September 2023

The future of passive investing after the bear market

Passive Investing 2023

Xtrackers by DWS

In EMEA for Professional Clients (MiFID Directive 2014/65/EU Annex II) only; no distribution to private/retail customers. In Switzerland for Qualified Investors (art. 10 Para. 3 of the Swiss Federal Collective Investment Schemes Act (CISA)). In APAC for institutional investors only. Australia and New Zealand: For Wholesale Investors only. In the Americas for Institutional Client and Registered Rep use only; not for public viewing or distribution.
CREATE Research and DWS International GmbH are not affiliated.

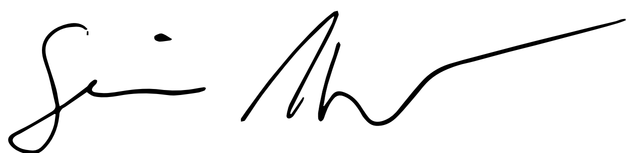
Foreword

The rapid rise in interest rates in advanced economies over the past year has come as a surprise to many. Prior to the return of significant inflation, many questioned the willingness of central bankers to use their monetary tools to induce recessionary pressure in their economies. The era of ultra-loose monetary policy, of quantitative easing and the essential removal of medium-term downside price risk across many asset classes felt like a fundamental cultural shift that was here to stay. The last 12-to-18 months has been a rude awakening for those who went long this narrative.

The dynamic in the growth of passive investing coincided with the start of this period of easy money. The key question now, and the question this report aims to shed light on, is whether the end of that era also signals a change in attitudes to passive investing. The survey results suggest the trend towards passive investing is here to stay; that the fundamental drivers of passive investment growth are ultimately uncorrelated with monetary conditions, and that fixed income is the next asset class after equities to see a significant increase in passive investment appetite.

This report offers a detailed analysis of how pension funds are adapting to the changing economic landscape. The report highlights how pension fund demand for efficient index tracking solutions and granular passive portfolio building blocks remains strong, despite the significant shift in economic fundamentals that has taken place in advanced economies.

I would like to thank CREATE-Research for their diligent work in producing this report, which Xtrackers by DWS is proud to sponsor once again as we celebrate the fifth anniversary of the CREATE-Research Passive Investing series of reports.



Simon Klein
Global Head of Xtrackers Sales, DWS

Acknowledgements

"The test of a first-rate intelligence is the ability to hold two opposing ideas in mind at the same time and still retain the ability to function."

F. Scott Fitzgerald
American essayist

The rapid rise of passive investing is one of the stand-out phenomena of this century. Detractors have long argued that it is largely underpinned by excess liquidity from central banks in the wake of the 2008 Global Financial Crisis. Once that drains away, as has happened conspicuously in the last two years, the wheels will come off the passive bandwagon.

This contention is the subject of the 2023 annual pension survey in a research programme first started by DWS and CREATE-Research in 2018 to track the advance of passive investing and its future evolution.

The survey provides a timely and objective perspective on a debate that seems to have generated more heat than light.

My foremost thanks go to 148 pension plans for participating in the survey. They have provided practical insights into how passives have advanced into core portfolios and how they have fared in the bear market of 2022.

Over the years, many of these participants have helped to highlight how the pension landscape has been changing, thereby helping to create an impartial research platform that is widely used in all pension markets.

I would also like to thank DWS for sponsoring the publication of this report. Their arms-length involvement has helped to canvas a wide spectrum of views in the pension community so as to deliver an independent assessment.

My grateful thanks also go to IPE for helping to conduct the survey and especially to its editor Liam Kennedy for his wise counsel and unstinting encouragement throughout this programme.

Last but not least, I would like to thank four colleagues at CREATE-Research: Anna Godden for desk work, Lisa Terrett for project management, Naz Rajan for data analysis and Dr Elizabeth Goodhew for editorial support.

If, after all the help I have received, there are errors and omissions, I am solely responsible.

Amin Rajan
Project Leader, CREATE-Research

Author: Prof. Amin Rajan
First published in 2023 by CREATE-Research and DWS

Telephone: +44 (0) 1892 78 48 46
Mobile: +44 (0) 7703 44 47 70

Email:
amin.rajan@create-research.co.uk

Want to take a shortcut?
Just click on the selected chapter.

Table of contents

Foreword I

Acknowledgements II

1 ⁄ Executive summary

Key takeaways 2

Passive investing under the spotlight 3

Survey highlights 4

Main findings 5

1 Passives demonstrate resilience and tradability 5

2 Passive investing is now a foundational trend 7

3 Actives and passives are yin and yang 9

4 ETFs and customised indexes will lead the next wave of growth 10

2 ⁄ Rise of passives

What have their key merits been? 16

1 An expanding value proposition 16

2 Don't write off active investing just yet 18

3 ⁄ Passives 2.0

Where is innovation needed most? 22

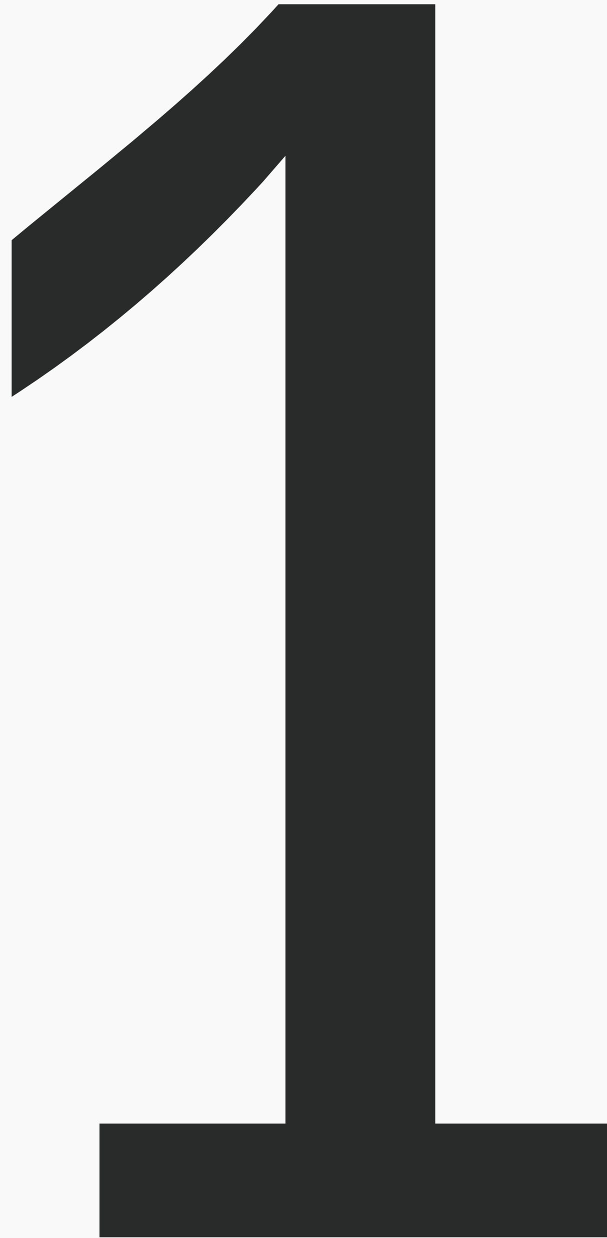
1 Product widening 22

2 Activism advancing into passive investing 25

Other publications from CREATE-Research 29

Disclaimer 30

© CREATE-Research, 2023
All rights reserved. This report may not be lent, hired out or otherwise disposed of by way of trade in any form, binding or cover other than in which it is published, without prior consent of the authors



Executive summary

Key takeaways

- Passive investing is not a bull market luxury. In the bear market of 2022, it outperformed active investing in relative terms, confounding its critics. It has also proved more resilient and tradeable. The bear market has not undermined the rise of passives as a foundational trend on account of their lower costs, straightforward governance, performance predictability and their ability to slice and dice the investment universe in an era of volatility.

- However, the bear market has exposed the perceived design limitations of passives: like overweighting companies due to their size, not their intrinsic value. Stocks that might not have been bought solely on their own merits are lifted by package buying. Also, the high level of ETF trading activity is widening the gap between the prices of individual stocks and their economic worth.

- Depending on the liquidity of the bond or equity in question, ETFs may even aid price discovery: in high volatility scenarios without sufficient underlying liquidity, ETFs provided the required liquidity. This much was evident in high-yield and investment-grade credit when markets crashed at the outset of the Covid-19 crisis.

- Active and passive styles remain diametric opposites, like yin and yang in Chinese philosophy. Yet, they are inseparable due to the changing level of markets' informational efficiency over a cycle. This interdependency, however, has weakened since the 2008 Global Financial Crisis, which turned investment returns into a monetary phenomenon, driven more by central bank action than the state of the real economy.

- Since inflation roared back to life in 2021, central banks have been draining away liquidity. But actives have yet to regain their mojo, as predicted, and start to reverse the relentless rise of passives. That is because active or passive is not seen as a binary choice. Actives are still deployed in inefficient markets where price anomalies persist. Passives are used in efficient markets that are hard to beat by managerial skill.

- Taking a three-year forward view, ETFs, customised indexes and segregated accounts will be at the vanguard of the next wave of growth, even after allowing for the known weaknesses of passives. ESG will be the key growth driver. In the process, it will blur the line between actives and passives, as higher tracking errors will be essential to achieve investors' goal of a double bottom line: doing well financially and doing good socially.

- With an eagle eye on such outcomes, investors are demanding innovation in four critical aspects of passive strategies: stewardship, double materiality, customisation and transparency. In this era of high volatility, investors feel that they are riding a rollercoaster in the dark. They want to know the thinking that goes into these strategies to ensure that their investments are making a difference on the ground. The burden of proof has increased.

"The extreme market turbulence of 2022 burnishes the case for passives rather than weakens it – at least for now."

An interview quote

Passive investing under the spotlight

Boon or bane?

That's the question behind the headlong rise of passive investing since the Global Financial Crisis of 2008.

It forced key central banks to embark on a prolonged era of quantitative easing that pushed interest rates zero bound, flooded financial markets with excess liquidity, dampened volatility and distorted asset prices by effectively putting a floor beneath them.

That defining moment was the latest and most ambitious milestone in a prolonged era of 'the Greenspan put'. During Alan Greenspan's chairmanship, whenever capital markets came under stress, the US Federal Reserve reduced its fund rates and added liquidity to encourage risk taking and avert further deterioration.

Other conspicuous occasions were the 1987 stock market crash, the 1997 Asian crisis, the 1998 LTCM crisis, the 2000 burst of the internet bubble and the 9/11 attacks.

Such intervention has, over time, turned investment returns into a monetary phenomenon. Central bank action has caused a disconnect between capital markets and the real economy – contrary to all tenets of investing. The perception that the Fed would always intervene if markets tumbled became deeply ingrained in investor psyche.

The resulting market environment proved fertile for the rise of passive funds, as they became a one-way bet, while active managers struggled, as asset prices became unmoored from their fair value. In all key regions, the majority of them have underperformed their market benchmark after costs over extended periods, according to the S&P Dow Jones Indexes SPIVA scorecards.

However, as inflation surged in 2021-22, key central banks in the West have embarked on a long succession of steep interest rate hikes and dramatically withdrawn liquidity. Critics had always contended that the true test of passives was best judged not when markets were artificially inflated but by their resilience when quantitative tightening caused markets to tank.

When markets entered a bear phase in 2022, that moment of reckoning finally arrived: were passives just another bull market luxury? Hence, this survey addresses four questions:

- How have passives performed compared with actives in pension portfolios in the 2022 bear market?
- Why is passive investing now a foundational trend even though the bear market has exposed its limitations?
- How will active and passive styles continue to complement one another in a diversified pension portfolio?
- Why are passives likely to experience product widening and deepening in the next wave of growth?

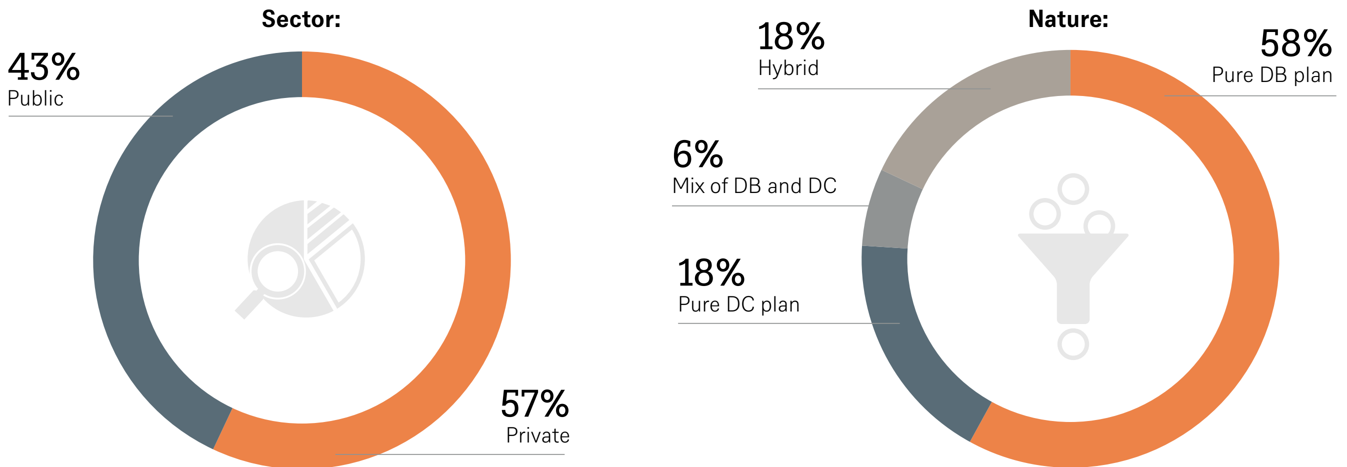
The survey involved 148 participants in Europe, Asia-Pacific and North America, with a total AuM of €1.7 trillion. Twenty of them were also involved in post-survey interviews to add the necessary insight, colour and nuance to our survey findings. Figure 1.0 provides details.

The rest of this section presents the survey highlights and our four key findings.

Figure 1.0

Which sector does your pension plan cover and what is the nature of your plan?

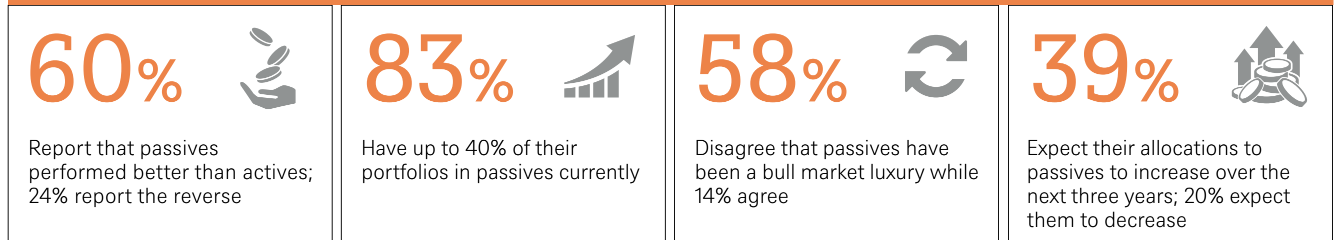
% of respondents



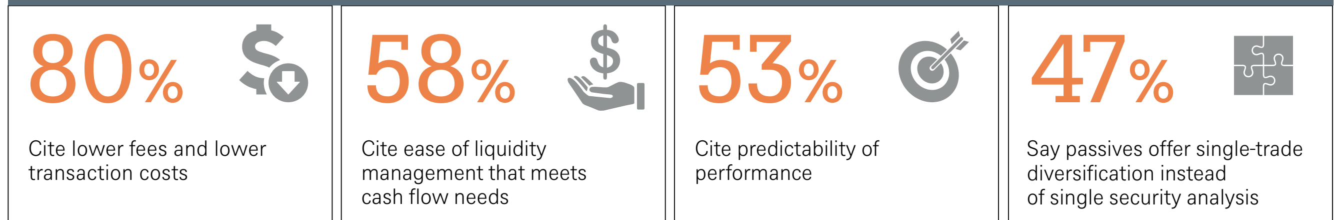
Source: CREATE-Research Survey 2023

Survey highlights (% of participants)

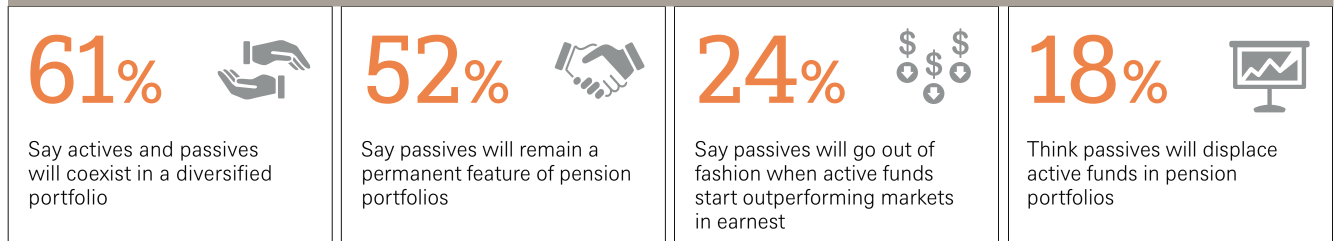
How did passives perform relative to actives in the bear market of 2022?



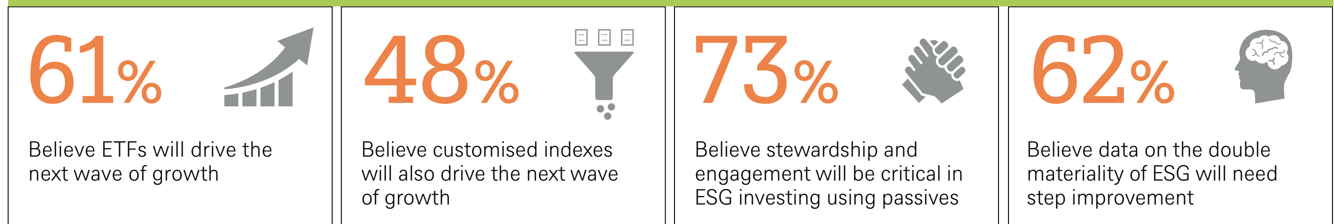
Why is passive investing a foundational trend?



How will active and passive styles complement one another?



Why will product widening and deepening dominate growth in passives?



Main findings

1. Passives demonstrate resilience and tradability

2022 was one of the worst years ever for global markets. Both passive and active funds were badly hit in absolute terms.

Relatively, however, passive funds outperformed their active peers in our survey participants' investment portfolios (Figure 1.1, left chart). Sixty percent of them report outperformance, while 24% report underperformance.

Equally notable, passive funds have also proven more resilient and tradable: their share in total portfolio also increased during the year, while active funds posted net outflows. Currently, on an asset-weighted basis, the share of passives stands at just under 40% in pension portfolios, though many portfolios have shares well in excess of that average (Figure 1.1, right chart).

These numbers defy widespread expectations that as central banks take away the proverbial punch bowl – as they did when inflation spiraled upwards in 2021-22 – markets will reconnect with fundamentals and favour active stock pickers. This does not appear to have happened – so far. Indeed, underperformance has prevailed extending over one, five and ten years, while asset-weighted active share has been falling.

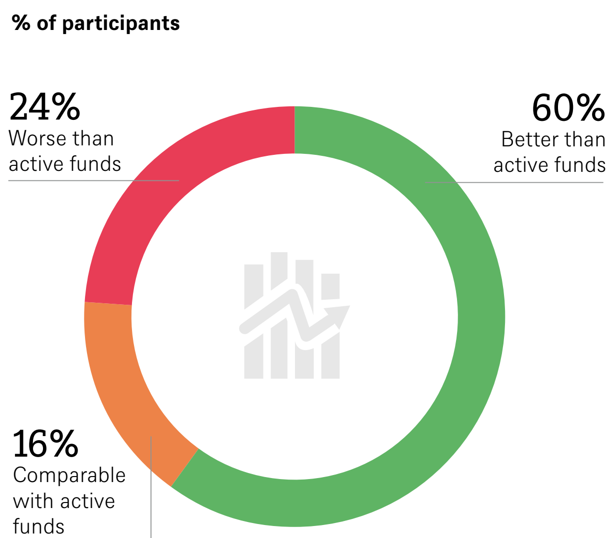
Historically, the advantages that passives have over actives tend to shrink in down markets, as actives keep more of their assets in cash, which retains their nominal value. Besides, passives are also inherently exposed to momentum risks: buying high and selling low.

This recent resilience of passives is partly due to the fact that they are a default option in many pension portfolios; funds are constantly flowing into them, despite market conditions. But there are other factors at work, too, as shown in Section 2. The most important is their lower fees and transaction costs (cited by 80% of survey participants). This matters a great deal now as markets are braced for an extended era of low nominal returns due to central banks' latest quantitative tightening.

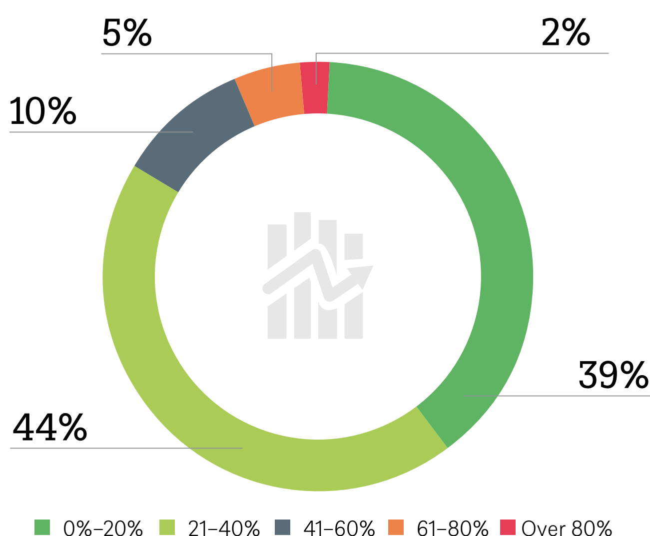
Figure 1.1

How did your pension plan's investments in passive funds perform compared with active funds in 2022?

% of participants



What is the approximate share of all passive funds in your pension plan's investment portfolio currently?



Source: CREATE-Research Survey 2023

"We have just come through a period where index investing gave you the best returns. Active equity funds in Europe had their worst year of underperformance for more than two decades in 2022."

An interview quote

Case Study 1a

A shrinking pool of alpha

To understand why active investing has had such a tough time this century, we need to go back in time. Investing, as we know it today, took off after around 1960. In the beginning, active managers mainly competed with less-informed retail investors, trust institutions and conservative mutual funds. Hence, it was not uncommon for them to beat the market by an average annual 200 or 300 basis points. The resulting lucrative profit pool inevitably attracted new competitors with highly qualified staff and state of the art technologies. The result was that, regardless of its size, alpha had to be shared between too many players. The informational inefficiencies that delivered alpha were soon arbitraged away.

With access to the best advice, institutional players were at an advantage in this new zero-sum game, unlike retail investors, who started migrating to the low-cost passives coming on stream. This was akin to weaker players leaving the poker table.

The exodus was marked in the 2010s, when regulators turned the spotlight on the fees charged by active funds and the prevalence of 'closet tracking': portfolio copycats that mimic a benchmark with little chance of beating it after fees, while still charging active fees. They depressed the average performance of all active funds when lumped together.

Passives are not an all-weather strategy, but they have become an important building block of our diversified portfolio. With central banks now focused on reducing inflation, the broad market gains of the recent past are history. But actives have yet to make their long-awaited comeback despite increased dispersion in stock values. So the passive pendulum is unlikely to swing in the other direction any time soon.

A US pension plan

Excess liquidity from the preceding quantitative easing had brought forward future returns, pushed investors up the risk curve and caused the longest bull market in history. That process is being reversed by interest rate hikes in 2021-23 on both sides of the Atlantic.

Investment returns may no longer be a monetary phenomenon, as in the past two decades.

This scenario still favours passives. Their costs are seen as a key factor in outperformance. The rise of commission-free trading has helped, but other factors are at work too (Figure 2.1 in Section 2): ready liquidity (58%), performance predictability (53%), a credible building block alongside actives in a balanced portfolio (48%), and single-trade diversification that avoids single-security analysis and multiple manager selection (47%).

Indeed, there is strong consensus in our survey that the rise of passives is a structural trend that will limit the scale of any future reversal. Under it, the traditional alpha pool, based on human skills, has been contracting since the 1990s, as markets have become more informationally efficient with the rise of artificial intelligence and big data, leaving ever more alpha managers fishing in a contracting pool (Case Study 1a).

As for the immediate causes of the underperformance of actives, there were clear geographical differences across the Atlantic.

In the US, the incidence of underperformance was lower because the most expensive tech stocks, known as FAANG, bore the brunt of market declines and dented the relative performance of passives. Actives were also helped by the surge in oil and gas stocks in the wake of the Russian invasion of Ukraine. Many survey participants had overweight positions in these sectors. As a result, actives did relatively better in the US in 2022 than in 2021.

In Europe, in contrast, the incidence of actives' underperformance was notably higher on account of a double whammy. First, gas and oil sector stocks boomed just when many of our survey participants had gone underweight as dictated by their ESG policies. Second, their portfolios were more exposed to areas of markets that were hard hit like small and medium-sized companies.

In both cases, two factors influenced the outcome: the weight of the tech sector, which hurt passives in the US; and adherents to ESG principles, which hurt actives in Europe.

2. Passive investing is now a foundational trend

The contention that passives are just a bull market luxury that cannot withstand volatile markets going forward is not supported by our survey (Figure 1.2, left chart). Only 14% of our respondents support this contention to a large extent and a further 28% support it to some extent. The remaining 58% said not at all.

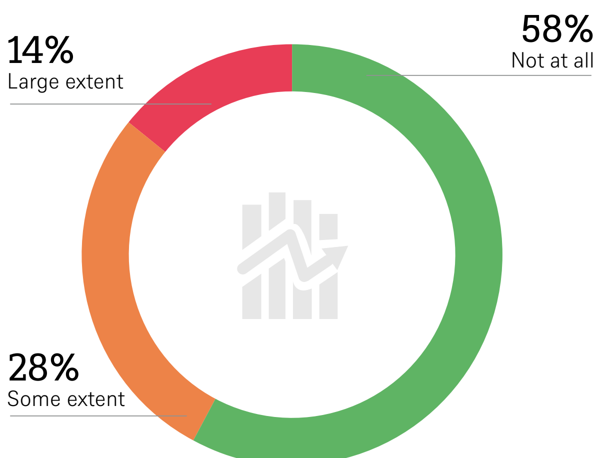
The reason is that passives have evolved rapidly since the collapse of the dot.com bubble in 2000 and have continued to evolve through the three subsequent bear markets (Case study 1b).

Those seminal episodes left pension investors with two enduring lessons. Risk does not necessarily generate returns, as equities were outperformed by bonds over extended periods; nor does diversification work when it's needed most, as excessive leverage in the market ramps up the correlation between historically lowly correlated asset classes like bonds and equities. The gap between financial theories

Figure 1.2

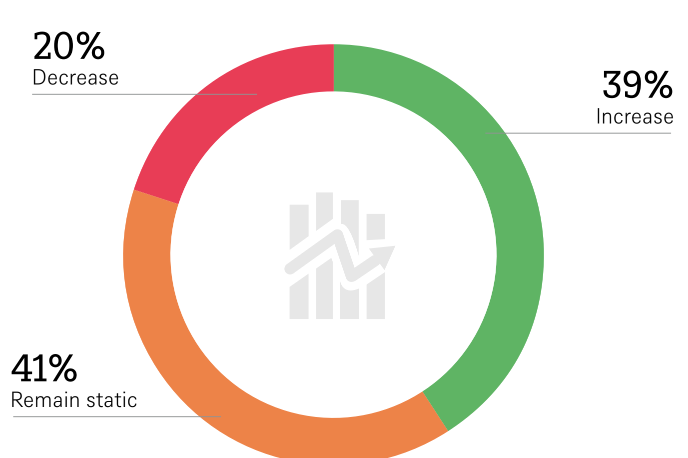
To what extent has passive investing just been a bull market luxury that cannot withstand volatile markets going forward?

% of participants



How is the share of all passive funds in your plan's total portfolio likely to change over the next three years?

% of participants



Source: CREATE-Research Survey 2023

Case Study 1b

Passives have weathered three bear markets

We implemented the core–satellite approach in the wake of the 2000-01 bear market. It meant putting low-cost passives at the core of our portfolio and deploying alternative investments in illiquid markets as satellites. This approach worked well in the three subsequent market corrections since then.

The first came after the collapse of Lehman Brothers in 2008, ushering in the Global Financial Crisis. In relative terms, our passives suffered far less than actives, especially those in private markets where liquidity had virtually dried up.

The second correction came with the onset of the Covid-19 pandemic in March 2020. Thanks to timely central bank action, the market rout was soon reversed. Passives went on to outperform actives.

Finally, with the 2022 bear market, history repeated itself: contrary to what their critics had predicted, passives did not suffer a rout compared with actives.

The upshot is clear: financial markets have become very noisy with the 24-hour news cycle. New corporate information is factored into securities prices in real time, making markets more informationally efficient, thanks to high frequency trading that aims to profit from fleeting price anomalies.

However, this is tempered by dynamic and hard-to-model macro forces – like the Covid-19 pandemic and the Russian invasion of Ukraine – that have overwhelmed the idiosyncratic risks that affect individual securities. They left markets both volatile and directionless for extended periods. Beating them with bottom-up stock picking has proven difficult. While that situation lasts, passives are here to stay.

A Swedish pension plan

and their real-life outcomes has been glaringly clear over time. Ex post returns rarely matched ex ante promises.

The notions of risk premia and time premia no longer seem to hold. Hard-to-model macro risks can overwhelm idiosyncratic micro risks to the detriment of active security selection.

These experiences have given rise to the belief that as much as 90% of wealth creation in pension portfolios comes from beta-driven market effects. Beta has done the heavy lifting on returns. Alpha is a high dispersion space where manager selection is key. This puts small and medium-sized plans at a disadvantage on account of their limited governance budgets.

Indeed, some of our survey participants argued that, historically, markets have been in a bull phase for 70% of the time, which not only helps recoup losses from episodic bear markets, it also marks an upward trend in securities prices. As markets move onwards and upwards, they tend to favour passive investing, until actives begin to deliver market-beating performance with an acceptable degree of performance persistency. On current reckoning, passives will account for more than half of global pension assets by 2027.

That does not mean actives have no role. Passives have their strengths. But, like all investment strategies, they also have limitations, as we shall see in the next subsection.

For now, it is clear that the secular upward trend for scale in passives is set to continue over the next three years (Figure 1.2, right chart): 39% expect to increase the share of passives in their portfolios, 20% expect to decrease it, with the remaining 41% expecting no change.

The key expectation now is that, with rate rises in the key economies extending into 2023, markets will be in a prolonged era of low nominal returns and high volatility. Passives are seen as attractive in this context. Their low cost could improve returns net of fees; and their low governance costs allow for opportunism, as periodic market ructions throw up good buying opportunities. This positive outlook is underpinned by positive attributes of passives: cap-weighted indexes are cheap, transparent and require minimal governance, offering a set-and-forget autopilot option.

For their part, ETFs can slice and dice the investment universe, allowing investors to pursue specific themes over a market cycle in a tax-efficient manner. They are cheap because they track indexes rather than attempt to beat them. They are an easy route into an asset class without having to pick individual funds or securities. They are often used to short the market or to hedge and trade in an opaque manner.

This is not to say that cap-weighted indexes and ETFs do not have downside risks. They do, as shown in the next subsection. Indeed, these have become more obvious as central banks have started to drain away market liquidity.

3. Actives and passives are yin and yang

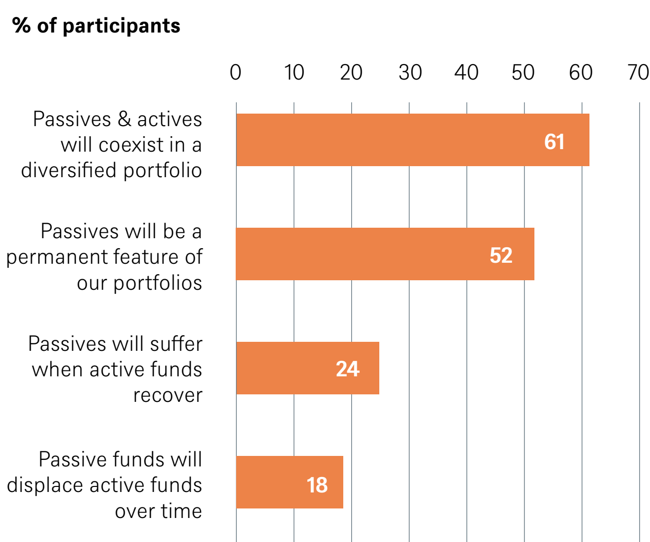
One important survey finding is that, despite their relative success, passives will complement actives, not displace them (Figure 1.3).

On the positive side, 61% of survey respondents believe that passives and actives will coexist in their diversified portfolio as equal partners. 52% envisage passives will become a permanent feature of their portfolios. On the negative side, 24% believe that passives will go out of fashion when active funds outperform the market. 18% think that passives will displace active funds in their portfolio over time. Hence, it is instructive to look at their interdependency in a historical context, in order to explain the rationale underpinning these numbers.

Figure 1.3

Looking ahead to the next 3 years, which of the following statements summarise your views about passive funds?

% of participants



Source: CREATE-Research Survey 2023

According to Morningstar data since 1990, these two styles have displayed three features: clear cyclical patterns, changing fortunes over the cycles and an inverse relationship. For example, the headlong rise of passives after the Global Financial Crisis of 2008 was preceded by nearly 10 years of outperformance by actives. Overall, both actives and passives have had periods of underperformance only to rebound notably when the cycle turned. Passives did well when markets were rising and actives fared especially well during periods of market turmoil, as their managers were able to use a broader toolbox of strategies like

"We only invest actively if it can structurally produce higher returns than passives after costs."

An interview quote

diversification, tactical switches into cash and astute stock selection.

Thus, like yin and yang in Chinese philosophy, the two styles were perceived as diametrically opposite, yet inseparable. The reason is the changing level of market efficiency over a cycle. As active managers aimed to buy underpriced assets and sell overpriced ones, price anomalies were ironed out and markets became more efficient, making passives more attractive.

However, as new money came into passives, valuations became distorted over time, thus opening the door for actives. This dynamic was considerably diluted by central banks' quantitative easing in the aftermath of the 2008 crisis, which caused positive correlations within and across asset classes to rise to unusually high levels, making passives a one-way bet, as markets were flooded with excess liquidity.

There were expectations that once this liquidity was withdrawn, as happened in 2021-22, market forces would reverse the fortunes of actives. This has yet to happen in the current market cycle. For the foreseeable future, pragmatism will define pension investors' approaches.

First, the active–passive choice is not binary: there are shades of grey in between. This has become obvious with the rise of ESG investing where passive indexes need a higher active share, defined by their tracking error, in order to achieve targeted outcomes (Case study 1c).

Second, it is accepted that, like every investment strategy, passives have their limitations as well as their strengths. While they perform well in rising markets, these limitations become more obvious in a volatile market, as has been experienced since the start of 2022. These limitations are set out in Section 2. To start with, cap-weighted market indexes like FTSE 100, Russell 2000 or S&P 500 invariably get bloated: by their very nature, they overweight large expensive companies at the expense of inexpensive companies not included in the indexes. Stocks that might not have been bought solely on their own merits are lifted by package buying. The index premium rises simply because markets rise, no matter its intrinsic value.

Similarly, high levels of ETF trading ensures that the gap between the prices of individual stocks and their economic worth has been getting bigger. Stocks are more correlated than they used to be. Their valuations are increasingly influenced by whether or not they are included in widely traded indexes.

Thus, given these limitations, pension investors have adopted a horses-for-courses approach by refining the traditional core–satellite model, duly distinguishing the level of informational efficiency of markets. Those core asset classes – such as global equities and sovereign debt – that are traded in highly efficient liquid markets are targeted via passives. Those satellite assets trading in illiquid inefficient markets – like small caps and EM debt – are targeted by actives, that have more degrees of freedom than passives.

Such pragmatism is based on the belief that constructing a portfolio is not a binary active/passive choice. Nor is it wise to lionise a strategy when it is riding high. It is prudent to have a pragmatic balance between the two in a world where price overshoots are common.

4. ETFs and customised indexes will lead the next wave of growth

As we have seen previously, the pendulum is unlikely to swing away from passives, despite the bear market. If anything, their growth is likely to continue, albeit at a more moderate rate. The interest in passives is tinged with caution as they increase their allocations. The reason is that some of the inherent limitations of passives, as previously described, are difficult to price in after the withdrawal of central bank liquidity.

Case Study 1c

The blurred boundary between actives and passives

Currently, there are too many indexes. The narrower they get, the more they resemble active stock picking. This applies especially to those targeting the double bottom line associated with ESG investing: doing well financially and doing well socially.

That requires active decisions, such as which rating providers to use, which index managers to select, what types of businesses to target, and what weights to put on different pillars of ESG. As new forward-looking materiality frameworks evolve in response to new regulation and as data quality improves, our passive ESG investing is now becoming partly active in nature. It is not decision free, as has long been the case with plain vanilla ESG cap-weighted indexes.

It was much less active in the recent past, with the first generation of ESG indexes, which had clearly defined parent benchmarks tracking broad markets. They also had low tracking error, defined as the level of active risk a fund takes versus its parent index. We expected them to deliver some demonstrable benefits without sacrificing baseline outcomes.

However, as the infrastructure of skills, data and technology has improved lately, a low tracking error is inconsistent with achieving a double bottom line.

This is duly reflected in the EU's Paris-aligned Benchmark and Climate Transition Benchmark. Both are built around an absolute 1.5°C target scenario. Even if the world misses the net zero goal by 2050, these indexes are so designed to stick to their decarbonisation trajectory. They are also meant to attract regulatory oversight. This is in marked contrast to the previous generation of low-carbon indexes, which neither targeted an explicit temperature scenario, nor attracted legal scrutiny.

The upshot is clear: the line between actives and passives is blurring. So, we consider a whole spectrum of investing types with low-cost/rules-based investing at one end and high-cost/discretionary investing at the other. The aim is to achieve an optimal balance of market risk and idiosyncratic risk.

A French pension plan

It is widely accepted that the high market returns of the last decade are unlikely to be repeated after the bear market, as central banks continue to treat inflation beating as their top priority. Bringing inflation down to low single digits – say 3% – means interest rates will have to remain high for the foreseeable future. So, pension plans are paying more attention to how some of the inherent downsides of passives can adversely affect their portfolios.

Growth is likely to affect all shades of passives, with three of them likely to be favoured most (Figure 1.4). The first is ETFs, cited by 61% of survey participants. Their growth has been rapid as Covid-19 turbocharged theme investing.

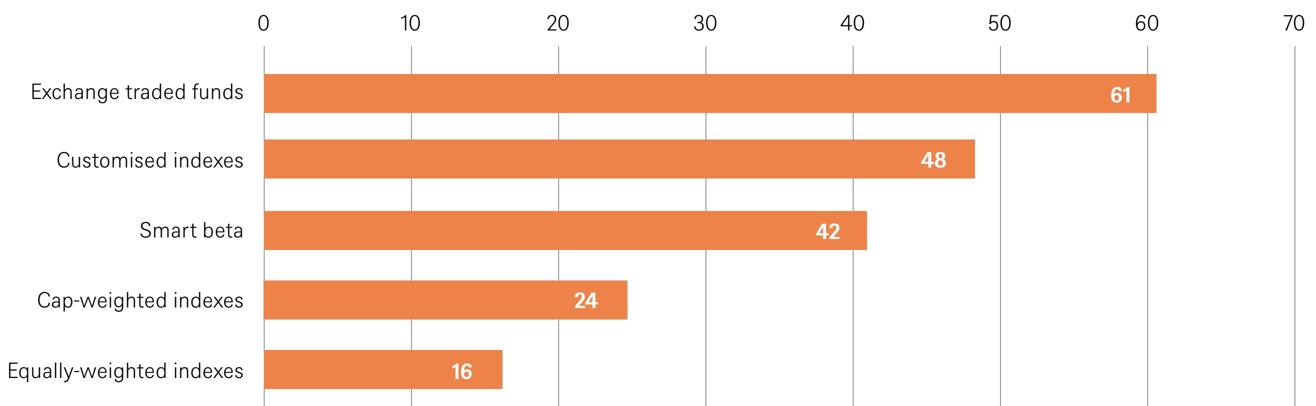
In previous crises, policymakers targeted bricks and mortar projects to reboot their economies. During the pandemic, in contrast, they targeted green and digital sectors in the key economies. The European Union's Green New Deal worth €225 billion is a case in point. Another is the Inflation Reduction Act in the US, envisaging an injection of $369 billion into green energy projects. These and other initiatives have focused on renewable energy, life sciences, electric vehicles,

"Equity beta is unlikely to deliver our return target of CPI plus 4%. We will use actives to deliver alpha."

An interview quote

Figure 1.4

Looking ahead to the next 3 years, which of the following passive vehicles in general are likely to have the fastest asset growth?



Source: CREATE-Research Survey 2023

waste management, biotechnologies, cybersecurity and robotics, to mention a few.

Indeed, mega trends have been powering these and other sectors in this century. They matter to investors because they disrupt industries, promote new business models and give rise to clear and predictable sources of value creation, with a multi-year return profile.

ETFs are seen as an ideal vehicle for capitalising on mega trends that ignore classic regional and sectoral splits. Current practice is investing in multiple themes with tactical switches periodically to capitalise on ephemeral alpha opportunities: some themes are durable, while others decay rapidly. ETFs have benefited from the fact that the universe of pure-play thematic funds in the active space is somewhat limited. It is no wonder that a rising number of mutual funds are being converted into ETFs.

As ETF growth has taken off, concerns about them have, yet again, emerged. The key one is that they impair markets' traditional role of price discovery. They are becoming a new stock market phenomenon in their own right – one in which stock performance can be influenced just by inclusion in a major index. Their critics invoke the Laffer curve analogy. In its original context, the curve argued that beyond a certain point, a rise in the income tax rate could, perversely, shrink tax revenue by reducing the incentive to work.

In the investment context, the curve questions whether the rise of passives beyond a certain threshold could be self-defeating due to the resulting harm to price discovery, with long periods of low volatility in the up market followed by bouts of extreme volatility in the down market. The issue is at what stage does the rise of ETFs impair markets' price discovery role. The jury is currently out on this point (Case study 1d). The way in which ETFs provided price discovery in high yield and IG credit in the market crash at the outset of the pandemic suggests that price discovery has not been an issue in extreme situations.

Moving on to the second favoured vehicle, it covers a recent innovation that is enhancing the attractiveness of passives: customised indexes in segregated accounts that allow investors to

Case Study 1d

Concerns about price discovery are not going away

There is a lot to like about passives: low cost, low governance, broad diversification and zero key-person risk. But their explosive rise in the past 10 years has brought to the fore a big potential downside: individual securities are selected on the basis of their size, not their intrinsic merits. This creates an index premium that undermines the traditional price discovery role of markets, which enables buyers and sellers to agree a price at which they are willing to trade. The divergence between the PE ratios of those constituents and non-constituents of ETFs is clear.

Of course, the divergence creates arbitrage opportunities for active managers, but they have struggled to realise it, since cashing in on these anomalies requires both a buyer and a seller with diverse views. So far, this has proven difficult while market prices remained artificially inflated by central bank action. This absence of diversity creates fragility in the market and the possibility of prices departing substantially from their fair value. The US market is even more passive than conventional metrics imply.

Opinions vary on the point at which price discovery is seriously hampered. Some argue that it could happen when passives account for 90% of the investment universe, a figure far higher than current market penetration. This is because it is the flows and not the stock of funds that matters. However high the share of passives, so long as there are some active traders in the market, price discovery will not be hampered.

Yet others argue that the threshold is much lower than 90% and we may be close to it if we include benchmark hugging by active managers. Every marginal euro invested in the market is simply buying the market. Where is the price discovery in that?

A Dutch pension plan

"Whether ETFs affect markets' traditional role of price discovery remains an open issue – for now."

An interview quote

follow their chosen themes at a more granular level (cited by 48% in Figure 1.4). It also allows them to engage directly with constituent companies. It purchases the underlying securities that make up an index rather than buying a pooled vehicle. In the US, this allows the generation of 'tax alpha' when tax losses and tax gains on individual securities are netted out. It also allows investors to express their preferences about the components in the index – commonly favoured by those wanting to pursue ESG or, indeed, other secular themes.

The third favoured vehicle is smart beta strategies (42%). They will help to harvest various traditional risk factors in a transparent rules-based way. The long winter for value investing is coming to an end. With high correlations between equities and bonds continuing, diversification based on risk factors will gain traction. Notably, as market prices move towards fundamentals, there will be a revival of value investing – the practice of picking underpriced stocks with true potential. Smart beta also permits in-house investing for large investors.

Return to contents page

2

Rise of passives

What have their key merits been?

Introduced in 1886, the Dow Jones Industrial Average was simply a market proxy, not an investment idea. Over time, however, as markets became hard to beat, enterprising asset managers saw an opportunity to deliver market-representing returns at very low cost. In this century, passives have evolved rapidly from cap-weighted indexes to ETFs, smart beta and customised indexes. Their virtues have been evident in rising markets, which also served to conceal some of their inherent downsides.

Lately, these downsides have become more obvious as markets entered a bear phase in 2022. As a result, pension plans are adopting a pragmatic approach that seeks to maximise upsides while minimising downsides. This involves having a horses-for-courses approach: using passives for highly liquid markets with fewer informational inefficiencies, and actives in illiquid markets where inefficiencies abound. The two styles are also converging in areas such as smart beta and ESG investing.

1. An expanding value proposition

When the first index mutual fund was launched in the US in 1976, critics held that the great mass of investors were unlikely to be satisfied with the goal of merely achieving average returns. But as we saw in Section 1, the evolution of markets since then changed all that, as the value proposition of passives has kept expanding. At least one in every two survey participants have identified six benefits of passives in today's ultra-challenging environment (Figure 2.1).

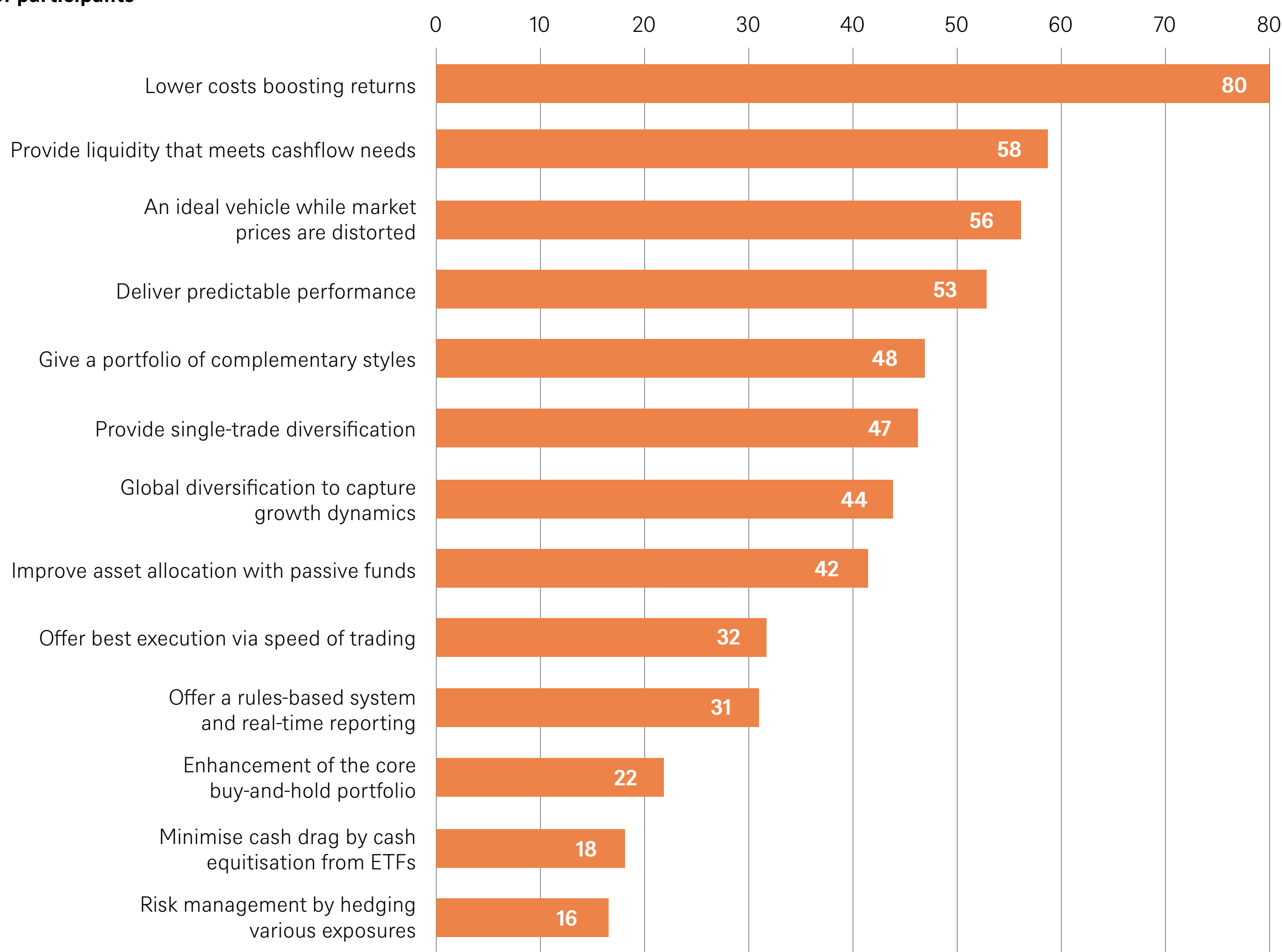
The most widely reported (by 80%) is their lower cost, which boosts their after-fees returns: a major factor as markets are likely to remain in an era of low nominal returns and higher volatility due to the latest round of quantitative tightening by central banks. Investors do not have to research the securities in the index to beat it. All indexes are transparent: their holdings are on public display.

The second benefit is that they permit liquidity management that meets cash flow needs and allows opportunism as volatility throws up periodic buying opportunities (58%). In this context, tactical asset allocation is on the rise as a key source of alpha. ETFs have proven to be an ideal vehicle for this purpose. They have been especially welcomed by pension plans whose sponsors have not been able to make full deficit recovery contributions after issuing profit warnings in the wake of the pandemic.

The third benefit of passives has been very evident in capturing returns when markets were distorted by central bank action prior to 2021 (56%). This allowed broad diversification as part of a balanced portfolio by complementing actives (48%). Passives thus served to improve asset allocation by ensuring that time-varying risk premia over a cycle are captured by the appropriate investing style (42%).

The fourth benefit of passives has been their performance predictability (53%). This has predominantly been the case with cap-weighted indexes. However, this benefit has been somewhat diluted in innovations that have involved less systematic passive approaches. For example, ESG

Figure 2.1
What have been the main benefits of passive funds in the current challenging investment environment?



Source: CREATE-Research Survey 2023

indexes have required higher active risks via bigger tracking errors to realistically target a double bottom line. Smart beta, too, has required higher active risk in periodic factor rebalancing in what is seen as a 'third way' of investing (Case study 2a). It seeks to offset the inefficiency of cap-weighted indexes as revealed by the tech bubble in 2020. However, it also runs the risk of underperforming the market.

The fifth benefit centres on international diversification (44%). Passives have proved ideal for capturing country-specific growth dynamics or indeed to new investment ideas. This has been especially welcomed by small and medium-sized plans with limited skillsets and governance structures that disfavour active investing.

The final benefit centres on implementation. Dealings in passives are done at speeds that offer the best execution (32%) and real-time reporting (31%). Both these factors have served to reduce implementation leakage when trades are done on 'stale' prices owing to delays in their execution. With actives, in contrast, traded prices rarely match quoted prices.

"Passives require minimal governance as they offer a set-and-forget autopilot option."

An interview quote

Case Study 2a

Passives have continued to evolve into the 'third way' of investing

We started investing in passives around 2005 and have adjusted our approach in line with their evolution. Our latest foray has been into smart beta: a systematic rules-based style of investing that aims to harvest premia of traditional risk factors like value, momentum, low variance and size.

We recognise that seemingly different asset classes can have unusually high correlations due to their common exposure to underlying risk factors.

This style sits between traditional actives and passives with overlaps at each end. Thus, it is the third way of investing. Although rules based, it also requires human inputs, as it crunches a large volume of data to establish interrelationships between these factors, and their risk-reward features over a market cycle. Big data – with its volume, velocity and variety – has been a big factor in the rise of smart beta.

Our experience shows that market-beating returns often come from simple systematic exposure to traditional risk factors. These strategies offer the enticing option of earning alpha at beta fees. However, they are not so passive: portfolio managers still need to make judgement calls on which factors to select, which data to apply and when to do the rebalancing. After all, factors can become overvalued as they attract new money and hit a capacity ceiling above a certain level of assets.

Smart beta has now given rise to two versions of alpha: a commoditised one that refers to market-beating returns targeted by factor investing and an informational one that aims to beat the commoditised version solely by relying on managerial skills, proprietary research and a high information ratio.

An Australian superannuation fund

2. Don't write off active investing just yet

The benefits associated with passives, as described in the previous subsection, should not detract from the fact that passives also have certain design features that turn strengths into weaknesses as market conditions change. The current bear market is no exception.

It has exposed certain downsides that either remained concealed in a rising market or, at the very least, were not fully priced into market valuations. Broad market gains are gone.

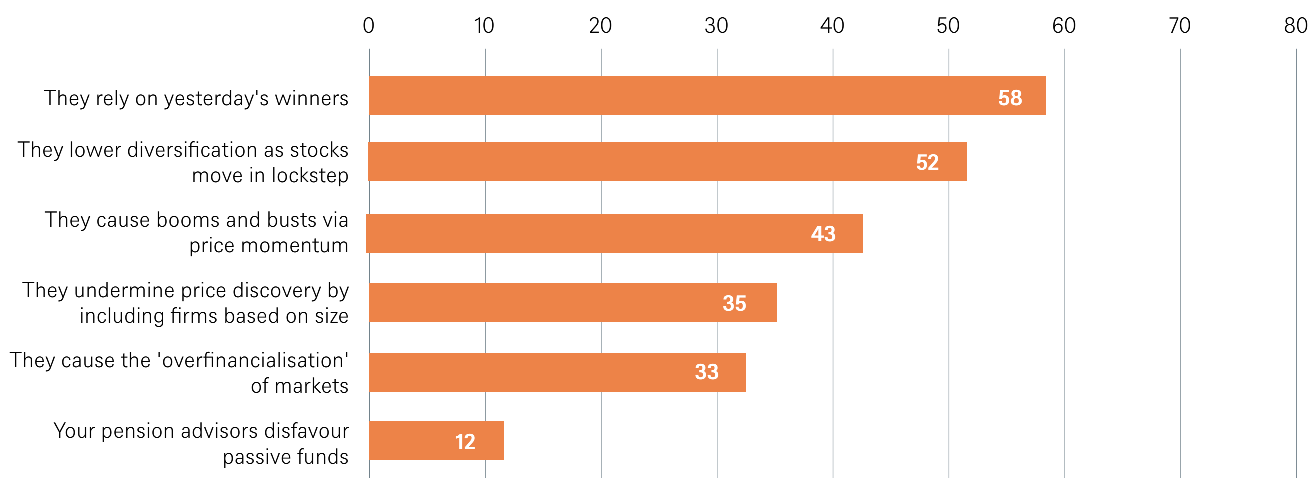
At least one in every three survey participants has become more aware of that with the advent of the bear market in 2022 (Figure 2.2).

To start with, by buying in bulk, passive investing does not discriminate between outstanding companies and mediocre ones (cited by 58%). By their very construction, passive funds rely on yesterday's winners and overinflate valuations. The resulting 'index premium' rose as market prices scaled fresh heights prior to the 2022 bear market. This further disconnected prices of individual component stocks from their fundamentals – especially in cap-weighted indexes where stocks are included on account of their size, not their intrinsic merits. Thus, most valuable companies have continued to remain so, no matter their future prospects.

Hence 35% reckon that this feature undermines markets' role in price discovery and capital

Figure 2.2

What have been the main drawbacks of passive funds in the current investment environment?



Source: CREATE-Research Survey 2023

allocation. However, as we saw in Case study 1d in Section 1, the share of passives has arguably not yet crossed the threshold beyond which the loss of price discovery becomes a concern. Even so, 43% still believe that passives make booms and busts more likely due to their strong inherent price momentum.

Another inherent weakness is that passives reduce diversification benefits, as securities inside an index move in lockstep with swings in the overall market (52%). The correlation of shares within all the indexes has risen markedly in the last decade. This has prevented investors wanting to profit from buying good companies and shorting poorly performing ones in the index. Furthermore, any stock that is not suitable for inclusion in broad-based index funds or ETFs will have fewer and fewer possible buyers as more money moves into these sorts of products.

From a fixed income perspective, index funds can create adverse selection: overexposure to the most indebted companies or countries. The implied moral hazard is ever present when capital is channelled to those who deserve it least.

Finally, 33% believe that sky-rocketing ETF trading has caused the overfinancialisation of markets where speculation overrides investing. The result has been shorter time horizons, the higher velocity of trades, momentum trading, unrealistic expectations and the constant search for 'hot' products.

Historically, the role of equity markets has been to channel resources from savers wanting to build up their retirement pots to borrowers wanting to grow their business. Savers were thus issued shares that were meant to provide a claim on the future profits of borrowers. Over time, however, trading in such claims has become more profitable than holding them.

The foregoing potential downsides are becoming more evident in the 2022 bear market. Our survey

"Our horses-for-courses approach uses actives in illiquid markets where they work best, and passives in liquid markets where they are ideal."

An interview quote

Case Study 2b

Active or passive is not a binary decision

For us, the choice between actives and passives is not clear cut. Our passive portfolio has delivered good returns when implementing innovative ideas via ETFs, but this does not mean that we ignore actives.

They are not just about delivering market-beating returns. They also aim to diversify risks based on a variety of styles used by active managers. They also permit high-conviction investing that can ride out short-term market drawdowns. It is our investment belief that markets are often blindsided by future opportunities because they put too much emphasis on yesterday's winners: so-called recency bias. That is clear from how the composition of the top 10 stocks in the S&P 500 has shifted radically in this century.

It makes a lot of sense to take into account the efficiency of underlying asset classes. Passives are ideal when markets are more efficient and actives are ideal when they are not. That said, it is essential to emphasise that when markets are dominated by a handful of stocks – like TMT at the end of the 1990s and FAANG in the last decade, all stocks tend to move in lockstep and it increases the inefficiency of indexes.

Active management works when there is greater performance dispersion between individual stocks in an index that lowers their correlation. Since the end of 2021, that dispersion has increased. The long winter for value investing seems to have come to an end. It would be premature to begin work on the eulogy of active investing.

A Canadian pension plan

participants continue to weigh them up against the potential upsides and, on balance, they have retained their appetite for passive investing, as shown in Section 1.

But they are ever mindful that there is a place for both passives and actives in a diversified portfolio (Case study 2b). One is needed to target long-term risk premia in inefficient markets, the other to target momentum and liquidity management when that is profitable. The two styles, therefore, will continue to coexist – the more so since global active management fees have fallen substantially over the past decade. The hurdle for active strategies to add value is as low as it has ever been. Active managers have not been inactive in facing the challenges from passives.

Hitherto, passives made a lot of sense when the market environment was dominated by cheap money. As that environment changes and valuation overshoots become common, it makes sense to use actives in today's volatile environment in market segments where dynamic investing could possibly trump lower fees on passive vehicles.

Return to contents page

3

Passives 2.0

Where is innovation needed most?

Passives are entering a new era of growth that marks a departure from their cap-weighted heritage. Far from dampening interest in passive investing, the current bear market has, if anything, maintained it among our survey participants. Coverage is widening and deepening. It is widening by incorporating a variety of index funds that are pursuing newly emerging investment themes. It is deepening by seeking to ensure that new passives combine the best of old and new.

Taking them in turn, the opportunity set of passives has been expanding to embrace themes around ESG and the UN's Sustainable Development Goals. A discernible shift is underway from cap-weighted indexes or core ESG indexes that follow a parent benchmark, towards less-constrained ETFs, segregated accounts and customised indexes. The biggest shifts will involve SDGs and Paris climate benchmarks.

To ensure that such shifts deliver targeted outcomes, it is vital for passive managers to become more innovative by doing four things: embrace a more activist stewardship role that allows them to act as agents of change; implement the EU's 'double materiality' concept; seek steep improvements in data from listed companies as well as rating agencies; and deliver more cost-effective customisation. Without these improvements, Passives 2.0 will struggle to deliver.

1. Product widening

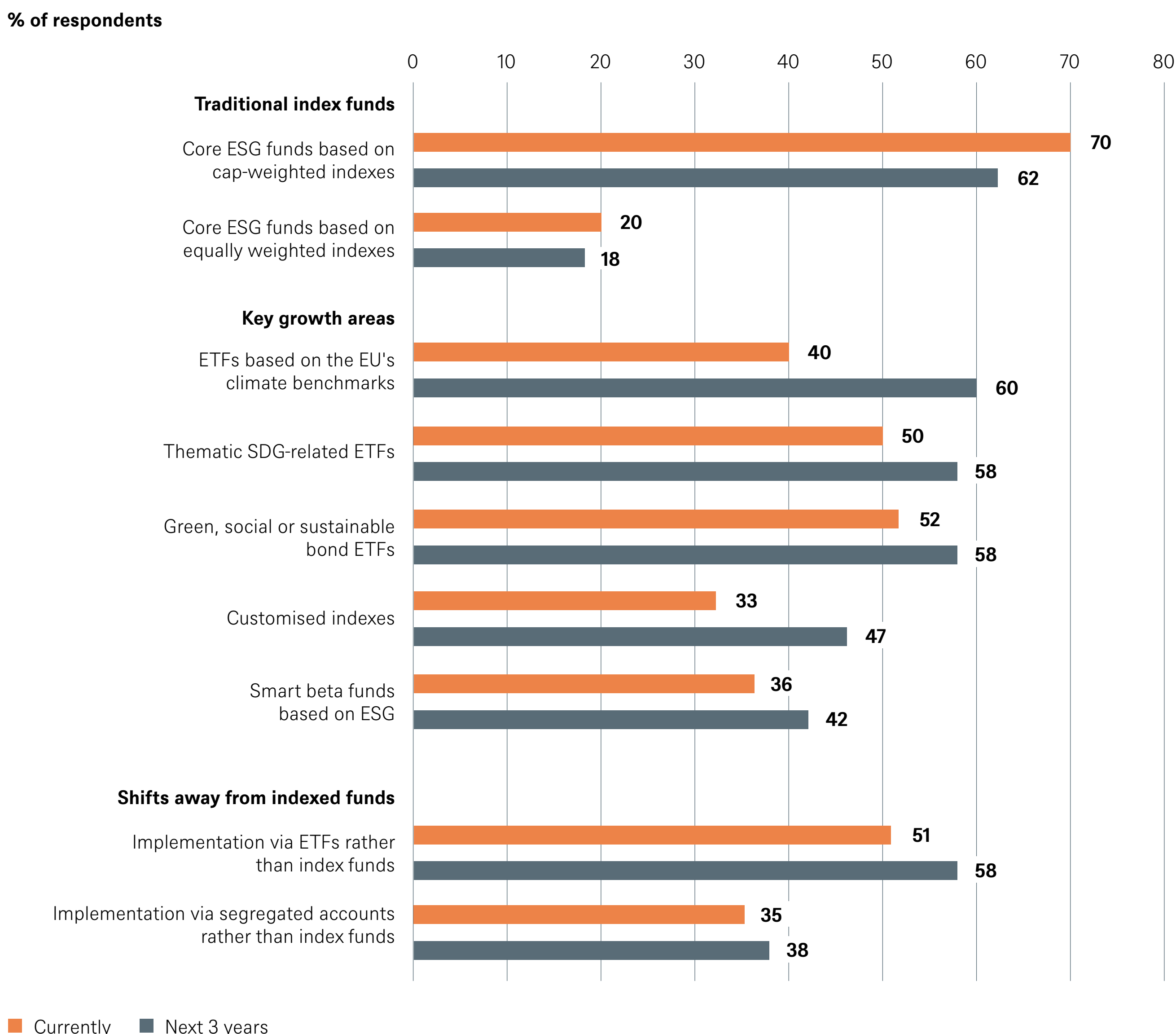
As we saw in Section 1, thematic funds are likely to attract growing interest from our survey participants. As central banks have drained market liquidity with their quantitative tightening programme since 2021, persistent swings in asset prices are the norm. Market volatility has returned. In order to withstand it, interest has shifted to selective growth points in the global economy that can ride out market turbulence and become one of the focal points of value creation. Sustainability is one of them.

Currently, it is accessed via a variety of passive funds (Figure 3.1). The most widely used of these are core ESG funds that are cap weighted (70%), and the least widely used are core ESG funds that are equally weighted (20%). In between are various forms of ETFs and customised indexes. Thus, it is clear that a variety of passives are already being used to varying degrees.

Looking to the next three years, there is likely to be a compositional shift, as implied by two trends. First, cap-weighted indexes may well lose favour, falling to 62% from their current level of 70%. Second, the popularity of passive exposures is likely to grow across the board, including thematic SDGs, the two Paris benchmarks, and green, social or sustainable bonds. The other growth area is segregated accounts, rising to 38% from the current level of 35%.

Figure 3.1

What are the main vehicles used in ESG investing currently and which will be used over the next three years?



Source: CREATE-Research Survey 2023

A key feature of today's investing is the regulatory changes that are helping organisations navigate the challenges associated with ESG. The Principle for Responsible Investment's regulation database, tracking sustainable finance regulation around the world, now reports on 868 policy tools and guidance that are in place, and more than 300 policy revisions to support, encourage or require investors to consider ESG factors. Their focus on better disclosure standards globally will contribute to better data quality, transparency and comparability between companies and funds. More than ever, investors are keen to ensure that their investments deliver not only good

"We can no longer afford to fly blind with ESG investing, with QT causing persistent swings in asset prices."

An interview quote

risk-adjusted returns, but also socially worthwhile outcomes. Otherwise, ESG will be yet another vacuous investment slogan, like BRICS, that promises much but delivers little (Case study 3a).

The regulatory landscape is also set to improve, as the Corporate Sustainability Reporting Directive came into effect in 2023, and enhance disclosure of sustainability-related information by EU companies. In the UK, the Financial Conduct Authority (FCA) is leading the charge on mandating TCFD-aligned disclosures: proposing the adoption of sustainable investment labels, crafting the UK Green Taxonomy and working on gold-standard net zero transition plans.

For its part, the Securities and Exchange Commission (SEC) in the US has released three proposals to improve ESG disclosures and tackle greenwashing. One of the SEC's latest proposals requires funds using ESG criteria in their investment process to define and disclose more clearly how they plan to achieve their goals in their published prospectuses and annual reports. Last spring, the SEC also closed its consultation on new rules to require public companies to enhance disclosures on climate issues.

Case Study 3a

Data remain the Achilles heel of ESG investing

There is little doubt that we shall have significant allocations to passives of various forms over the next three years. But this assessment is predicated on the condition that there will be major improvements in the data that underpin ESG investing.

In the last bull market, excess liquidity from central banks lifted all boats. Our passive funds targeting ESG did well. Quantitative tightening is already reducing liquidity and causing capital rationing. Hence, it is vital for us to know the thinking that goes into ESG funds and the data that underpins it. Currently, our capital is not going into solving environmental, social and governance problems on the scale that is required.

The main reason is that there has been no mandatory requirement on listed companies to report their ESG risks and opportunities, until the arrival of the EU's Corporate Sustainability Reporting Directive this year.

The SEC's initiative on mandatory disclosure of ESG risks is also a step in the right direction.

Before then, companies were left to decide for themselves which ESG factors were material and what to report. This self-selective approach has been inevitably self-serving: only metrics that showed investee companies in a good light are reported. They are neither decision useful nor forward looking.

To compound the problem, the frameworks used by long-established nonprofits like the Global Reporting Initiative and the Sustainability Accounting Standards Board have varied in scope and emphasis.

Regulation is set to improve the whole infrastructure of data, skills and technology. Our index managers have been under huge pressure to seek step-improvements in their supply chains.

A German pension plan

2. Activism advancing into passive investing

For a long time, passives were seen as commoditised products where the key differentiator was cost and cost alone. As we have seen in the preceding subsection, their current 2.0 form has experienced a considerable widening of their opportunity sets. Alongside this widening, at least one in every two pension plans is now also seeking to deepen the value proposition of passives by requiring their providers to deliver innovation in four areas.

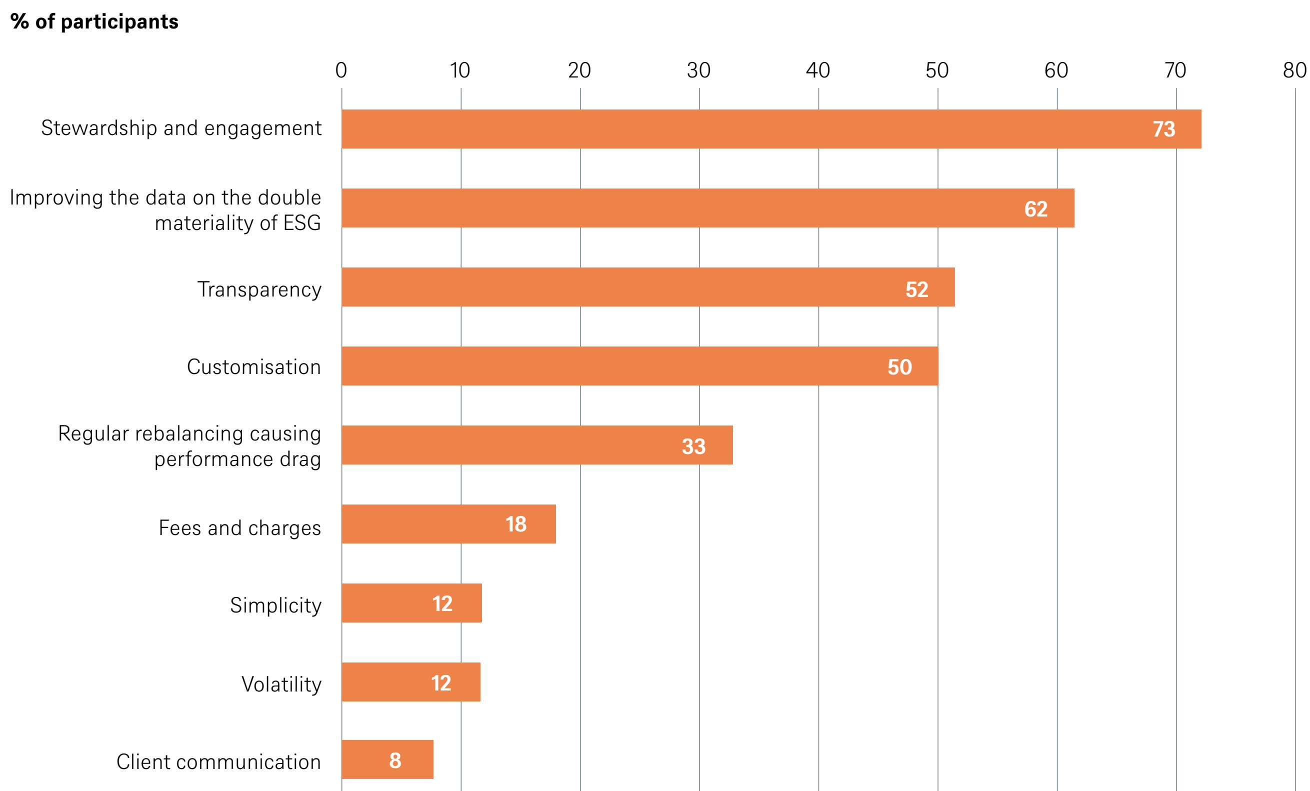
The key area is stewardship and engagement with companies in the indexes as well as the index providers themselves, as cited by 73% (Figure 3.2).

High-profile governance lapses have whipsawed share prices and cost investors dear, as shown by BP's Deep Horizon oil spill in the Gulf of Mexico in 2010. While the data on ESG pillars are evolving, pension plans are keen to know far more about two aspects: how their ESG agenda is actually being implemented on the ground and what standards and metrics are being used to assess the outcomes. They are keen to harness the latent power of their index holdings to raise the quality of their beta holdings and also to deliver positive spin-offs for wider society. All the more so, since they can't divest: they have more skin in the game than active managers.

Hence, they want index managers to engage in a number of activities and also improve the skill

Figure 3.2

In which product features do providers of passive funds need to deliver innovation that improve the quality of beta returns for your pension plan?



Source: CREATE-Research Survey 2023

"Only deeper engagement can move the needle on ESG issues."

An interview quote

Case Study 3b

Stewardship: going from processes to impacts

As a major shareholder in Volkswagen, we suffered reputational as well as financial damage when its widely publicised emission-cheating scandal was exposed in 2015, invoking billions of dollars in fines and tarnishing its global brand.

That experience taught us that it is vital for our passive managers to exercise their stewardship role by proxy voting, tabling resolutions at the AGM, voting against directors who show minimum interest in ESG issues, having year-round dialogue between AGMs, having a say on ESG issues at AGMs, and working in collaboration with peers in various international networks like Climate Action 100+. Corporate boards need independent directors who can be the voice of shareholders in board discussions.

These activities need to be directed at achieving twin goals: securing decent returns on our investments and acting as catalysts of change on three truly disruptive forces that investors face today: environment, social and governance. It is about future-proofing tomorrow's businesses against these forces.

Hence, staff in the stewardship team at our index managers need tact, empathy and diplomacy as much as they need business knowledge and personal gravitas. They need a deeper understanding of how corporate strategies are designed and implemented. They need to have industry experience plus awareness of the cultural nuances of individual businesses.

Above all, they must believe that their mission is to make a difference, rather than just going through the motions, hobnobbing with senior corporate executives and ticking boxes, as has been the case in the past. They should know that companies always talk a good game, so they must ask searching questions that seek to reveal the reality behind it.

This is all the more essential because there are no widely accepted definitions of engagement, templates for their adoption, or metrics of their outcomes. Apart from episodic splashes, it remains unclear as to how engagement is done and what it really delivers.

A UK pension plan

sets of staff members who are directly involved in corporate engagement (Case study 3b). The aim is to ensure that they are active owners rather than passive holders of paper assets. The days when stewardship was a box-ticking exercise using a boiler plate narrative are gone. Pension plans are now mandated to be agents of change and ensure that ESG is not just a pipe dream.

A related area, also requiring innovation, is the data on double materiality: risks faced by companies and companies' own impacts on outside stakeholders (62%). Increasingly, pension plans are looking beyond the impacts of ESG risks on their portfolios to understand how companies impact on the environmental, economic and social systems around them. This broader focus, which is now required by EU regulators, is driving increasing demand for greater non-financial information. That such disclosures are consistent is crucial if they are to be of any value to either financial or sustainability outcomes and avoid the

risk of greenwashing. But there is another reason too, especially in the climate context: the rise of litigation risk as third parties seek compensation from collateral damage.

The third area where further innovation is desired is transparency (52%). This not only covers corporate reporting but also ESG and SDG indexes compiled by external rating agencies. Indeed, the lack of transparency on their rating methodologies, underlying data used, product objectives and conflicts-of-interest management around their indexes are drawing scrutiny from regulators in jurisdictions as diverse as France, India, the UK and the US.

The construction and labelling of ESG benchmarks have drawn critical detailed scrutiny, as the subjective nature of how data and ratings are turned into investment products could create a 'trust deficit' in passive ESG funds. Indeed, the Securities and Exchange Commission thinks that the rating agencies should come under the umbrella of the Investment Company Act 1940, since their activities have veritably turned them from data vendors into investment advisors. While regulators are planning their next move in this area, our survey participants want their index managers to apply maximum leverage to gain the necessary transparency around what appears to most investors as a 'black box'.

The final area requiring innovation is customisation (50%). As we saw previously, a raft of indexes is now being deployed in pension portfolios; leading to an increased demand for bespoke indexes. This is the flip side of the rising tolerance for higher tracking error. The Covid-19 crisis concentrated minds on the 'S' pillar of ESG, covering around 19 separate items. Pension plans have been selective in their choice, focusing on employees and local community. Also, within the 'E' pillar, some focus on biodiversity, others on climate change.

To conclude, therefore, with further innovation, the upward trend in passives is set to continue as they widen and deepen their presence in pension portfolios.

Return to contents page

Other publications from CREATE-Research

The following reports and numerous articles and papers on emerging trends in global investments are available free at www.create-research.co.uk

- ESG investing after the bear market (2023)
- Asset allocation in an inflation-fuelled world (2022)
- Impact investing 2.0: Advancing into public markets? (2022)
- Net zero: going beyond the hype (2022)
- DB plans in their end game in the post pandemic world (2021)
- Can capital markets save the planet? (2021)
- DB plans in their end game in the post-pandemic era (2021)
- Rise of the social pillar of ESG (2021)
- Creating resilient pension portfolios post Covid-19 (2020)
- Sustainable investing: fast forwarding its evolution (2020)
- Addressing climate change in investment portfolios (2020)
- Quantitative easing: the end of the road for pension investors? (2019)
- Future 2024: Future-proofing your asset allocation in the age of mega trends (2019)
- Passive investing: The rise of stewardship (2019)
- Rocky Road for the European Union: Pension Plans' Response (2018)
- Passive investing: Reshaping the global investment landscape (2018)
- Alternative investments 3.0 (2018)
- Back to long-term investing in the age of geopolitical risk (2017)
- Active investing: Shaping its future in a disruptive environment (2017)
- Digitisation of asset and wealth management (2017)
- Expecting the unexpected: How pension plans are adapting to a post-Brexit world (2016)
- Financial Literacy: Smoothing the path to improved retirement savings (2016)
- 2008: A turning point in the history of investing (2016)
- How Pension Plans are Coping with Financial Repression (2015)
- Pragmatism Presides, Equities and Opportunism Rise (2015)
- Why the Internet Giants Will Not Conquer Asset Management (2015)
- Pension Dynamics: The Impact of the End of Compulsory Annuitisation in the UK (2015)
- Alpha behind Alpha: Rebooting the pension business models (2014)
- Not All Emerging Markets Are Created Equal (2014)
- Investing in a High Frequency Trading Environment (2014)
- Upping the Innovation Game in a Winner Takes All World (2013)
- A 360-Degree Approach to Preparing for Retirement (2013)
- Investing in a Debt-Fuelled World (2013)
- Market Volatility: Friend or Foe? (2012)
- Innovations in the Age of Volatility (2012)
- The Death of Common Sense: How Elegant Theories Contributed to the 2008 Market Collapse? (2012)
- Investment Innovations: Raising the Bar (2011)
- Exploiting Uncertainty in Investment Markets (2010)
- Future of Investments: the next move? (2009)
- DB & DC plans: Strengthening their delivery (2008)
- Global fund distribution: Bridging new frontiers (2008)
- Globalisation of Funds: Challenges and Opportunities (2007)
- Convergence and divergence between alternatives and long only funds (2007)
- Towards enhanced business governance (2006)
- Tomorrow's products for tomorrow's clients (2006)
- Comply and prosper: A risk-based approach to regulation (2006)
- Hedge funds: a catalyst reshaping global investment (2005)
- Raising the performance bar (2004)
- Revolutionary shifts, evolutionary responses (2003)
- Harnessing creativity to improve the bottom line (2001)
- Tomorrow's organisation: new mind-sets, new skills (2001)
- Fund management: new skills for a new age (2000)
- Good practices in knowledge creation and exchange (1999)
- Competing through skills (1999)
- Leading People (1996)

Prof. Amin Rajan
amin.rajan@create-research.co.uk
Telephone: +44 (0) 1892 78 48 46 | Mobile: +44 (0) 7703 44 47 70

Disclaimer

DWS is the brand name of DWS Group GmbH & Co. KGaA and its subsidiaries under which they do business. The DWS legal entities offering products or services are specified in the relevant documentation. DWS, through DWS Group GmbH & Co. KGaA, its affiliated companies and its officers and employees (collectively "DWS") are communicating this document in good faith and on the following basis. This document is for information/discussion purposes only and does not constitute an offer, recommendation or solicitation to conclude a transaction and should not be treated as investment advice. This document is intended to be a marketing communication, not a financial analysis. Accordingly, it may not comply with legal obligations requiring the impartiality of financial analysis or prohibiting trading prior to the publication of a financial analysis. This document contains forward looking statements. Forward looking statements include, but are not limited to assumptions, estimates, projections, opinions, models and hypothetical performance analysis. No representation or warranty is made by DWS as to the reasonableness or completeness of such forward looking statements. Past performance is no guarantee of future results. The information contained in this document is obtained from sources believed to be reliable. DWS does not guarantee the accuracy, completeness or fairness of such information. All third party data is copyrighted by and proprietary to the provider. DWS has no obligation to update, modify or amend this document or to otherwise notify the recipient in the event that any matter stated herein, or any opinion, projection, forecast or estimate set forth herein, changes or subsequently becomes inaccurate. Investments are subject to various risks. Detailed information on risks is contained in the relevant offering documents. No liability for any error or omission is accepted by DWS. Opinions and estimates may be changed without notice and involve a number of assumptions which may not prove valid. DWS does not give taxation or legal advice. This document may not be reproduced or circulated without DWS's written authority.

Please be advised the above content was created by a third party. All comments, opinions, and views above are those of a third party and do not represent nor should they be attributed to DWS or any of its affiliates. DWS is not implying an affiliation, sponsorship, endorsement with / of the third party or that any monitoring is being done by DWS.

© 2023 DWS International GmbH

© 2023 DWS Investments UK Limited

© 2023 DWS Investments Hong Kong Limited

In Singapore, this document is issued by DWS Investments Singapore Limited. The content of this document has not been reviewed by the Monetary Authority of Singapore. © 2023 DWS Investments Singapore Limited

In Australia, this document is issued by DWS Investments Australia Limited (ABN: 52 074 599 401) (AFSL 499640). The content of this document has not been reviewed by the Australian Securities and Investments Commission. © 2023 DWS Investments Australia Limited

Date 14.07.2023 / CRC: 096741

Xtrackers by DWS

DWS Group (DWS) with EUR 841bn of assets under management (as of 31 March 2023) aspires to be one of the world's leading asset managers. Building on more than 60 years of experience, it has a reputation for excellence in Germany, Europe, the Americas and Asia. DWS is recognized by clients globally as a trusted source for integrated investment solutions, stability and innovation across a full spectrum of investment disciplines.

Xtrackers by DWS is a large and established provider of high quality exchange traded funds (ETFs) and exchange traded commodities (ETCs). Providing efficient 'passive' exposure to diversified indices or to single commodities, Xtrackers ETFs and ETCs provide a comprehensive set of dependable investment tools for effective portfolio allocation. Xtrackers are listed on eleven stock exchanges globally and have over 143.81 B EUR (as of 31 March 2023) in assets under management, making Xtrackers one of the largest providers of ETFs and ETCs by AUM.

CREATE-Research is an independent research boutique specialising in strategic change and the newly emerging asset allocation models in global asset management. It undertakes major research assignments from prominent financial institutions and global companies. It works closely with senior decision makers in reputable organisations across Europe and the US. Its work is disseminated through high profile reports and events that attract wide attention in the media. Further information can be found at www.create-research.co.uk.