2022

Invesco Global Sovereign Asset Management Study

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Inflation shock presents sovereigns with hard choices
The high level of uncertainty around the future path of inflation has created a challenging investment environment. Sovereigns continue to increase allocations to real assets, while exploring opportunities in fixed income as yields rise. Russia's invasion of Ukraine has dampened demand for European assets; North America and developed market APAC allocations increase.

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External management and data science help overcome scale challenges
Increased scale is pushing larger sovereigns to make greater use of external managers, particularly in private markets. Partnerships with external managers are being used to help integrate ESG and manage beta exposure and currency risk. Data science is also seen as a solution to scale challenges, with sovereigns looking to make use of machine learning and artificial intelligence to gain an edge in alpha generation and portfolio optimisation.

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Digital assets: a disruptive technology gathering momentum
Sovereigns are researching digital assets but taking a conservative approach to investment. Direct investment into companies that provide digital asset infrastructure is the preferred approach to gaining exposure. Meanwhile, central bank digital currencies (CBDCs) are being heavily researched and are seen as a potential threat to the long-term viability of existing cryptocurrencies.

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Rising stakes in ESG as sovereigns focus on impact
ESG integration continues to rise, with a growing focus on delivering on measurable targets. This is helping drive increased use of impact investing, which is seen as a way for sovereigns to help fund the transition towards low carbon energy. The invasion of Ukraine has highlighted the limitations of implementing ESG via passive strategies and led to an increased focus on active investing.

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Renminbi allocations continue to rise, as Russia reserves freeze catalyses soul-searching about dollar reserves
The position of the US Dollar has held firm despite questions around the weaponisation of reserves following the Ukraine invasion. Inflation is a concern, with central banks moving out of deposits into both government bonds and non-traditional asset classes. Diversification into new asset classes has continued and is driving an increased use of external asset management.

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Welcome

Welcome to Invesco's tenth annual study of sovereign investors. Running since 2013, this year the study represents the views and opinions of 139 chief investment officers, heads of asset classes and senior portfolio strategists at 81 sovereign wealth funds and 58 central banks. Combined, these investors are responsible for managing around US$23 trillion in assets (as of March 2022).

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10th
annual study of sovereign investors

139
chief investment officers, heads of asset classes and senior portfolio strategists

Running since
2013

81
sovereign funds

58
central banks

In 2022 we find sovereign investors grappling with an inflation shock, rising interest rates and a war in Eastern Europe. In our first theme we discuss how these factors are influencing asset allocations, including a continued rise in private market allocations. However, with no consensus on how these factors will unfold we also uncover high levels of uncertainty and a widespread belief that this a macro environment in transition with limited visibility and growing uncertainty about what comes next.

In our second theme we turn a spotlight on the challenges of scale and find external managers playing an increasing role in helping larger sovereign funds meet their private market objectives. We also note that asset manager partnerships are becoming more prominent, with investors looking for assistance in areas such as beta management. In this theme we also discuss how sovereign funds are harnessing the power of data science and artificial intelligence, with these tools helping to deliver alpha at scale and improved efficiencies across large portfolios.

Theme three focuses on digital assets. While investment in cryptocurrencies remains rare, we observe sovereign funds bullish on the underlying technology, with many keen to gain exposure via companies developing digital asset infrastructure. In this theme we also examine central bank digital currencies, with most banks now exploring how this technology could work in practice and many seeing their deployment as a potential threat to established cryptocurrencies.

Theme four reports on the continued rise in ESG integration. We discover sovereign investors increasingly focused on achieving measurable outcomes that can be tracked over time, which in turn is helping drive the use of impact strategies. In this theme was also discuss how Russia's invasion of Ukraine has thrown a spotlight on some of the challenges related to passive investing, which for some investors has led to a renewed focus on active management to meet ESG objectives.

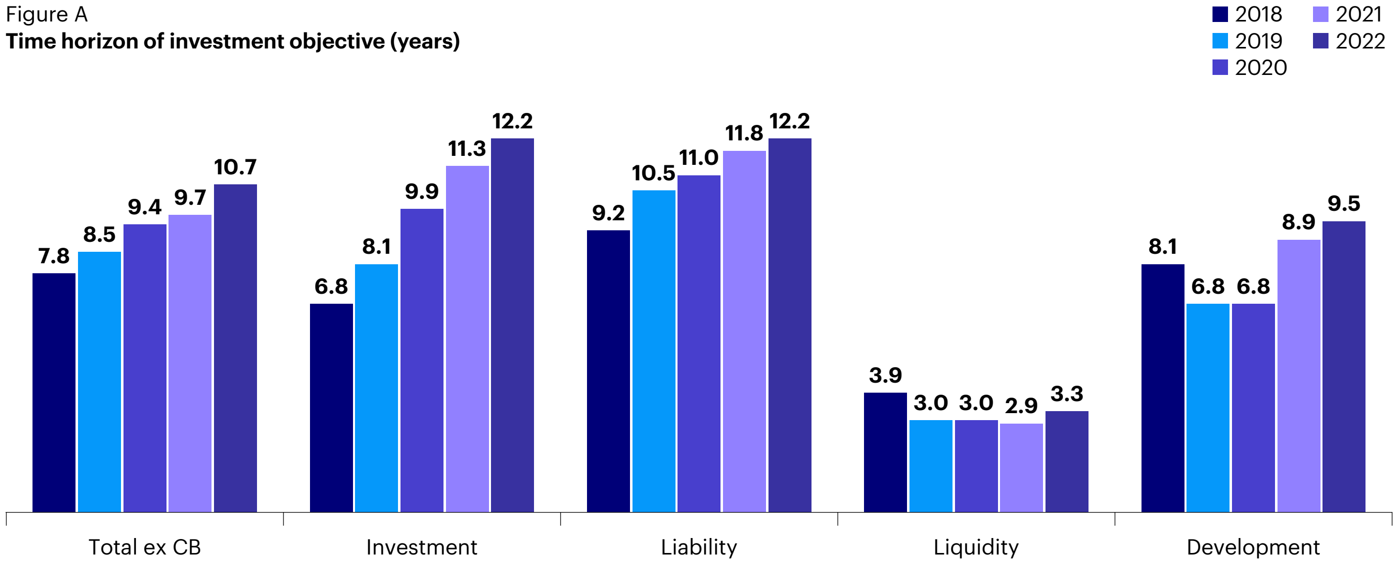
Our final theme focuses on developments in the management of central banks reserves. This includes an exploration of the 'weaponisation' of Russian reserves via sanctions and the potential impact on the role of the US dollar as the world's reserve currency. In this theme we also find central banks under pressure to protect reserves from the impact of inflation. This has added momentum to the trend towards non-traditional asset classes and is in turn driving the increased use of external managers.

We hope this report gives you an interesting and informative insight into the world of sovereign investors. If you would like to discuss these findings or have any questions, please do get in touch.

Key metrics

Investment horizons
In the past 12 months sovereign investors have continued to extend their investment time horizons, in line with the trend seen in previous studies. In 2022, sovereigns reported an average investment horizon of 10.7 years, versus the 9.7 years reported in 2021. This increase is evident across sovereign segments but with the largest rise among investment sovereigns. Investment horizons have been increasing as a reaction to high levels of volatility and to help facilitate greater flexibility in portfolio construction, including increased allocations to illiquid private markets.

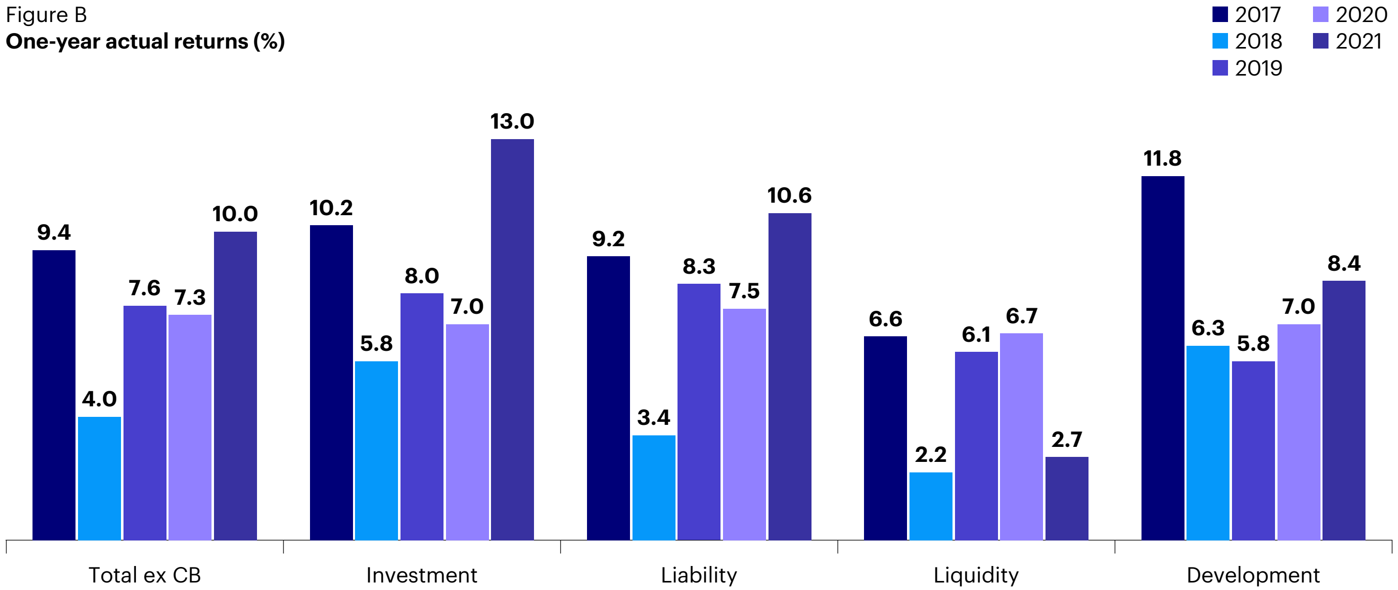
Figure A
Time horizon of investment objective (years)



Sample size: 2018 = 64, 2019 = 65, 2020 = 58, 2021 = 55, 2022 = 62.

Performance
Sovereign investor performance was strong to December 2021, with average returns of 10% on the back of strong equity market performance. Investment and liability sovereigns performed best in with returns of 13.0% and 10.6% respectively, thanks in part to their greater exposure to equity markets. With their greater allocations to private markets, development sovereigns delivered slightly more muted performance but still registered an increase on the previous 12 months. Liquidity sovereigns were the one segment to register lower performance, with their predominantly fixed income-based portfolios negatively impacted by the rising rate environment.

Figure B
One-year actual returns (%)

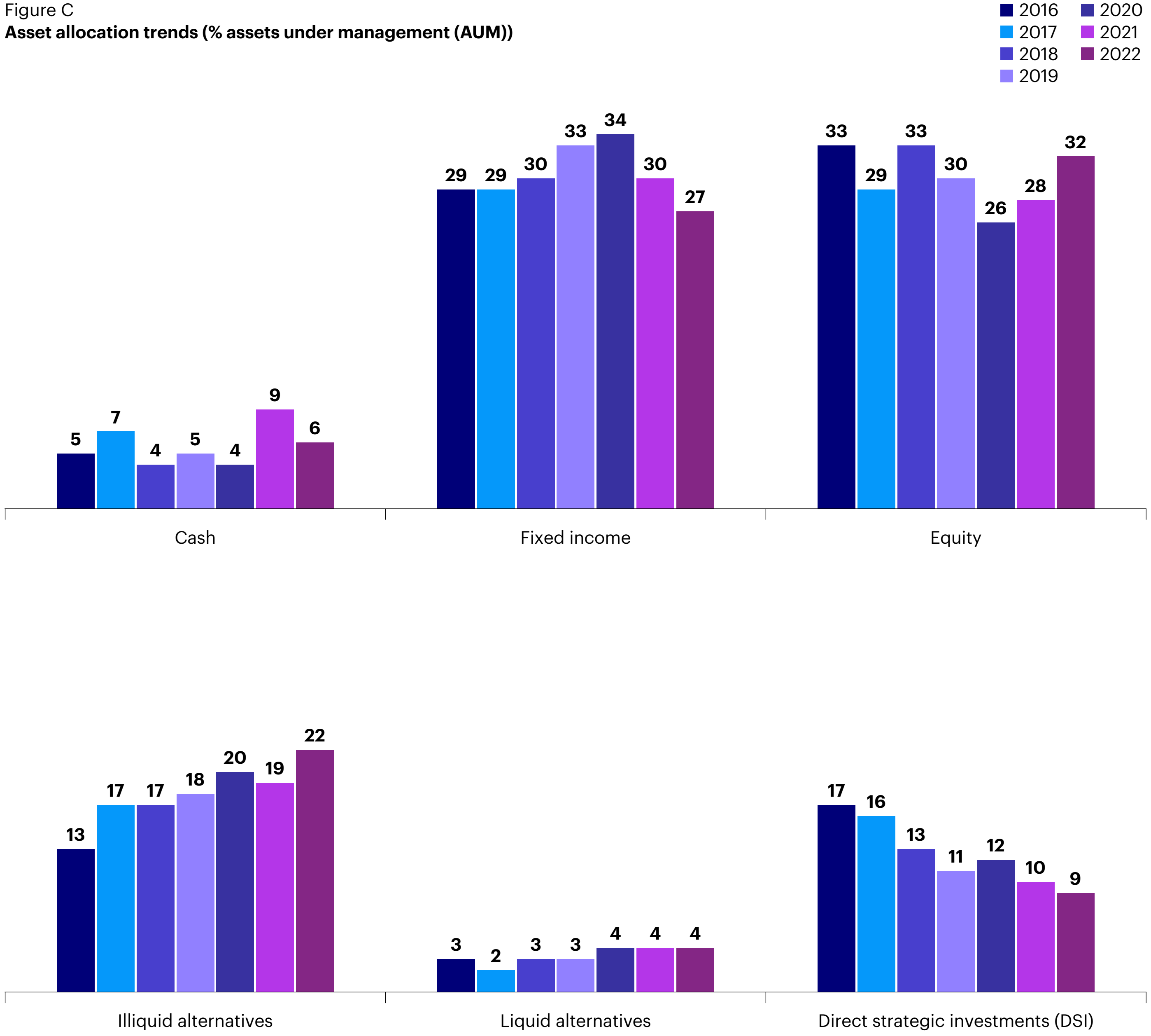


Sample size: 2017 = 52, 2018 = 55, 2019 = 71, 2020 = 61, 2021 = 55.

Key metrics

Asset allocation
For the second year in a row, allocations to fixed income have fallen while equity allocations have increased. This year fixed income allocations stand at 27% on average (down from 30%) while equity allocations are at 32% (up from 28%).

Figure C
Asset allocation trends (% assets under management (AUM))

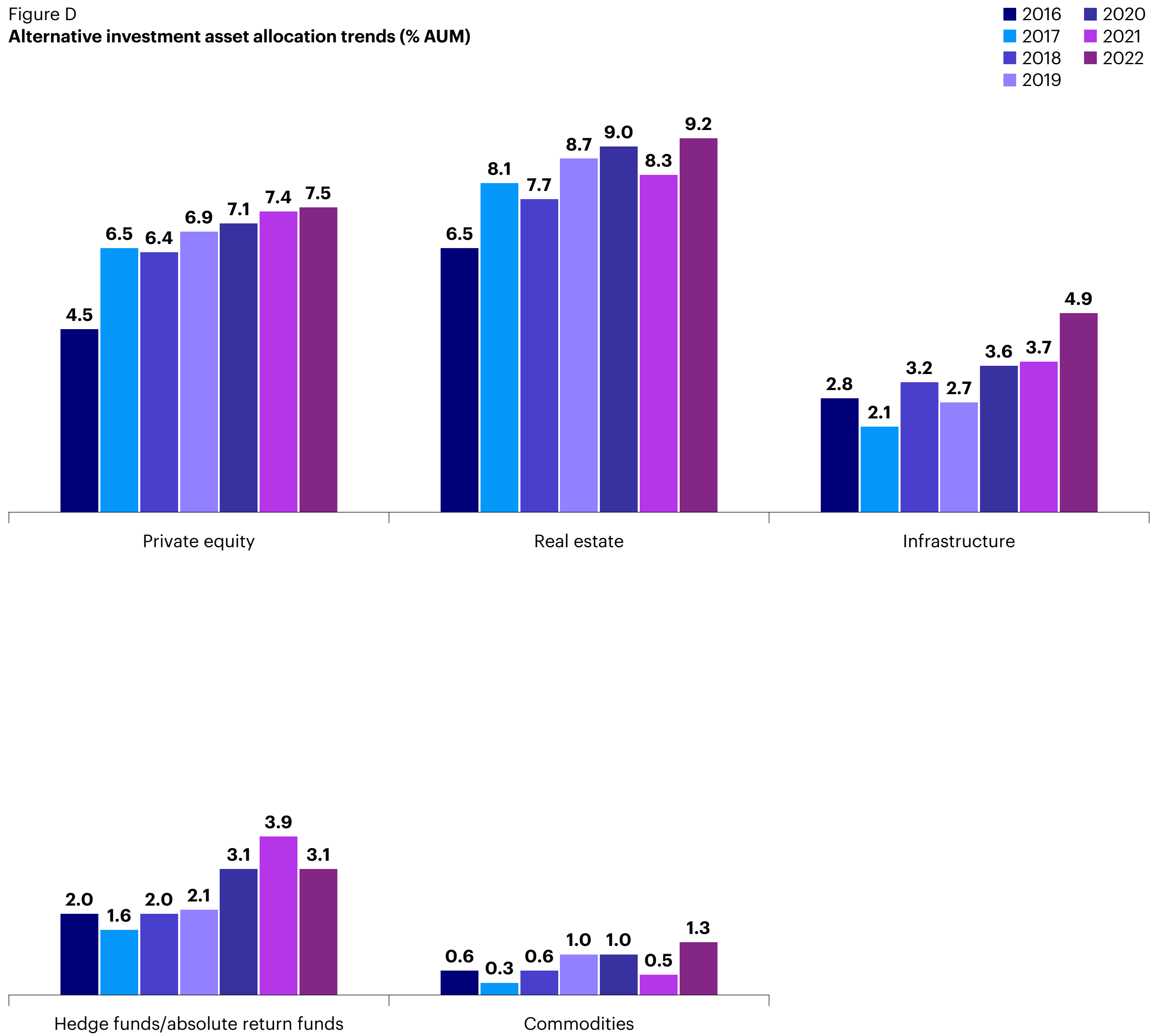


Sample size: 2016 = 57, 2017 = 62, 2018 = 63, 2019 = 53, 2020 = 78, 2021 = 54, 2022 = 74.

Key metrics

Sovereign investors now have an average of 26% of their portfolio allocated to alternative investments (excluding direct strategic investments) with allocations to illiquid alternatives continuing to climb steadily. Within alternative allocations, private equity and real estate continue to be the largest sub-sectors, but infrastructure registered the largest year-on-year increase.

Figure D
Alternative investment asset allocation trends (% AUM)



Sample size: 2016 = 57, 2017 = 62, 2018 = 63, 2019 = 53, 2020 = 78, 2021 = 54, 2022 = 74.

Theme 1

Inflation shock presents sovereigns with hard choices

High levels of uncertainty put the brakes on major portfolio shifts, with continued increases in real asset allocations the exception.

Sovereigns ponder when and how to re-enter fixed income as rates rise, and assess potential opportunities in a sharp and deepening equity market correction.

Russia's invasion of Ukraine dampens demand for European assets; surging commodity prices fuel caution in emerging markets; meanwhile, allocations to North America and developed market APAC are increasing.

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A year ago, this study reported a cautiously optimistic mood among sovereign wealth funds. Emerging from the worst of the pandemic, these investors welcomed the prospect of a more normal operating environment, deploying capital to risk assets. Inflation ranked just seventh in terms of macro themes influencing allocations. The pandemic, climate change and low yields were considered much more pressing issues.

What a difference a year makes. Inflation has surged; in March 2022 consumer prices across OECD countries rose 8.8%,[1] year-on-year, the fastest pace of increase in at least three decades, and at the time of writing were still trending upwards. This has already produced the largest year-to-date drawdown in bond market history. As a result, instead of shielding portfolios in a risk off environment and sharp correction in equities, fixed income allocations have been a major contributor to negative performance. This positive correlation presents challenges for sovereigns as they look ahead. Or as one European investment sovereign put it, "The problem we have in bonds is that they're not a great diversifier [against equities] when the Fed is raising, and when a crisis is bond driven. If we had an equity-driven event, that would be different, but the Fed is hiking quite aggressively to counter inflation and other central banks such as the ECB look set to follow, and that's a problem for bonds as well as equities."

Figure 1.1
Risks to global growth in next year (% citations, sovereigns only)

What do you see as the major risks to global economic growth in the next year? Sample size: 77.

> I think that inflation will still be there going forward. I expect it to be lower than today, but it will still not be as low as the pre-pandemic levels.
>
> **Investment sovereign**
> Asia

The end of macro predictability, as persistent inflation sends sovereigns back to the drawing board
Sovereigns now see inflation, alongside global geopolitics, as the biggest threat to global growth over the next year **(figure 1.1)**. Early expectations of a fleeting spike in inflation, as fractured supply chains reknitted and Covid ebbed, proved over-optimistic. Sovereigns are now grappling with the question of how persistent – and high – inflation will be, and how to position their portfolios.

While the low yield, low inflation backdrop of the preceding years presented its own challenges, it was a macro environment that had become relatively predictable and one that sovereign wealth funds had developed strategies to contend with. With the pricing of US treasuries suggesting that federal funds rates could reach 2.75%-3% by the end of 2022,[2] respondents this year noted that they have been forced to develop a new set of macro assumptions, including higher levels of inflation and higher long-term interest rates, and were attempting to resolve how these assumptions influence the relative outlook for different asset classes.

Across all segments the overriding feeling was one of uncertainty and an environment in which decision-making had become much harder.

1 Source: OECD.
2 CME Group data.

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Inflation expected to subside but remain higher for longer

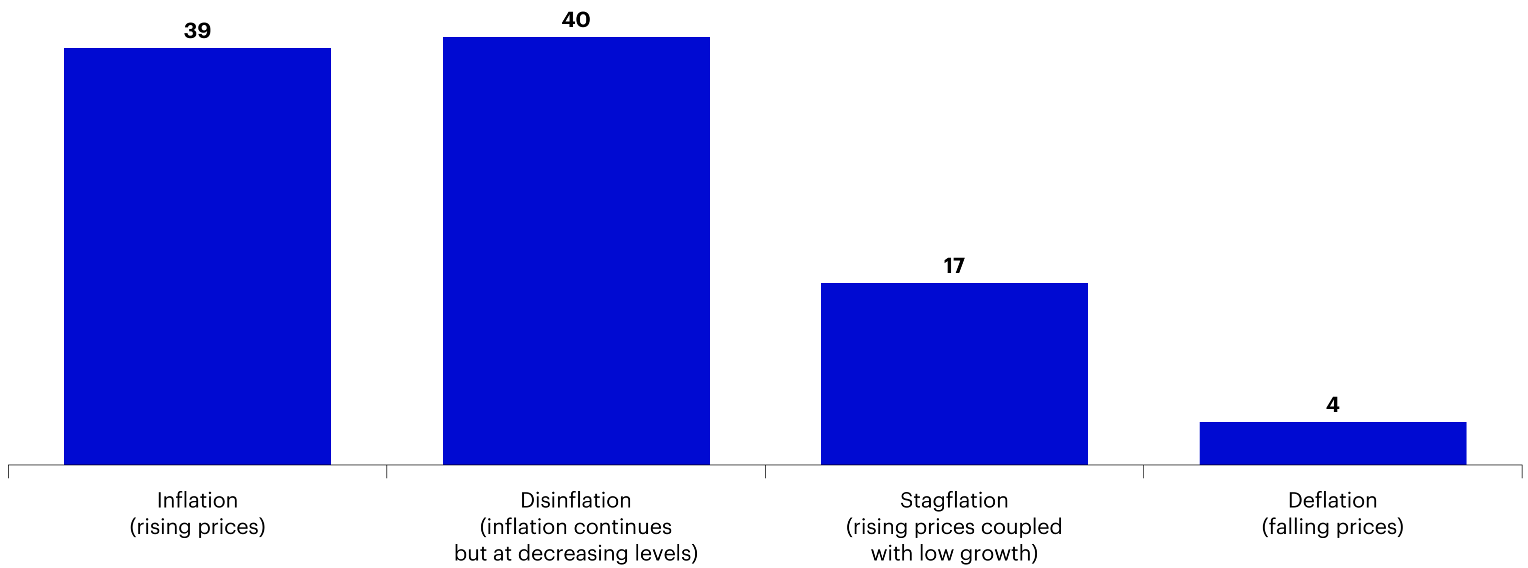
With their uncertainly reflected in a mixed inflation outlook, two-fifths of respondents expect inflation in developed markets to remain stubbornly high over the next two years. A further two-fifths expect inflation to steadily decline and just under a fifth anticipate stagflation **(figure 1.2)**. However, even among those respondents most bearish over inflation, few are expecting the average US inflation rate for the next 5 years to stick at 5% or above, with only 16% anticipating this **(figure 1.3)**.

Development and investment sovereigns were the most pessimistic on the future path of inflation, while liability and liquidity sovereigns were more inclined to believe inflation would be transitory and come down over the next 12 months **(figure 1.4)**. The investment sovereign segment includes most commodity-based sovereigns that are beneficiaries of the surge in commodity prices. Most sovereigns, however, viewed the current situation as temporary and were therefore not adjusting their own budget forecasts or risk levels in anticipation of sustained higher levels of inflows.

Liability and liquidity sovereigns both see advantages in a higher rate environment. Liability sovereigns noted that higher interest rates were beneficial when calculating the value of their liabilities and therefore positively impacted their funding status. Meanwhile liquidity sovereigns, who generally allocate to very short duration fixed income instruments, were relatively insulated from the fall in fixed income asset prices and stand to benefit from higher yields on these securities.

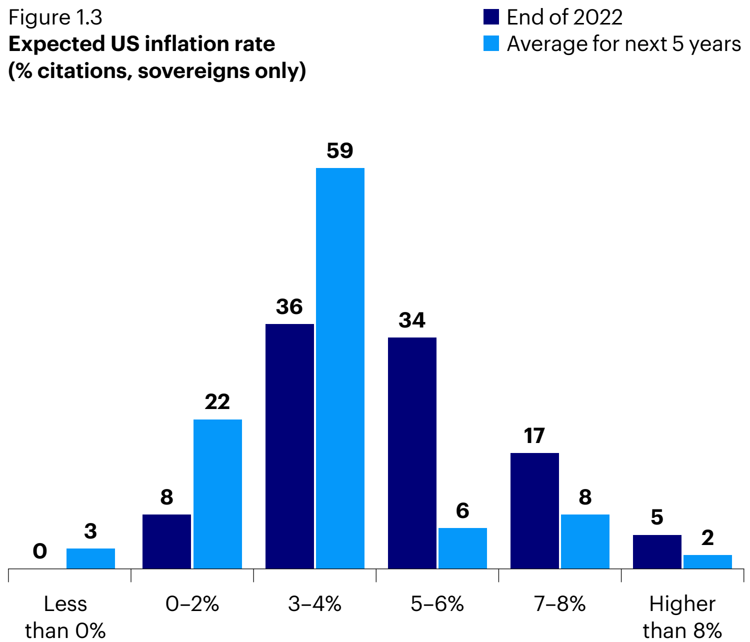
However, most respondents acknowledged challenges around these forecasts, with very little visibility on how the factors that had led to this (such as supply constraints, changes in workforce participation and a post-pandemic rebound in spending) would play out over the medium and long term. Notably, stagflation was identified as a very real risk, and an investment environment that would leave sovereigns with limited options for delivering positive real returns. Some respondents highlighted real assets, including real estate, infrastructure and renewables as investments that provide cashflows that tend to be resilient in low-growth inflationary environments.

Figure 1.2
Inflation expectations for developed markets in next 2 years (% citations, sovereigns only)



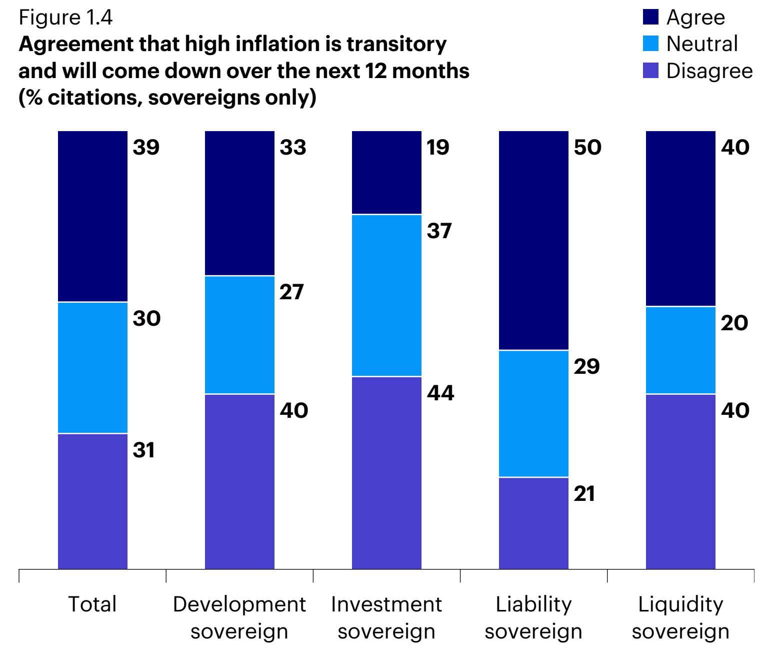
What is the more likely scenario over the next two years in developed markets? Sample size: 70.

Figure 1.3
Expected US inflation rate (% citations, sovereigns only)



What do you expect the US inflation rate to be at the end of 2022 (i.e. the rate for December 2022)? What do you think the average will be for the next 5 years? Sample size: 2018 = 63, 2019 = 53, 2020 = 78, 2021 = 54, 2022 = 65.

Figure 1.4
Agreement that high inflation is transitory and will come down over the next 12 months (% citations, sovereigns only)



Do you agree or disagree with the following statements? Sample size: 70.

Despite a range of views on the path of inflation, there was a consensus that inflation over the medium term is likely to remain elevated in comparison to the recent past **(figure 1.5)**. Three-quarters of sovereign respondents expect US inflation to average at least 3% over the next five years **(figure 1.3, page 09)**, in comparison to an average of 1.8% between 2015 and 2020. "I think that inflation will still be there going forward. I expect it to be lower than today, but not as low as pre-pandemic levels," suggested an Asia-based investment sovereign.

This was seen as paving the way for higher long-term interest rates and yields. However, on the question of whether this would mean that government bonds would once again deliver positive real yields, views were often diametrically opposed; with around a third expecting negative real yields to persist for the next three years and a further third expecting government bonds to deliver positive real returns within this timeframe **(figure 1.5)**.

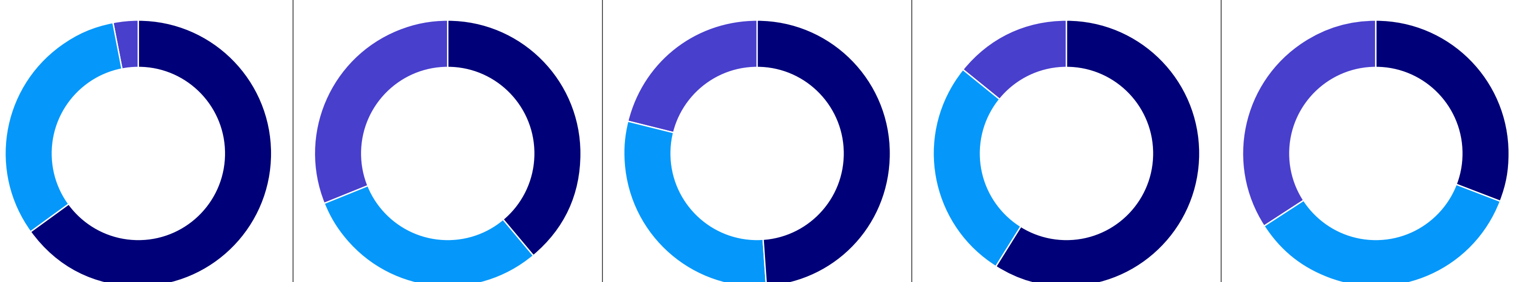
Uncertain environment puts brakes on major portfolio shifts but drives opportunistic investments

Despite the challenges in forecasting, sovereigns have been adapting their portfolios to take account of monetary tightening, the rising rate environment, and the potential end of the multi-decade bull market in bonds. Some 59% have adjusted their portfolios in expectation of rising rates **(figure 1.5)**. Most notably fixed income allocations have continued to fall.

As one Middle East investment sovereign explained, "We reduced our bond portfolio by about 70% as we thought that the bull market for bonds was set to change with an increase in rates and a progressive reduction in the balance sheet of central banks."

Not all sovereigns are afforded that level of flexibility around their long-term strategic asset allocations, particularly with respect to fixed income, or indeed share a similar outlook for the asset class. For example, a European liability sovereign responsible for investing state pension assets noted, "We have a sizable allocation to fixed income, which has impacted performance recently. Monetary tightening is top of mind but, typically, you have in fact been incurring a risk premium in fixed income even though you have had expected rate hikes. It is worth remembering the interest rate curve is pricing several rate hikes already and if they aren't realised there may be a premium for us. So, we still think there is value there, but this obviously comes with some potential downside risks as well".

Figure 1.5
Agreement with macro statements (% citations, sovereigns only)



	Labour market shortages and demographic shifts will put long-term upward pressure on wages and inflation (in developed markets)	High levels of inflation are transitory and will come down over the next 12 months	Supply chain constraints are sticky and will put long-term upward pressure on inflation	We have adjusted our portfolio in expectation of rising interest rates	Negative real yields on government bonds will persist for the next 3 years
Agree	65	39	49	59	31
Neutral	32	30	30	27	35
Disagree	3	31	21	14	34

Do you agree or disagree with the following statements? Sample size: 70.

Several investors shared this view, believing the tapering of central bank bond purchases would be good for fixed income markets in the long run as it could bring about the end of persistent, historically low yields. These investors were likely to be looking at entry points in fixed income. As a first step, cash allocations built up in response to the pandemic were often being redirected to yield-bearing money market assets with low duration risk.

While fixed income allocations have been falling, private market allocations have risen **(figure 1.6, page 11)**. One Middle East based development sovereign described their own approach: "We increased significantly the amount of cash and also used some of the proceeds to increase our holdings in private equity".

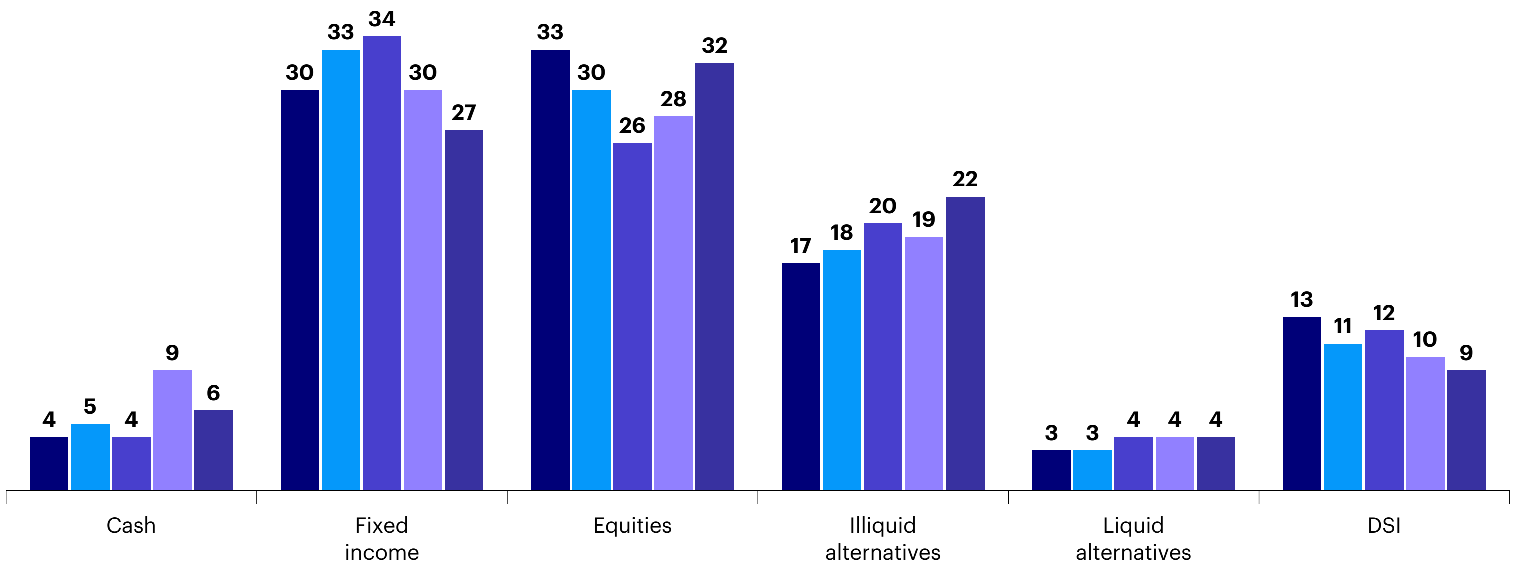
While investors are mindful about deal flow and supply in private markets, with some expressing concerns over rich valuations, the volatility shelter and long-duration play private markets provide to long-term investors is attractive regardless.

The private markets of real estate, infrastructure and private equity are often now destinations for reallocations from fixed income, putting further demand pressure on these asset classes (a challenge discussed further in Theme 2). Over the past ten years, allocations to private equity, real estate and infrastructure have rapidly increased, standing at $719 billion at the end of 2020 up from $205 billion in 2011.[3] This has partly been as a response to low yields in fixed income. However, sovereigns made it clear that an increase in yields will not bring an end to this trend, with real assets offering a number of other benefits including protection from inflation and diversification **(figure 1.8, page 11)**.

In these asset classes due diligence around inflation-linked contract terms has also increased in importance, with assets with in-built inflation protection proving very attractive. This was the case for one liability sovereign in the West, who explained, "Real assets can act as an inflation hedge as their values tend to be highly correlated with inflation. We have always invested in real estate, infrastructure, and renewables, as the values of these assets provide us with a significant amount of protection from inflation."

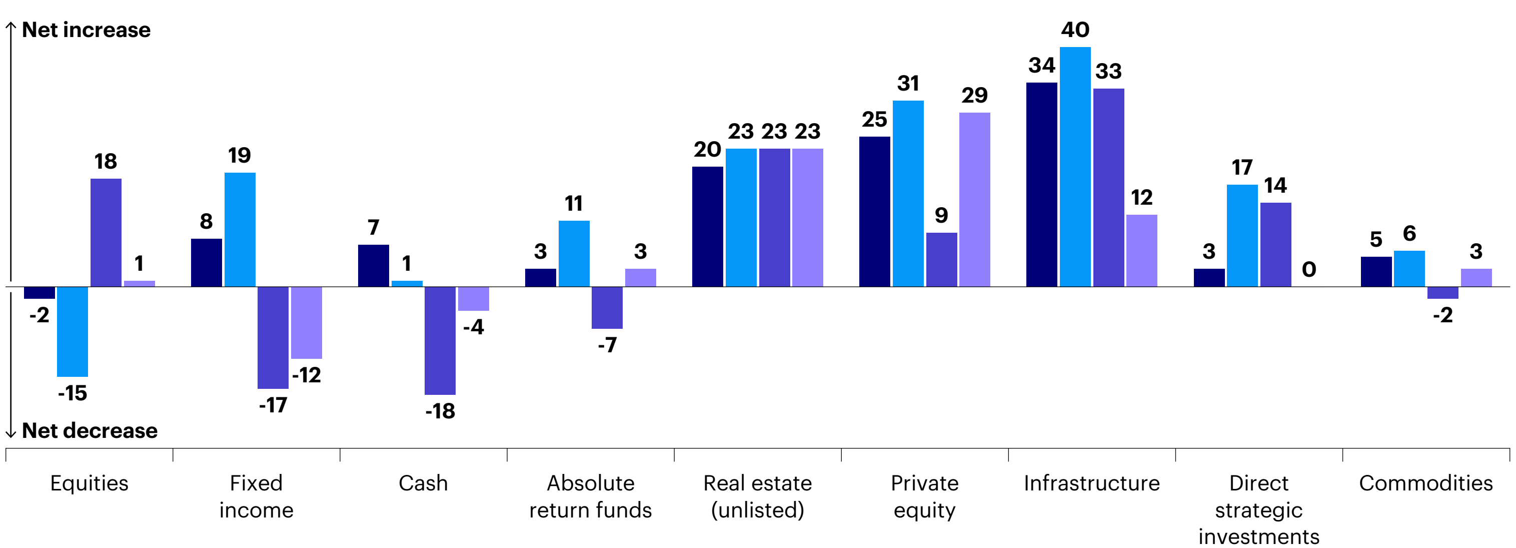
[3] https://www.preqin.com/insights/research/blogs/swfs-in-alternatives-in-pursuit-of-higher-returns

Figure 1.6
Asset allocations (mean %, sovereigns only)



What is the current allocation for the following assets? Sample size: 74.

Figure 1.7
Net allocation intentions by year (% citations to increase – % citations to decrease, sovereigns only)



For each asset class, do you intend on increasing / maintaining / decreasing your strategic asset allocation (SAA) over the next 12 months? Sample size: 69.

Falling valuations create opportunities in select equity sectors

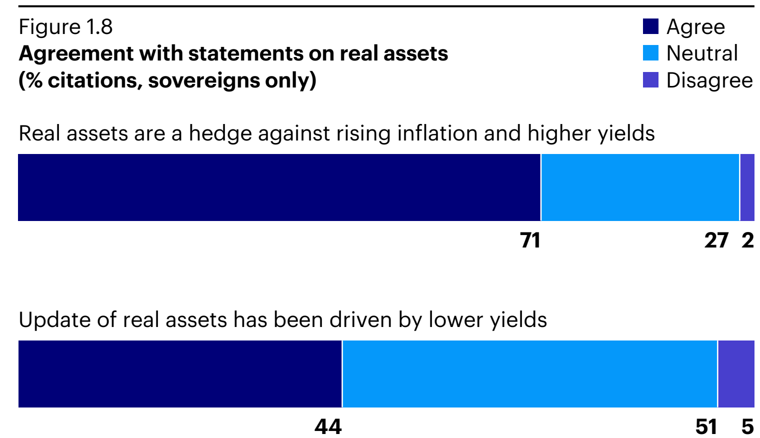
There is further appetite to reduce fixed income allocations but, in contrast to previous years, there is limited interest in moving these allocations into equities **(figure 1.7)**. While equities were seen as potentially offering protection from inflation there was concern around the ability of companies to pass on rising costs during an economic downturn.

Investors were also cautious due the high levels of uncertainty around interest rates, and subsequent discount rate for future cash flows. This was seen as important in the revaluation of high duration growth stocks, and sovereigns noted that duration management had become a more important aspect of risk controls within equity portfolios.

Despite these challenges, as long-term investors, sovereign funds are in many cases able to look through periods of volatility. The market correction was seen as creating opportunities in a few areas, including US technology stocks, which many had viewed as very expensive prior to the calendar year sell-off at the time of writing. As one Middle East development sovereign explained: "The drop in valuations has been quite sudden and means that more assets start to look attractive. Specifically, the US players had very rich valuations whenever we would talk about tech. Now we look at comparables and we can see potential entry values. The market is getting more rational and you see multiples that make more sense."

For funds that hold strategic equity stakes current valuations were also seen as an opportunity to increase their position in some cases. For example, one fund noted how they had converted a private equity stake into a minority shareholding after an IPO and, having pocketed some gains, were now taking advantage of the current valuations to increase their holdings. A key consideration for many investors making such opportunistic purchases was the pricing power of the underlying company and ability to pass on future inflationary pressures to customers.

Figure 1.8
Agreement with statements on real assets (% citations, sovereigns only)



Do you agree or disagree with the following statements? Sample size: 62.

Ukraine invasion brings country risk considerations to fore, particularly in emerging markets

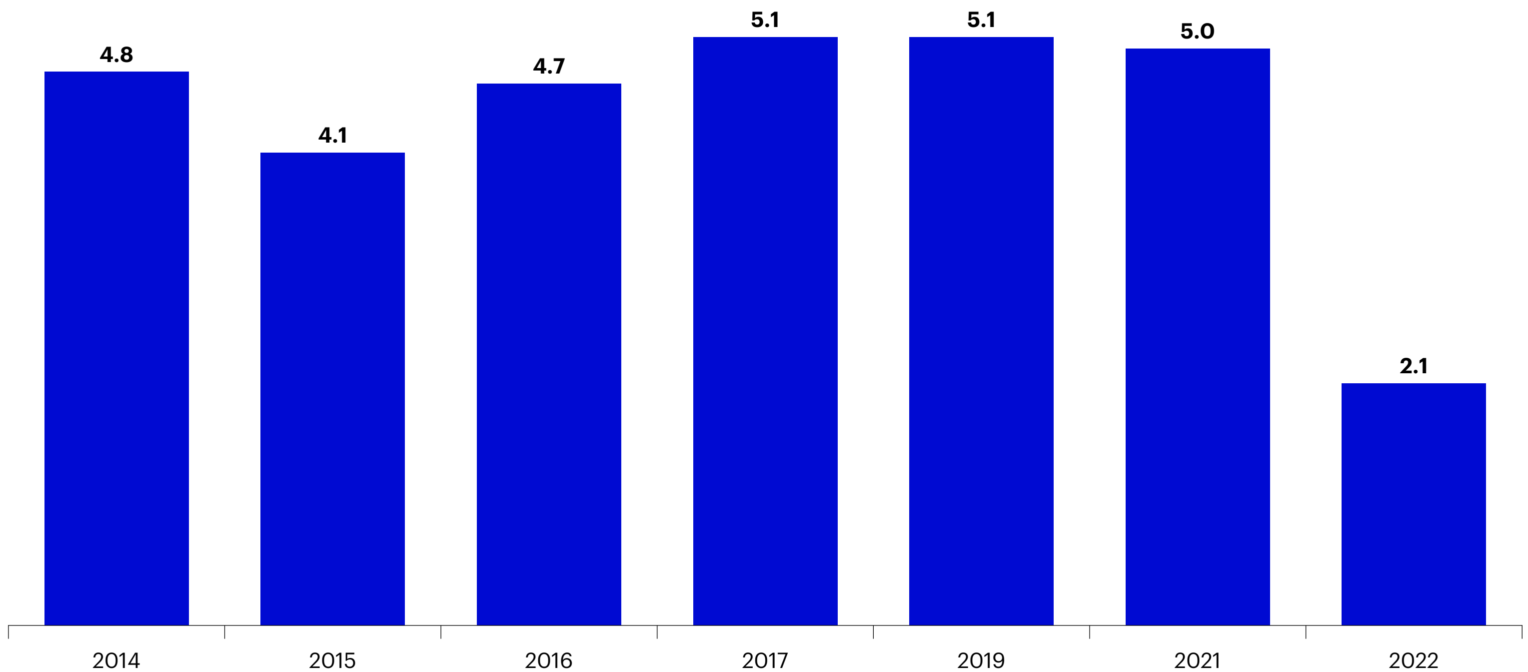
Fieldwork for this study took place in the first quarter of 2022, with around 40% of interviews conducted before Russia's invasion of Ukraine and 60% in the weeks immediately after. Prior to the invasion, Europe was often regarded as an attractive destination for capital thanks to favourable valuations, particularly in comparison with the US. However, in the weeks following there was a notable reversion in this sentiment.

Europe is believed to be particularly exposed to longer-term impacts from the invasion due to the disruption in supply of energy and other commodities. For many, the invasion weakened Europe's growth prospects, while also making it harder to contain inflation, and in doing so made for a potentially toxic recipe for stagflation. Instead, respondents said they were deploying capital to US and APAC markets, with 33% and 23% expecting to increase their allocations to these respective markets **(figure 1.10, page 13)**.

Russia had been considered a potential investment destination for some sovereign funds up until the point of invasion. The country's attractiveness to sovereign investors had been steady in recent years, following a dip after the annexation of Crimea. After the invasion Russia's attractiveness unsurprisingly plummeted **(figure 1.9)**.

Some funds noted that this highlighted the challenges in accounting for political risk when making country level investment decisions and that they had become more discerning with regards to other emerging markets. In particular, the invasion was seen as highlighting the advantages of investing in emerging markets that have a record of good relations with the US and other countries in the West. "We saw Europe as cheap prior to the invasion based on fundamentals but the invasion led us to focus more on political risk and the rule of law in our valuations. It's a reminder to assess each global opportunity on its merits rather than to apply the same methodology," suggested a development sovereign based in the Middle East. Some emerging markets were also seen as particularly exposed to rising inflation, with a negative reassessment of countries dependent on food and energy imports but a positive reassessment of net exporters in markets such as Latin America and the Middle East.

Figure 1.9
Attractiveness of Russia for portfolio (score out of 10, sovereigns only)



Please score the following countries out of 10 in terms of likely destinations for new/additional investment from your fund over the next three years? Sample size: 2017 = 58, 2019 = 33, 2021 = 54, 2022 = 55.

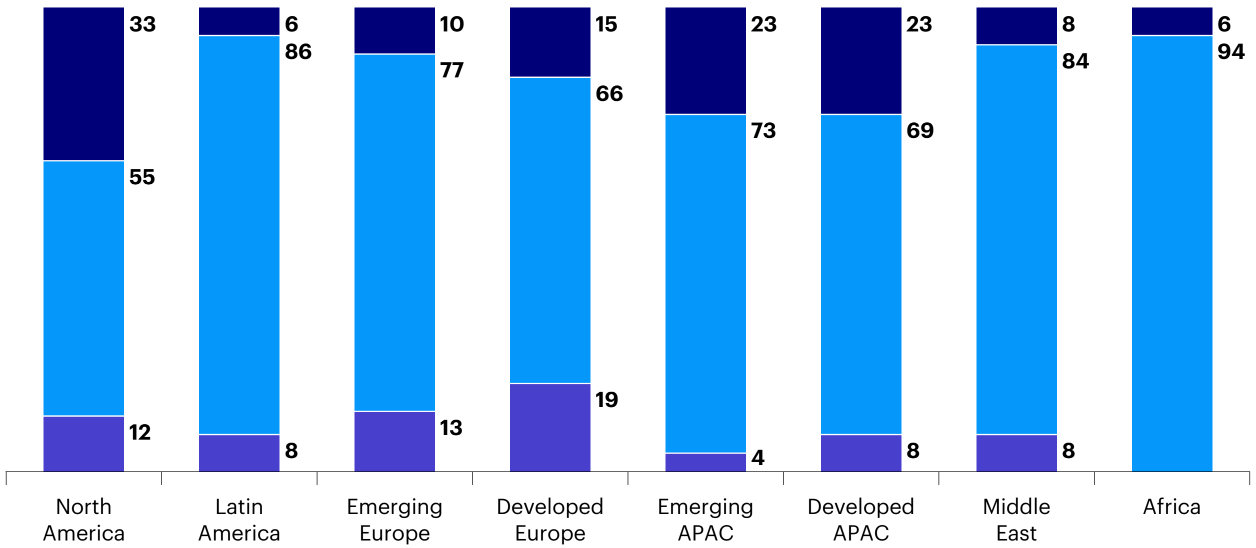
> **I don't think the situation in Russia influences our view of China. China is a large and growing market which you can't ignore.**
>
> **Investment sovereign**
> Middle East

Overall, emerging APAC was seen as less affected by the negative headwinds and therefore a destination for additional investment by nearly a quarter of SWFs **(figure 1.10)**. This study has previously noted high levels of sovereign capital flows into China. However, views on China this year were more mixed. Regulatory risk was viewed as a much greater concern following government interventions in sectors such as technology, impacting asset prices. More than half of sovereign funds believed that China had become a more challenging place to invest over the past 12 months **(figure 1.11, page 13)**.

It was widely noted that China is much more integrated into global trade and financial markets than Russia, with the interdependence of the Chinese and US economies seen as potentially mitigating some of the underlying geopolitical risk **(figure 1.11)**. "I don't think the situation in Russia influences our view of China. China is a large and growing market that you can't ignore. The relevant risk is perhaps in relation to Taiwan, but if in anything that risk might have gone down," said an investment sovereign based in the Middle East.

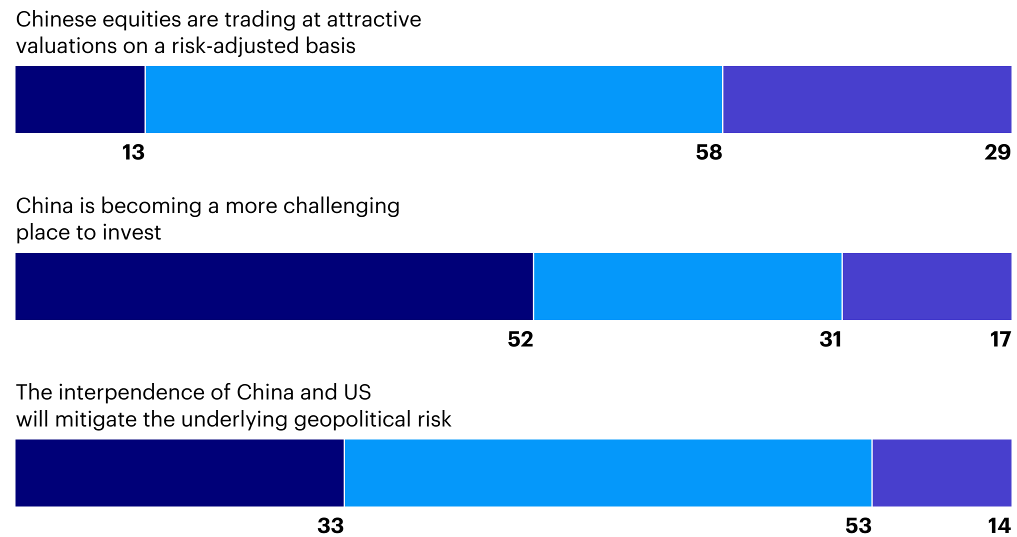
Indeed, some funds identified the market correction as a buying opportunity in a country that is accounting for a steadily rising share of global GDP. "If you look at China, there is a slowdown in the domestic market due to the pandemic, and the slowdown in the real estate sector. However, we are still quite optimistic about the country over the long-term so this looks like a buying opportunity as we see a lot of potential in the region," said one investment sovereign based in the West.

Figure 1.10
Change in regional allocations in next 12 months (% citations, sovereigns only)



For each region how do you expect your allocation to change in 2022? Sample size: 52.

Figure 1.11
Agreement with statements on China (% citations, sovereigns only)



Do you agree or disagree with the following statements? Sample size: 69.

A wait and see approach

Sovereign investors viewed the prevailing macroeconomic environment in the first half of 2022 as one of immense uncertainty. For many, the future path of economic growth, inflation, and interest rates is highly unpredictable, and exacerbated by conflict in Ukraine.

With the relative attractiveness of asset classes and individual securities highly dependent on the long-term outlook for inflation and interest rates, it is unsurprising that many are adopting a wait and see approach. Their hope is for more visibility before making any major portfolio shifts, while also continuing with the tried and trusted movement into real assets that has successfully helped deliver on their objectives up until now. Consequently, private equity allocations continue to increase, as have those to assets that tend to outperform in inflationary environments such as infrastructure and unlisted real estate.

While we're seeing an understandable breakdown in consensus over anticipated macroeconomic conditions, the potential end of a multi-decade bull run in fixed income markets is creating a new backdrop for sovereigns – and one that they have potentially only just started to get to grips with.

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Theme 2

External expertise and data science help overcome scale challenges

Scale challenges and large private markets allocations lead larger sovereigns to seek external expertise.

Around half of sovereigns engage asset managers in strategic partnerships; one third plan an increase in these arrangements over the next five years, citing ESG and managing beta exposure, sovereign and currency risk as likely areas of focus.

Sovereigns embrace technology with nearly 50% of all sovereigns – and nearly three-quarters of the largest – investing in data science teams in the last five years as they use machine learning and AI to gain an edge in alpha generation and portfolio optimisation.

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Sovereign wealth funds grew total assets under management to over $10 trillion in 2021, up from around $8.4 trillion three years earlier.[4] Their sheer size presents opportunities not available to smaller institutional investors – but also challenges.

The 2019 edition of this study examined several of these challenges, noting the benefits of size come with trade-offs, including operational complexity and dwindling sources of attractive risk-adjusted return. At the same time, governments have expanded the responsibilities of some of the best-resourced funds, including handing them additional mandates in recognition of their strong performance. With many sovereigns recording bumper inflows on the back of high commodity prices, the issue of scale is one that remains firmly top of mind for many funds.

Continuing popularity of private markets puts internalisation trend on pause

Over the last decade this study has observed an increase in sovereigns investing in people and systems to manage select investments internally, often driven by cost and control. This year, several sovereigns of size found themselves once again looking externally for select investments.

A key challenge for large funds is capacity, with sources of alpha in public markets often difficult to deliver at scale. One solution has been an increase in allocations to private markets, which allow sovereigns to put sizeable blocks of capital to work while also capturing long-term returns, illiquidity premia, and diversification benefits. This year private market allocations accounted for 22% of portfolios on average, up from 18% in 2019. Allocations are even higher among the largest funds (AUM > $100 billion) at 27%.

Many larger funds have been developing internal teams focused on private markets to maximise this opportunity, working alongside satellite offices in important local markets. This is a continuation of the challenge noted in the 2020 study, with competition for talent meaning that sovereigns often find it difficult to develop in-house teams able to meet all their private market objectives.

These challenges were compounded by the pandemic, which created additional issues around international recruitment and made it difficult to run local offices in markets that implemented (and in some cases still retain) strict travel and quarantine requirements. As a result, the growth in allocations to real assets is pushing larger SWFs to increasingly rely on external managers to deliver on their private market objectives. Around a third of the largest funds said that they were looking to make greater use of external managers in private equity and real estate, while just over a quarter were looking to do the same in infrastructure **(figure 2.1)**.

This study has previously noted how increased demand for illiquid assets such as property and infrastructure has generally not been met with equivalent supply. This has led to intense competition for the most attractive assets and increased the importance of sourcing the right deals across a range of territories and in both primary and secondary markets. Sovereigns noted that their own internal teams are often specialised (by geography and/or industry), and that large global managers can often unearth a broader opportunity set.

Figure 2.1
Plans for externalisation or internalisation in each asset class (% citations, sovereigns only)

		Total	Small (<$25bn)	Medium ($25-100bn)	Large (>$100bn)
Fixed income	Externalisation	8%	7%	0%	11%
	Internalisation	15%	13%	17%	17%
Equities	Externalisation	10%	0%	11%	18%
	Internalisation	15%	8%	22%	18%
Private equity	Externalisation	24%	0%	29%	33%
	Internalisation	9%	0%	14%	11%
Real estate	Externalisation	21%	0%	22%	32%
	Internalisation	13%	0%	22%	16%
Infrastructure	Externalisation	16%	0%	14%	26%
	Internalisation	8%	0%	0%	16%

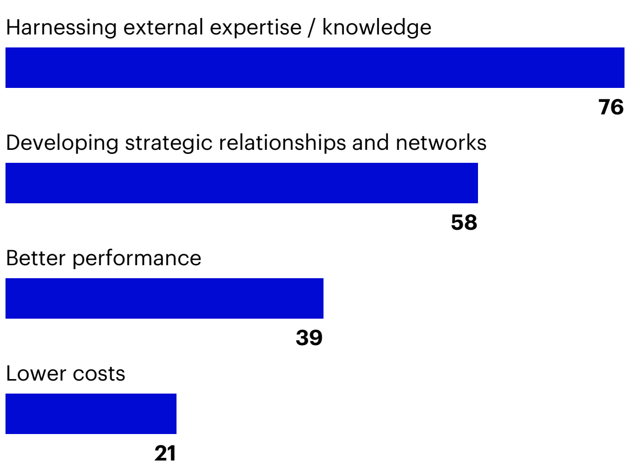
For each asset class are you looking to manage more assets internally or more assets externally? Sample size: 39.

[4] Source: Global SWF Global Track at https://globalswf.com/

As well as relying on external managers to deliver deal-flow there was also recognition of the expertise that external managers can bring **(figure 2.2)**. Indeed, some funds noted that they had struggled to manage private market assets outside of their domestic market and were backtracking on previous moves to internalise. One Middle East based development sovereign explains: “Many funds are realising they are not good at operating assets and are looking to rely more on players that have a better track record. When we have made an investment as the majority shareholder, we have been forced to operate the business and that is something that has historically not worked well, so we are moving away from that model and trying to leave all the management to General Partners (GPs).”

Some 39% of respondents said that the motivation for this was better performance, linked to greater on the ground knowledge, and 21% cited lower costs, as external managers allow funds to forego large and costly internal teams **(figure 2.2)**.

Figure 2.2
Drivers of externalisation (% citations, sovereigns only)



What are the main drivers for managing more assets externally? Sample size: 38.

Scale and unfamiliar territory drive uptake of asset manager partnerships

In response to these pressures more than half of sovereign investors have developed strategic partnerships with third-party asset managers, rising to more than nine in ten for investment sovereigns **(figure 2.3)**.

There is recognition among sovereign funds that developing strategic relationships with a small number (typically two to three) of global asset managers can play an important role in helping them to meet their long-term objectives. Sovereigns noted the complexity and operational risk of managing many mandates and highlighted the benefits of consolidating towards a smaller number of trusted partners.

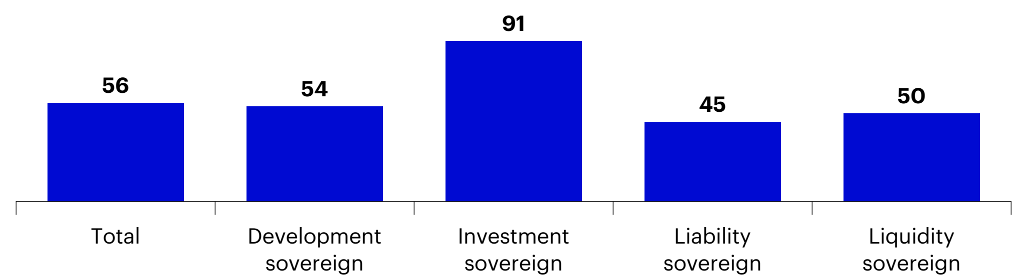
Such relationships rely on managers having a breadth of investment capabilities as well as scale and global expertise across different asset classes. These partnerships were seen as particularly beneficial for dealing with portfolio level challenges, including ESG, managing beta exposure and managing sovereign and currency risk. Several noted the importance of managing sovereign risk at a portfolio level had been highlighted by the invasion of Ukraine and they often believed asset managers were well placed to deliver solutions and expertise in this area. Similarly, some sovereigns revealed that their ESG framework had been developed in collaboration with an asset manager, and that familiarity with their portfolio built up over several years of partnership was an important aspect of this process.

Strong long-term partnerships were also viewed as facilitating knowledge-sharing in both directions as well as delivering access to the best deals. One development sovereign in the Middle East said: “We are building relationships with asset managers. This is to generate better returns, but also when they have good opportunities for direct investments that require a bigger ticket size, we have the relationships in place.” Such relationships generally take time to establish and often begin with an investment in a manager’s pooled fund. “Fund investments are often important for enabling co-investments, so you need to develop those types of strategic relationships to get that access,” said a Middle East-based investment sovereign.

The expertise of asset managers in new or challenging regions was also cited as a driver, as one Asia-based investment sovereign explained: “We look to develop strategic partnerships in regions where we have limited experience. For example, our office in India is relatively small compared to an external manager’s so there’s a lot that our internal managers can learn from them”.

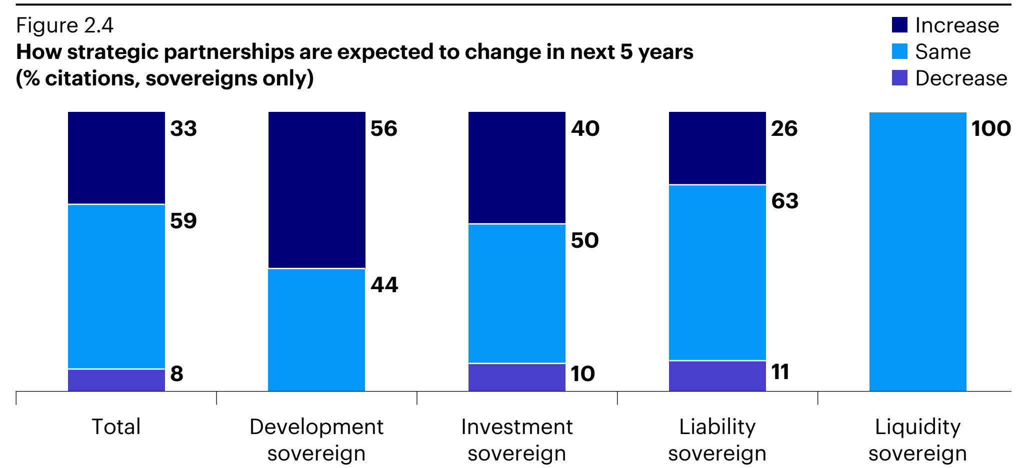
Some 33% of sovereign funds expect their use of such partnerships to increase over the next five years **(figure 2.4)**, rising to 40% for investment sovereigns and 56% of development sovereigns. The latter have traditionally held portfolios made up primarily of direct strategic investments managed internally. However, over the past 10 years we have tracked how these funds have diversified into new asset classes as their remit has widened. This has included greater use of externally managed private equity and venture capital, with the lead role taken by development sovereigns often helping to facilitate the development of a more active local private equity/VC industry and therefore also encouraging capital flows from other investors.

Figure 2.3
Have strategic partnerships with third-party asset managers
(% citations, sovereigns only)



Do you have any strategic partnerships with third-party asset managers? Sample size: 55.

Figure 2.4
How strategic partnerships are expected to change in next 5 years
(% citations, sovereigns only)



How do you expect these strategic partnerships to change in the next 5 years? Sample size: 48.

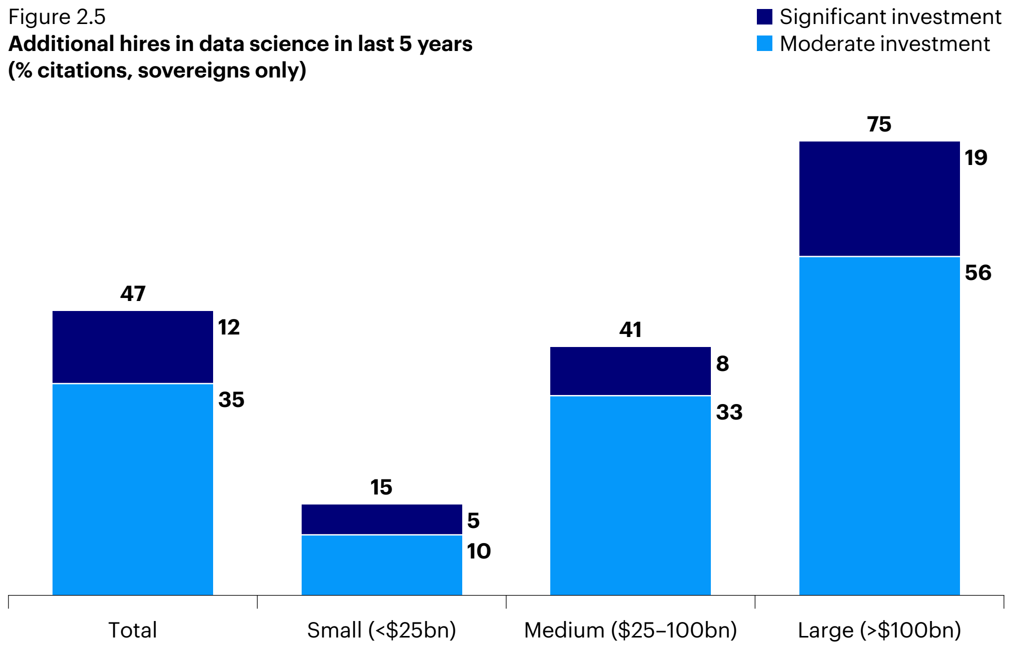
Rise of the machines: larger sovereigns race to embrace data science

Some of the largest, most high-profile sovereign funds are notable early adopters of data science. Among this group of investors there is recognition that emerging technologies, including machine learning and artificial intelligence, have the potential to offer a significant competitive advantage. Some 40% of the largest sovereigns are making use of artificial intelligence or machine learning **(figure 2.6)** and nearly half of sovereign funds have invested in data science teams in the last five years **(figure 2.5)**. This has included several high-profile recruitments from academia and quant-based hedge funds, as well as investment in data sets and the necessary associated services such as cloud storage and cybersecurity.

One very large European liability sovereign has focused recruitment activities in this way, stating: "We prioritise people who show they can think digitally and bring a data focus to the job, whether that be in workflow and administration or investments. We also developed a training programme for current staff".

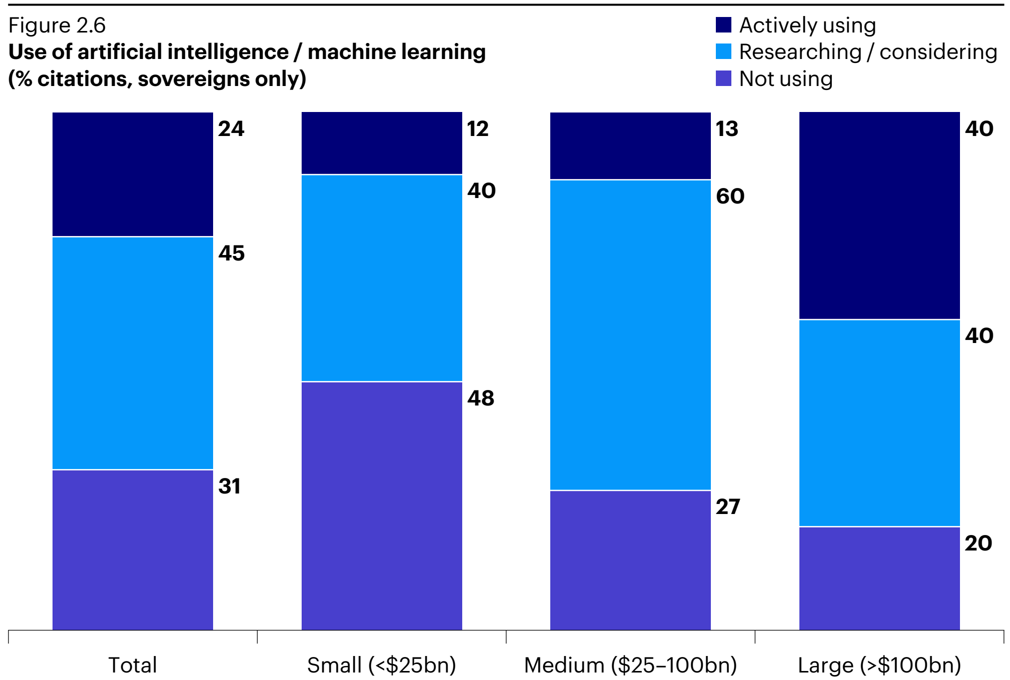
Sovereigns were most likely to see a role for data science in developing the sophistication of their data analysis and research **(figure 2.7, page 18)**. Developing a framework for better forecasting and valuation was identified as a key goal and was also seen as a potential solution to the ballooning size of research teams. For example, several funds sought to develop machine learning tools for calculating intrinsic values from company financial statements. It was noted that such a system can be automatically updated as new data is released and offers significant efficiencies on existing bottom-up research processes (that are often largely manual) as well as speedier execution of investment decisions. "Within our region over staffing is a challenge and there are lots of inefficiencies. AI is one of the levers we can use operationally to improve this," said a development sovereign based in the Middle East.

Figure 2.5
Additional hires in data science in last 5 years (% citations, sovereigns only)



To what extent have you made additional hires in data science / AI in the past 5 years? Sample size: 60.

Figure 2.6
Use of artificial intelligence / machine learning (% citations, sovereigns only)



Are you using AI / machine learning in your own investment processes? Sample size: 70.

Sovereigns also saw data science, including natural language processing, as a tool for alpha generation. Several highlighted a disparity in alpha opportunities in emerging and developed markets, suggesting that in relatively more efficient developed markets it was generally more difficult to outperform by relying on fundamental research. Here sovereigns were exploring opportunities to implement machine learning in alternative data sets, such as credit card transactions, social media comments, company earnings calls or satellite images to help identify idiosyncratic alpha opportunities. "We're beginning to look at how we can use AI to analyse company reports and slice and dice or absorb that information" said a development sovereign based in the West.

Data science is also playing a significant role in risk optimisation and the development of portfolios with the strongest risk-adjusted return profile **(figure 2.7, page 18)**. In last year's study we highlighted that market risk (or beta risk) was seen as the most significant risk that sovereign funds must contend with, and that its importance had grown due to the market volatility witnessed during the pandemic and beyond. Capturing the desired level of beta exposure across multiple asset classes at scale is something that many funds continue to grapple with and something that data science is seen as particularly well suited to address.

This includes analysing the interaction and correlation between asset classes, geographies and individual securities as well as modelling beta exposure and the impact of different market scenarios. Sovereigns also pointed to the ability of data science to identify emerging risks in real time and the establishment of automatic controls that could act independently to counter risks as they developed. Some large liability sovereigns noted that they manage a number of different client portfolios with different objectives and risk appetites and that these systems could be used across these different mandates, helping to justify the initial outlay.

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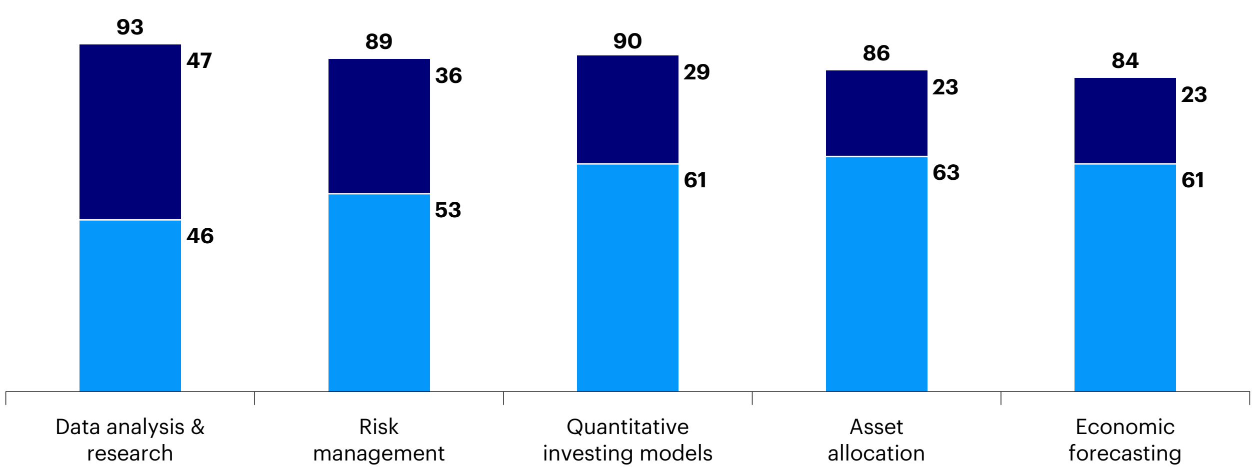
Another area data science is assisting sovereigns in is extracting information to support both their ESG investment implementation and decision-making and reporting and disclosure requirements. As this study has reported frequently over the years, accessing consistent, high-quality data is a major challenge for sovereigns in their ESG programmes. This year several sovereigns spoke of their investments in AI-driven technology that discover, process, and identify key metrics from a litany of structured and unstructured data to inform their decisions on how companies' activities aligned with their ESG policies. One European sovereign mentioned, "We were sick of complaining about it like everyone else, so we hired data scientists to sit within investment teams and spoke to peers and consultants to discover what leading programmes and processes were out there. We are happy with the results so far, if not the cost!"

Figure 2.7
Areas where sovereigns see a role for artificial intelligence / machine learning (% citations, sovereigns only)



In which areas do you see a role for AI / machine learning in your organisation? Sample size: 59.

Quant based approach is a solution to scale challenges for some

The opportunities afforded by innovations in data science were being embraced, to a greater or lesser extent, by many funds in this year's survey. However, a smaller number of funds were going further and looking to transition large parts of their portfolio to a more quant-based approach.

This was seen as a potential solution to delivering favourable risk-adjusted returns at scale in listed markets. Several funds claimed to be learning from their quant-based mandates with external managers and had been impressed by the efficiency of these operations. One Asia-based investment sovereign explained "when we look at our external managers with an advanced quant mandate, they don't need many staff in the team because everything is programmed. You don't need a huge team of fundamental research analysts; you just need a team of programmers and mathematicians."

This approach was seen as attractive in terms of ongoing operating expenses as well as offering future scalability: "If you are running $10 billion or $100 billion, you're running the same strategy. If your assets increase tenfold, the number of staff does not increase tenfold as it might with a fundamental bottom-up approach," said one Middle East-based investment sovereign. Such a strategy was also seen as delivering benefits in terms of risk management and diversification, with a quant-based portfolio allowing for control over beta exposure as well as control over other investment factors such as value, momentum and volatility.

The rapid rotation in factor performance over the past 12 months had highlighted to some the importance of taking these alternative investment factors into consideration and demonstrated the role that a quant approach could play in risk management. Some funds that had been overweight growth stocks during the rotation noted that they would be looking to seek a more balanced exposure to different factors, and that moving to more of a factor-based approach would help them identify and control for these exposures.

The challenge of managing risk in a market when fixed income is not playing its usual risk-reducing role was also seen as a spur to a more quant-based approach, as one development sovereign based in the West explained: "We are looking at a systematic approach to try to get something uncorrelated into the portfolio. We're removing fixed income and looking for something else that can try and add risk protection to substitute for that."

A quant-based approach was also seen as useful for integrating ESG considerations into a portfolio. Sovereign investors noted that a quant-based approach could be tailored using ESG metrics with, for example, the weightings to underlying companies or sectors adjusted based on carbon data or ESG scores. Sovereigns that had introduced or were considering this approach noted that it had the advantage of offering a consistent and defendable methodology that could be applied across different parts of a portfolio. It was also viewed as highly scalable and adaptable as ESG data sources improve and become more available across different geographies and asset classes.

> **If your assets increase tenfold, the number of staff does not increase tenfold as it might with a fundamental bottom-up approach.**
>
> **Investment sovereign**
> Middle East

Operating smarter

Sovereigns have realised that growing in terms of assets under management does not necessarily require growing headcount and that increased operational complexity and internalisation of asset classes can in fact sometimes be a barrier to strong performance. Solutions that help overcome capacity constraints and allow for alpha generation at scale are therefore increasingly being embraced. This includes greater use of external management, data science and, for some, a move to a more quantitative approach.

With many funds set to continue growing over coming years on the back of inflows, consolidation and increased remits, these and other solutions are likely to be needed if sovereign funds are to deliver top-tier performance to match their top-tier size.

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Theme 3

Digital assets: a disruptive technology gathering momentum

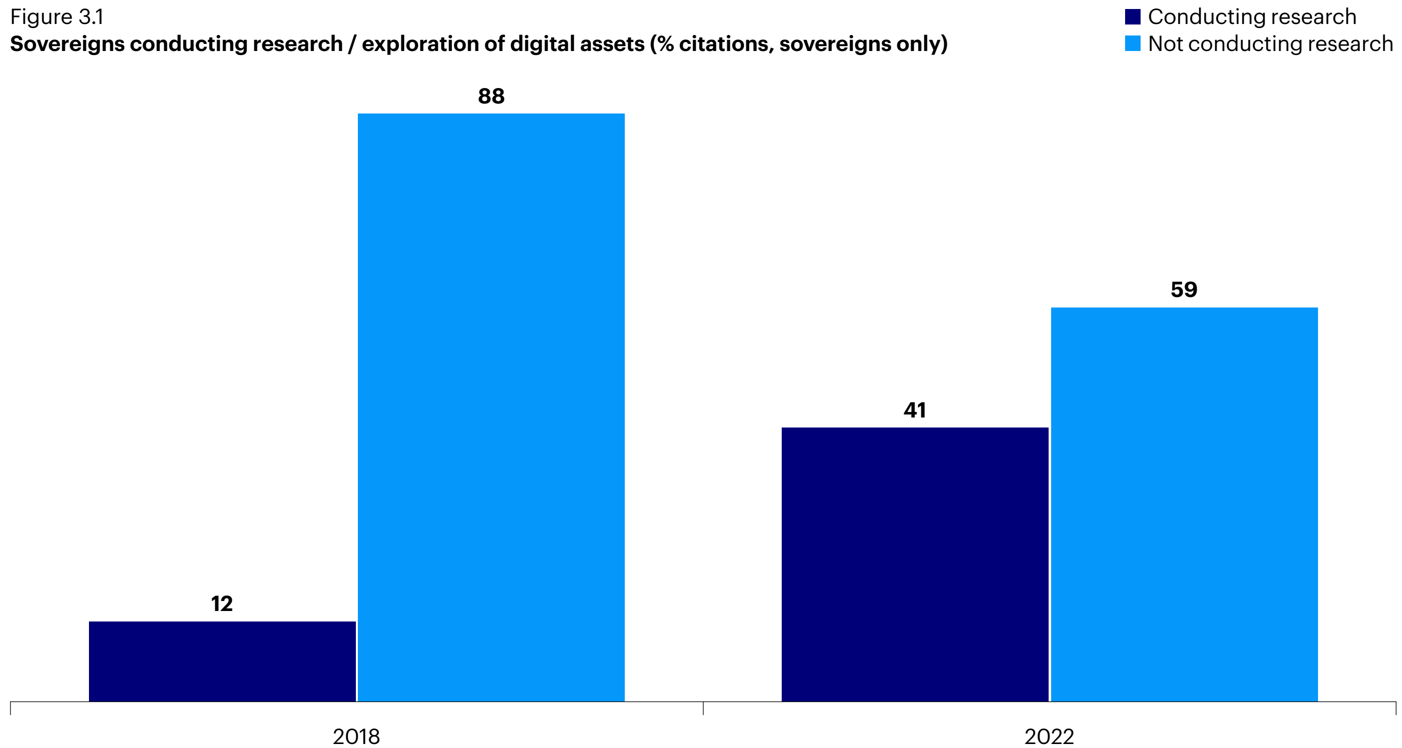
A growing number of sovereign wealth funds are conducting research into digital assets but are taking a conservative approach to investment due to volatility and regulatory pressures.

Direct investments into companies involved in the wider digital asset ecosystem is the most desired approach to gaining exposure, with several sovereigns already involved in private equity transactions.

Central bank digital currencies (CBDCs) are being heavily researched, and many sovereigns and central banks see these as a threat to the long-term viability of existing cryptocurrencies.

Digital assets have emerged from very early adoption by a small group of individuals, to an asset class with a market capitalisation equivalent to a medium sized stock exchange. The growing importance of the asset class, and the considerable gains made by many, albeit with significant volatility, has captured attention and is generating discussion among retail and institutional investors alike as to whether digital assets are an investment opportunity.

Figure 3.1
Sovereigns conducting research / exploration of digital assets (% citations, sovereigns only)



Are you currently undertaking any research / exploration of digital assets? Sample size: 58.

Not so early: awareness and interest to evaluation

Despite the many press articles anticipating adoption of digital assets by institutional investors, this is not what we hear from most sovereign investors in this year's study. While there is broad support and appreciation for the potential role of digital assets and blockchain technology in the wider financial system, for most respondents' digital assets are not yet considered investable.

However, research into digital assets is increasing. When we first asked sovereign wealth funds about digital assets and cryptocurrencies in the 2018 edition of this study, only 12% said they were conducting research into the area; this has risen sharply to 41% of sovereigns in 2022 **(figure 3.1)**. This research has focused both on the assets themselves (such as cryptocurrencies) and the technology and infrastructure behind them, which several consider at the forefront of innovation. Development and Investment sovereigns were much more likely to be involved in digital asset research, consistent with their higher risk tolerance.

Interest in the blockchain infrastructure opportunity rises

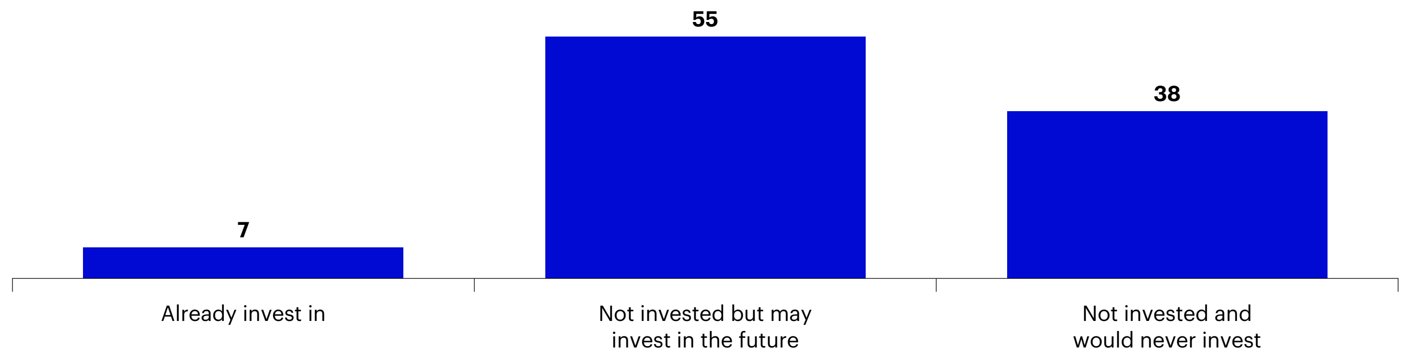
While there is undoubted interest, many respondents suggested that conservative investment committees were currently unlikely to approve investment in digital assets. Sovereign funds were instead more bullish about direct investment in the underlying technology via private equity and, where they have allocations, venture capital investments that fit within existing frameworks. There is also some appetite for products, such as ETFs, investing in listed blockchain companies or even physical cryptocurrency ETFs.

Some 7% of sovereigns already have some exposure to the digital asset ecosystem through direct investments in the underlying blockchain companies and a further 55% would consider investing in the industry if the right opportunity were to present itself **(figure 3.2)**.

A handful of sovereigns see themselves as being quite advanced in this space, but the general perception is that more of their peers are investing in digital assets than appears to be the case **(figure 3.3)**. That said, there is some belief that this could be one of the next big growth sectors and sovereigns could be in line for significant gains by getting involved at an early stage of its development. This was summed up nicely by one liability sovereign based in the West: "This is something we will spend a lot more time on in 2022. We don't want to be the fund that is left behind. Even if we don't end up doing anything, we still want to understand how it will impact traditional markets."

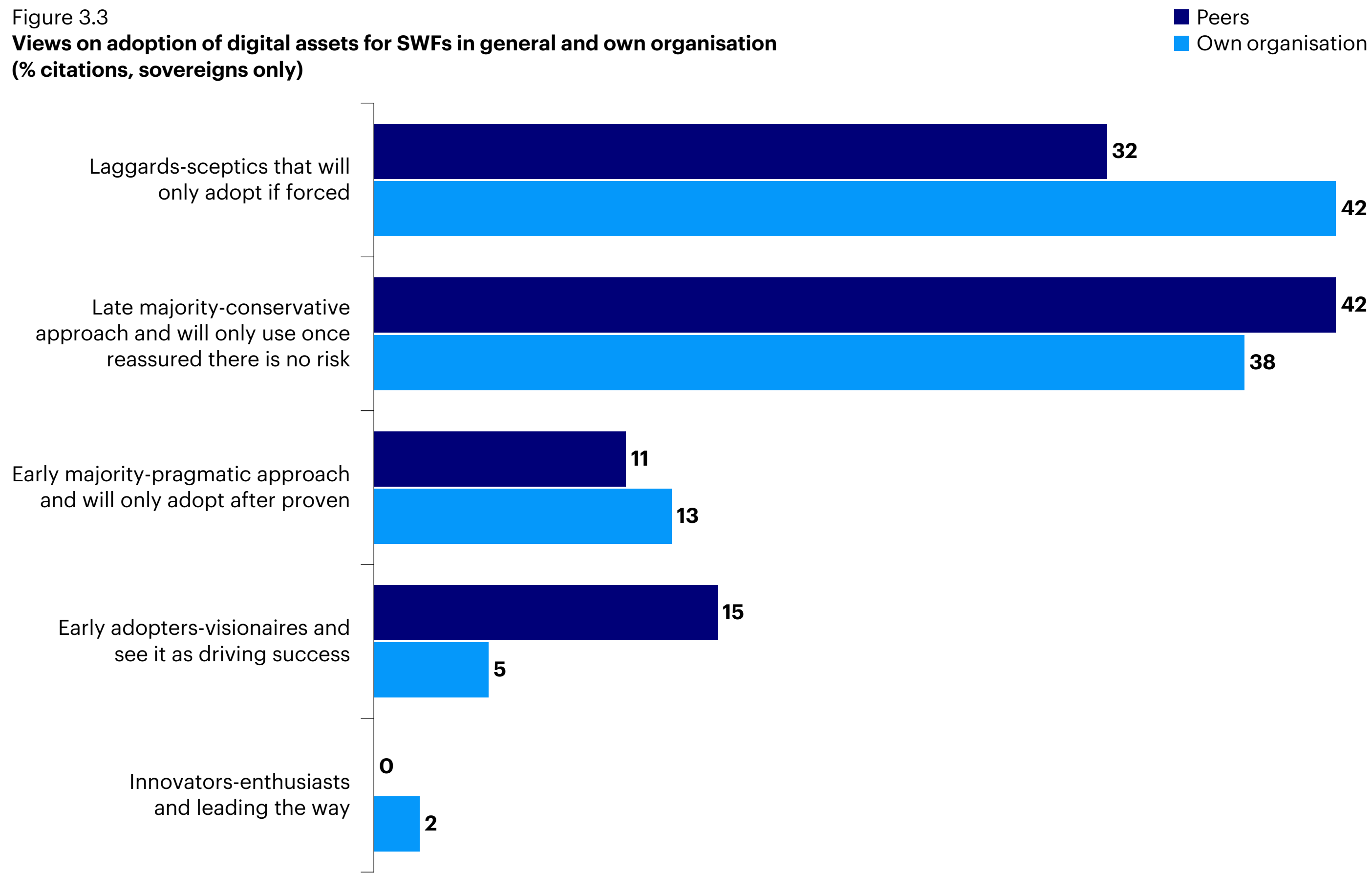
> **We don't want to be the fund that is left behind. Even if we don't do anything we still want to understand how it will impact traditional markets.**
>
> **Liability sovereign**
> West

Figure 3.2
Direct investments in digital assets or underlying companies (% citations, sovereigns only)



Are you currently invested in digital assets? Sample size: 61.

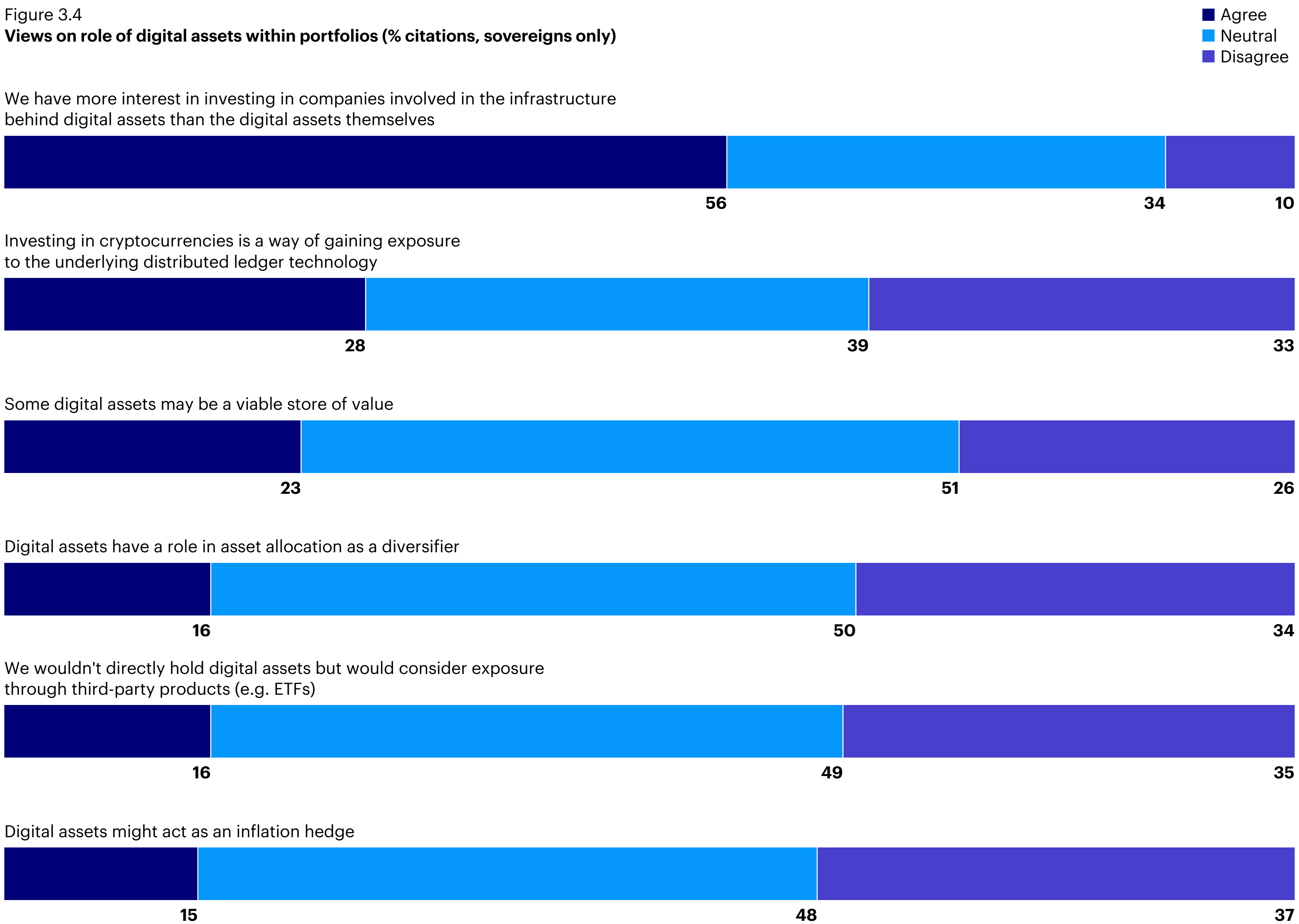
Figure 3.3
Views on adoption of digital assets for SWFs in general and own organisation (% citations, sovereigns only)



Where do you think sovereign wealth funds are in the adoption of digital assets as an asset class and/or in portfolios? Where is your own organisation on this scale? Sample size: 55.

Figure 3.4

Views on role of digital assets within portfolios (% citations, sovereigns only)



To what extent do you agree with the following statements? Sample size: 61.

For many, the underlying blockchain technology is seen as having a profound impact and one that carries a real investment case. More than half saw investing in digital asset infrastructure as the largest growth opportunity **(figure 3.4)** and offering the best chance of investment returns. These investments are viewed in the same vein as other early-stage venture capital investments in disruptive technology.

In contrast, there were mixed views from sovereign funds on the role that digital assets themselves could play in portfolios with few finding merit in their potential as a store of value, diversifier, or inflation hedge **(figure 3.4)**.

> **The largest and most significant hurdle to investing in digital assets is their volatility.**
>
> **Investment sovereign**
> Asia

Volatility a major barrier to investment committees

Digital assets are generally seen as currently too volatile to play a significant role in investment allocations **(figure 3.5)**, with price speculation considered the major contributor. Even modelled as a small percentage they were seen as contributing too high levels of volatility to a portfolio, making it very challenging to get past investment committees and onto the fund's mandate.

As one Asia-based sovereign commented, "Their volatility is indicative of a highly speculative asset; price adjustments can be 25% to 75% and in very short timeframes. Investment committees are generally conservative, so combine that with uncertainty of how this new technology works, its risks, unclear value creation and unconventional use cases well, that's a lot of work and education to contemplate for what might in the end be a very small allocation based on its volatility alone. It's an emerging technology, so there's precedent there – if network effects take, then for some that volatility will have been worth it in terms of value, but it's unclear that will happen, along what timeline, and at what cost to the environment?"

Energy intensiveness was frequently cited as a challenge to adoption of digital assets **(figure 3.5)** due to potential conflict with ESG considerations and the adoption of carbon commitments including net zero pledges. "Volatility is the largest and most significant hurdle to investing in digital assets and so is their energy consumption. Since sustainability is central to our investment decisions, the environmental aspect presents a challenge for us," said another Asian investment sovereign.

Among those who did not believe environmental concerns was a challenge to adoption, was one North American sovereign who noted, "the world's energy consumption has been steadily increasing for as long as we have been keeping a record of it, before cryptocurrencies or any other recent technological development. There is a line of course but attempts to selectively slow consumption is an ineffective distraction. Transitioning to the generation and distribution of cleaner energy sources is where governments, regulators, and the wider discourse should be focused, and perhaps agreeing a price for carbon, which probably isn't a very popular view."

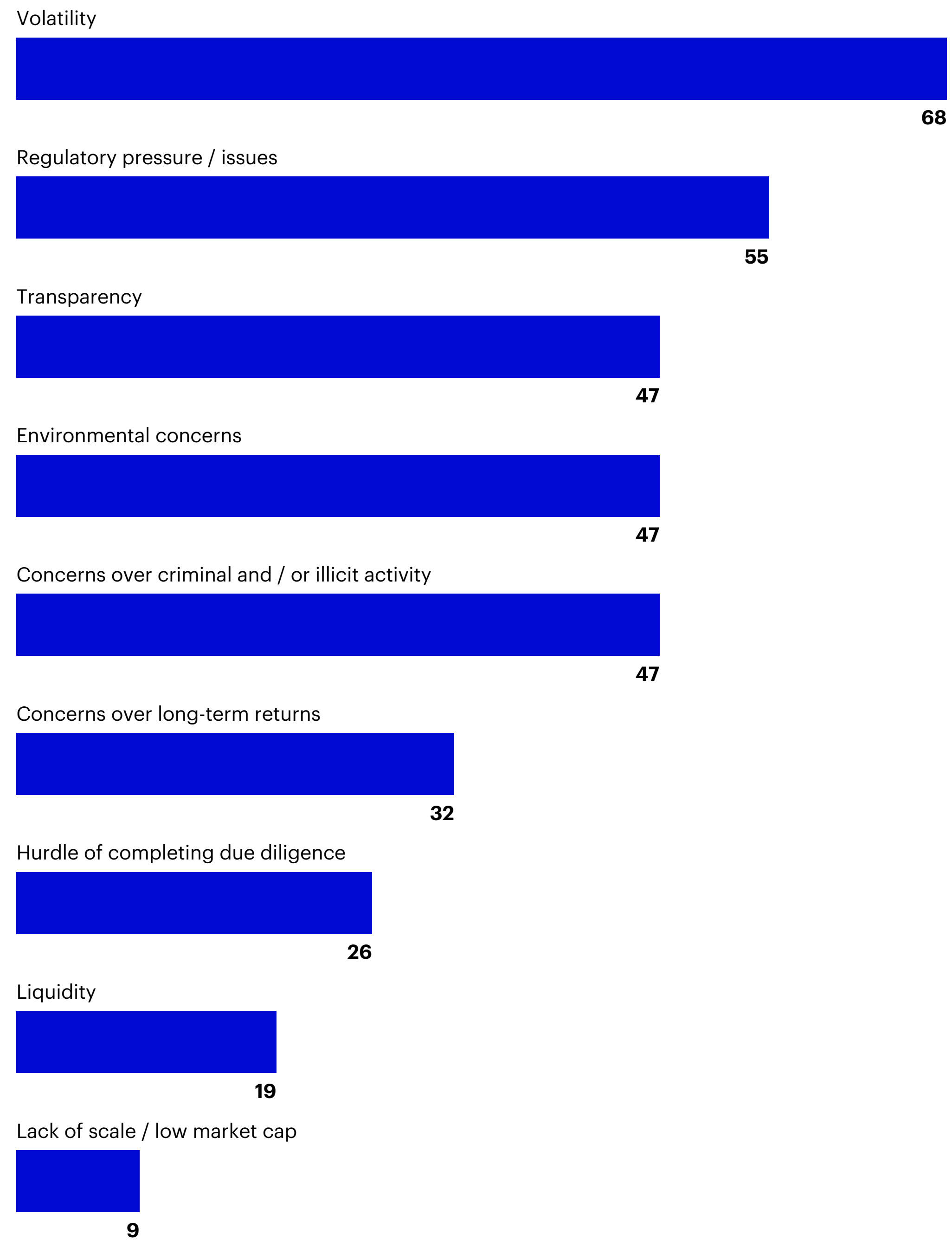
Regulation of digital assets is also a sticking point. "There are material regulatory risks such as the potential for governments to ban or limit the use of decentralised cryptocurrency for transactional purposes and – not entirely independent of that – the fact transacting on the Bitcoin chain is expensive, energy intensive and slow, makes it and similar cryptocurrencies unsuitable as a medium of exchange at this time," according to one APAC liability sovereign.

In countries where governments and regulators have adopted a hard-line on digital asset investment from the general public, it was seen as difficult from an optics point of view for the sovereign wealth fund to then be investing into the asset or associated companies.

As more concrete use cases emerge, some believe that price discovery could mature and that this would open more scope for investment by institutional investors and sovereigns. "It's a good innovation and it's not overhyped as a technology. It's a great innovation for humanity in general but overhyping of the prices is an issue," said a Middle East-based investment sovereign.

> **It's a good innovation and it's not overhyped as a technology... but overhyping of the prices is an issue.**
>
> **Investment sovereign**
> Middle East

Figure 3.5
Barriers to investing in digital assets (% citations, sovereigns only)



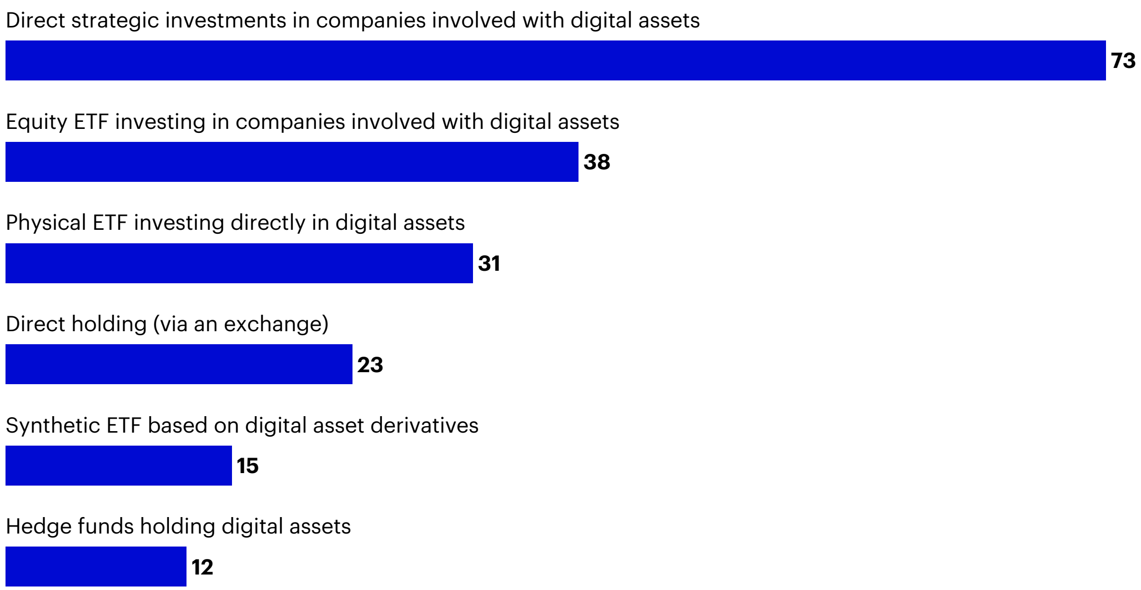
What are the barriers to investing in digital assets? Sample size: 47.

Digital assets could play a role in some portfolios

When presented with the hypothetical scenario of increasing exposure to digital assets in their portfolios, a direct strategic investment into associated companies was seen as the most desired approach **(figure 3.6)**. Sovereigns would also consider access through blockchain ETFs investing in digital asset-related companies. Direct exposure via an exchange was generally less desired (although nearly a quarter suggested they would consider this route), with indirect access through ETFs seen as more viable.

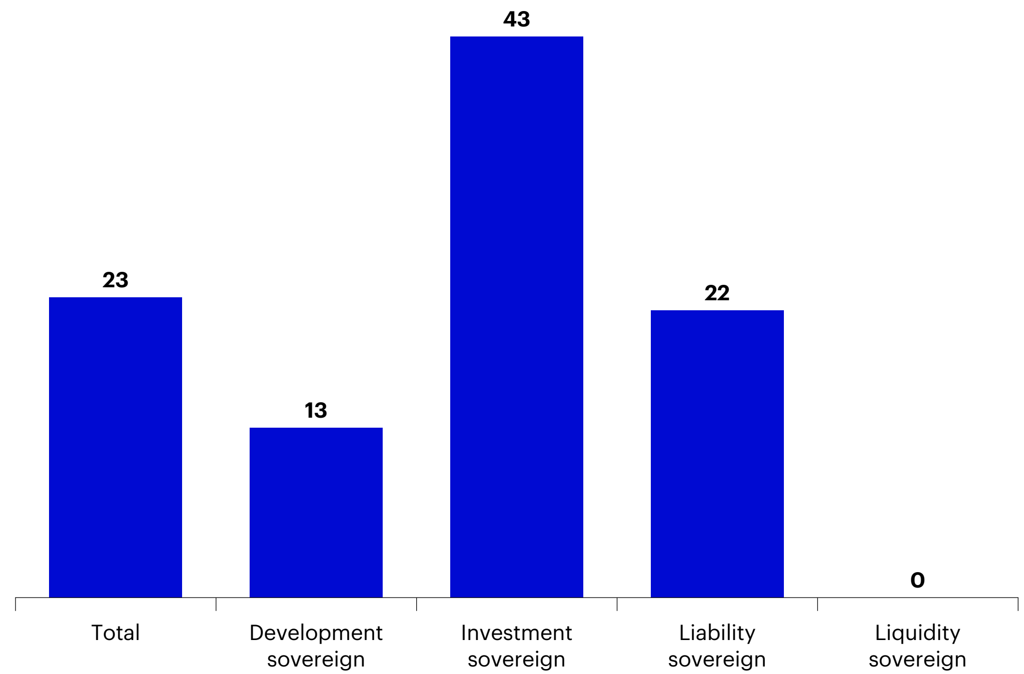
Investment sovereigns were the most open to direct holdings via an exchange, with 43% saying that they would consider such an investment **(figure 3.7)**. This is a view that fits with their long investment horizons and ability to handle high levels of volatility. It is amongst these funds where we are most likely to see the greatest direct involvement in coming years.

Figure 3.6
Best way to access digital assets within portfolio (% citations, sovereigns only)



What do you think would be the best way to access digital assets within your portfolio (assuming these products existed)? Sample size: 26.

Figure 3.7
Open to investing directly via an exchange (% citations, sovereigns only)



What do you think would be the best way to access digital assets within your portfolio (assuming these products existed)? Sample size: 26.

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Central banks believe CBDCs could limit the viability of private cryptocurrencies

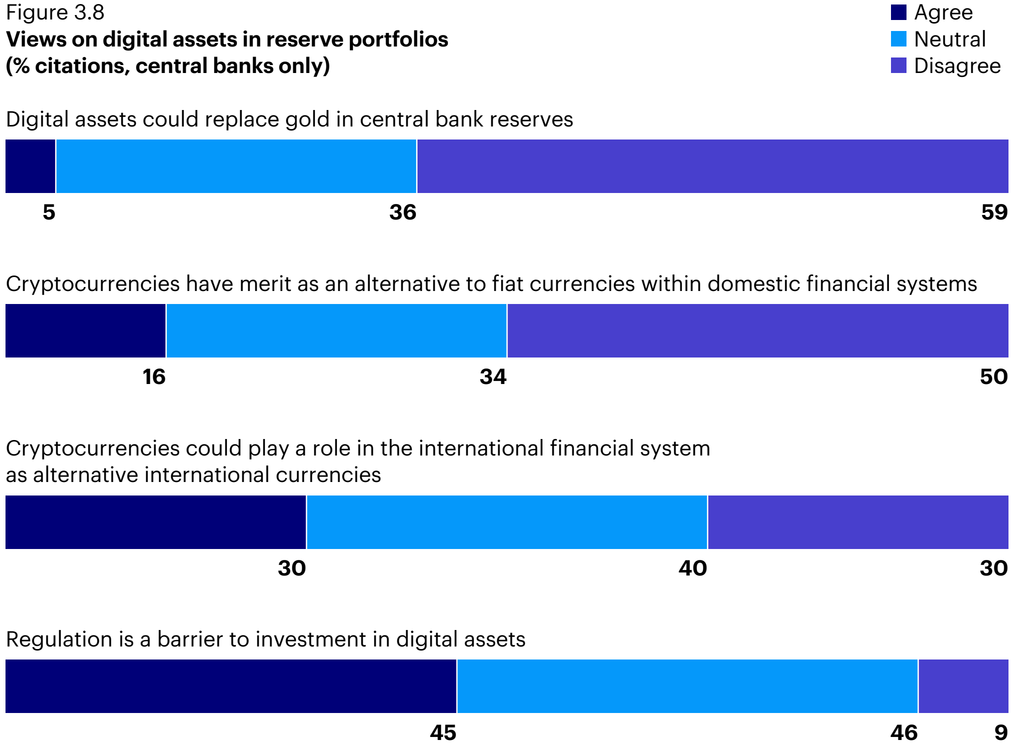
Central banks were generally less keen on digital asset adoption than sovereigns. Much has been made of digital assets potentially replacing gold as a store of value, but this is a view that was widely rejected by central banks. There was some support for their role as an alternative to fiat currencies although regulation was seen as a significant barrier to the adoption of digital assets as part of reserves **(figure 3.8)**.

Both sovereigns and central banks see existing cryptocurrencies as potentially threatened by the launch of central bank digital currencies, albeit with banks much more likely to agree with this sentiment **(figure 3.9)**. Despite outlawing private cryptocurrencies in 2021 after first prohibiting financial institutions from transacting in them and then banning domestic mining, China is leading on CBDCs having soft-launched its digital Renminbi across several cities and regions. Its perceived lead on CBDC design and launch is having an effect on currency allocations in reserve portfolios, further contributing to the growing allocations to Renminbi. "China is one of the big markets on an international level and its growing interest and stance on CBDCs has played some part in our decision to increase Renminbi allocations," said one Asian central bank.

Most central banks are still deep in the research and development stage of their digital currency journeys and are therefore still assessing the real-world applications of retail or wholesale CBDCs. As with the wider views on general blockchain technology, greater efficiency in payment systems was seen as the key driver of CBDC adoption **(figure 3.10, page 26)**. Enhanced financial inclusion was also recognised as a supportive use case for CBDCs, particularly in emerging markets where large proportions of the population are underbanked or unbanked. A European central bank explained, "There is little doubt that a CBDC would make the transactions much more efficient, and much less expensive. The financial system loses a lot of money to transaction costs, and CBDC would help to reduce these losses."

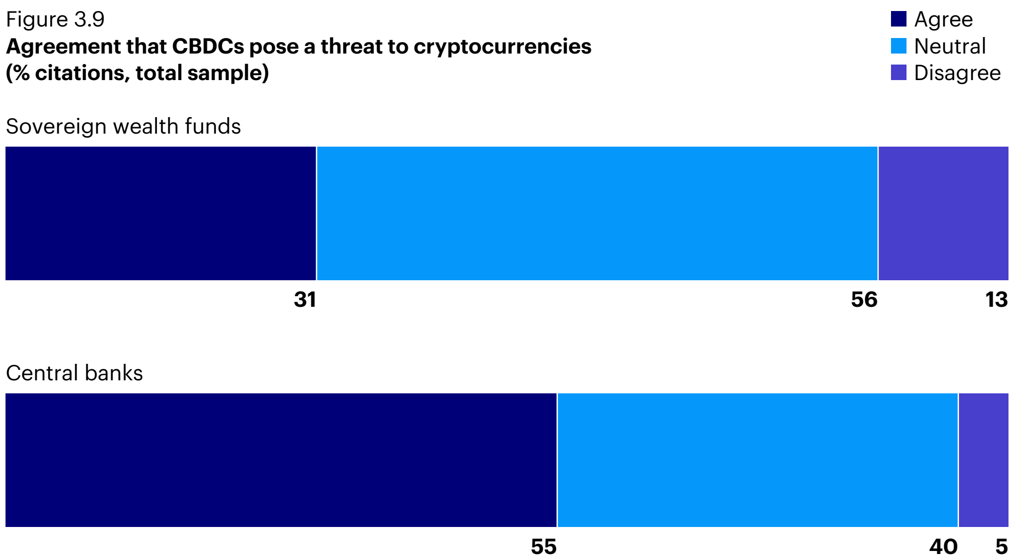
Cybersecurity and technology challenges top the list of risks **(figure 3.11, page 26)**. Disintermediation of commercial banks was also widely cited as a risk – particularly in those countries where CBDC projects are still in the research phase. It was also seen as unclear how CBDCs would be accessed by a retail audience. Ultimately, CBDC launches are not on the near-term agenda for most developed nations as they are of the opinion many hurdles must be overcome before a CBDC could be designed and launched.

Figure 3.8
Views on digital assets in reserve portfolios (% citations, central banks only)



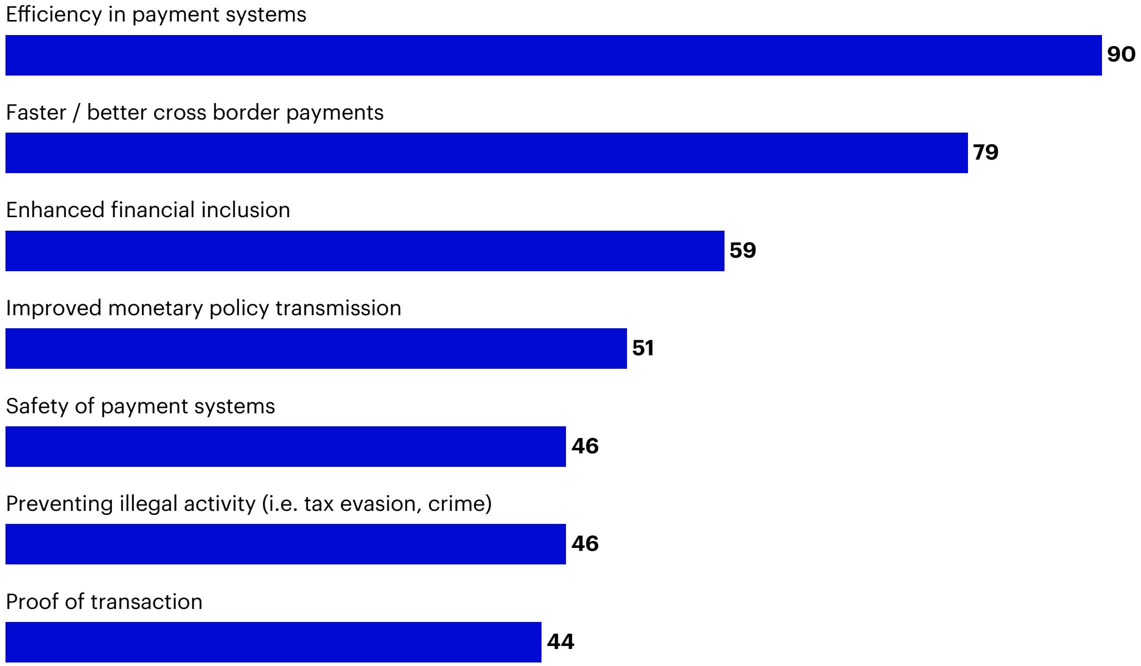
To what extent do you agree with the following statements? Sample size: 44.

Figure 3.9
Agreement that CBDCs pose a threat to cryptocurrencies (% citations, total sample)



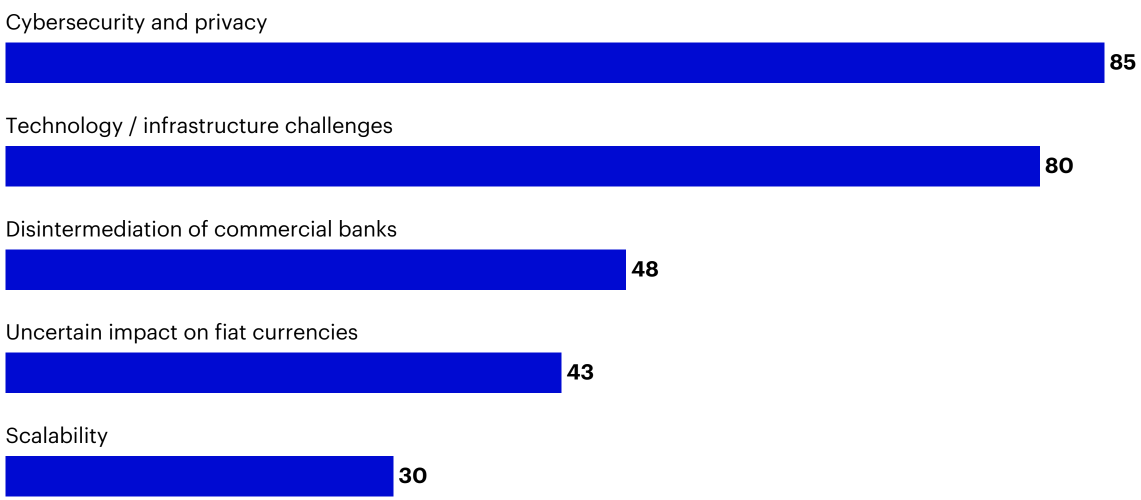
To what extent do you agree with the following statement: Cryptocurrencies such as bitcoin are threatened by the existence of central bank digital currencies (CBDCs)? Sample size: 104.

Figure 3.10
Benefits of CBDCs (% citations, central banks only)



What do you see as the main benefits of launching a CBDC? Sample size: 39.

Figure 3.11
Risks of CBDCs (% citations, central banks only)



What do you see as the main risks of launching a CBDC? Sample size: 40.

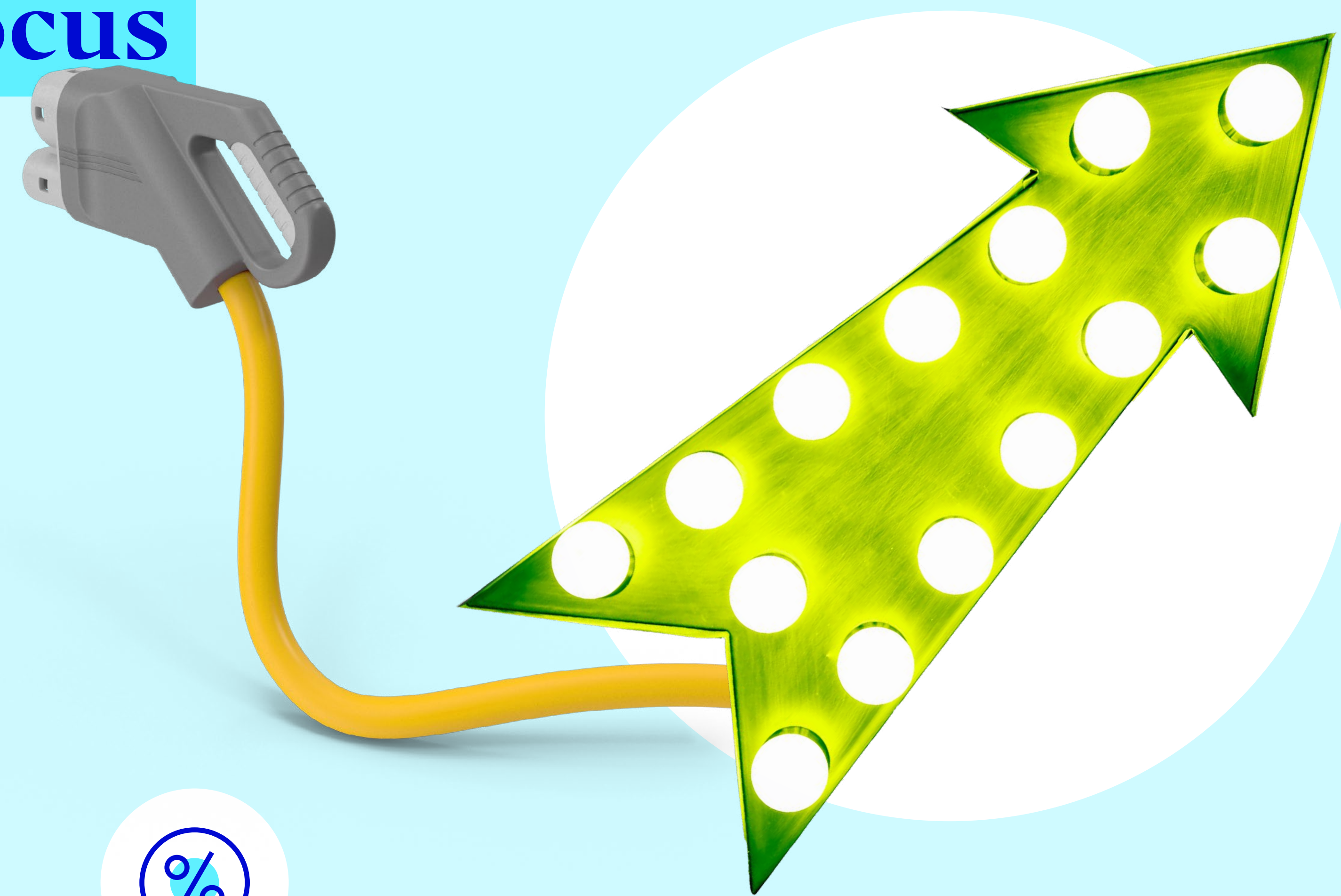
The future of sovereigns and digital assets

With a number of central banks likely to launch their own digital currencies over the next few years, it is unclear what impact this will have on existing private cryptocurrencies. Sovereigns will be staying keenly abreast of the developments in this space, particularly of blockchain technologies and their real-world applications that could have a meaningful impact on the global financial system. In any case, these increased efforts to research and understand digital assets show green shoots of optimism for wider adoption within sovereign wealth funds' portfolios.

> **There is little doubt that a CBDC would make the transactions much more efficient, and much less expensive.**
>
> **Central bank**
> West

Theme 4

Rising stakes in ESG as sovereigns focus on impact



ESG integration continues to rise: 75% of sovereign wealth funds and 47% of central banks have adopted a formal ESG policy, up from 46% and 11% in 2017.

Impact investing is widespread and growing; development sovereigns are leading the way with a focus on using impact strategies to fund the transition towards low carbon energy.

ESG considerations have driven 40% of sovereign funds to increase their active allocations, with the invasion of Ukraine highlighting the limitations of implementing ESG via passive strategies.

Over the past five years, this study has tracked a rapid uptick in ESG adoption by both central banks and sovereign wealth funds.

In 2017, 11% of central banks and 46% of sovereign wealth funds had an ESG policy in place. This year that number stands at 47% and 75% respectively, with a further increase on the previous year **(figure 4.1)**.

With three-quarters of sovereign funds now incorporating ESG, many that had previously been resistant have come on board. For some, the reputational risk of swimming against the tide has been a significant driver. As one development sovereign based in the Middle East explained: "Historically, we have been a very low-profile shareholder. However, the regulatory environment has prompted us to take a position, and ESG is becoming a very big deal. If you don't provide a good story to tell the public, the public creates its own narrative, and this narrative is often wrong."

> When we talk about impact, we don't want screens or cheap tilts. We want to be a leader investing in the energy transition.
>
> **Development sovereign**
> West

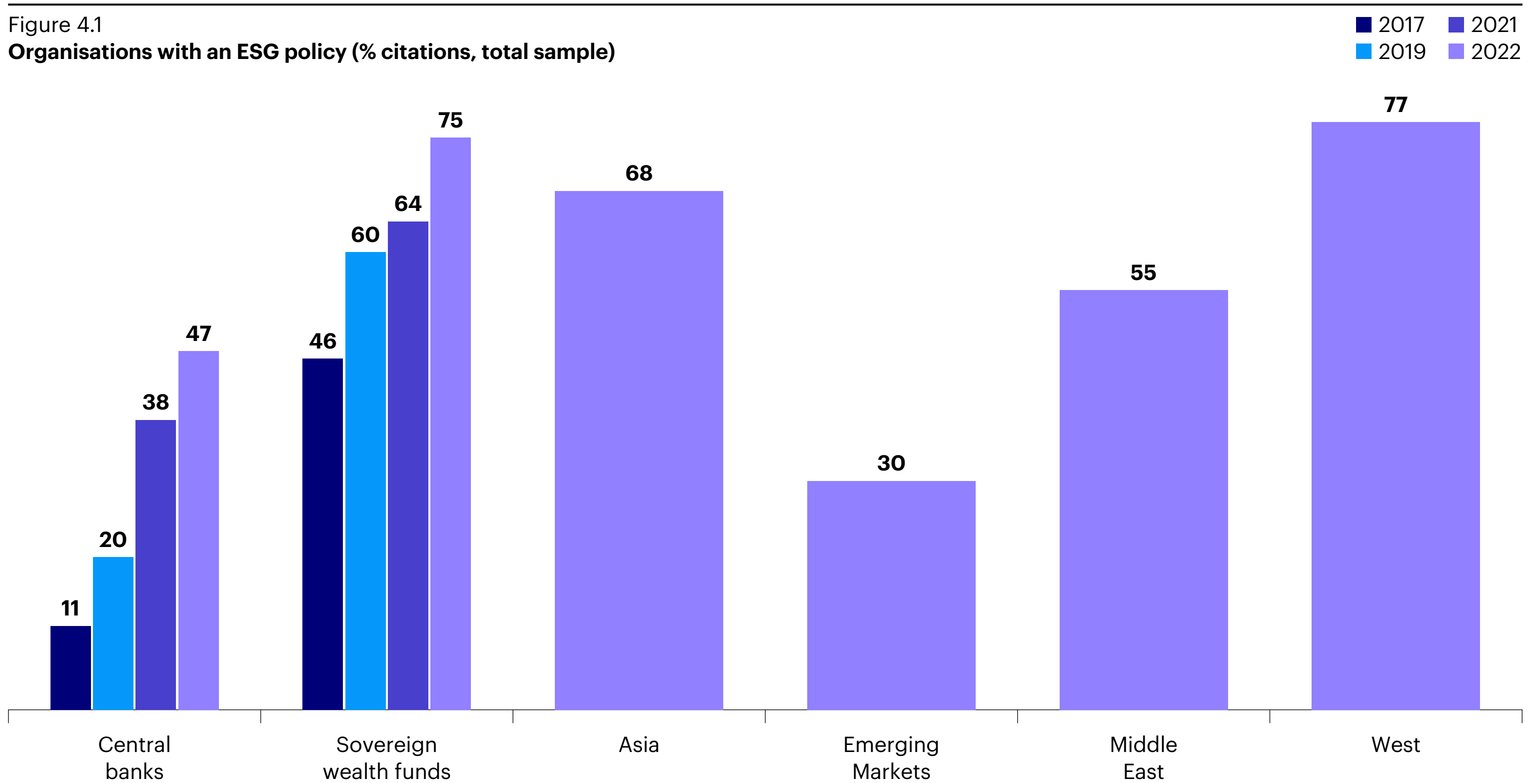
Central bank investment teams drive ESG uptake

Adoption of ESG among central banks has proceeded quickly, and last year we noted that the pandemic had accelerated this process. Some 44% of central banks stated that the pandemic has led to an increased focus on ESG, shining a spotlight on the environmental impact of human activity and the role of inequality and labour standards on health outcomes.

Despite what is a four-fold increase in adoption since 2017, more than half of central banks still have no organisation-wide ESG policy in place, with the initiative instead often taken by individual investment teams or portfolio managers on an ad-hoc basis. Respondents pointed to the traditional slow pace of change within their organisation and some suggested that even without a formal policy they had started to adopt ESG considerations in their process. "It takes time to develop an official policy. However, it's becoming more dominant in every investment mandate and meeting to have investments that are compliant with our ESG goals," said a central bank based in the Middle East.

Banks often take a lead from their governments, with a correlation between central banks without ESG policies and countries that have been slower to adopt policies on issues such as climate change. Among central banks in the Eurozone, increased consideration of ESG has been driven by the ECB, with some noting upcoming requirements to publish detailed carbon data for non-monetary policy portfolios. One such central bank explained their approach: "We are preparing a combination of tools to implement our carbon strategy. We will be screening based on governance and ESG ratings and are working on a goal of being greener than the benchmark universe. On the impact side, we will have a dedicated path in green and sustainable bonds and will also be focused on voting where we use external managers in the equity portfolio."

Figure 4.1
Organisations with an ESG policy (% citations, total sample)



How long have you had an ESG policy? Sample size: 132.

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Lack of regulatory clarity hampers ESG adoption, while poor data stokes greenwashing fears

Both sovereign funds and central banks acknowledge that challenges mean there is often a gap between the goals within their ESG policy and their current implementation. The most cited challenges relate to a lack of clear regulatory standards and data quality **(figure 4.2)**. With regard to the latter, respondents noted poor data quality made it hard to quantify the impact of ESG strategies and pointed to a particular problem of inconsistency across providers: “For credit ratings there are three major agencies but for ESG there are many, many more and each has its own methodology. What is ESG compliant for one is not necessarily compliant for another,” said a Middle East development sovereign.

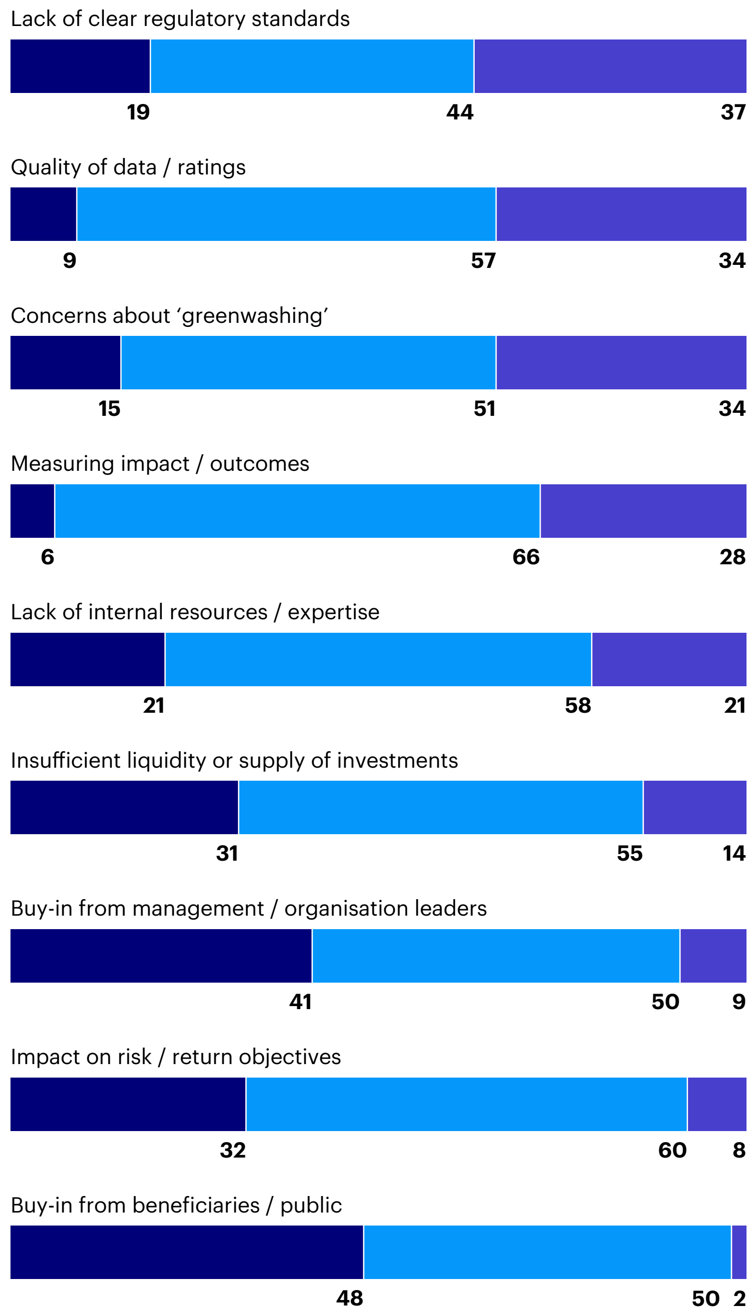
The lack of agreed data standards was seen as stoking concerns around greenwashing, creating reputational risk when implementing and reporting on ESG. “Many investment opportunities are branded and marketed in a way that may seem environmentally friendly but in reality, are not,” said a central bank based in the West. “There is a lack of transparency, which presents reputational risks,” added a development sovereign in the Middle East.

Partly as a result of these challenges respondents are also moving towards a more critical and differentiated view of ESG strategies. Sovereign funds in particular have started to consider more closely the effectiveness of various ESG strategies and are focusing resources on those that deliver the best results in terms of measurable outcomes that can be verified and tracked over time.

For example, while negative screening is one of the most widely used strategies by both central banks and sovereign funds, it is the strategy that sovereign investors believe to be the least effective in terms of delivering positive outcomes for society **(figure 4.3)**. Active voting and engagement were seen as effective in delivering such outcomes, and was being widely used by sovereign funds. Notably, voting and engagement were much less widely utilised by central banks, who often cited a potential conflict of interest as a barrier to taking a more active role in their holdings. However, this is a challenge that some banks have started to address, with the effective use of proxy voting agents mandated to vote according to pre-determined guidelines identified as a solution.

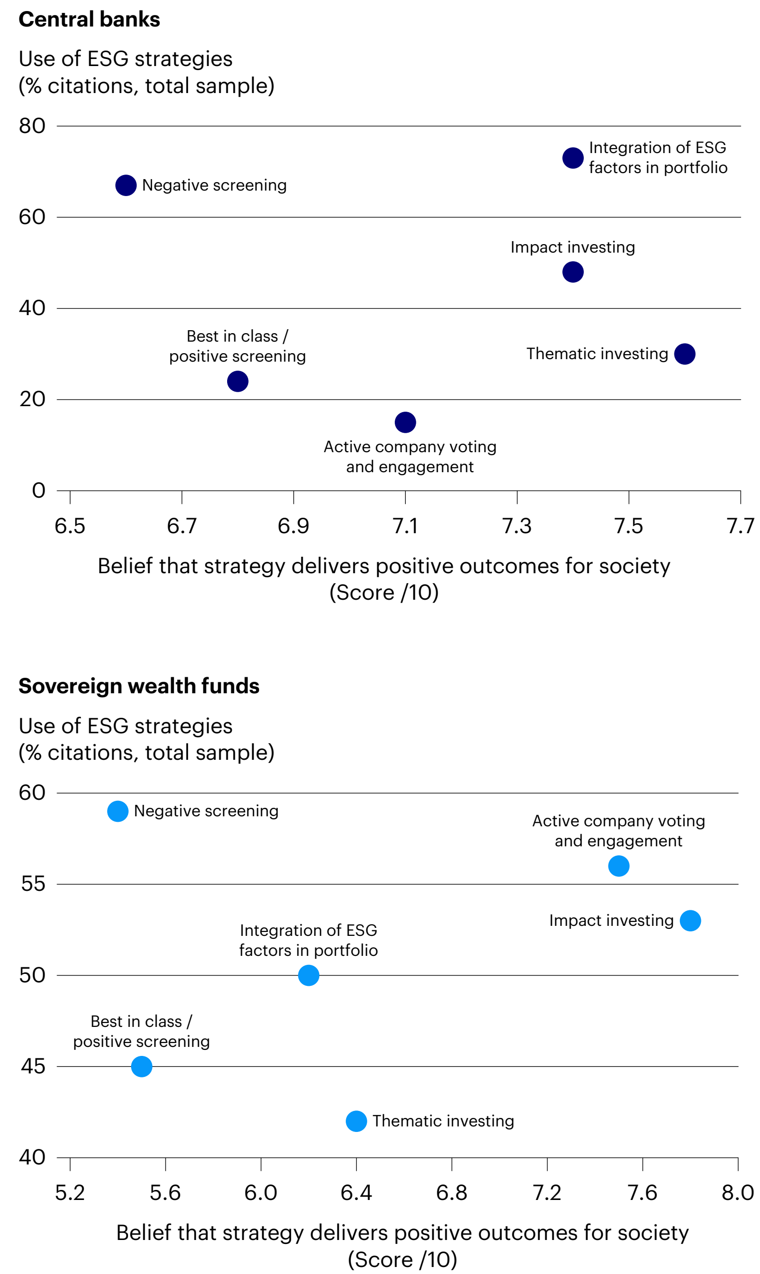
Figure 4.2
Challenges of ESG investing
(% citations, total sample)

Not a challenge
Moderate challenge
Significant challenge



How significant are the following challenges in relation to ESG investing? Sample size: 112.

Figure 4.3
Use of ESG strategies vs belief in effectiveness of those strategies
(% citations, total sample)



Which of the following ESG strategies do you use? To what extent do you think each of the following ESG strategies delivers positive outcomes for society? Sample size: 97.

Bracing for impact

In last year's study some sovereigns expressed concerns about a lack of scalable, investable opportunities within the impact part of the ESG space. The original interpretation of impact investing was often restricted to direct investments in community projects in areas such as micro finance and clean water. However, this year we found sovereign investors looking further afield for impact opportunities and a wider range of investments qualifying as 'impact investing'.

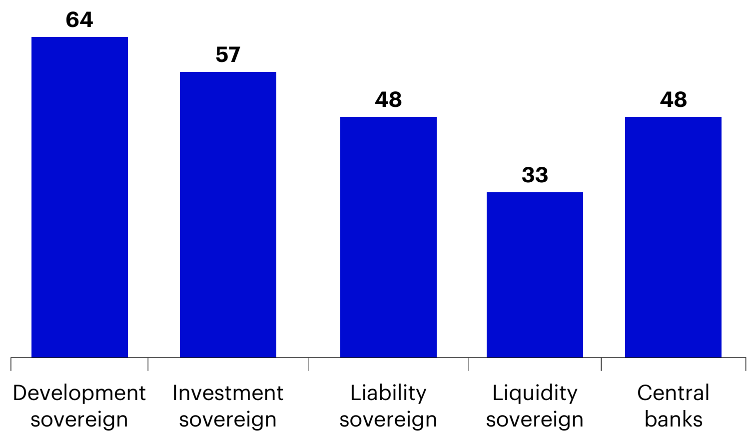
The primary criteria for these investments are that they make a positive measurable, intentional, and direct social or environmental contribution. Investments now regularly included within this framework include green and sustainable bonds, direct investments in renewable energy and investments in emerging technologies such as carbon capture.

As a result, the use of impact investing is now widespread, and is particularly popular among development sovereigns **(figure 4.4)**. For these funds the focus is often on helping to fund the energy transition with their domestic market, including the rollout of wind and solar energy, as one such emerging market-based fund based explained: "A lot of our infrastructure investments have an impact focus. This includes a programme to invest in solar energy in parts of the country where there is currently no renewable energy infrastructure."

For these sovereigns, new asset manager mandates are also being tied to impact objectives as European based fund explained: "We have gone to tender seeking proposals for a positive impact climate solution that will help with the decarbonising agenda. We really want to be a leader investing in the energy transition. This includes cleantech and solutions that will help companies decarbonise their businesses."

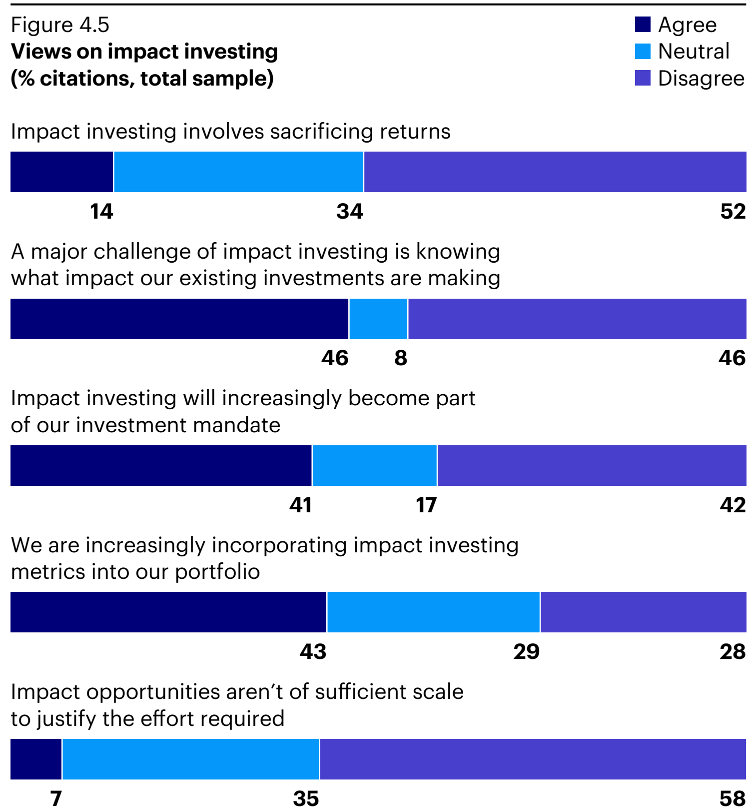
Just under half of central banks currently make use of impact investing but, given limitations on investable asset classes for most, this is restricted to investing in green and sustainable bonds. "Impact investing is also another important pillar of our ESG strategy, and we have started buying green bonds in order to support companies and projects that intentionally make a direct positive contribution towards society and environment at large," said a European central bank.

Figure 4.4
Use of impact investing (% citations, total sample)



Which of the following ESG strategies do you use? Sample size: 97.

Figure 4.5
Views on impact investing (% citations, total sample)



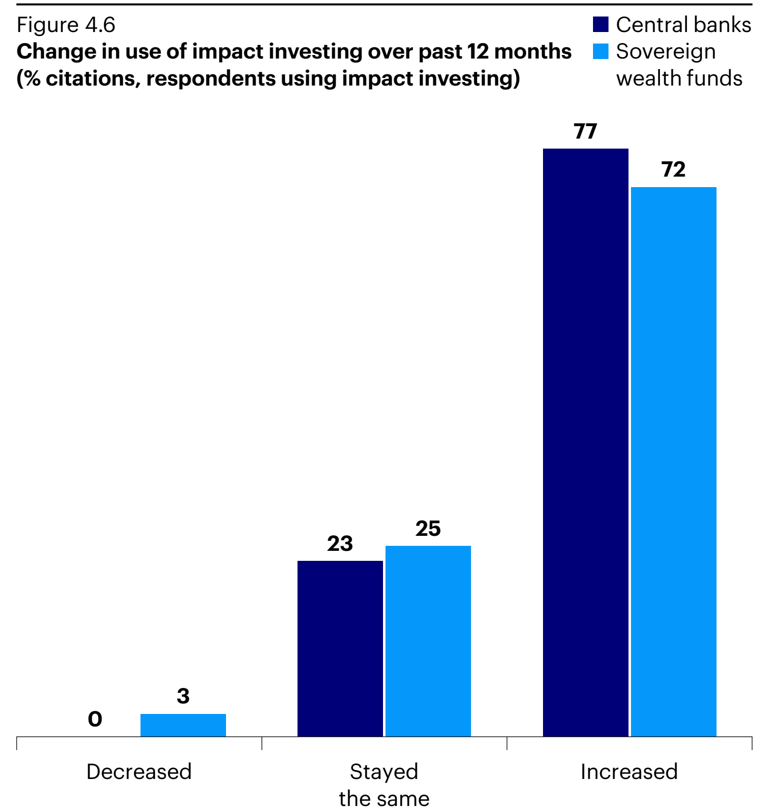
To what extent do you agree with the following statements? Sample size: 103.

Some 41% of sovereign investors believe impact investing will increasingly become part of their overall mandate and, of the investors that have already invested in impact strategies, around three-quarters have increased allocations over the past 12 months **(figures 4.5 and 4.6)**.

Indeed, the terminology and tools developed under the guise of impact investing are increasingly feeding into other ESG strategies with measurable impact now often at the forefront of objectives. Some 43% of respondents reported that they are increasingly incorporating impact investing metrics into their portfolio **(figure 4.5)**. Notably, impact investing is not seen as hampering returns, as investments that make a direct contribution to positive social or environmental impact are increasingly seen as being aligned with return objectives.

One positive development is that only 7% of investors said that impact opportunities were not of sufficient scale to justify the effort required **(figure 4.5)**. "When we talk about impact, we don't want screens or cheap tilts. We want to be a leader investing in the energy transition so that's cleantech and business solutions that will help companies decarbonise their businesses," said a development sovereign based in the West.

Figure 4.6
Change in use of impact investing over past 12 months (% citations, respondents using impact investing)



How have your allocations to impact investing strategies changed over the past 12 months? Sample size: 45.

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A focus on engaging companies to reduce emissions

Sovereign funds are increasingly implementing carbon targets for their overall portfolio. Some 30% of sovereigns have now implemented a carbon target, up from 23% last year. In contrast, only 16% of central banks have formal carbon targets, with little change year-on-year **(figure 4.7)**. Central banks noted that they are generally obligated to co-ordinate these targets with their government, meaning that those in countries without formal targets are restricted from developing their own. Some 83% of central banks with a carbon target said that this target was aligned with their government, while just over half of sovereign funds said the same **(figure 4.8)**.

Sovereign investors have adopted a range of strategies to meet their carbon targets, including divestment, engagement, reweighted allocations and investment in innovation such as renewable energy and carbon capture **(figure 4.9)**. Although around half of sovereign investors noted that they made use of divestment, we found a clear preference for engagement where possible (utilised by around seven in 10). This ties in with our earlier finding that engagement is seen as much more effective than negative screening in terms of delivering positive societal outcomes. Divestment was generally seen as a last resort or as a necessary part of new screening policies. For example, one fund noted that they had been required to undertake divestments after introducing negative screening for oil sands mining and for companies that generate more than 15% of their revenues from coal.

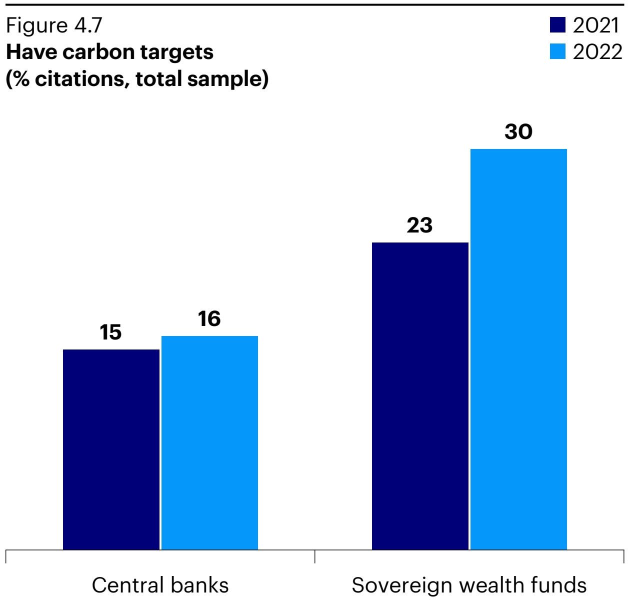
Benefits of engagement varied with type of company. Respondents noted that they could have the most impact by influencing high-carbon companies to reduce their emissions, rather than by simply excluding those companies from their portfolio. "We prefer to actively engage with companies so that they can develop proper strategies to reduce their carbon emissions in the long run. We have developed a number of metrics that allow us to monitor the progress of companies on this aspect," said a liability sovereign based in the West. A similar approach was noted by a development sovereign also based in the West: "We are encouraging our portfolio companies to reduce their carbon emissions and a number of companies in our portfolio have embraced the Science Based Targets initiative.[5] Our primary aim has been to encourage companies to reduce their carbon footprint with respect to their peers and industry averages."

Alliances such as Climate Action 100+ and the One Planet Sovereign Wealth Fund Framework were seen as important ways for sovereign investors to maximise their influence during engagement initiatives. Sovereigns noted that a single investor might find it difficult to influence a large corporation to employ more sustainable practices, but that several large investors coming together under a single umbrella organisation were much more likely to effect change. "Being part of an alliance helps us to collectively influence large companies in various sectors to cut their greenhouse gas emissions, and adopt sustainable practices," said a liability sovereign based in the West.

Such alliances were also seen as an important platform to exchange ideas and identifying opportunities for investment in innovation, as one Middle East-based investment sovereign explained: "We are a founding member of the One Planet Sovereign Wealth Fund initiative, which aims to bring together sovereign wealth funds across the globe and then develop strategies to invest in companies and technologies, which can help the transition to a low carbon economy".

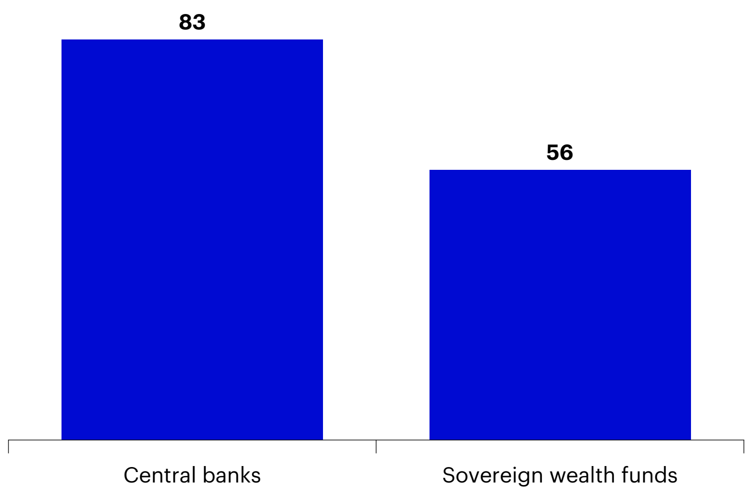
[5] https://sciencebasedtargets.org/

Figure 4.7
Have carbon targets
(% citations, total sample)



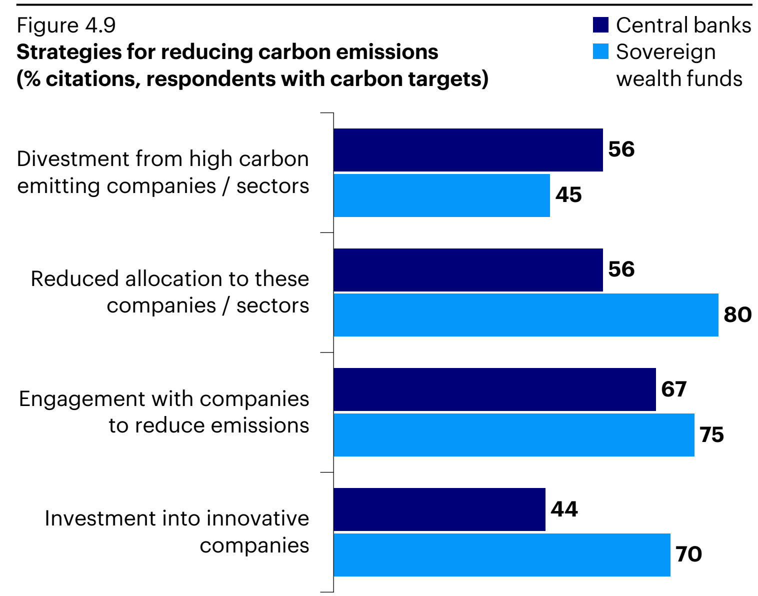
Have you set any carbon targets for your portfolio?
Sample size: 2021 = 119, 2022 = 125.

Figure 4.8
Carbon targets aligned with government
(% citations, respondents with carbon targets)



Are your carbon targets aligned with your government's carbon targets? Sample size: 24.

Figure 4.9
Strategies for reducing carbon emissions
(% citations, respondents with carbon targets)



Which strategies are you employing to reduce carbon emissions in your portfolio? Sample size: 29.

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Ukraine invasion highlights ESG passive strategy limitations

Russia's invasion of Ukraine has prompted some challenging questions for sovereign investors regarding the robustness of their ESG implementation at a country level. As noted in Theme 1, for many sovereign investors Russia was rated as a possible investment destination right up until the point of invasion. As such, several investors have been left holding Russian assets that have since declined dramatically in value and/or become untradeable due to the implementation of sanctions.

For many, this added to concerns over the role of passive investing within an ESG framework. Sovereign investors with passive exposure to emerging markets indices naturally were at index weight to Russia in their equity and bond portfolios. Prior to the invasion, Russian stocks accounted for less than 1% of global market cap, so in most instances exposure hasn't been significant. However, this has not prevented scrutiny from stakeholders in some countries as to why their sovereign wealth funds had investments in a country building up military forces on a neighbour's border.

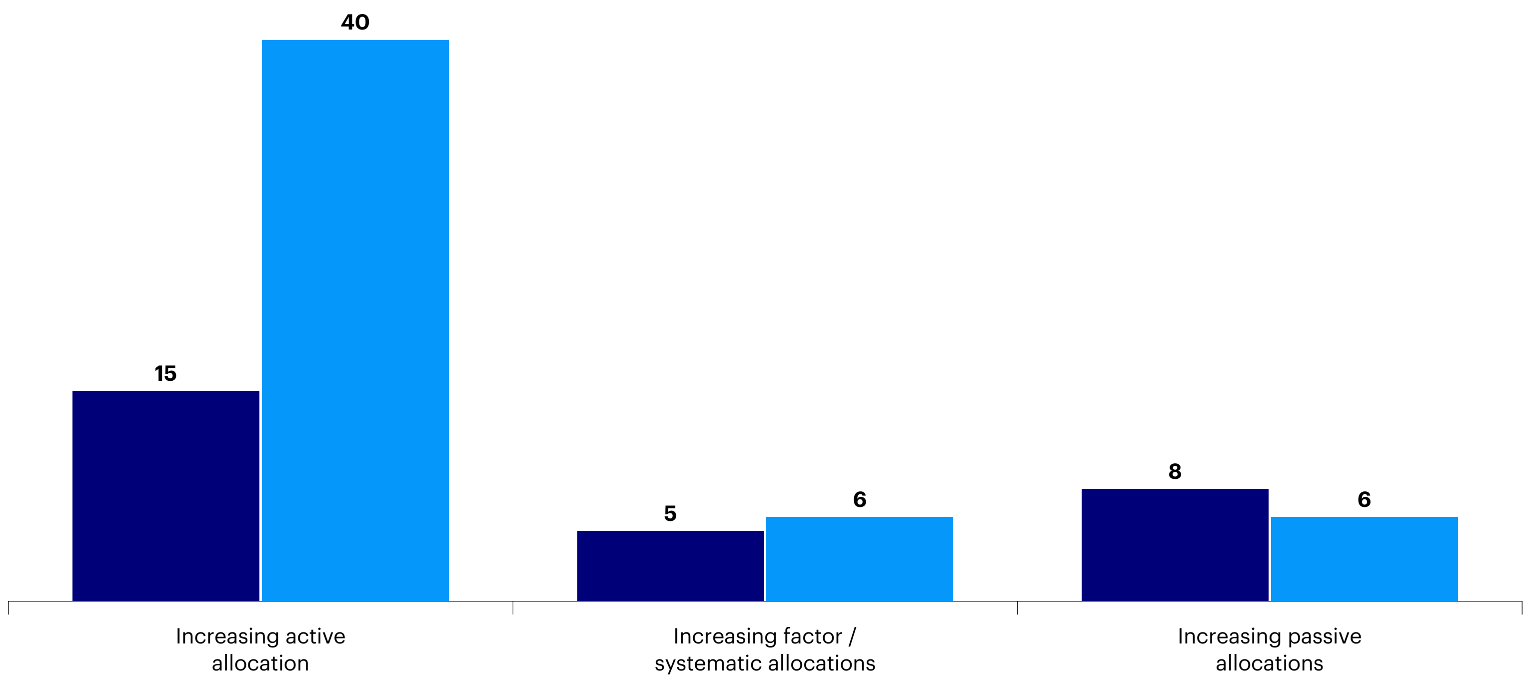
Some 40% of sovereign wealth funds and 15% of central banks said that ESG issues were prompting them to increase their active allocations **(figure 4.10)**. An active risk-based approach was seen as conferring advantages over a screening-based passive approach; companies or governments that might not meet thresholds for screening can instead be down-weighted (for example by reducing allocations to Russia as the geopolitical risks increased, rather than being a forced seller after the invasion).

"It's difficult to be an active and responsible owner if you are investing passively. If you are just a passive index investor it is very difficult to know exactly what goes in and out of that portfolio," said one liability sovereign based in the West. "ESG encourages investors to be more active in their due diligences and to favour active allocations," added a development sovereign based in the West.

Increased ESG sophistication drives focus on measurable outcomes

Both sovereign wealth funds and central banks are increasingly putting ESG at the heart of their investment strategy. While challenges remain, including concerns about data quality and greenwashing, sovereign investors believe that they can develop strategies to overcome these issues. This includes greater use of active management, impact investing, measurable carbon targets and coordinated voting/engagement. As these strategies prove their worth, in particular with regards to measurable outcomes that are verifiable and can be tracked over time, they are likely to be adopted by more investors and steadily permeate across sovereign portfolios.

Figure 4.10
Impact of ESG on active/passive/factor allocations (% citations, total sample)



Are ESG issues having an impact on active/passive/factor decisions? Sample size: 102.

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Theme 5

Renminbi allocations continue to rise, as Russia reserves freeze catalyses soul-searching about dollar reserves

Renminbi held by 63% of central banks with its overall share of reserves rising, but the position of the US Dollar is holding firm despite Russia sanctions.

Inflation is a concern and 71% have either taken or are planning to take action to counteract it; many are moving out of deposits into non-traditional asset classes and back into government bonds.

Further diversification into new asset classes continues: 35% of central banks are looking to move into new asset classes in the next two years and this trend is leading to an increase in the search for external manager expertise.

Central banks' foreign exchange reserves were thrust into the spotlight in 2022, for two principal reasons.

The first is the weaponisation of reserves by Western governments. In the wake of Russia's invasion of Ukraine, nearly half of Russia's approximate $600bn reserves have been frozen by sanctions imposed by the US, Europe, and others. These sanctions have sparked some debate on the role of the US Dollar as the dominant reserve currency, but respondents in our sample are largely unmoved on their views.

The second is the inflationary surge. Central bank reserves have become more exposed to rising inflation in recent years, as deposits were allocated to non-traditional assets. There has been a shift back to government bonds and shorter duration exposures as reserve currency central banks started to
raise policy interest rates and begin quantitative tightening, causing bond yields to become more attractive.

While navigating these more volatile markets, central banks have diversified more through new asset classes. In doing so, they are increasingly seeking external expertise, with 81% now using external managers for mandates and off-the-shelf products (mostly ETFs) **(figure 5.13, page 39)**.

The number of banks holding Renminbi continues to rise...

Renminbi has been steadily growing in its share of global foreign exchange portfolios, highlighting the increasing importance of China's position within the global economy and as a key trading partner. Allocations rose from 1.1% of total foreign exchange reserves at the end of 2016 to 2.8% at the end of 2021.[6]

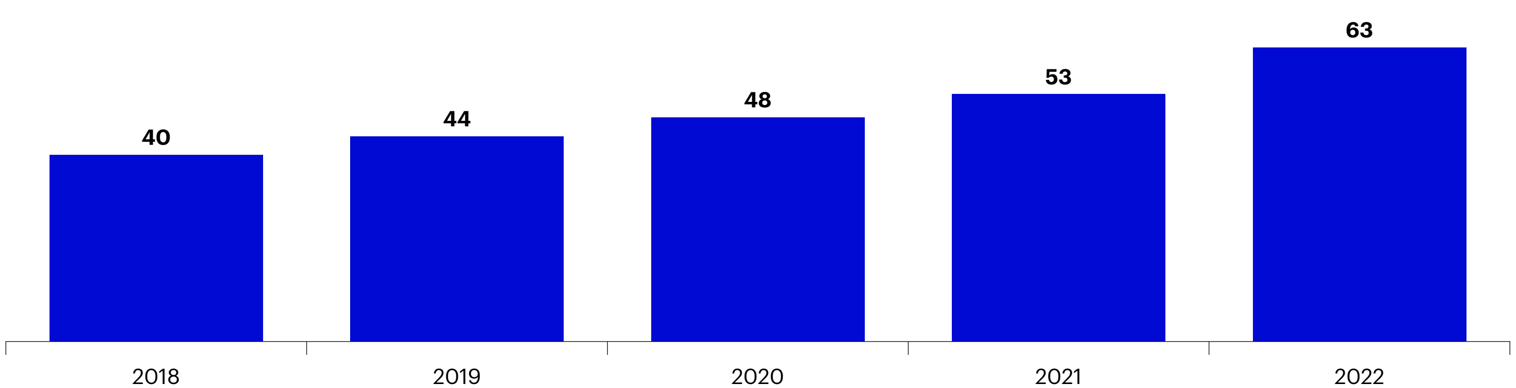
Some 58.8% of central bank foreign reserves were denominated in US Dollars at the end of 2021, according to IMF year-end data. This was almost unchanged from the 58.9% figure at the end of 2020. Thus, the RMB seems to be gaining market share from diversifier reserve currencies rather than the Dollar, given the greater speed of market share and interest in Renminbi than in the Dollar decline in reserve currency market share.

Across central banks, there is wider adoption of Renminbi as a reserve currency. Some 63% of central banks now have RMB allocations, up from 40% in 2018 **(figure 5.1)**. Most see their position as underweight and want to further increase allocations over the next five years **(figure 5.2)**.

However, central banks offer up opposing views on whether Renminbi will become a true reserve currency in five years' time **(figure 5.3)**. Concerns remain around Renminbi's liquidity and convertibility, with many central banks still holding RMB allocations within their investment tranche. The sentiment is strong from some of China's close geographic neighbours and trade partners, though still echoed by some central banks in developed Western countries: "Our current allocation to Renminbi is less than 2%, but we do believe that it has the potential to become one of the most important reserve currencies in the next decade. Therefore, we do expect to increase allocations in the next 5 years," commented one.

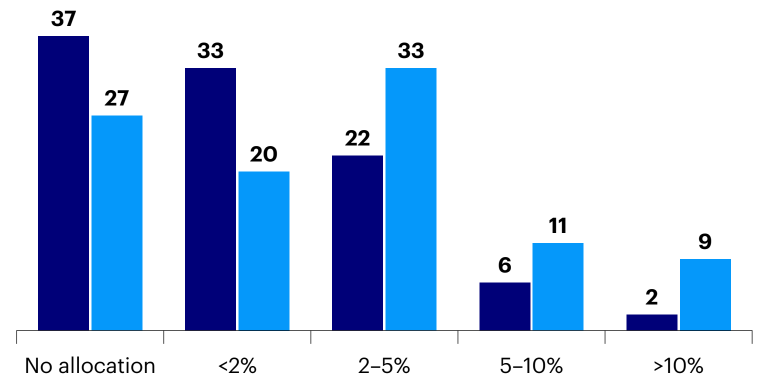
[6] IMF COFER, as of 31 December 2021.

Figure 5.1
Central banks holding Renminbi (% citations, central banks only)



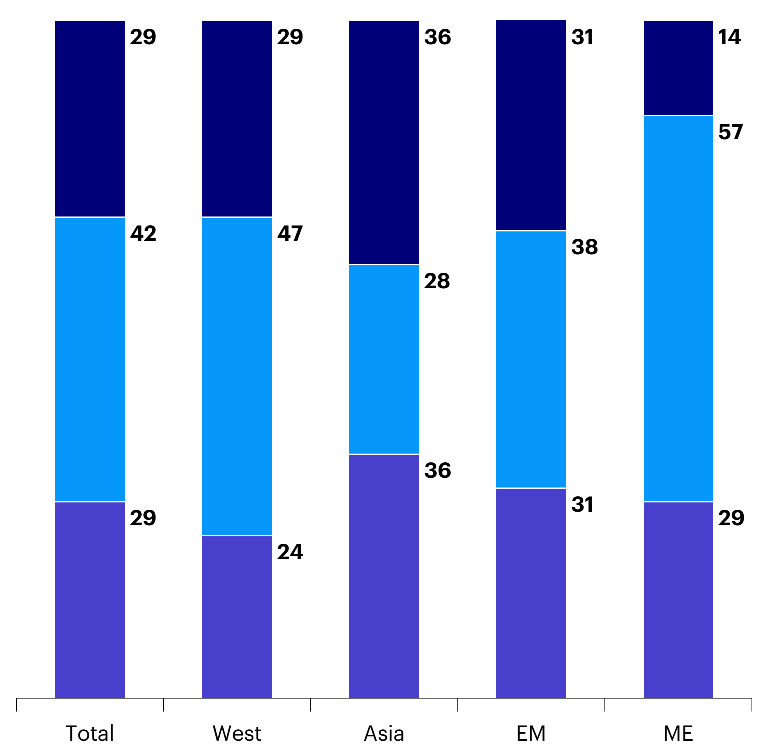
Do you have any allocations to Renminbi? Sample size: 2018 = 56, 2019 = 44, 2020 = 55, 2021 = 53, 2022 = 49.

Figure 5.2
Central banks current and projected Renminbi allocations (% citations, central banks only)



What is your current allocation to Renminbi? What do you think your allocation will be in 5 years' time? Sample size: 49.

Figure 5.3
Central banks believing Renminbi will become a true reserve currency (% citations, central banks only)



To what extent do you agree with the following statement: the Renminbi will become a true reserve currency in the next 5 years? Sample size: 52.

> **The Renminbi will become a better reserve currency in the next five years but I do not think that it will really replace the US Dollar in this time period.**
>
> **Central bank**
> Asia

…but reports of dollar's demise overstated – for now

Despite the growth of the Renminbi, few central banks view it as a threat to the US Dollar's position as the world reserve currency, at least with a five-year view **(figure 5.4)**. Further out, there is greater uncertainty. US Dollar allocations as a share of global central bank reserves have reduced from 65.4% at the end of 2016 down to 58.8% at the end of 2021 as central banks look for greater currency diversification.[7]

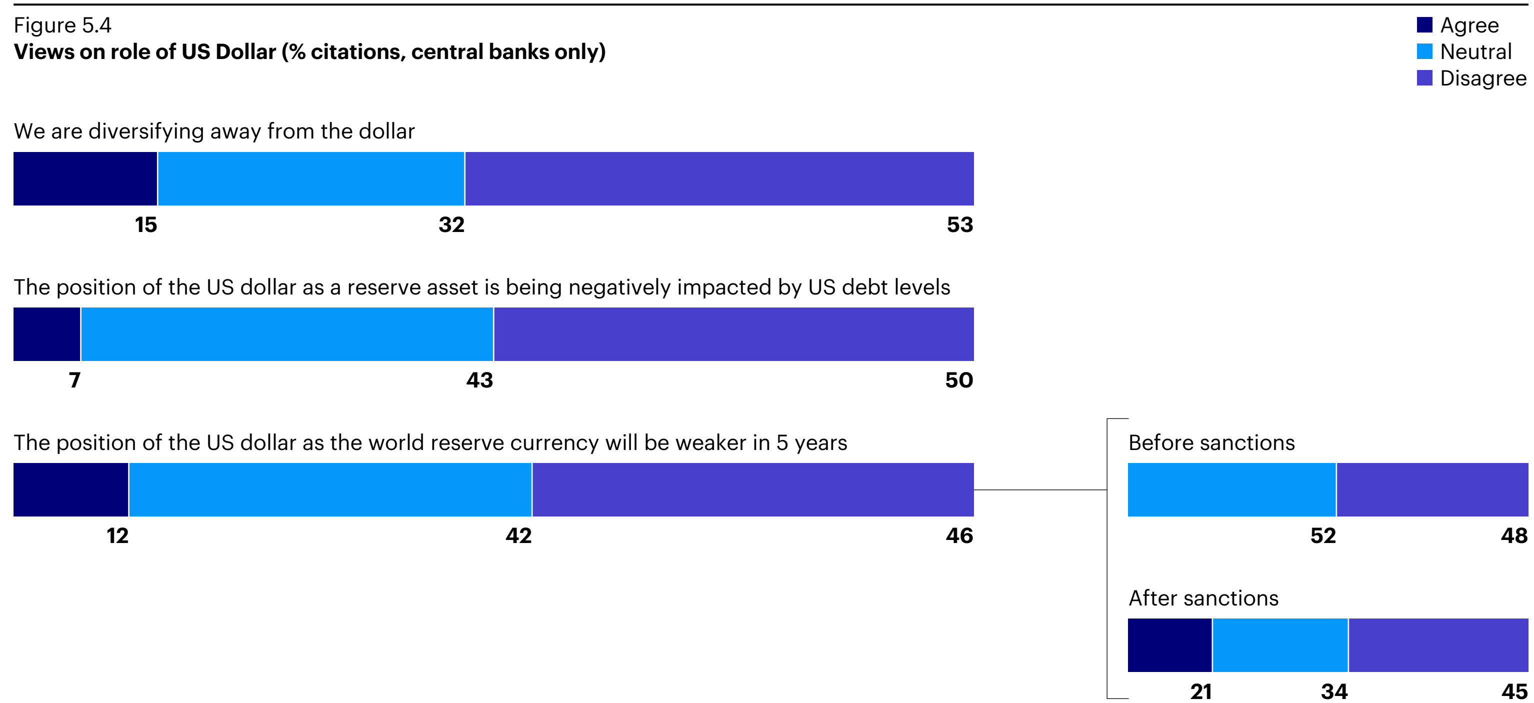
Based on our interviews, the Russia/Ukraine war has not had a great deal of impact on views of the role of the US Dollar in portfolios. However, all those agreeing that it could be weaker in five years' time were interviewed after the February 24th invasion and ensuing sanctions, which implies a significant shift in sentiment catalysed by the invasion and freezing of Russia's foreign exchange reserves. Central banks of countries which see themselves as running a high risk of direct or secondary sanctions might be reconsidering their US Dollar holdings, but the reality is that there is no major alternative.

Furthermore, the participation of so many western governments in Russian sanctions and the freezing of the Central Bank of Russia's foreign exchange reserves suggests that any desire for Dollar diversification to avoid the risk of sanctions could support greater interest in Renminbi than traditional diversifier reserve currencies. In any case, diversification away from the US Dollar looks set to continue its already well-established decremental trend.

"We believe that the position of the US Dollar is strong today, but its position can change significantly, especially with the rise of China as an economic superpower in the coming decade" said one Central bank based in the West. "I do think that the Renminbi will become a better reserve currency in the next five years, but I do not think that it will really replace the US Dollar in this time period" suggested a central bank based in Asia.

[7] IMF COFER, as of 31 December 2021.

Figure 5.4
Views on role of US Dollar (% citations, central banks only)



To what extent do you agree with the following statements? Sample size: 52.

Inflationary trends pushing central banks away from deposits

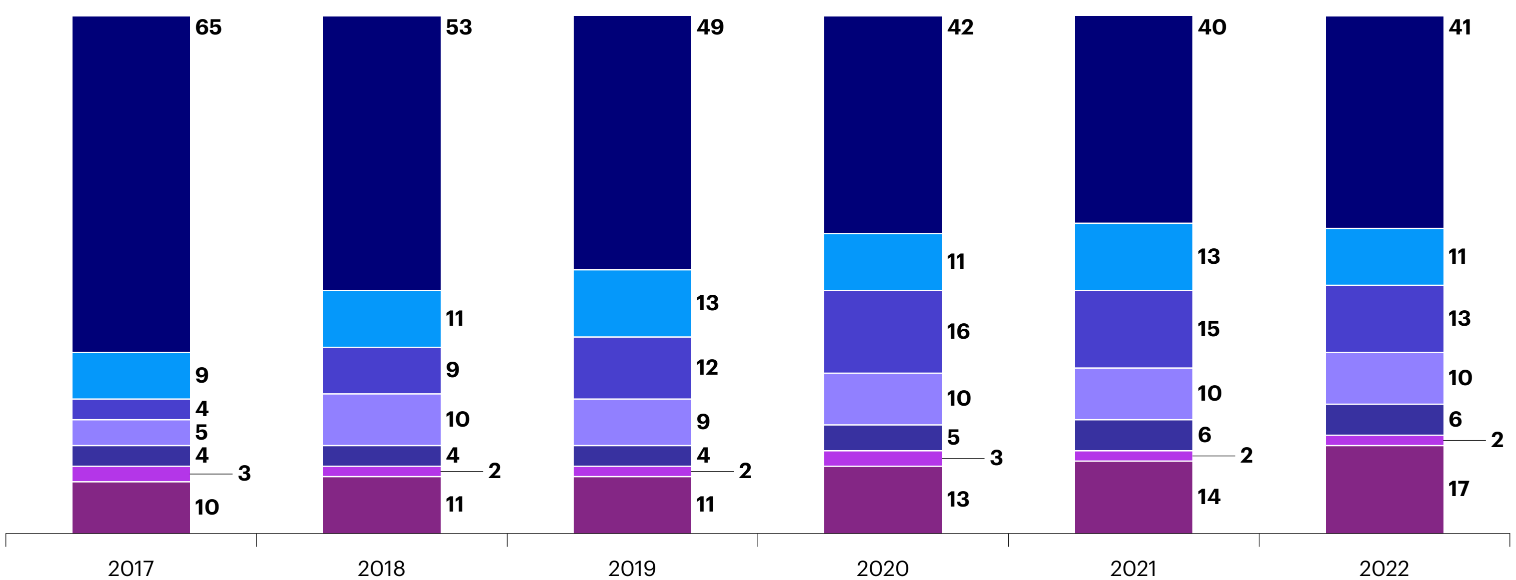
Many central banks sought liquidity following the outbreak of Covid-19 leading to an increase in cash deposits from 25% in 2019 to 28% in 2021. This trend has now reversed, with 24% of reserves held in deposits with commercial and central banks in 2022 **(figure 5.5)**, as demand for greater liquidity of reserves dried up post-Covid.

A rising global inflationary environment and moves by central banks to increase interest rates are now having the largest impact on allocations. These cash deposits are being reallocated into government bonds, as yields rise for new coupons, and into non-traditional asset classes such as equities, emerging market debt and alternatives, including real estate **(figure 5.6)**.

A European central bank told us that they were "looking to diversify into new asset classes, especially because real interest rates in Europe are negative. Holding cash in deposits does not yield good results".

Figure 5.5
Asset allocation of central bank reserve portfolios (mean %, central banks only)

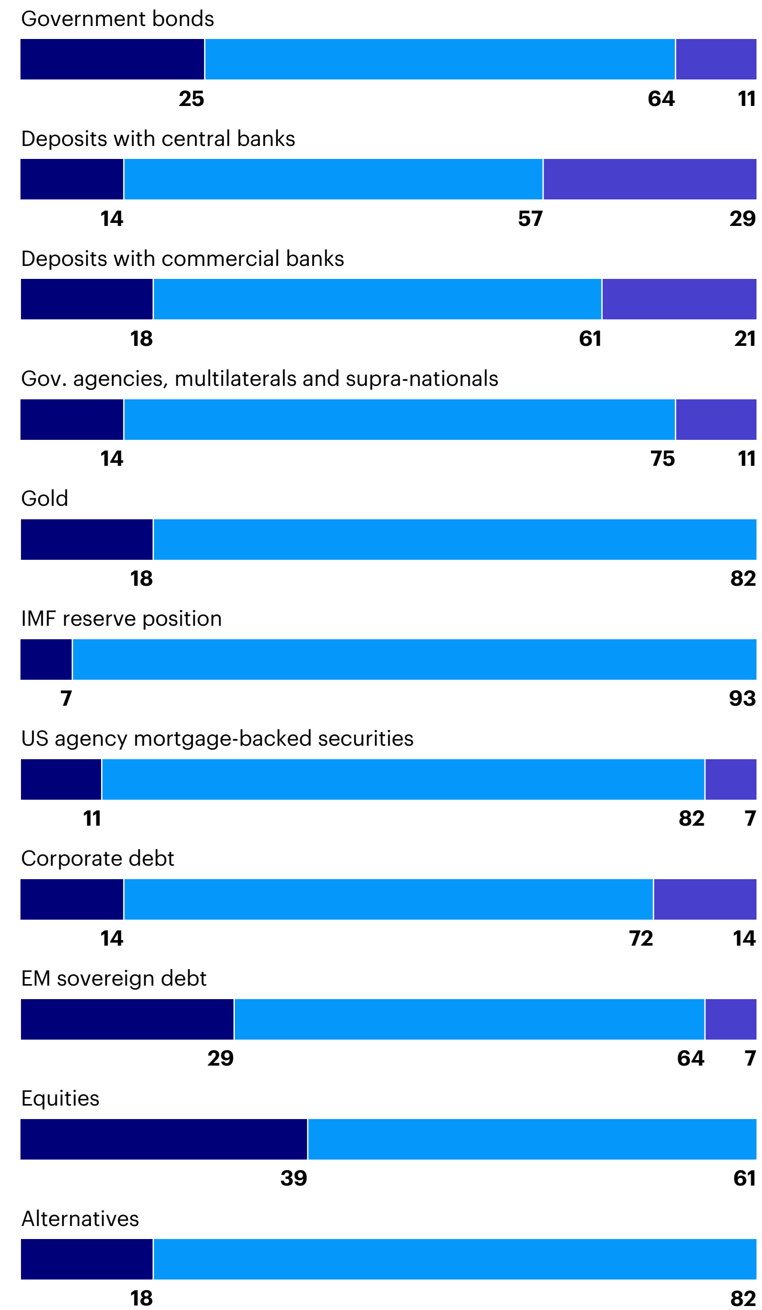
Government bonds
Deposits with central banks
Deposits with commercial banks
Gov. agencies & multilaterals
Gold
IMF reserve position
Non-traditional asset classes



For the total reserves portfolio, what is your allocation across asset classes? Sample size: 2016 = 15, 2017 = 33, 2018 = 55, 2019 = 36, 2020 = 36, 2021 = 38, 2022 = 40.

Figure 5.6
Expected changes in allocations over next year (% citations, central banks only)

Increase
No change
Decrease



How are these allocations likely to change over the coming year? Sample size: 28.

Many central banks had yet to come to a conclusion on inflation projections when interviewed back in February and March but were looking to make tactical changes to their short-term asset allocations to combat the inflationary threat. Some 71% of central banks said that they either have already taken, or are considering taking, action to protect their reserves portfolio from inflation. Shortening portfolio duration is the most common strategy (68%), with central banks looking to take advantage of interest rate rises and better government bond rates **(figure 5.7)**. Just under a third are shifting to gold as an inflation hedge and a further 29% are allocating to Treasury Inflation-Protected Securities (TIPS).

These changes have not been widespread across reserves portfolios. Many central banks have adopted a wait-and-see approach, with expectations that the data would become clearer on the medium to long-term outlook for inflation later in 2022. These projections would then influence asset allocation decisions on the wider portfolio.

"We think that high inflation will lead to the normalisation of monetary policy. Higher yields mean shorter duration. We also have more allocation to TIPS [Treasury Inflation-Protected Securities] and are moving to an overweight position in commodity currencies" said one Asian central bank.

Banks continue to diversify into new asset classes

The recent low-yield environment has been pushing central banks into new asset classes over the past five years **(figure 5.8)**. The share of foreign exchange reserves in non-traditional asset classes, including equities and real assets, has increased from 10% in 2017 up to 17% in 2022 **(Figure 5.5, page 36)**. Further adoption and shifts into new asset classes have occurred in 2021 and the trend looks set to continue in 2022 even as interest rates start to rise.

In addition to higher returns, central banks value non-traditional assets for their diversification benefits, with banks weathering the storm of inflation and rising interest rates by tilting away from fixed income and deposits.

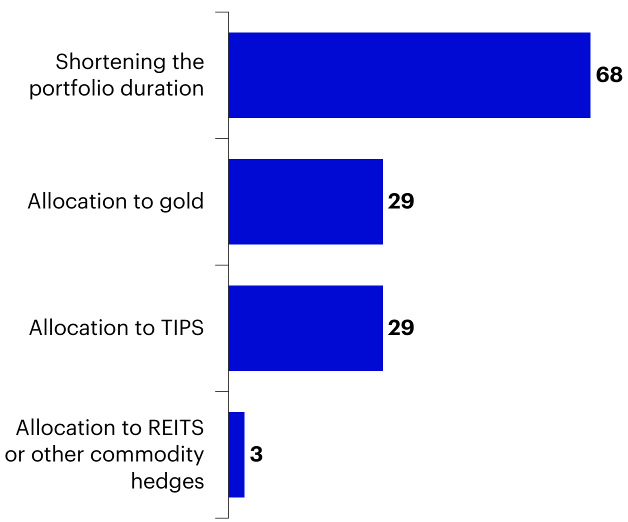
Some 35% of central banks are looking to introduce new asset classes to their reserves portfolio in the next two years **(figure 5.9)**. This is down slightly on the 40% who indicated they would be doing so in last year's study as some pulled the Covid-delayed trigger on asset class diversification over the course of 2021. Equities and real estate top the list of asset classes under consideration, with real estate valued for its fixed income-like dividends and low volatility in comparison to equities **(figure 5.10, page 38)**.

Equities are undoubtedly now a mainstream asset class among central banks, as over half of those interviewed invest in the asset class within their reserves portfolio **(figure 5.11, page 38)**. Those banks who have only dipped their toes into the water are also looking to increase allocations up to target weightings **(figure 5.12, page 38)**.

Many central banks who were on the fence over investing in equities due to Covid-19 pandemic-related market drawdowns and the ensuing uncertainty are expecting to invest in the asset class. The inflationary environment hasn't been cited as a deterrent to this, given that the likely source of funds will come from accumulated cash deposits.

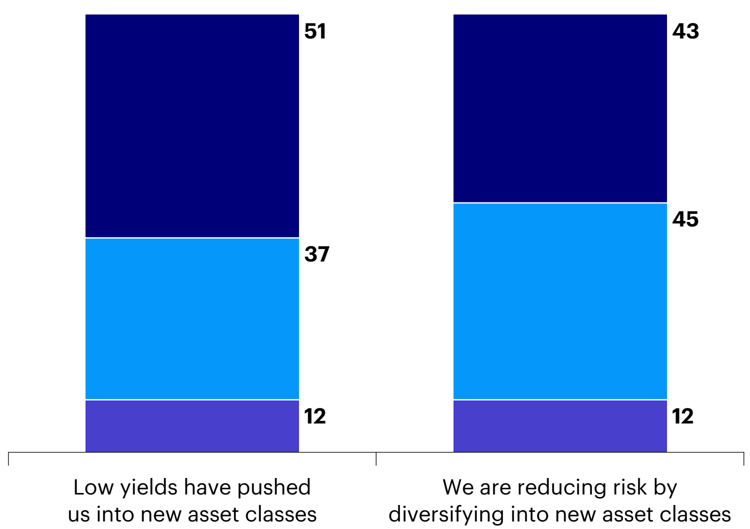
The lack of internal expertise is often cited as a challenge to adoption, which is why central banks typically start by buying global or developed market indexes and increasing exposure as they further learn about the asset class and its role in the portfolio. Recent equity market volatility was noted as a concern, but many central banks who have received the green light to allocate to equities can now afford that additional risk.

Figure 5.7
Action being taken to protect reserves portfolios against inflation (% citations, central banks taking action only)



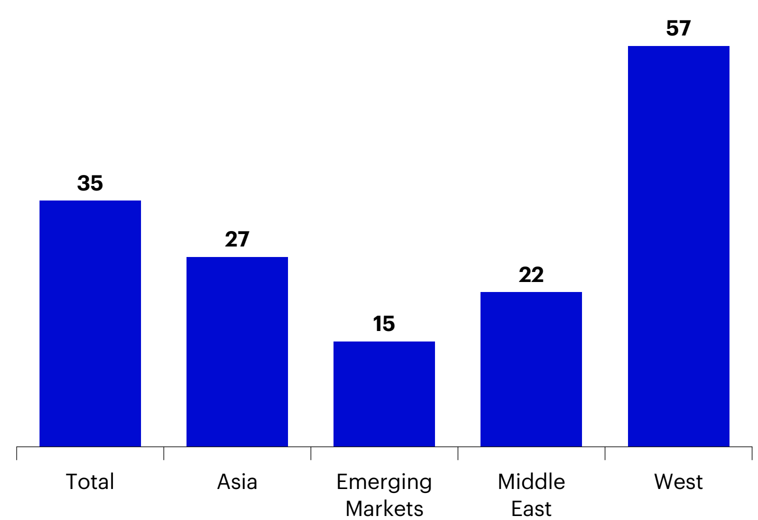
How are you protecting/considering protecting the portfolio value from global inflationary trends? Sample size: 32.

Figure 5.8
Central banks diversifying into new asset classes (% citations, central banks only)



To what extent do you agree with the following statements? Sample size: 49.

Figure 5.9
Central banks introducing new asset classes in next two years (% citations, central banks only)



Are you considering introducing any new asset classes into the portfolio over the next two years? Sample size: 54.

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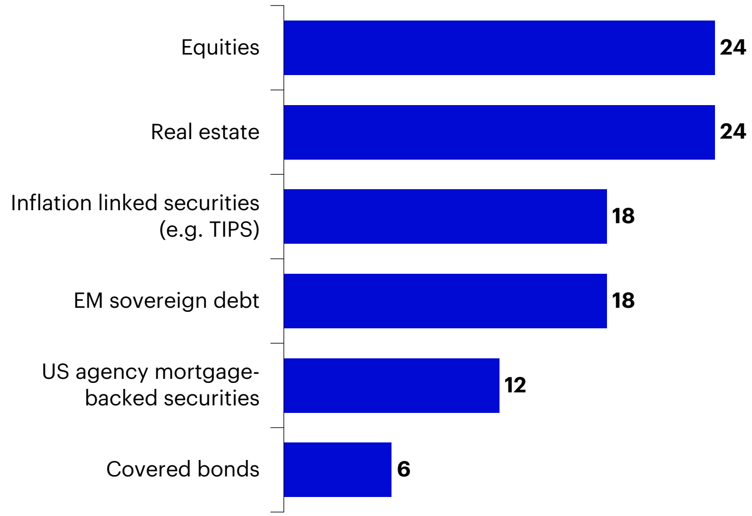
A central bank based in the West said of its decision to begin investing in equities, that this was "a long-term strategy to improve the risk-return profile and reduce the cost of holding reserves. It will help us to gain know-how and feel for the wider spectrum of asset markets."

This was echoed by central bank based in the Middle East: "We wanted to increase our risk appetite and give some of the overall allocation to riskier assets. We now have the ability to allocate to ETFs or to riskier assets. The last couple of years have been exceptional and not normal years so there was some appetite for some minor changes and tactical allocations."

Central banks across the West, Asia and Middle East have all largely adopted equities within the investment tranche of reserve assets and many in the West and Middle East are looking to further increase their equity allocations over 2022 **(figure 5.12)**. Middle Eastern central banks have been beneficiaries of surging oil prices following Russia's invasion of Ukraine which will result in more reserves to invest. Emerging market central banks are less likely to invest in equities, with little appetite to introduce them over the coming year.

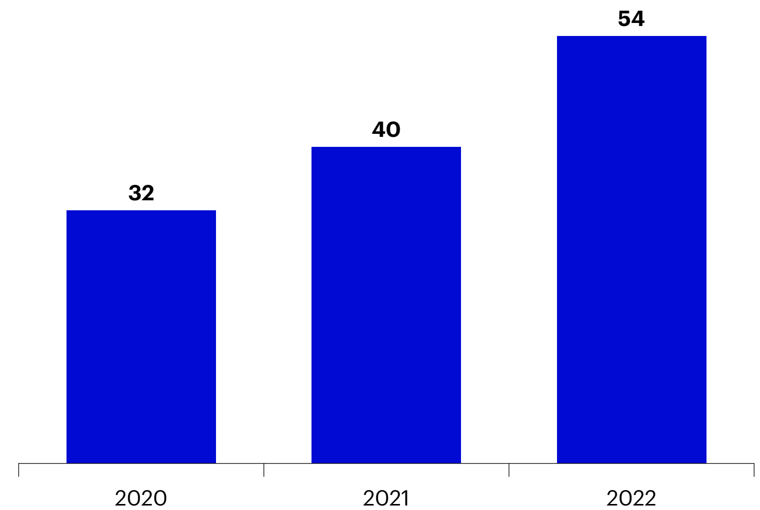
> "
> **We wanted to increase our risk appetite and give some of the overall allocation to riskier assets. We now have the ability to allocate to ETFs or to riskier assets.**
>
> **Central bank**
> Middle East

Figure 5.10
New asset classes being considered (% citations, central banks introducing new asset classes only)



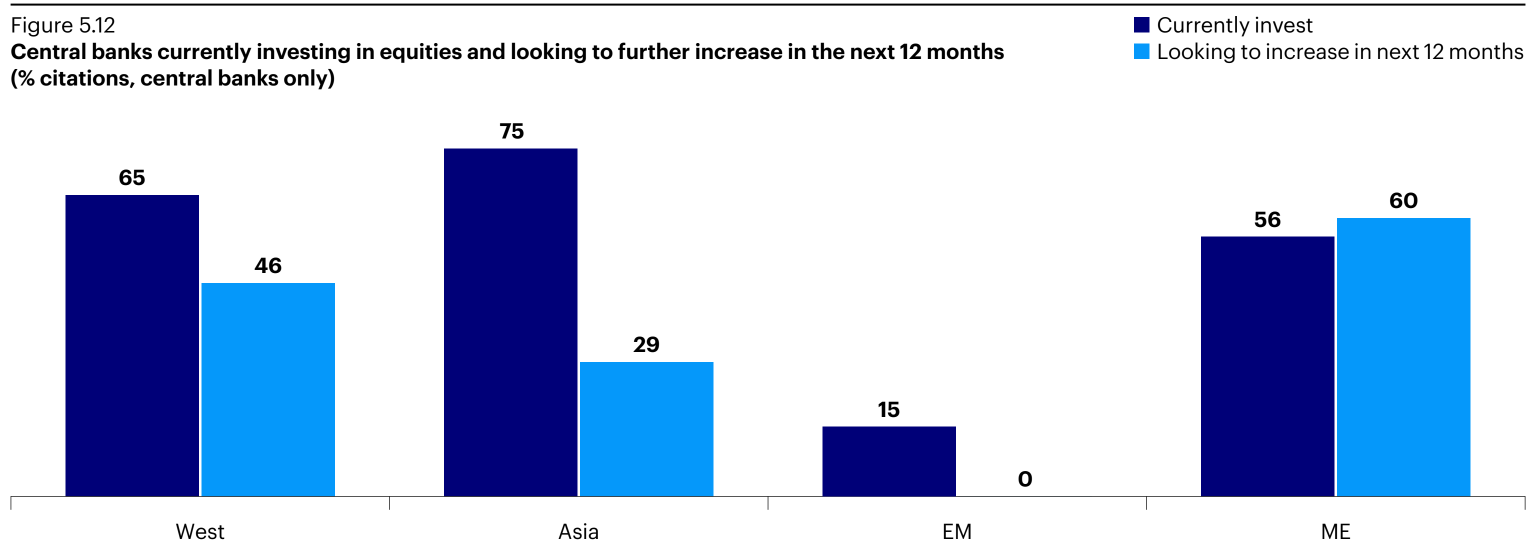
Which asset classes are you considering introducing over the next two years? Sample size: 19.

Figure 5.11
Central banks currently investing in equities (% citations, central banks only)



Do you currently invest in equities? Sample size: 2020 = 48, 2021 = 47, 2022 = 54.

Figure 5.12
Central banks currently investing in equities and looking to further increase in the next 12 months (% citations, central banks only)



Do you currently invest in equities? How are these allocations likely to change over the coming year? Sample size: 45.

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Diversification encourages search for external expertise

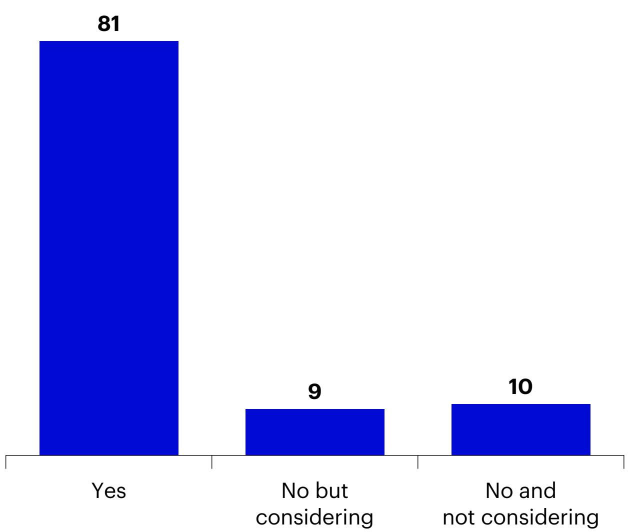
The desire to incorporate non-traditional assets such as equities, emerging market debt, mortgage-backed securities and alternatives is leading to the greater use of external managers by central banks.

External mangers are valued for their expertise as well as the ability to set tight risk requirements within mandates. ETFs are being widely used with sufficient liquidity to handle a sizeable allocation often a key consideration for selection.

Some 81% of central banks are using external managers **(figure 5.13)** with most doing so for equity allocations through a mixture of mandates and products. Other asset classes that central banks find difficult to manage in-house, such as mortgage-backed securities (MBS), are also commonly managed by external managers **(figure 5.14)**.

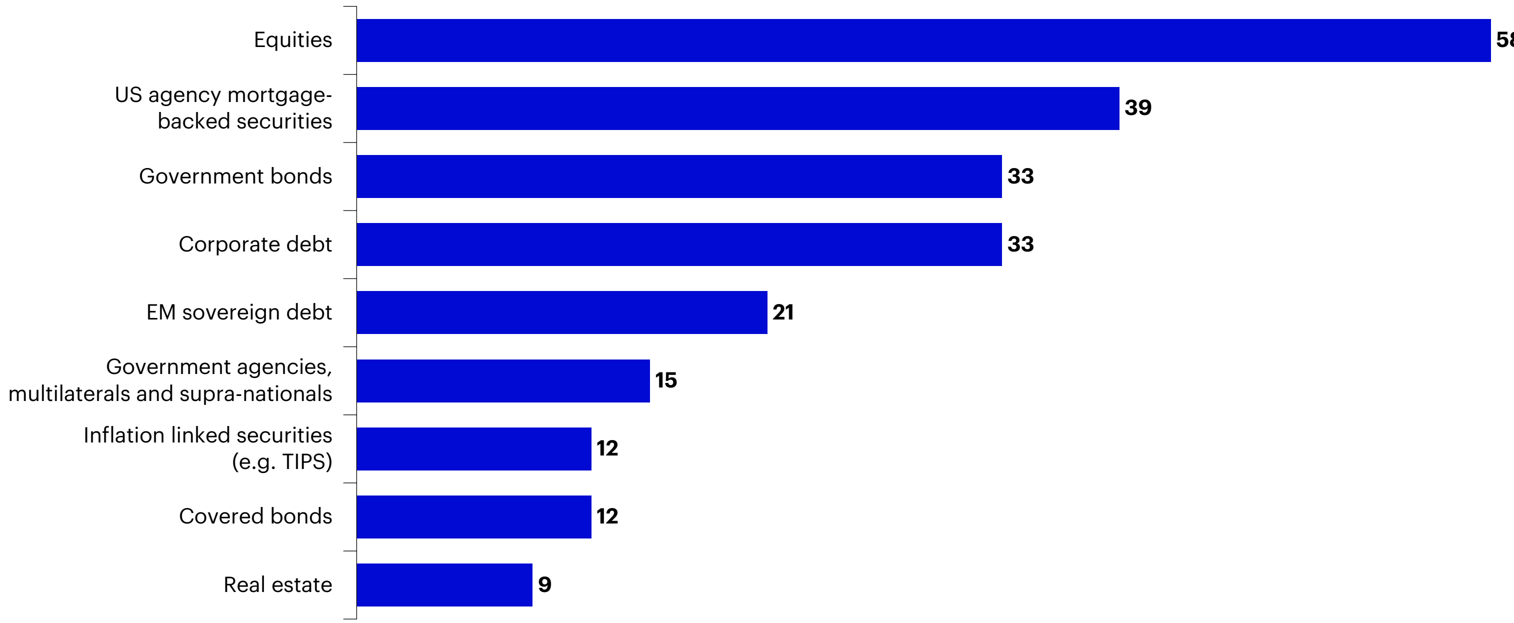
A Middle Eastern central bank summarised its decision to use external managers for higher risk asset classes: "The riskier an asset class, the higher the tendency to outsource at the beginning. This is so you can control the risk management a bit more. It's more well defined when you hire an external manager as you can have the exact targets in the mandate for how it's being run."

Figure 5.13
Use of external managers (% citations, central banks only)



Do you use external asset managers to manage parts of your portfolio?
Sample size: 47.

Figure 5.14
Asset classes using external managers for (% citations, central banks that use external managers only)



For which asset classes do you use external managers? Sample size: 19.

Diversification to persevere despite macro and geo-political headwinds

The big questions for central bank reserve managers in 2022 are how sustained the inflationary environment will be, to what extent will central banks react with interest rate rises and what will be the knock-on effects to global equity markets. The majority believe foreign exchange reserves will stay either the same or get larger in a post-Covid world and much of this surplus looks to be heading into non-traditional asset classes, such as equities.

Many central banks increased liquidity due to the pandemic, and for some Asian and Central European central banks this has been needed once more to weather the Ukraine/Russia-fuelled commodity price shock. But despite this and rising inflation, central banks remain committed to the path of further diversification across currencies and asset classes.

Appendix

Sample and Methodology

The fieldwork for this study was conducted by NMG between January and March 2022. 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 within sovereign wealth funds and central banks, conducting interviews using experienced consultants and offering market insights rather than financial incentives
- In-depth (typically 1 hour) face-to-face interviews using a structured questionnaire to ensure quantitative as well as qualitative analytics were collected
- Analysis capturing investment preferences as well as actual investment allocations with a bias toward actual allocations overstated preferences
- Results interpreted by NMG's team with relevant consulting experience in the global asset management sector

In 2022, we conducted interviews with 139 funds: 81 sovereign investors and 58 central banks. The 2022 sovereign sample is split into three core segmentation parameters (sovereign investor profile, region and size of assets under management). The 2022 central bank sample is broken down by region.

Figure 6.1
Sovereign investor sample, by segment

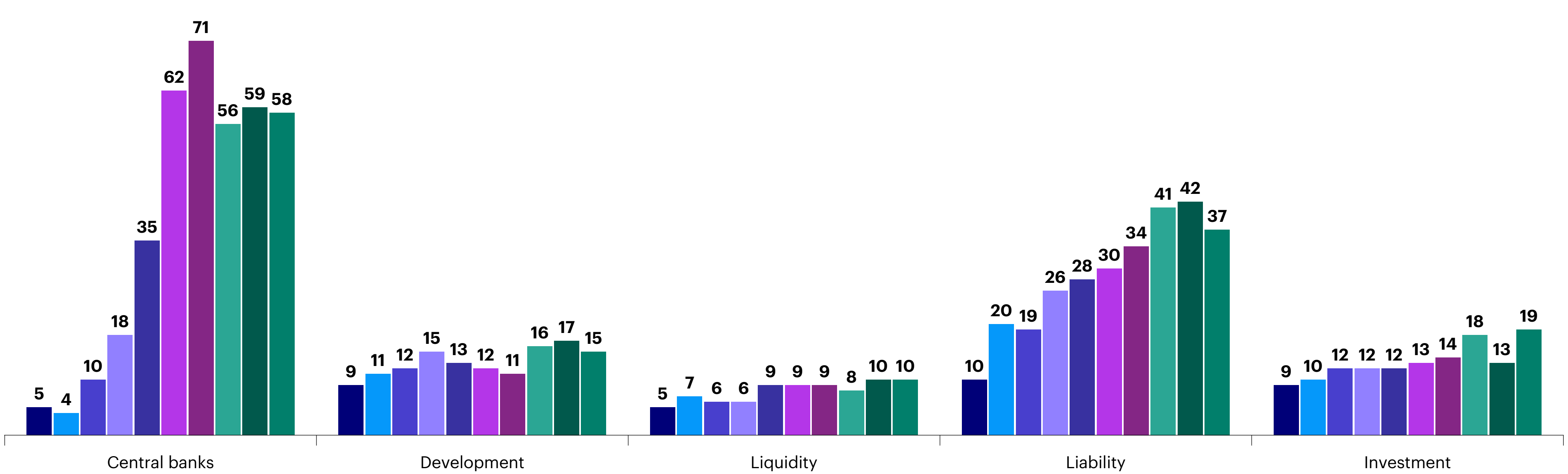


Figure 6.2
Sovereign investor sample, by region

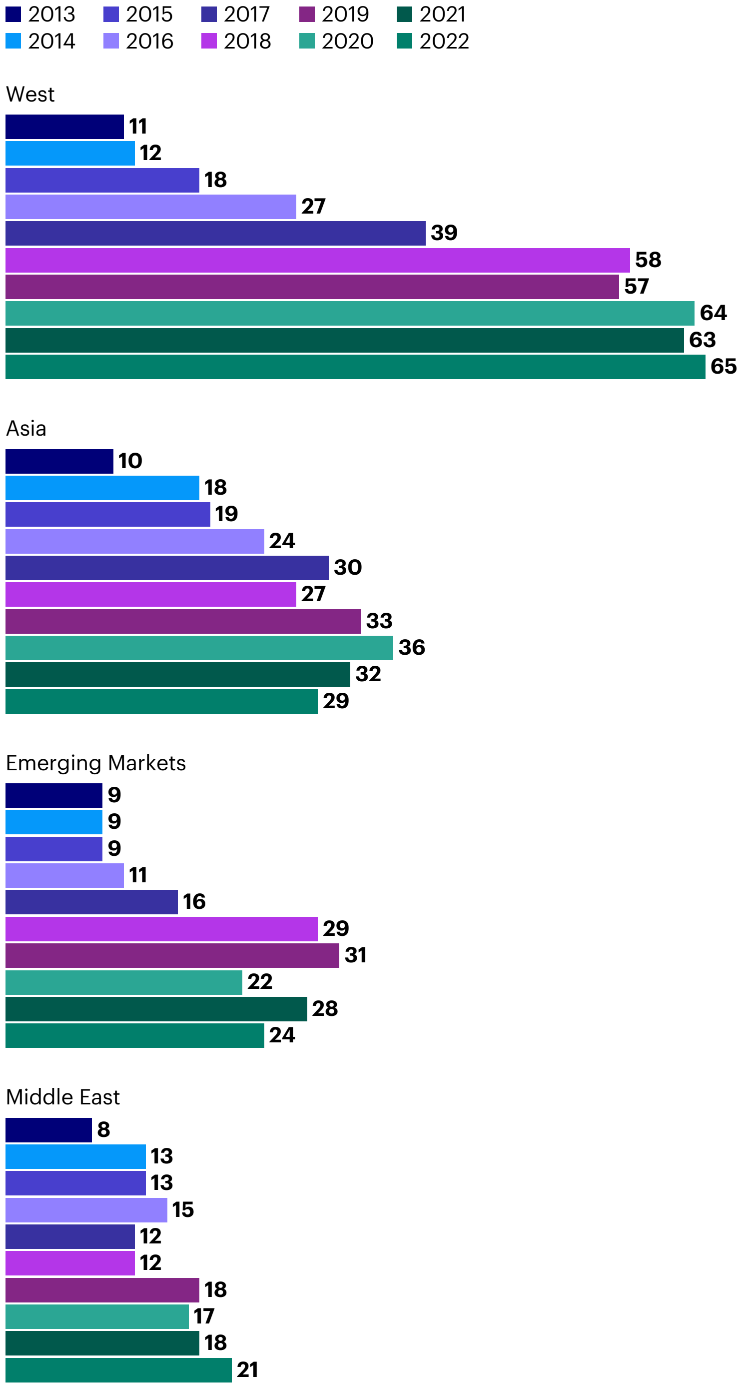


Figure 6.3
Sovereign wealth fund sample, by assets under management

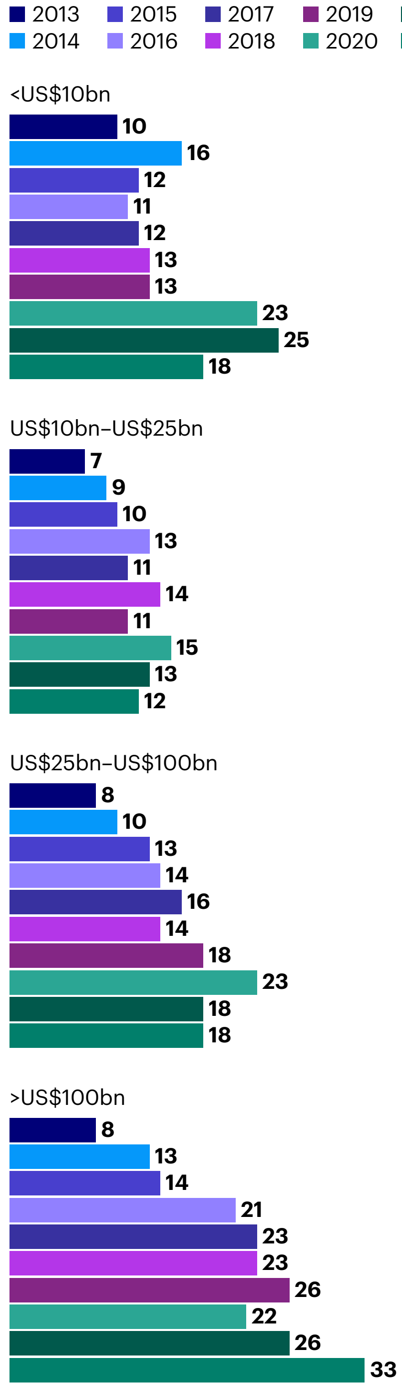
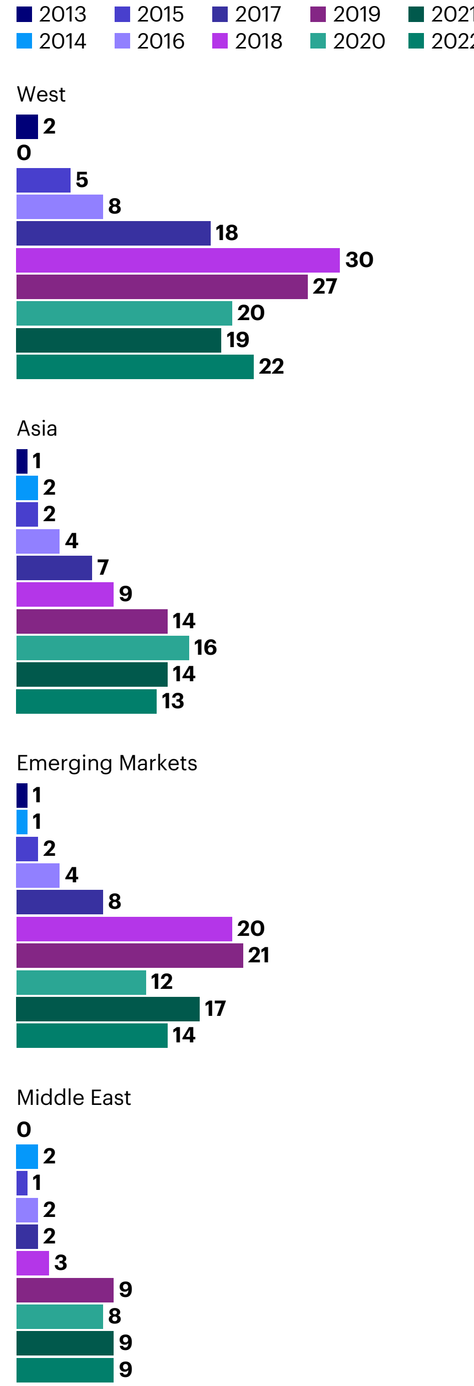


Figure 6.4
Central bank sample, by region



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Defining sovereign investors

There are distinct segments of sovereign investors, determined in the first instance by their objectives. This framework is outlined below.

Investment sovereigns
Investment sovereigns have no specific liabilities that they are intended to fund. This typically means this segment invests with a particularly long-time horizon and high tolerance for illiquid and alternative asset classes. Long investment return objectives tend to be high, reflecting an ability to capture additional return premia.

Liability sovereigns
Liability sovereigns in contrast are intended to fund specific liabilities, liability sovereigns are sub-segmented into those which are already funding liabilities (current liability sovereigns) vs those where the liability funding requirement is still in the future (partial liability sovereigns). Liability sovereigns generally seek to match their portfolio with the duration of the liabilities they are funding. Those where funding requirements are still well into the future resemble investment sovereigns in their approach; those with significant current funding requirements tend to still have a diverse long-term portfolio but will be more liquid and higher yielding.

Liquidity sovereigns
Liquidity sovereigns operate so they can act as a buffer in the event of economic shocks. They are most commonly located in emerging markets which are prone to exchange rate volatility and / or in resource-based economies which are highly exposed to fluctuations in commodity prices. Because of the priority placed on being able to deploy capital predictably and at short notice. Liquidity sovereigns invest with a much shorter time horizon and with a focus on liquidity ahead of returns.

Development sovereigns
Development sovereigns are only partial portfolio investors. Their principle objective is to promote domestic economic growth rather than achieve an optimal risk / return portfolio trade-off. This is pursued by investing in strategic stakes in companies which make a significant contribution to the local economy to promote expansion and growth in employment. They pursue portfolio strategies with their other assets which are usually influenced by the size and characteristics of their strategic stakes.

Central banks
Central banks have a range of domestic roles in their economy – banking to government, issuance of currency, setting of short-term interest rates, managing money supply, and oversight of the banking system. Central banks also have a range of external facing roles, including managing foreign exchange rate policy and operations, including payments for imports / receipts for exports and government overseas borrowings. Central banks hold substantial reserves to support those functions and ensure they are seen as credible. Those reserves have traditionally been invested with a priority on capital preservation and liquidity.

Figure 6.5
Sovereign profile segmentation

Primary objective	Capital presentation & liquidity	Investment & liquidity	Investment & liability funding	Investment & development	Investment only
Global sovereign segment	Central banks	Liquidity sovereigns	Liability sovereigns	Development sovereigns	Investment sovereigns

Time horizon & illiquidity tolerance →

Investment risk

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.

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