in the long term is not entirely clear. Canadian households may in the future increasingly prefer to invest their assets abroad in search of higher risk-adjusted returns, meaning that the estimated reduction in domestic investment resulting from the CPP expansion would be lower. However, it is debatable that Canadian households would shift their preferences for financial investments abroad in search of higher returns, given the wide body of economic evidence that suggests such investors prefer to invest in their home markets. While the long-term effects are debatable, in the short to medium term, investment in Canada will likely fall due to CPP expansion. This could have a negative impact on the Canadian economy and governments should consider policy reforms such as reducing capital gains taxes and lowering taxes on business investment to help spur investment.

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