CANADIAN HOME BIAS

A Case for Global Equity Diversification

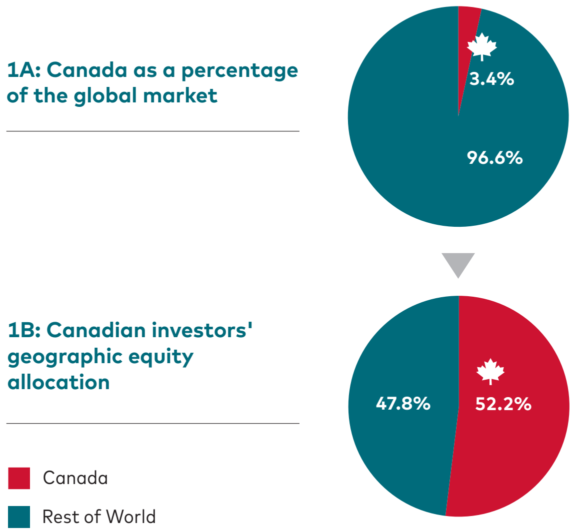
Bilal Hasanjee, CFA®, MBA, MSc Finance | Senior Investment Strategist, Vanguard Investments Canada

Diversification is crucial for investors looking to reduce portfolio risk over time, and foreign securities play a vital role in achieving this objective.

However, investors often ask, "How much should I allocate to local versus global stocks?" Financial theory suggests that investors should align their asset class exposure with global market capitalizations because they represent the consensus asset allocation of investors at any given point in time. Therefore, market-cap weighted indices serve as a valuable asset allocation starting point for most investors. For example, as of June 30, 2022, a forward-looking efficient portfolio should only allocate about 3.4% of equities to Canadian stocks since they accounted for the same percentage of the global equity market on that date. However, as shown in Figure 1, according to the International Monetary Fund, Canadian investors allocated 52.2% of their total equity allocation to Canadian equities, over 15x overweight. Despite the benefits of diversifying a portfolio globally, home bias has been strong among Canadian investors. There are good reasons to have some overweight to Canada for domestic investors, including future return differentials, preference for the familiar, favourable tax considerations, the need to hedge domestic liabilities and currency risk. However, Vanguard believes the optimal asset allocation for Canadian investors is 30% vs 70% allocation to Canadian versus international equities, based on our research, which we will delve into throughout this paper.

FIGURE #1

Canadian equities are a small part of the global equities market



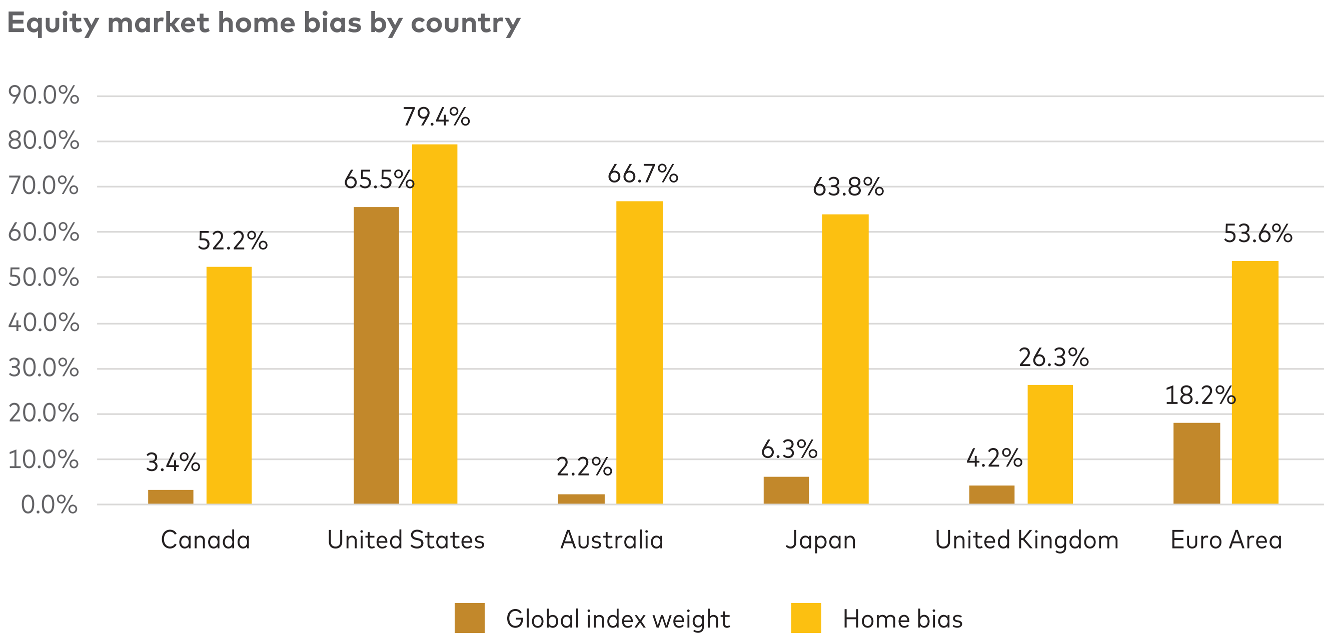
Sources: Vanguard calculations using International Monetary Fund's Coordinated Portfolio Investment Survey and Bloomberg. Market cap and holdings data as of June 30, 2022.

Why home bias?

Home bias is a recognized global phenomenon where investors intentionally overweight domestic holdings at the expense of foreign securities, as shown in Figure 2. Various theories have been proposed to explain this bias, including expectations of future return differentials, preference for the familiar, corporate governance standards, the need to hedge domestic liabilities, perceived global exposure through multinationals, and currency risk. However, this bias has significant implications as it prevents investors from achieving broad diversification across global markets.

FIGURE #2

Home bias is a globally observed phenomenon



Notes: Data as of June 30, 2022 (the latest available from the International Monetary Fund, or IMF) in U.S. dollars. Domestic investment is calculated by subtracting total foreign investment (as reported by the IMF) in each country from its market capitalization in the MSCI All Country World Index. Given that the IMF data is voluntary, there may be some discrepancies between the market values in the survey and the MSCI ACWI.
Sources: Vanguard, based on data from the IMF's Coordinated Portfolio Investment Survey (2022).

Consequences of home bias

Security Concentration:

Figure 3 shows the leading 10 holdings in the Canadian and global equity markets. It is evident that Canada exhibits a greater level of concentration compared to the global equity market. Specifically, the top 10 holdings in Canada constitute almost 37% of the index. Conversely, the top global securities make up less than 16% of the global market. This could contribute to idiosyncratic risk, a form of risk which is peculiar to investing in a certain geography or market and can be avoided by diversification.

FIGURE #3

Canadian equities are more concentrated than global equities

A: Top 10 holdings in Canadian equity market

Holdings	Market value (USD bn)	Market weight	Global weight
Royal Bank of Canada	141	6.45%	0.19%
Toronto-Dominion Bank	117	5.35%	0.16%
Enbridge Inc.	81	3.72%	0.11%
Shopify Inc. Class A	78	3.56%	0.11%
Canadian Pacific Kansas City Limited	77	3.51%	0.11%
Canadian National Railway Company	73	3.35%	0.10%
Canadian Natural Resources Limited	65	2.99%	0.09%
Bank of Nova Scotia	64	2.92%	0.09%
Bank of Montreal	63	2.88%	0.09%
Brookfield Corporation	47	2.14%	0.06%
Total		**36.9%**	**1.1%**

B: Top 10 holdings in global equity market

Holdings	Market value (USD bn)	Market weight
Apple Inc.	3,563	3.92%
Microsoft Corporation	3,236	3.56%
Amazon.com Inc.	1,454	1.60%
Nvidia Corporation	1254	1.38%
Alphabet Inc. Class C	963	1.06%
Tesla Inc.	863	0.95%
Alphabet Inc. Class A	845	0.93%
Meta Platforms Inc. Class A	782	0.86%
Taiwan Semiconductor Manufacturing Company	600	0.66%
UnitedHealth Group Inc.	591	0.65%
Total		**15.6%**

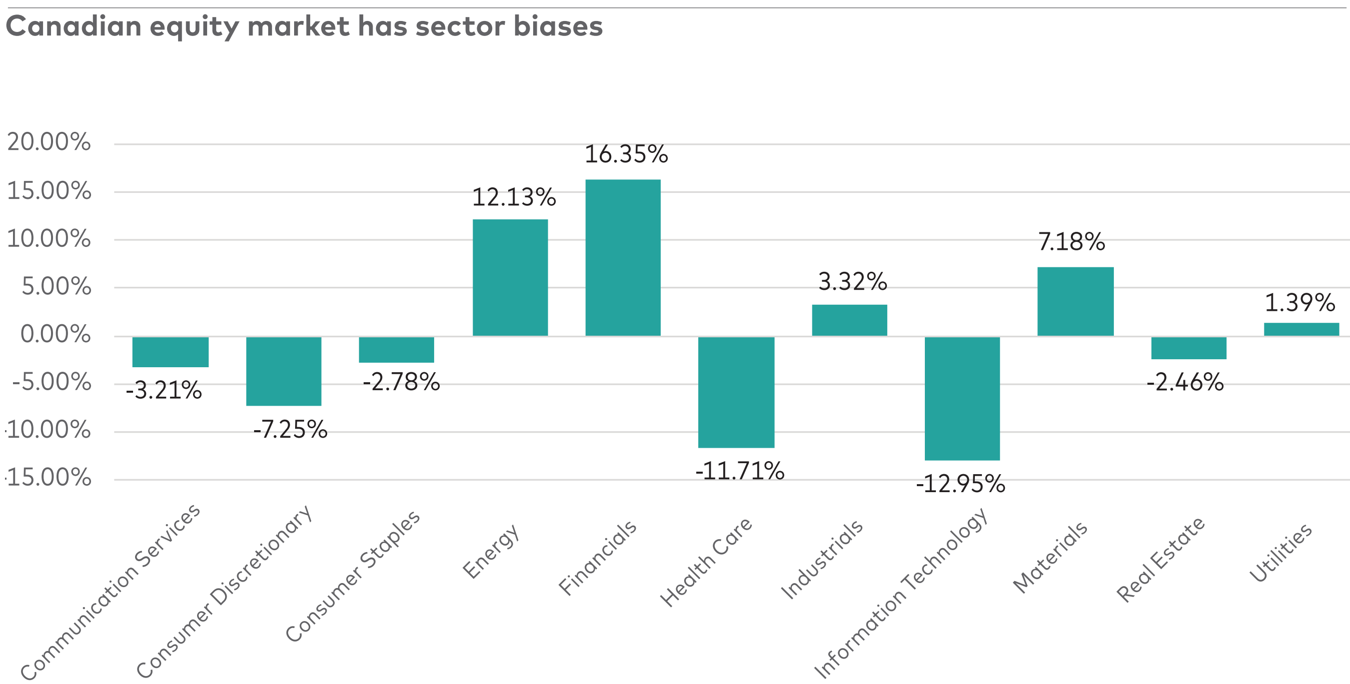
Notes: Canadian equities represented by FTSE Canada All Cap Index; Global equities represented by FTSE Global All Cap Index. Data through May 31, 2023.
Sources: Vanguard calculations, using Bloomberg data.

Sector concentration:

When we analyze security concentrations, it becomes evident that Canadian equity portfolios tend to be heavily invested in specific sectors or industries. In Figure 4, we compare the weight of the top 10 equity sectors in Canada to their weight in the global equities market. The Canadian equity market is significantly overweight in the energy and financials sectors, with relatively smaller overweight in materials and industrials. However, this results in information technology, healthcare, consumer discretionary and consumer staples being underweight relative to the global market.

FIGURE #4

Sector biases in Canadian equity market: A risk to diversified portfolios



Notes: Canada equities represented by FTSE Canada All Cap Index; global equities represented by FTSE Global All Cap Index. Data as of May 31, 2023.
Sources: Vanguard calculations, using data from Bloomberg.

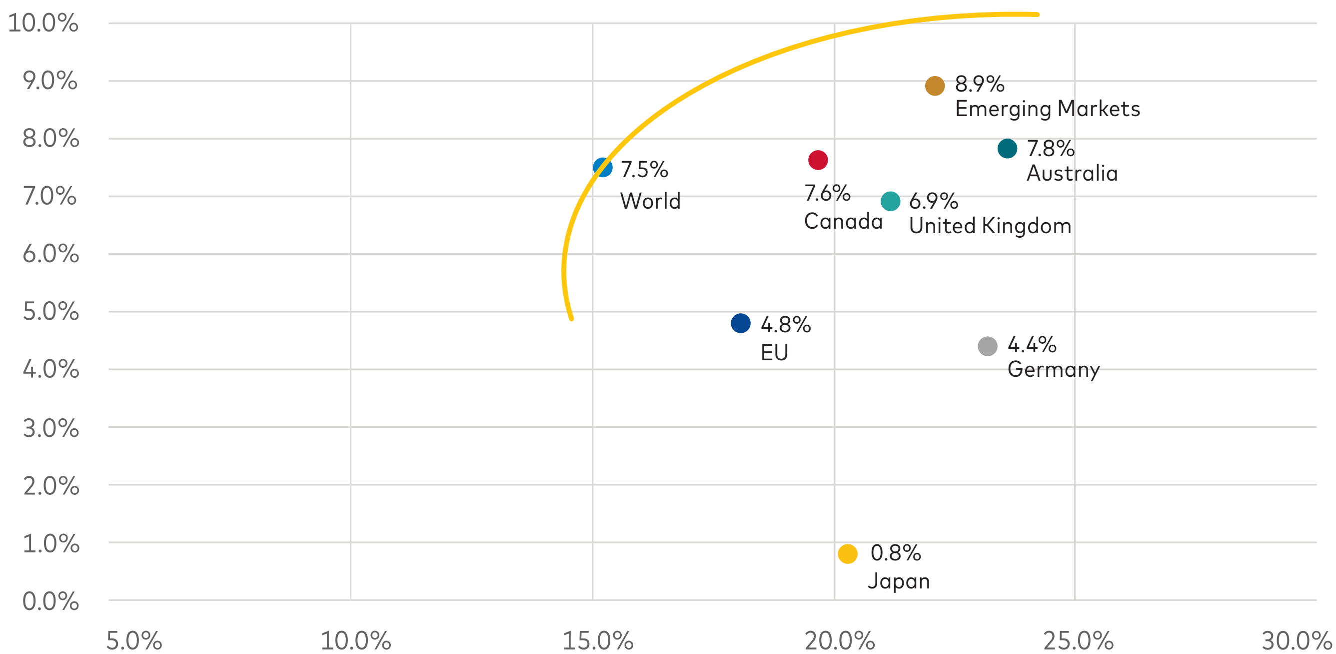
Inefficient portfolio allocation:

Although investors may have unique reasons or justifications for home bias, its direct implication for security and sector concentrations is that Canadian investors are exposed to a considerable amount of risk that could have been diversified away. Figure 5 illustrates the historical risk and return of the global equity market (blue dot, next page), Canadian equity market (red dot, next page), along with the returns and volatilities of many countries of the global index (various colors). Additionally, a theoretical forward-looking efficient frontier, represented by the yellow curve, is shown. Two key takeaways can be drawn from this graph: Firstly, the Canadian stock market has historically been more volatile than the global market, but without a proportionate increase in return (in fact, all individual countries have had greater risk than the global index). Secondly, in a forward-looking context, any portfolio that deviates from the global market is, by definition, inefficient.

FIGURE #5

Over concentration in Canadian equities (or any single country) leads to inefficient portfolios

Global and country-wise risks vs returns



Notes: Index returns reflect the MSCI World Index and the respective MSCI indexes for each country in the World index. The efficient frontier does not reflect actual data or returns and is theoretical in nature. Returns data are through May 31, 2023, more details on the data timeseries can be found in the footnote.[1]
Sources: Vanguard calculations, using data from Bloomberg.

Canadian home bias and modern portfolio theory

Modern portfolio theory allows for the creation of portfolios that have a lower risk per level of return than individual assets held in isolation. This is due to the diversification benefit, where combining securities, sectors, and countries with less-than-perfect correlations results in more efficient portfolios. An efficient portfolio can be created for each level of risk, represented as the yellow line or the efficient frontier in Figure 5. The "World" portfolio is the most efficient portfolio for investors to choose. However, most investors prefer a set allocation to securities outside their home country, leading to the challenge of determining how much equity allocation should be focused on Canadian versus non-Canadian stocks. While a fully market proportional equity portfolio may be impractical or unpreferable for most Canadian investors, maintaining a set allocation represents a reasonable trade-off between diversification and investor preferences. The primary challenge with this approach is determining equity allocation to Canadian versus non-Canadian equities.

[1] Global return data covers the period January 29, 1988 through May 31, 2023; Canada return data covers the period January 30, 2004 through May 31, 2023; Germany return data covers the period February 26, 1999 through May 31, 2023; Japan return data covers the period February 26, 1971 through May 31, 2023; United Kingdom return data covers the period February 26, 1971 through May 31, 2023; Australia return data covers the period February 26, 1971 through May 31, 2023; EU return data covers the period February 26, 1999 through May 31, 2023; and Emerging Markets return data covers the period January 29, 1988 through May 31, 2023. The return points are historical, while the curve is purely theoretical and forward looking.

Finding optimal home bias allocation using minimum variance analysis

A key factor to consider in determining how much to allocate outside of Canadian equity market is diversification. One way to evaluate the expected diversification benefits of international equities is to analyze the impact on portfolio volatility as incremental allocations of international equities are added to a domestic equity portfolio.

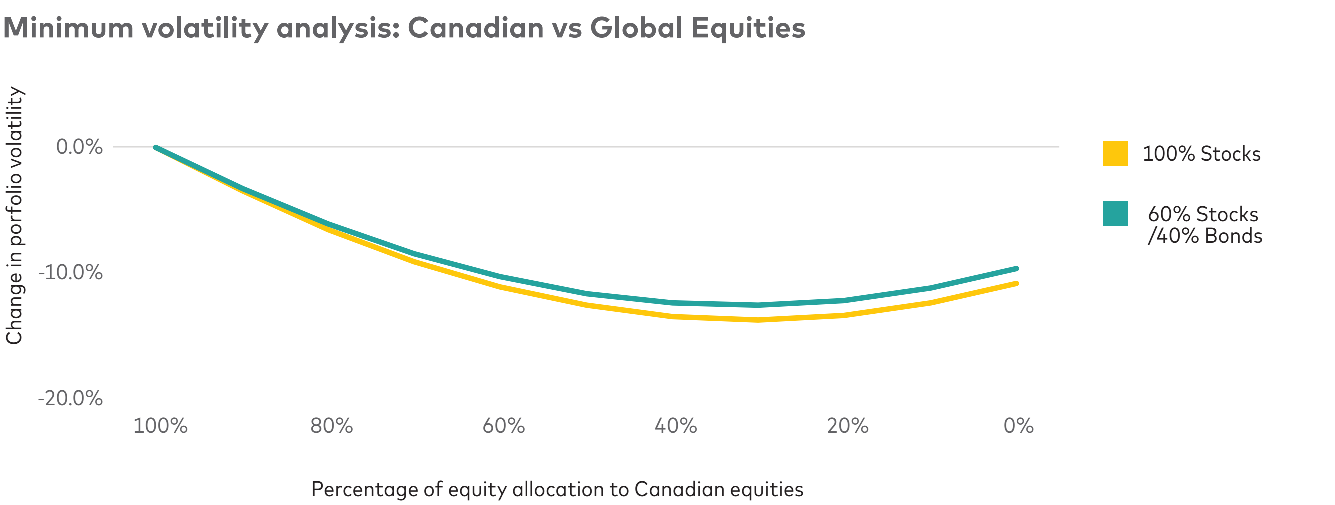
Figure 6 displays the results of a minimum-variance analysis, with a focus on assessing volatility of investment portfolios. The analysis considers a 100% equity portfolio and a balanced portfolio of 60% stocks and 40% bonds, gradually decreasing exposure to Canadian vs global equities while starting with a portfolio fully allocated to Canadian equities. Notably, the curves representing both equity-only and balanced (60% equity / 40% bonds) portfolios demonstrate that incorporating global equity exposure would have reduced average volatility over the studied period.

That said, the marginal benefit of international diversification declines as allocations to international equities increase. A semi-U-shaped curve in Figure 6 illustrates that portfolio volatility begins to rise with allocations of greater than 70% to international equities. **Looking at the data, the optimal asset allocation for Canadian investors is a 30% allocation to Canadian equities and a 70% allocation to international equities because it has shown to minimize the long-term volatility of their portfolio**[2]. Also, by combining the analyses in Figure 4 and 5, we can understand that maintaining a significant level of home bias implies explicitly taking on the idiosyncratic risk of Canada, deviating from the efficient frontier.

When it comes to sizing an appropriate home bias, we take into consideration factors such as investors' home-country preferences, potential volatility of returns and volatility reduction from diversification and imperfect correlations achieved thorough global exposures, the degree of market / sector concentrations, relative implementation costs (including taxes and trading costs), currency impacts and regulatory restrictions.

FIGURE #6

Optimal Canadian vs global equities allocation in a minimum-variance framework is at 30% Canadian equities vs 70% global equities



Notes: Data are as of May 31, 2023, for the period from January 1, 1999, to May 31, 2023. Canadian equities are represented by the MSCI Canada Investable Market Index; non-Canadian equities are represented by the MSCI All Country World Index ex Canada Index. Global bonds are represented by the Bloomberg Barclays Global Aggregate ex-CAD Bond Index (CAD Hedged); Canadian bond returns are represented by the Bloomberg Global Aggregate Canadian Float Adjusted Bond Index through October 31, 2000, and the Bloomberg Barclays Canada Aggregate Index thereafter. The domestic/international bond allocation is 60%/40%, respectively.
Sources: Vanguard calculations, based on data from, Bloomberg, FactSet and Morningstar.

[2] Based on minimum variance analysis on historical data from January 1999 to June 2022. Details of the methodology under the note for Figure 5.

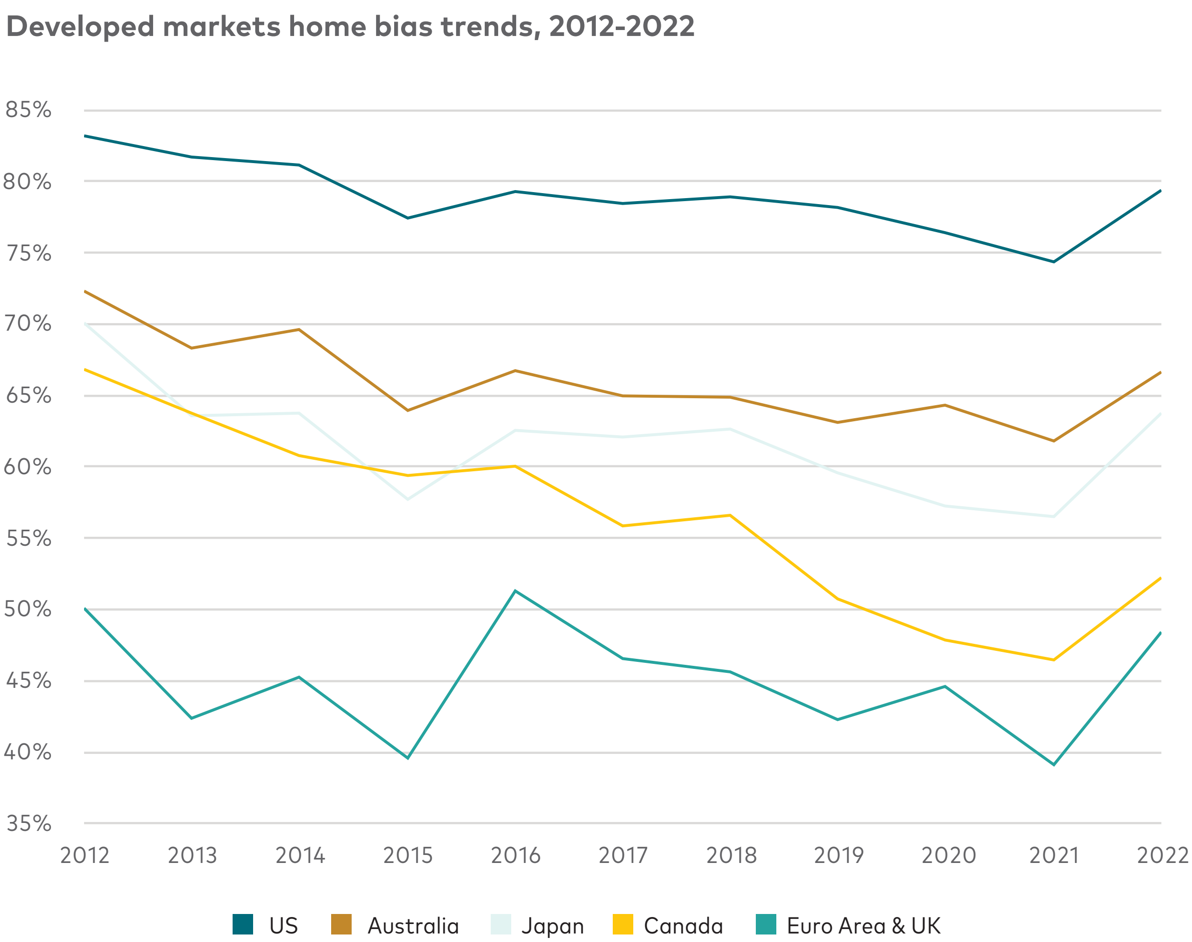
Going global: Canadian investors are showing greater preference for global equities and diversification

Our research shows that Canadian and other developed countries' investors may have realized the benefits of international diversification as shown by the declining preference for domestic equities from 2012 to 2021, in Figure 7. In short, Canadian investors are increasingly tapering down their level of home bias by diversifying to international equities. And this is a trend seen across the globe in other developed markets.

Moreover, looking at the asset allocation for global pension assets over the last two decades, the data reveals a notable decrease in the degree of home bias in equities. Specifically, the average weight of domestic equities has declined from 67.1% in 2002 to 37.7% in 2022 across Australia, Canada, Japan, Netherlands, Switzerland, UK, and US. In the last decade, the United States has exhibited the largest allocation to domestic equities, whereas Canada, Japan, and Switzerland have had the lowest allocation.[3]

FIGURE #7A

Declining home bias in developed economies' investors



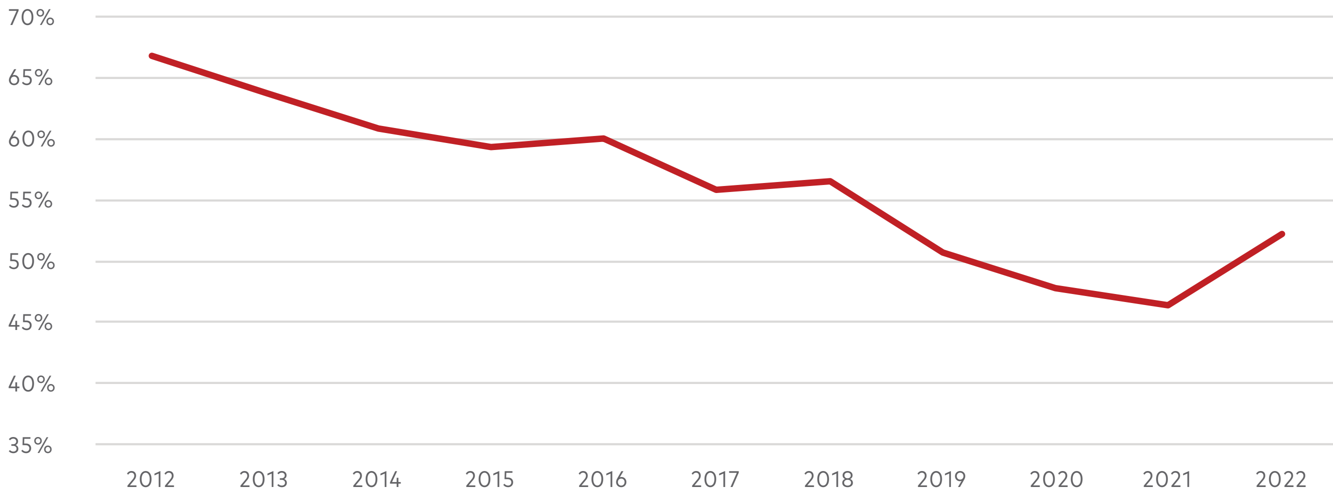
Notes: Data as of June 30, 2022 (the latest available from the International Monetary Fund, or IMF) in U.S. dollars. Domestic investment is calculated by subtracting total foreign investment (as reported by the IMF) in a given country from its market capitalization in the MSCI All Country World Index. Given that the IMF data is voluntary, there may be some discrepancies between the market values in the survey and the MSCI ACWI.
Sources: Vanguard calculations, based on data from the IMF's Coordinated Portfolio Investment Survey (2022).

[3] Thinking Ahead Institute: Global pension asset study 2023

FIGURE #7B

Declining home bias in Canadian investors

Canada home bias trend, 2012-2022



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Sources: Vanguard calculations, based on data from the IMF's Coordinated Portfolio Investment Survey (2022).

Conclusion:

Home bias is a common, global phenomenon where investors overweight domestic holdings at the expense of foreign securities. Canadian investors have a significantly high home bias, allocating 55.6% of their total equity allocation to Canadian equities, which is over 16x overweight. This bias results in security and sector concentration, leading to an inefficient portfolio allocation and exposure to considerable idiosyncratic risk that can be diversified away by allocating to both Canadian and global equities in a portfolio.

Yet some level of home bias makes sense for Canadians since there will always be a local preference for Canadian companies and securities that are familiar and in closer proximity. Vanguard maintains that 30% Canadian equities and 70% international equities is the optimal asset allocation for Canadian investors based on historical evidence on minimizing volatility, declining trend of domestic equity preferences for both individual and pension investors and after considering other factors such as benefits of diversification, portfolio implementation costs, favourable tax considerations, currency effects and regulatory restrictions.

References:

- Renzi-Ricci, G., Zhu, V., Donaldson, S.J., Ahluwalia, H., 2021 Vanguard's framework for constructing globally diversified portfolios
- Renzi-Ricci, G., Zhu, V., Donaldson, S.J., Ahluwalia, H., 2021 Global equity investing: The benefits of diversification and sizing your allocation
- Scott, B. J., Balsamo, J., McShane, K. N., & Tasopoulos, C., 2017. The Global Case for Strategic Asset Allocation and an Examination of Home Bias. Vanguard Research.
- Pakula, D.C., Walker, D.J., Kwon, D.T., Bosse, P.M., Maciulis, V., & Philips, C.B. 2014., Global equities: Balancing home bias and diversification – A Canadian investor's perspective. Vanguard Research.
- Scott, Brian J., James Balsamo, Kelly N. McShane, and Christos Tasopoulos, 2017. The Global Case for Strategic Asset Allocation and an Examination of Home Bias. Valley Forge, Pa.: The Vanguard Group.
- International Monetary Fund, 2019. Coordinated Portfolio Investment Survey. Washington, D.C.: IMF.

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