Vanguard

Vanguard research

July 2025

Core components of a successful retail investment system

Executive summary

- The need for individuals to participate in the capital markets has never been greater. Globally there is a vast pool of cash savings – an estimated $51.7 trillion across all OECD countries[1] – but too few people are putting these savings to work in the financial markets, potentially reducing their long-term returns.
- At the same time, the worker-to-retiree ratio is declining at an increasingly rapid pace[2] and public finances are deteriorating in a host of developed economies. This underscores the need for action.
- Yet policymakers face complex challenges in designing retail investment systems that foster strong long-term investor outcomes and robust capital markets. This paper acknowledges those challenges and, building on Vanguard's decades of research and experience, offers a set of eight regulatory features – or policy levers – intended to support policymakers' informed decision-making.
- The opportunity to improve individuals' long-term financial health is significant. If households in the most populous OECD countries that hold more in deposits than in investments reallocated just 10% of their cash to investments, capital markets would increase by $2.1 trillion[3], with significant economic and societal benefits.
- By encouraging individuals to invest, we can drive greater financial security for millions of people and build more resilient retail investment systems.

The size of the opportunity

$51.7 trillion

Estimated amount that households held in cash across all OECD countries in 2023[1].

$2.1 trillion

Estimated increase in size of capital markets if countries with more in deposits than investments reallocated 10% of their cash to investments[3].

1 Source: Vanguard calculations based on OECD data, 2023. Cash is defined as currency and deposits.

2 Vanguard calculations based on data from United Nations, World Population Prospects, 2025.

3 Source: Vanguard calculations based on OECD data, 2023. The figure is the additional amount of capital that could be invested if households in the most populous OECD countries that hold more in deposits than investments (Japan, the UK, Germany and Australia) reallocated 10% of their cash to investments. Investments are defined as equity, other securities and investment funds.

Contents

Introduction

The need to shrink the global investment gap is not a new challenge, but it is becoming increasingly urgent due to ageing populations, deteriorating public finances and the shift to defined-contribution retirement schemes.

The worker-to-retiree ratio is declining at an increasingly rapid pace. In the past 15 years the world old-age dependency ratio has declined from 7.6 to 5.3 and is projected to continue falling[4].

However, by encouraging individuals to invest, there is an opportunity to reduce dependency on state pension and social security schemes and improve individuals' long-term financial outcomes. While cash savings are an essential component of an individual's financial plan, serving as a buffer for emergencies and unpredicted expenses, their value can be eroded significantly by inflation over time. Investing is therefore vital for building long-term wealth and reaching goals such as retirement.

Yet designing successful retail investment systems that encourage individuals to invest is a complex, nuanced challenge. Policymakers must navigate diverse economic contexts, investor behaviours and market structures, each requiring careful consideration and tailored solutions.

This paper offers a set of potential regulatory features – referred to as "policy levers" – that can serve as a toolkit to inform decision-making. Rather than prescribing a one-size-fits-all approach, we encourage policymakers to evaluate which levers may be most relevant and effective in their specific market, with the ultimate goal of enabling retail investors to achieve long-term investment success.

In defining "retail investment system", we include both:

1. **Direct participation**, which captures household ownership of funds, equities, bonds and other similar financial investments; and
2. **Indirect participation**, which captures households' ownership of a similar set of instruments through vehicles such as pension funds (both public and private, such as employer-provided retirement plans) and life insurance[5].

For the purposes of this paper, we consider a "successful retail investment system" to be one that (1) encourages individuals to invest; (2) gives them access to advice, guidance and support; and (3) ensures they get a fair deal.

Chapter 1 compares retail investment systems across major economies. We outline that direct investment in funds and equities remains limited, with approximately one-quarter of investors directly participating in retail markets in the countries we surveyed. However, structural differences shape how individuals access, engage with and benefit from retail investment opportunities, giving insights into how policy and market design influence investor participation and outcomes.

Chapter 2 introduces the Pathways to Investing model, identifying three key drivers of retail investment systems: person, product and policy. We explore how individual characteristics – such as income, financial literacy, risk preferences and trust – affect investment behaviour. We also highlight the importance of accessible, low-cost and well-designed investment products. On the policy side, we review how pension system design, tax incentives and legal protections are shown to significantly influence participation.

Chapter 3 presents the eight policy levers that we consider vital to advancing a pro-investor regulatory framework. These levers are organised into the three broad objectives that we have observed to be fundamental to a retail investment system.

4 Vanguard calculations based on data from United Nations, World Population Prospects, 2025.

5 This definition reinforces that this paper is limited to consideration of individuals' financial assets as defined by the OECD. For example, it does not extend to consideration of non-financial market-based investments, such as the purchase of residential property or investment in a family/private business.

Core components of a successful retail investment system

Based on our research and decades of experience, we have identified **eight core components** that are found in successful retail investment systems.

Encourage individuals to invest

1. **Auto-enrolment:** Implementing retirement systems that automatically enrol eligible workers in savings plans has proven highly effective in boosting investment participation and long-term wealth.
2. **Tax incentivisation:** Enabling tax-advantaged investment vehicles, and offering other tax-effective initiatives, can significantly encourage individuals to move their cash savings into capital markets.
3. **Default products:** Directing customers to default or pre-approved investments can benefit those who lack the time, motivation or skills to make informed investment decisions.

Give investors access to help

4. **Spectrum of advice:** Giving investors access to a full range of support, guidance and advice can help to meet their individual needs and circumstances.
5. **Financial literacy:** Developing targeted, research-based national financial literacy plans can build consumer confidence in investing.

Ensure investors get a fair deal

6. **Remove/mitigate conflicts in the distribution chain:** Commission-based remuneration models can create conflicts of interest. Regulatory regimes should ensure intermediaries are not unduly influenced by commissions when advising or distributing funds.
7. **Decision-useful, simple disclosures:** Product providers must be required to offer clear, concise and engaging information to help consumers compare products and encourage investment firms to compete, leading to better services and lower costs.
8. **Value for money – the power of low costs:** Clear total cost disclosure is vital. Every dollar paid in fees is a dollar less in potential returns. Investors should be able to easily understand and compare all-in costs to make informed decisions.

We cite external and Vanguard research evidencing the utility of the eight policy levers. We acknowledge that no single policy lever is sufficient; rather, we encourage policymakers to consider which policy levers may be suitable for their markets to build a more effective retail investment system. Drawing on policy and Vanguard case studies, we include best practices and regulatory innovations that can enhance investor outcomes and strengthen capital markets globally.

Vanguard is committed to working with policymakers, sharing our global experience and research expertise to help address the challenges individuals face in achieving long-term investment success. We welcome the opportunity to collaborate with policymakers, regulators and industry leaders to build more inclusive, transparent and effective retail investment systems in line with Vanguard's core purpose to take a stand for all investors, treat them fairly and give them the best chance of investment success.

Chapter 1: Comparing retail investment systems globally

This chapter examines the key characteristics of several major retail investment systems across three dimensions: (1) market breadth and depth; (2) investment product and distribution; and (3) retail market outcomes. The country coverage below seeks to balance geographic spread and maturity of retail investment markets with the availability of robust and consistent data. In doing so, we aim to provide international policymakers with a range of examples and perspectives to help illuminate policy choices.

1. Market breadth and depth

This section first examines the breadth of ownership of retail investments across major retail investment markets; it then compares the depth of these markets, expressed as a share of total Gross Domestic Product (GDP).

1.1 Market breadth

Breadth of participation is a vital indicator of how successful retail investment systems are in spreading the benefits of capital markets. **Figure 1** below compares the percentage of the adult population owning certain retail investments and vehicles across various countries.

Overall ownership rates of retail assets are low, with the notable exception of pensions and insurance. Direct ownership of investment funds is low at around 10%; Mexico has the lowest participation rate in the group at 3% (driven in part by the high prevalence of informal employment), with Germany being the notable exception at 21% (driven by the growth in exchange traded funds (ETFs)). At 11%, the proportion of direct ownership of equities by European retail investors is low by international standards. The high coverage rates of Australia's Superannuation system and the UK's private pension system (at 83% and 75% of the adult population respectively) also stand out.

FIGURE 1

Direct ownership of retail investments is generally low across countries

Instrument[6]	UK	EU	Germany	France	Italy	Australia	US	Mexico
Investment funds	9%	13%	21%	9%	10%	–	12%	3%
Listed equities	20%	11%	15%	12%	7%	30%	21%	–
Bonds	2%	3%	3%	1%	11%	3%	1%	–
Pension/life insurance	75%	28%	42%	40%	12%	83%	54%	36%

Note: The following differences should be noted across the various household surveys employed: (1) FCA data for 'Pension/life insurance' relate to private pensions only; (2) ASX data on listed equities is for domestic equities only; (3) ATO data for 'Pension/life insurance' relate to Superannuation only; and (4) Federal Reserve data relate to families rather than adult population.

Sources: Financial Conduct Authority (FCA), 2024 data; European Central Bank (ECB), 2021 data; Australian Stock Exchange (ASX), 2023 data; Australian Tax Office (ATO), 2024 data; Federal Reserve, 2022 data, National Institute of Statistics and Geography (INEGI), 2024 data.

6 This table captures only direct ownership of specific instruments or wrappers. Including indirect ownership gives much higher results; for example, Federal Reserve data show that 58% of US families own equities directly or indirectly.

1.2 Market depth

Deep pools of retail investment can offer long-term capital to support innovation and growth. While patterns of direct retail participation are broadly similar, **Figure 2** outlines stark differences in households' asset pools relative to the size of the local economy (expressed as a share of GDP[7]):

FIGURE 2

Household assets relative to the size of local economies varies widely

Holding	UK	Germany	France	Italy	Australia	US	Canada	Japan	Mexico
Currency and deposits	79%	79%	74%	74%	63%	51%	76%	196%	21%
Retail Investment									
Investment funds	11%	26%	13%	34%	–	54%	69%	22%	2%
Equity	30%	42%	62%	78%	52%	169%	82%	55%	33%
Debt securities	1%	5%	2%	20%	0%	22%	5%	8%	0%
Insurance, pensions and guarantees									
Pension assets	91%	29%	10%	15%	147%	97%	170%	27%	37%
Life insurance and annuity entitlements	24%	28%	61%	35%	–	21%	–	56%	3%

Note: Retail investment includes direct household investments in funds, shares, bonds and other financial investments.
Source: OECD household finance data, 2023.

The data highlight important themes and structural differences in retail systems across countries. First, for most countries in the panel, households' stock of currency and deposits is around 75% of GDP, but with the US (51%) and Japan (196%) as clear exceptions. Second, Canada, Australia, the US and the UK all have large pension systems, in the range of 90-170% of GDP. Third, direct household investment in equity and investment funds is markedly higher in the US and Canada (respectively, 223% and 151% of GDP). Last, there are notable similarities between EU markets and Japan, with relatively large pools of life insurance but relatively shallow pools of direct retail investment and funded pension assets.

7 This comparison of a stock of assets relative to local GDP is a standard approach to enable cross-country analysis.

2. Product and distribution

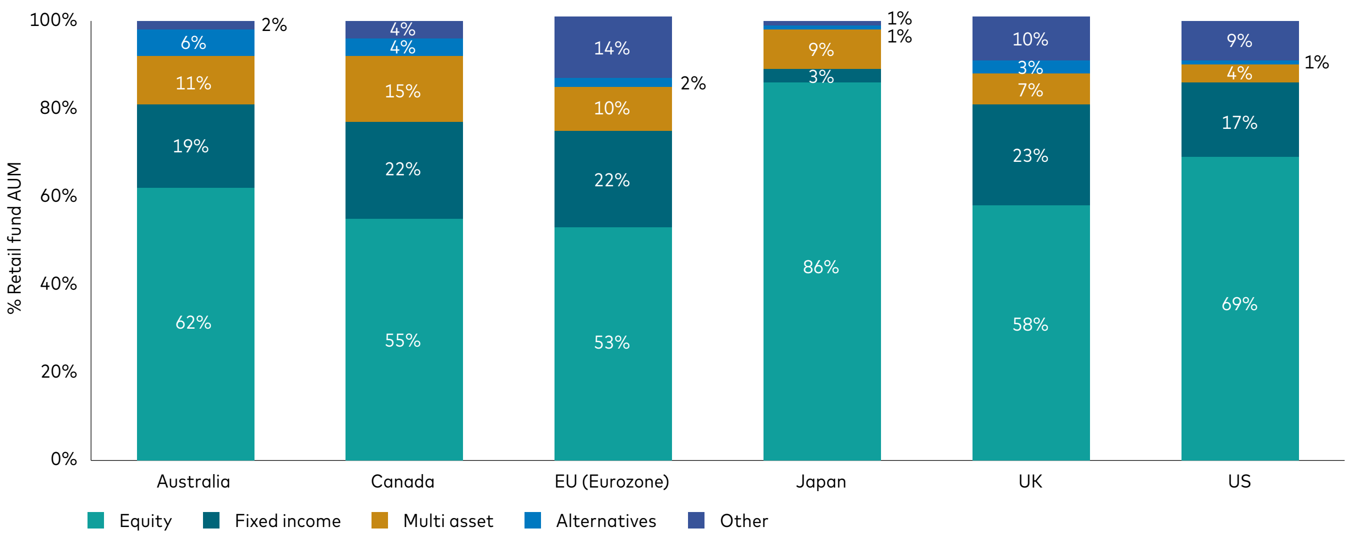
This section compares the products that retail investors buy and the key channels through which those products are sold. We focus specifically on investment funds sold to retail clients for a consistent comparison of product markets.

2.1 Retail fund product

Figure 3 compares the share of total assets under management (AUM) of all available fund products for retail investors in each region, in five main asset classes:

FIGURE 3

Equity is the main component of retail investors' fund holdings



Note: 'Alternatives' includes alternative funds, property funds and commodity funds. 'Other' includes convertibles funds, money market funds and miscellaneous categories. Total AUM is calculated as the sum of net assets (as at 31 December 2024, in USD terms) of all available products for retail investors in each region in each fund category, and presented as a percentage of aggregate AUM of each region. See appendix for definitions of funds in scope by region. Due to rounding, some categories may not sum to 100%.

Source: Morningstar.

Overall, equity clearly has the largest allocation for the panel above, ranging from 53% of total AUM in the EU to 86% in Japan[8].

The typical allocation to bonds is around 20% of AUM, although Japan is a notable outlier at only 3% of AUM. Retail investors in the US and Australia, which have large occupational pension systems, are more disposed to invest in equity funds than European or Canadian investors. Meanwhile, retail investors in all markets have a low allocation to alternative assets.

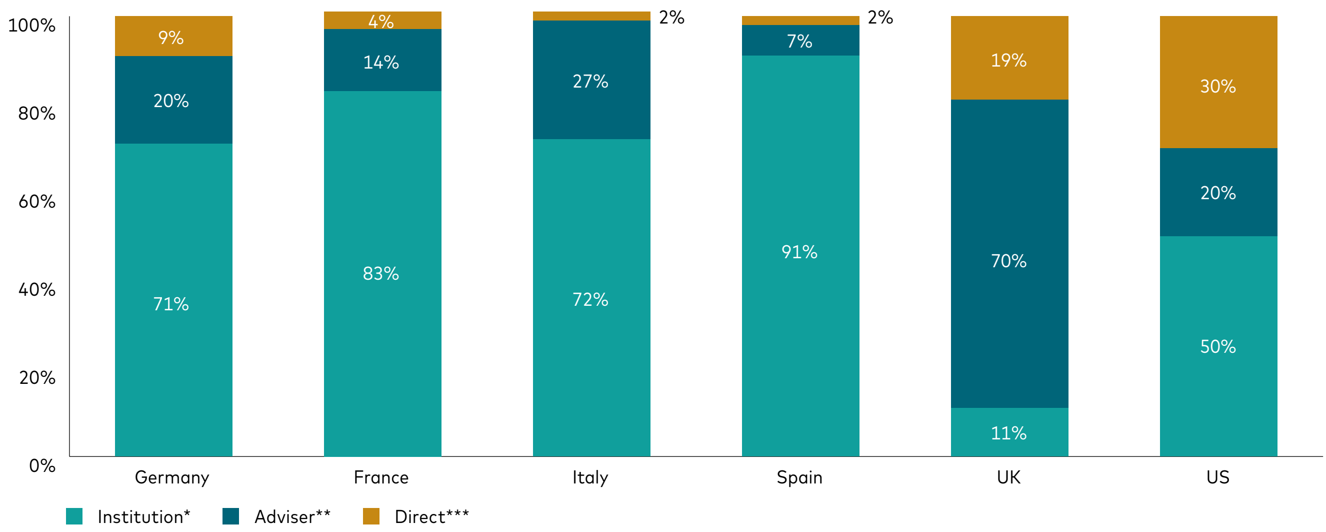
8 Data for Mexico provided by the domestic securities association suggests that only 25% of fund AUM in Mexico is invested in equities with the remainder in fixed income funds.

2.2 Retail investment distribution

Market structures for distributing (i.e. selling) retail investment products vary widely across international markets, but can be broadly categorised into three channels: i) institutions; ii) advisers; and iii) direct-to-consumer (D2C). Even between these categories there is complexity and potential overlap and, as a result, distribution structures are perhaps the hardest aspect of retail investment systems to properly understand and compare[9]. **Figure 4** offers a high-level, cross-country comparison of the share of retail investment AUM distributed through the three channels.

FIGURE 4

Retail fund distribution is mainly intermediated by institutions or financial advisers



Notes: *Institution typically refers to distribution via a bank, broker, insurer or pension provider. **Adviser typically refers to distribution via an independent adviser or network of advisers; a wealth manager; or discretionary portfolio manager. ***Direct-to-consumer/D2C typically refers to online platforms that may be run by asset managers, banks, insurers or technology companies. Due to rounding, some categories may not sum to 100%.

Sources: Platforum 2024 data for European markets; Broadridge 2024 data for US.

There is a clearly identifiable 'continental European' model of retail investment distribution, dominated by institutions; particularly banks and insurers[10]. The UK distribution model is dominated by wealth managers and financial advisers, along with a significant direct to consumer (D2C) segment. In the US, an estimated one-half of the retail investment AUM is distributed by advisers, with a further third through the D2C channel.

[9] For example, certain discretionary portfolio managers may have very limited advice capability in practice, whereas certain private banks will also have retail-facing advisers.

[10] For example, in France insurers control distribution of 36% of retail AUM. In Italy the corresponding share is 19%.

3. Retail market outcomes

This section examines two important drivers of retail investor outcomes: market performance and the cost of investing. As in the previous section, the analysis is focused on public markets and retail investment funds in order to provide a solid basis to compare market performance and product costs[11].

3.1 Market performance across regions

Figures 5 and **6** compare across regions the performance of the main equity and bond market benchmarks over each of the past two decades. Also included are projected returns over the next decade, as calculated by Vanguard's Capital Markets Model (VCMM)[12]. Performance is measured in nominal local currency terms. The tables show that benchmark performance varies widely over time, making the case for global diversification to support investor outcomes.

FIGURE 5

Equity market benchmark

Annualised returns	2005-2014	2015-2024	2025-2034 (forecast)
UK	6.8%	6.2%	6.9%
EU (Eurozone)	5.4%	7.7%	7.3%
Australia	8.0%	8.6%	6.3%
US	7.8%	13.1%	4.3%
Canada	7.8%	8.8%	7.4%
Japan	4.1%	9.5%	6.9%
Mexico	13.9%	4.1%	11.3%

FIGURE 6

Bond market benchmark

Annualised returns	2005-2014	2015-2024	2025-2034 (forecast)
UK	5.7%	0.0%	5.0%
EU (Eurozone)	4.9%	0.3%	3.0%
Australia	6.7%	2.0%	4.4%
US	4.7%	1.3%	4.9%
Canada	5.3%	1.9%	3.8%
Japan	2.0%	-0.2%	1.4%

Past performance is not a guarantee of future results. Any projections should be regarded as hypothetical in nature and do not reflect or guarantee future results.

Note: Returns are calculated from the total return index of the regional MSCI equity index and Bloomberg corporate bond index for each calendar year (see appendix for specific indices selected). Returns are all presented in local currency terms.

Source: FactSet and Refinitiv.

In the decade 2005-2014 and in 2015-2024, equity market benchmarks typically returned 5-10% annually in nominal terms. In the most recent decade the US equity market has been the outlier with annual returns of 13%. Over both decades, market performance was strongest in the US, Canada and Australia; whereas the EU and the UK saw lower annual returns of around 6%.

Over the next decade, some 'reversion to the mean' is to be expected, with equity market growth forecast to be slower in the US and Australia and faster in Europe and Japan.

In the decade 2005-2014, corporate bond market benchmarks typically returned approximately 5% annually. The clear outliers were Australia at 6.7% and Japan with an annual return of 2%. In the decade just ended, annual bond market returns converged on the 0-2% range, reflecting the impact of an extended period of near-zero interest rates.

Over the next decade, bond returns are forecast to be higher as we expect interest rates to settle at higher levels than in the 2010s.

11 Since in principle retail investors in every region have equal access to a globally diversified portfolio, we do not compare the performance of funds investing in specific regions and/or asset classes.

12 Return forecasts correspond to the median of 10,000 Vanguard Capital Markets Model (VCMM) simulations for 10-year annualised nominal total returns in local currency terms for the regional MSCI equity index and Bloomberg corporate bond index, for the period from 31 December 2024 to 31 December 2034. The projections generated by the VCMM are hypothetical in nature, do not reflect actual investment results and are not guarantees of future results.

3.2 Retail investment fund costs

This section examines the cost of investing in retail fund products. In an ideal world, retail investors and policymakers would be able to compare the *total cost of investing* across products, capturing fund costs, trading costs and distribution. However, such total cost data are not yet widely available and are difficult to construct[13]. Hence, we focus here on product cost only.

Figure 7 compares across regions the average cost[14] of equity and bond funds across eight broad product categories and the asset-weighted average cost of all retail funds (encompassing mutual funds and ETFs, both index and active) for equity and bonds respectively. Cross-referencing the data in Figure 3 shows that this sample captures around 80% of the overall investment fund market (approximately 60% from equity and 20% from bonds).

FIGURE 7

Asset weighted product cost (%) for retail share class

Equity	UK	EU	Australia	US	Canada	Japan
Equity mutual funds – active	1.43	1.48	1.26	0.62	1.27	1.57
Equity mutual funds – index	0.12	0.12	0.19	0.07	0.40	0.18
Equity ETF – active	0.25	0.25	1.70	0.42	0.69	–
Equity ETF – index	0.20	0.22	0.25	0.13	0.21	0.05
All equity funds (asset weighted)	**0.74**	**0.64**	**0.80**	**0.28**	**0.89**	**0.24**
Fixed Income						
Bond mutual funds – active	0.93	0.66	0.72	0.44	0.51	0.78
Bond mutual funds – index	0.10	0.14	0.24	0.05	0.20	0.43
Bond ETF – active	0.22	0.13	0.54	0.37	0.51	–
Bond ETF – index	0.18	0.17	0.22	0.10	0.19	–
All bond funds (asset weighted)	**0.61**	**0.36**	**0.60**	**0.26**	**0.43**	**0.73**

Note: Product costs are calculated as (i) asset-weighted average cost of all available products for retail investors in each region in each fund category; and (ii) for all equity and bond funds, asset-weighted average cost of all available fund products for retail investors in each region in each fund category. Asset sizes are measured by net assets on 31 December 2024 in USD terms. Complete dataset not available for Japan.

Source: Morningstar.

Overall, the US market has the lowest cost fund products in almost all categories, although Japan emerges as a low-cost market for equity ETF index products. Fund costs are highest for active equity products: excluding distribution and other costs, retail investors pay between 55 basis points (bps) (US) and 139bps (Japan) more for active management of equity mutual funds, compared to index fund management.

While the asset-class level data underline the position of the US as a low-cost product market, they also offer some unexpected findings.

At 73bps, the overall cost of bond funds in Japan stands out as high both relative to other regions and to the weighted cost of equity products (24bps). Meanwhile, notwithstanding lower distribution costs in the UK funds market[15], asset-weighted product costs in the UK are higher than the EU average for both equity and bond funds (by 10bps and 25bps respectively). Industry data[16] suggests that in Mexico, retail investors face some of the highest costs among the group, with equity fund fees at 1.85% and fixed income fund fees at 1.15%.

13 Vanguard research found that the average total cost of investing with advice in Germany is 2.35% a year, compared to 1.91% in Italy and 1.64% in the UK. Vanguard, Total cost of investing: Improving outcomes for Europe's retail investors, 2024.

14 Product costs shown are the asset-weighted average cost of all available products for retail investors in each region in each fund category.

15 Vanguard, Total cost of investing: Improving outcomes for Europe's retail investors, 2024.

16 Source: Morningstar, *Global Investor Experience Study: Fees and Expenses*, 2022.

Chapter 2: The drivers of retail investing

Having reviewed a broad range of economic literature, we have organised the economic evidence regarding the key drivers of retail investing into a conceptual framework: the Pathways to Investing model. This model captures the factors that influence participation in the capital markets.

FIGURE 8

The Pathways to Investing model

Person	Product	Policy
The characteristics, financial capability and attitudes of individuals which drive their engagement and decisions.	The market setting which frames the product options and choices for retail investors.	The role of public policy in offering incentives and support for retail investors.
• Assets and income • Financial literacy • Behavioural preferences • Trust and confidence • Demographic factors	• Low costs and investment minimums • Default investment products • Advice and guidance	• Pension systems • Automatic enrolment • Tax policy • Legal infrastructure

1. Person

Successful investing requires four key ingredients: articulating clear and appropriate goals, building a balanced and diversified mix of investments, keeping costs low and maintaining discipline and long-term perspective over time[17]. But adherence to these basic principles can be challenging for investors, let alone non-investors, if they lack resources, motivation or know-how. In this section we discuss individual factors that facilitate or impede investing – factors that can often be aided by the policy levers cited in Chapter 3 that are designed to give investors access to advice, guidance and support.

1.1 Assets and income

Participation in capital markets is strongly associated with wealth and income, as many individuals lack – or believe they lack – sufficient resources to invest. In fact, 45% of non-investors around the world indicate a lack of money prevents them from investing[18]. This is the most common self-reported barrier across all 27 EU member countries, all age groups and all education levels[19], translating to a significant investing gradient across the socioeconomic spectrum. For instance, only 1 in 70 of the least-wealthy European households (bottom 20%) hold equities, versus more than one in three of the wealthiest households (top 10%)[20]. Similarly, Americans in the bottom 20% of income are nearly seven times less likely to own equities than those in the top quintile (7% vs. 48%)[21].

17 Vanguard, *Principles for Investing Success*, 2024.

18 World Economic Forum, 2024 Global Retail Investor Outlook, 2025.

19 European Commission, Retail financial services and products, 2022.

20 ECB, Household Finance and Consumption Survey: Results from the 2021 wave, 2023.

21 Federal Reserve, Survey of Consumer Finances, 2022.

Vanguard's Guide to Financial Wellness[22] recommends that individuals first ensure they have set aside emergency savings to cover unexpected expenses before investing. However, evidence remains that across many countries, individuals have savings sitting in cash that would benefit from being invested in the capital markets. For instance, 42% of UK adults have more than £10,000 in cash; they collectively hold around £735bn in cash, most of which (nearly 59%) *could* be invested, accounting for emergency savings needs[23]. This suggests that both actual *and* perceived assets influence participation in capital markets.

1.2 Financial literacy

Financially literate individuals save and invest more, with better diversified portfolios and returns on their investments[24]. However, levels of financial literacy vary across[25] and within countries, and overall financial literacy levels remain stubbornly low across the world[26]. Strong education systems and access to financial education can help lower psychological barriers to participating in the capital markets. Childhood financial literacy programmes have delivered significant improvements in financial decision making, while digital and app-enabled programmes afford unprecedented levels of scale to help millions of children. Section 2.2 of Chapter 3 of this paper outlines our observations on how targeted, research-based financial literacy plans focused on how people engage with money can contribute to the development of a successful retail investment system.

1.3 Behavioural preferences

Individual preferences toward risk, loss and time significantly predict the likelihood of investing, largely because investing requires a certain degree of comfort with uncertain outcomes, the prospect of losing money and tradeoffs between less money today for more money in the future. Individuals with higher risk tolerance are consistently more likely to invest in equities and risk tolerance is the strongest predictor of investing among German households, even after controlling for wealth, income and other demographic factors[27]. There are significant differences in risk propensity across and within countries. Individuals in countries that demonstrate risk-averse attitudes, such as Germany and the Netherlands, are less likely to hold equities, mutual funds or bonds compared to relatively more risk-tolerant countries such as the US, UK and Australia[28].

Loss aversion similarly varies by person and is associated with lower rates of stock-market participation, ostensibly because loss-averse individuals experience more pain from losses than pleasure from equivalent gains[29]. Preferences on the gain side of the ledger also affect investment behaviour, as individuals who show stronger preferences for present versus future consumption (i.e., present bias) tend to save and invest less for retirement versus those who are future-focused[30].

22 *Vanguard's Guide to Financial Wellness,* 2024.
23 Barclays, The UK investment gap: £430 billion in cash savings not invested by UK adults, 2024.
24 Kaiser and Lusardi, Financial Literacy and Financial Education: An Overview, 2024.
25 Klapper et al., Financial Literacy Around the World, 2016.
26 Lusardi and Mitchell, The Importance of Financial Literacy: Opening a New Field, 2023.
27 Dohmen et al., Individual Risk Attitudes: Measurement, Determinants, and Behavioral Consequences, 2010.
28 Ferreira, Cross-country differences in risk attitudes towards financial investment, 2018.
29 Dimmock & Kouwenberg, Loss-aversion and household portfolio choice, 2010.
30 Shah Goda et al. The role of time preferences and exponential-growth bias in retirement savings, 2015.

1.4 Trust and confidence

Individuals with lower levels of trust and confidence in financial institutions are less likely to participate the stock market at all – and if they do participate, they invest a smaller proportion of their assets in equities[31]. However, trust and confidence in the financial services industry varies across country and industry subsector, as illustrated in **Figure 9** below. Two of the crucial subsectors providing access to the capital markets, financial advisory and investment management, are generally distrusted across the countries we focus on in this paper. There is also substantial variation within countries, with lower-income and older individuals less trusting across all subsectors. To this end, in Chapter 3 we advocate for a retail investment system that is designed and enforced to ensure that investors get a fair deal – reducing the risk of inherent market failures will help increase individuals' levels of trust and confidence in retail investment systems.

FIGURE 9

Trust in the financial services industry varies across country and subsector

Country	Financial services overall	Banks	Personal insurance	Property/ casualty insurance	Financial advisory	Investment management	Financial technology	Crypto-currency/ digital assets
India	83	87	84	79	80	82	80	65
China	80	86	78	82	79	76	82	72
Mexico	69	70	66	64	60	63	55	41
Brazil	65	71	66	66	61	63	62	44
Canada	59	66	55	50	48	50	37	18
US	55	61	53	51	50	50	32	25
Australia	52	58	49	47	45	46	34	22
UK	49	57	46	41	39	37	33	14
Japan	47	54	40	41	29	25	31	14
France	45	57	61	58	41	29	28	16
Italy	44	48	51	48	44	45	45	30
Germany	41	50	53	57	35	34	31	16

Trust Neutral Distrust

Notes: Trust scores are taken from the Edelman Trust Barometer for 2024, which had a focus on financial services. We report trust scores for a selection of countries for the overall financial services industry and subsectors. A reading of 60-100 indicates trust, 50-59 indicates neutral and 1-49 indicates distrust.
Source: Edelman Trust Barometer 2024.

[31] Guiso et al., Trusting the Stock Market, 2008.

1.5 Demographics

Individual characteristics such as gender, age and education levels are significantly associated with participation in the capital markets. Women are significantly less likely to invest than men (e.g., 20% vs. 32% in the EU[32]); a gap that may be partly due to lower paid or part-time jobs reducing women's means to invest and partly explained by gender differences observed in confidence[33] or risk tolerance[34].

Age is strongly correlated with participation in defined-contribution plans in the US, where younger workers participate at significantly lower rates than middle-aged or older workers[35], likely because they have lower incomes and wealth as well as significantly lower levels of financial literacy[36]. However, age differences in overall stock ownership rates are mixed and vary by region. In Europe there is a positive correlation between age and owning investment products[37], while in the US stock ownership is highest among middle-aged adults and is lower among the youngest and oldest adults[38].

By contrast, education has a clear connection to stock-market participation across countries: 32% of European adults with higher levels of education (completed after age 20) own investment products, compared to only 17% of those with the lowest levels of education (completed before age 16)[39]. The education-investment gradient is even starker in the US: 80% of Americans with college degrees but only 17% of those without high school degrees own equities[40].

2. Product

The availability of low-cost, high-quality investment products, services and experiences is essential to democratise access to capital markets, encourage long-term investing and facilitate investor success.

2.1 Low costs and investment minimums

Products with low investment minimums and fees enable and encourage individuals to invest with a small amount and keep more of their returns, which compound over time. Studies suggest that differences in cross-country participation in the stock market can be in part explained by differences in participation costs[41]. There is a common misperception that significant wealth is needed to invest – for instance, 38% of non-advised adults with greater than £10,000 in cash assets in the UK said they did not have enough money, or financial affairs complex enough, to consider investing in the capital markets[42]. While this may reflect historically high barriers to entry for investors, trends in price compression and lower minimums mean that millions of would-be investors in the US, UK and EU can get started with as little as $1/£1/€1 and pay only fractions of a percent in investment fees. Perceived barriers to entry may be stubbornly high, but *actual* barriers are lower than ever.

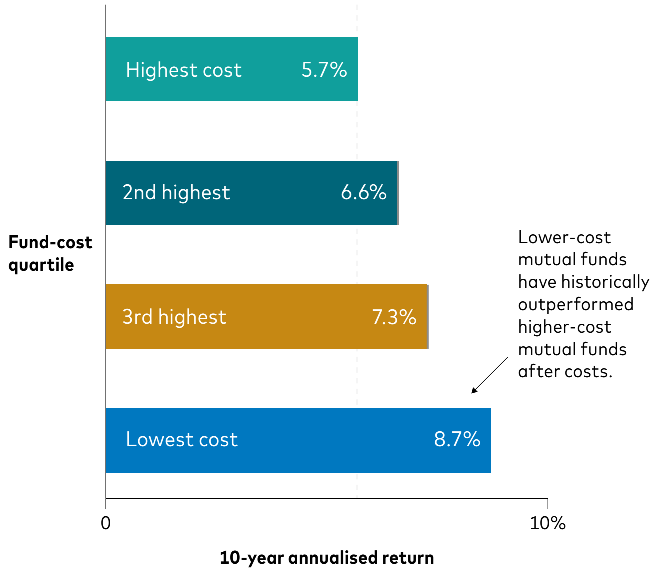
32 European Commission, Retail financial services and products, 2022.
33 Bucher-Koenen et al., Fearless Woman: Financial Literacy and Stock Market Participation, 2021.
34 Grable, Financial Risk Tolerance, 2016.
35 Vanguard, *How America Saves,* 2024.
36 Mitchell and Lusardi, Financial Literacy and Financial Behavior at Older Ages, 2022.
37 European Commission, Retail financial services and products, 2022.
38 Federal Reserve, Survey of Consumer Finances, 2022.
39 European Commission, Retail financial services and products, 2022.
40 Federal Reserve, Survey of Consumer Finances, 2022.
41 Guiso et al., Household stockholding in Europe: where do we stand and where do we go?, 2003.
42 Financial Conduct Authority, Financial Lives 2024 survey, consumer investments - selected findings, May 2025.

For individuals who step into the world of investing, low-cost indexing has proven to be a successful investment strategy[43]. As depicted in **Figure 10** below, there is a significant correlation between costs and excess return, with higher expense ratios generally associated with lower excess returns.

FIGURE 10

Lower-cost portfolios tend to outperform higher-cost ones after costs

Average annualised returns of equity mutual funds (2012-2022)



Past performance is no guarantee of future returns.

Notes: We considered all equity mutual funds available in Morningstar Direct that survived the period of 31 December 2012 to 31 December 2022, regardless of where they were available for sale. In total, there were 8,192 funds. Each fund is represented by its oldest share class. Returns are in USD and net of expenses, excluding loads and taxes. We relied on prospectus expense ratios when they were reported; otherwise, we approximated the expense ratio using the annual expense net ratio, which is based on the actual fee charged. By cost quartile, the average expense ratios are 0.57% (lowest-cost quartile), 1.20% (second lowest-cost quartile), 1.62% (second-highest-cost quartile), and 2.47% (highest-cost quartile). The cutoffs for the equity mutual fund expense ratios are: 0.90% (25th percentile; lowest quartile), 1.36% (50th percentile; between second lowest and second-highest quartiles), and 1.83% (75th percentile; highest quartile).

Source: Vanguard calculations, using data from Morningstar, Inc. Vanguard Principles for Investing Success, 2024.

While low minimums and costs can encourage investors to take the first step, access to products, such as index funds and ETFs, can make it easier to build balanced and globally diversified portfolios without needing specialist knowledge to select individual equities. Having an appropriate asset allocation is crucial to staying the course and growing one's assets, because most of the variability in a portfolio's return over time is due to the asset allocation[44]. Products that offer low cost, high quality and broad diversification give investors the best chance to achieve long-term success. Default products can significantly support individual investors in making better investment decisions.

[43] Vanguard, *The case for low-cost index-fund investing,* 2023.

[44] Vanguard, *Principles for Investing Success,* 2024.

2.2 Default investment products.

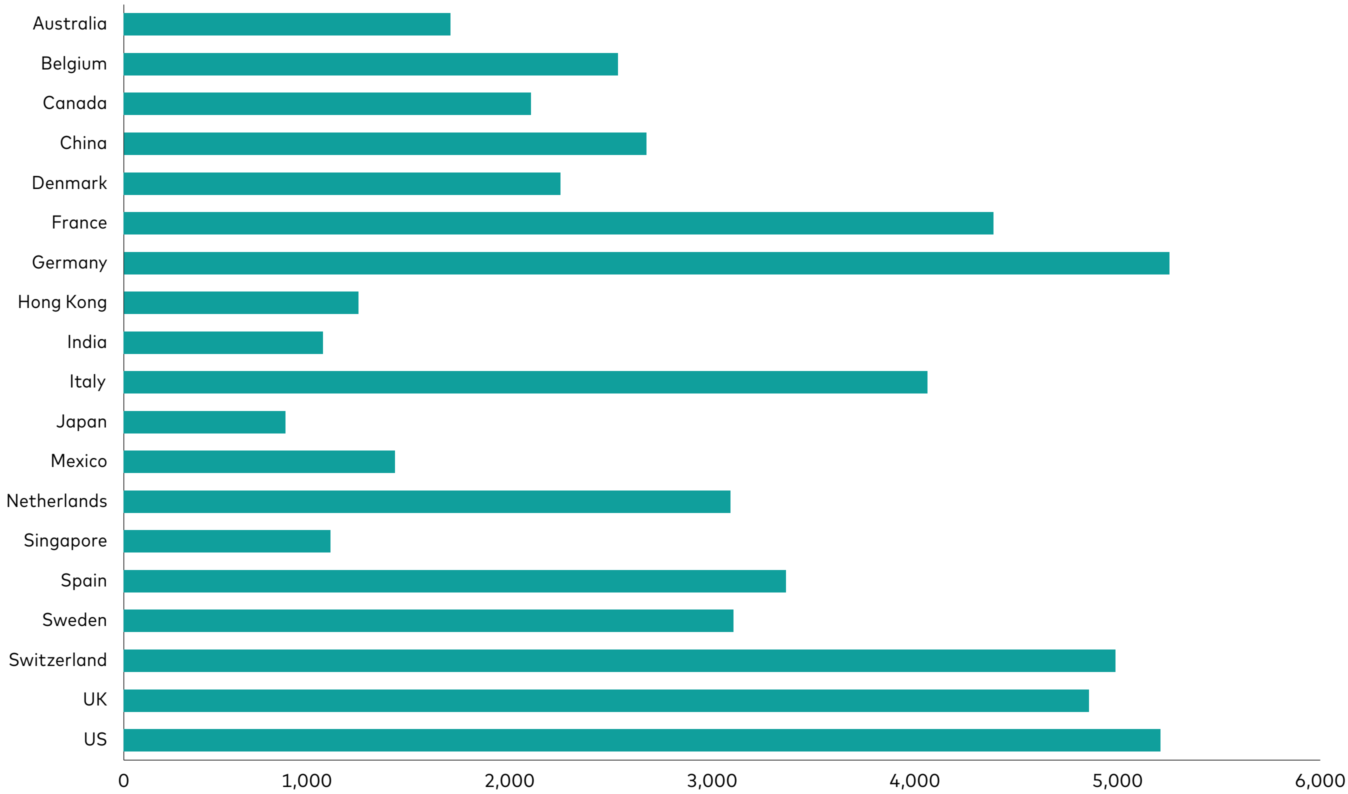
Growth in availability of low-cost mutual funds and ETFs, as shown in **Figure 11**, has led to an increased number of choices for investors.

But having too many products to select from can result in choice overload, whereby individuals are overwhelmed by the choices available and take no action. For instance, workers who face a larger number of options in their US employer-sponsored pension scheme (401(k)) plan menu are significantly less likely to participate in the plan at all, and those who do participate save at lower rates while allocating less to equity funds[45],[46]. Excessive choice not only undermines motivation to invest but also contradicts investor preferences. Roughly one in four all-cash investors in the US feels overwhelmed by choice among investments and their most commonly preferred number of options is only 10[47].

Well-designed default investment products and fund solutions, such as target-date funds, can remove knowledge-related barriers to investing and inertia by reducing the number of decisions individuals must make to attain a balanced, diversified portfolio. Among defined-contribution[48] plans offering automatic enrolment, the overwhelming majority (94-95%) use target-date or balanced funds as defaults [49,50].

FIGURE 11

Availability of equity mutual funds and ETFs in select countries



Notes: This analysis excludes funds categorised as obsolete, feeder funds, fund of funds, institutional share classes, and/or any share class that requires a minimum investment of US $100,000 USD or more. Funds are categorised as available for sale if any share class is available in that country.

Source: Vanguard calculations of Morningstar data for equity mutual funds and ETFs as at December 2024.

45 Iyengar et al., How Much Choice is Too Much? Contributions to 401(k) Retirement Plans, 2004.

46 Iyengar & Kamenica, Choice proliferation, simplicity seeking, and asset allocation, 2010.

47 Vanguard, *Out of sight, out of market: The IRA cash drag,* 2024.

48 Where the retirement benefit is determined by the amount of contributions made, the investment performance of those contributions and the tax relief received.

49 Vanguard, *How America Saves,* 2024.

50 Fidelity, Building financial futures Q4 2024 Report, 2024.

The widespread adoption of target-date fund defaults has led to a dramatic improvement in portfolio diversification and age-appropriate asset allocation over the past two decades, enabling millions of investors to achieve better outcomes automatically[51]. Further information on how default products can be of benefit to individual investors in this regard can be found in section 1.3 of Chapter 3.

2.3 Access to support, guidance and advice

Many individuals lack confidence when it comes to investing, attributing their lack of participation to not knowing how to invest or what investments to choose[52]. Advisory offers, services and solutions can help fill the gap. Indeed, most investors benefit from some form of advice, ranging from an investment philosophy embedded within a product, to digital advice offering a modest degree of personal engagement through to a full-service financial adviser. In section 2.1 of Chapter 3 we identify the importance of individuals having access to a full spectrum of advice and guidance to meet their individual investing needs and circumstances.

3. Policy

The economic development of a country, level of state support, structure of the pension system (especially mandatory vs. opt-in vs. opt-out regimes), tax policy and legal infrastructure (including financial regulation and investor protection) all have a significant influence on participation in the capital markets. Thoughtfully designed public policy regimes can reduce barriers to entry, boost extrinsic motivation and reduce or eliminate friction for millions of would-be investors. Because policy-level interventions can achieve maximum scale in short order (through roll-out to an entire populace simultaneously), they are among the most effective tools for expanding access to investing. This is a foundational motivation for this publication and Vanguard's commitment to collaborate with policymakers on this topic.

3.1 Pension systems

Population structures are changing around the globe, with a rising proportion of older people. With people generally living longer, healthier lives, more time will be spent in retirement. Half of babies born in 2007 in developed countries are expected to live to over 100, equating to a 40-year retirement[53]. These longer retirements will require greater funding.

In many countries historically generous state and private pensions provided sufficient resources to fund retirement. Moving forward, evidence suggests retirees are facing readiness gaps around the world, with the global retirement gap estimated to be $400trn by 2050 according to the World Economic Forum[53]. A combination of the state pension, workplace pension schemes and, for those who are able, private savings and investing will be crucial to achieve retirement security. The structure of a country's pension system shapes retail investment markets and individuals' decision-making in several ways:

- Public/private balance: pension systems which guarantee citizens a relatively high income in retirement may weaken incentives to invest as there is a common misconception that there is little need or value in accumulating capital for old age outside a pension (see **Figure 12** below).

[51] Vanguard, *How America Saves*, 2024.

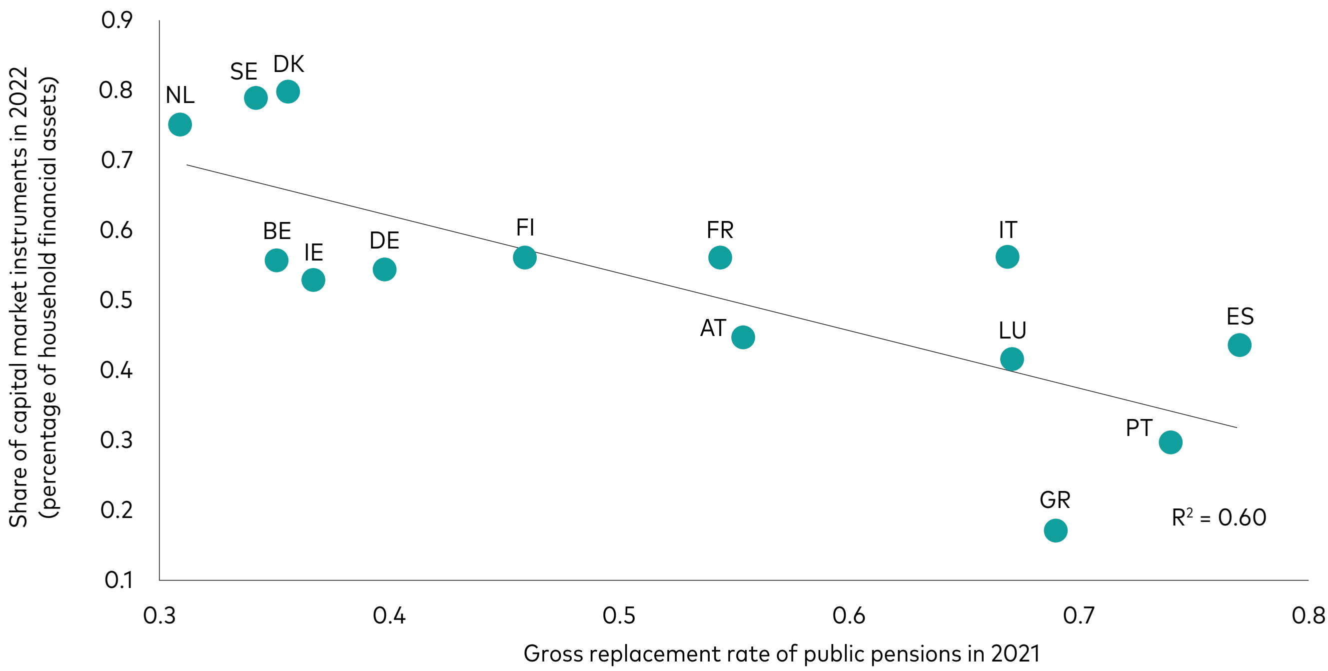
[52] World Economic Forum, 2024 Global Retail Investor Outlook, 2025.

[53] World Economic Forum, We will live to 100 – how can we afford it?, 2017.

- Defined benefit[54] (DB) vs defined contribution (DC) schemes: Generous workplace DB pension schemes may also make individuals less likely to invest in the capital markets (and create long-tail liabilities for employers/governments). In contrast, DC plan participants typically choose whether to invest beyond the minimum contributions, which investments to allocate contributions to and how to draw down their savings in retirement.
- Level of engagement: Some state pension schemes (such as those in Sweden and Denmark) require citizens to engage with their pension and make asset allocation decisions, whereas some workplace DB systems (notably the Netherlands) offer limited scope for member engagement and decision-making.

FIGURE 12

Generous public pension systems may weaken participation in the capital markets



Key: AT (Austria); BE (Belgium); DE (Germany); DK (Denmark); ES (Spain); FI (Finland); FR (France); GR (Greece); IE (Ireland); IT (Italy); LU (Luxembourg); NL (Netherlands); PT (Portugal); SE (Sweden).

Source: The 2021 Ageing Report: Economic and Budgetary Projections for the EU Member States (2019-2070). EFAMA, Household Participation in Capital Markets, January 2024.

54 A defined benefit pension is a type of retirement plan where the income received is fixed and guaranteed, based on salary and years of service. It is often called a "final salary" or "career average" pension, as the payout is calculated based on salary at retirement or an average of an individual's salary over their career. The benefit is usually a monthly income for life, and the employer is responsible for ensuring there are enough funds to cover the payments.

3.2 Automatic enrolment

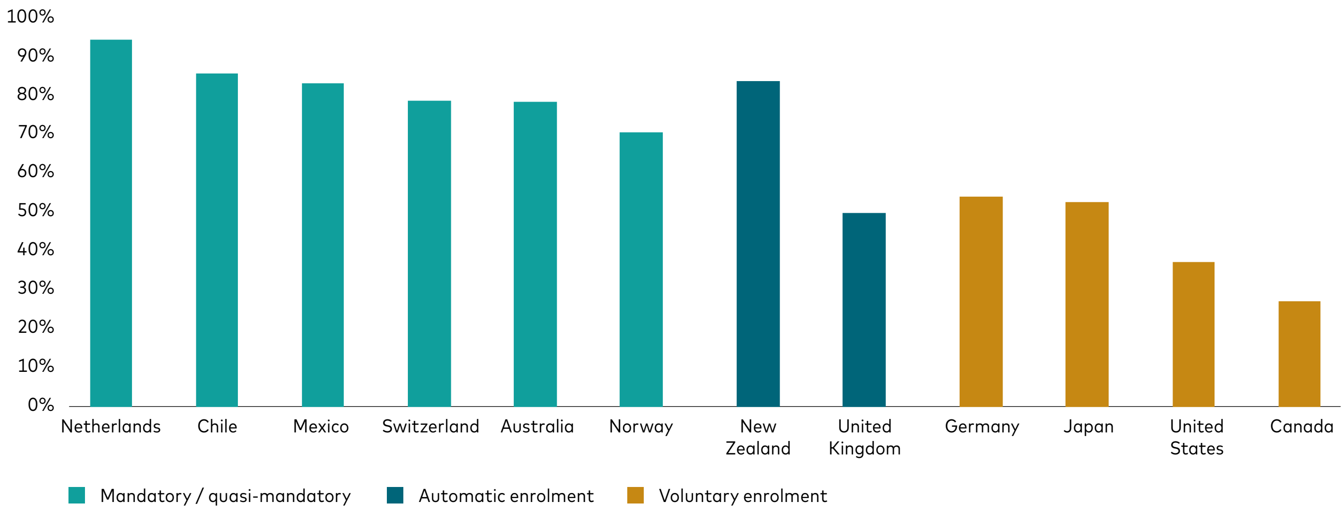
The power of automatic enrolment to boost participation in capital markets has been well documented among workplace pension schemes where eligible workers are enrolled by default. Historically, pension participation has been low in many countries with opt-in schemes (i.e. voluntary enrolment), as these relied on workers actively taking action to join the plan. By contrast, countries that have adopted either mandatory or opt-out pension schemes typically have higher pension plan participation rates (**Figure 13**).

In the US, DC retirement plans with automatically enrolled employees had an overall participation rate of 94% in 2023, compared with 67% participation in plans with voluntary enrolment (**Figure 14**). Automatic enrolment removes the need for individuals to invest in the capital markets on their own accord, eliminating barriers related to knowledge or motivation while leveraging inertia to drive better investor outcomes[55]. Consequently, automatic enrolment is particularly effective amongst groups that are *least* likely to opt-in of their own accord, including younger and lower-income individuals. This can make it a game changer for democratising investing at scale. Indeed, automatic enrolment into DC pension schemes combined with default investment products has been a key driver of US household participation in the capital markets, especially among lower-income workers and younger generations (Gen Z and Millennials)[56]. Sections 1.1 and 1.3 of Chapter 3 of this paper explore in more depth how the combination of automatic enrolment and default investment products can counteract the risks of inertia and/or a lack of knowledge.

FIGURE 13

Countries with mandatory or opt-out pension schemes typically have higher participation rates

Participation rates in occupational pension plans by pension scheme type, % of working age population



Notes: Figures are given as a percentage of the working age population. Not all working-age individuals meet eligibility for participation across all countries. Voluntary enrolment corresponds to participation in voluntary occupational pension schemes, as defined by the OECD.

Source: OECD, *Pensions at a Glance*, 2023.

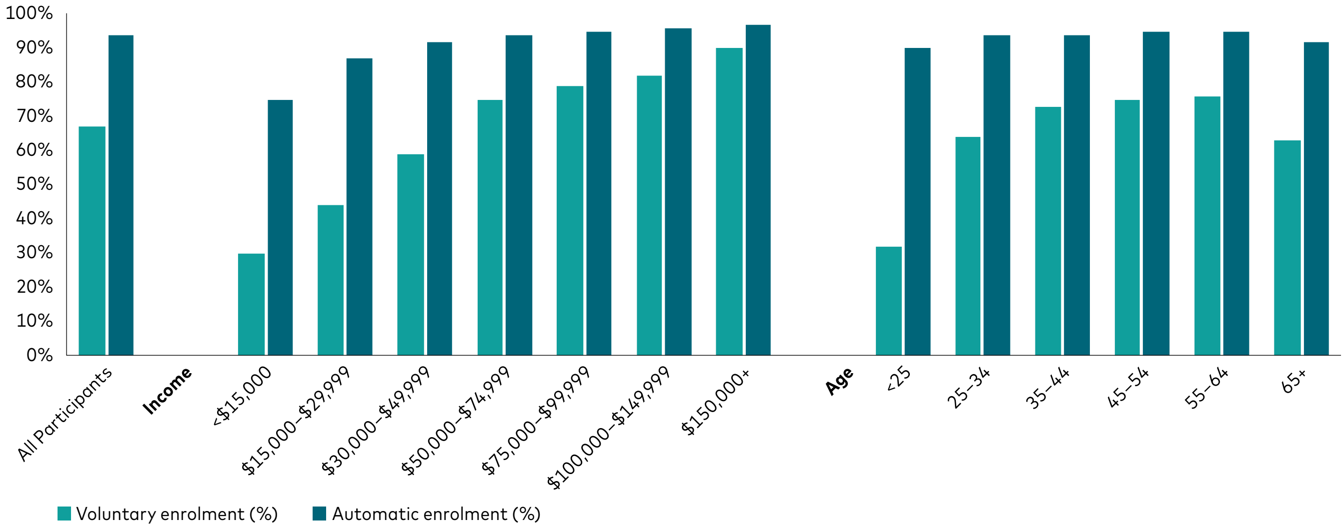
[55] Vanguard, *Automatic enrolment: The power of the default*, 2021.

[56] Vanguard, *How America Saves*, 2024.

FIGURE 14

Participation in US DC plans is typically higher for those with automatic enrolment

Plan participation rates by plan design, 2023 estimated



Source: Vanguard, *How America Saves*, 2024.

3.3 Tax policy

Tax policy plays a crucial role in shaping participation in the capital markets by directly influencing the after-tax return on investments, which incentivises or disincentivises investment. Tax incentives that reduce the tax burden on capital gains and offer tax-advantaged savings vehicles tend to encourage greater participation in investment markets. For instance, in the US long-term capital gains are taxed at a preferential rate of 0% or 15% for most investors, while interest from savings is taxed at 10% to 37% (depending on total income).

Countries that offer tax-efficient investing vehicles that allow investments to grow tax-free or tax deferred, such as Individual Savings Accounts (ISAs) in the UK, Investeringssparkontos (ISKs) in Sweden and Individual Retirement Accounts (IRAs) in the US, tend to see higher levels of stock-market participation, as illustrated in **Figure 16** below. Section 1.2 of Chapter 3 of this paper provides further Vanguard perspective on how tax-incentivised investment plans can leverage behavioural economics to encourage greater retail investment.

Conversely, policies can discourage capital markets participation by placing high and/or complex taxes on investments relative to alternative financial products, such as insurance or bank savings. For example, in France, where traditional life insurance products ('assurance vie') receive favourable tax treatment, the proportion of household financial assets in life insurance products (29%) is markedly higher than other OECD countries[57]. Germany and Italy similarly have tax policies that favour life insurance products and pension schemes, over individual equity investment.

[57] Source: OECD data on household financial assets, 2023.

3.4 Legal infrastructure

Countries with stronger investor protections, corporate governance rules, market oversight and enforcement and more transparent financial markets tend to see higher levels of retail investor participation in the stock market[58]. Strong legal frameworks create a more secure and reliable environment for individuals; in turn, trust in institutions can encourage stock market participation[59]. Simply put, when investors' interests are harmed by firms breaking the law or playing loose with regulatory compliance, consumers' trust and confidence in the financial system is often damaged. Investors lose confidence when they believe misbehaviour goes unpunished and risks becoming rampant.

It is essential that retail investment systems are founded on and supported by a legal and regulatory regime that delivers both specific and general deterrence. Weak or inconsistent legal protections can discourage investor participation in the stock market by increasing the perceived level of risk in investing, reducing transparency, and in extreme cases, limiting access to fair recourse in instances of mismanagement.

58 Kaustia et al., What drives stock market participation? The role of institutional, traditional, and behavioral factors, 2023.

59 Fisch and Seligman, Trust, financial literacy, and financial market participation, 2021.

Chapter 3: A pro-investor policy framework

This chapter outlines the eight policy levers which we have identified can lead to successful retail investment systems. We have organised these eight levers into three broad objectives that policymakers may have to:

1. Encourage individuals to invest;
2. Give investors access to support, guidance and advice; and
3. Ensure investors get a fair deal.

We recognize that there is no single "silver bullet" that by itself will catalyse a successful retail investment system – a combination of several different policy levers will likely be needed to have the most profound effect.

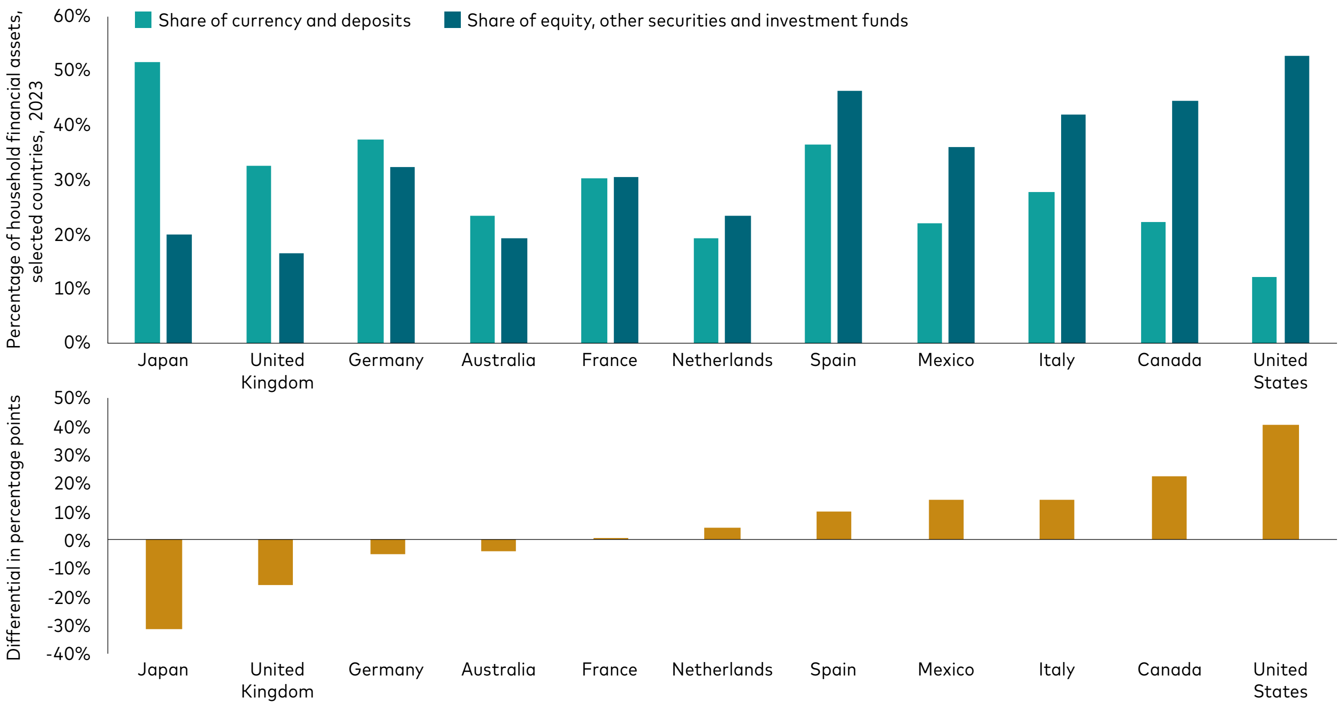
Policy case studies referenced in this chapter are examples of what Vanguard considers to be positive regulatory developments that have supported individual investors' financial outcomes. Vanguard case studies serve as examples of real-world application of the policy levers. Together, these case studies serve as illustrative examples of policy levers conducive to successful retail investment systems. However, their inclusion does not indicate that these examples cannot be further improved.

1. Encourage individuals to invest

A paradox of financial markets is how few individuals invest in them. OECD data illustrates that investors across various countries have significantly less money invested than they have saved in bank deposits[60].

FIGURE 15

Across the globe, saving is more common than investing



Notes: This chart shows the percentage of financial assets of households and non-profit institutions serving households (NPISH) in currency and deposits compared to the percentage in equity, other securities and investment funds, as defined by the OECD. We include a selection of the largest OECD countries where data coverage is good. Data are as at 2023.

Source: OECD.

While cash savings are an essential component of any individual's financial health (as they serve as a buffer for emergencies and unpredicted expenses), investing is essential for reaching long term goals such as retirement, paying for education or building wealth, as inflation can cause money put aside today to be worth less in the future. Prompting savers to become investors could have a profoundly positive impact on the strength and resilience of capital markets around the world. If households in the most populous OECD countries that hold more in deposits than in investments[61] reallocated just 10% of their cash to investments, those countries' capital market stakes would rise by U.S. $2.1 trillion[62]. Deeper capital markets will have both economic and societal benefits for these countries, including increasing their funding of growth and innovation, boosting productivity, creating jobs, bringing new services to consumers and broadening investment opportunities for investors.

60 Source: OECD data on household financial assets, 2023.

61 Investment is defined as the sum of household financial assets in equity, other securities and investment funds.

62 This figure is calculated by taking the countries in Figure 15 that hold more in deposits than in investments and reallocating 10 per cent of their deposits to investments (equity, other securities and investment funds). We sum the total reallocated amount to reach the final figure.

Below we articulate the three policy levers that we believe can encourage more individuals to invest.

1.1 Automatic enrolment

Counteract the risks of inertia and/or a lack of knowledge by ensuring individuals are automatically enrolled into a retirement plan.

In a number of countries – such as Australia, the UK, Ireland and the US – policymakers have sought to help individuals prepare for their retirement by compelling employers to automatically enrol new hires into tax-incentivised retirement plans.

As Chapter 2 outlined, the significant increase in retirement participation caused by automatic enrolment has a profoundly positive impact on individuals' financial wellbeing and the overall health of a retail investment system, given that retirement is typically the greatest financial need that individuals are saving for. For this reason, in an age where state retirement support is often less dependable, we consider automatic enrolment retirement plans to be a cornerstone of a successful retail investment system.

Policy case study

The superannuation system significantly improves retirement outcomes for Australian citizens

The Australian retirement system is composed of three pillars:

- Age Pension: A means-tested payment to retirees who meet age and residency requirements. The government provides the Age Pension as a safety net to ensure a basic standard of living for retirees.
- Compulsory Superannuation: Mandatory contribution by employers (currently at 12% of salaries).
- Voluntary Savings: Personal extra savings within the pension system, and savings/investments outside superannuation, including home ownership.

Since the commencement of mandatory contributions in the early 1990s, Australia's superannuation system has amassed some AU$4 trillion of assets. As the Australian Treasury's Intergenerational Report[63] highlighted, the superannuation system has put Australia on a strong footing by international standards to manage the cost of pensions for its ageing population.

1.2 Tax incentivisation

Leverage behavioural economics and encourage individuals to invest by providing tax incentives.

There is strong evidence globally that fiscal incentives can be an effective means by which to encourage increased investment in capital markets.

The appropriate tax incentivisation scheme is likely to depend on a country's objectives, current economic situation and tax regime.

Policy case study

UK Individual Savings Accounts (ISA) increase the prospects of investment success for low- and middle-income households

In 25 years, more than £700 billion has been amassed in ISAs, with Stocks and Shares ISA holdings accounting for just under 60% of the market value of ISA funds in the 2022 to 2023 tax year[64]. There has also been substantial take up by low- and middle-income households. Data published in 2024 shows that 46% of households (or 10 million) contributing to an ISA have a household income below £20,000[65], well below the median full-time gross earnings of £37,430 per annum[66].

63 Australian Treasury, Intergenerational Report 2023.

64 UK Government, Annual Savings statistics, 2024.

65 McBride et al. Simplifying Saving and Improving Financial Security through Universal Savings Accounts. Tax Foundation, 2024.

66 Office for National Statistics, Employee earnings in the UK: 2024. Measures of employee earnings, using data from the Annual Survey for Hours and Earnings.

FIGURE 16

The design of non-retirement investment accounts is influenced by domestic policy drivers, which impact their uptake

National scheme	Launch	Contribution allowance	Tax treatment of 1) contributions; 2) capital gains, dividends and/or interest; 3) withdrawals[67]	Eligible assets for investment	Assets, % of GDP	Take-up, % of adult population
Canada TFSA	2009	**Annual:** CAD 7,000, indexed to inflation. **Lifetime:** Annual allowances accumulate from when people turn 18 to a maximum "contribution room" in 2025 of CAD 102,000.	TEE		18.4% (2022)	54.1% (2022)
France PEA	1992	**Lifetime:** EUR 150,000. A total allowance of EUR 225,000 applies to the combined value of PEA and a version of the PEA that is targeted at investments in SMEs.	TET Withdrawals incur social security contribution payments. Account must be open for at least five years to qualify for tax benefit.	Must be invested in equity issued by companies headquartered in the EEA or funds investing at least 75% of their assets in EEA equity.	3.9% (2024)	12.3% (2023)
Italy Ordinary PIR	2017	**Annual:** EUR 40,000. **Lifetime:** EUR 200,000.	TEE Account must be open for at least five years to qualify for tax benefit.	70% of capital must be invested in securities issued by firms incorporated in Italy; 30% of this must be in SMEs.	0.8% (2023)	No data
Japan Growth NISA	2014	**Annual:** JPY 2,400,000. **Lifetime:** JPY 12,000,000. A total allowance of JPY 18,000,000 applies to the combined value of Growth and Tsumitate NISAs.	TEE	Listed equities and funds	4.9% (2023)	10.6% (2023)
Sweden ISK	2012	Tax-free allowance of SEK 150,000 (rising to SEK 300,000 in 2026).	TTE Flat annual tax based on Swedish government borrowing rates applies to holdings above tax-free allowance (1.086% in 2024).	Listed securities (including bonds)	31.2% (2024)	45.4% (2024)
UK Stocks & Shares ISA	1999	**Annual:** GBP 20,000. Allowance applies to combined value of contributions to all ISA types.	TEE	Listed equities, listed investment trusts, UK/EU UCITS investment funds, listed corporate bonds, UK/EEA government bonds, cash.	17.1% (2022)	6.8% (2022)

Source: New Financial, Designing Savings and Investment Accounts in the EU, 2025.

We encourage policymakers to ask four key questions when designing tax incentivisation schemes:

1. How can the incentives be designed to best align with public policy objectives?
2. How easy will it be for service providers to implement and comply with these schemes?
3. How can public awareness of the tax incentives be increased?
4. Can bipartisan governmental support be achieved to provide regime longevity?

67 Note: T = taxed; E = tax-exempt. The three-letter sequence denotes: (1) whether contributions are made from pre- or post-tax income; (2) whether capital gains, dividends and/or interest are tax-exempt; and (3) whether investment withdrawals are taxed.

1.3 Default products

Improve investors' outcomes by selecting quality products that add value.

Individual investors can benefit greatly from investment systems that direct customers to valuable products and services, such as default and/or pre-approved investments[68]. This is particularly the case for those consumers that lack the ability, time, motivation and/or skill to make effective investment decisions. In the presence of default options, these consumers will typically take the path of least resistance and invest/remain invested in the default option.

Policy case study

Qualified Default Investment Alternatives (QDIAs) have improved the asset allocation of US employees' retirement plans

By some estimates, the adoption of low-cost target-date funds as default investments (QDIAs) in US retirement plans[69] may enhance retirement wealth by as much as 50% over a 30-year horizon[70]. QDIAs have been particularly effective in helping US employer-sponsored pension scheme (401(k)) members to achieve age-appropriate asset allocations and avoid extreme portfolios. In 2005, two years before the Pension Protection Act enabled QDIAs, participants under 25 allocated only 57% of their assets to equities. By 2022, participants allocated 87% to equities and target-date fund QDIA adoption reached 90% of 401(k) plans. Over the same time period, the prevalence of extreme equity allocation (i.e., 0% or 100%) plummeted to 7% from 34%[71].

Policy case study

The simplicity and comparability of MySuper Products makes them an appropriate default investment for Australian retirement investors

Since 2013, all Australian Prudential Regulation Authority (APRA) regulated funds seeking to be nominated as default providers have been required to offer a MySuper product as the default for members who do not make an active investment selection. The MySuper designation applies to simple, relatively low-cost diversified investment products that can be easily compared across different providers, based on standardised public disclosures on metrics such as fees and charges, investment objectives, risks and performance. MySuper products now account for over 40% of assets in the Australian superannuation system (and are invested in by some 80% of superannuation fund members).

68 There is broad consensus among behavioural scientists that defaults are powerful tools for improving decisions and outcomes while preserving decision-makers autonomy. See, for example, Jachimowicz et al., When and why defaults influence decisions: a meta-analysis of default effects, 2019 and Vanguard, *Improving retirement outcomes by default: The case for an IRA QDIA*, 2024. Compared to traditional interventions like financial literacy programmes, defaults are considerably more effective, easier to implement and less costly (Benartzi et al., Should governments invest more in nudging?, 2017). Furthermore, defaults are particularly effective where engagement is low and inertia is high (Vanguard, *How America Saves,* 2023).

69 Pursuant to the Pension Protection Act of 2006.

70 Utkus & Mitchell, Target Date Funds and Portfolio Choice in 401k plans, 2020.

71 Vanguard, *Improving retirement outcomes by default: The case for an IRA QDIA,* 2024.

2. Give investors access to support, guidance and advice

It is human nature to seek help and advice in areas where one's own personal knowledge and expertise is limited. Investing is no different. However, key challenges persist in advice markets globally including the high cost of investment advice and the common lack of alignment between advisory services available and the needs and wants of the investing public. In this section, we outline two policy levers that we believe can improve investors' access to advice, support and guidance.

2.1 Spectrum of advice

Ensure investors have access to the full range of support, guidance and advice to suit their circumstances.

Given the challenges referenced above, it is important that individuals have access to a full spectrum of advice and guidance depending on their individual investing needs and circumstances.

FIGURE 17

A spectrum of advice and guidance can facilitate greater alignment between available services and the needs of individual investors

	Embedded guidance in product design	Digital nudges*	Personalised guidance	Simple, limited & robo-advice	Comprehensive advice
Service description	Financial guidance integrated directly into a product, service or platform.	Digital prompts to educate investors about opportunities to improve their financial outcomes.	Customer engagement intended to help consumers in their decision-making process under an insights-style self-directed model of guidance.	Delivering a standard array of simple, one-off financial advice interventions – asset allocation, rebalancing and portfolio-construction services.	Asset management, financial planning, tax, estate, insurance and other specialised services.
Type and extent of guidance or advice provided	Generic/general advice (may be cohort-based)	Cohort-based/ Next best action/ Unprompted	Cohort based/ Semi-personalised/ Prompted guidance	Personalised/ Customer initiated	Highly personalised/ Customer initiated

Increasing needs and complexity of financial circumstances

Source: Vanguard, 2025.

*Nudges, depending on the jurisdiction, can also be personalised based on someone actively inputting something, or based on already available data such as their date of birth, balance, contributions and other information.

The remainder of this section focuses on *emerging* areas of advice reform.

2.1A: Embedded guidance in product design

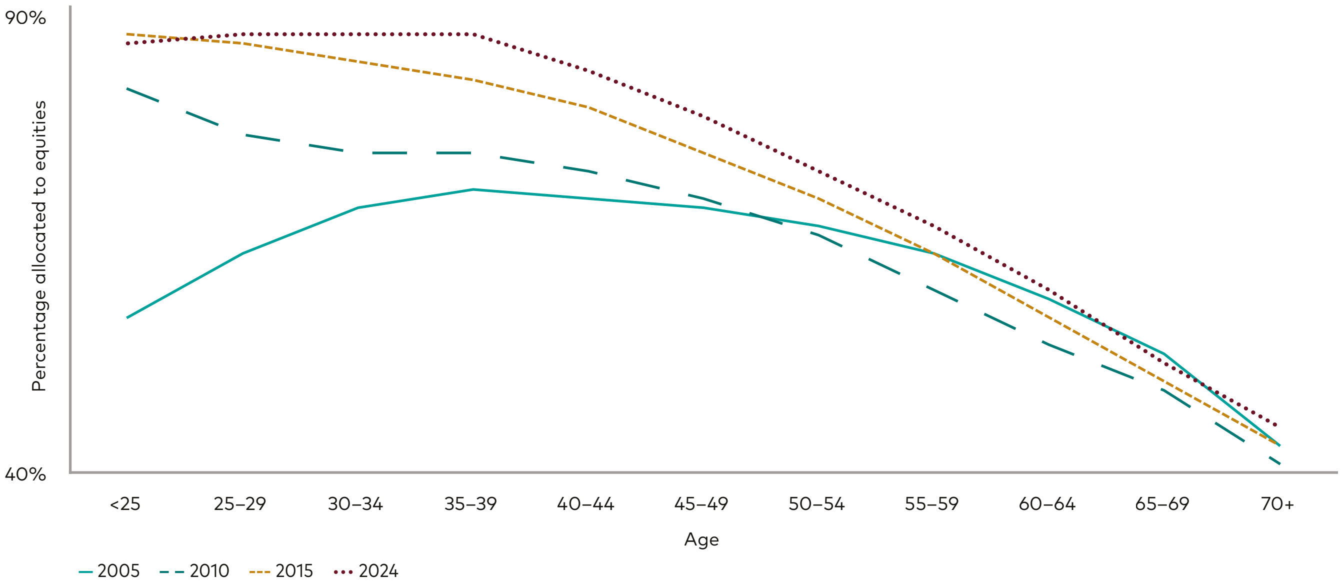
Provide embedded guidance to individual investors via product solutions

The asset allocation guidance embedded in retirement products such as target-date funds or lifecycle products can help an individual derisk their investment exposure in advance of a specified retirement date, so they obtain a reasonable percentage of their pre-retirement income in retirement.

FIGURE 18

Equity allocations for younger investors have increased over time, as more employers have adopted target-date funds as a default investment alternative

Improved age-appropriate equity allocations
(participant weighted)



Source: Vanguard, *How America Saves,* 2024.

2.1B: Digital nudges

Instil a regulatory framework supporting use of digital nudges to encourage good investing behaviours.

Digital engagement, or "nudges", when used appropriately, can increase financial literacy[72], enhance investor engagement and improve investment outcomes.

Vanguard case study

Vanguard's use of digital nudges for US retirement clients has significantly improved their retirement prospects

In the US, Vanguard uses nudges designed to boost retirement outcomes. Vanguard operates a recordkeeping 401(k) business for US employers who sponsor retirement savings plans[73] for their employees. To encourage employee participation, many employers match employee contributions up to a certain amount (e.g., a dollar-for-dollar match up to a certain percentage of a worker's salary). To help clients use this employee benefit, Vanguard identifies clients whose employer offers to match retirement contributions and sends communications designed to educate them about taking advantage of this match.

Vanguard also uses nudges to prompt clients to consider increasing their personal retirement savings. For Vanguard's self-directed US clients who rely on individual retirement accounts ("IRAs") to save for retirement, Vanguard technology reviews contribution data and encourages clients to contribute earlier in the year to benefit from compounding. Nudges are also used to encourage non-contributors to consider making at least one contribution per year.

As a result of these prompts, approximately 60% of 401(k) plan participants took action after receiving a nudge from Vanguard[74], and 14,000 IRA clients acted after Vanguard nudged them, boosting their retirement savings by US $50 million.

We advocate for retail investment systems that permit the use of digital nudges. However, as with all forms of advice and guidance, consumer protections remain critical and therefore any regulatory change in this space must be implemented by means of a robust regulatory framework.

72 For example, through just-in-time education and simple experiences (such as pop-ups/tips defining terms) to support less experienced investors.

73 A retirement savings plan in the United States refers to different types of employee benefit plans that provide retirement income or defer income until termination of covered employment or beyond. One example is a 401(k) plan – a type of defined contribution plan that does not promise a specific amount of benefits at retirement. Instead, workers who participate in 401(k) plans assume responsibility for their retirement income by electing to defer a portion of their salary which is instead contributed on their behalf, before taxes, to the 401(k) plan.

74 Vanguard Webcast, "A Look Ahead with Vanguard", 2023.

2.1C: Personalised guidance

Provide more personalised investment guidance through prudent use of investor data.

There is a significant role for personalised guidance beyond simple nudges, but short of personal advice, to improve investment outcomes and close advice gaps. Personalised guidance includes general recommendations and "next best actions" for a particular cohort of investors based on personal information collected. One specific regulatory example of this is the new Targeted Support regime currently under consultation in the UK[75].

Vanguard case study

How regulatory reform in the UK is expected to turn cash on Vanguard's UK retail platform into investments

At the start of 2025, 0.2% of Vanguard's direct UK retail investment clients had their entire holding in cash, even though Vanguard's retail platform is designed to facilitate subscription in investment funds and does not offer a cash savings wrapper (i.e. no Cash ISA). Approximately 83% of these cash investors had been fully invested in cash for at least three years without making any withdrawals.

Under the scope of the current UK regulated advice-guidance boundary, Vanguard does not believe it is possible to undertake any intervention for these clients, other than biannual reminders that the client has excess cash in their account, as intervention could be perceived to amount to the provision of regulated investment advice. However, for many clients these biannual reminders are inadequate to prompt behavioural change.

Under the auspices of the UK's expected Targeted Support regime, we envisage being able to proactively engage and target clients who hold excess cash in their portfolio. Using specific client data, Vanguard could provide targeted information about the projected increase in value that clients' cash holdings could earn under different investment scenarios. We believe that this type of targeted communication could significantly increase the number of clients deciding to invest their platform cash in investment funds and improve their investment outcomes.

2.1D: Simple, limited & robo-advice

Increase availability of investment help through lower-cost, simplified technology-enabled advisory services.

Simple, limited, one off and robo-advice services can be provided by human or digital means based on more extensive data input from individuals.

In a Vanguard study[76] we found that:

- Investors believe advice provides higher incremental portfolio value than going it alone, whether provided by a human (+5%) or digitally (+3%).
- Investors prefer digital advice for certain portfolio management services such as diversification and tax optimisation.

[75] The FCA's Advice Guidance Boundary Review is the collective reference for several streams of work being undertaken in the UK to clarify and narrow the boundary between advice and guidance. The introduction of measures such as targeted support is part of this.

[76] Vanguard, *Quantifying the investor's view on the value of human and robo-advice,* 2022.

2.2 Financial literacy

Develop targeted, research-based, national financial literacy plans to build consumer confidence in investing.

Financial literacy levels vary widely globally[77]. Engaging and educating investors can support their sense of autonomy and agency over investment decisions. The IOSCO Retail Market Conduct Task Force[78] recognised that large financial education campaigns may not always work as intended and there is a need to consider different forms of engagement to build investor knowledge. Research at a national level is vital to understand domestic issues, track progress and identify the interventions that can be successful in raising financial literacy among populations. For example, early education to build an understanding of numeracy and financial concepts (see adjacent policy case study).

As also recognised by the IOSCO Retail Market Conduct Task Force, interventions beyond that must be more targeted, meeting people where they are – and at the right points and stages in their investment journey to be effective. There is evidence that just-in-time education at moments that matter, such as first job, life events and job transitions are key decision points that can help individuals make sound investment decisions and change the course of one's life trajectory for the better. Embedding decision environments with timely and relevant information to facilitate choices can be a powerful antidote to lack of knowledge[79].

Policy case study

Belgium's innovative wikifin stimulates high levels of engagement

The Belgian Financial Services and Markets Authority (FSMA) wikifin financial education program takes a multi-channel approach to improve individuals' ability to make well informed investment decisions. This is executed through an educational website, a programme for schools and a unique set of learning experiences for secondary level children.

Wikifin's innovative approach to financial education has proven successful:

- The website sees more than 600,000 visitors per year.
- The school programme, which provides free downloadable educational materials for schools, has 22,000 teachers registered to date and 190,000 downloads.
- The secondary educational experience has seen 30,000 students participate.

Many investors can benefit from simply being aware of four simple, guiding principles to underpin their investment journey – the importance of: setting goals, investing in a balanced portfolio, minimising costs and maintaining discipline to stay the course towards investment goals[80].

FIGURE 19

Principles for investing success

Goals
Create clear, appropriate investment goals.

Balance
Keep a balanced and diversified mix of investments.

Cost
Minimise costs.

Discipline
Maintain perspective and long-term discipline.

Source: Vanguard.

77 OECD, 2023.

78 IOSCO Retail Market Conduct Task Force Final Report, FR05/23 Retail Market Conduct Task Force Final Report, 2023.

79 Fernandes et al. Financial Literacy, Financial Education and Downstream Financial Behavior, 2014.

80 Vanguard, *Principles for Investment Success*, 2024.

3. Ensure investors get a fair deal

If policymakers are to be successful in encouraging better investing behaviour, it will be critical to ensure that individual investors are the ultimate beneficiaries of this change. Achieving this success in practice means overcoming the inherent market failures that can arise in retail investment markets, particularly information asymmetry and conflicts of interest[81]. Evidence demonstrates that the most effective retail investment systems embrace and prioritise consumers' best interests, foster lower costs, focus on transparency and healthy competitive marketplaces, ensure strong consumer protections and remove damaging biases in distribution chains. This is the inspiration for the three policy levers in this section, which we believe can help ensure investors get a fair deal.

3.1 Remove/mitigate conflicts in the distribution chain

Ensure intermediaries are not inappropriately influenced by the payment of commission by product providers when giving advice or distributing funds to their customers.

Unfortunately, under many retail investment systems around the world, conflicts of interest in the distribution chain can damage the investment outcomes of individual investors. Topical potential conflicts of interest identified by regulators include:

- Commission-based remuneration of advisers and distributors by investment product providers.
- Where a broker receives payment from market makers, in exchange for sending client orders to them for execution ("payment for order flow").
- Digital engagement practices used by market participants to influence retail investor behaviour to drive revenue growth (e.g. through increased frequency of trading and/or by encouraging investment in higher-margin and higher-risk products).

Leading retail investment systems recognise that these potential conflicts of interest can operate to the detriment of individual investors, are vigilant to monitor these risks and intervene to remove or mitigate negative outcomes arising from these potential conflicts of interest.

Take, for example, how countries have sought to address the distribution of investment products following a commission-based remuneration model. Under this model, firms that sell financial products through third parties (intermediary distributors such as banks and insurance companies) pay these intermediaries a commission for arranging the sale. However, these embedded commissions can give rise to potential conflicts of interest that misalign the interests of investment fund managers and intermediaries with those of the investors they serve. For example, the payment of commission to intermediaries can cause product bias in favour of those products paying higher commission and away from those paying less, or no, commission, to the detriment of the consumer's best interests.

81 These sources of market failure in retail investment are discussed in Vanguard, Total Cost of Investing, 2024, and are prominent in the literature and policy discussion on retail markets.

Successful retail investment systems reduce the risk of this intermediary conflict of interest affecting product choice for end investors through a number of different and interconnected measures. Countries have their own policy drivers and market dynamics and therefore there is no 'one size fits all' solution:

FIGURE 20

Measures to reduce the risk of commission-based remuneration models affecting product choice

Measure	Example jurisdiction(s)
Overarching consumer-centric regulatory principle	Ireland (Overarching duty to secure customers' interests[82]) UK (Consumer Duty) US[83]
Enhanced transparency in respect of commission-sharing arrangements	Canada (total cost reporting disclosures) EU (EU Directive 2014/65/EU on markets in financial instruments - MiFID) US[84]
Only permitting commission payments where they are demonstrated to enhance the quality of service to clients	Canada (ban of all forms of deferred sales (service) charges) EU (MiFID)
Imposition of 'value for money' requirements and assessments for providers and distributors of investment products	EU (Retail Investment Strategy – proposed) UK (Assessment of Value and Consumer Duty Fair Value Assessment requirements)
Enact a strong 'best interest of the client' test (with precise and enforceable requirements in respect of the receipt of commission payments where permissible)	Canada (implementation of CFR client-focused reforms) EU (Retail Investment Strategy – proposed) UK (best interest principle and conduct of business rule)
Prohibiting commission-based selling	Australia Canada (ban of trailing commissions for order-execution only dealers) EU (only in respect of independent investment advice and portfolio management services) Mexico (only in respect of independent investment advice) Netherlands UK
Client/industry pressure	US[85]
Minimum professional education standards/ongoing continuing professional development requirements for advisers	Australia Canada EU (Retail Investment Strategy – proposed)[86] Mexico UK US

82 This will apply from March 2026. This will strengthen the existing 'best interests' test under the Consumer Protection Code – but note that MiFID activities are excluded.

83 Fiduciary duty under the US Investment Advisers Act of 1940; Securities and Exchange Commission Regulation Best Interest applicable to broker-dealers.

84 Although not required by rule, broker-dealers that receive revenue sharing from mutual fund complexes generally provide high-level website disclosure of these arrangements.

85 In the United States, commissions that accounted for 45% of advisers' compensation in 2013 fell significantly to 30% as at 2021, a decline that was projected to continue down to 26% of revenues in 2023 (Cerulli Associates, 2021).

86 It should also be noted that amongst EU member states, a number already have minimum professional education standards and/or ongoing continuing professional development requirements for advisers, including Ireland, Spain, Netherlands, France, Italy and Germany.

Despite industry criticism of the impact of bans on commission-based selling, there is a wide variety of evidence suggesting that these regulatory interventions have had a positive effect on retail investment systems. Research has identified the association of banning commission-based selling with:

- More individuals accessing financial advice[87].
- Increased quality of independent advice[88].
- Increased trust in advisers[89].
- No significant reduction in the number of financial advice firms or advisers[90].
- Increased competition between product manufacturers due to greater adviser focus on product quality and cost[91].
- An annual return difference of household wealth between 1.5% to 2% for OECD countries with commission bans versus OECD countries without (equating to households in commission ban countries having the potential to double the amount of wealth compared to households in non-commission ban countries after 40 years)[92].

3.2 Decision-useful simple disclosures

Require product providers to provide clear, concise, engaging information to help consumers compare products and encourage firms to compete.

Research has shown individuals can often feel overwhelmed by the complexity of and uncertainty associated with investment products. In these circumstances, procrastination delays their financial decision, or they rely on decision shortcuts to minimise their mental effort. And while decision shortcuts can sometimes be helpful, they can also lead to costly mistakes.

To ensure that all individuals have the best chance of investment success, it is important that investment information is presented in a helpful, easy-to-understand manner, breaking down complex concepts into easily digestible pieces. For years, Vanguard has championed this as the need for "plain talk". IOSCO's Retail Market Conduct Task Force[93] would appear to agree with this observation, noting that traditional disclosure by firms may not always solve the problem of complexity in financial services markets; disclosure should compete for retail investor attention and not be perceived as a tick-the-box exercise.

87 Financial Conduct Authority, Evaluation of the impact of the Retail Distribution Review and the Financial Advice Market Review, December 2020.

88 Gorter, J, *Commission Bans and the Source and Quality of Financial Advice,* 2012.

89 Financial Conduct Authority, Evaluation of the impact of the Retail Distribution Review and the Financial Advice Market Review, December 2020.

90 (a) Steffen Sebastian, Lukas Noth and Albert Grafe. The Effect of Commission Bans on Household Wealth: Evidence from OECD Countries, May 2023.
(b) Dutch Minister of Finance to the Parliament of the Netherlands, *Briefing concerning the effectiveness of the inducements ban,* 32.457, 23 January 2018.
(c) Financial Conduct Authority, Evaluation of the impact of the Retail Distribution Review and the Financial Advice Market Review, December 2020.

91 Europe Economics, Retail Distribution Review Post Implementation Review; Theodor Kockelkoren, Netherlands Authority for Financial Markets (AFM), Speech at a conference of the European Money and Finance Forum SUERF in Madrid, 2014.

92 Steffen Sebastian, Lukas Noth and Albert Grafe. The Effect of Commission Bans on Household Wealth: Evidence from OECD Countries, May 2023.

93 IOSCO, FR05/23 Retail Market Conduct Task Force Final Report, 2023.

3.3 Value for money – the power of low costs

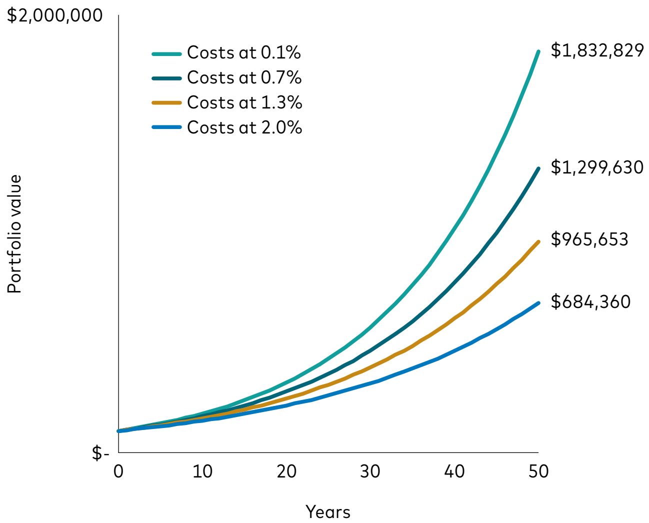
Keep costs to investors low by driving transparency and fostering competition amongst providers.

Every dollar paid in management fees or trading commissions is a dollar less of potential return. What's more, costs are one of the only components of total return that an investor can control. So minimising cost is critical to achieving long-term investment success – and could amount to an investment pot that is over a million dollars higher in value than would be received if invested in a higher-cost portfolio.

FIGURE 21

Higher costs can significantly depress a portfolio's growth

Assuming a starting balance of US $100,000 and a yearly return of 6%, which is reinvested.



Any projections should be regarded as hypothetical in nature and do not reflect or guarantee future results.

Notes: The portfolio balances shown are hypothetical and do not reflect any particular investment. In this example, the accounts return 6% annually, then investment costs are taken at the end of the year. The rate of return is not guaranteed. The final account balances do not reflect any taxes or penalties that might be due upon distribution. Costs are one factor that can impact returns. There may be differences between products that must be considered prior to investing.

Source: Vanguard calculations

However, in a number of markets around the world, investors are still paying far more to invest than they should and awareness of costs among investors is low. In Europe, we have found[94] low engagement with investment product fees, with past performance frequently driving decision-making despite not being a reliable guide to future performance. In Australia, one in two Australians do not understand their investment fees, while 59% of those that have reviewed their fees report that they are difficult to compare[95]. Despite regulatory efforts to increase fee disclosure in Canada, most individuals are still largely in the dark about how much they pay for investment services. A 2020 study by the Canadian Securities Administrators[96] found only half of investors felt they knew how much they paid their adviser in the previous year. And only one out of five could correctly identify their total fees on their account statement, according to a 2021 report from the Mutual Fund Dealers Association of Canada[97].

Total cost disclosure is critical to ensure the all-in cost to invest is easy to understand, find and compare so consumers can make well-informed decisions.

[94] Vanguard, *European Manifesto – Three steps to improve the financial standing of people in the EU*, February 2020.

[95] Vanguard Australia, *Confusing Fees: Most Australians don't realise what they're being charged by their super fund*, 2024.

[96] Canadian Securities Administrators, 2020 CSA Investor Index, 2020.

[97] Mutual Fund Dealers Association of Canada, Research Report: Improving Fee Disclosures for Canadian Investors, 2021.

Policy case study

The interests of investors are best served when comparable total cost of investing information is presented in a simple and usable format

EU	Canada
• In January 2018, the EU introduced strengthened MiFID requirements on disclosing information to clients on the total cost of investing: o **Ex-ante disclosure** of expected costs to be provided in good time before a client makes an investment decision. o **Ex-post disclosure** to clients of costs which have been incurred on an annual and personalised basis. • Both ex-ante and ex-post disclosures must contain (i) aggregated figures expressed as a monetary amount and a percentage – third party payments need to be itemised separately within this, and (ii) an illustration showing the cumulative impact of costs on investment return.	• From 1 January 2026, Canadian financial companies must comply with enhanced total cost of investing annual reporting requirements captured in Canadian Dollar amounts: o How well investments have performed o How much an investor has paid directly or indirectly for financial advice o The full cost of owning the investment, including both the management expense ratio and the trading expense ratio.

Cost warnings should be as prevalent as past performance warnings that are now commonplace in financial regulation. Providing consumers with information that encourages focus on the impact of fees on net returns (as is the case in product disclosure statements in Australia) will stimulate competition and improve investor returns. As identified in section 3.2 above, the effectiveness of cost warnings will be increased where they are drafted to be clear, concise and engaging.

Policy case study

Australian product disclosure rules help individual investors to understand the impact of fees and costs on their net investment return

In Australia, product disclosure statements provided to retail investors must include details on the risks of investing, details on the fees and related arrangements and certain consumer warnings. Before the fees and costs are disclosed the product disclosure statement must include the following consumer warning:

Did you know?

Small differences in both investment performance and fees and costs can have a substantial impact on your long-term returns. For example, total annual fees and costs of 2% of your account balance rather than 1% could reduce your final return by up to 20% over a 30-year period (for example, reduce it from $100,000 to $80,000). You should consider whether features such as superior investment performance or the provision of better member services justify higher fees and costs. You may be able to negotiate to pay lower fees. Ask the fund or your financial adviser.

To find out more

*If you would like to find out more, or see the impact of the fees based on your own circumstances, the Australian Securities and Investments Commission (ASIC) Moneysmart website (**www.moneysmart.gov.au**) has a superannuation calculator to help you check out different fee options.*

Conclusion

Policymakers have an important opportunity to enhance individual wealth creation, by learning from existing thought leadership and international examples of regulatory best practice and identifying research gaps that may exist to provide further context.

We believe that Vanguard's core purpose – to take a stand for all investors, to treat them fairly and to give them the best chance for investment success – aligns with policymakers' objectives to foster economic growth and improve outcomes for individual investors. Vanguard is committed to collaborating with policymakers to share our global experience and research capability, helping to address the challenges faced by individuals and policymakers in ensuring individuals' long-term financial wellbeing.

The eight policy levers detailed in this paper (and outlined overleaf) represent not just a framework, but a shared opportunity to build stronger, more resilient retail investment systems that empower individuals to achieve lasting financial security.

Core components of a successful retail investment system

Based on our research and decades of experience, we have identified **eight core components** that are found in successful retail investment systems.

Encourage individuals to invest

1. **Auto-enrolment:** Implementing retirement systems that automatically enrol eligible workers in savings plans has proven highly effective in boosting investment participation and long-term wealth.
2. **Tax incentivisation:** Enabling tax-advantaged investment vehicles, and offering other tax-effective initiatives, can significantly encourage individuals to move their cash savings into capital markets.
3. **Default products:** Directing customers to default or pre-approved investments can benefit those who lack the time, motivation or skills to make informed investment decisions.

Give investors access to help

4. **Spectrum of advice:** Giving investors access to a full range of support, guidance and advice can help to meet their individual needs and circumstances.
    - **Embed guidance in product design:** Provide embedded guidance to individual investors via product solutions.
    - **Digital nudges:** Instil a regulatory framework supporting use of digital nudges to encourage good investing behaviours.
    - **Personalised guidance:** Provide more personalised investment guidance by prudent use of investor data.
    - **Simple, limited and robo-advice:** Increase availability of simple investment help through lower-cost, simplified, technology-enabled advisory services.
5. **Financial literacy:** Developing targeted, research-based national financial literacy plans can build consumer confidence in investing.

Ensure investors get a fair deal

6. **Remove/mitigate conflicts in the distribution chain:** Commission-based remuneration models can create conflicts of interest. Regulatory regimes should ensure intermediaries are not unduly influenced by commissions when advising or distributing funds.
7. **Decision-useful, simple disclosures:** Product providers must be required to offer clear, concise and engaging information to help consumers compare products and encourage investment firms to compete, leading to better services and lower costs.
8. **Value for money – the power of low costs:** Clear total cost disclosure is vital. Every dollar paid in fees is a dollar less in potential returns. Investors should be able to easily understand and compare all-in costs to make informed decisions.

Data appendix

FIGURES 5 AND 6

Country benchmark performance

Region	Equity market index	Fixed income market index
UK	MSCI United Kingdom	Bloomberg Sterling Aggregate
EU	MSCI Europe	Bloomberg Euro-Aggregate
Australia	MSCI Australia	Bloomberg Australian Dollar Aggregate
US	MSCI US	Bloomberg US Aggregate
Canada	MSCI Canada	Bloomberg Canada Aggregate
Japan	MSCI Japan	Bloomberg Japan Aggregate
Mexico	MSCI Mexico	–

Note: Returns are calculated from the total return index of the regional MSCI equity index and Bloomberg corporate bond index over the 10-year periods. Returns are all presented in annualised nominal local currency terms.

Source: FactSet and Refinitiv.

FIGURES 3 AND 7

Product cost

Region	Fund universe selection*	Cost metric
UK	OEFs and ETFs available for sale in the UK	Annual report net expense ratio
EU	UCITS funds available for sale in any of 27 EU countries (European cross-border sale)	Annual report net expense ratio
Australia	OEFs and ETFs available for sale in Australia	Indirect cost ratio (ICR)
US	OEFs and ETFs available for sale in the US	Prospectus net expense ratio
Canada	OEFs and ETFs available for sale in Canada	Annual report management expense ratio (MER)
Japan	OEFs and ETFs available for sale **ONLY** in Japan	Annual report net expense ratio

***** All exclude feeder fund, fund of funds and virtual share classes.

Note: Product costs are calculated as asset weighted average cost of all available products for retail investors in each region in each fund category. Asset sizes are measured by net asset as at 31 December 2024 in USD terms. See below for the specific cost variable used.

Source: MorningStar.

Full Morningstar definition of cost metrics used:

- **Indirect cost ratio (ICR):** The ICR includes any applicable management fees and performance fees for the period but does not include costs deducted directly from an investor's account. The ICR is the ratio of these indirect management costs to the fund's total average net assets for the period.
- **Prospectus net expense ratio:** The percentage of fund assets, net of reimbursements, used to pay for operating expenses and management fees, including 12b-1 fees, administrative fees and all other asset-based costs incurred by the fund, except brokerage costs. Fund expenses are reflected in the fund's NAV. Sales charges are not included in the expense ratio. For models, this data point is the asset-weighted and rescaled aggregation of the prospectus net expense ratios of eligible holdings within a fund's portfolio.
- **Annual report management expense ratio (MER):** The percentage of a fund's average net assets paid out each year to cover the fixed costs of managing the fund as stated in the fund's annual report and semi-annual report. The MER is specific to the Canadian market.
- **Annual report net expense ratio:** The percentage of fund assets used to pay for operating expenses and management fees, including 12b-1 fees, administrative fees and all other asset-based costs incurred by the fund, except brokerage costs. Fund expenses are reflected in the fund's NAV. Sales charges are not included in the expense ratio. The expense ratio for fund-of-funds only includes the wrap or sponsor fees and does not include the underlying fund fees.

Connect with Vanguard®

global.vanguard.com

IMPORTANT: The projections or other information generated by the Vanguard Capital Markets Model® regarding the likelihood of various investment outcomes are hypothetical in nature, do not reflect actual investment results, and are not guarantees of future results. VCMM results will vary with each use and over time. The VCMM projections are based on a statistical analysis of historical data. Future returns may behave differently from the historical patterns captured in the VCMM. More important, the VCMM may be underestimating extreme negative scenarios unobserved in the historical period on which the model estimation is based.

The Vanguard Capital Markets Model® is a proprietary financial simulation tool developed and maintained by Vanguard's primary investment research and advice teams. The model forecasts distributions of future returns for a wide array of broad asset classes. Those asset classes include US and international equity markets, several maturities of the US Treasury and corporate fixed income markets, international fixed income markets, US money markets, commodities, and certain alternative investment strategies. The theoretical and empirical foundation for the Vanguard Capital Markets Model is that the returns of various asset classes reflect the compensation investors require for bearing different types of systematic risk (beta). At the core of the model are estimates of the dynamic statistical relationship between risk factors and asset returns, obtained from statistical analysis based on available monthly financial and economic data from as early as 1960. Using a system of estimated equations, the model then applies a Monte Carlo simulation method to project the estimated interrelationships among risk factors and asset classes as well as uncertainty and randomness over time. The model generates a large set of simulated outcomes for each asset class over several time horizons. Forecasts are obtained by computing measures of central tendency in these simulations. Results produced by the tool will vary with each use and over time.

The primary value of the VCMM is in its application to analysing potential client portfolios. VCMM asset-class forecasts – comprising distributions of expected returns, volatilities, and correlations – are key to the evaluation of potential downside risks, various risk–return trade-offs, and the diversification benefits of various asset classes. Although central tendencies are generated in any return distribution, Vanguard stresses that focusing on the full range of potential outcomes for the assets considered, such as the data presented in this paper, is the most effective way to use VCMM output.

The VCMM seeks to represent the uncertainty in the forecast by generating a wide range of potential outcomes. It is important to recognise that the VCMM does not impose "normality" on the return distributions, but rather is influenced by the so-called fat tails and skewness in the empirical distribution of modelled asset-class returns. Within the range of outcomes, individual experiences can be quite different, underscoring the varied nature of potential future paths. Indeed, this is a key reason why we approach asset-return outlooks in a distributional framework.

Important information

This document is issued for policymakers and regulators in their professional capacity only and is not a recommendation or solicitation to buy or sell investments.

Investment risk information

The value of investments, and the income from them, may fall or rise and investors may get back less than they invested.

Past performance is not a reliable indicator of future results. The performance data does not take account of the commissions and costs incurred in the issue and redemption of shares.

Any projections should be regarded as hypothetical in nature and do not reflect or guarantee future results.

2262_LE73965_4633586