Invesco

2022

Invesco Global Factor Investing Study

This document is not intended for members of the public or retail investors.
Full audience information is available inside the front cover.

Executive summary

Welcome to the 7th annual Invesco Global Factor Investing Study. This Study represents a unique longitudinal examination of global factor investing and this year incorporates the views of 83 institutional investors and 68 retail investors, collectively responsible for managing $25.4 trillion in assets (as of 31 March 2022).

Over the seven years this study has been running, factor investing – a form of investing in which securities are chosen based on attributes (commonly termed 'factors') that have tended to offer favorable risk and return patterns over time – has evolved to become a core part of the investing landscape. This study offers an opportunity to understand the drivers behind this growth, alongside investor experiences, and methods of implementation.

This year the core study was accompanied by ten in-depth interviews with highly experienced factor investors to understand how the space is evolving and may continue to develop as new theories and technologies are integrated into a factor investing framework. Throughout this report, the highlights from these interviews are presented as a series of 'future of factors' features.

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Theme 1

Equity factor faith rewarded: market turmoil highlights value of factors in managing risk

In our first theme, we focus on the performance of factors during recent market volatility and the impact that this had on investor sentiment. We find for many the volatile environment has demonstrated the strengths of a factor approach, with factor exposures now seen as fundamental in understanding the relative performance of portfolios. As such, we find allocations to factor investing continue to rise with the drivers of a factor approach often expanding as investors become more experienced.

Theme 2

ESG performance challenges drive interest in applying a factor approach to ESG

In theme two, we look at the intersection of factor investing and Environmental, Social, and Governance (ESG). Factors are now seen as an important tool for maintaining performance when adopting ESG, for example by controlling for unwanted bias resulting from ESG integration. Two-thirds of investors now believe factors can be used to implement ESG objectives, up from less than half in in 2018. However, the lack of consensus around methodology remains a barrier to implementation, with respondents keen for further research in this area.

Theme 3

End of the fixed income bull market sees investors looking to factors for new sources of return

In our third theme, we examine how and where factor investing is being used within fixed income. There are now high levels of belief in the application of factors within fixed income, and we find the potential end of the fixed income bull market has led to accelerating levels of demand for a factor approach. In particular, factors are seen helping to manage volatility and as an aid in delivering more diversified sources of return. In this theme, we also note that investors are using factors to implement both passive and active fixed income strategies and explore how factors are spreading across different parts of fixed income portfolios, with adoption within high yield bonds looking set for a period of rapid growth.

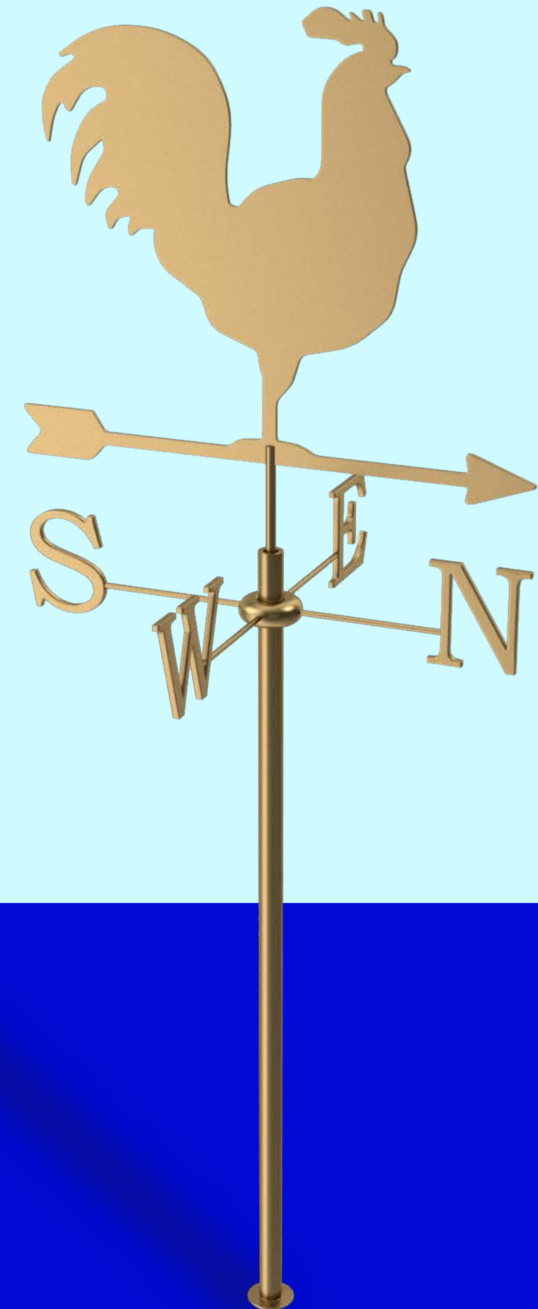
Theme 4

Accelerating rate of change in markets highlights the benefits of tactical tilting to a long-term, diversified multi-factor approach

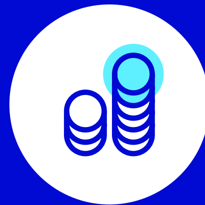
In theme four, we explore approaches to implementation and find four-fifths of factor investors now adjust factor weights through time. This is driven by the varying performance of different factors over the economic cycle and desire to balance out exposures across the portfolio. We note many investors are using factor products both tactically and strategically and this differentiation plays an important role in product selection. Factor purity is a key consideration for products being used tactically and performance relative to benchmark is more important for those being used as part of a long-term strategic allocation.

Theme 1

Equity factor faith rewarded: market turmoil highlights value of factors in managing risk



Factor allocations outperformed as volatile environment showcases strengths of factor investing



Allocations to factor investing continue to rise, with drivers of a factor approach expanding as investors become more experienced

Value, quality, and low volatility are expected to outperform in an inflationary market environment

There can be no assurance that expectations will come to pass.

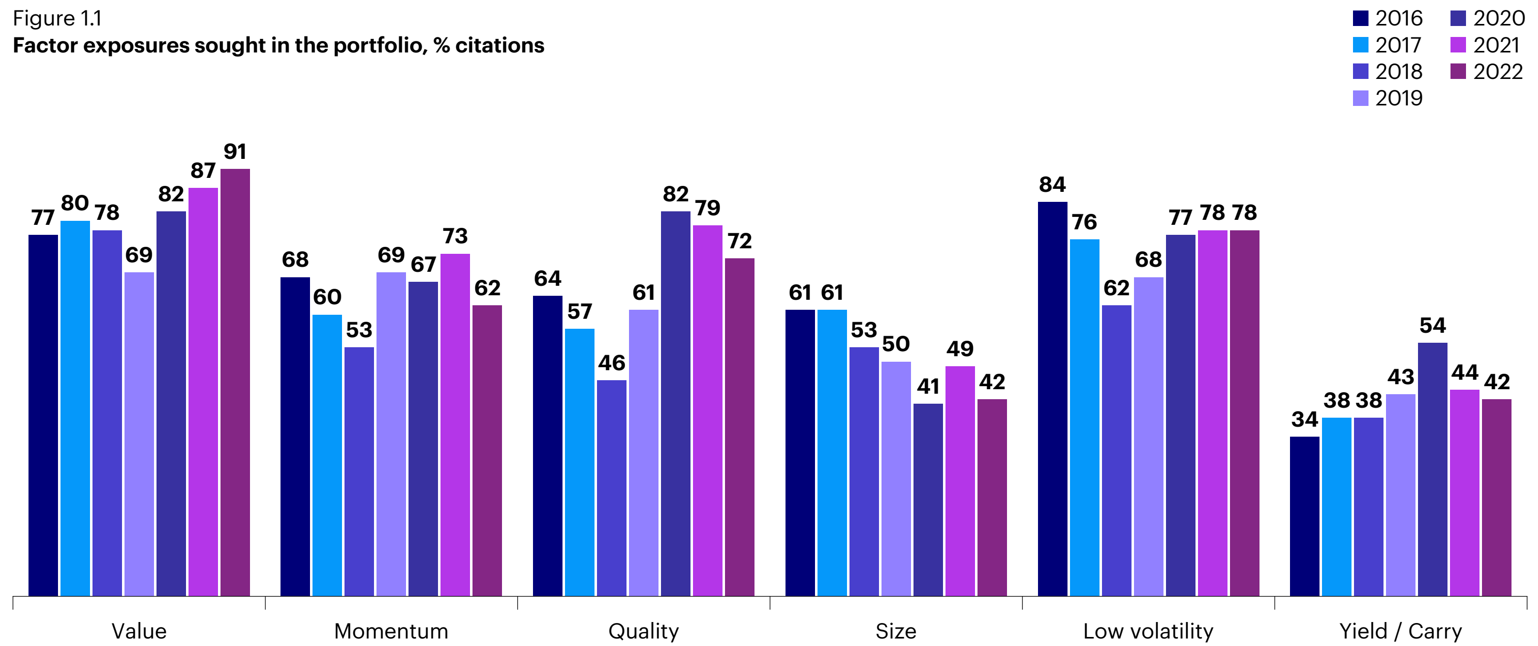
Over the past 12 months, spiking inflation and rising interest rates have reshaped the investment environment. This has led to a significant revaluation of the premium placed on growth companies and driven down the price of fixed income securities. In this volatile market environment, the relative performance of investment factors has shifted several times. The market environment has tended to reward investors with a diversified set of exposures, sometimes punishing those who leaned too heavily into one or two factors which underperformed over this period.

As established in last year's edition of this study, a multi-factor approach is now the norm for factor implementation. On average, respondents seek exposure to four distinct investment factors with value, low volatility, quality, and momentum the most targeted exposures **(figure 1.1)**. This approach has generally put factor investors in a strong position, with respondents indicating their factor allocations were more likely to have outperformed than to have underperformed relative to both their fundamental active and market-weighted strategies in the 12 months to March 2022 **(figure 1.2)**. Over 80% of respondents indicated their factor allocations met or exceeded the performance of their fundamental active strategies; 64% indicated their factor allocations met or exceeded performance versus market-weighted strategies.

In terms of outcomes, the dominant contributor has been which factors you're exposed to.

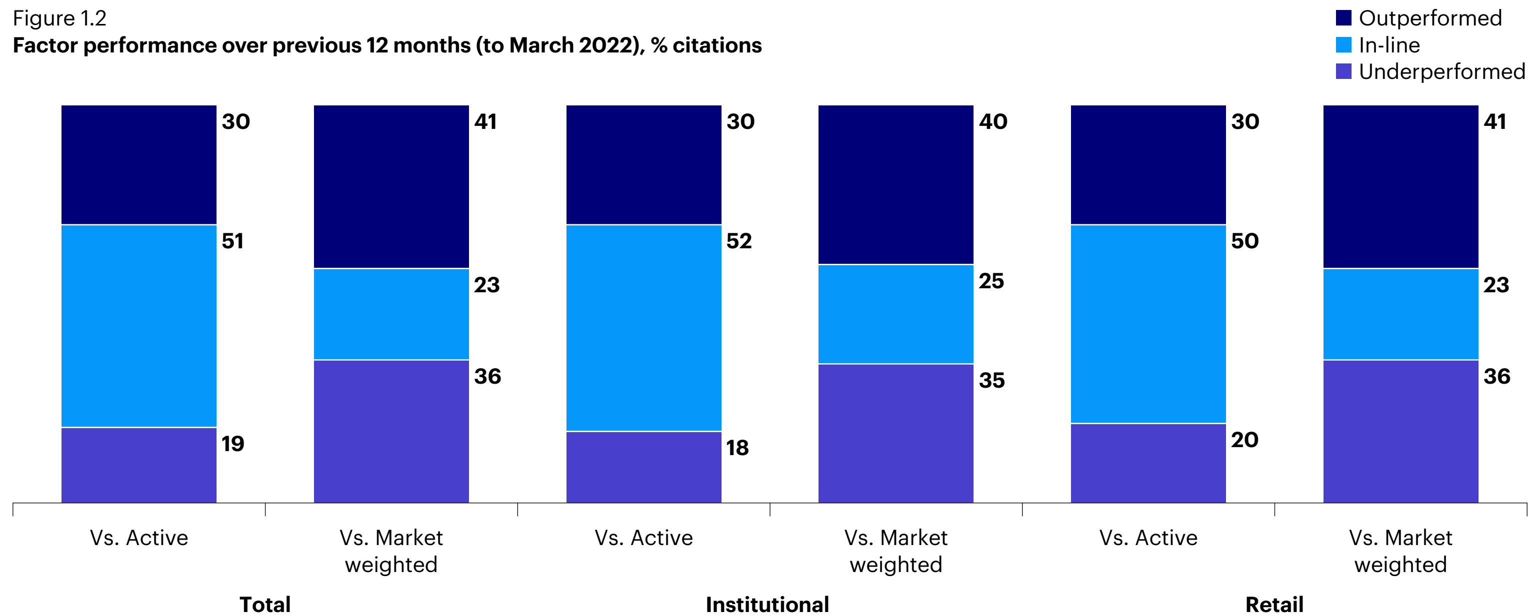
Retail investor
EMEA

Figure 1.1
Factor exposures sought in the portfolio, % citations



What investment factors do you explicitly seek / have exposure to within your portfolio (or client portfolios)? Sample size: 2016 = 56, 2017 = 98, 2018 = 260, 2019 = 236, 2020 = 237, 2021 = 232, 2022 = 146.

Figure 1.2
Factor performance over previous 12 months (to March 2022), % citations

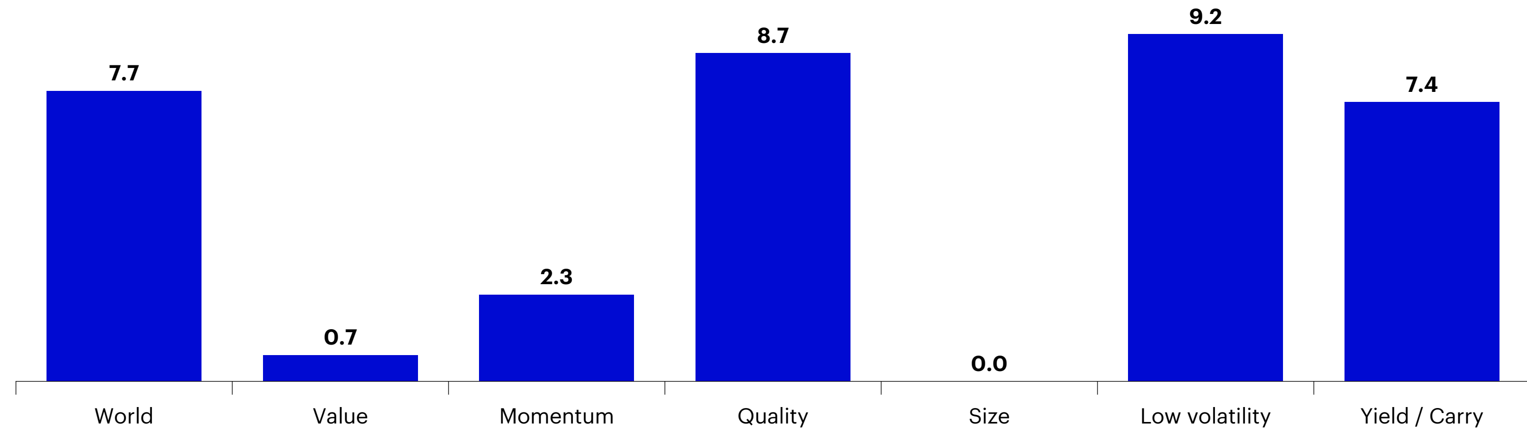


How have your factor strategies performed in terms of return relative to traditional active / market weighted strategies over the past 12 months? Sample size: 148.
Past performance is not a guarantee of future results.

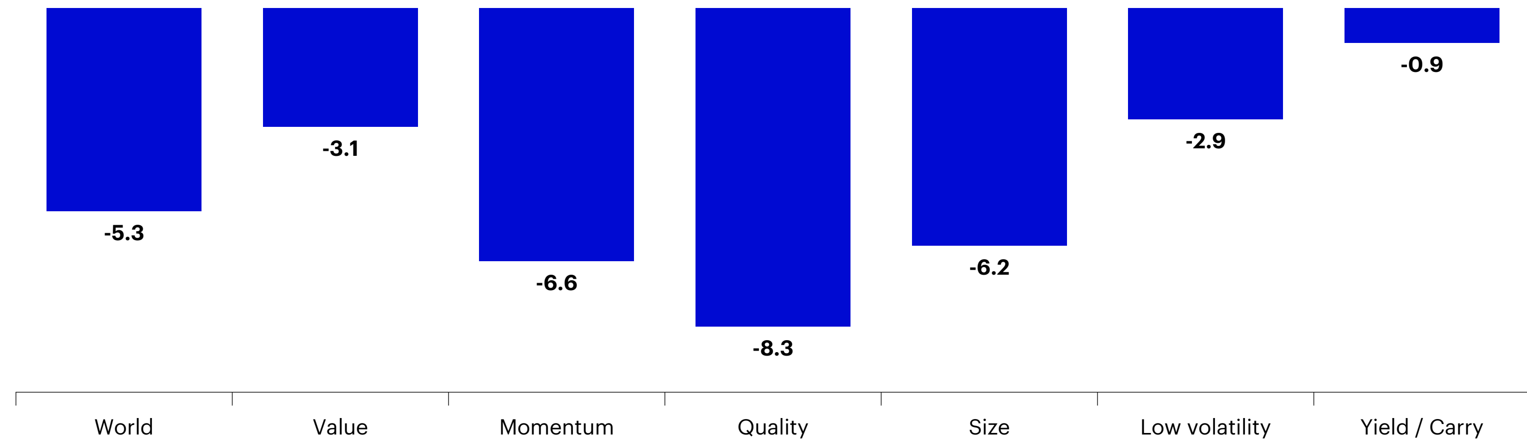
Of the key investment factors, low volatility has seen the strongest recent performance, being the only factor to outperform over both the three months and the 12 months to March 2022. This outperformance has continued to June 2022, where low volatility is one of three factors to outperform the market, alongside value and yield / carry **(figure 1.3)**.

Figure 1.3
Global index returns (%)

12 months to 31 March 2022



3 months to 31 March 2022



	Value	Momentum	Quality	Size	Low volatility	Yield / Carry
Relative performance (12 months to 31 March)	-7.0	-5.4	1.0	-7.7	1.4	-0.3
Relative performance (3 months to 31 March)	2.2	-1.3	-3.1	-0.9	2.4	4.3
Relative performance (6 months to 30 June)	5.2	-3.9	-4.2	-2.1	8.2	9.9

Past performance is not a guarantee of future results.
Source: www.msci.com/end-of-day-data-search. Indexes: ACWI, ACWI ENHANCED Value, ACWI MOMENTUM, ACWI QUALITY, ACWI SIZE TILT, ACWI MINIMUM VOLATILITY (USD), ACWI HIGH DIVIDEND YIELD. All in Gross USD terms.

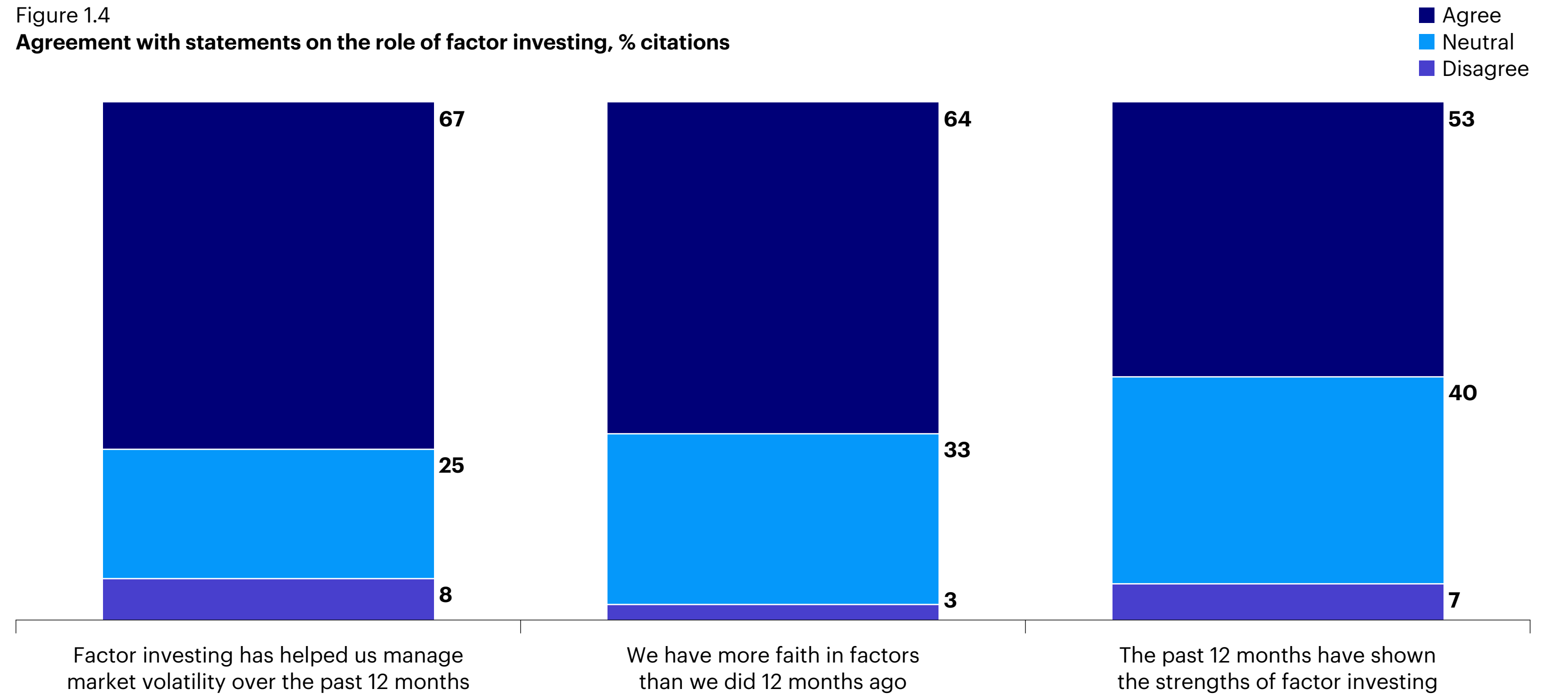
Factors were well-suited to managing risk during market turbulence

As noted by respondents, rotations in factor performance over the past year has underlined the benefits of using factors to understand and manage risk. Around two-thirds of investors said factor investing helped them manage market volatility over the past year; a similar number indicated their faith in factors grew over the previous 12 months **(figure 1.4)**. "If you were ever a doubter in terms of factors and their influence on outcomes, the last couple of years shone the light on that with huge reversals and divergencies that you can pinpoint to factors. In terms of outcomes, the dominant contributor has been which factors you're exposed to rather than specific managers, stocks or geographic allocations," said an EMEA-based retail investor.

In this year's study, 55% of respondents indicated they were using factors for risk and performance management, up from 28% four years ago **(figure 1.5)**. In particular, respondents indicated factors had proven to be a key tool in moderating against market excess, with respondents indicating many fundamental active portfolios had become over-exposed to growth stocks prior to the recent market correction.

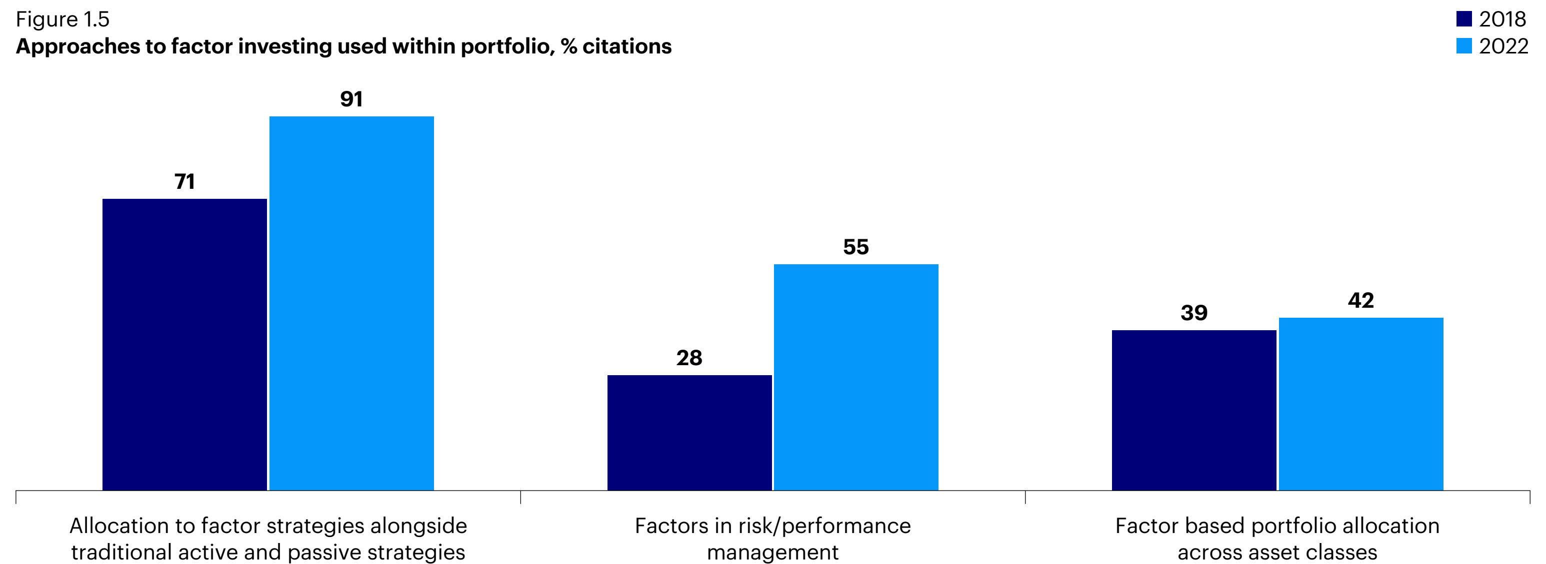
> **Factor strategies have helped us to increase returns and help reduce risks related to volatility.**
>
> **Institutional investor**
> North America

Figure 1.4
Agreement with statements on the role of factor investing, % citations



Do you agree or disagree with the following statements? Sample size: 150.

Figure 1.5
Approaches to factor investing used within portfolio, % citations



Which approaches to factor investing do you use within your portfolio (or client portfolios)? Sample size: 2018 = 247, 2022 = 150.

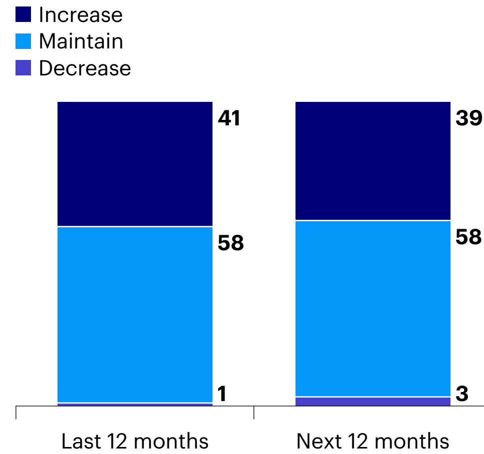
Drivers of factor investing evolve with experience

Strong relative performance and strengthened belief in the value of factor investing is reflected in rising allocations, primarily funded from fundamental active and new money **(figures 1.6 and 1.7)**. Less than 5% of respondents suggested they would decrease their factor allocations over the next 12 months, while nearly 40% expected to increase factor allocations **(figure 1.6)**. "We are increasing the use of factor investing in our portfolio as it provides a way to diversify our portfolio against volatility," revealed an Institutional investor based in APAC.

Increased allocations have also been supported by the growing number of ways a factor approach is being utilised. Around half of investors indicated the drivers for investing via factor strategies had evolved as they had become more experienced **(figure 1.8)**. While increasing returns and reducing risk are consistently the most important drivers **(figure 1.9)**, other motivations tend to gain prominence over time. In particular, the ability to control portfolio exposures and improve transparency tend to increase in importance, with many investors only fully understanding the power and scope of a factor approach as they develop expertise.

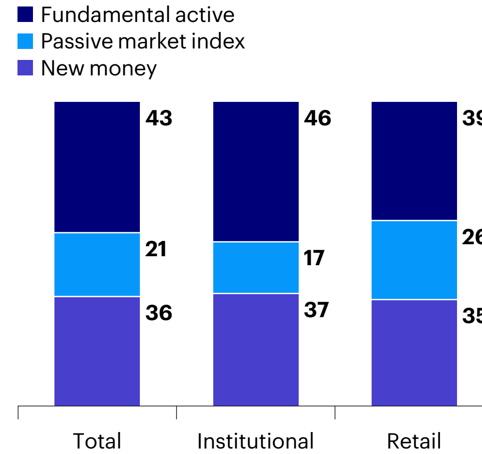
As an example, investors point to the power of factor strategies in understanding the exposures and contributions of fundamental active managers, as one EMEA-based retail investor explained: "We now use factor tools for monitoring active managers: If we had a value fund in our portfolio and that was tracking towards different factors that would create a red flag. It's really handy to have rapidly accessible software that tells you exactly what the exposures are to different styles which you can track over time." An EMEA-based institutional investor adopts a similar approach: "If an active manager is up for re-tender, I will put their portfolio's performance through the regression model and see if their performance has been additive in terms of alpha or simply a function of their factor exposures."

Figure 1.6
Change in factor allocations (to/from March 2022), % citations



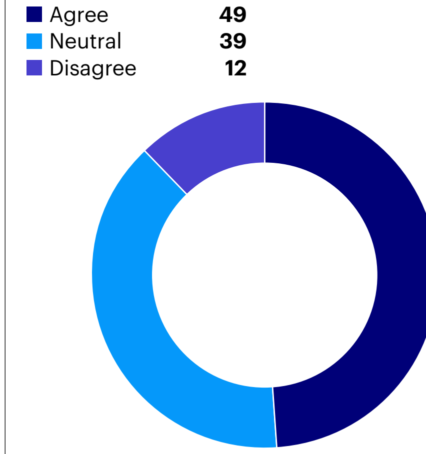
Over the last 12 months, have you increased, decreased, or maintained your factor allocations? Over the next 12 months, how do you plan to change your factor allocations? Sample size: 146.

Figure 1.7
Source of funding for increased allocations, % citations



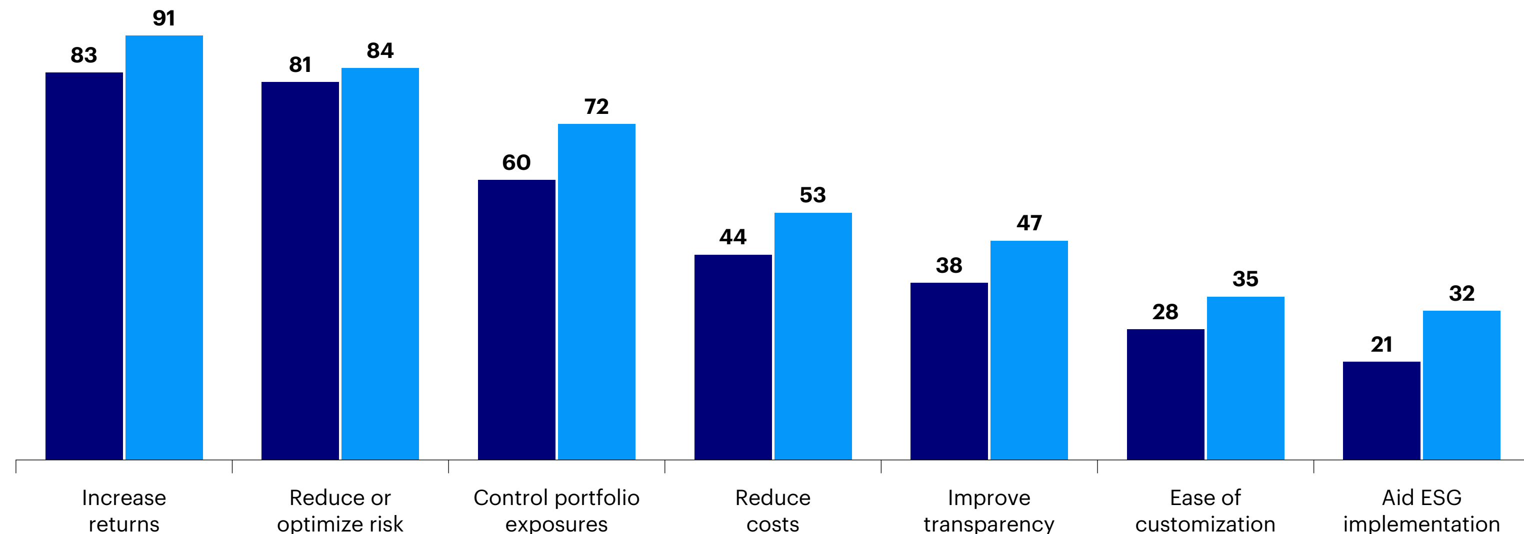
Where would you fund the allocation from? Sample size: 72.

Figure 1.8
Agreement that the drivers of factor investing strategy have changed with experience, % citations



Do you agree or disagree with the following statements? Sample size: 150.

Figure 1.9
Drivers of factor investing, % citations



Which of the following drivers were important when originally investing in factor strategies? Which of these drivers are important now? Sample size: 149.

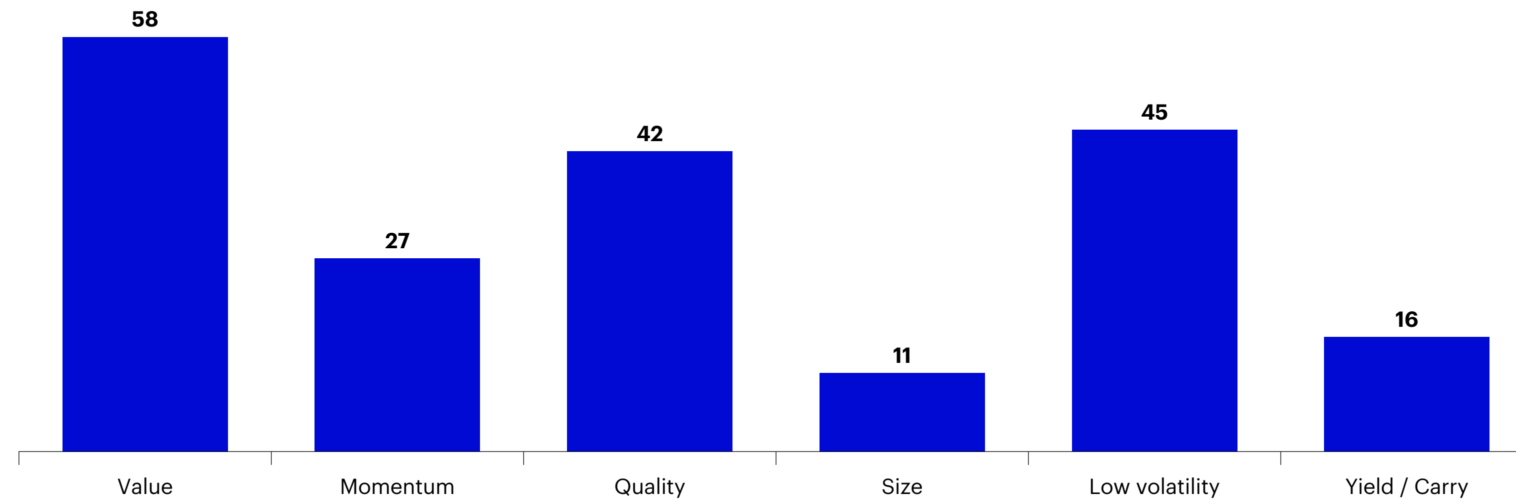
Value, quality and low volatility expected to outperform in an inflationary market environment

Respondents expect value, low volatility, and quality to be the best performing factors over the next 12 months, with this driving an increase in allocations **(figures 1.10 and 1.11)**. "When inflation and interest rates are high, we think that quality and value companies should outperform and bring good returns," said an APAC-based retail investor. This view was supported by institutional investor based in EMEA: "We prefer the value factor as it should deliver better performance during an inflationary period."

Notably, value remains the most popular factor for the third year running, with the proportion of investors targeting this factor increasing year on year **(figure 1.1 on page 04)**. Several investors who had shifted their portfolio towards momentum-focused growth in recent years indicated they were now looking to rebalance their factor exposures. As one North American retail investor explains: "At the beginning of the year we shifted around our portfolio. We were overexposed to growth and small cap, and we have since skewed more towards value and since then performance has improved."

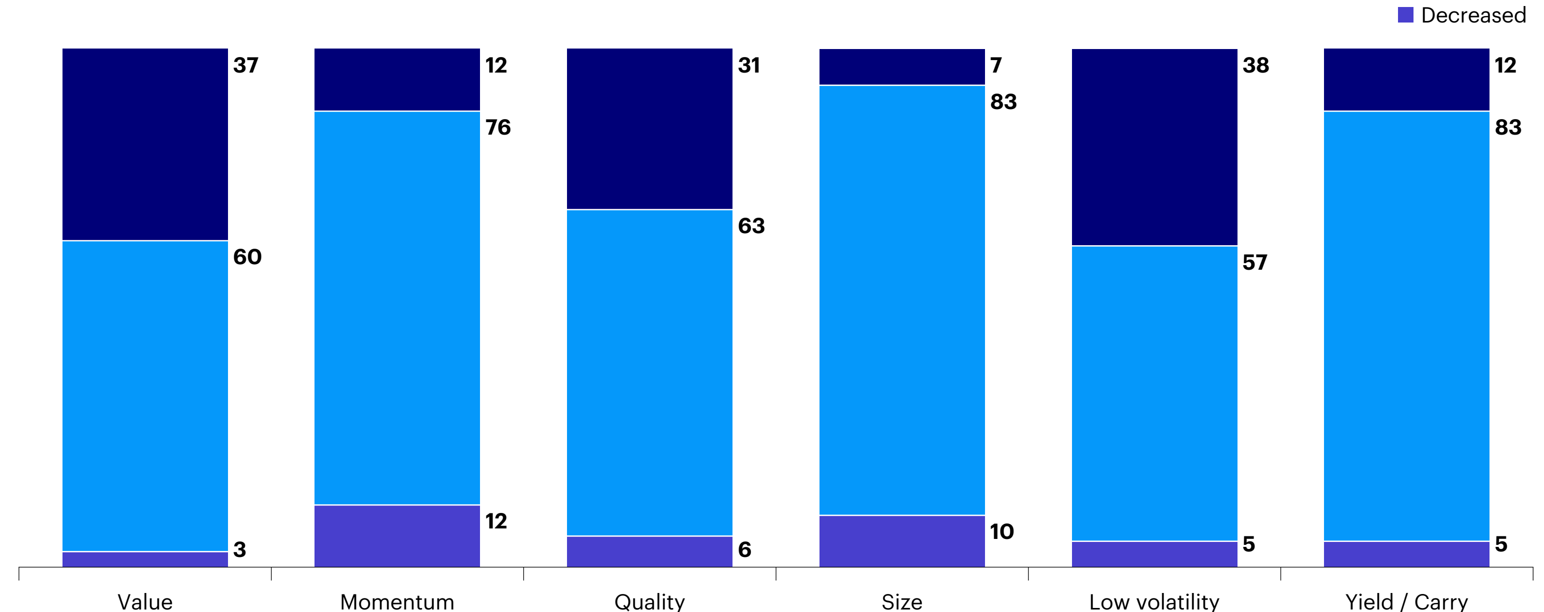
While many investors now look to adjust their factor exposures in line with the expected performance of different factors in the cycle (discussed in detail in theme 4), a significant proportion choose to maintain set allocations independent of the market environment. Indeed, this is a strategy that has proven its worth over the past 12 months, summed up by an EMEA-based institutional investor: "We maintain equal factor weights. While we might have additive and detractive components in the short term, over the long term everything should be additive and serve to reduce volatility giving you the best chance of securing a higher Sharpe ratio."

Figure 1.10
Factors expected to outperform in next 12 months, % citations



There can be no assurance that expectations will come to pass.
Which factors do you expect to outperform or be most attractive in the coming 12 months? Sample size: 135.

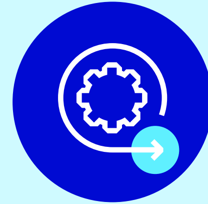
Figure 1.11
Change in factor allocations over past 12 months, % citations



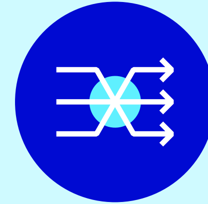
Over the last 12 months, have you increased, decreased, or maintained your allocations to these factors (ignoring market impacts)? Sample size: 139.

Future of factors

Using factors to drive performance and manage volatility



Recent market turmoil has highlighted advantages in developing and using sophisticated factor techniques to predict, manage, and take advantage of market volatility



Factors are being used in scenario analysis to predict how portfolios may react to macroeconomic events and manage tail-risk

Investors are using factor allocations alongside strategic asset allocations to manage and optimize volatility across the entire portfolio

If we feel that volatility is going to increase, we will overweight or underweight certain factors to take advantage of that. In some cases, we try to structure the portfolio to target factors that will benefit from higher volatility.

Institutional investor
North America

While we cannot predict geopolitical events, we want to understand what the factor sensitivity is to those events and use that to predict how the portfolio is going to perform. Factors are becoming more important because we want more granularity and better tools to understand how different factors react in different scenarios.

Retail investor
North America

The newer factor models for modelling risk are a lot more flexible and can more accurately model tail risk. For example, our factor models predicted that volatility in the small-cap space was a harbinger for the overall market. With factors you can make better predictions about these tail events ahead of time.

Institutional investor
EMEA

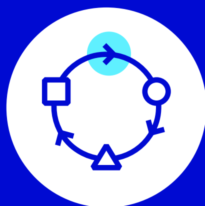
It is now clear factors have merits in portfolio optimization and we are moving towards structuring the portfolio around factors as well as asset classes. This includes substituting part of our traditional equity allocation with a minimum volatility factor strategy.

Institutional investor
North America

Theme 2

ESG performance challenges drive interest in applying a factor approach to ESG

Factors are seen as an important tool by investors for maintaining performance when integrating ESG; 72% see improved performance as a driver for integrating ESG via a factor approach



66% of investors believe factors can be used to implement ESG objectives, up from 42% in 2018. Around half of investors are using factors to integrate ESG

Investors are keen for further research, with the lack of consensus around methodology and approach a barrier to implementation

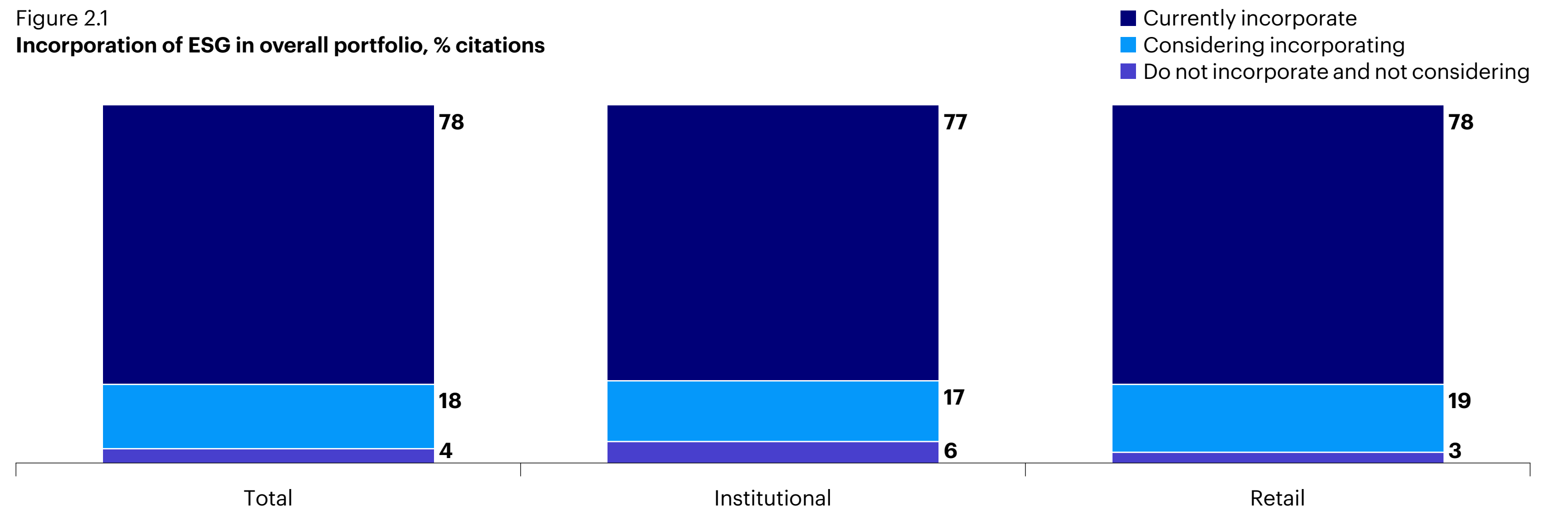
Environmental, Social and Governance (ESG) adoption has advanced rapidly over the years since this study's inception, and this year almost 80% of the sample incorporate ESG in their portfolio **(figure 2.1)**. Over this period, ESG portfolios have generally been associated with high relative performance. Question marks over the impact of ESG on performance have faded into the background. However, in the last year the impact of ESG on risk and return objectives has come under the spotlight due to strong performance for extractive industries (which tend to be underweighted in ESG portfolios) and weaker performance for high-growth technology sectors (which tend to be overweighted).

This challenging period has cooled support for enhanced performance as a driver for ESG adoption. In 2021, enhancing investment performance was the most important reason for incorporating ESG into an investor's portfolio, cited by 75% of respondents **(figure 2.2)**. However, this year it has dropped to 59%. "ESG has had a good run, but our ESG portfolio has underperformed in the last 12 months," revealed an EMEA-based retail investor.

With performance no longer the most important driver of ESG adoption, demand from clients and beneficiaries has moved into the top spot. "Our beneficiaries ask us to produce an ESG narrative for their investments. They want to invest in a way that considers the environment and society as a whole," said an APAC-based institutional investor. With investors under pressure to continue the deepening integration of ESG across their portfolios, many are exploring how this can be achieved in a way that does not impact on performance, with factor investing emerging as a solution.

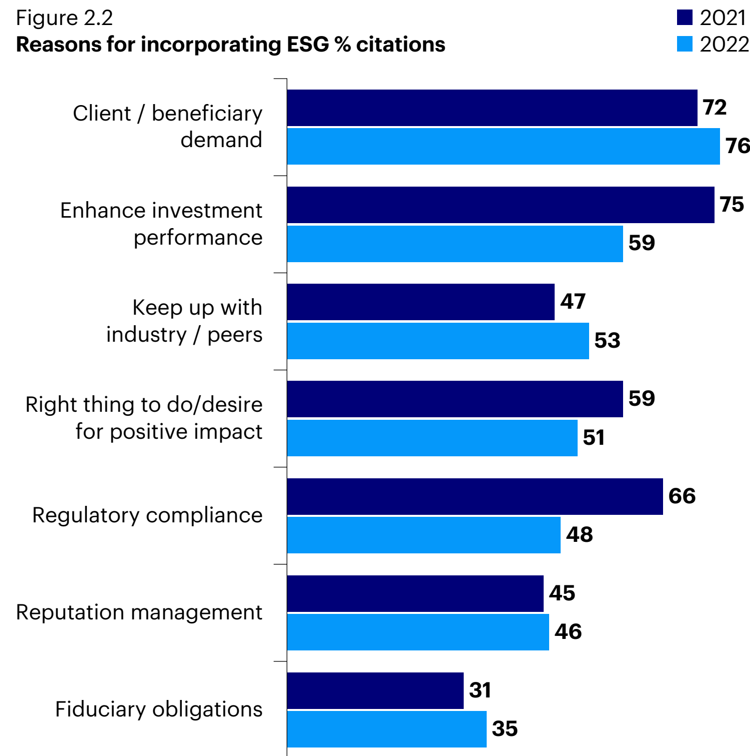
Indeed, this challenging period for ESG performance is seen by many as creating an opportunity for factor investing. Improved performance is cited by 72% of respondents as the advantage of using factors to help implement ESG, making it the most cited option **(figure 2.3)**. "By using a quantitative factor model, we can control our exposures and ensure we are delivering the same performance as the equivalent non-ESG portfolio," said an institutional investor based in North America. The ability to identify and control for unintentional factor tilts is the second-most-cited option for using factors to implement ESG **(figure 2.3)** and is one of the reasons why a factor approach can help support the performance of ESG strategies. "If we know how ESG is impacting our factor exposures we can devise a strategy to manage that," said an APAC-based institutional investor.

Figure 2.1
Incorporation of ESG in overall portfolio, % citations



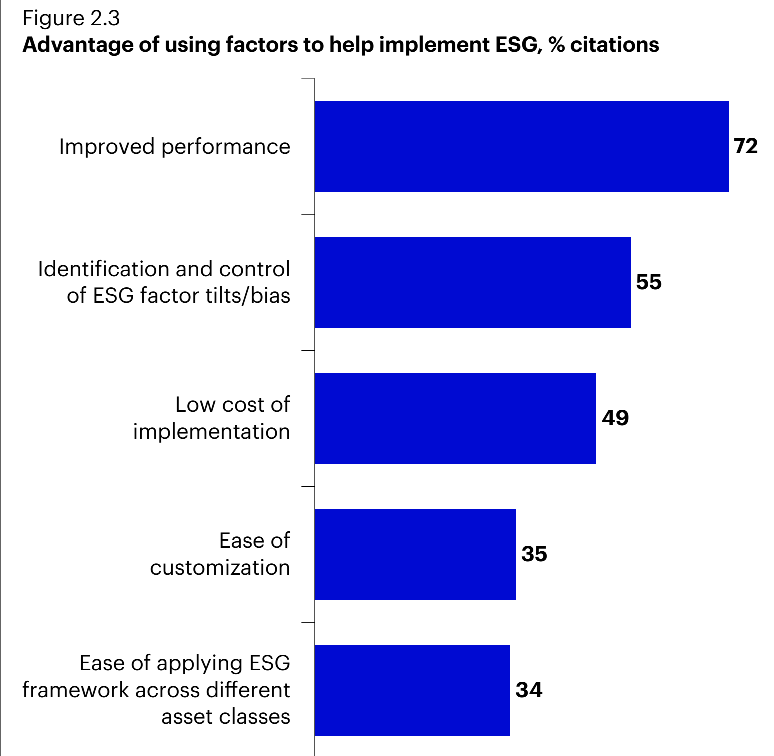
Do you incorporate ESG in your overall portfolio? Sample size: 147.

Figure 2.2
Reasons for incorporating ESG % citations



Why do you incorporate ESG? Sample size: 134.

Figure 2.3
Advantage of using factors to help implement ESG, % citations



What are the advantages of using factors to help implement ESG? Sample size: 94.

Growing belief ESG is an application for factor investing

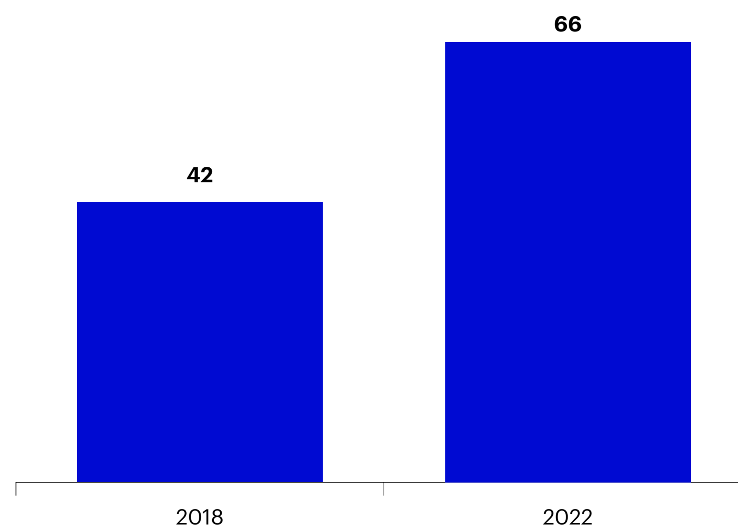
Two-thirds of investors now believe factors can be used to implement ESG objectives, representing a sizeable increase since 2018 when 42% said the same **(figure 2.4)**. Around half of investors are implementing ESG via a factor approach **(figure 2.5)**. Some 38% of investors are incorporating ESG in their factor portfolios via exclusionary screens, while 22% are applying ESG variables directly into their factor models and 40% are using a combination of these approaches **(figure 2.6)**.

Investors highlighted the ability to integrate both ESG and carbon metrics directly into their quantitative models was a key advantage of a factor approach. For example, a number of institutional investors revealed they had developed their own bespoke ESG data sets for public securities, and this information was now feeding directly into their quantitative model when deciding each company's weight in factor allocations. "We include ESG metrics and also look at how those metrics have developed over time to focus on companies that are making an effort to move in the right direction," said an EMEA-based institutional investor.

More research is needed on how ESG and factors are intertwined

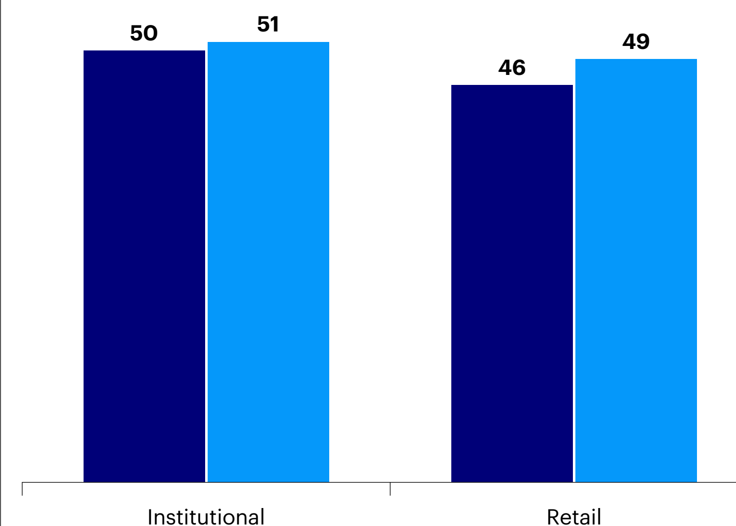
Although nearly half of investors are incorporating ESG via factors, there has been little change to this proportion in the last year **(figure 2.5)**. Investors who have not yet adopted ESG via a factor approach point to three interwoven concerns: a lack of consensus around methodology; limited amounts of research; and the lack of quality data **(figure 2.7)**. There is high demand for additional research in this area, particularly around how ESG influences factor exposures. "We need more studies laying out the interdependence and correlations between factors and ESG," suggested one EMEA-based retail investor. "We need more consensus and a clear methodology for how we map investment factors to ESG," added an APAC-based institutional investor.

Figure 2.4
Belief that factors can be used to address ESG objectives, % citations



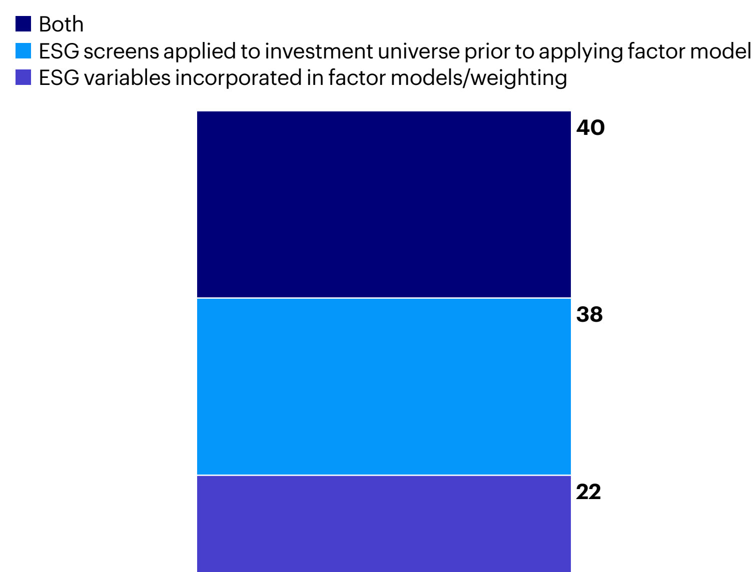
Do you believe that factors can be used to address your portfolio's ESG objectives? Sample size: 2018 = 132, 2022 = 146.

Figure 2.5
Use of factors to help incorporate ESG, % citations



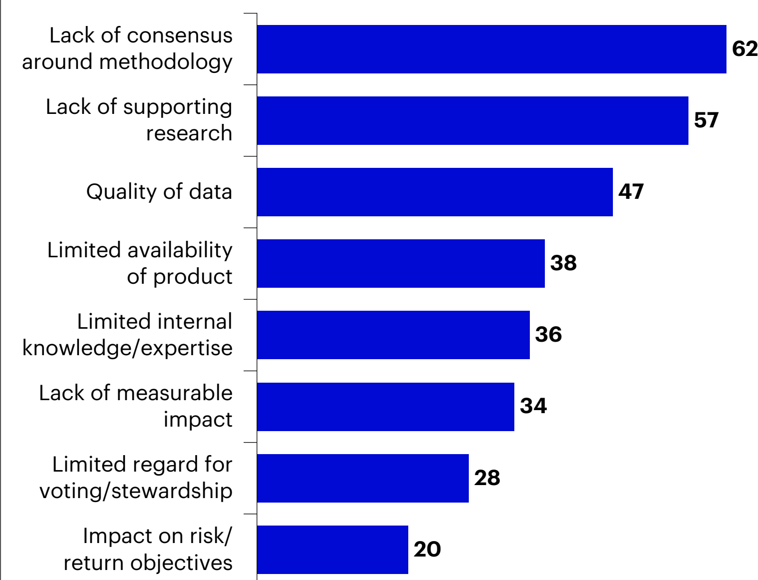
Do you use factors to help incorporate ESG? Sample size: 2021 = 236, 2022 = 146.

Figure 2.6
Approach for incorporating ESG through factor investing, % citations



Which of the following best characterised your approach? Sample size: 50.

Figure 2.7
Challenges of implementing ESG with a factor approach, % citations



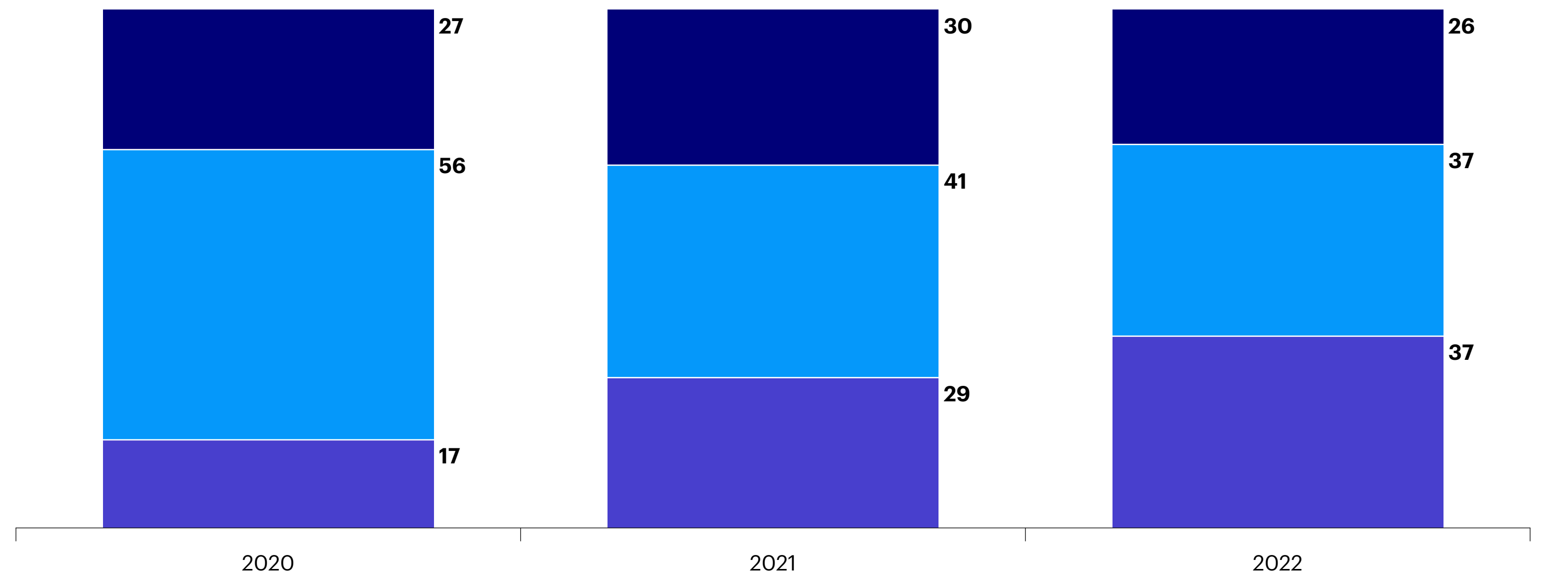
What are the challenges of implementing ESG with a factor approach? Sample size: 130.

The need for additional research is exemplified by the continuing debate around whether ESG is itself an investment factor, or whether ESG shows indirectly through other factors, or is completely independent of investment factors. Two years ago, more than half of respondents considered ESG to be completely independent of investment factors. However, this number has fallen rapidly, with investors now more likely to say ESG shows indirectly through other factors **(figure 2.8)**. "It is hard to say it is independent when there is so much overlap between ESG and quality" said a retail investor based in North America. "We would describe it is more as an overlay in the context of factors rather than its own factor," suggested an APAC-based institutional investor.

Currently around half of investors believe ESG can lead to bias towards certain factors, and most believe those biases can shift over time **(figures 2.9 and 2.10)**. Investors noted that changes in ESG-related information could cause adjustments to the scores of both individual companies and sectors. New ESG methodologies are developing, and this could impact the resulting factor tilts. "It is important to keep a tab of how ESG is impacting the portfolio over time and adjust factors to deliver the required portfolio characteristics," suggested an EMEA-based retail investor.

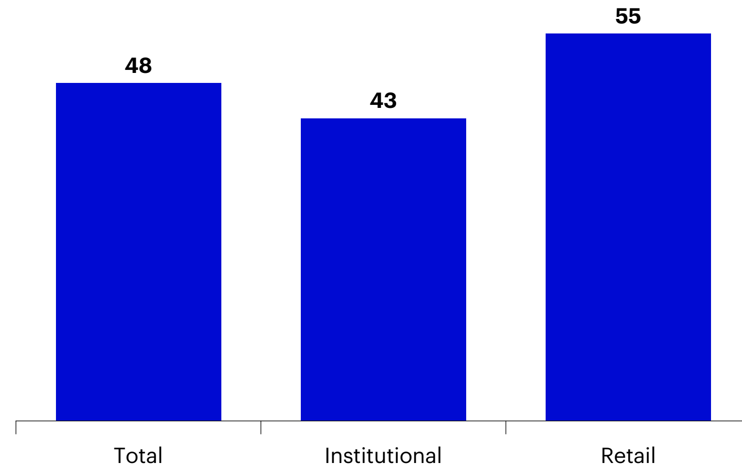
This was seen as particularly relevant for the application of ESG within fixed income portfolios. ESG is seen as having a direct impact on rating agency credit scores and thus influencing the return characteristics of fixed income securities in a way which could be modelled quantitatively. "ESG is now an important criterion for credit rating agencies. If a bond is ESG friendly, you don't need to worry as much about rating migration risk. For example, an oil company will have higher probability of being downgraded than a solar company, so this is being built into our factor models," revealed a North American institutional investor.

Figure 2.8
Belief that ESG is an investment factor, % citations



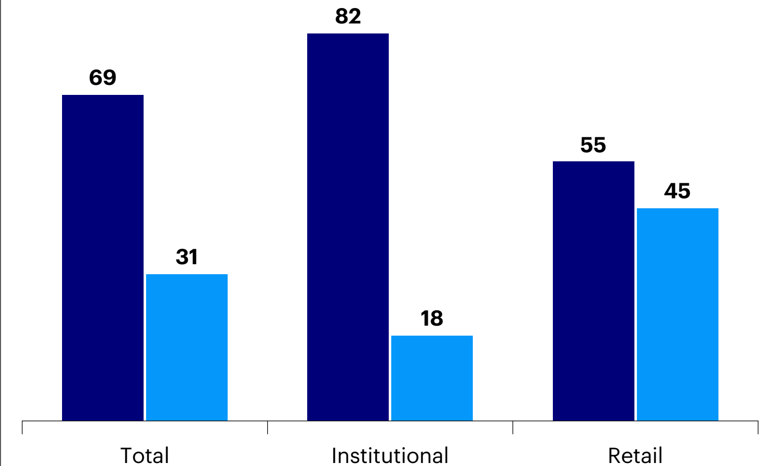
Do you consider ESG to be an investment factor? Sample size: 2020 = 218, 2021 = 239, 2022 = 147.

Figure 2.9
Belief ESG leads to bias towards certain factors, % citations



Do you think integrating ESG into a portfolio has the potential to create a tilt/bias towards certain factors? Sample size: 139.

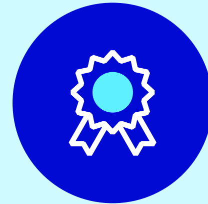
Figure 2.10
Belief that ESG bias is static or changes over time % citations



Do you think this tilt/bias is largely static or changes over time? Sample size: 64.

Future of factors

Factor investing meets commodities



Investors find merit in commodity strategies as a hedge against unexpected inflation; there is growing belief factors can aid implementation

A factor approach is seen as offering additional sources of return potential and, for some, a way of overcoming the ESG challenges of investing in commodities

Alternative data sets such as shipping rates are being use within commodity factor models alongside conventional metrics such as price momentum

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Because of the types of investors that hold commodities, there are a lot of systematic distortions that can be exploited with a factor approach. For example, there are certain types of hedging patterns that you can identify and exploit using factors.

Institutional investor
APAC

I think there should always be an allocation to commodities because they have high beta to unexpected inflation.[1] Public pension funds wanted to avoid the ESG-related discussions around commodities so have tried to manage inflation using TIPs but that has not worked as well.

Institutional investor
North America

If you are investing in energy derivatives via a factor strategy you are not adding any carbon to the atmosphere so that can be a good solution from an ESG perspective. Commodities can also play a role on meeting your ESG objective by investing in carbon or the materials that are used to make batteries.

Institutional investor
North America

Price momentum is a common factor in commodities, but you also want to include alternative data such as shipping rates and port congestion. We partner with firms that trade in different commodities that share real time data that allows us to develop an edge on the commodities portfolio.

Institutional investor
EMEA

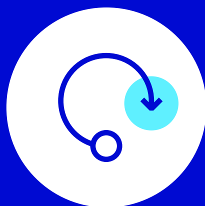
[1] Bloomberg Commodity Index has a beta of 4.46 to inflation from 31/12/1970 to 31/12/2020.

Source: Bloomberg L.P. and Invesco Analysis. Unexpected inflation is defined as year-over-year inflation relative to its 5-year moving average.
Past performance is not a guarantee of future results.

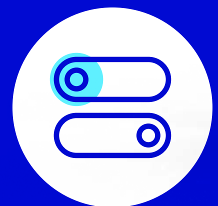
Theme 3

End of the fixed income bull market sees investors looking to factors for new sources of return

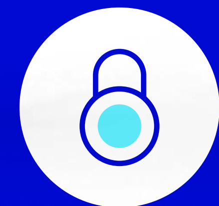
Advancements in data and research drive greater belief in the application of factors in fixed income



The end of the fixed income bull market accelerates demand for factors as investors search for diversification and better ways to manage heightened volatility



Passive and active implementation of factor strategies within fixed income portfolios drives demand for more products



Factor investing spreads across fixed income asset classes with high yield bonds set for the fastest growth

Fixed income factors continued their steady increase in acceptance this year. A North American retail investor, and regular contributor to this study, said "a number of investment factors have now been identified in fixed income and there is the data to suggest that they influence performance". This is one reason driving a marked increase in believing factor investing can be successfully applied in fixed income, rising from 61% of investors in 2016 to a near-universal 92% in 2022 **(figure 3.1)**.

Not only has there been substantial progress in terms of fixed income data over this period, trading efficiency has also improved. With a substantial body of academic research evidencing the key factors more established, it is now possible to back-test fixed income factors more reliably. A wave of product launches and the emergence of factor-based fixed income indices from the major providers has followed, further lifting confidence. "Before you needed to do everything in-house, but new products mean that it has become easier to adopt a factor strategy in a fixed income portfolio," suggested a North American retail investor.

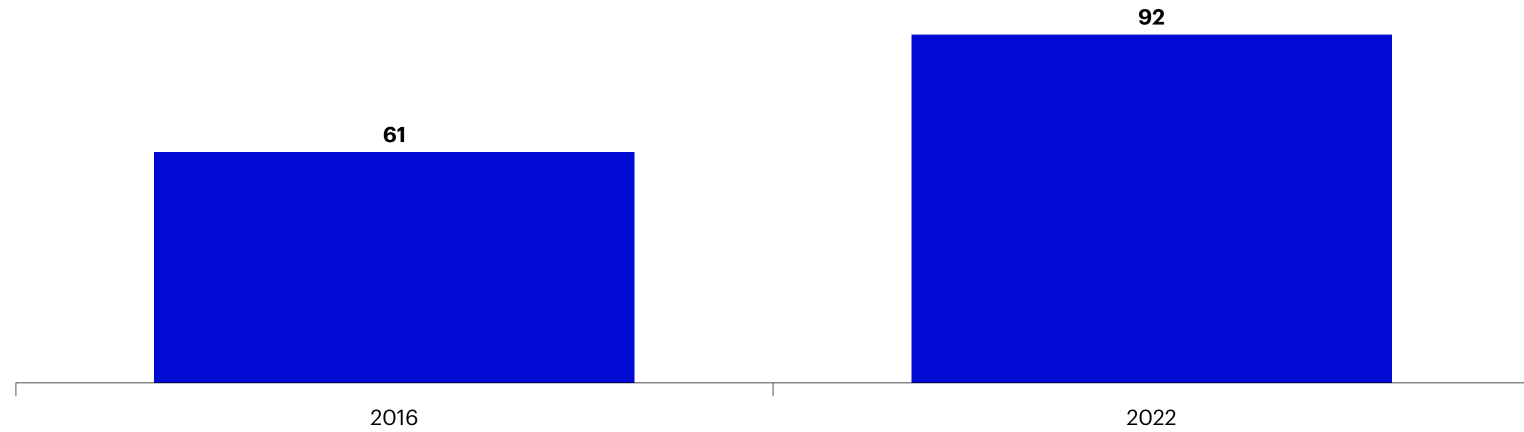
Factoring in the end of the fixed income bull market

The proportion of global assets allocated to factor strategies in fixed income remains small in comparison to equities. For example, in the 2021 study, 64% of respondents invested greater than 10% of their equity allocations in factor strategies compared to 38% of fixed income allocations **(figure 3.2)**. This can be partly attributed to the long bull run in fixed income markets which began in the early 1980s. For more than 40 years, investors enjoyed rising prices as rates fell (and eventually turned negative in some asset classes). With fixed income markets a one way bet for so many years some complacency inevitably crept in, with investors having limited incentives to look for alternative sources of return.

Spiking inflation and rising interest rates have brought this environment to a crashing halt and investors are now having to respond. Respondents see factors as playing an important role in helping to manage increased levels of volatility and expand the sources of return. "We are looking to identify which factors are the most robust and could impact fixed income returns. We are trying to rank those factors and decide whether we need to overweight or underweight each factor in our model in a dynamic way," revealed an institutional investor based in North America.

Figure 3.1

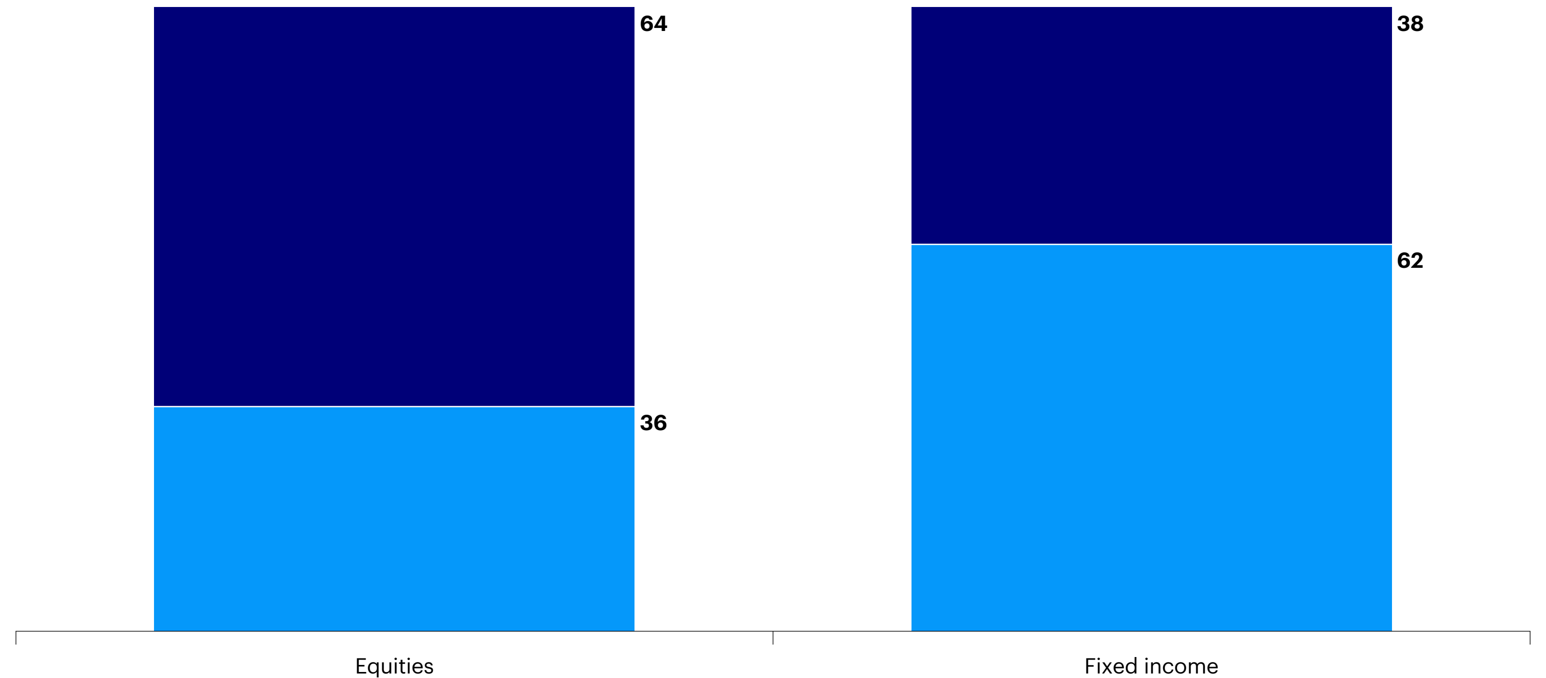
Applicability of factor investing to fixed income, % citations



Do you think factor investing can be applied in fixed income? Sample size: 147.

Figure 3.2

Percentage of factor allocations by asset class – equities vs fixed income, % citations (2021 study)



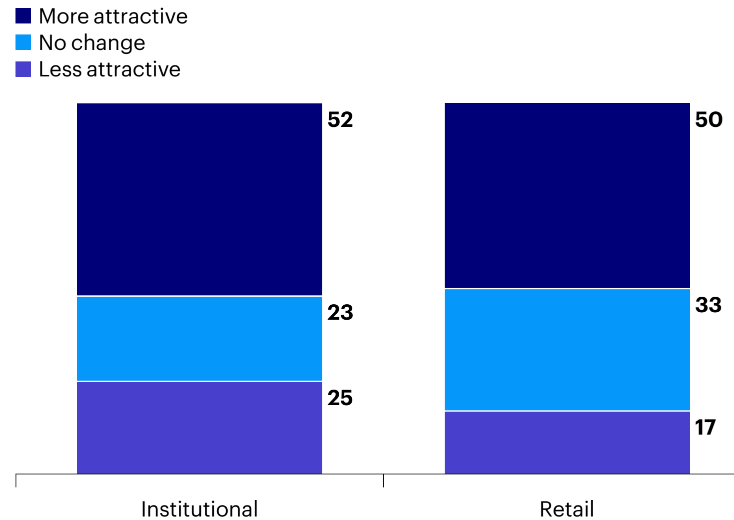
What percentage of your equities and fixed income portfolio is invested in factor strategies? Sample size: 183.

More than half of respondents agreed the market environment was making factor investing more attractive **(figure 3.3)**. "To invest in this market, you really need to understand the factors that are driving the change in prices and how they interact with inflation," said a North American retail investor. "In this environment diversification by factors becomes more important," added an APAC-based institutional investor.

Fixed income returns are closely tied to fundamental macroeconomic variables. Investors applying a systematic approach to their fixed income portfolios often initially prioritise traditional macro drivers of return, such as inflation and interest rates, before later incorporating investment factors such as value. This year we find 54% of investors are using both macro and investment factors, and a few are targeting investment factors in isolation **(figures 3.4 and 3.5)**.

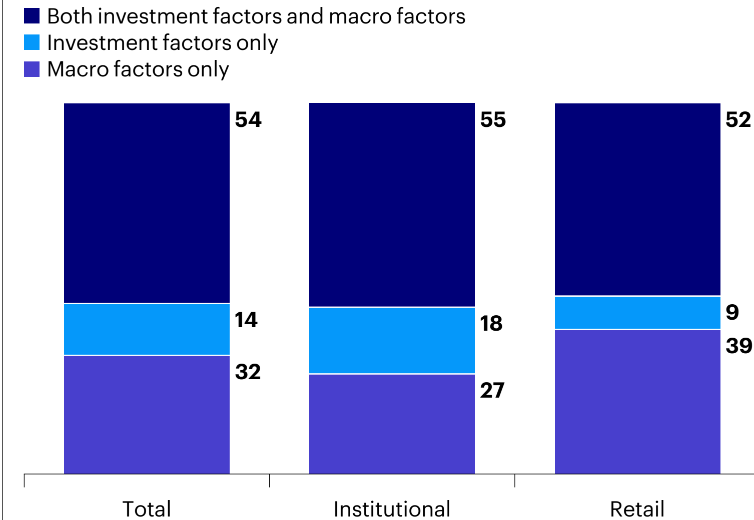
In general, respondents indicated macro factors were more likely to be used to guide portfolio positioning in a top-down manner. They were particularly relevant for strategies investing across different fixed income asset classes (for example deciding on appropriate weights between investment grade and high yield securities), as well as those focused on government bonds. In contrast, investment factors were seen as crucial for understanding and capturing returns when selecting securities within an asset class. "We are using value, momentum and low volatility to identify and better understand potential sources of return in fixed income, which has been effective," noted an EMEA-based institutional investor.

Figure 3.3
Impact of market environment on attractiveness of factor investing in fixed income, % citations



How has the current environment (high inflation and prospect of rising interest rates) impacted the attractiveness of factor investing in fixed income? Sample size: 78.

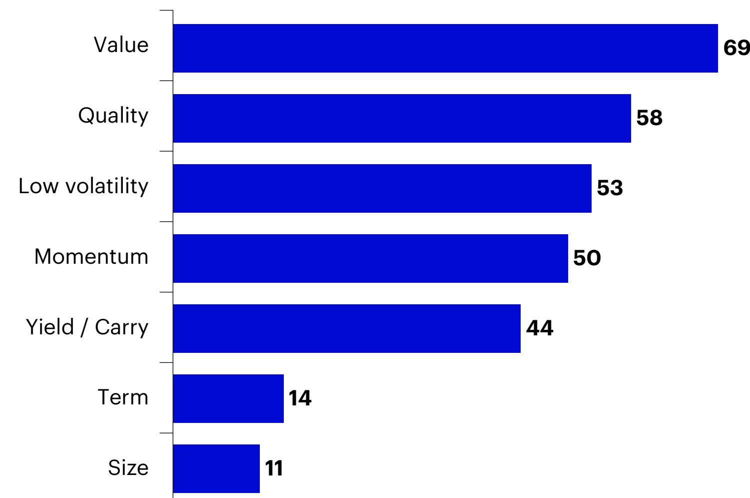
Figure 3.4
Type of factors used in fixed income portfolio, % citations



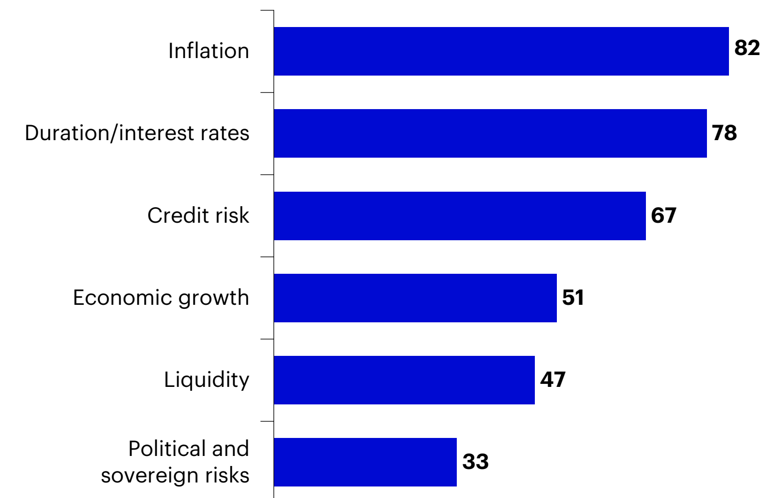
Which types of factors do you use? Sample size: 56.

Figure 3.5
Fixed income factors targeted, % citations

Investment factors



Macro factors



Which investments factors are you targeting in your fixed income portfolio? Which macro fixed income factors are you using in your factor investing strategy? Sample size: 45.

Challenges of investing passively in fixed income solved with factor approach

Partly due to structural challenges related to transaction costs, passive management in fixed income often struggles to deliver benchmark returns and passive investing currently represents a much smaller share of the overall market than in equities. This historically has led to much greater reliance on fundamental active management (and the associated higher fees). However, respondents in this year's study indicated it was a challenge they are now starting to overcome via factor strategies by developing quantitative models which can closely track the performance of a fixed income index while minimising trading costs. "Traditionally it has been hard to find strategies that reliably give us just index returns in fixed income but that is now changing with the development of factor products," said an EMEA-based retail investor.

Factor strategies were also seen as helping investors better understand and target sources of return in active parts of the portfolio. Investors indicated traditional active managers have often been able to deliver outperformance relative to benchmarks by overweighting systematic risk factors such as lower credit quality or longer duration.

Factor analysis was seen as making it much easier to monitor these exposures and thus facilitate a better understanding of how a fixed income portfolio might perform in different environments – something that was seen particularly important given recent swings in yields. "Active managers have taken fees for managing an asset class that has been in its golden years. If we see rates normalise to anywhere near to pre financial crisis levels I think we can start seeing a lot more differentiation in terms of performance," suggested one EMEA-based retail investor.

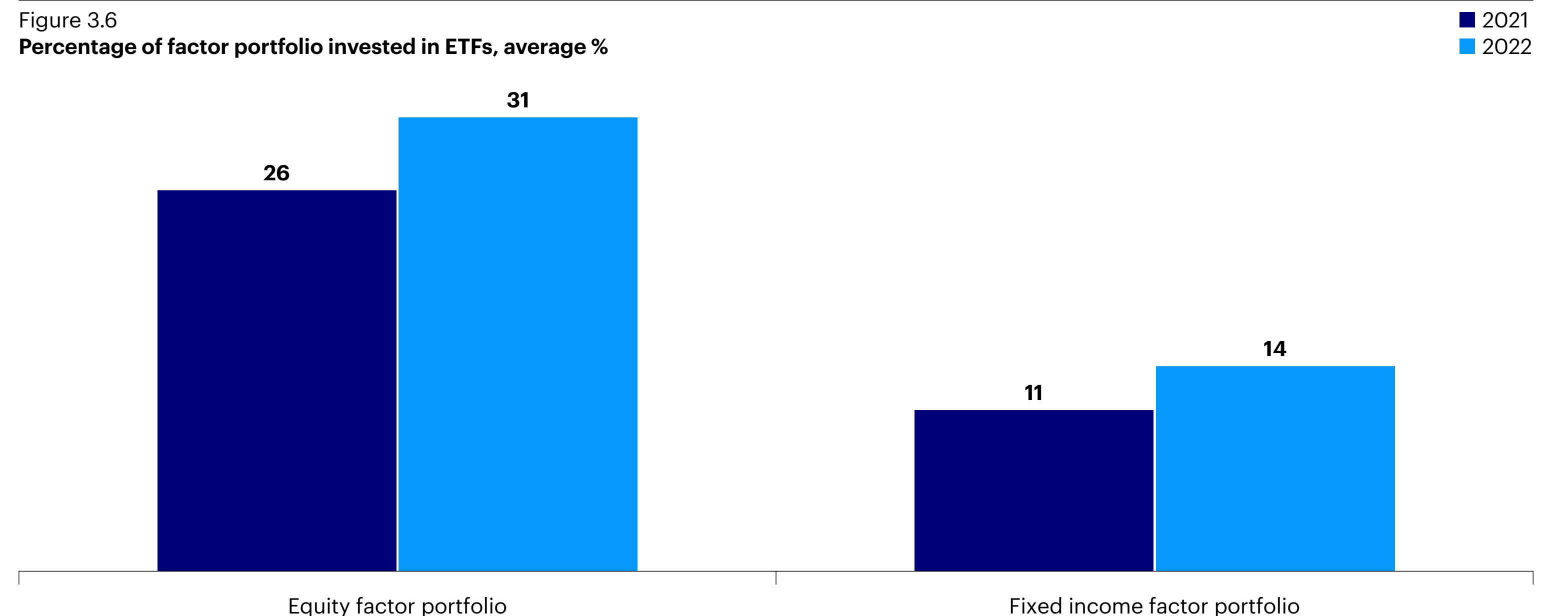
Some factor strategies within fixed income replicate these strategies in a more explicit way. However, investors indicated factor implementation allowed them also to identify additional drivers of return. These are often uncorrelated to the traditional drivers of performance used by traditional active managers and thus offering additional diversification.

In this way, traditional active and factor-based strategies were often seen as complementary rather than in direct competition. One North American institutional investor explained: "It is unlikely that factor investing strategies will entirely replace classic fundamental bond-pickers, but it can add diversification and give us a clearer view of our exposures across the portfolio".

This method of implementation was seen particularly attractive in asset classes, sectors or geographies, where traditional active managers have struggled to deliver consistent outperformance relative to benchmarks or where a factor-based approach might deliver a significant reduction in costs.

While there is a growing appreciation of the role factors can play in managing fixed income portfolios, respondents noted further product development was needed. For example, respondents highlighted even when they could attribute the returns of an active manager to specific factors rather than alpha, there was not always a direct product replacement they could use as an alternative. This partly explains why ETFs represent a smaller proportion of factor portfolios in fixed income than in equities, despite continued growth year-on-year **(figure 3.6)**.

Figure 3.6
Percentage of factor portfolio invested in ETFs, average %



What percentage of your factor allocation within equities and fixed income is invested via ETFs? Sample size: 64.

Factor investing spreads across fixed income portfolios with focus on high yield

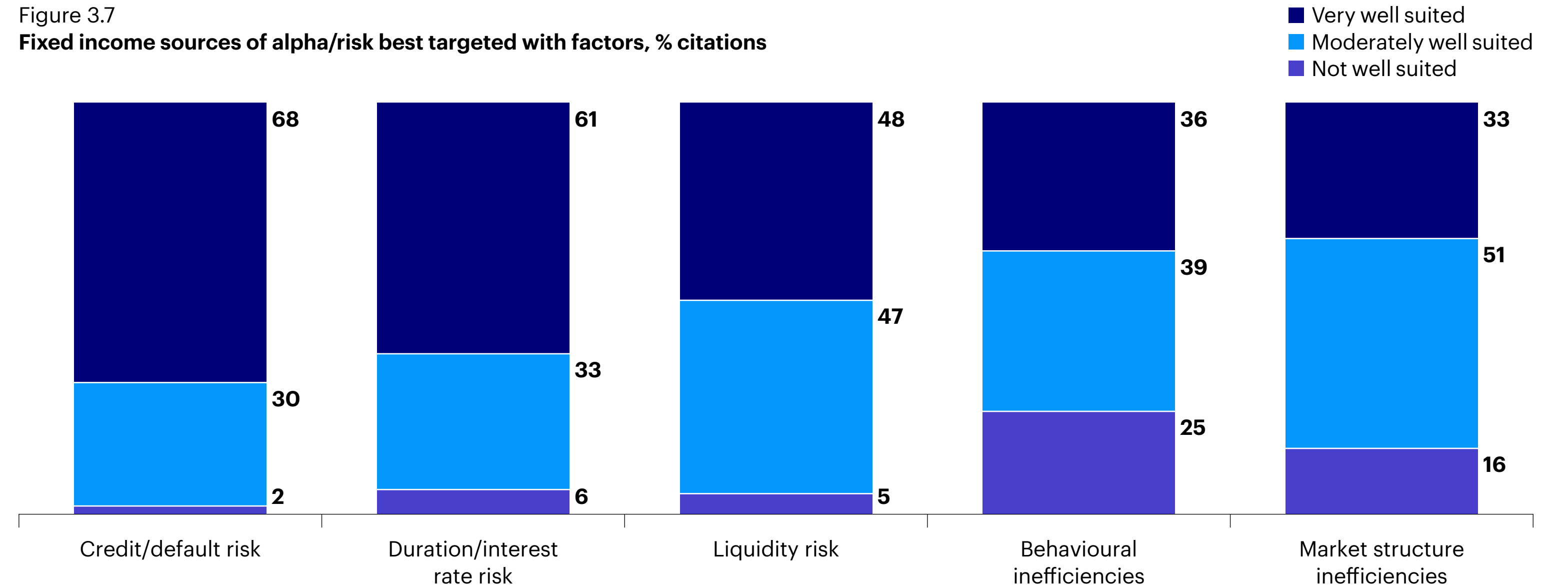
Respondents believe the management of credit risk, duration risk, and liquidity risk are highly suited to a factor approach, whereas behavioural and market inefficiencies are seen as somewhat less suitable **(figure 3.7)**. This fits with the risk premia theory of factor investing, which suggests higher returns are generated by assuming higher risks rather than biases in the way investors behave or the way markets are organised. A number of investors suggested excess returns derived from market inefficiencies were not guaranteed to persist over the longer term. One North America-based institutional investor explained: "We look at factors as a way to control our exposure to different sources of risk rather than an attempt to arbitrage inefficiencies in the way the markets are organised".

Currently within fixed income asset classes, factor investing is most widely used in government and corporate bonds, reflecting both the depth and liquidity of these markets as well as the number of products available **(figure 3.8)**. Over the next 5 years there is anticipation factor investing will spread to other parts of the fixed income asset class. Particularly strong growth is expected in high yield bonds and substantial expansion across emerging market bonds, asset backed securities and mortgage-backed securities **(figure 3.8)**.

Respondents noted different factors drive returns within different fixed income asset classes and these factors were often uncorrelated, allowing investors to gain additional diversification by combining them. However, it was also made clear the implementation of factors varies across fixed income asset classes and a 'one size fits all' approach was generally inappropriate. As one APAC institutional investor noted, "We look to invest in government bonds, corporate bonds, and asset backed securities using factors, but there are idiosyncrasies between them that are more prevalent than, say, in our equity factor strategies. So, we come at it in slightly different ways".

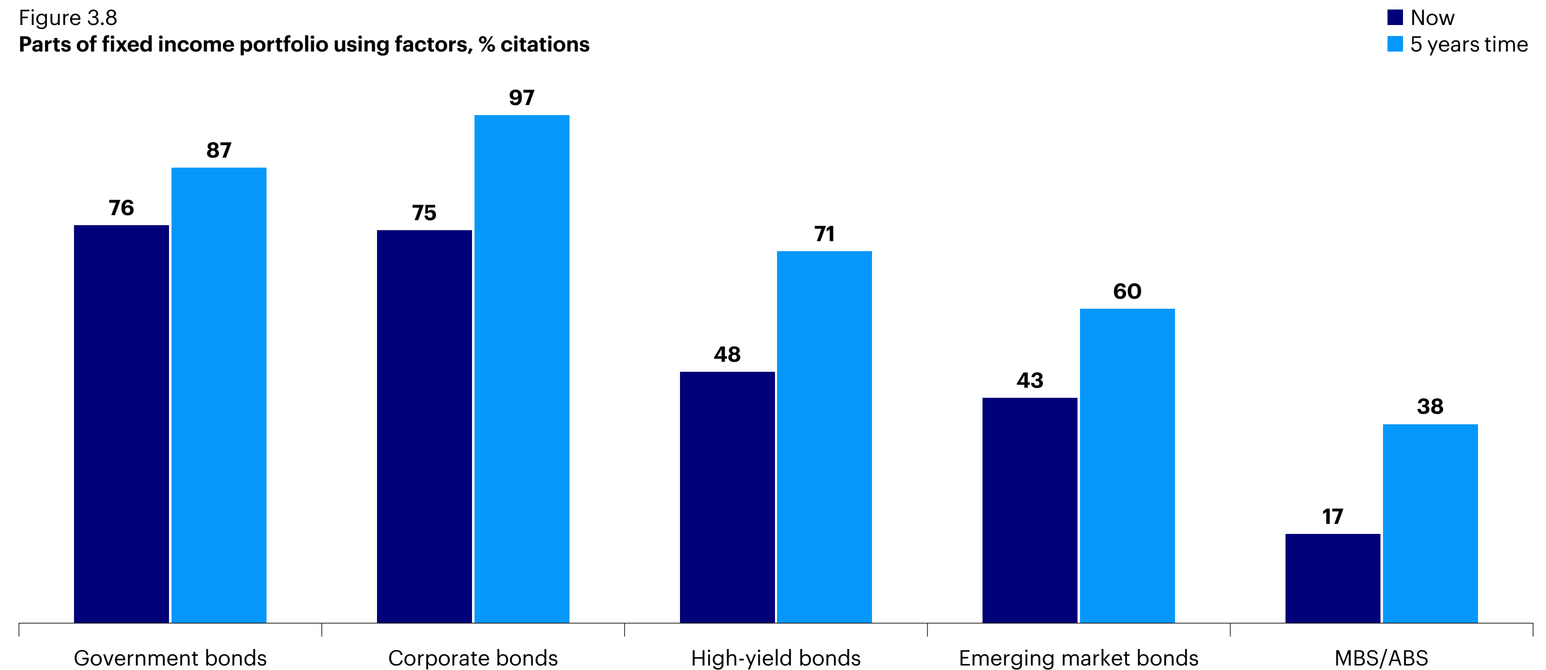
As an example, a value strategy within investment grade credit may be focused on relative levels of duration risk; a value strategy in high yield might be focused on relative levels of default risk. Similarly, a low volatility strategy within government bonds or investment-grade credit may be focused on the impact of duration, while low volatility in high yield bonds may be focused on changes in credit spreads. Developing an understanding of this additional layer of complexity was seen as particularly important when expanding factor use across the fixed income portfolio.

Figure 3.7
Fixed income sources of alpha/risk best targeted with factors, % citations



Which of the following is factor investing suited to capture/manage? Sample size: 66.

Figure 3.8
Parts of fixed income portfolio using factors, % citations

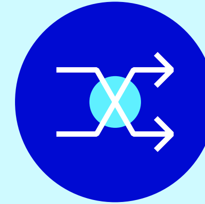


In which parts of your fixed income portfolio are you using factor investing? In which parts of your fixed income portfolio do you think you will be using factor investing in 5 years' time? Sample size: 63.

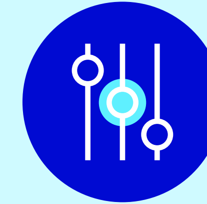
Future of factors

Machine learning uncovering non-linear factor relationships

Developments in cloud computing and big data have enabled more participants to access AI and machine learning tools



Investors are developing non-linear models of the interaction between factors and developing multi-factor models to take advantage of these relationships



Natural Language Processing (NLP)-strategies are being used to fine tune trading models by predicting short-term price movements

Machine learning and AI have been there for a long time, but the problem was our ability to utilise them because we did not have the computing power. Thanks to cloud computing we now have that capability and are able to unleash better forms of analysis to uncover how the different factors contribute to performance.

Institutional investor
North America

We are using AI to model non-linear interaction within factors. Using convolutional neural network (CNN) methods, we try and predict which combination of factors will give us the best result and have found that it often provides better accuracy than linear prediction models. We have moved away from predicting which individual factors are going to outperform towards predicting which group of factors together are going to outperform.

Institutional investor
EMEA

Markets are getting more complicated and there are a lot of links between various factors. We are moving away from assuming linearity and moving towards nonlinear structures. That's where AI and machine learning comes into play, and we are starting to understand we need more complicated structures than we have used in the past.

Institutional investor
North America

We get data about the entire trading book and use natural language processing models (NLP) to make predictions a few steps ahead. NLP models have been developed to predict the next word in a sentence and we can use the same model to analyse the trade book to predict short-term changes in price to gain an advantage when trading.

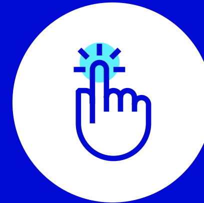
Institutional investor
EMEA

Theme 4

Accelerating rate of change in markets highlights the benefits of tactical tilting to a long-term, diversified multi-factor approach

80% of factor investors now adjust factor weights through time, driven by the varying performance of different factors over the economic cycle and a need to balance out exposures across the portfolio

The time-frame used to assess performance is falling with single factor tactical allocations assessed over the short term but multi-factor strategic allocations still assessed over the long term



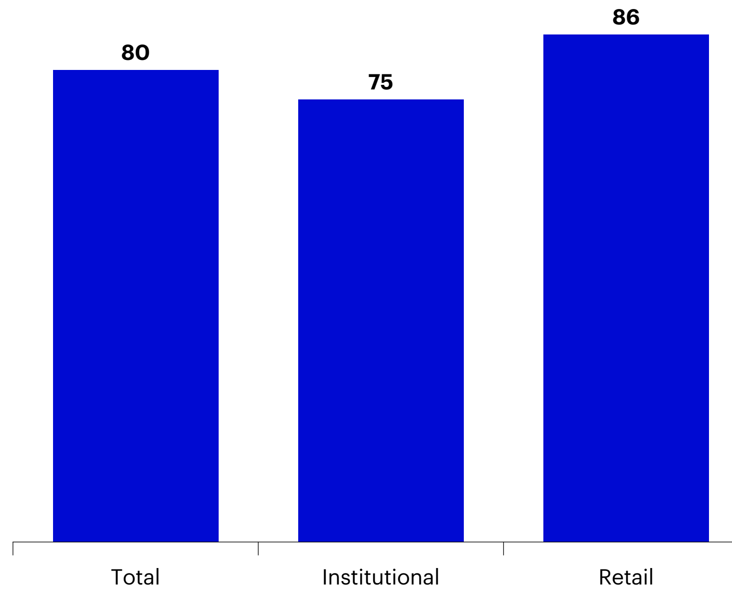
Use-case is driving selection decisions for factor products; factor purity is key for tactical allocations while performance relative to benchmarks is important for strategic allocations

The traditional model of factors sees investors make set allocations to a diversified set of factors academic evidence suggests deliver outperformance over the long term. This 'set and forget' model is still used by some but over the past seven years this Study tracked how, for many, the implementation of factors has steadily become more tactical. This is a function of the changing role of factors which are now commonly used as a tool for implementing active ideas. However, it also reflects the accelerating rate of change within financial markets, and the resulting challenges and opportunities this brings.

This year, 80% of factor investors revealed they adjust factor weights through time, rising to 86% of retail investors **(figure 4.1)**. The pace of change of these adjustments, however, can vary. Half of respondents only adjust their factor exposures in the long run, while half are making short-term tactical changes. This short-term approach is more common among retail investors **(figure 4.2)**.

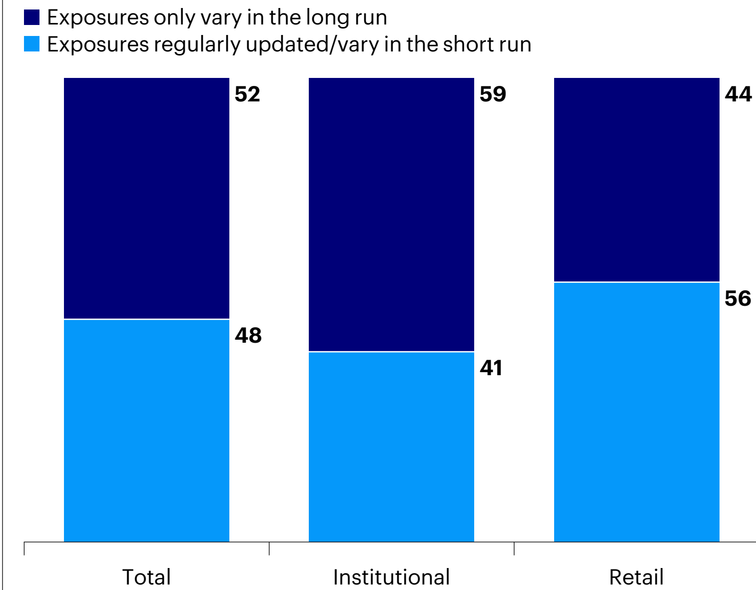
> “
> **Things are moving so much quicker compared to even ten years ago and you can't ignore that.**
>
> **Retail investor**
> North America

Figure 4.1
Adjust factor weights through time, % citations



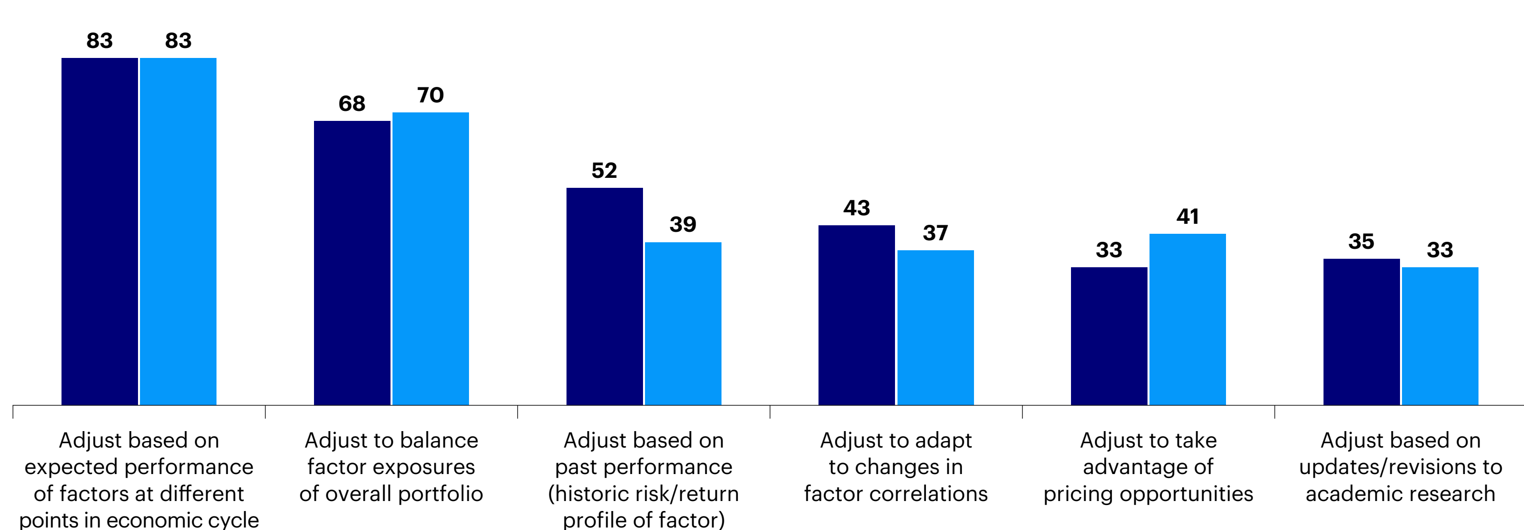
Do you adjust your factor weights through time? Sample size: 143.

Figure 4.2
Approach to adjusting factor weights, % citations



How would you characterise your approach? Sample size: 113.

Figure 4.3
Reasons for adjusting factor weights, % citations



Why do you adjust your factor weights through time? Sample size: 114.

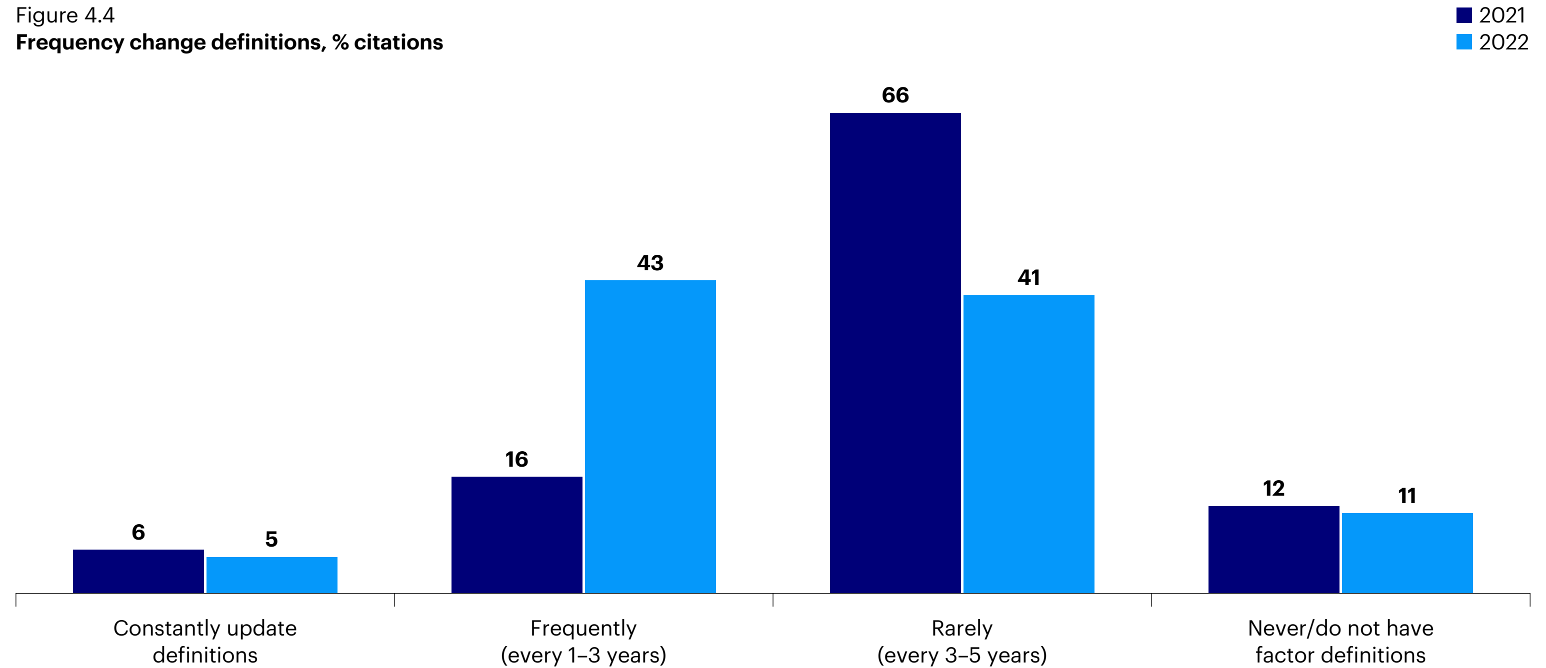
What has changed?

The sharp sell-off in equities and bonds experienced at the beginning of 2022, before (and during) interviews for this study, driven by inflation and geopolitical concerns, has for many highlighted the need for greater diversification but also the potential to capitalise on mispricing opportunities. As one EMEA-based retail investor said, "It's becoming clearer that you can use factors to shore up your defences and there are big macro hints that can help you understand whether a factor might be useful. I don't think it's possible to ever time it perfectly but there were some points in 2020 and 2021 when we should have had more value exposure."

Furthermore, several respondents observed markets are moving faster and this should be reflected in the implementation of their factor strategies. "Things are moving so much quicker compared to even ten years ago and you can't ignore that," suggested a North America-based retail investor. This is also feeding factor definitions, which are being changed more frequently **(figure 4.4)**. Respondents cited the need to incorporate the latest data as the most important reason **(figure 4.5)** and indicated the significant shifts in the underlying macro environment, particularly in respect to interest rates, were feeding into modified definitions for certain factors such as value and quality.

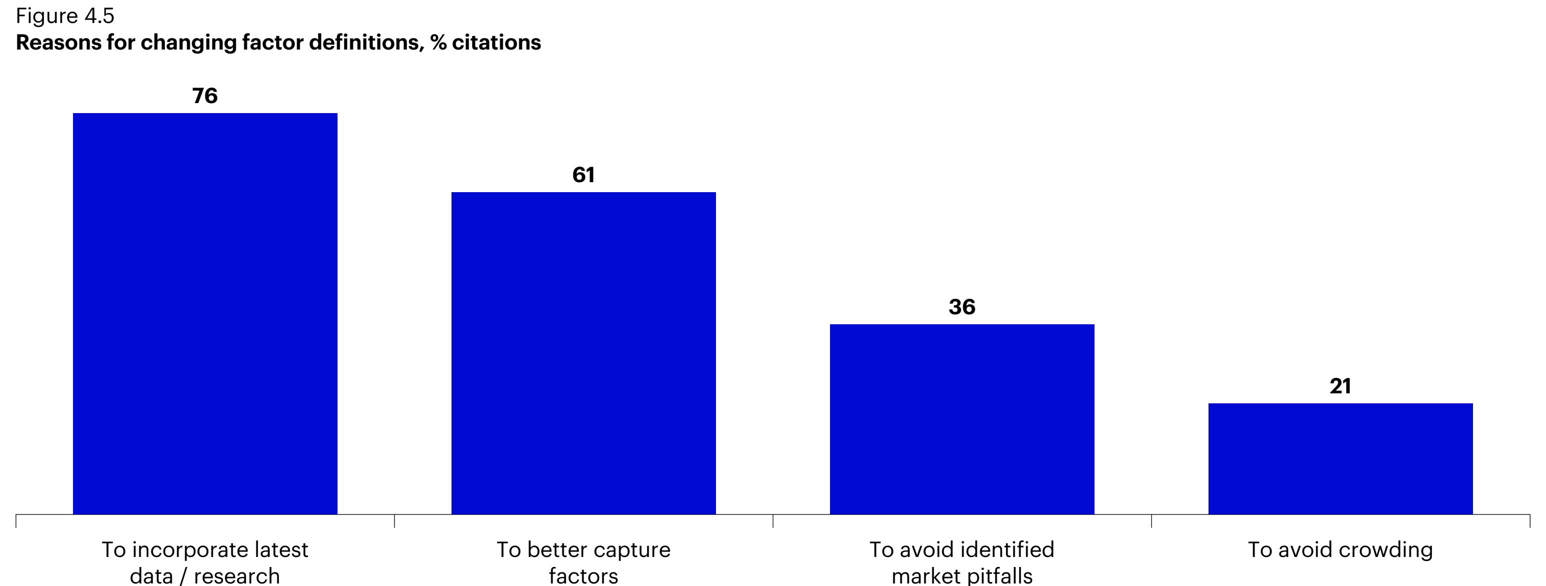
Investors also indicated definitions were being modified as they became more sophisticated, including via variations by sector. "When we look at value, we now drill down into the sectors and the differences across valuations in different sectors will also play a part in terms of our definitions" said one institutional investor based in North America. The importance of considering how factors intersect with sectors was a view shared by an EMEA-based retail investor: "Most value strategies have big sector bets but it's really hard to know which sectors will work so we adopt a sector neutral approach that eliminates some of that risk."

Figure 4.4
Frequency change definitions, % citations



What is the frequency of reviewing and changing your factor definitions? Sample size: 147.

Figure 4.5
Reasons for changing factor definitions, % citations



Why do you change your factor definitions? Sample size: 121.

Volatility highlights value of modifying strategic multi-factor allocations with tilts

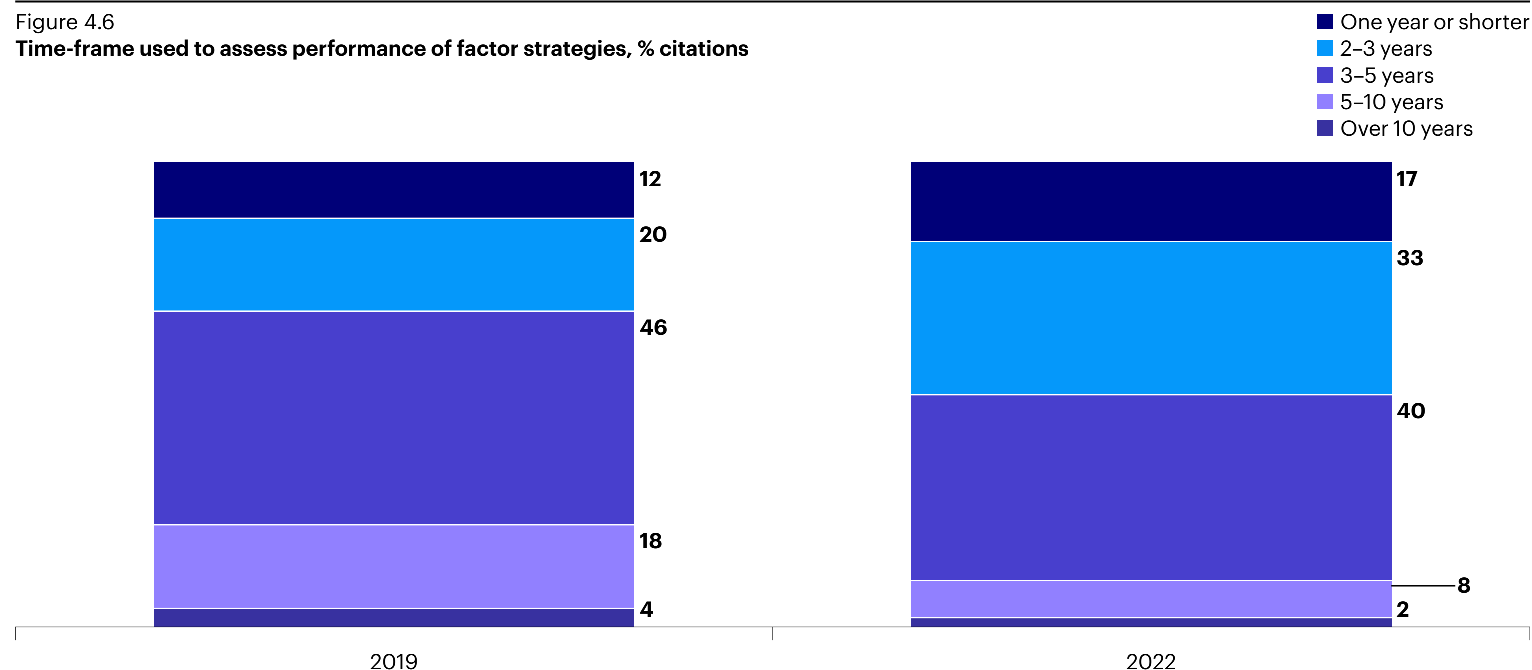
While most investors make some adjustment to their factors through time, some stressed their strategy had been built around a strategic core of factors proven to work over the long term. Indeed, for many, the past year has highlighted how difficult it was to predict factor performance reliably and demonstrated the importance of maintaining factor diversification. The ability to monitor and balance factor exposures is one of the key strengths of a factor approach.

These respondents saw a need to balance factor exposures of the overall portfolio as a second key reason for adjusting factor weights through time **(figure 4.3 on page 22)**. Sophisticated factor tools allow investors to develop a holistic view of their portfolio exposures to maintain factor diversification across asset classes. "Our general approach is to have diversified factor exposures within a portfolio to capture most of upside but also deliver differentiated performance on the downside," revealed an APAC-based retail investor.

Several investors are managing to factor diversification targets more robustly, with factor products seen as useful for managing to these targets. For example, several North American retail investors noted their fundamental active managers tended to be underweight to value, and respondents were using ETFs to help flatten the risk of being underexposed to this factor. Similarly, several UK managers noted they were benchmarked against the FTSE100 (which has a strong value tilt), but they also had a global investment mandate and were using factor products to adjust their exposures closer to the benchmark, whilst maintaining the desired level of global diversification.

Notably, over the past three years there has been a decrease in the time frame used to assess performance of factor strategies in line with a shift towards more dynamic, tactical implementation **(figure 4.6)**. While tactical single factor tilts are generally monitored and assessed over the short term, the performance of core multi-factor strategic allocations are usually still assessed over the long term. This dichotomy was described by one EMEA-based institutional investor: "Our short-term tilts are constantly monitored so that we can adjust them if the market environment changes. However, the core of our core factor portfolio is assessed over a 4–5 year period."

Figure 4.6
Time-frame used to assess performance of factor strategies, % citations



What time frame do you use to analyse / assess the performance of factor strategies? Sample size: 2019 = 238, 2022 = 147.

Increased number of use-cases for factors drives product demand

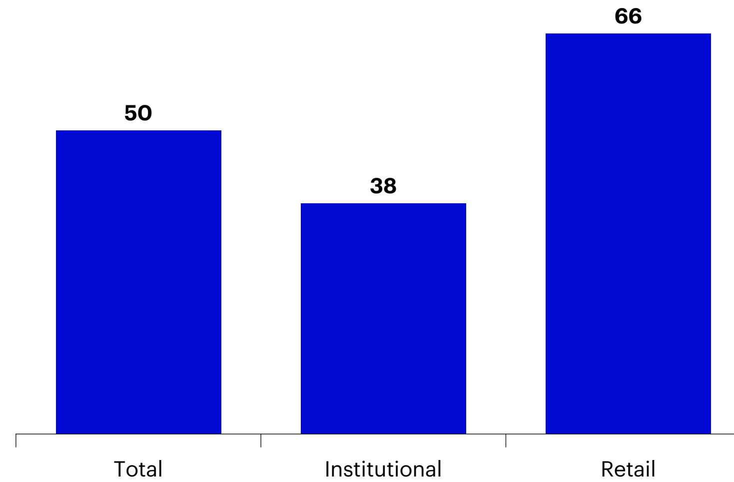
Some 50% of investors are making use of factor ETFs to implement their factor strategy, rising to 66% amongst retail investors **(figure 4.7)**. The simplicity of targeting multiple factors through a single vehicle is making the use of ETFs for tactical factor tilting more important **(figure 4.8)**. "Based on market sentiment and our house-views we use ETFs to accentuate the factors we expect to outperform," said a North American retail investor.

Most investors make use of factor ETFs both strategically and tactically **(figure 4.9)** with respondents noting selection decisions for factor products are driven by their use-case.

Based on market sentiment and our house-views we use ETFs to accentuate the factors we expect to outperform.

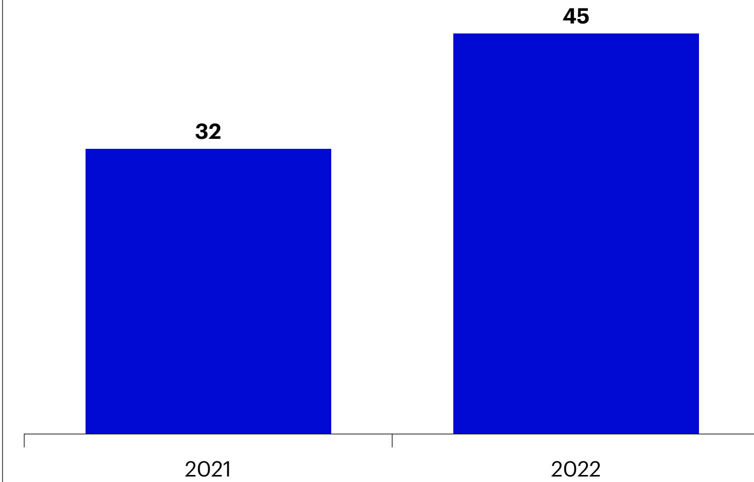
Retail investor
North America

Figure 4.7
Use of factor ETFs, % citations



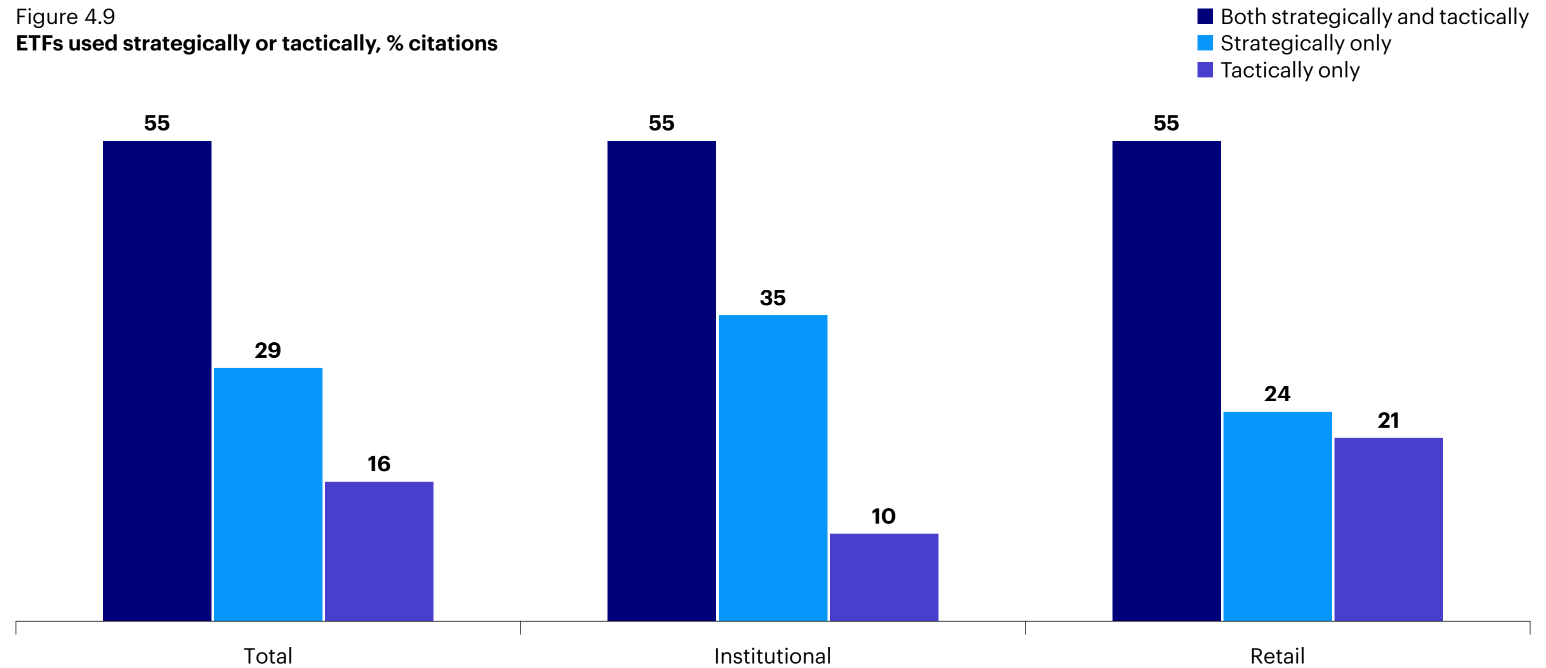
Do you use factor ETFs? Sample size: 149.

Figure 4.8
Single point of access to multiple factors as driver of factor ETF use, % citations



Why do you use ETFs to target factors? Sample size: 2021 = 151, 2022 = 74.

Figure 4.9
ETFs used strategically or tactically, % citations

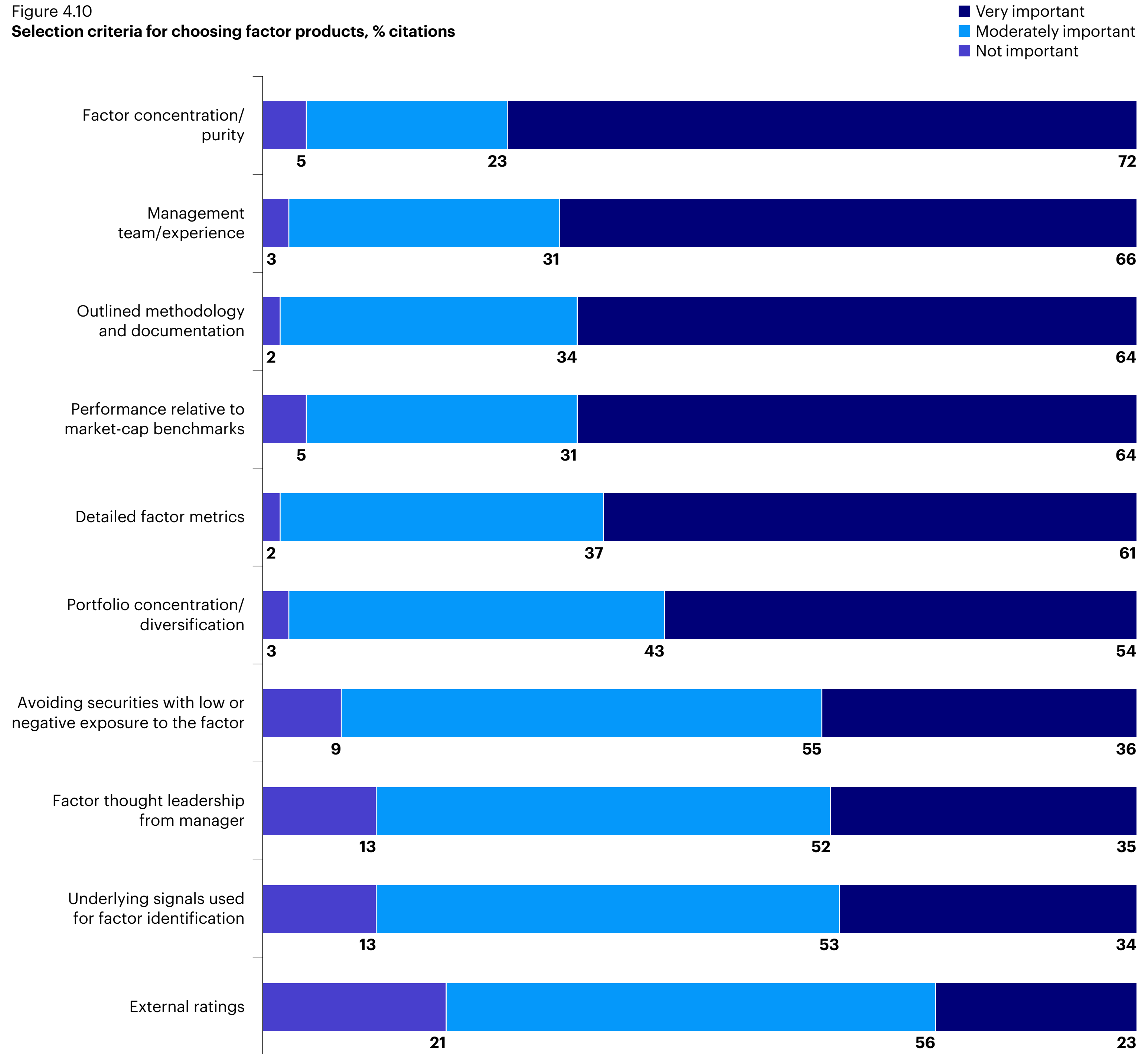


Do you use factor ETFs strategically or tactically? Sample size: 73.

For example, factor purity was the most cited selection criteria **(figure 4.10)** but was seen as particularly important when investing in single factor products for tactical reasons or to rebalance exposures elsewhere in the portfolio. "We are not necessarily choosing best performing products but instead looking at the ones that track the factor most purely," said an APAC-based institutional investor.

In contrast, investors indicated performance relative to market cap benchmarks is an important consideration when selecting a multi-factor product as part of a strategic allocation. Investors were also focused on how factors were combined, impacting the implications for expected performance in different environments. "When selecting a multi-factor solution, it's a function of cost and whether it provides a durable exposure to the factors that we are looking for" revealed a retail investor based in EMEA. "For multifactor ETF's we would be very much looking at how far it tracks away or close to the overall benchmark. If we are looking for pure exposure to a single factor, we would look at how the product tracks against that factor's index" added a North American retail investor.

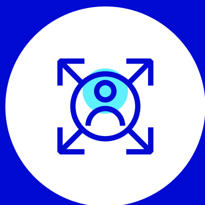
Figure 4.10
Selection criteria for choosing factor products, % citations



When selecting a factor product which of the following are important in your assessment? Sample size: 137.

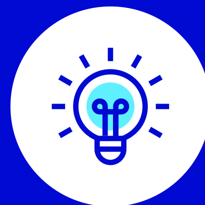
Sample and methodology

The fieldwork for this study was conducted by NMG's strategy consulting practice. Invesco chose to engage a specialist independent firm to ensure high-quality objective results. Key components of the methodology include:



A focus on the key decision makers, conducting interviews using experienced consultants and offering market insights

In-depth (typically one hour) face-to-face interviews using a structured questionnaire to ensure quantitative as well as qualitative analytics were collected



Results interpreted by NMG's strategy team with relevant consulting experience in the global asset management sector

In 2022, the seventh year of the Study, we conducted interviews with 151 different pension funds, insurers, sovereign investors, asset consultants, wealth managers and private banks globally. Together these investors are responsible for managing $25.4 trillion in assets (as of 31 March 2022).

This year, this core study was supplemented with 10 additional in-depth interviews with highly experienced factor users to better understand how factor investing has evolved and is expected to continue to develop.

In this year's study, all respondents were 'factor users', defined as any respondent investing in a factor product across their entire portfolio and/or using factors to monitor exposures. We deliberately targeted a mix of investor profiles across multiple markets, with a preference for larger and more experienced factor users. The breakdown of the 2022 core interview sample by investor segment and geographic region is displayed in **figures 5.1**, **5.2** and **5.3**.

Institutional investors are defined as pension funds (both defined benefit and defined contribution), sovereign wealth funds, insurers, endowments, and foundations.

Retail investors are defined as discretionary managers or model portfolio constructors for pools of aggregated retail investor assets, including discretionary investment teams and fund selectors at private banks and financial advice providers, as well as discretionary fund managers serving those intermediaries.

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Figure 5.1
Assets under management by segment ($ trillion, as of 31 March 2021)

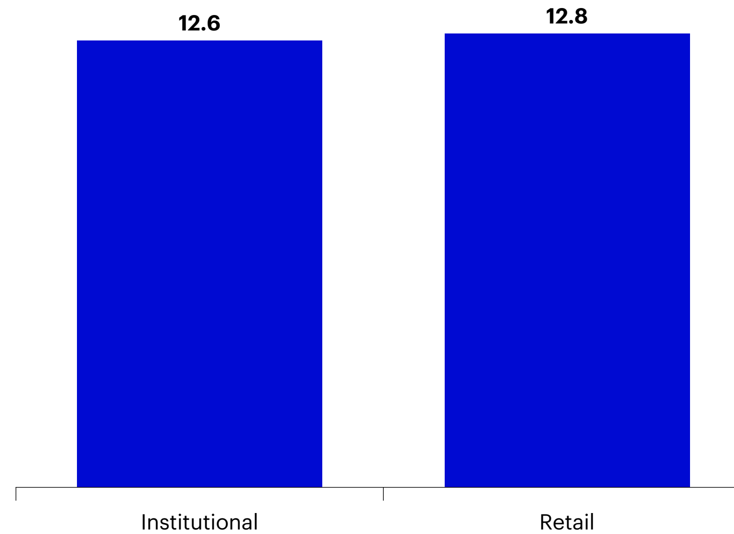


Figure 5.2
Sample by segment

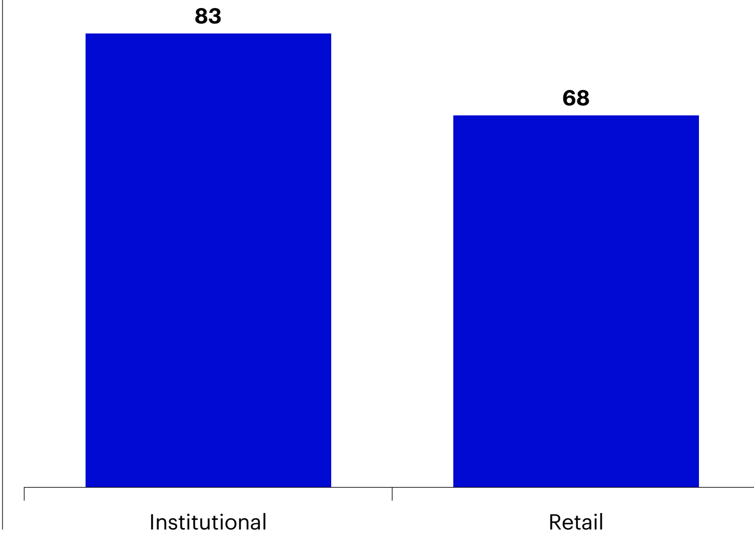
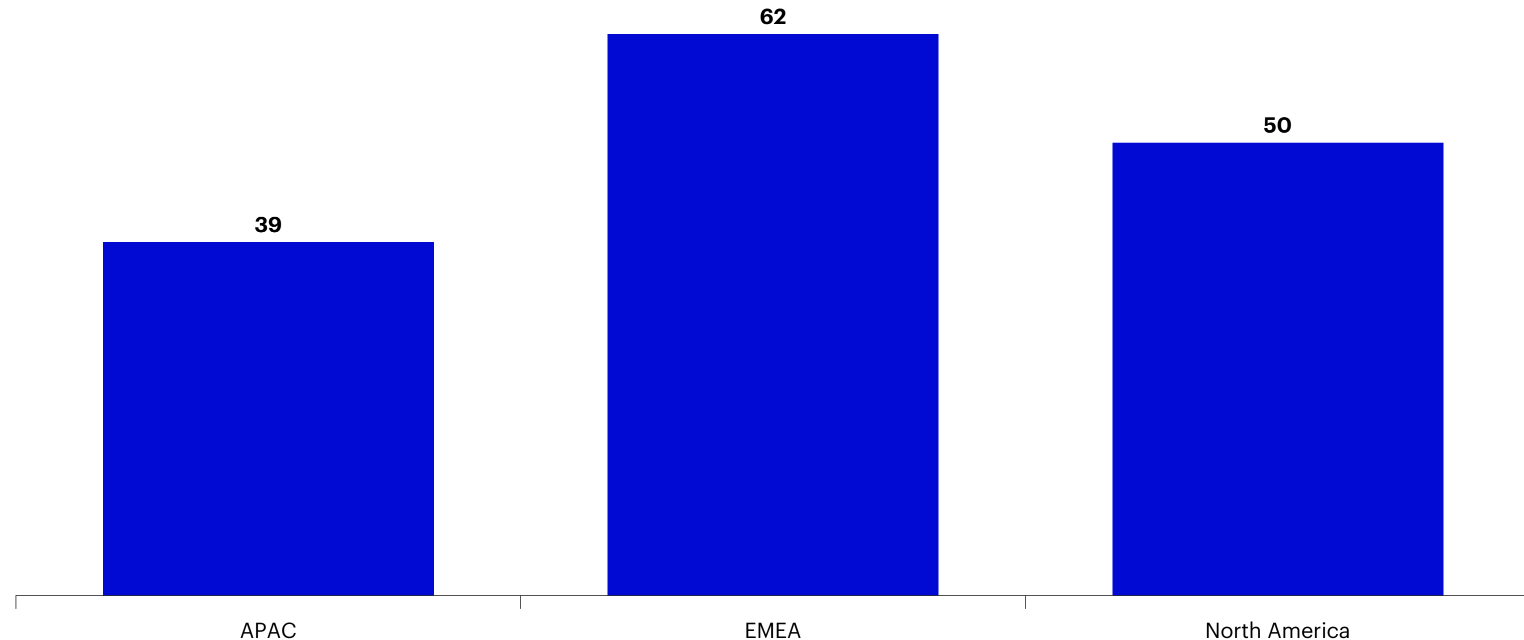


Figure 5.3
Sample by region



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Risk warnings

The value of investments and any income will fluctuate (this may partly be the result of exchange rate fluctuations) and investors may not get back the full amount invested.

Factor investing (as known as smart beta or active quant) is an investment strategy in which securities are chosen based on certain characteristics and attributes that may explain differences in returns. Factor investing represents an alternative and selection index-based methodology that seeks to outperform a benchmark or reduce portfolio risk, both in active or passive vehicles. There can be no assurance that performance will be enhanced or risk will be reduced for strategies that seek to provide exposure to certain factors. Exposure to such investment factors may detract from performance in some market environments, perhaps for extended periods. Factor investing may underperform cap-weighted benchmarks and increase portfolio risk. There is no assurance that the investment strategies discussed in this material will achieve their investment objectives.

Interest rate risk refers to the risk that bond prices generally fall as interest rates rise and vice versa. An issuer may be unable to meet interest and/or principal payments, thereby causing its instruments to decrease in value and lowering the issuer's credit rating.

In general, stock values fluctuate, sometimes widely, in response to activities specific to the company as well as general market, economic and political conditions.

The use of environmental, social and governance factors to exclude certain investments for non-financial reasons may limit market opportunities available to funds not using these criteria. Further, information used to evaluate environmental, social and governance factors may not be readily available, complete or accurate, which could negatively impact the ability to apply environmental, social and governance standards.

There are risks involved with investing in ETFs, including possible loss of money. Index-based ETFs are not actively managed. Actively managed ETFs do not necessarily seek to replicate the performance of a specified index. Both index-based and actively managed ETFs are subject to risks similar to stocks, including those related to short selling and margin maintenance.

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