Should Canada Require Its Pension Funds to Invest More Domestically?[1]

Keith Ambachtsheer[2]
University of Toronto
KPA Advisory Services

Sebastien Betermier[3]
McGill University

Chris Flynn[4]
CEM Benchmarking

We analyze the domestic investments of Canadian pensions funds, assess the risk-return trade-offs between domestic and foreign investments, and investigate the barriers to investing in Canada. We show that Canadian pension funds invest disproportionately large amounts of capital in Canada, particularly in bond-like asset classes such as fixed income and real estate. However, over the past decade their domestic investments have proportionally decreased as part of a shift toward global asset diversification. One driver of this decline is the lack of strategic assets available for sale in Canada, combined with the increased availability of such assets in other countries. We propose actionable solutions to mitigate the lack of strategic assets problem and create win-win outcomes alike for the Canadian economy and for Canadian pension funds. However, we caution against adopting government policies that mandate Canadian pension funds to invest domestically, as such policies will upset the funds' risk-return calibrations and expose pension plan members to potential financial losses.

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[2] Ambachtsheer is Executive in Residence at the Rotman School of Management, University of Toronto and cofounder of KPA Advisory Services in Toronto, Canada. Contact: keith@kpa-advisory.com.

[3] Betermier is an Associate Professor of Finance at the Desautels Faculty of Management, McGill University, in Montreal, Canada. Contact: sebastien.betermier@mcgill.ca.

[4] Flynn is Head of Product and Research at CEM Benchmarking in Toronto, Canada. Contact: chris@cembenchmarking.com.

Canada is facing a growing economic productivity gap (Haun and Sargent 2023, Rogers 2024) and the question is, what is causing it? More specifically, why is it that private business investment is weaker in Canada compared to other OECD countries (Robson and Bafale 2022)? Could it be that diminishing competition between Canadian businesses over the past decades has stymied innovation and growth (Wu, 2024)? Or is it that Canadian businesses find it increasingly difficult to raise capital from investors, and if so, why?

Recently, Canadian pension funds have been held partially responsible for Canada's productivity gap. In March 2024, over 90 Canadian corporate executives signed an open letter calling on the government to amend the rules governing Canadian pension funds and have them increase their domestic investment.[5] The executives cite a statistic showing the decline in pension fund investments in Canadian public equities, from 28% of their total assets in 2000 to 4% by 2023, as evidence supporting the claim that Canada's productivity gap results from the lack of pension fund investment capital.

Before considering possible policy responses, however, we need a better understanding of how Canadian pension funds invest domestically. This paper proposes to contribute to this topic by addressing the following questions: How do Canadian and foreign pension funds compare in terms of domestic investments? How do Canadian pension funds balance the risk-return trade-offs between domestic and foreign investments in order to make the necessary returns that maintain pension payments? What are the barriers that limit domestic investment in Canada?

We establish four facts about Canadian domestic investments based on high-quality data from the global benchmarking firm CEM Benchmarking. We compare the domestic investments in public equities and fixed income markets of 157 pension funds from three countries: Canada, the United Kingdom (UK), and the United States (US) over a 10-year period from 2013 to 2022. For each country and each asset class, we calculate the average proportion of pension fund assets that is invested domestically – which we refer to as the "domestic share." The four facts are the following.

Fact 1: Canadian pension funds allocate a disproportionately high percentage of their public equity investments to Canadian equities. In 2022, Canadian pension funds invested 18% of their portfolio in shares of domestic listed stocks. By comparison, the global market portfolio that is set to maximize gains by diversifying globally only allocates a 3% investment share to Canada. Academic finance literature terms this partiality for domestic investment as the "home bias" (see Cooper, Sercu, and Vanpée (2012) for a survey).

[5] The open letter is available at: https://www.lba.ca/publication/open-letter-canada/

Fact 2: Among asset classes such as fixed income and real estate that provide steady income streams, Canadian pension funds favor Canadian assets and allocate a greater proportion of their capital domestically. In 2022 the average domestic share of fixed-income assets was 88%.[6] Similarly, Beath et al. (2022) find that Canadian pension funds invest heavily in the real estate of large Canadian cities such as Toronto, Montreal, and Vancouver where they prioritize development in Canada before scaling up internationally.

Fact 3: Over the past decade, there has been a trend towards global diversification that has resulted in Canadian funds decreasing the percentage of domestic investments in their portfolios and investing more abroad. We observe that from 2013 to 2022 there was a decrease in the domestic share from 33% to 18% in public equity markets. Likewise, the domestic share in fixed income decreased from 96% in 2013 to 88% in 2022.

Fact 4: The trends described by facts 1-3 are global and not unique to Canadian pension funds. The CEM Benchmarking data reveal parallel trends for UK and US pension funds. These trends are further supported by well-established finance research showing that retail and institutional investors around the world consistently allocate a disproportionately large portion of their stock portfolio to domestic assets. The home bias tends to be strongest among investors in countries that are small, developing, and concentrated. Globally, the home bias has steadily decreased since the 1990s by approximately 1.5% per year (Bekaert and Wang 2009).

We draw several insights from these facts. First, the home bias of Canadian pension funds reveals that domestic assets have certain appreciable advantages that pension funds are interested in. For example, domestic investments give pension funds a home-court informational advantage which can result in high risk-adjusted returns from domestic assets (Van Nieuwerburgh and Veldkamp 2006). They are also less exposed to currency risk than foreign assets. This is valuable to pension funds because their liabilities are paid in local currency. Domestic assets also act as a hedge against pension liability risks since they are both exposed to the same local interest rates and inflation shocks (Friend et al. 1976). In Canada, domestic equities have the additional advantage of being tilted toward commodity producer stocks thereby providing a natural hedge against inflation (Beath et al. 2021). Finally, domestic investments do not run the risk of being expropriated by foreign governments that have poor investor protection (Dahlquist et al. 2009).

[6] Fixed income assets include government nominal and inflation-linked bonds, liability-driven investing (LDI) portfolios, dedicated mortgage-backed security portfolios, and corporate bonds. They do not include private credit, direct mortgage lending, derivatives and swap instruments.

Second, the trend towards global diversification indicates that there are also significant risks associated with domestic investments, particularly in stock-like asset classes. The main risk is having too many eggs in one basket. A portfolio with too much invested in one market is more exposed to that market's performance fluctuations. This risk is especially high for an economy like Canada's which is comparatively small, about the same size as that of Texas, and highly concentrated in three sectors: Energy, Financials, and Materials. This lack of diversification is also evident in the distribution of the top 10 firms in the S&P/TSX Composite Index where these 10 firms account for approximately one third of the index. There is also the risk of the "double-whammy" effect. This is a situation where Canadian equities may drop in value during times of local economic crisis. The result is that pension funds will not see the expected return on their investment. This will lead to funding deficits. And it is precisely this economic context when people and employers are the least able to allocate more of their income to their pension plans in order to provide the financial capital needed to make up the funding deficit, i.e. "the double whammy."

Third, because the trend towards global diversification is common across *all* institutional investors, there is no reason to conclude that Canadian companies have less access to capital because Canadian pension funds are investing less domestically. If Canadian funds are investing more abroad, so are the funds from Australia, Europe, the Middle East, Singapore, the UK, and other countries. When these international funds are looking for foreign investment opportunities, Canada is one of those opportunities. The question then is whether investors, foreign and domestic, are interested. If Canada is not receiving its share of foreign or domestic capital, then it must have a structural problem that is setting up barriers to investing in Canada.

When we consider the factors limiting domestic investment in Canada, we identify one major friction that deters Canadian pension funds from increasing their domestic share. The lack of strategic assets. By these we mean specific asset classes that demonstrate distinct strategic benefits to a pension fund portfolio so that pension funds can meet their mandate to deliver regular, cost-efficient income for pensioners and sustain a healthy pension system. For example, Canadian Real Return Bonds (RRBs) fall into this strategic asset category because Canadian pension funds use them to hedge against inflation risk. However, in November 2022 the Canadian Ministry of Finance stopped issuing RRBs making it harder for pension funds to find reliable ways to buffer portfolios against inflation.[7] Another strategic asset class is infrastructure. Canadian pension funds seek infrastructure investments that provide steady and inflation-indexed income streams. Recently however, the Ontario government introduced legislation that

[7] https://www.budget.canada.ca/fes-eea/2022/report-rapport/anx2-en.html

would ban tolls on highways,[8] which effectively removes road infrastructure as a strategic asset. In direct contrast, other countries such as Australia, India, the UK and the US have proactively monetized large-scale infrastructure assets such as airports, seaports, railroads, roadways, utility companies, transmission grids, and digital networks. The result is that landmark properties and projects such as Heathrow Airport in London, the Eurostar railway connecting London to Paris, and the 9km NorthConnex tunnel in Sydney – Australia's deepest tunnel - are all partly owned by Canadian pension funds.[9]

In today's investment climate, global investors have exceptional freedom to allocate capital across countries, sectors, and asset classes. This means that, if governments want domestic investment, they must compete for it. For example, India has been successful at capturing foreign capital by facilitating access to large-scale infrastructure projects for pension funds along with excellent investment conditions. With India creating these conditions, Canada will struggle to retain both domestic and foreign capital until it too can provide similar or better conditions.

The success of Canada's pension model is dependent on several key elements: the arms' length legal structures, strong governance functions, and sophisticated implementation strategies (see Ambachtsheer, 2021).[10] We conclude that, if government policy were to mandate that Canadian pension funds increase their domestic investment share, it would undermine careful risk-return calibrations, compromise existing governance functions, and expose pension plan members to potential financial losses. For Canada to benefit from, and potentially increase domestic investment, it should instead consider facilitating access to strategic asset classes – a win-win outcome for all stakeholders. Moreover, this will unlock capital not only from Canada's pension funds but also from the much larger pool of international investors.

The rest of the paper is structured as follows. In Section I, we provide additional information about the domestic investments of Canadian pension funds from the CEM Benchmarking data. In Section II, we explain in greater depth why Canadian pension funds encounter barriers to domestic investing and propose actionable solutions to mitigate the lack of strategic assets problem and create win-win outcomes for both the Canadian economy and the Canadian pension funds. Section III concludes.

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[8] https://news.ontario.ca/en/release/1004192/ontario-banning-road-tolls-freezing-drivers-licence-fees-to-keep-costs-down

[9] Heathrow Airport and Eurostar Group are partly owned by Caisse des Dépots et Placements du Quebec (CDPQ). NorthConnex tunnel is partly owned by CPP Investments.

[10] Canada's pension fund sector waged a major campaign in the 1980s and 1990s to remove "The 10% Foreign Property Rule." Established in 1971, the rule required at least 90% of Canadian pension assets to be invested in Canada. The government listened and the limit was gradually raised starting in 1990 and finally fully removed in 2005. See "The Foreign Property Rule: A Cost-Benefit Analysis" by Burgess and Fried (2002) for the strong arguments made at the time for full removal of the rule.

I. Domestic investments of Canadian pension funds

A. Data

We use data from CEM Benchmarking, a global benchmarking firm based in Toronto that collects high quality annual survey data on the asset mix, performance, and costs directly from pension funds.[11] Based on this dataset we are able to compare the domestic investments of pension funds from Canada, the UK, and the US.

For every fund and every year, the data include information about the fund's domestic investments in listed equities. Specifically, we have information on the total fund assets invested in listed equities, which we refer to as the "stock portfolio." We also observe whether the fund has a dedicated desk for *domestic* listed equities, a dedicated desk for *foreign* listed equities, along with the share of the stock portfolio managed by each desk.[12] We refer to the proportion of the stock portfolio managed by the dedicated domestic desk as the *domestic share*.

The CEM Benchmarking dataset provides the same information for fixed income investments. Fixed income assets include government nominal and inflation-linked bonds, liability-driven investing (LDI) portfolios, dedicated mortgage-backed security portfolios, and corporate bonds. Any form of private credit or direct mortgage lending is not included in the fixed income portfolio because it is part of a separate private credit category. Any type of derivative or swap instrument is not included either. From this data, we calculate the domestic share making up a fund's fixed-income portfolio.

To maximize consistency and accuracy, we restrict the data to funds that consistently report this information to CEM Benchmarking every year over a 10-year period between 2013 and 2022. This group contains 157 pension funds: 42 from Canada, 21 from the UK, and 94 from the US. We say a fund is *large* if its assets under management (AUM) exceeded USD 10 billion in 2022. In our sample, there are 15 Canadian, 12 UK, and 36 US large funds.

[11] Founded in Toronto in 1991, CEM has become the premier global provider of 'value for money' analytics. Many of its databases stretch back into the 1990s and thus can serve as the basis for the kind of research findings reported in this paper.

[12] The remaining assets in the stock portfolio are reported in the dataset as a single group. We do not have information on how assets in this group are invested, and we conservatively assume that assets in this group do not include domestic investments. In the Appendix we re-estimate the domestic share with the assumption that assets in this additional group include domestic investments.

B. Stock portfolio

Table 1 reports the average domestic share in the pension funds' stock portfolio.[13] The table shows three insights. First, Canadian pension funds allocate a disproportionately high percentage of their public equity investments to Canadian equities. In 2022, the domestic share was equal to 18% for Canadian pension funds. As a reference point, the global market portfolio, which maximizes the gains from diversifying globally, allocates just 3% to Canada.[14] The difference between Canada's domestic share of 18% and its 3% allocated share in the global stock market index is referred to as the "home bias" (French and Poterba 1991).

Table 1. Domestic Share - Stock Portfolio
This table reports the domestic share of pension fund investments in listed equities in 2013-2022. For each year and each country, we report the average share of the stock portfolio that is managed by the dedicated domestic desk. The data include 157 pension funds from Canada, the UK, and the US. Funds that manage over USD 10 billion of assets in 2022 are categorized as large funds.

	Domestic Share					
	Canada		UK		US	
Year	All	Large	All	Large	All	Large
2022	0.18	0.16	0.18	0.16	0.37	0.37
2021	0.19	0.16	0.18	0.17	0.38	0.38
2020	0.20	0.17	0.18	0.17	0.39	0.37
2019	0.21	0.18	0.19	0.19	0.41	0.40
2018	0.23	0.20	0.23	0.22	0.42	0.41
2017	0.26	0.22	0.25	0.23	0.42	0.43
2016	0.29	0.25	0.25	0.23	0.45	0.44
2015	0.28	0.26	0.26	0.25	0.46	0.46
2014	0.32	0.29	0.30	0.27	0.49	0.49
2013	0.33	0.30	0.34	0.31	0.49	0.49

Not surprisingly, the domestic share varies across funds – and we estimate a cross-sectional standard deviation of 12% in 2022 for Canadian pension funds. In spite of the variation, the domestic share remains high on average even for the large pension funds that tend to have easier access to foreign

[13] The Appendix reports additional information on the proportion of pension funds with a domestic desk.
[14] According to International Capital Asset Pricing Model (Solnik 1974), investors who wish to maximize the average return and minimize the volatility of their portfolio will seek to invest in (i) a portfolio of government bonds from each country and (ii) the globally diversified stock market portfolio where the proportion invested in each stock market is given by to the ratio of the country's total market capitalization to the world's equity market capitalization (hedged against exchange risk).

investment opportunities. Table 1 shows that, in 2022, large Canadian pension funds invested, on average, 16% of their stock portfolio in a dedicated Canadian portfolio.

The second insight from Table 1 is that the domestic share has progressively decreased over the past decade. In 2013, the average domestic share was 33% for Canadian pension funds and 30% for the subset of large funds. The decline of 15% in 10 years indicates an average decline of 1.5% per year.[15]

The third insight from Table 1 is that the level and the decline in the domestic share are not unique to Canadian pension funds. It is remarkable how UK pension funds exhibit nearly identical patterns to Canadian funds. In 2013, UK funds had an average domestic share of 34% (31% for the large funds), which then decreased to a domestic share of 18% (16% for the large funds) in 2022. The 18% domestic share in 2022 corresponds to a large home bias when compared to the global market portfolio allocation of 4% in the UK. Over the ten-year period from 2013 to 2022, the UK pension funds' decrease of 16% in the domestic share is nearly identical to the decrease in the Canadian pension funds' domestic share.

US pension funds also show a parallel trend. From 2013 to 2022, the average domestic share decreased from 49% to 37%, which corresponds to a decline of about 1.2% per year. It must be noted, however, that the true domestic share is likely to be significantly higher than these estimates because the US stock market accounts for over 60% of total world equity market value.

These statistics are consistent with a large academic literature in finance about the investors' home bias (see Cooper, Sercu, and Vanpée (2012) for a comprehensive survey). Over the past 30 years, the home bias around the world has slowly but steadily decreased. Bekaert and Wang (2009) document an average decline of 1.5% per year in the equity home bias between 1997 and 2005. Rubbanyi, Van Lelyveld, and Verschoor (2014) show that Dutch pension funds reduced their domestic investments from 37% in 1992 to 13% in 2006, a decline consistent with the annual 1.5% estimate. Cooper, Sercu, and Vanpée (2012) further show the decline in the home bias continues over the period 2001-2010.

Altogether, these empirical findings reveal that (i) Canadian pension funds invest disproportionately large amounts of their public equity investments in Canadian equities, (ii) the domestic share has proportionally decreased over the past ten years, and (iii) these trends are not unique to Canadian pension funds.

[15] An alternative explanation is that the declining domestic share is the result of pension funds re-structuring their stock portfolio and moving the assets in their dedicated domestic desks over to the "non-dedicated" part of their stock portfolio. However, this explanation is unlikely. For one, such a restructuring would also result in a large decline of the share of the stock portfolio managed by the dedicated foreign desk, a relationship that is not evident in the data. Furthermore, when we analyze the benchmarks of the non-dedicated accounts used by the pension funds, we do not find evidence of customized region tilts.

C. Fixed income portfolio

In Table 2, we report the average domestic share in the fixed income portfolio. In Canada, the UK, and the US, the pension funds have an average domestic share in fixed income exceeding 80%. This is significantly higher than in listed equity markets. The high domestic share across all three economies shows that the home bias is particularly pronounced in the fixed income asset class and not unique to Canada.

Table 2. Domestic Share - Fixed Income Portfolio
This table reports the domestic share of pension fund investments in fixed income assets in 2013-2022. For each year and each country, we report the average share of the fixed income portfolio that is managed by the dedicated domestic desk. The data include 157 pension funds from Canada, the UK, and the US. Funds that manage over USD 10 billion of assets in 2022 are categorized as large funds.

	Domestic Share					
	Canada		UK		US	
Year	All	Large	All	Large	All	Large
2022	0.88	0.81	0.83	0.82	0.95	0.93
2021	0.87	0.84	0.80	0.79	0.94	0.92
2020	0.87	0.85	0.76	0.74	0.94	0.92
2019	0.87	0.82	0.75	0.70	0.93	0.91
2018	0.89	0.83	0.74	0.64	0.93	0.92
2017	0.88	0.81	0.75	0.65	0.93	0.92
2016	0.92	0.92	0.68	0.65	0.94	0.92
2015	0.93	0.93	0.69	0.70	0.94	0.92
2014	0.95	0.94	0.71	0.74	0.94	0.92
2013	0.96	0.93	0.69	0.72	0.94	0.92

We observe that the average domestic share of Canadian pension funds' fixed income portfolios has declined over time: from 96% to 88% from 2013 to 2022 for all funds, and from 93% to 81% for the large funds. Here the similarities among Canadian, UK, and US funds end. For the UK funds, the domestic share increased from 69% to 83% from 2013 to 2022. For the US funds, the domestic share remained constant at around 94-95%. It may be that differences in LDI strategies and regulatory frameworks drive this divergence.

D. Alternative asset classes

The statistics on domestic investments in listed equities and fixed income represent only a part of the pension funds' total portfolio. What are the domestic investments in other classes and especially in alternative asset classes, which include private equity, private credit, real estate, infrastructure, and natural

resources? This question is important because these alternative assets now account for over 30% of total assets for Canadian pension funds.[16]

Data on the funds' domestic investments in alternative asset classes is difficult to obtain. However, CEM Benchmarking ran one-time surveys of its largest global investors about the proportion of domestic investments in private equity (2018), real estate (2019), and infrastructure (2020). The number of participating funds in each survey is significantly smaller than in the broader dataset and should therefore be interpreted with caution. Nevertheless, the patterns we observe are informative about differences in the domestic share across alternative asset classes and countries.

Table 3 shows the results for each asset class. We report the average domestic share for pension funds based in Australia, Canada, Europe (excluding the UK), the UK, and the US.

Table 3. Domestic Share - Alternative Assets
This table reports the average domestic allocation of pension fund investments in private equity (2018), real estate (2019), and infrastructure (2020) for a subset of large pension funds surveyed by CEM Benchmarking.

	Private Equity		Real Estate		Infrastructure	
Country/Region	Domestic Share	Number of Funds	Domestic Share	Number of Funds	Domestic Share	Number of Funds
Australia	0.06	2	0.61	1	0.46	1
Canada	0.07	7	0.57	9	0.07	6
Europe (ex. UK)	0.30	7	0.70	2	0.15	2
UK					0.67	4
US	0.68	8	0.82	7	0.17	4

The domestic share is generally lowest for private equity and highest for real estate. This result is consistent with the patterns discussed in Sections I.B and I.C and confirms that the domestic share is lower for stock-like asset classes such as private equity and higher for bond-like asset classes, such as fixed income, real estate, and infrastructure.

The table also shows interesting country variation. In the private equity market, the domestic share is low everywhere except for US pension funds. This is consistent with the fact that most of the activity in the private equity market takes place in the US. Similarly, in the infrastructure market we see that the domestic share is highest for Australian and UK funds. As we noted earlier, governments in both countries have proactively monetized their domestic infrastructure assets. The availability of investable

[16] The Appendix provides information about the average asset allocation to listed equities and alternative assets for Canadian, UK, and US pension funds in 2013-2022.

infrastructure assets in these strategic markets helps to explains why Australian and British pension funds have a higher domestic share.

To sum up, the analysis in this section shows that it is important to study the pension funds' domestic share inside a particular asset class. Each asset class has a distinct risk-return profile for the pension funds, so it should be expected that the domestic share will differ across asset classes.

Another takeaway is that changes in the pension funds' asset mix need to be accounted for when making conclusions about the domestic investments of pension funds at the *total* portfolio level. In the example of the open letter in March 2024, the executives cite how Canadian pension funds were investing 28% of their total assets in Canadian public equities in 2000 but only 4% in 2023. This statistic is difficult to interpret because it combines two effects: 1) the decline in the stock portfolio's domestic share discussed in Section I.B, and 2) the rebalancing of the pension funds' total assets from public investments towards private investments over the past two decades.

II. Barriers to domestic investing and actionable solutions

This section explains why Canadian pension funds encounter barriers to domestic investing. We then propose actionable strategies to mitigate these barriers and create win-win outcomes for both the Canadian economy and for Canadian pension funds.

A. Why Canadian pension funds encounter barriers to domestic investing

In order to understand why barriers to domestic investing exist, it is essential to understand the investment incentives that drive the Canadian pension fund business model and in particular, how vital the long term horizon becomes when pension funds invest with a mandate to deliver steady pension income payments to the millions of Canadians they serve.

The Canadian pension fund investment strategy is founded on a long-term, controlled risk-taking approach toward investments that results in a cost-efficient income source for pensioners. The consequent good health of Canadian pension funds today can be directly attributed to the sophisticated global investment strategies that pension funds have pursued. The logic behind this investment strategy is that, by compounding high investment returns over several decades, while controlling the risks, a pension fund can make enough return on its investment so that its members receive a generous and steady pension without having to contribute an excessive portion of their working income during their active years. This level of sophisticated risk-controlled investing in long-term assets that generate cost efficient pension

incomes requires adaptability, agility, and flexibility – characteristics that are the purview of independent governance.

Canadian pension fund management has evolved into a distinctive business model characterized by insourcing a large proportion of asset management in order to reduce costs (Ambachtsheer 2021). For example, the funds that have over USD 50 billion of assets manage more than 80% of their assets in-house. As Beath et al. (2021) explain, the resulting cost savings are extensive and funds therefore have a greater capacity to expand their active management capabilities and channel more capital toward asset classes such as real estate, infrastructure, private credit, and natural resources. These asset classes have strategic value because they meet three vital conditions: 1) they diversify the funds' assets, 2) they hedge against the funds' liability risks, and 3) they provide opportunities for direct value creation and high risk-adjusted returns.

This business model has performed remarkably well to date. Ambachtsheer (2021) and Beath et al. (2021) show that large Canadian pension funds outperform their global peers in terms of their investment performance and hedging against liability risks. As of 2024, the largest Canadian pension funds, commonly referred to as the "Maple 8," all have funding ratios above 100%.

Canadian pension funds implement their business model by actively searching for and prioritizing investments in the strategic asset classes. This is precisely where Canadian pension funds encounter a barrier to domestic investment. The Canadian government and public authorities own the majority of Canadian assets with high strategic value for the pension funds. And these assets are not for sale. Take, for example, the Toronto Pearson Airport, which was the second-busiest airport in North America in 2019, the Port of Vancouver, which ranks as the fourth largest port in North America by tonnes of cargo, and Hydro Quebec, one of the world's largest hydropower producers. These assets are all effectively owned by public authorities and they are not available to pension funds. The result: a conspicuous lack of available strategic assets in Canada for Canadian pension fund investment. Consequently, when Australia, India, the UK and the US make these strategic assets available on the market, the Canadian pension funds bid for them abroad.

These prized domestic public infrastructure assets thus present a dilemma for Canada's policy makers. Withholding them and keeping them under government ownership will cost Canada investment capital from the Canadian pension funds since the funds will look abroad for these prized assets. It is also costly to mandate pension investment in the remaining domestic asset classes because they lack the strategic value that the pension funds are looking for. That strategic value leads to maximized risk-adjusted returns for pensioners. Investing in the remaining domestic asset classes that do not provide the same strategic

value would overturn the pension funds' careful calibration between the risk-return trade-offs and may potentially cause financial losses for pensioners.

B. Asset monetization: Challenges and solutions

In this section, we explain the issues around public asset monetization and propose actionable solutions that have the potential to create win-win outcomes for all stakeholders. Canada's policy makers can free up Canadian domestic public infrastructure assets and make them available to pension funds through privatization or long-term leases. This option is appealing because it creates a win-win scenario where the government gains new capital and pension funds get access to strategic assets. However, this is easier said than done. Asset monetization is difficult to implement in Canada for three reasons: 1) barriers to scale, 2) a lack of buy-in from the Canadian population, and 3) a lack of economic viability.

Scale. Achieving scale is a major challenge for Canadian infrastructure assets. But because it is an essential source of value generation for the large Canadian pension funds which alone have the sufficient in-house expertise to engage in complex public-private partnerships, achieving scale is necessary (Betermier, Van Gelderen, and Zvan 2023).

Scale can be achieved by owning, developing, or managing large infrastructure properties and projects. Examples of domestic investments where Canadian pension funds have achieved scale include the acquisition of Cadillac Fairview, a major real estate operator and developer, by Ontario Teachers Pension Plan (OTPP) in 2000, the acquisition of Bruce Power, the world's largest operating nuclear facility, by Ontario Municipal Employees Retirement System (OMERS) in 2003, and the development of the metro rapid transit system Réseau express métropolitain (REM) by Caisse des Dépots et Placements du Quebec (CDPQ) since 2015.

Several large-scale Canadian infrastructure properties could potentially be monetized. For example, take the Toronto Pearson Airport, the Port of Vancouver, and Hydro Quebec. Canadian pension funds already own and manage several large airports, seaports, and utility companies abroad such as Heathrow Airport in London, the US seaport operator Ports America, and Pattern Energy, the largest owner of planned US wind installation. Other domestic opportunities include large infrastructure projects like the High Frequency Rail connecting Quebec City to Toronto, the Trans Mountain pipeline, and the use of surplus federal land for housing.[17]

[17] https://www.theglobeandmail.com/business/article-federal-land-could-be-used-for-housing-to-bring-down-costs-minister/

The energy transition also provides opportunities for large-scale investments. Recently, the Royal Bank of Canada reported that the net-zero transition will cost an estimated CAD 2 trillion to implement.[18] This transition necessitates large investments across all sectors, from retrofitting buildings to manufacturing batteries and investing in clean energy solutions.

The problem is that scale is difficult to achieve when the underlying market is highly fragmented. For example, the market for green retrofits is diffuse and complex because it involves dealing with many building owners and many different types of buildings. To achieve scale in this market, pension funds have focused on developing and greening the largest commercial and residential towers and malls in the financial districts of Toronto, Montreal, and Vancouver (Beath et al. 2022). For smaller and more diverse sets of properties, a potential solution is the creation of operating platforms that can oversee and put together large and diversified pools of retrofit contracts for the pension funds. Examples of large operating platforms owned by the pension funds include Cadillac Fairview and Antares Capital, a private credit platform for medium-size businesses in the US owned by CPP Investments.

Public buy-in. There is also the challenge of gaining public support for these projects. The lack of public enthusiasm for public-private partnerships has created a barrier to monetizing large-scale infrastructure projects. Previous attempts to monetize public assets have been perceived negatively. For example, the privatization of Hydro One in Ontario in 2015 became a divisive political issue.[19] In another example, the recent legislation introduced by the Ontario government to ban tolls on highways suggests there is little public buy-in for projects that require user-fees.

In order to build public support, a plan for public monetization initiatives needs a comprehensive regulatory structure and a set of contract stipulations to protect the public. It also needs a communications strategy that clearly explains how the proceeds of the asset sale will be used to fund new infrastructure projects. The use of pain-share/gain-share provisions and shorter-term leases could further help to show how the public will gain financially from the success of these projects. In addition, the use of competitive bidding processes can help to build a positive public perception that the government has received a fair price from the asset sale.

Gaining public support is also challenging for transition investments that consists of purchasing carbon-intensive “brown” assets and then turning them into “green” assets. Brown assets are politically sensitive and the pension funds run the risk of pushback for “green washing.” In order to make the purchase of brown assets palatable, investors need a green and transition finance taxonomy such as the one proposed

[18] The $2 Trillion Transition: Canada’s Road to Net Zero. RBC 2021.
[19] https://www.cbc.ca/news/canada/toronto/ontario-hydro-bills-privatization-1.4439500

by the Sustainable Finance Action Council (SFAC).[20] The taxonomy provides a comprehensive and unified rule book that makes it possible for both firms and investors to clearly identify transition and green activities and, in turn, achieve general acceptance and credibility.

Economic viability. Finally, the economic viability of large-scale infrastructure projects may not be attainable for investors due to regulatory challenges. In some markets, part of the issue has to do with a cumbersome regulatory system that results in lengthy permit processes. In 2019, the World Bank Doing Business Index (DBI) reported that it took 249 days to obtain a construction permit in Canada. By contrast, it took only 80 days in the US. Slow permits deter Canadian pension funds from undertaking large greenfield projects. Therefore, streamlining the permit regulation process would encourage domestic investment.

In many cases, the economic viability of large-scale infrastructure projects is contingent on the financial participation of government agencies such as the Canadian Infrastructure Bank (CIB) and the Building Ontario Fund.[21] These programs leverage the government's ability to borrow at low rates and therefore bring down the cost of capital of the projects to attract investment. For example, the Transportation Infrastructure Finance and Innovation Act (TIFIA) program in the US, enacted in 1998 and then expanded in 2023, is designed to enable the construction of complex, large-scale, and long-term transportation projects by providing credit assistance at a comparable-term Treasury rate and flexible amortization terms.

B. *Asset monetization: Case studies*

The efforts made over the past decade by the Australian and Indian governments to attract domestic investments provide excellent case studies to illustrate how these governments were able to solve the issues related to scale, public support, and economic viability.

Australia. In 2013, Australia established the Asset Recycling Initiative (ARI), an AUD 5 billion incentive program to monetize major infrastructure assets such as the Port of Melbourne and Transgrid, a high voltage electricity transmission network in New South Wales and the Australian Capital Territory.[22] The monetization was specifically used to build new infrastructure projects such as the Sydney Metro project, which helped to build public support. Moreover, the final bid winners were required to agree to a series of

[20] https://www.canada.ca/en/department-finance/programs/financial-sector-policy/sustainable-finance/sustainable-finance-action-council/taxonomy-roadmap-report.html
[21] The recently launched Canada Growth Fund (CGF) provides another opportunity to provide concessional financing and therefore make large-scale green investments economically viable for private investors. Because it is managed by PSP Investments, the CGF leverages the investment framework of the Canadian pension fund model.
[22] https://www.marshmclennan.com/content/dam/oliver-wyman/v2/publications/infrastructure-asset-recycling-grc.pdf

contractual stipulations about the composition of board members, employment guarantees, and pricing limitations to ensure that the public was protected. The ARI provided financial incentives for states to engage in asset recycling. When a state monetized an asset, it received from the federal government an incentive payment totalling 15% of the estimated proceeds, which was then used to fund the new infrastructure project. This incentive program thus encouraged states to monetize strategic assets and create excellent conditions for private investment.

India. In 1995, the Indian government launched the National Investment and Infrastructure Fund (NIIF) to catalyze domestic investment.[23] NIIF serves as a platform for domestic infrastructure investments where foreign investors can efficiently pool their capital together with the Indian government. The platform is jointly owned by the Indian government (49%), domestic commercial shareholders (3%), and a group of international investors (48%) that includes some large Canadian pension funds. This ownership structure provides several benefits. It ensures that Indian entities retain ownership and control, while at the same time ensuring a majority ownership by the private sector. Moreover, the presence of high-ranking officials from the Indian government on the Board allows for clear and frequent communications between the government and institutional investors, which in turn reduces the level of regulatory uncertainty for the funds. The government's anchor contribution provides immediate scale. The pension funds benefit from a foreign tax exemption on infrastructure investments, which help to make the investments economically viable. Finally, there are many assets to monetize, ranging from ports, roadways, logistics, datasets, airports, and renewable energy. Because many of these projects are greenfield activities that fill up an important societal need, they benefit from public support.

C. Fixed-income solutions

In addition to monetizing large infrastructure properties and projects, Canada has the opportunity to offer fixed-income products that align with pension funds' interest in assets that have a long time horizon and act as a buffer against inflation. Real Return Bonds (RRBs) make it easier for Canadian pension funds to hedge against inflation shocks to their liabilities. Offering RRBs will reduce the need for the pension funds to purchase Treasury Inflation Protected Securities (TIPS) in the US as a substitute solution. By the same logic, issuing long maturity bonds will help pension funds align the risk of their long-term liability portfolio to their assets. The market of long maturity bonds includes not only bonds issued by the government but also long-term fixed rate mortgages insured by the Canada Mortgage and Housing Corporation (CMHC). Most Canadian homeowners have a mortgage with a 5-year fixed rate and a floating rate afterwards. By contrast, in Denmark approximately 50% of homebuyers borrow at 30-year

[23] https://www.top1000funds.com/2023/08/indias-niif-a-poster-child-for-development-finance/

fixed rates.[24] Reforming mortgage insurance regulation may provide another lever to encourage domestic investments.

III. Conclusion

In this paper we investigate the domestic investments of Canadian pension funds. We show the funds have a conspicuous home bias, particularly in bond-like asset classes such as fixed income and real estate. However, the home bias has decreased over the past decade as part of a shift toward global asset diversification. These domestic investment patterns are common across institutional investors around the world and are therefore not specific to Canadian pension funds.

We identify frictions to domestic investing and uncover a gap between the assets available for sale in Canada and the assets desired by the pension funds. Moreover, in recent years other countries have filled this gap by providing access to strategic assets such as large-scale infrastructure properties and projects. The lack of strategic assets in Canada, combined with the increased availability of these assets abroad, has contributed to the decline in domestic investments.

We then investigate ways through which Canadian governments can effectively monetize some of its strategic assets. The key hurdles have to do with achieving scale, obtaining public buy-in, and ensuring the projects are economically viable. We propose actionable solutions to address these hurdles and draw insights from countries such as Australia and India that have been able to attract large amounts of foreign capital.

From this analysis we conclude that government policies that mandate Canadian pension funds to invest more domestically come at a cost to pensioners because they upset the careful balancing of the complex risk-return trade-offs that is necessary for the pension funds to achieve their mandate. Instead, government initiatives that reduce the barriers to domestic investing by facilitating access to strategic asset classes will not only retain and attract capital from Canadian pension funds but also bring in additional capital from the much larger pool of foreign investors.

[24] https://www.economist.com/leaders/2023/08/31/to-fix-broken-mortgage-markets-look-to-denmark

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Appendix

Proportion of pension funds with a domestic desk

Table A1 reports the proportion of pension funds that have a dedicated desk for domestic investments inside (A) their portfolio of listed equities and (B) their portfolio of fixed-income assets. In 2022, over 80% of the pension funds in each country had a dedicated domestic desk inside their stock portfolio - which is high. Not surprisingly, larger funds are more likely than smaller funds to have a dedicated domestic desk. For the fixed income portfolio, nearly all pension funds have a dedicated domestic desk.

Table A1. Dedicated Domestic Desk
This table reports the proportion of pension funds that have a dedicated desk for domestic investments inside (a) their portfolio of listed equities and (b) their portfolio of fixed-income assets in 2013-2022. The data include 157 pension funds from Canada, the UK, and the US. Funds that manage over USD 10 billion of assets in 2022 are categorized as large funds.

A. Proportion of Funds with a Domestic Desk - Stocks

	Canada		UK		US	
Year	All	Large	All	Large	All	Large
2022	0.83	0.93	0.86	0.83	0.82	0.86
2021	0.86	0.93	0.86	0.83	0.84	0.88
2020	0.86	0.93	0.86	0.83	0.86	0.88
2019	0.86	0.93	0.90	0.83	0.85	0.88
2018	0.88	0.93	0.95	0.92	0.87	0.90
2017	0.90	0.93	0.95	0.92	0.89	0.93
2016	0.98	1.00	1.00	1.00	0.90	0.91
2015	1.00	1.00	0.95	1.00	0.90	0.93
2014	1.00	1.00	1.00	1.00	0.93	0.95
2013	1.00	1.00	1.00	1.00	0.94	0.97

B. Proportion of Funds with a Domestic Desk - Fixed-Income

	Canada		UK		US	
Year	All	Large	All	Large	All	Large
2022	1.00	1.00	0.95	1.00	0.99	0.98
2021	1.00	1.00	0.95	1.00	0.99	0.98
2020	1.00	1.00	0.95	1.00	0.99	0.98
2019	1.00	1.00	0.95	1.00	0.99	0.98
2018	1.00	1.00	0.95	0.92	0.99	0.98
2017	0.98	0.93	0.95	0.92	0.99	0.98
2016	1.00	1.00	0.86	0.92	0.99	0.98
2015	1.00	1.00	0.81	0.92	0.99	0.98
2014	1.00	1.00	0.90	1.00	0.99	0.98
2013	1.00	1.00	0.90	1.00	0.99	0.98

Additional domestic share in the stock portfolio

In Section I.A of the main text, we estimate the domestic share in a portfolio as the proportion of assets managed by the dedicated domestic desk.

We now estimate the additional domestic share in the stock portfolio with the assumption that the "non-dedicated" stock portfolio includes domestic investments. We approximate the proportion of domestic investments contained in the non-dedicated stock portfolio in a particular year by setting it equal to the weight of the home country inside the global stock index of that year. We use the MSCI ACWI index, which tracks the investment results of a value-weighted index composed of large and mid-cap equities in 23 developed and emerging markets. We define the *additional domestic share* as the product of (i) the proportion of the stock portfolio allocated to the non-dedicated portfolio, and (ii) the weight of the domestic country inside the MSCI ASWI index.

Table A2. Additional Domestic Share - Stock Portfolio
This table reports the additional domestic share of pension fund investments in listed equities ("stock portfolio") in 2013-2022 under the assumption that part of the non-dedicated stock portfolio is invested domestically. For each year and each country, we estimate this additional domestic share as the average share of the non-dedicated stock portfolio multiplied by the weight of the home country inside the MSCI ACWI World Index. The data include 157 pension funds from Canada, the UK, and the US. Funds that manage over USD 10 billion of assets in 2022 are categorized as large funds.

	Additional Domestic Share					
	Canada		UK		US	
Year	All	Large	All	Large	All	Large
2022	0.02	0.02	0.03	0.03	0.22	0.21
2021	0.01	0.02	0.02	0.02	0.21	0.20
2020	0.01	0.01	0.03	0.02	0.19	0.18
2019	0.02	0.01	0.03	0.03	0.17	0.16
2018	0.01	0.01	0.03	0.03	0.14	0.14
2017	0.01	0.02	0.03	0.03	0.12	0.11
2016	0.01	0.01	0.03	0.03	0.12	0.12
2015	0.01	0.01	0.04	0.03	0.10	0.10
2014	0.01	0.01	0.03	0.03	0.08	0.08
2013	0.01	0.01	0.04	0.03	0.07	0.06

In Table A2, we report the additional domestic share for each country and each year. For Canadian and UK pension funds, the additional domestic share is small, between 2% and 3%, and does not change much over time. The additional domestic share is small because Canada and the UK make up a small

fraction of total world equity market capitalization. As a result, the empirical results in Section I.B provide a good approximation about the level and dynamics of the funds' domestic share.

The US presents a different situation. For US pension funds, the additional domestic share is large and increasing over time. This is because (i) American stocks constitute a large proportion of the global market index (over 60% today), and (ii) this proportion has significantly increased over the past decade. Therefore, even in the absence of a dedicated domestic desk, a US pension fund owning the global portfolio has an increasing tilt toward local listed equities.

Asset Allocation to Listed Equities and Alternatives

Table A3 reports the average allocation of total assets to alternative assets and listed equities in 2013-2022. Alternative asset classes include private equity, private credit, real estate, infrastructure, and natural resources. Between 2013 and 2022, the average share of total Canadian pension fund assets invested in alternative asset classes increased from 14% to 33% (21% to 43% for the large funds). This increase in alternative assets precisely coincides with the decrease in public equity investments, which fell from 51% to 34% from 2013 to 2022 (45% to 27% for large funds). We observe parallel patterns for UK and US pension funds.

Table A3. Allocation to Alternative Assets and Stocks

This table reports the average allocation of pension fund total assets to alternative assets and listed equities in 2013-2022. Alternative assets consist of private equity, private credit, real estate, infrastructure, and natural resources. The data include 157 pension funds from Canada, the UK, and the US. Funds that manage over USD 10 billion of assets in 2022 are categorized as large funds.

	Alternative Assets / Total Assets					
	Canada		UK		US	
Year	All	Large	All	Large	All	Large
2022	0.33	0.43	0.25	0.27	0.23	0.21
2021	0.27	0.36	0.22	0.23	0.21	0.17
2020	0.25	0.33	0.20	0.22	0.19	0.15
2019	0.25	0.33	0.22	0.23	0.20	0.15
2018	0.24	0.31	0.20	0.22	0.17	0.16
2017	0.20	0.27	0.17	0.20	0.14	0.15
2016	0.19	0.26	0.17	0.19	0.13	0.15
2015	0.17	0.23	0.17	0.19	0.14	0.14
2014	0.14	0.21	0.16	0.19	0.13	0.14
2013	0.14	0.21	0.15	0.18	0.11	0.14
	Listed Equities / Total Assets					
	Canada		UK		US	
Year	All	Large	All	Large	All	Large
2022	0.34	0.27	0.52	0.48	0.30	0.30
2021	0.38	0.32	0.54	0.51	0.35	0.36
2020	0.39	0.32	0.55	0.51	0.37	0.37
2019	0.39	0.33	0.53	0.50	0.37	0.38
2018	0.40	0.35	0.57	0.53	0.37	0.38
2017	0.44	0.38	0.59	0.55	0.41	0.41
2016	0.44	0.38	0.61	0.58	0.41	0.41
2015	0.46	0.40	0.60	0.58	0.42	0.43
2014	0.48	0.43	0.61	0.58	0.43	0.44
2013	0.51	0.45	0.63	0.59	0.45	0.46