Invesco Global Sovereign Asset Management Study 2019

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

Important information

This document is intended only for Professional Clients and Financial Advisers in Continental Europe (as defined in the important information); for Qualified Investors in Switzerland; for Professional Clients in Dubai, Jersey, Guernsey, Isle of Man, Ireland and the UK, for Institutional Investors in the United States and Australia, for Institutional Investors and/or Accredited Investors in Singapore, for Professional Investors only in Hong Kong, for Qualified Institutional Investors, pension funds and distributing companies in Japan; for Wholesale Investors (as defined in the Financial Markets Conduct Act) in New Zealand, for accredited investors as defined under National Instrument 45-106 in Canada, for certain specific Qualified Institutions/Sophisticated Investors only in Taiwan and for one-on-one use with Institutional Investors in Bermuda, Chile, Panama and Peru.

Aerial reflection of Bryant Park, New York City.
Cover image: Navid Baraty

Executive summary

Welcome

I am delighted to welcome you to our seventh annual study of sovereign investors. The scale and shape of this study has grown over time and now represents the views and opinions of 139 chief investment officers, heads of asset classes and senior portfolio strategists (68 sovereign funds and 71 central banks). These investors are responsible for managing over US$20 trillion in assets (as of March 2019).

The five key themes in this year's report seek to build on the findings from previous years' studies by analysing long-term trends as well as uncovering new insights.

Interviews took place between January and March 2019 following a turbulent fourth quarter for asset markets in 2018. This was top of mind for respondents and is evident in theme 01. Public market volatility has combined with late cycle concerns to lead sovereigns to defend, diversify and explore new opportunities.

In theme 02, we explore the challenges of sovereign asset owner scale, which has become a real issue for some large funds. Size has distinct benefits in accessing certain opportunities, but even those are often heavily contested, forcing large sovereigns to look at increasingly specialised areas.

Theme 03 finds that environmental, social and governance (ESG) adoption continues to gain traction with both sovereigns and central banks. Understanding has improved of how to derive value from its application to portfolios, particularly among a group of sovereigns with long histories of ESG adoption. The 'E' has become the focus, with 'G' initiatives considered to be assumed or complete, often the initial outcomes of ESG implementation.

Technology increasingly occupies the time of sovereigns as they oversee their investment programmes. Theme 04 looks at sovereigns as both technology investors and technology users, and finds a sophisticated approach to technology investing which is often not matched by the application of technology within the sovereign organisation.

A focus on central banks in theme 05 concludes this year's study. Central banks are seeking liquidity and safety, shifting away from the US dollar and other traditional reserve currencies towards a more diversified set of reserve currencies including the renminbi. A minority of central banks have made large additions of gold. At the same time these investors are facing pressure to cover their costs, which they are finding increasingly difficult in an environment of dwindling yields.

I hope the key themes in this year's report provide you with relevant and informative insights into this evolving and important group of investors. If you would like to discuss any of the findings or indeed have any questions, please do get in touch.

To view more content on this year's themes visit igsams.invesco.com

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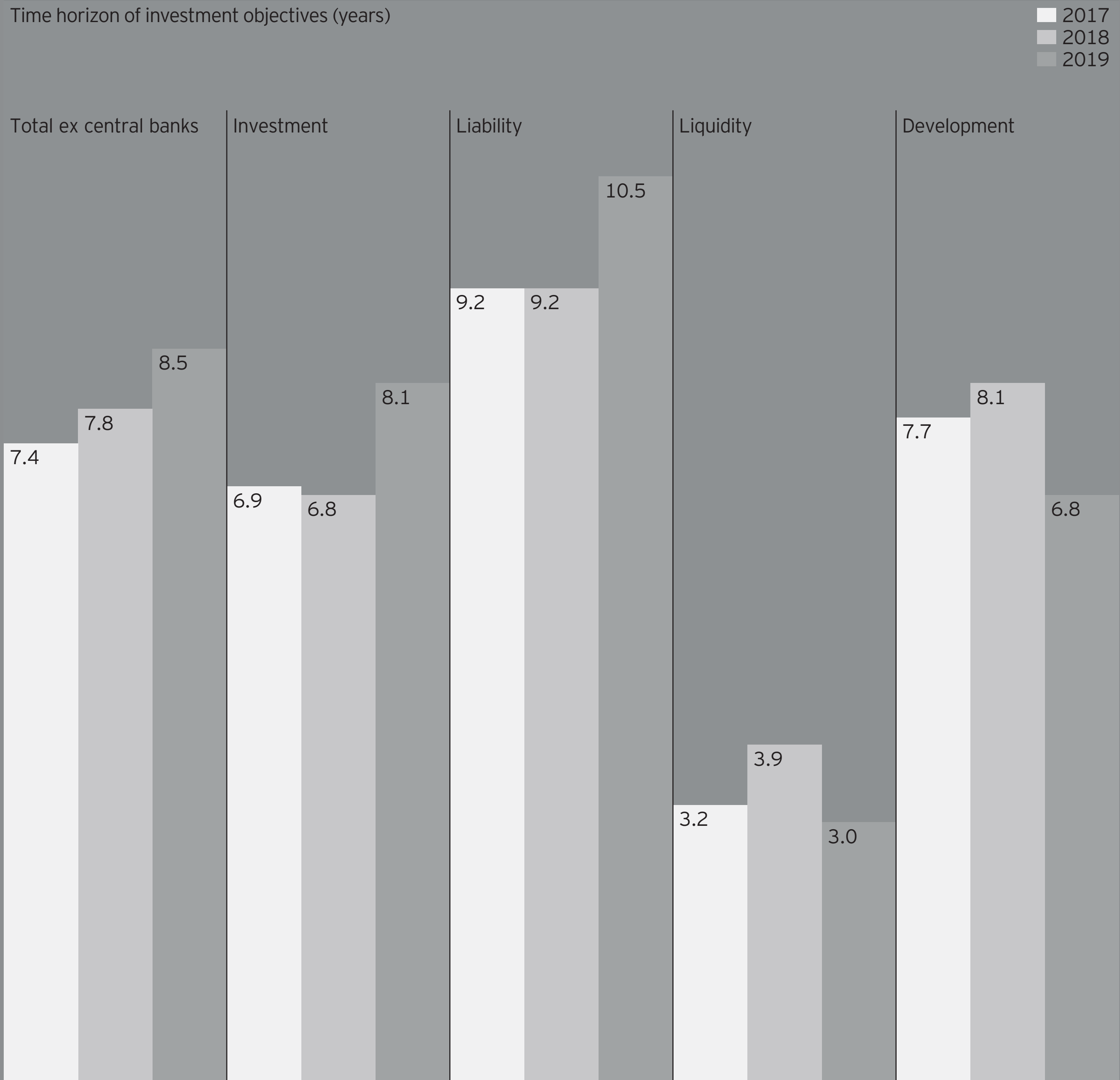
Key metrics

Time horizon
Investment time horizons among sovereign investors were extended over the past year, rising to 8.5 years from 7.8 years in last year's study. This represents a continuation of the recent trend which has been driven by lengthening horizons among investment and liability sovereigns. For these investors there has been an increase in allocations to illiquid private markets, with more capital being locked up for extended periods and these investments being judged over longer timespans. In contrast, there was a reduction in time horizons among liquidity sovereigns, which fell from 3.9 years to 3.0 years. For this sub-group of investors high levels of volatility have led to a notable increase in allocations to more liquid asset classes and a corresponding shortening of time horizons.

Time horizon of investment objectives (years)

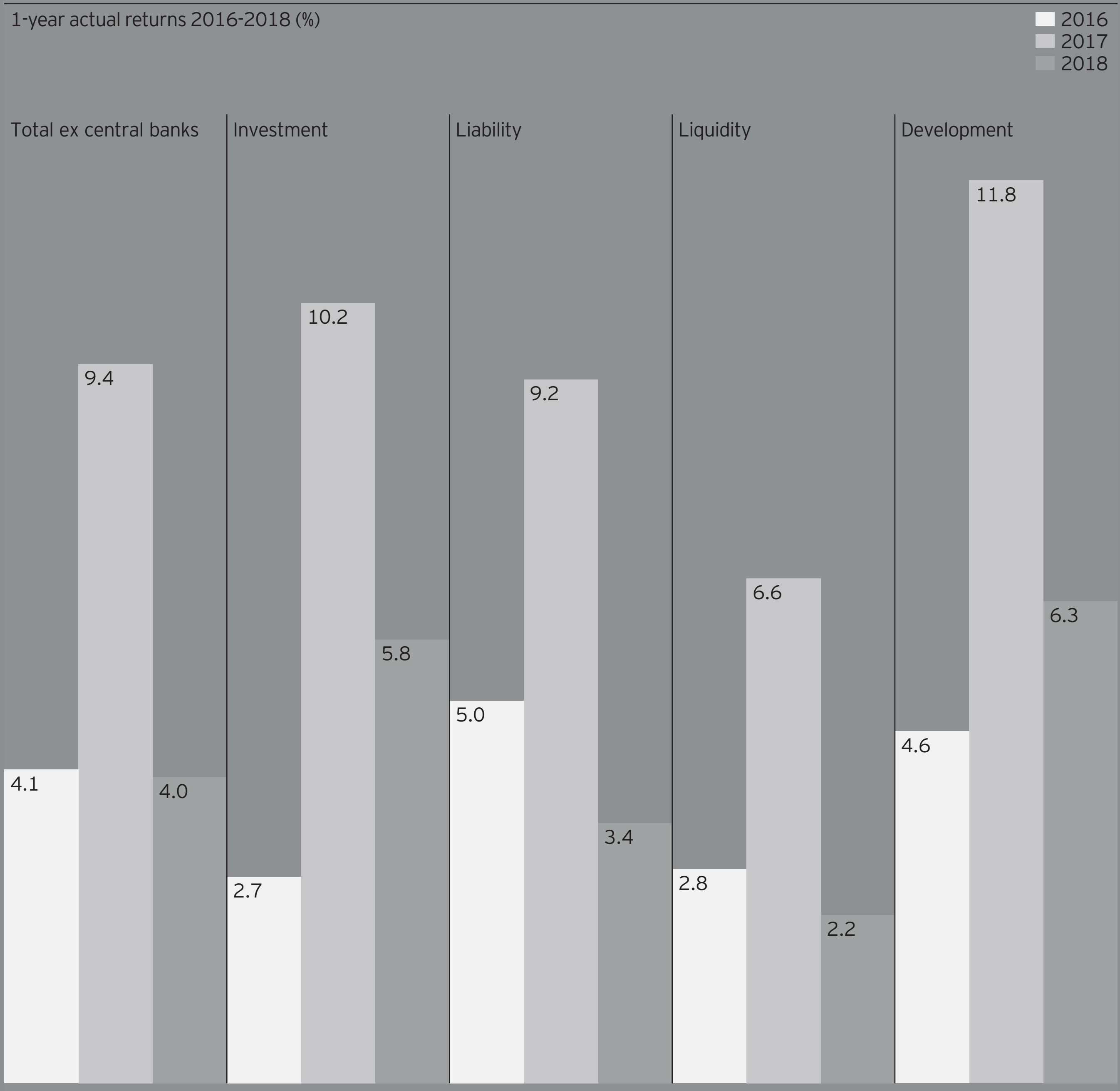


Sample size: 2017: 57; 2018: 64; 2019: 65. Sovereign definitions can be found in the appendix.

Performance
2018 was a challenging year for sovereign investors as weak and volatile equity markets combined with falling bond prices (on the back of rising yields). In a challenging period, sovereign investors (excluding central banks) on average achieved a return of 4%, compared to a very strong 2017, when sovereigns delivered gains of more than 9% on average.

Development sovereigns registered the strongest performance during the past year with returns of over 6%, thanks in part to their greater exposure to private market assets. Meanwhile, liquidity sovereigns recorded the weakest performance with returns of just over 2%, hampered by their relatively larger weighting towards cash and fixed income.

1-year actual returns 2016-2018 (%)



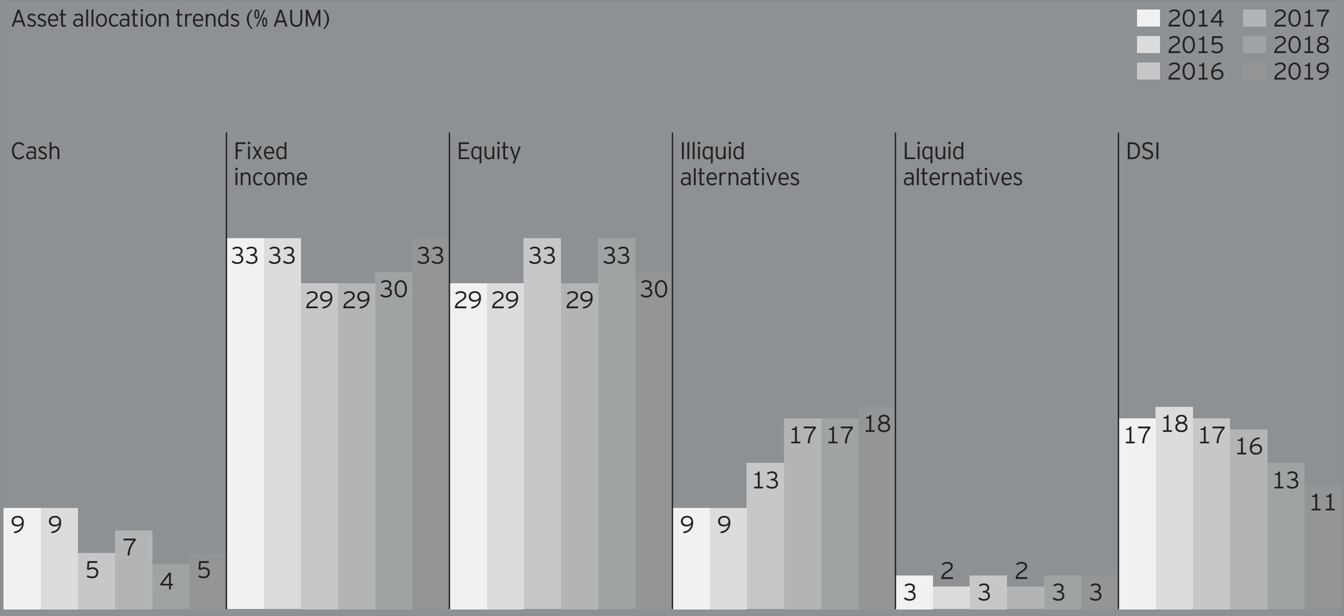
Sample size: 2016: 49; 2017: 52; 2018: 55.

Asset allocation
Allocations to fixed income increased to 33% in 2019. Meanwhile allocations to equities fell from 33% to 30% as a function of both decreasing strategic allocations and a fall in prices in the final quarter of 2018.

Sovereign investors now have an average of 21% allocated to alternative investments (excluding direct strategic investments), a continuation of the steady upward trend over the past five years.

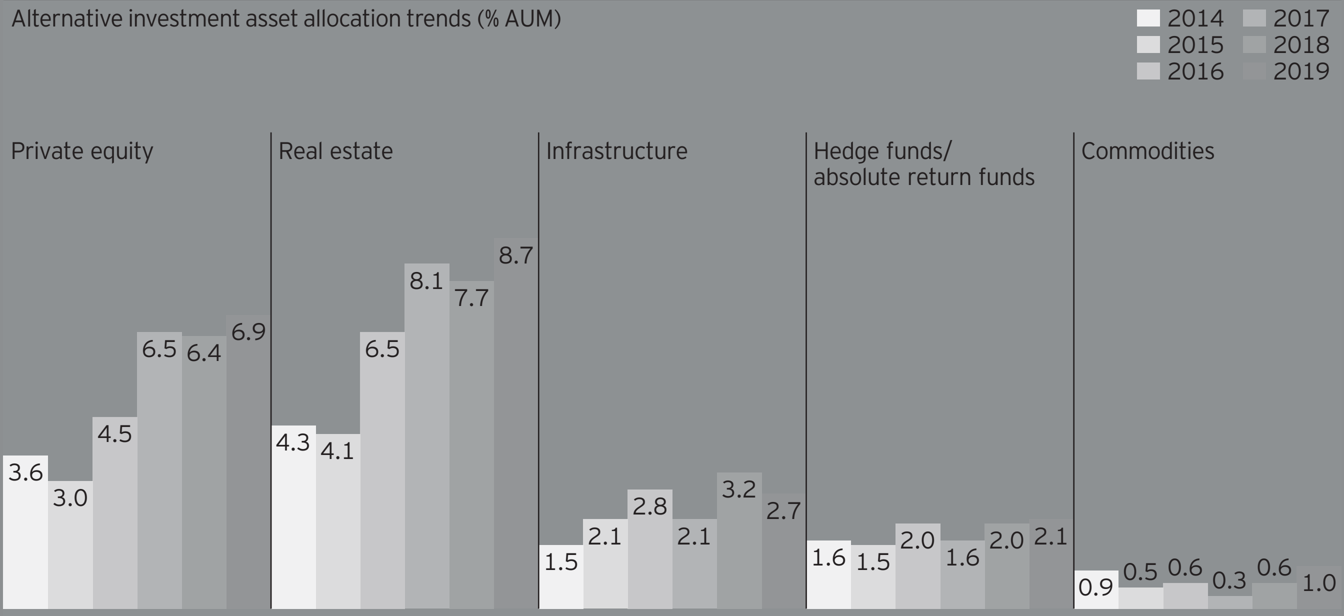
Within alternative allocations, private equity and real estate continue to be the largest sub-sectors, and registered further increases in 2019, with real estate the biggest beneficiary of expanded allocations.

Asset allocation trends (% AUM)



Sample size: 2014: 48; 2015: 44; 2016: 57; 2017: 62; 2018: 63; 2019: 53. Direct Strategic Investments (DSI) are direct investments held outside a private markets' portfolio.

Alternative investment asset allocation trends (% AUM)



Sample size: 2014: 48; 2015: 44; 2016: 57; 2017: 62; 2018: 63; 2019: 53.

Ageing cycle sees sovereigns defend, diversify and explore new opportunities

Key takeaways:

- A challenging 2018 has led to increased fixed income allocations and a push for more diversification as sovereigns anticipate the end of the current economic cycle.
- Some sovereigns have interpreted market volatility as highlighting the limitations of low intervention strategies, shifting away from market cap-weighted passive and 'set and forget' factor strategies in favour of more dynamic approaches.
- Sovereigns are shying away from Europe due to perceptions of increased political risk and slowing economic momentum, leading to increased interest in emerging markets, particularly China.

01

'Global Rainbow, After the Storm' installation, New York, USA.
Image: James Ewing/Otto

Equity volatility has seen sovereigns tilt to fixed income (as a defensive anchor) and the diversification benefits of private market assets
Last year's study highlighted rising allocations to equities and the displacement of fixed income as the biggest asset class for sovereigns. This five-year trend, during which fixed income fell from 35% to 30% and equity markets posted very strong gains, halted in 2018. Fixed income is back on top, swapping allocations with equities at an average of 33% of sovereign portfolios, as illustrated in Figure 1.1.

The view that the end of the economic cycle is close is almost unanimous – some 89% of sovereigns expect the cycle to end within two years (as shown in Figure 1.2). Late cycle concerns – both volatility and the prospect of negative returns from equities – have pushed sovereigns towards a more defensive position – supported by improved yields in some fixed income markets on the back of an increase in US interest rates.

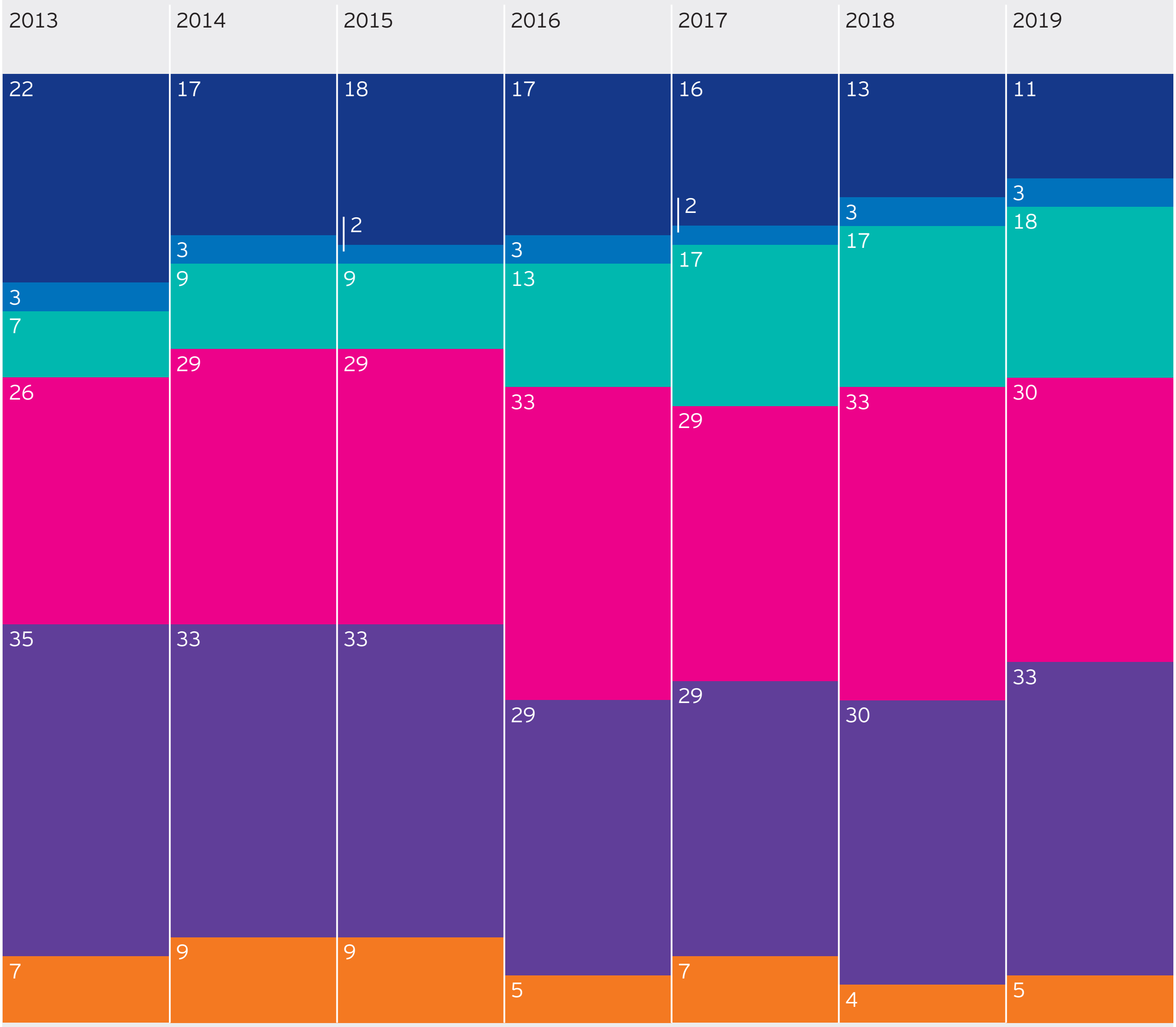
A decline in equity prices and more defensive portfolios led to lower investment returns for sovereigns in 2018 with the average fund returning 4.0% compared to 9.4% in 2017 (Figure 1.3 on page 14). However the segment's 5-year annualised return remains healthy at 7.6% pa.

Some 23% of surveyed sovereigns experienced negative returns for the year, with some of the worst experiences being reported by funds with higher allocations to passive equity strategies. With the MSCI World Index[1] falling 8.7% in US dollar terms during the year, the fact that three quarters of funds posted positive returns highlights the benefits of diversification, as fixed income and illiquid asset allocations picked up the slack.

[1] MSCI World Index (USD) www.msci.com, as at end of December 2018.

Fig 1.1. Asset allocation
Sovereigns only (% AUM)

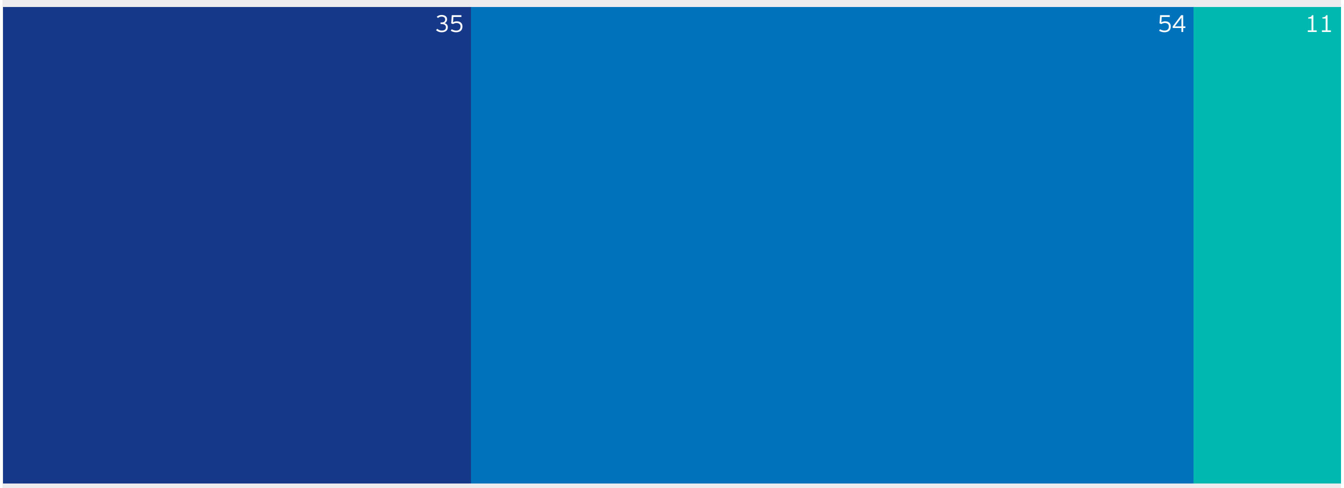
DSI
Liquid alts
Illiquid alts
Equity
Fixed income
Cash



Sample size: 2013: 33; 2014: 48; 2015: 44; 2016: 57; 2017: 62; 2018: 63; 2019: 53. Alts: alternatives.

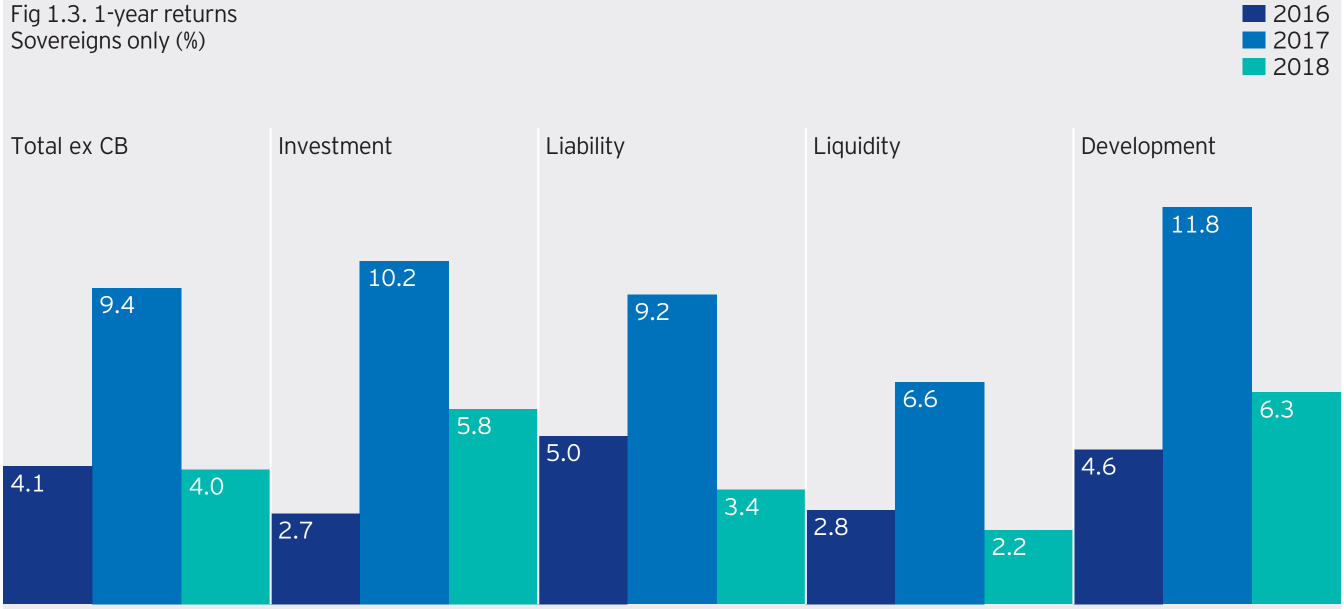
Fig 1.2. Expected end of the economic cycle
Sovereigns only (% citations)

6 months-1 year
1-2 years
2-3 years



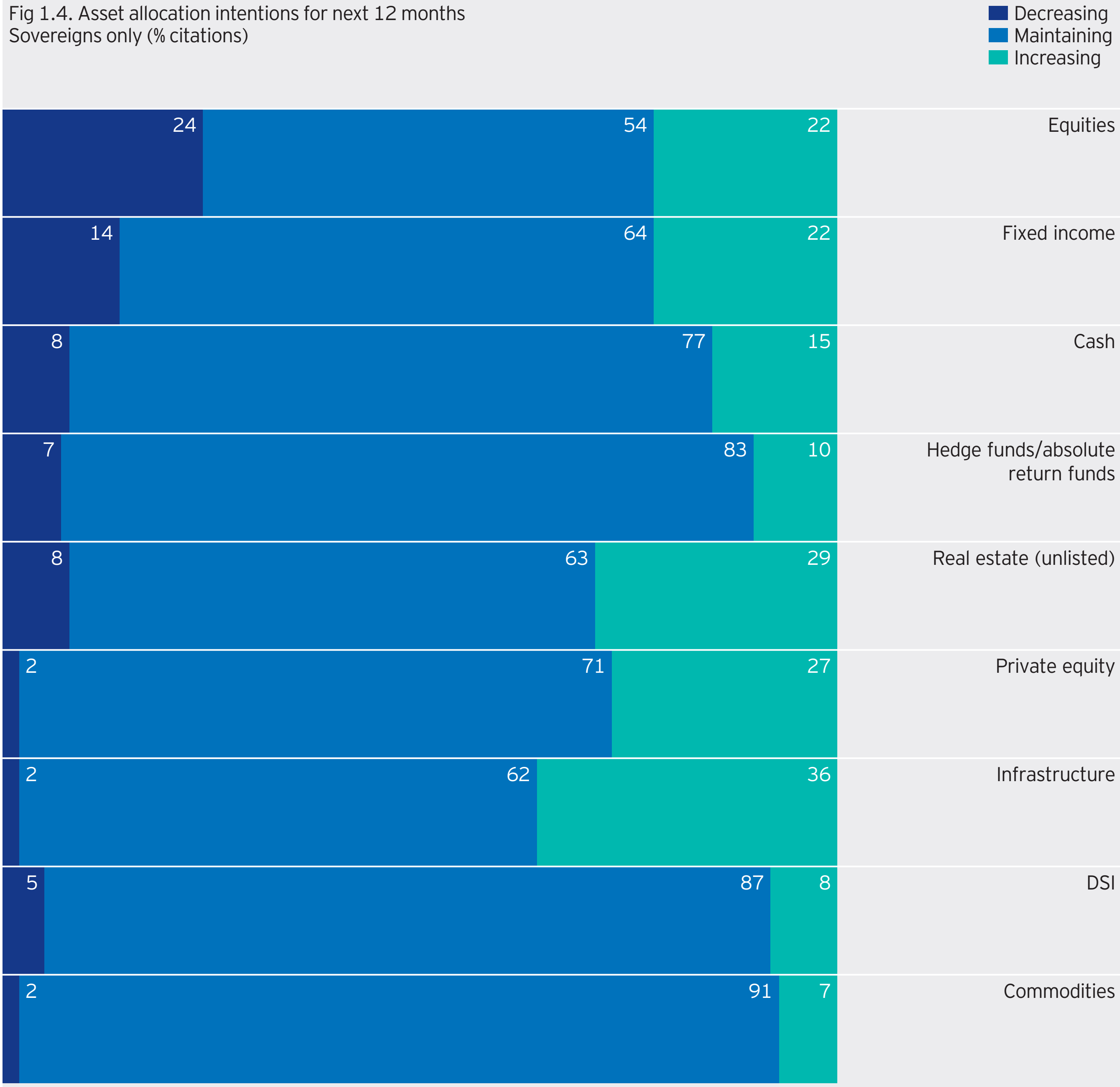
Sample size: 57.

Fig 1.3. 1-year returns
Sovereigns only (%)



Sample size: 55.

Fig 1.4. Asset allocation intentions for next 12 months
Sovereigns only (% citations)



Sample size: 59.

The diversification benefits of private market allocations in periods of public markets' volatility is reinforcing existing strong demand for private market investments – investors plan to increase allocations to infrastructure, real estate and private equity further, as illustrated in Figure 1.4. As well as returns with low correlations to other capital markets, the advantages identified in last year's report – including inflation protection, long-dated assets, and illiquidity premia – remain very attractive to sovereigns. For liability sovereigns in particular, infrastructure and real estate assets are also often viewed as offering a quasi-match for their liabilities.

Private market investments also allow sovereign investors to capitalise on a very long-term view of secular trends, such as climate change or demographic shifts. Increasing allocations to illiquid alternatives is a common trend across all regions, but is particularly prominent for those based in the West and the Middle East. In the latter case, some 75% plan to increase allocations to infrastructure and 63% plan increases to private equity (Figure 1.5 on page 17).

Push towards more sophisticated factor strategies
Market weakness in 2018 was felt particularly strongly by market cap-weighted passive portfolios as they captured negative performance (plus fees). As this study noted last year, the rise of market cap-weighted passive investing has been moderated by the increasing utilisation of factor investing, particularly in equity portfolios. However, equity market weakness has created challenges not only for passive equity strategies, but also for some factor strategies and asset managers who endured a difficult 2018.

There was a bifurcation of experience between more sophisticated large sovereigns utilising multiple factor-based strategies dynamically to manage the large beta exposures across their portfolios vs sovereigns utilising single-factor strategies. The latter were most impacted by recent market volatility with several of the most popular single-factor strategies (including value and momentum) delivering negative results during 2018[2]. Investors adopting a simple 'set and forget' approach to their factor allocations were also among those reporting negative returns. This is encouraging migration among this cohort from a single-factor approach towards taking multi-factor positions that can be adapted to suit the market conditions.

The experience is well represented by an APAC-based liability sovereign:

"Volatility and a difficult business cycle have led us to review our factor investment programme which we first began eight years ago. We've been moving from single-factor into multi-factor strategies. Our single-factor strategies haven't performed well in this business cycle, capturing a lot of the upside and downside volatility – generally they have underperformed market weighted indices. We know we should have been more dynamic in managing these factors and so we have moved from an equal weighting to a dynamic approach."
Liability sovereign, APAC

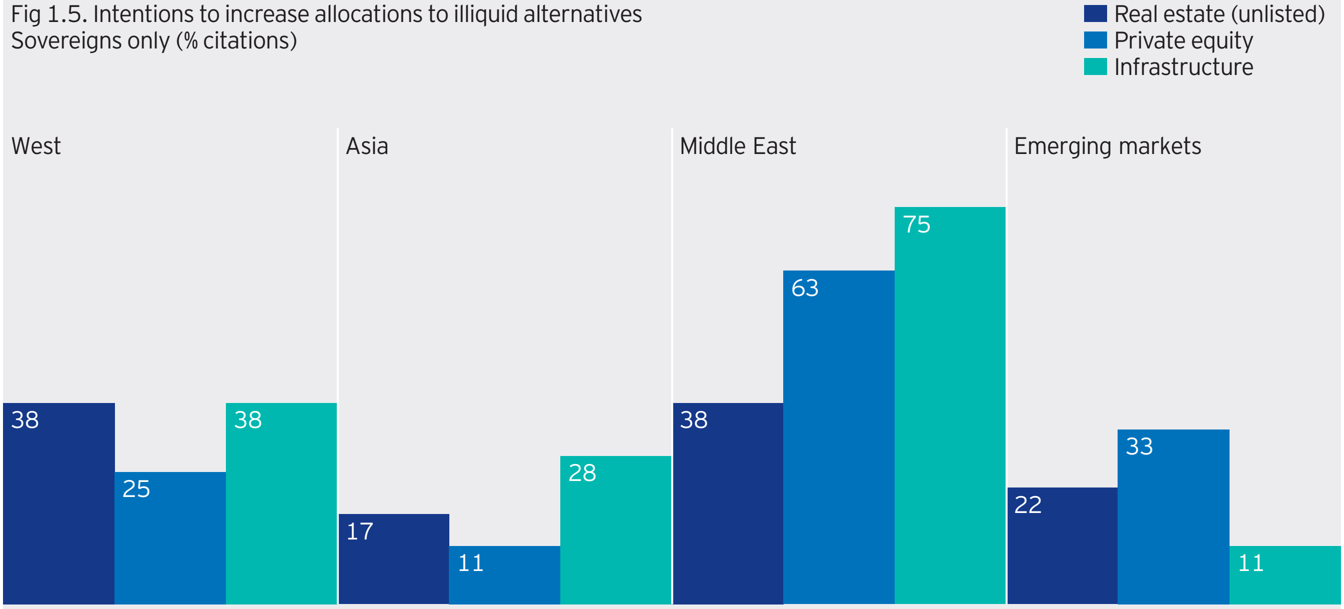
This was a relatively common view expressed by small- and medium-sized sovereigns. Large (and more sophisticated) sovereigns have already moved in this direction, viewing factor with a semi- or highly-active lens and utilising multi-factor strategies that offer portfolio efficiencies. For the most part, a difficult 2018 has not shaken the faith of sovereigns in the value of factor strategies, with factor strategies now holding a prominent place in public markets portfolios.

In addition to moving from single to multi-factor approaches, sovereigns continue to exhibit increasing interest in utilising factor strategies across additional asset classes. For example, 16% of funds now utilise factor strategies within their developed market fixed income allocation (against 33% for developed market equities) (Figure 1.6).

Investors at the leading edge of factor implementation are incorporating factor investing across more asset classes, and at the same time looking at how this can be implemented within a multi-asset framework. The consensus among investors is that a multi-asset approach provides attractive Sharpe ratios when compared to individual asset classes (given the lower correlation between underlying asset classes). However, some less well-resourced sovereigns lack the necessary skills to perform this type of portfolio-wide implementation and expressed a desire for tools that could facilitate adoption.

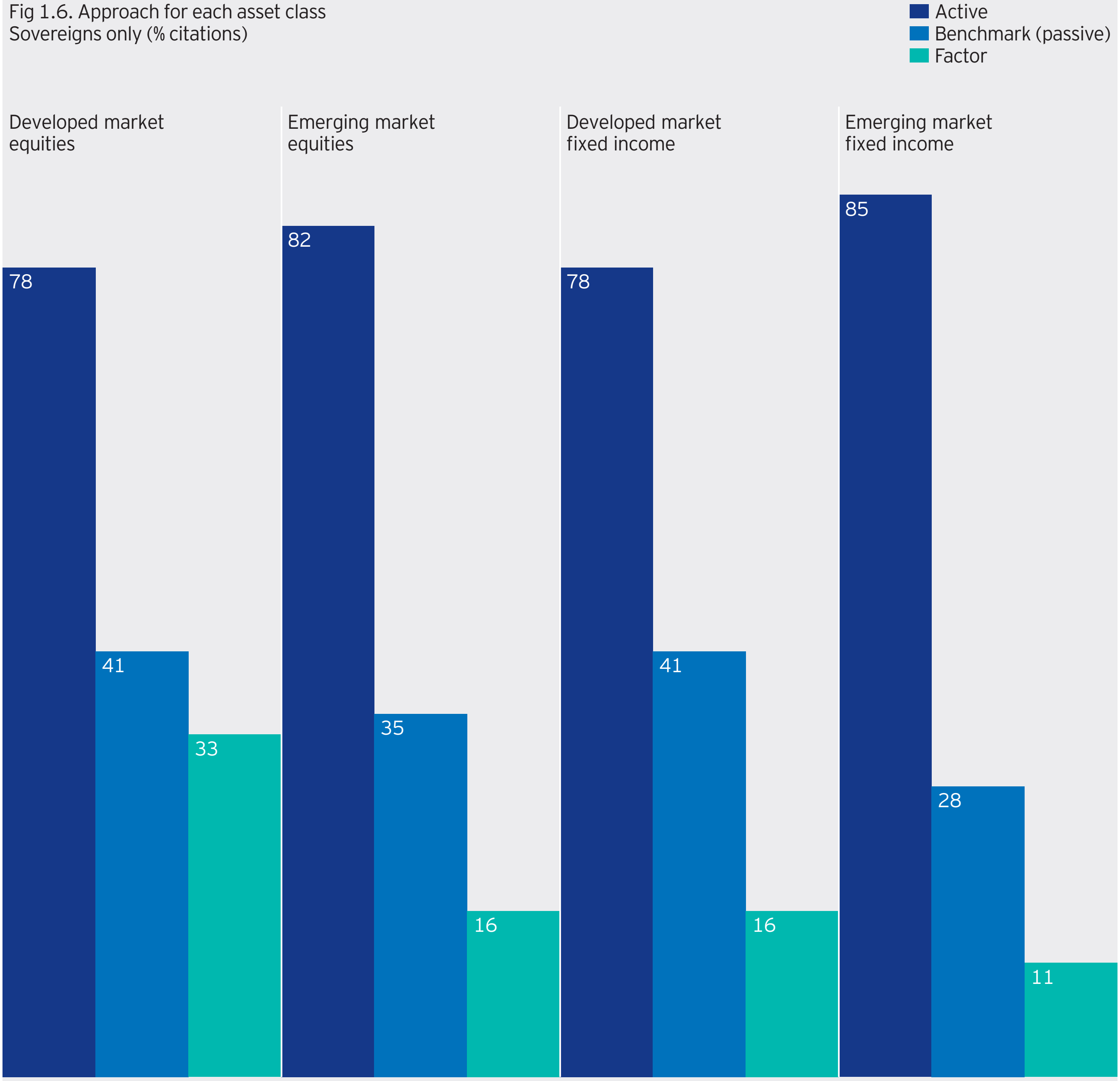
[2] Source: FactorResearch (https://www.factorresearch.com/research-factor-olympics-2018)

Fig 1.5. Intentions to increase allocations to illiquid alternatives
Sovereigns only (% citations)



Sample size: 59.

Fig 1.6. Approach for each asset class
Sovereigns only (% citations)



Sample size: 49.

Emerging markets and China preferred to Europe
Sovereign investors are also repositioning geographically. Slowing economic growth and perceptions of rising political risk have led to a decline in the attractiveness of major European economies. As highlighted in Figure 1.7, Brexit is now influencing asset allocation decisions for two-thirds of sovereigns. Continental Europe is increasingly volatile: populist parties continue to rise in popularity in major European economies including Germany and Italy, while the EU is engaged in an ongoing trade dispute with the US.

These issues have taken a toll on economic momentum. Furthermore, negative interest rates leave little room to manoeuvre and for some investors, this has signalled limited growth potential in the near future. As a result the region has fallen out of favour among sovereign investors. Nearly a third of sovereigns decreased allocations to Europe in 2018 and the same number plan further decreases in 2019, with North America, Asia and emerging markets the beneficiaries (Figure 1.8 on page 20).

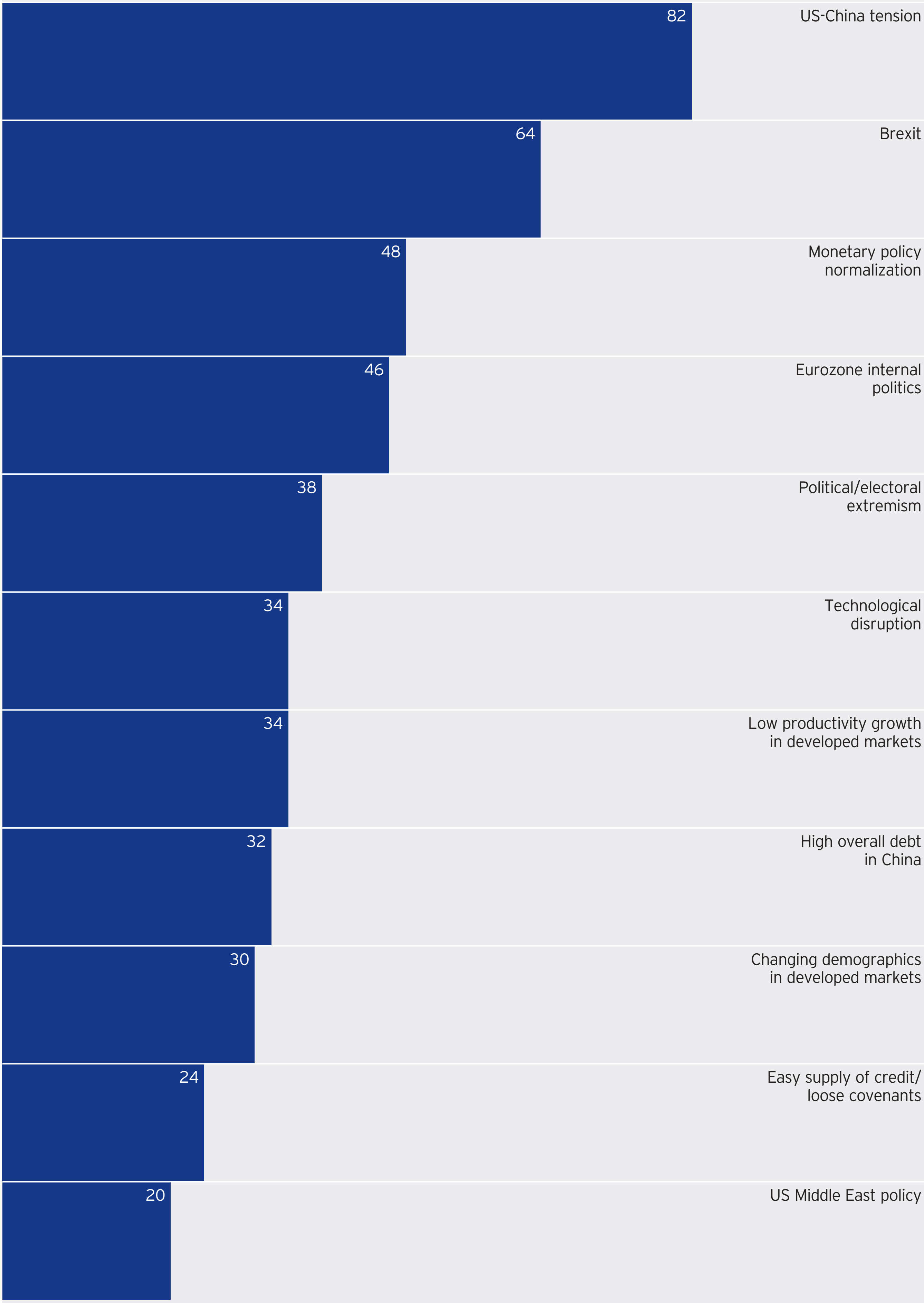
On average sovereigns now rate the investment attractiveness of the largest emerging market economies materially ahead of their developed market counterparts – a substantial reversal from 2017. China has seen the most improvement in its rating, followed by Brazil and India. Italy, Germany, Japan and the UK have registered the sharpest falls (see figure 1.9, pages 22 & 23).

It's notable that this improvement in sentiment is despite a difficult year for emerging markets, which were tested by deteriorating conditions in Turkey and Argentina in particular and concerns about wider contagion. It suggests a growing stickiness of emerging market allocations.

Sovereigns are seen as part of a broadening group of investors making long-term commitments to emerging markets. The presence of stable, long-term sovereign capital enhances the appeal of emerging markets to other investors while contributing to a view that fears of 'flight to safety' contagion and correlations observed during past cycles are overstated.

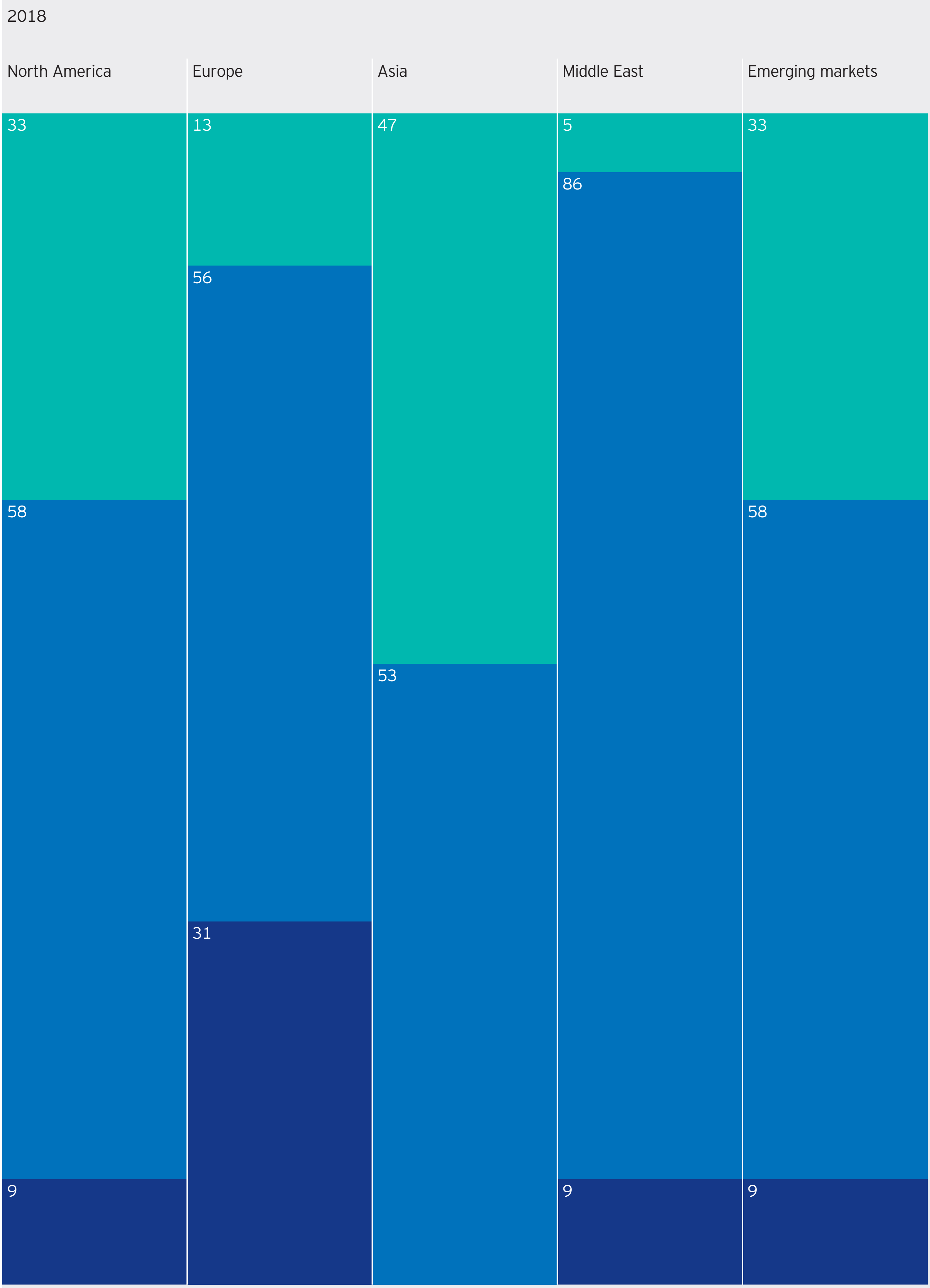
While allocations and quality of capital have increased, and correlation to developed markets concerns appear to have diminished, there remains caution among certain sovereigns about the immediate prospects for emerging market equities as a whole. Those that view the end of the current cycle resulting in a 'U' shape rather than 'V', find it hard to see markets that are net exporters doing well in a slower growth environment. The exception is China.

Fig 1.7. Macroeconomic themes influencing asset allocation decisions
Sovereigns only (% citations)

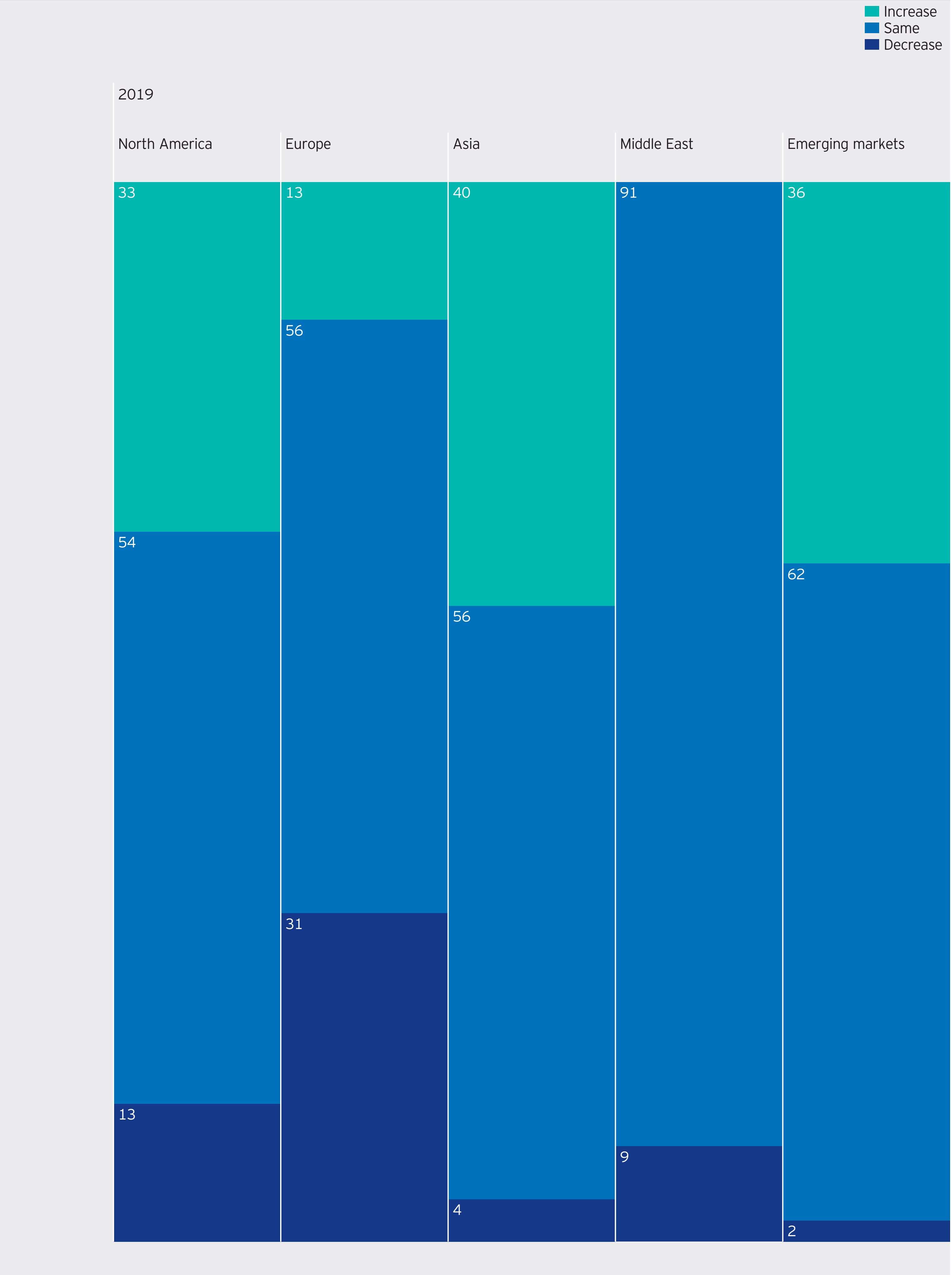


Sample size: 50.

Fig 1.8. Change and expected change in allocation
Sovereigns only (% citations)

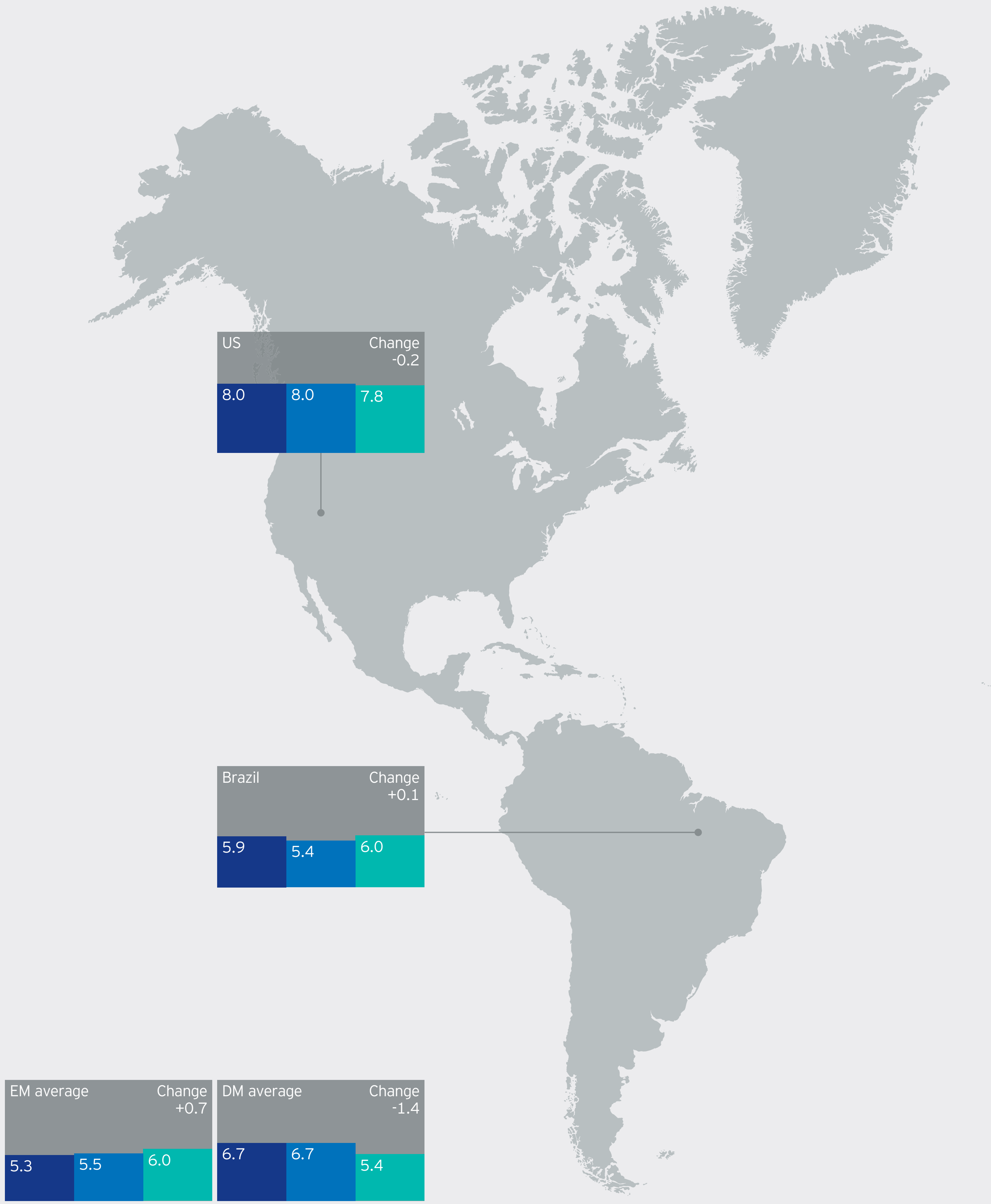


Sample size: 45.

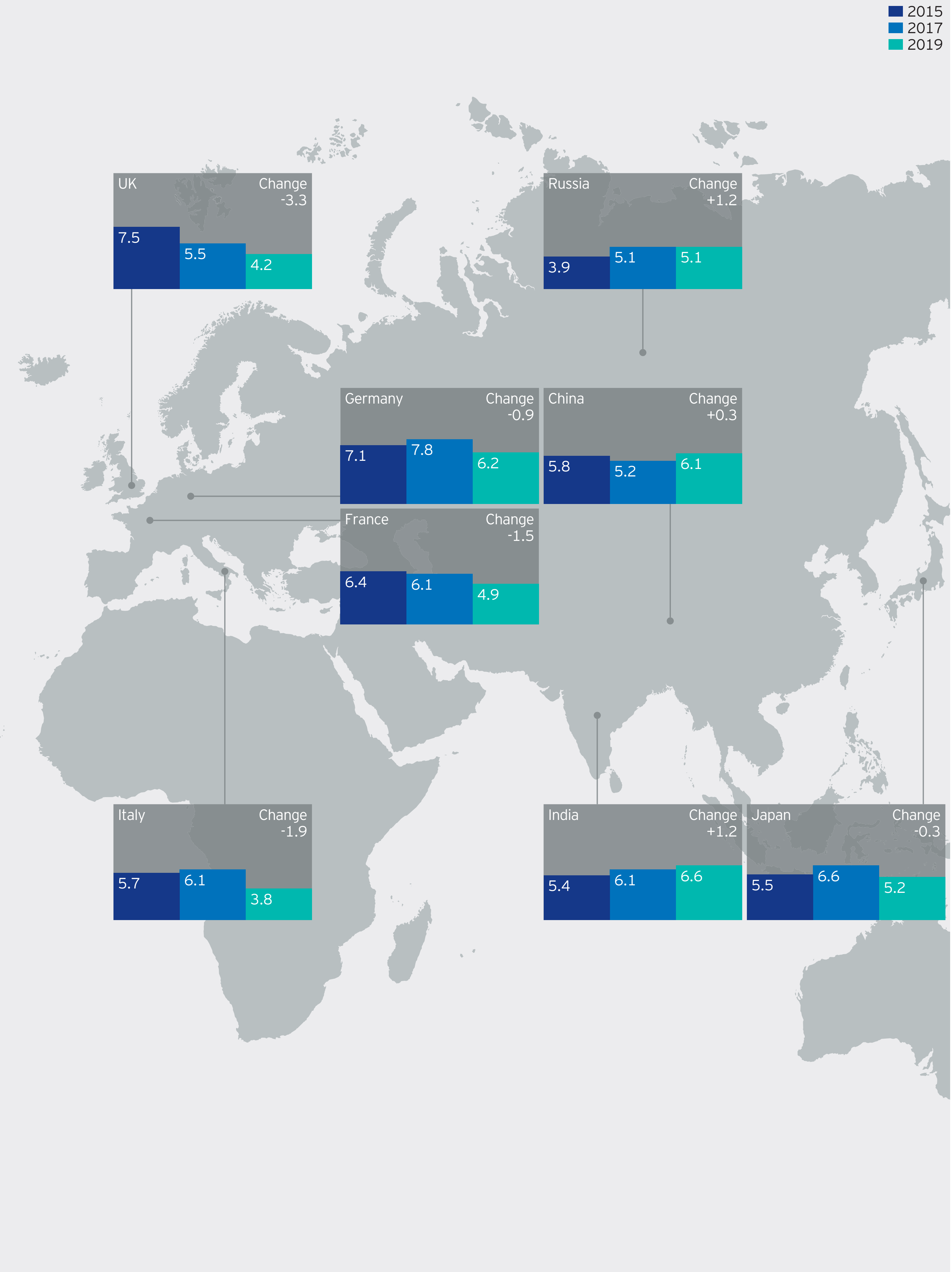


Increase
Same
Decrease
2019
North America
Europe
Asia
Middle East
Emerging markets
33
13
40
91
36
56
54
62
56
31
13
9
4
2

Fig 1.9. Attractiveness of economies for portfolio, 3-year prospects
Sovereigns only (average score 0-10)



Sample size: 2015: 27; 2017: 58; 2019: 33. Change equals difference in the average attractiveness score, 2015-2019.


2015
2017
2019
UK
Change
-3.3
7.5
5.5
4.2
Russia
Change
+1.2
3.9
5.1
5.1
Germany
Change
-0.9
7.1
7.8
6.2
China
Change
+0.3
5.8
5.2
6.1
France
Change
-1.5
6.4
6.1
4.9
Italy
Change
-1.9
5.7
6.1
3.8
India
Change
+1.2
5.4
6.1
6.6
Japan
Change
-0.3
5.5
6.6
5.2

As China rises in influence and prominence, so too does sovereign engagement

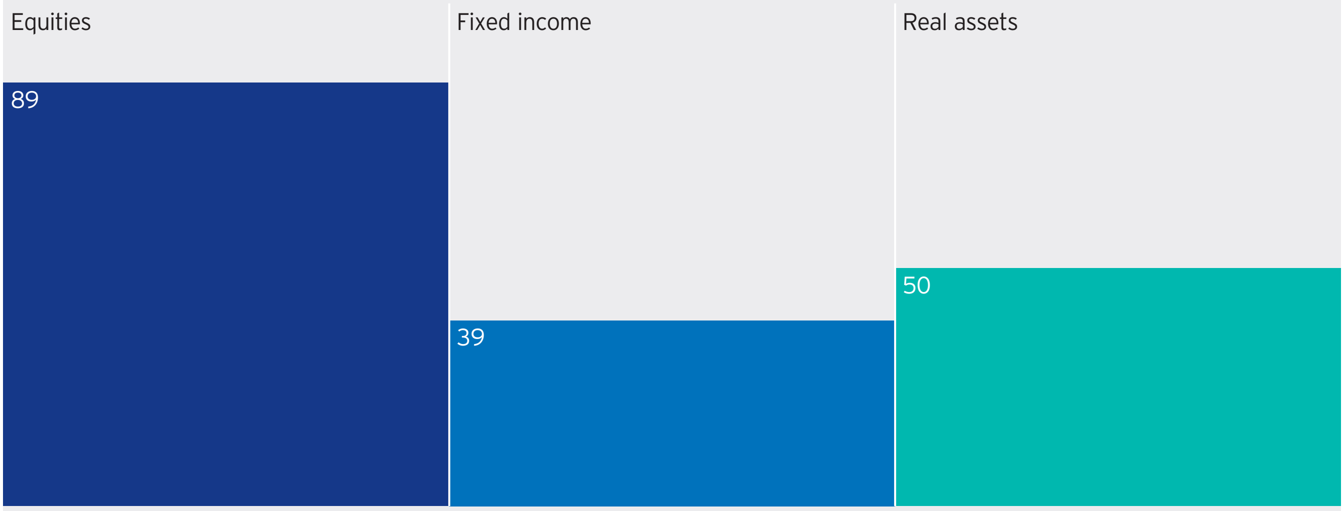
Heightened trade tensions between China and the US are impacting allocation decisions for the majority of respondents as illustrated in Figure 1.7 on page 19.

However, many sovereigns expressed optimism that ongoing negotiations could have a positive outcome for foreign investors. Investors cited progress on several fronts including China's enacting of a new foreign investment law in the first quarter of 2019 prohibiting the forced transfer of technology from foreign-invested businesses (previously a major grievance), and improvements to protection of intellectual property. As a large liability sovereign in APAC put it:

"We're constructive about China. On balance they should achieve this transformation. China's reputational issues as a bad economic factor are yesterday's story. It's a very entrepreneurial culture and its transformation from an agricultural-driven model to a value-adding tech and innovative services economy is already well underway."
Liability sovereign, APAC

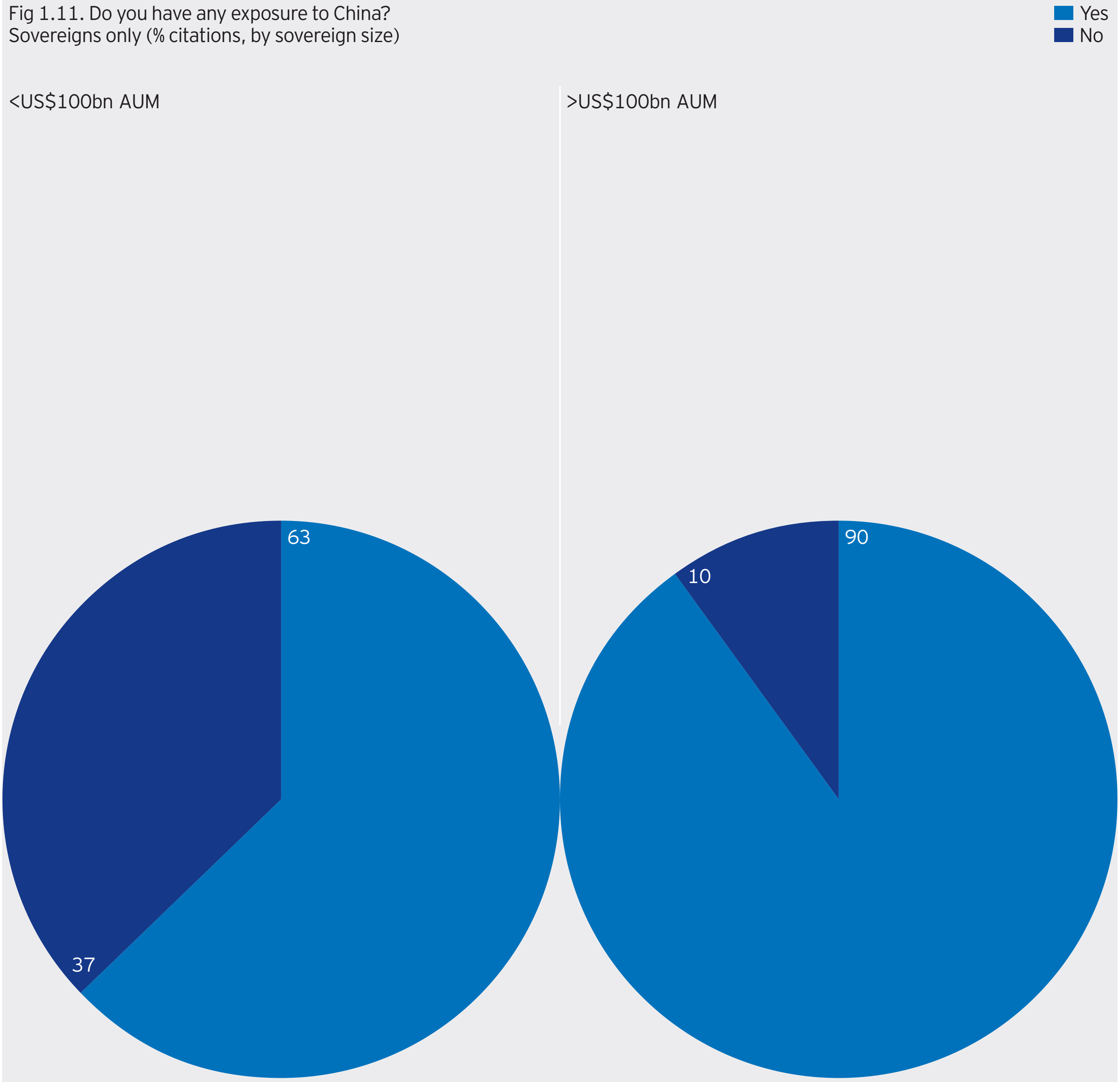
Equity is the most attractive asset class for sovereign investment in China (Figure 1.10) following over a decade of measures from the Chinese government designed to ease access and attract foreign capital (including Qualified Foreign Institutional Investors or 'QFII' and the Renminbi QFII or 'RQFII' regimes and more recently, the Shanghai-Hong Kong Stock Connect in 2014). Fixed income allocations are also already material and likely to increase with China's inclusion in major bond indices, and initiatives (such as Bond Connect, launched in July 2017) to open access to the local bond market to foreign investors. As Figure 1.11 shows, exposure to China is already widespread across the sovereign segment, especially large sovereigns.

Fig 1.10. Through which asset classes do you have exposure to China?
Sovereigns only (% citations)



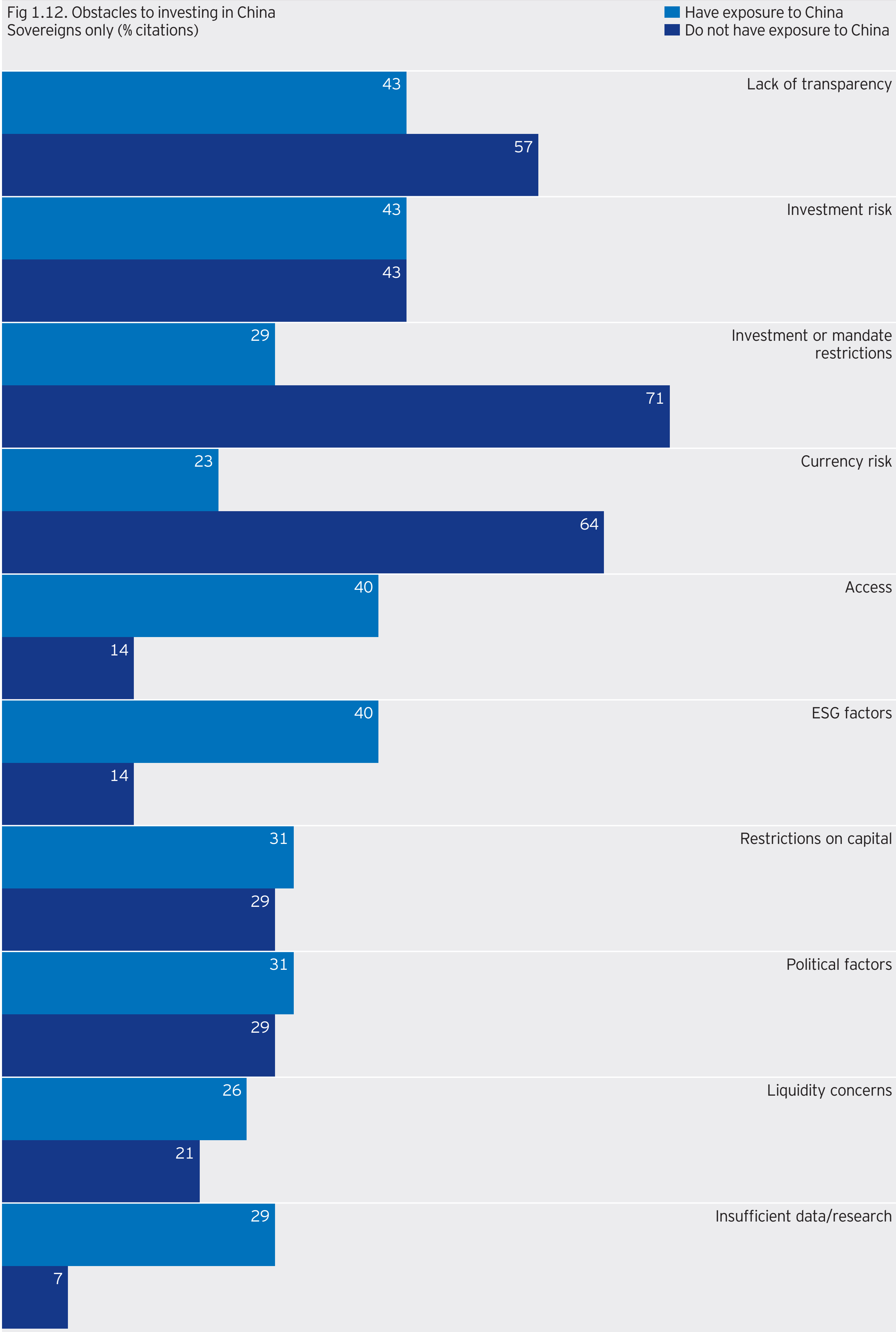
Sample size: 38.

Fig 1.11. Do you have any exposure to China?
Sovereigns only (% citations, by sovereign size)



Sample size: 56.

Fig 1.12. Obstacles to investing in China
Sovereigns only (% citations)



Sample size: 55.

Specialist expertise and active management is needed to address China risks

Transparency is the most commonly noted challenge preventing higher allocations to China (as illustrated by Figure 1.12), although for sovereigns with no existing China allocations, investment restrictions and currency risks are seen as the main obstacles. For institutions which have made allocations to China (often initially small as part of a broad EM or Asia portfolio), such concerns are much lower, indicating that most have confidence that they can be overcome.

A recent recruitment drive by well-resourced sovereigns focused on building their expertise in this area has targeted China specialists who can offer market knowledge and language skills, and several large funds have created dedicated China teams to focus on the country's markets.

"We have invested via partnerships in China and are looking to do more in this region. We have recruited in-house expertise and have built a dedicated Asian office which makes it easier to mobilise our scale."
Investment sovereign, Middle East

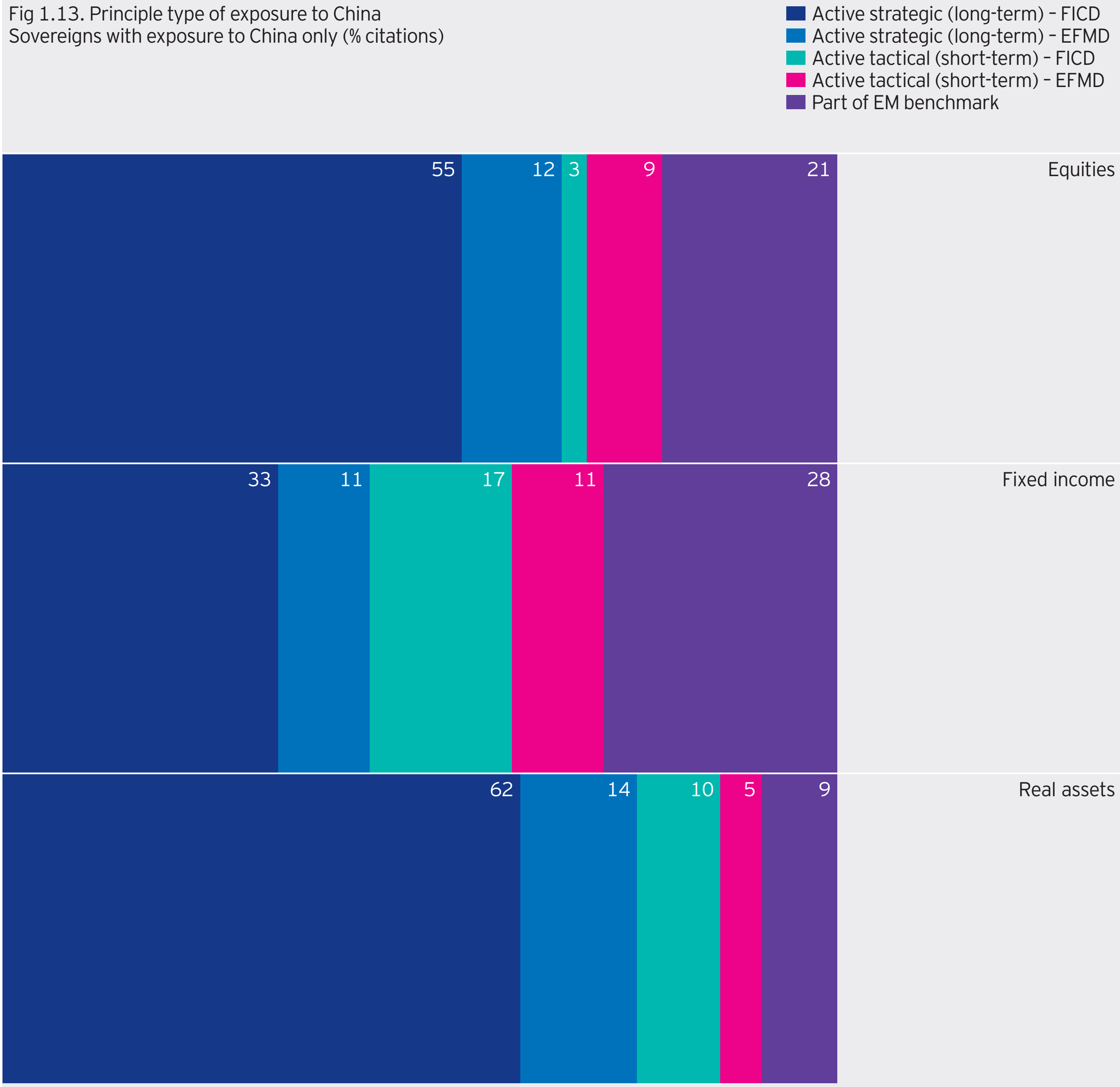
Concerns about the level of systematic risk in China has led most sovereigns to prefer an active approach to investing. Active strategic (i.e. long-term) investments are the most common means of gaining exposure to the Chinese market across equities, fixed income and real assets (figure 1.13), with decisions most often taken internally by large sovereigns who are more likely to manage these investments internally.

Systematic risks, combined with concerns about transparency, make the largest and best resourced sovereigns better placed to take advantage of opportunities in China and other emerging markets. They are also more likely to be approached by Chinese official agencies and made welcome as inbound investors.

As a result, large funds are not only more likely to have China exposure but are much more likely to have invested in real assets (see Figure 1.14). Of funds with exposure to China, those with assets under management of more than US$100bn are more than twice as likely to have exposure to real assets than funds with assets under management of less than US$100bn.

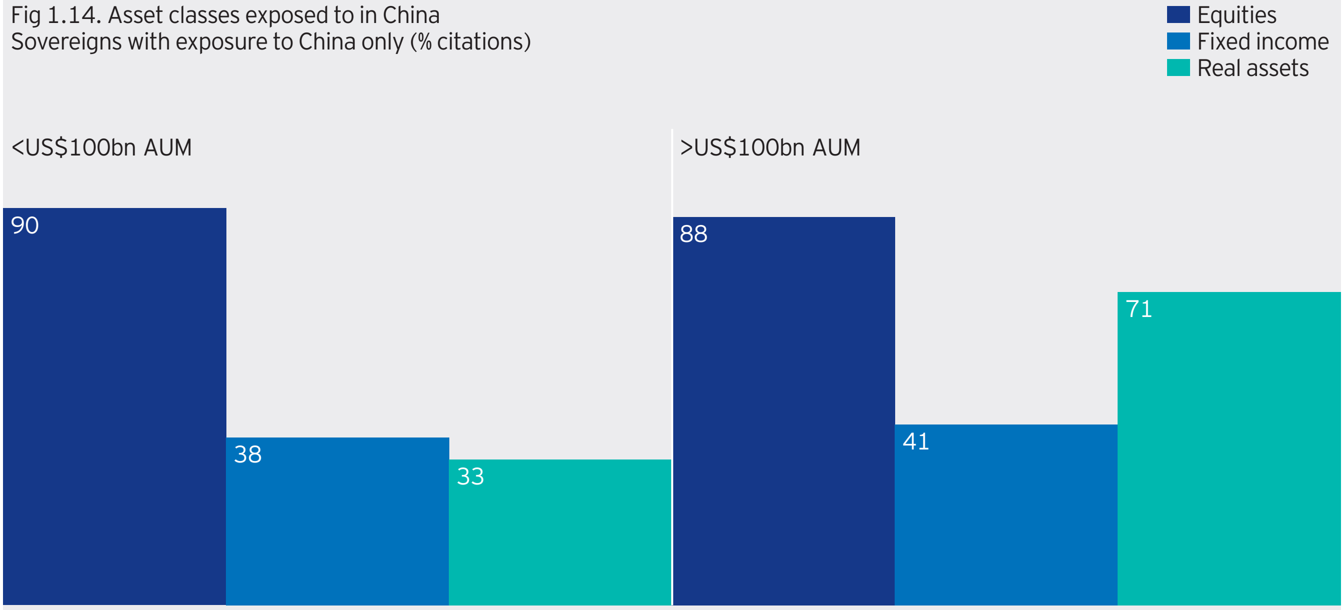
Taking stock
Following several years of strong returns on the back of steady global growth and rising equity markets, a more challenging 2018 has prompted sovereigns to take stock and consider whether they are well positioned to contend with a global downturn.
This has led some to rethink their assumptions, particularly with regards to passive and factor equity allocations. More generally it has accelerated the pre-existing trend for better diversification, both by asset class and geography, and this is likely to remain the principle driver of asset allocation while an end to the economic cycle is considered to be in sight.

Fig 1.13. Principle type of exposure to China
Sovereigns with exposure to China only (% citations)



Sample size: 33. FICD: Fund Investment Committee decision. EFMD: External Fund Manager decision.

Fig 1.14. Asset classes exposed to in China
Sovereigns with exposure to China only (% citations)



Sample size: 38.

Investing at scale

Key takeaways:

- Sovereigns are adapting to increasing scale – while the desire to secure real estate and infrastructure assets remains strong, large sovereigns are also seeking alpha in specialised areas including China and the technology sector.
- With demand for private market assets rising faster than supply, medium-sized sovereigns are finding it more difficult than large or small sovereigns to deploy capital as they begin competing against much larger asset owners.
- When faced with fork-in-the road decisions about whether to diversify and accept lower risk adjusted returns or become more concentrated and accept higher idiosyncratic risks, the ability to source and assess new opportunities quickly is important; large-scale sovereigns are best equipped for this environment.

02

City Hall interior, spiral staircase, London, UK.
Image: Greg White

The 2019 study looks at sovereigns across three scale categories:

Size	AUM range (US$bn)
Large	>100
Medium	25–100
Small	<25

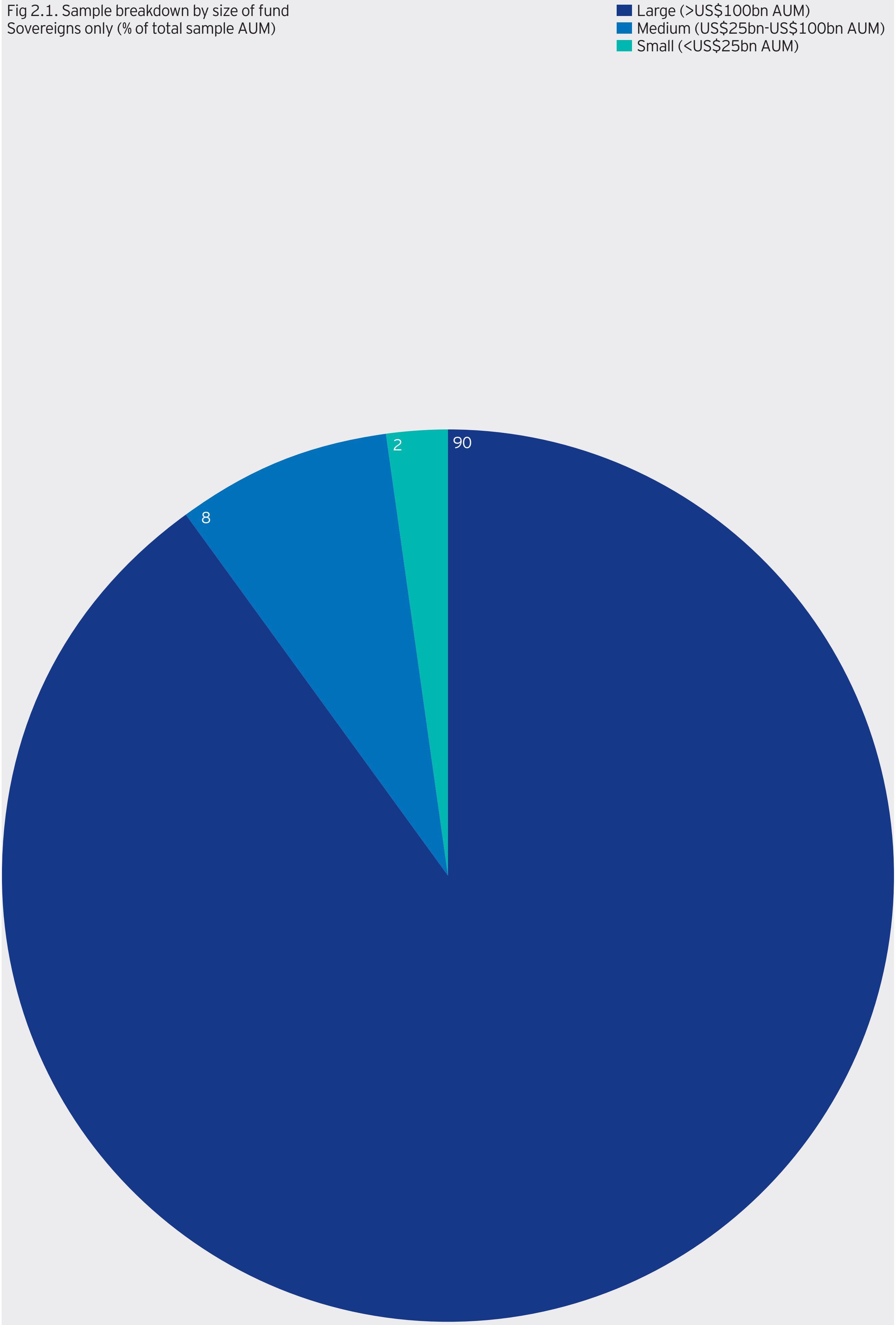
Figure 2.1 shows the number of sovereigns in each size category is similar, yet the difference in total asset size between large-scale and medium-sized sovereigns illustrates the extent to which they dominate total assets.

Large sovereigns: Deploying capital at scale
The 2019 study found that while size does facilitate opportunities, CIOs of large-scale funds are also grappling with constraints stemming from scale. In addition to operational complexities from building larger internal capabilities such as governance, systems, processes and procedures and expanding human resources responsibilities, the study found investment challenges. These challenges include what to do with new capital as the end of economic cycle draws near, as they prepare for a period of low asset class returns to be very much top of mind. As they survey dwindling sources of attractive risk-adjusted return, CIOs face fork-in-the road decisions.

A key challenge for large-scale funds is capacity. As they grow, traditional sources of alpha in public markets (such as smaller capital markets for micro and small-cap equities and high-yield credit) become difficult to transact and manage and shrink to insignificance in terms of contribution to portfolio returns even if highly successful. In adapting to scale, sovereigns, like other large asset owners, are forced to evolve to target different asset classes, investment strategies and methods of access.

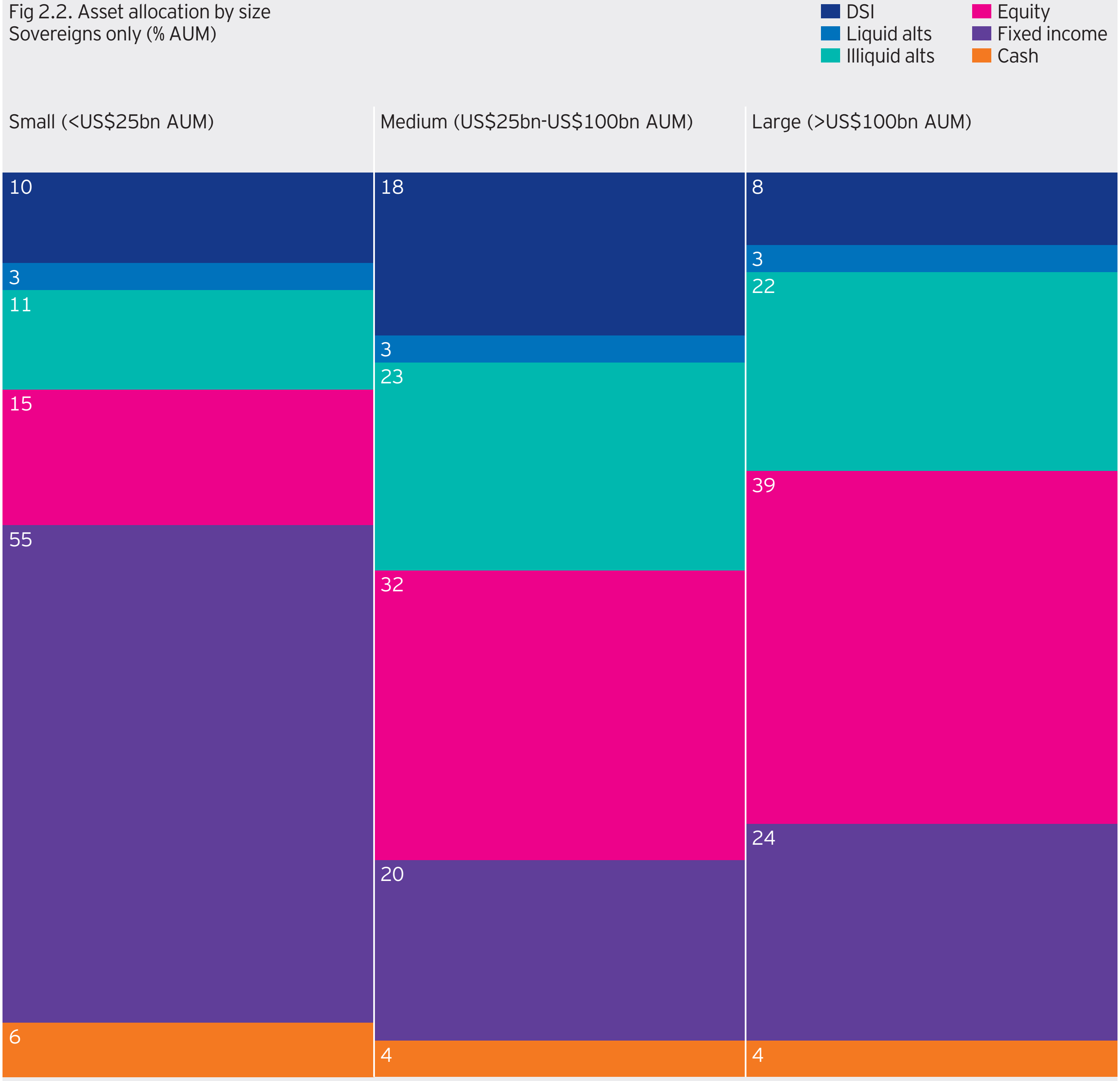
The most prominent example of this evolution has been the rise of interest in, and allocations to, private market assets. Past studies have shown sovereigns steadily increasing their exposure to a diverse range of private markets to capture long-term returns, illiquidity premia, and diversification benefits. As shown in Figure 2.2 on page 34, medium-and-large-scale sovereigns have greater allocations to these assets while Figure 2.3 on page 34 shows the overall average segment exposures to illiquid alternatives have more than doubled since 2013 to 18%.

Fig 2.1. Sample breakdown by size of fund
Sovereigns only (% of total sample AUM)



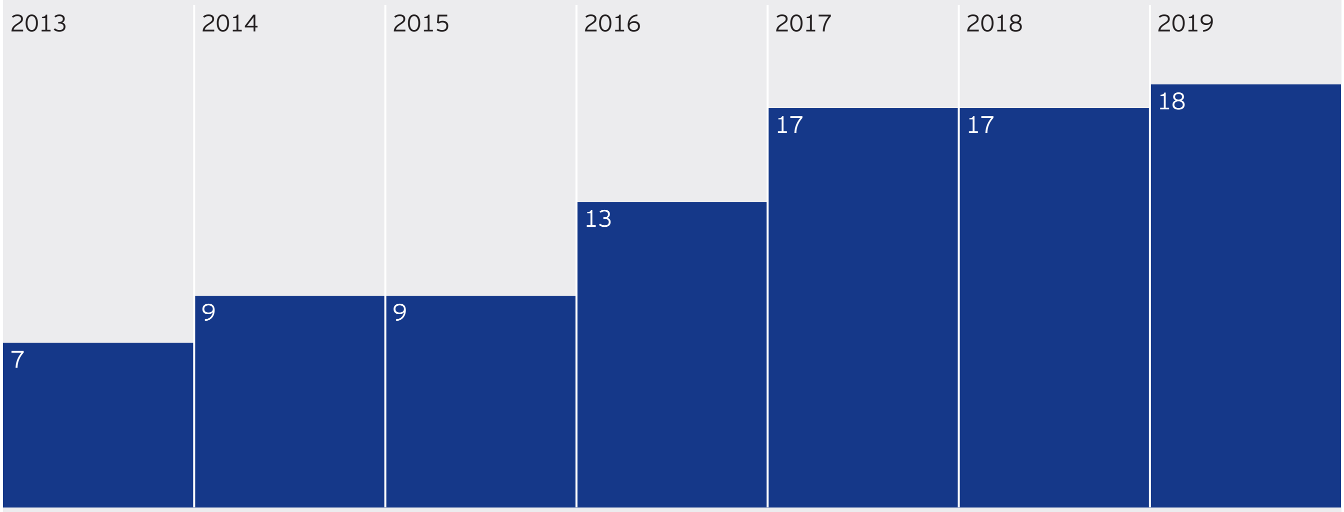
Sample size: 68. Large: 25; Medium: 18; Small: 25.

Fig 2.2. Asset allocation by size
Sovereigns only (% AUM)



Sample size: 53.

Fig 2.3. Allocation to illiquid alternatives
Sovereigns only (% AUM)



Sample size: 2013: 33; 2014: 48; 2015: 44; 2016: 57; 2017: 62; 2018: 63; 2019: 53.

Sovereigns are underweight vs strategic asset allocations

However, the aforementioned benefits are increasingly difficult to capture in private markets. Demand for illiquid assets such as property and infrastructure has not been met with a matching supply of new deals. Sovereigns are underweight their strategic asset allocations as capacity has become an issue for them even here, where investors have traditionally been able to find opportunities to make big ticket investments.

The state-controlled status of sovereign investors can hinder their access to infrastructure assets as they step out of their home market. Assets such as ports, railroads, toll roads, power and communications networks are often considered to be strategic assets, with potential national security implications. In markets with stringent rules around foreign investment there can be heightened sensitivity to motivations behind sovereign investment, particularly when led by less transparent investors.

The supply/demand imbalance and sensitive political environment have increased the importance of sourcing and assessing accessible deals. The range of available options to access deals as they arise, whether in primary or secondary markets is also important. Being flexible between direct, indirect, commingled or co-investment driven investment creates more options and opportunities to invest.

Mid-sized sovereigns: toughest in the middle
Large-scale sovereigns, while still experiencing difficulties sourcing attractively valued deals in private markets, have been relatively effective in meeting strategic asset allocations. However, sovereigns in the middle of the size spectrum can find themselves caught in the middle: too large or no longer wishing to use the commingled pools with which small-scale sovereigns must content themselves, but too small to make use of these more sophisticated private market strategies available to large sovereigns.

Consequently, many find themselves significantly underweight as illustrated in Figure 2.4.

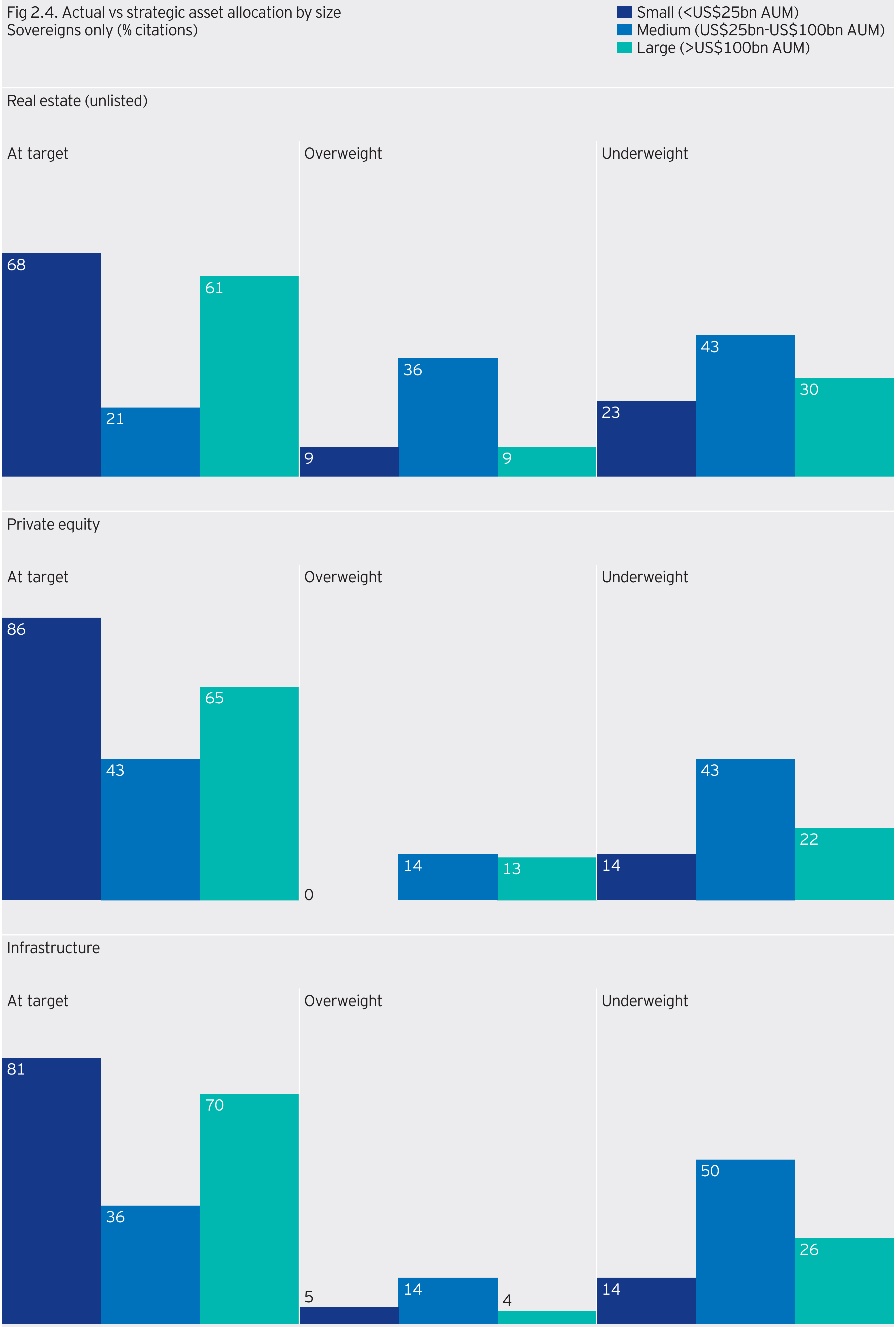
As the 2018 study noted, sovereigns now view their private markets portfolios more holistically and are seeking a better alignment of interests, reduction of agency issues and cost efficiencies. Increasingly, larger sovereigns have sought to collaborate with other investors of similar scale at the asset level.

Club deals and co-investment structures provide greater control over asset selection. Unlike closed-end funds there is typically no set termination date or fee-based incentive to sell down, allowing investors to fully utilise their long-term investment horizons, which will be indefinite in some cases. As sovereigns grow their internal investment capability and reach a suitable size, many prefer this approach, spending more time assessing individual opportunities and bidding for deals.

This can create barriers for the mid-sized sovereigns looking to follow as they begin competing against other much larger asset owners, including large-scale sovereigns. Mid-sized sovereigns looking to invest need to establish a leading internal capability if they are to source assets, and assess them efficiently, often needing to work closely with other investors to secure the opportunity.

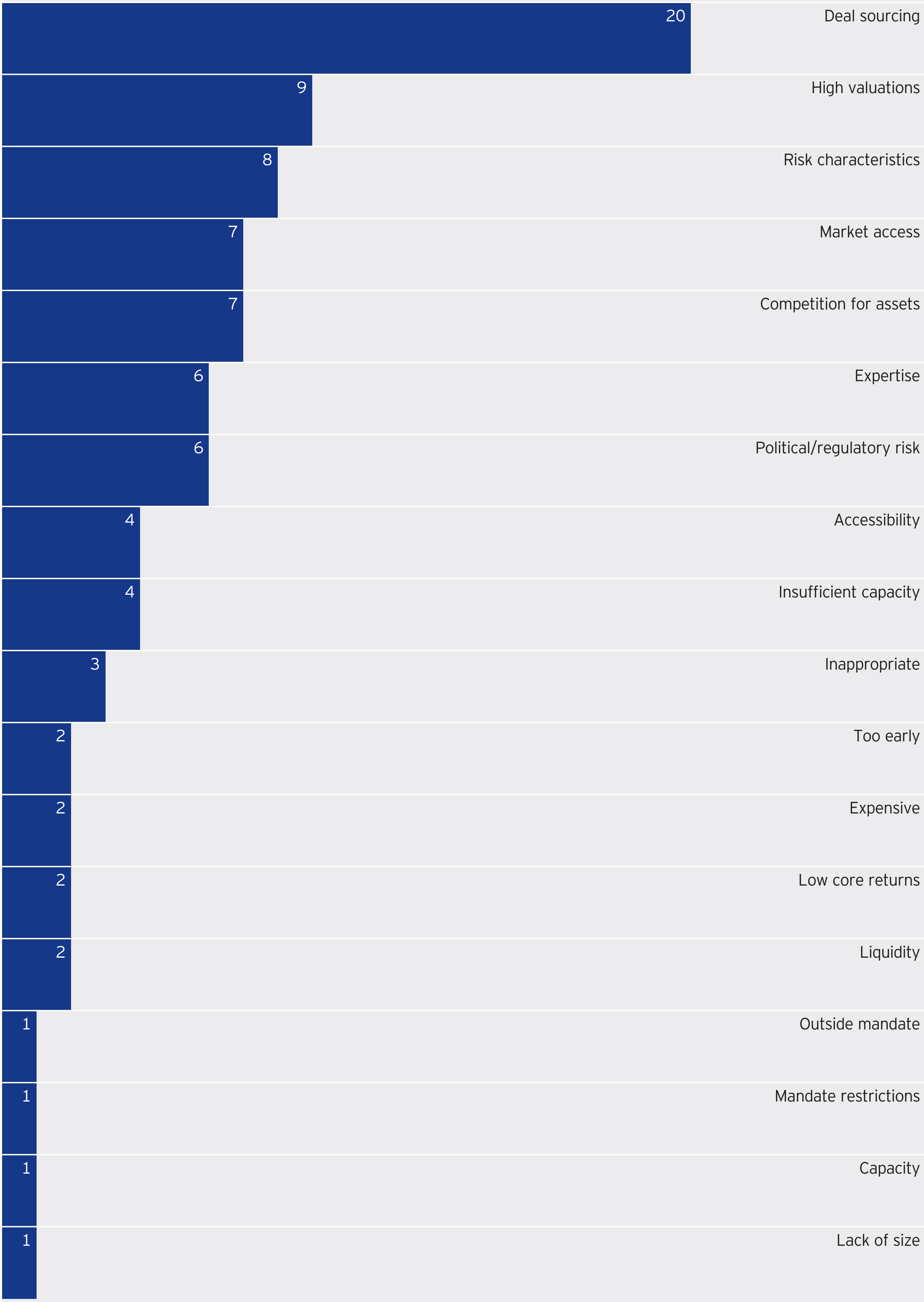
Small sovereigns: focused on funds
Club deals and co-investment structures are unavailable to, or impractical for, smaller sovereigns. The size of commitments required in these deals limits their ability to diversify. Yet they are less underweight their target weights in private markets than mid-sized sovereigns as a result of their emphasis on closed-end funds. Closed-end fund managers (or General Partners) have a greater degree of control over asset selection and, as their management fees are now almost exclusively paid on invested capital, they are highly incentivised to deploy quickly.

Fig 2.4. Actual vs strategic asset allocation by size
Sovereigns only (% citations)



Sample size: 59.

Fig 2.5. Obstacles to investing in infrastructure
Sovereigns only (% citations)



Sample size: 62.

Dealing with deal scarcity: infrastructure's deployment vs risk trade-off

In response to the limited set of conventional opportunities, some larger sovereigns have cast the net wider. The 2019 study found this to be particularly true in the case of infrastructure. Infrastructure assets are viewed as a good match for many sovereign investors, not only due to the ability to invest large amounts of capital, but also for the regulated, long-term revenue these monopolistic assets tend to deliver, which has helped many sovereigns achieve attractive risk-adjusted returns. Liability sovereigns are particularly keen on infrastructure assets, given their long-time horizons, illiquidity tolerance, and the fact they are a quasi-match to their liabilities.

Figure 2.5 illustrates the major difficulties faced by sovereigns locating opportunities to deploy capital, let alone opportunities that might offer attractive returns.

Supply constraints in developed markets have yet to be addressed by government action to remedy underinvestment. In some countries there is a perceived lack of political will to push deals through, and some bad past experiences with public-private partnerships (such as the UK's Private Finance Initiative (PFI)) have caused friction between governments and some parts of the electorate.

The major exception is North America where the US administration has expressed a willingness to invest in infrastructure (most recently to the scale of US$1 trillion, including a request to Congress for US$200bn of government spending in the next fiscal year[3]), although there is some scepticism as to whether this level of investment will be realised in the form of investible opportunities. As Figure 2.6 on page 40 shows, sovereign investors have responded, with just under 50% of those investors considering additional regions for infrastructure allocations nominating North America.

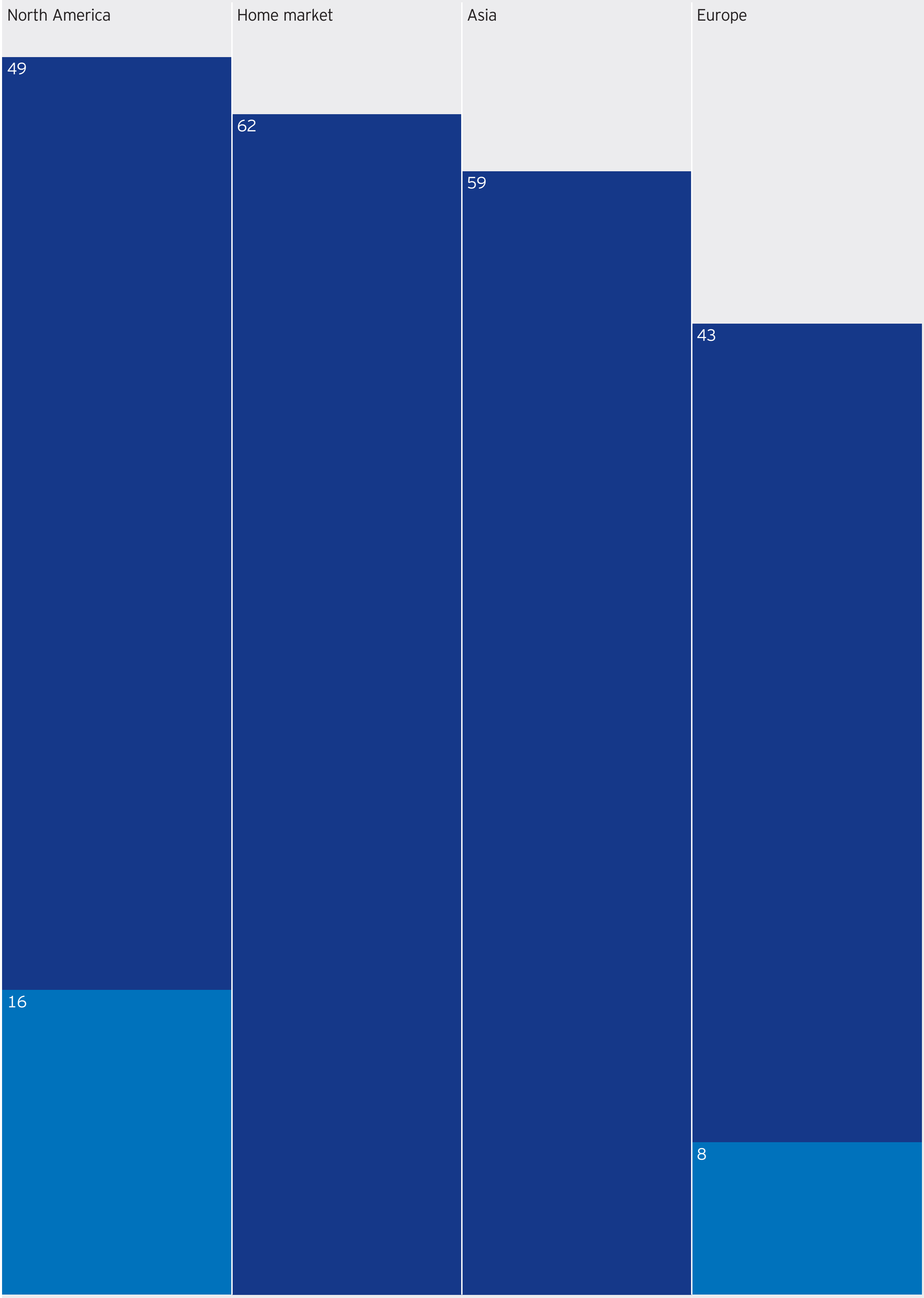
Particularly notable is the rising interest in emerging market infrastructure, reiterating the increased interest in emerging markets noted in theme 01. The 2015 study discussed how infrastructure generally constitutes a larger proportion of sovereigns' emerging markets exposures relative to developed markets. Introducing emerging market infrastructure carries higher risk, including the risk of repatriation of assets. One large sovereign in the APAC region noted their belief that this risk was underappreciated:

"Globally, political extremism is a real risk now and the potential impact on – and risks to – investing in large monopolistic assets seem to me to be underappreciated – there are a lot of investors pursuing emerging market infrastructure assets, for example."
Liability sovereign, APAC

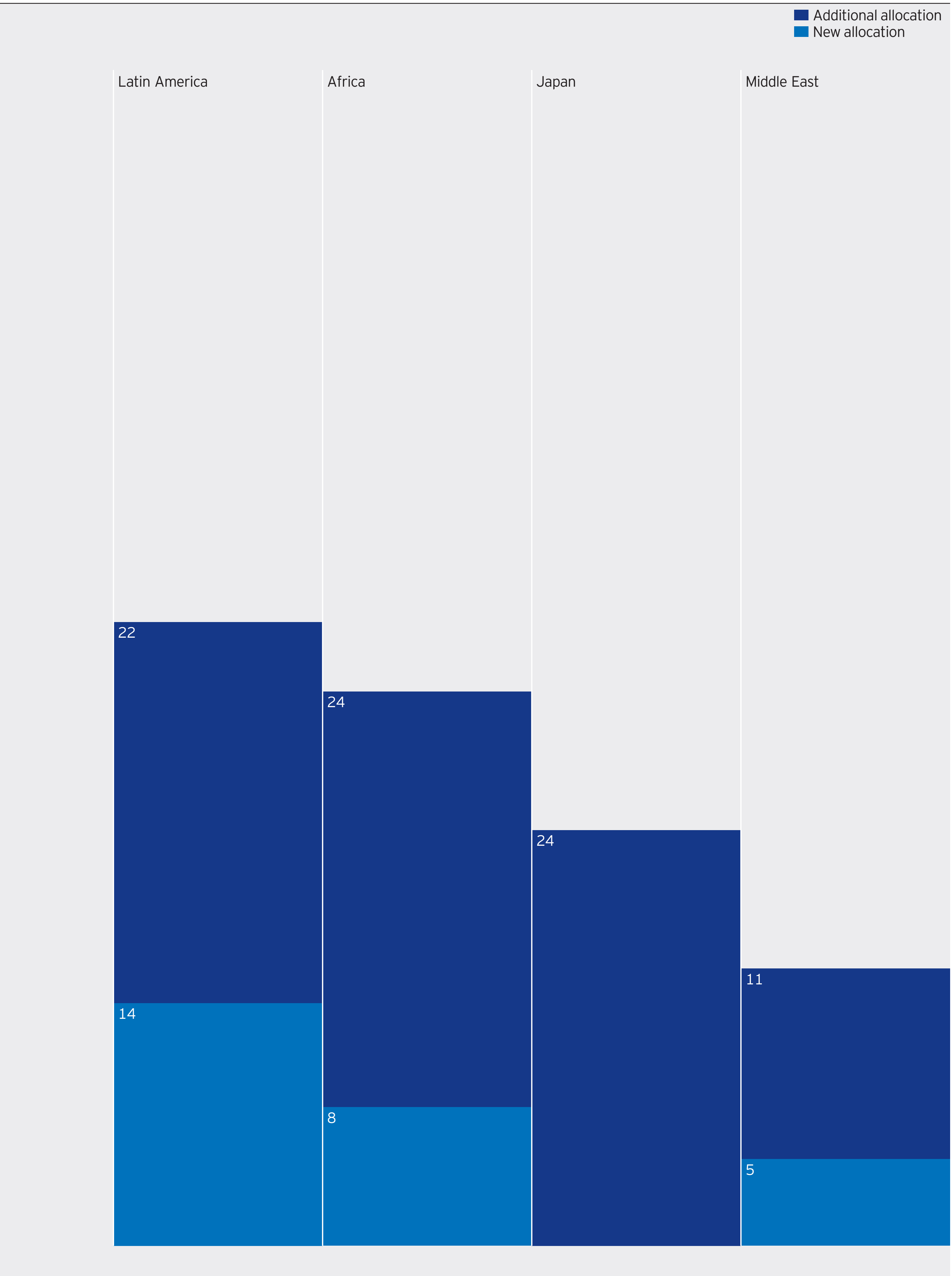
Access to these types of assets is seen as an advantage of large-scale sovereigns – the ability of well-resourced internal teams to assess new assets in new regions while understanding the risks. But even for those with the capability to do so, residual political risks remain. These can be hedged to some extent by sovereign-to-sovereign relationships, and the potential damage to diplomatic relationships which would ensue from repatriation. However in a populist political environment this risk cannot be fully eliminated.

[3] https://www.whitehouse.gov/wp-content/uploads/2018/02/FY19-Budget-Fact-Sheet_Infrastructure-Initiative.pdf

Fig 2.6. Expected infrastructure investments in next 12 months
Sovereigns only (% citations)



Sample size: 37.


Additional allocation
New allocation
Latin America
Africa
Japan
Middle East
22
14
24
8
24
11
5

Large-scale sovereigns are positioning for China and technology themes

As sovereigns consider new assets and regions, two themes are emerging: the growing importance of China, and technology – particularly for large-scale sovereigns.

As highlighted in theme 01, China has emerged as a rising proportion of sovereign portfolios, particularly large-scale investors (Figure 2.7).

China as a macroeconomic theme is already impacting asset allocation thinking and decisions for sovereigns, whether directly as an investment opportunity, indirectly in terms of geopolitics and economic performance, or its outbound investment activity.

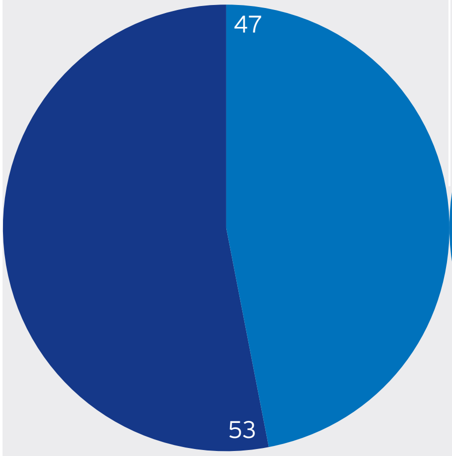
At the time of the study, trade tensions between the US and China were top of mind and were having a significant impact on allocation decisions. While sovereigns generally recognised an improving backdrop as Chinese authorities take steps to liberalise their capital markets in order to attract more foreign investment, there remain significant obstacles, not least of which was lack of transparency and familiarity with the rule of law.

Despite the obstacles, large-scale sovereigns are making active, long-term strategic decisions to invest in a number of Chinese asset classes, primarily equities and real assets, and to a lesser degree fixed income (Figure 2.8 on page 44).

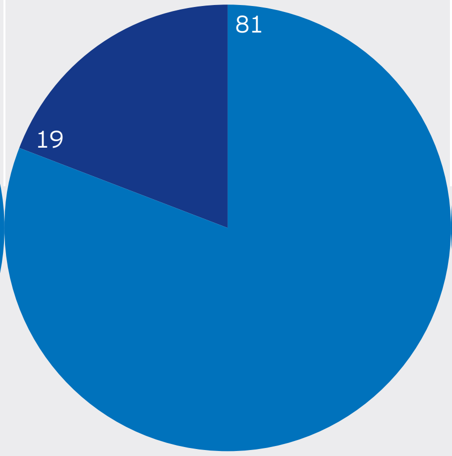
Fig 2.7. Sovereigns with exposure to China by size
Sovereigns only (% citations)

Yes
No

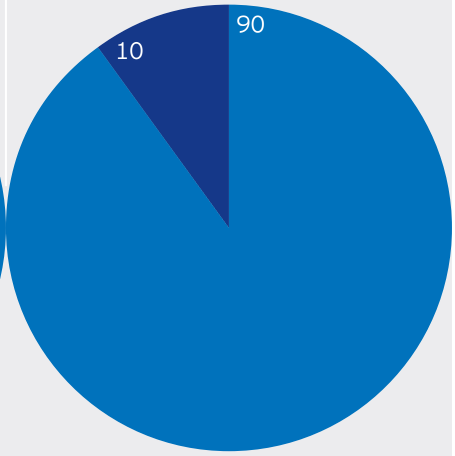
Small (<US$25bn AUM)



Medium (US$25bn-US$100bn AUM)

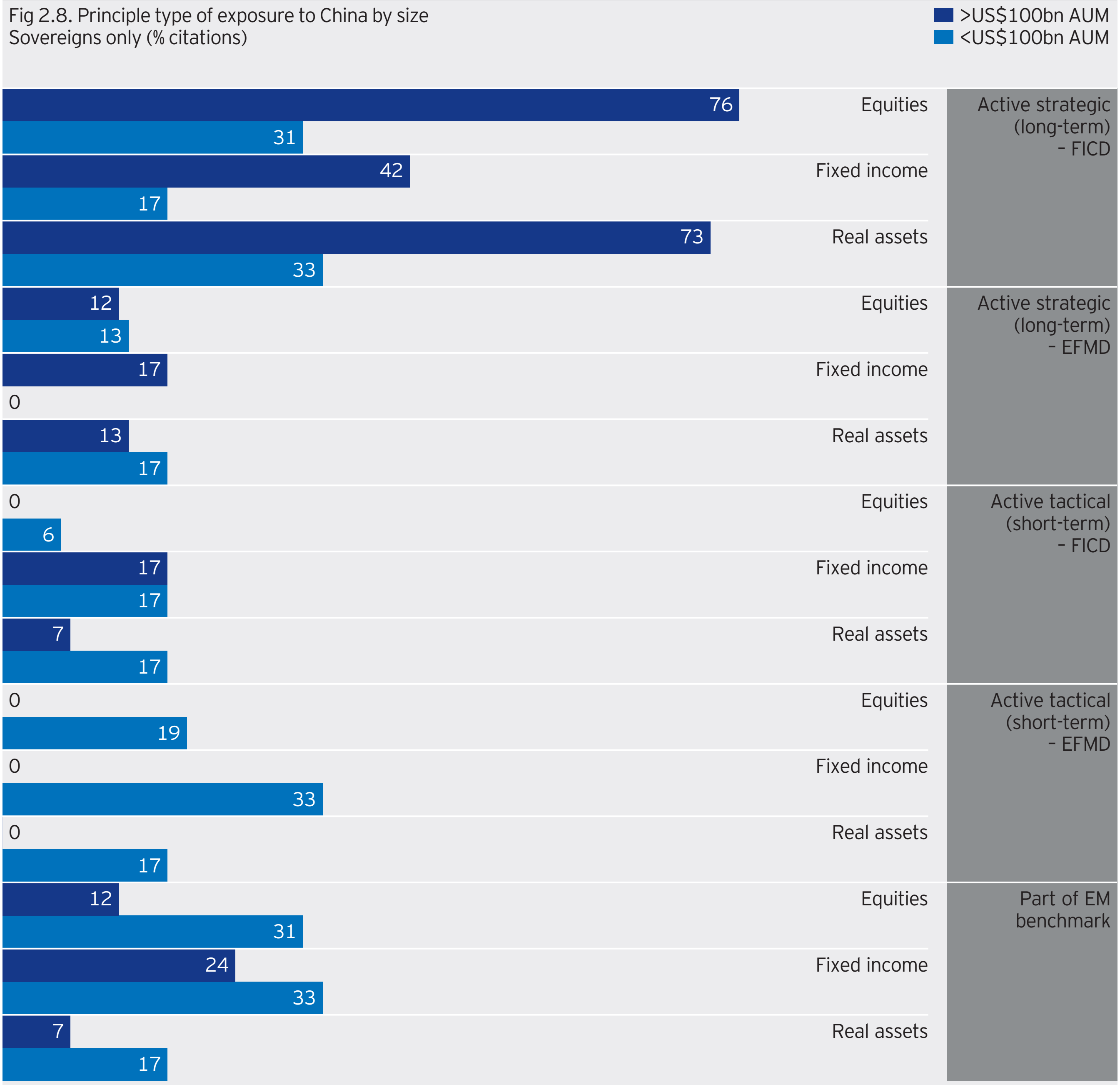


Large (>US$100bn AUM)



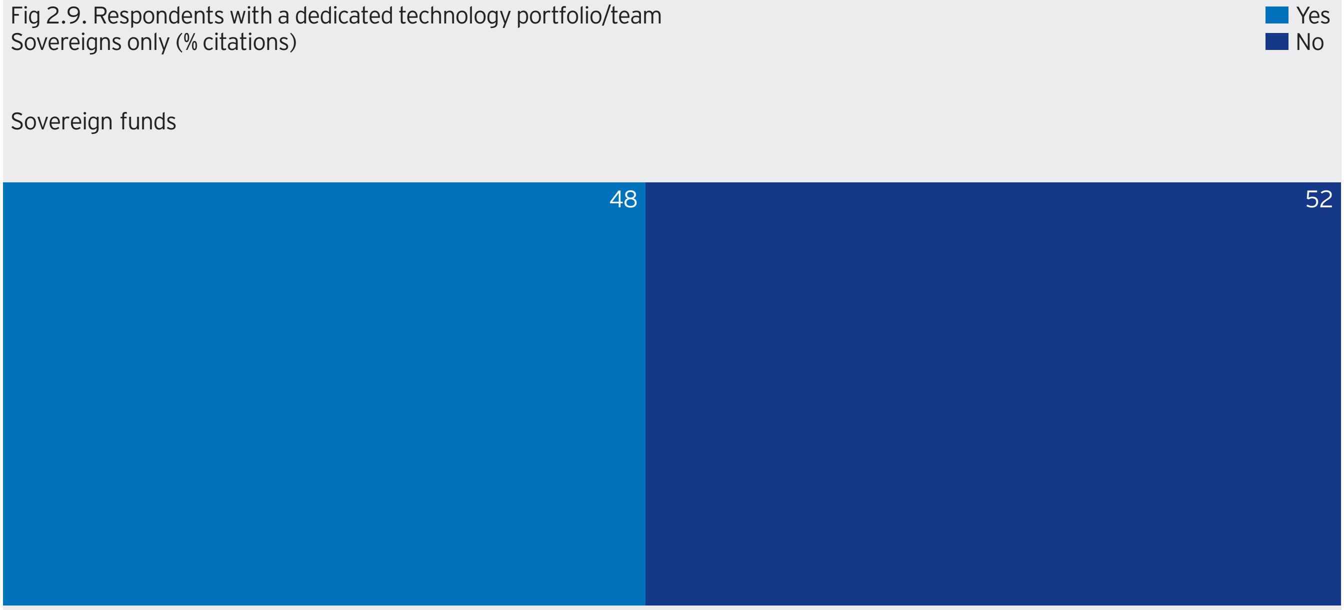
Sample size: 56.

Fig 2.8. Principle type of exposure to China by size
Sovereigns only (% citations)



Sample size: 33. FICD: Fund Investment Committee decision. EFMD: External Fund Manager decision.

Fig 2.9. Respondents with a dedicated technology portfolio/team
Sovereigns only (% citations)



Sample size: 63.

Long-term, strategic allocations by sovereigns to Chinese private markets tend to include real assets that are exposed to political risk, which might appear counterintuitive given the unfamiliar legal environment. But many large sovereigns reported that while concerns remain, they take comfort from a view that the Chinese government considers their capital preferred.

Some larger Asian sovereigns pointed to decades-long investments on the mainland and the development of good working relationships with the Chinese government. Elsewhere, sovereign capital is being actively targeted:

"Access is less of an issue now – things have freed up especially for sovereign wealth funds. The Chinese government has visited us and taken steps to encourage investment and facilitate introductions to China-based asset managers."
Liability sovereign, EMEA

The advantage of scale is substantial here. Large sovereigns supported by specialist teams resourced to assess the opportunity and risks, networked to find attractive opportunities, and confident about an improving China and their status as investors, are better positioned to find investment opportunities and protect investments once made.

"We are approaching a potential de-globalisation and almost a bifurcation of global economic activity: a China-sphere and a US-sphere"
Liability sovereign, APAC

The second key theme enabled by scale is technology. In last year's study, the theme considering cryptocurrencies found that, to the extent that non-central bank sovereign investors considered cryptocurrencies at all, they did so via a technology lens. Sovereigns recognise technology as a large and broad investment opportunity, with some large-scale sovereigns establishing dedicated technology teams to assess opportunities for investment but also the risks that technological innovation may represent to other parts of their portfolios (Figure 2.9).

The aim of these teams is typically to identify emerging disruptive and long-term trends, sourcing and assessing opportunities to participate and to capitalise. In parallel these investors gain a better understanding of the risks (or upside) that technological advancements pose to other parts of their portfolio, such as autonomous vehicles and infrastructure, and e-commerce impacting the long-run viability of retail real estate assets.

Some development sovereigns have a history of establishing overseas offices in major technology hubs. Their aim is to identify sources of return by taking large (sometimes controlling) stakes in emerging tech companies. Some also seek to transfer skills and intellectual property back to their home markets to encourage local economic growth by offering attractive financing and tax arrangements thanks to their government links.

Large sovereigns are also well placed to harness technologies to improve the way they invest, utilising scale and sophistication to search for advantage. This is evident in the large-scale data and analytics programmes many investors are undertaking. Cleaning data is a key focus as they look to leverage artificial intelligence (AI), pointing AI at internal datasets as another input into investment decisions.

ESG integration continues at pace with environmental factors to the fore

Key takeaways:

- ESG adoption continues to gain traction – rapidly with adopters – amongst both sovereigns and central banks as it becomes clearer how to derive value from its application.
- A segment of asset owners with long histories of ESG adoption lead in terms of integration, innovation, and idea generation; many consider asset managers to be lagging.
- 'E' is becoming the focus of ESG investing: 'G' initiatives, which are often the initial outcomes of ESG implementation, are now frequently seen as assumed.

03

2,650 heliostats at the Gemasolar Thermosolar Plant, Seville, Spain.
Image: Markel Redondo/Panos Pictures

Traction picks up pace
In our 2017 study we highlighted the split in asset owner perspectives of ESG investing:

- ESG supporters were embedding and integrating ESG considerations into their investment processes. The integration emphasis is focused on equity portfolios, with implementation often consisting of relatively simple positive and negative screens.
- Non-supporters were often waiting for the emergence of better quality, objective data with which to more accurately assess the investment risk/return trade-offs and portfolio impacts involved in ESG adoption.

Two years later, ESG is a front of mind issue for many respondents, occupying significant asset owner time and resources. As illustrated by Figure 3.1, both sovereigns and central banks continue to adopt ESG policies, with over half of sovereigns now having a policy in place. Implementation is most prevalent among sovereigns based in the West but is also common in the Middle East and Asia following an uptick in adoption (see figure 3.2).

In addition to more sovereign investors embracing ESG policies, supporters have considerably developed their thinking, moving beyond their initial efforts often centred on relatively simple screening, to more sophisticated and specific forms of integration. Many have intensified their focus on ESG, added or deepened dedicated ESG teams, and have moved beyond initial scepticism (in some cases) to integrate their interpretation of ESG into broader investment policies and processes.

After they integrate further into equity investment processes, fixed income is usually the next step, while more advanced adopters have begun assessing, and even implementing, the ESG lens in real estate and infrastructure.

"We see ESG considerations increasingly applied not just at the asset class level but across every single investment in the portfolio and like many of our peers, have appointed dedicated ESG professionals within investment teams that have dual reporting lines into investments and a head of ESG."
Liability sovereign, APAC

While challenges remain, there are signs of a more general breakout from its starting point in equities, indicating that in some segments at least, ESG will be applied generally across portfolios in a manner which has not been seen previously. As Figure 3.3 indicates, there is a broad view that ESG can be integrated into most asset classes.

This extended traction is most even and evident in the West (Figure 3.4 on page 50). Belief in ESG applicability outside of equities is lower in Asia and emerging markets.

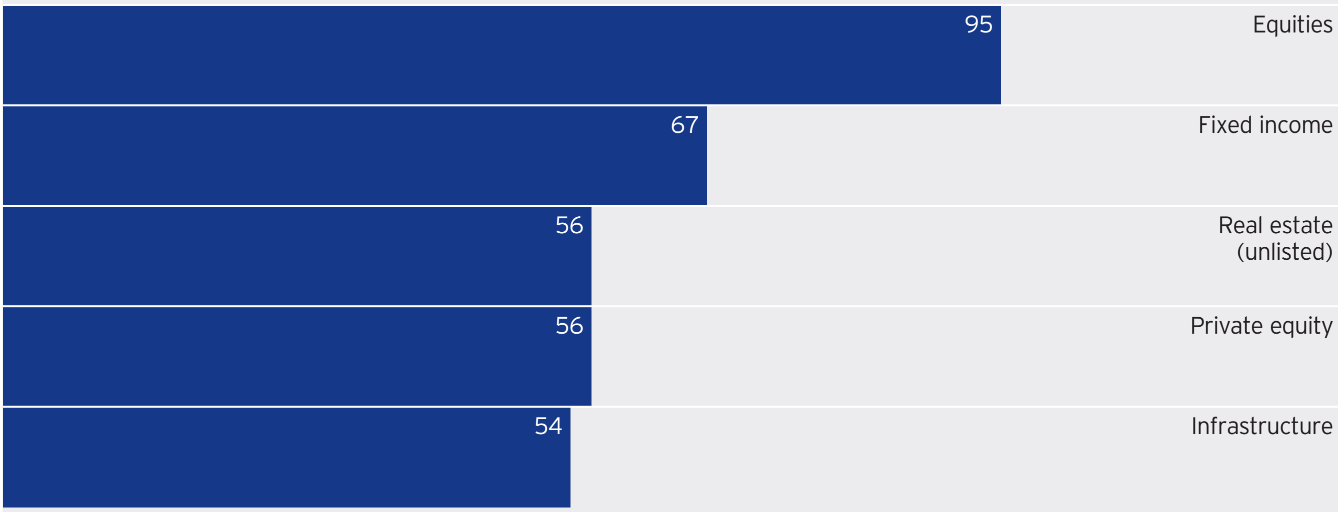
Fig 3.1. Respondents with a specific ESG policy at the organisational level
(% citations)

Sample size: 113; Central banks: 53; Sovereign funds: 60.

Fig 3.2. Respondents with a specific ESG policy at the organisational level
Sovereigns only (% citations)

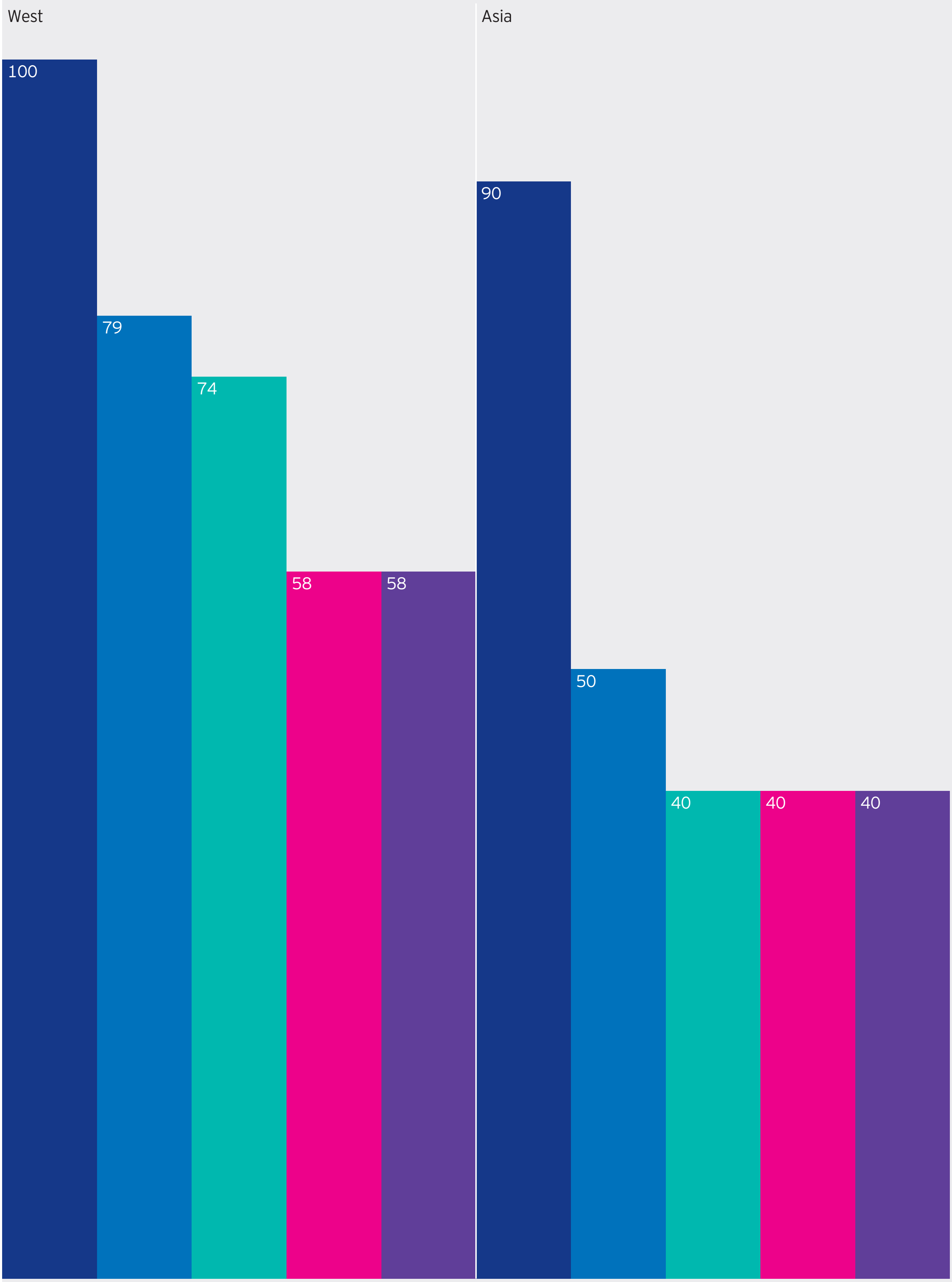
Sample size: 60; West: 25; Asia: 17; Middle East: 9; Emerging markets: 9.

Fig 3.3. Asset classes believed to be eligible for ESG
Sovereigns only (% citations)



Sample size: 39.

Fig 3.4. Asset classes believed to be viable for ESG implementation by region
Sovereigns only (% citations)



Sample size: West: 19; Asia: 10; Middle East: 6; Emerging markets: 4.

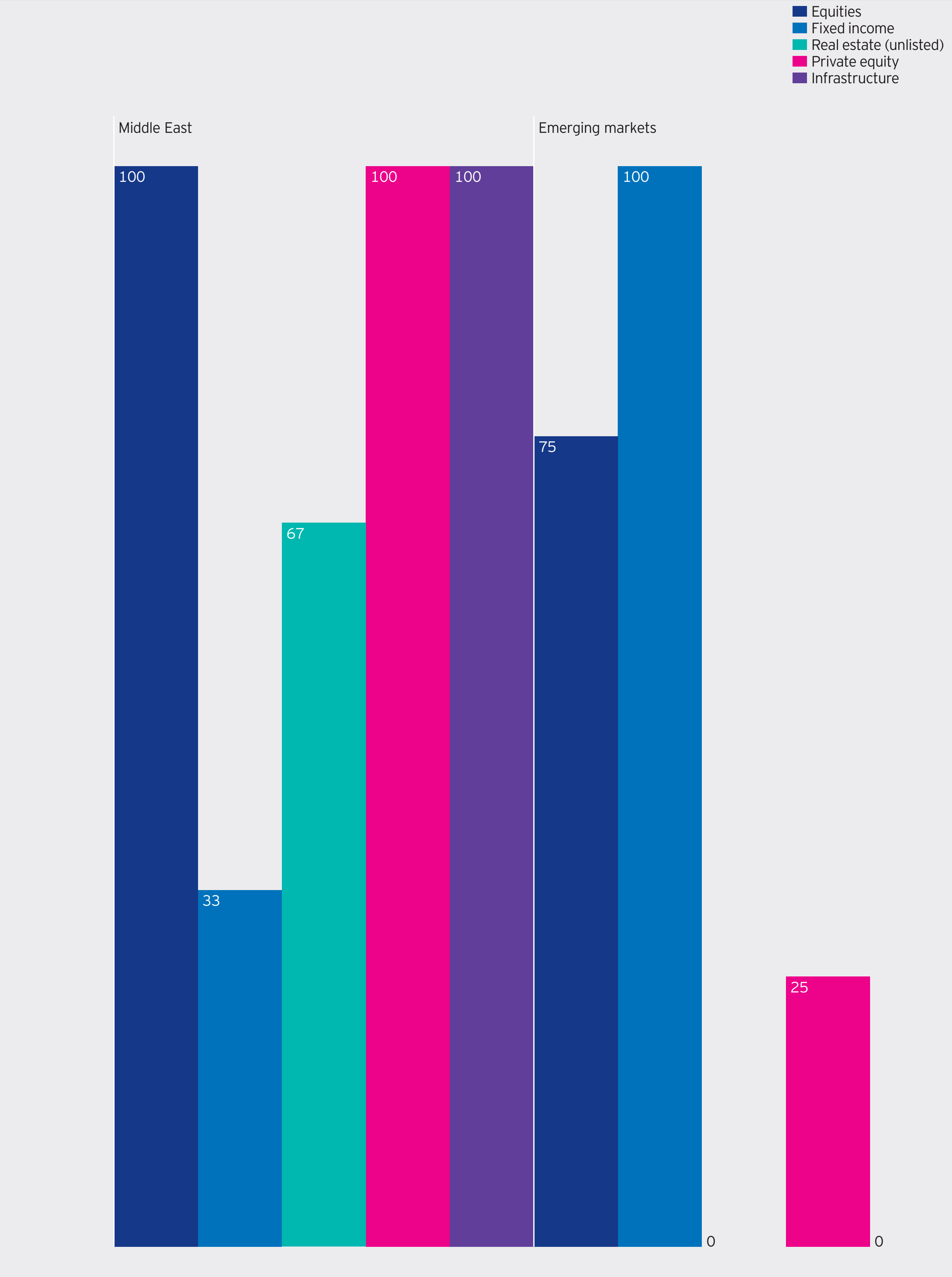
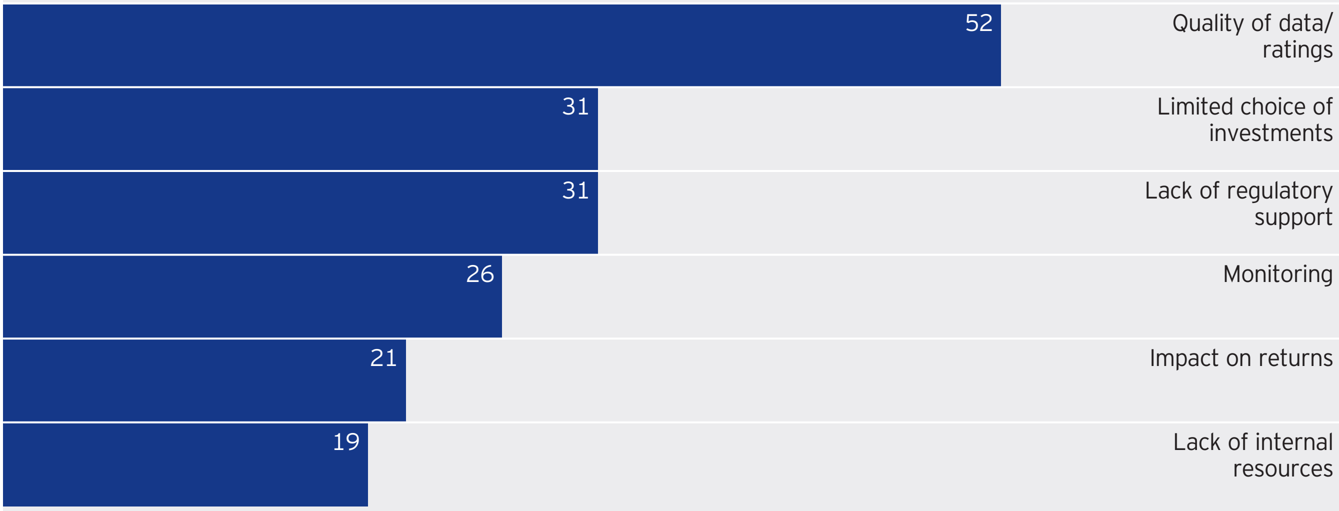
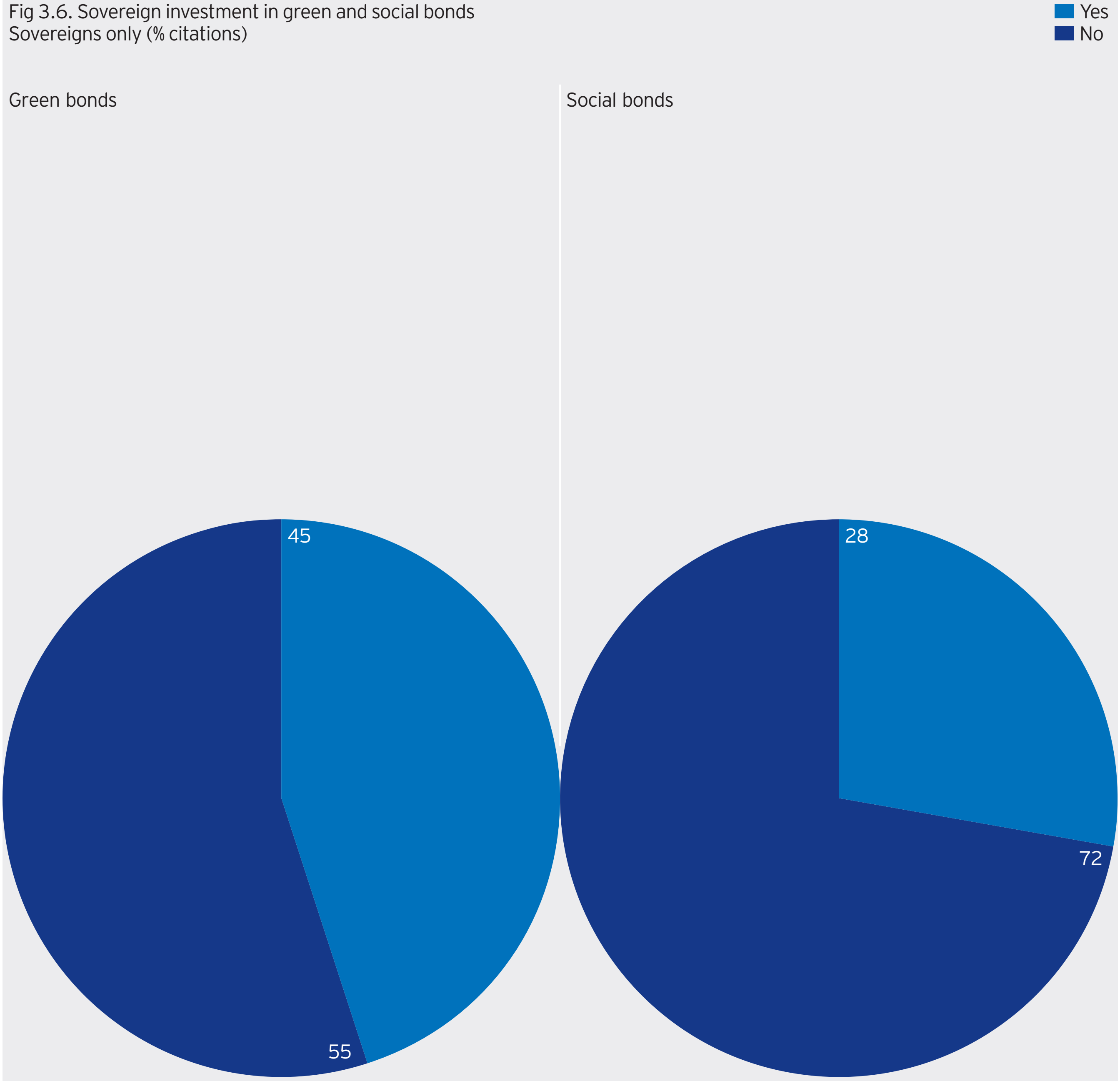

Equities
Fixed income
Real estate (unlisted)
Private equity
Infrastructure
Middle East
Emerging markets
100
33
67
100
100
75
100
0
25
0

Fig 3.5. Main challenges in incorporating ESG
Sovereigns only (% citations)



Sample size: 42.

Fig 3.6. Sovereign investment in green and social bonds
Sovereigns only (% citations)



Sample size: 47.

Fixed income constraints
Despite the spread of ESG across asset classes, investors continue to find challenges and constraints to implementation, even in equity portfolios – challenges that were raised in 2017 around the lack of quality data, as Figure 3.5 indicates, remain for the most part unresolved.

The lack of clear definitions and quality data that lead to ambiguity and subjectivity were among the concerns repeated this year, even among ESG supporters with long track records of integration:

> "I have seen different ESG providers reach completely different conclusions about the ESG quality of a company. So, it becomes a subjective decision – who do you believe?"
> Liability sovereign, APAC

When extending ESG principles to fixed income, the issues around definitions and access to quality data are often exacerbated. Sovereigns also cited challenges specific to fixed income integration:

- Difficulties applying an engagement approach as a debtholder as opposed to a shareholder: deciding how to engage with government debt (for example) is a challenge many institutional investors face but is particularly troublesome for sovereigns. Sovereigns also find engagement with credit issuers less straightforward than equity issuers, with limited tools available to drive changes in corporate behaviour.

  'Voting with your feet' in the form of debt sales in the secondary market, or withdrawing from refinancings, is perceived to have much less visibility and impact than the votes of an investor with significant equity interests (where shareholders can be forceful and co-ordinated). There are also questions about the legality of co-ordinating with other debtholders in some jurisdictions, and whether this might constitute collusion or market manipulation. This is a highly sensitive topic for sovereigns, particularly outside their home nation.
- Limited application of a company's ESG credentials to credit ratings provided by ratings agencies, with many respondents expressing a lack of belief that agencies could overcome their perceived conflicted positions (the receipt of payment from issuers for ratings) soon.
- Shortage of robust fixed income capabilities and products incorporating ESG, particularly for sovereigns relatively new to ESG adoption and integration. Given the novel challenges presented by ESG adoption in fixed income, many sovereigns have looked to third parties for help but have found this harder than expected.

  > "We were instructed by our government stakeholders to integrate ESG considerations across our portfolio and turned to a factor manager to implement the approach. Having initially explored internal approaches, we found variations in performance outcomes to be unacceptable and in parallel concluded that an active approach was likely to underperform market-cap indices."
  > Liability sovereign, APAC

- Green and social bonds in principle represent an apparently easier way of taking ESG considerations into fixed income. As Figure 3.6 shows, nearly half of sovereigns have some allocation to green bonds. However, green and social bonds present their own problems. Looking ahead, there is less certainty about green bonds as demand outstrips supply and some sovereigns cited valuation concerns. Social bonds, while often considered well-intentioned, were frequently not delivering on either their objectives or performance.

Equity market volatility creates another evaluation point

Non-supporters of ESG are often concerned about potential adverse risk/return impacts; investment objectives are typically not adjusted or made less onerous as a result of ESG adoption. That said, there is growing recognition of the need to keep pace with public expectations, potential reputational risk of non-adoption, and depending on domicile, the potential for regulators to drive policy regardless.

These sovereigns are monitoring the progress and experience of pioneering institutional investors with long track records of adopting, integrating and innovating in ESG to understand whether, and how, equity market volatility in late 2018 impacted performance.

This affirms the demand for more, and better, information and data relating to ESG. While some investors yearn for an agreed set of standards, others look to asset managers for help in this area. The experience has not always been encouraging. Sovereigns that have adopted and integrated ESG for some time have strong convictions that they are ahead of the asset management community, and that in the absence of delivery from asset managers, it falls to asset owners, potentially in co-ordination with academia, to solve ESG problems.

This principle extends to security issuers and investment banks. Amongst the most sophisticated ESG adopters, there is a strong consensus that securities issuers, for example issuers of ESG-accredited fixed income securities, have not kept pace with the needs of asset owners. Such securities often lack the criteria or nuances sought by these investors.

Environmental considerations becoming focal point of initiatives

Given the definitional issues of ESG implementation, it has been common for asset owners to commence their journey with a focus on 'G' issues. Governance issues such as board composition and the ability to flag controversies often made the G easiest to define and measure in a consistent manner, as well as offering some evidence of return or risk benefits.

In 2019, we find that leading ESG adopters increasingly see 'G' factors as assumed or complete. Leaders have started to anchor their ESG policy framework around 'E' environmental factors and the potential to deploy capital to projects which advance initiatives such as de-carbonisation with a satisfactory risk/return profile. Figure 3.7 illustrates the prominence of sustainability and climate change in the ESG policies of sovereigns. Even allowing for a marked increase in sample from 2017 to 2019 the 'E' is increasingly a central focus.

Sovereigns are approaching the 'E' with an increased level of sophistication, compared to 2017 when many implemented environmental considerations with simple screens applied to security selection. Sovereigns with longer ESG track records now incorporate 'E' factors in security valuations while proactively engaging companies on these issues.

As Figure 3.8 on page 56 shows, carbon emissions/climate change is the single most important ESG issue. With physical climate risks such hurricanes, heatwaves, earthquakes, and wildfires being seen to occur with greater frequency, some sovereigns have been energised to pinpoint the material risk of unprecedented and heightened shifts. This includes applying the 'E' to their emerging markets exposures, an asset class until recently many considered extremely difficult for ESG adoption due to lack of information and transparency.

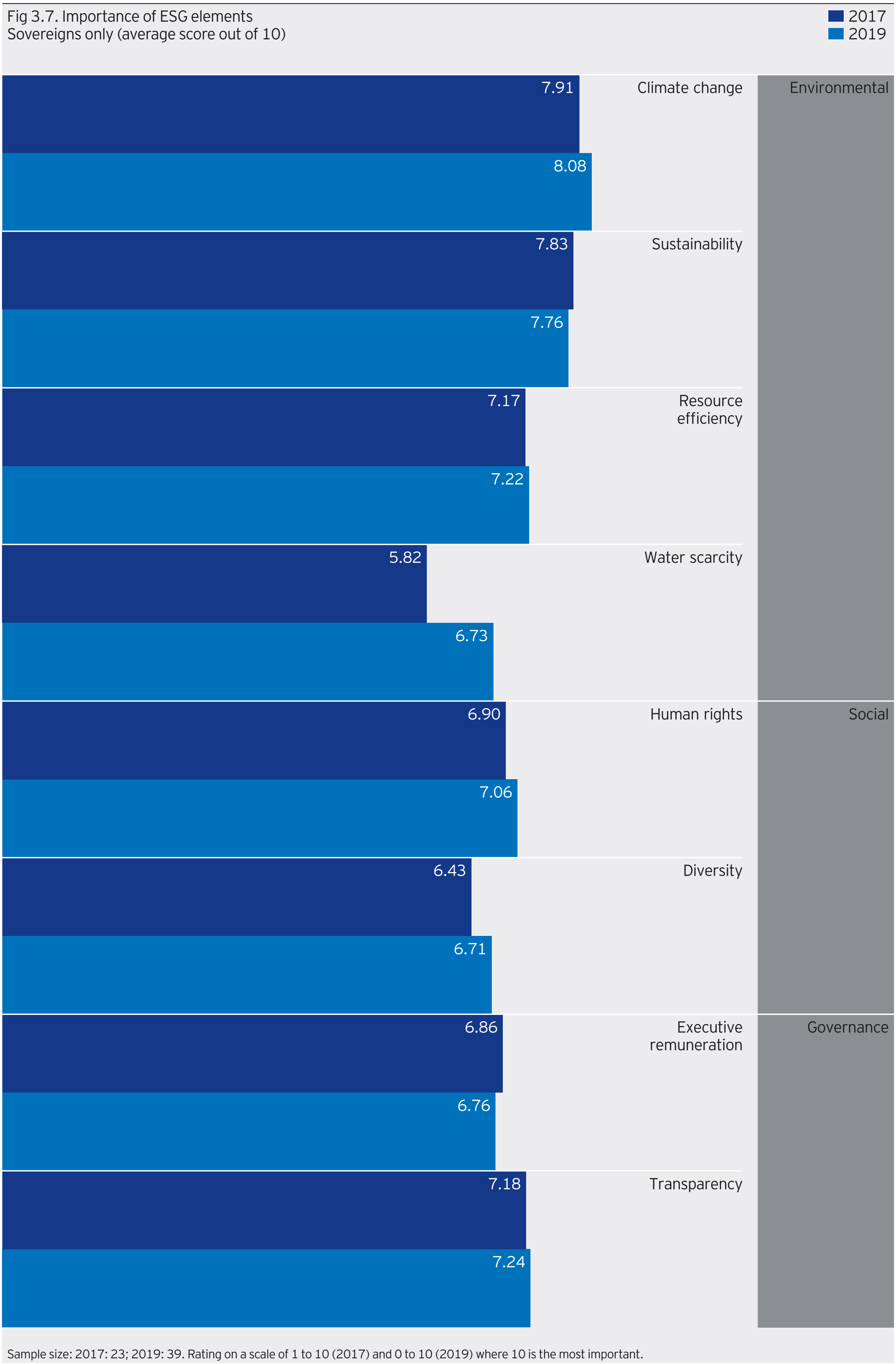
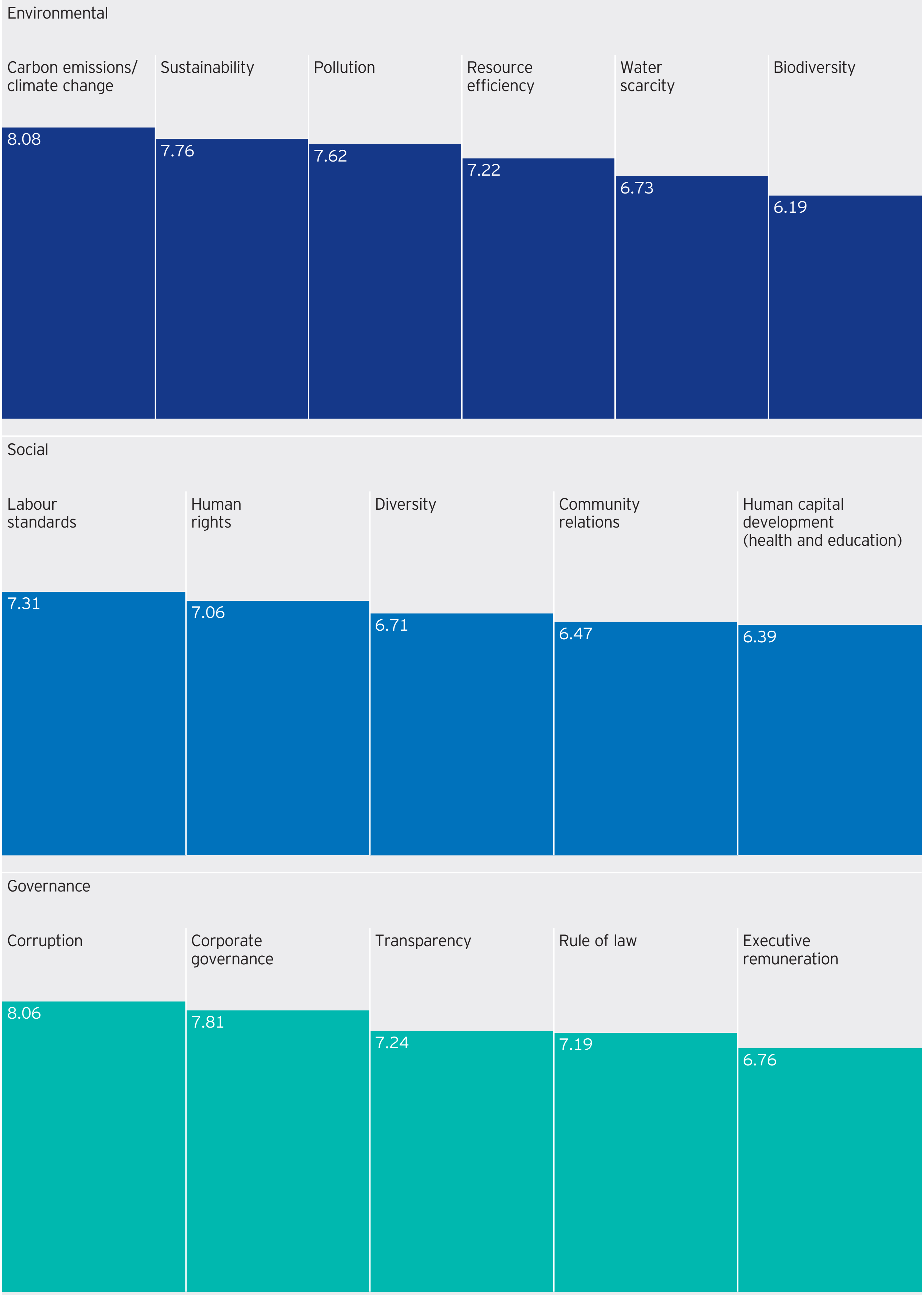


Fig 3.7. Importance of ESG elements
Sovereigns only (average score out of 10)
2017
2019
Environmental
Climate change
7.91
8.08
Sustainability
7.83
7.76
Resource efficiency
7.17
7.22
Water scarcity
5.82
6.73
Social
Human rights
6.90
7.06
Diversity
6.43
6.71
Governance
Executive remuneration
6.86
6.76
Transparency
7.18
7.24
Sample size: 2017: 23; 2019: 39. Rating on a scale of 1 to 10 (2017) and 0 to 10 (2019) where 10 is the most important.

Fig 3.8. Importance of individual ESG issues
Sovereigns only (average score out of 10)



Sample size: 34. Rating on a scale of 1 to 10 where 10 is most important.

"This year we developed a detailed process to take climate change risks and opportunities into account when appointing managers. We assess the materiality of climate change risks in the investment, the manager's climate change policy and willingness to engage with us on ESG issues, including climate change. A major achievement this year was the application of climate-related exclusions to our emerging markets equities mandates. Our next focus is on de-carbonising our equity factor mandates."
Liability sovereign, APAC

For investors who have expanded their ESG implementation into real assets (especially infrastructure), shifts in weather patterns are causing concern, with models suggesting assets such as highways, ports and other public infrastructure are vulnerable to foreseeable shifts in climate. Other reasons adopters have gravitated toward environmental factors include:

- Standardisation – feasible solutions for considering environmental implications in the due diligence process such as headline risks and building out sustainability targets.
- Improved vendor capabilities – for example, better data to track carbon footprint and risk models to assess the implications of rising temperatures on portfolios.
- 'E' drives 'G' – with environmental issues now often at the core of corporate engagement (eg climate change mandates and carbon emission transparency from oil companies), this is effectively prosecuting the 'E' by embedding these considerations into 'G' initiatives.
- Regulatory guidelines – developed nations have begun to carve out regulation and guidelines around environmental standards for asset owners.
- More options to put capital to work – respondents are discovering more and larger opportunities to allocate capital and generate income from 'E' initiatives, including fossil fuel to clean electricity migration, clean-tech initiatives, green bonds, and other sustainable infrastructure projects.

"We look at climate change, not only as one of the greatest risks of our time, but also an immense opportunity to find new ways to enhance performance."
Development sovereign, EMEA

Social factors are clear; ability to translate to investing guidelines is less so

A remaining barrier to more general adoption and integration of ESG by sovereigns is the difficulty of defining and building a measurable 'S' factor. Respondents expressed the value of understanding and discussing social issues under the umbrella term of ESG, and as illustrated in Figure 3.8, social factors are considered. Certain sovereigns have taken steps to implement broader social initiatives internally as a demonstration of commitment to ESG values. However, in comparison to the other factors, social variables have yet to become a practicable means of evaluating risk/return. They are often seen as factors that are laudable, but not yet realistically applicable when building out an investing guideline.

As with the challenges faced in integrating environmental and governance factors, leading adopters continue to develop and refine their thinking in this area – 'S' as the risk of loss of social licence being an example. As they look inwards, driving policies such as diversity through their organisations, leading sovereign ESG adopters are already starting to look at their investments, service providers and counterparties through this lens, and, as with 'E' and 'G' factors, expectations and scrutiny will continue to rise.

Technology investors, late technology adopters

Key takeaways:

- As technology investors, sovereigns are increasingly focused on the opportunities for their portfolios.
- However, while sovereigns have long held thematic investments in the tech sector, the use of technology to optimise the management of the portfolio (and more generally across the organisation), has been surprisingly muted.
- Sovereigns have prioritised technology as a tool to drive operational, risk and investment process improvements, but many acknowledge they still have far to go to fully integrate technology into their portfolios.

04

Remotely controlled humanoid robots serve at a cafe in Tokyo.
Image: Kyodo News/Getty Images

In our 2018 study we examined sovereign thinking about cryptocurrencies. While none of our sample were making direct investment in cryptos, there was widespread interest in underlying blockchain technology. In this year's study, we spoke in depth with our respondents about the implications of rapid technology changes, including:

- Technology as a thematic portfolio investment and how investors access the technology sector.
- Technology as a tool for economic development given that many sovereigns operate a multi-mandate, often including either a direct, or indirect, development objective to speed up or diversify growth.
- Technology to improve sovereign investment and operational efficiency.

The dichotomy between sovereigns as tech investors and tech implementers is stark. While investors have long held thematic investments in the tech sector, either actively or through the index, the use of technology to optimise the management of the portfolio has (perhaps surprisingly) been muted. However, there are signs that this is beginning to change.

Technology as a portfolio investment

Given the dominance of tech companies over the last few years in terms of contribution to equity returns and capital raising, it is little surprise that sovereign investors have placed more emphasis on the sector. With technology becoming a more important driver in the economic growth of countries, sovereigns can play an important role in providing capital for the development of new technologies.

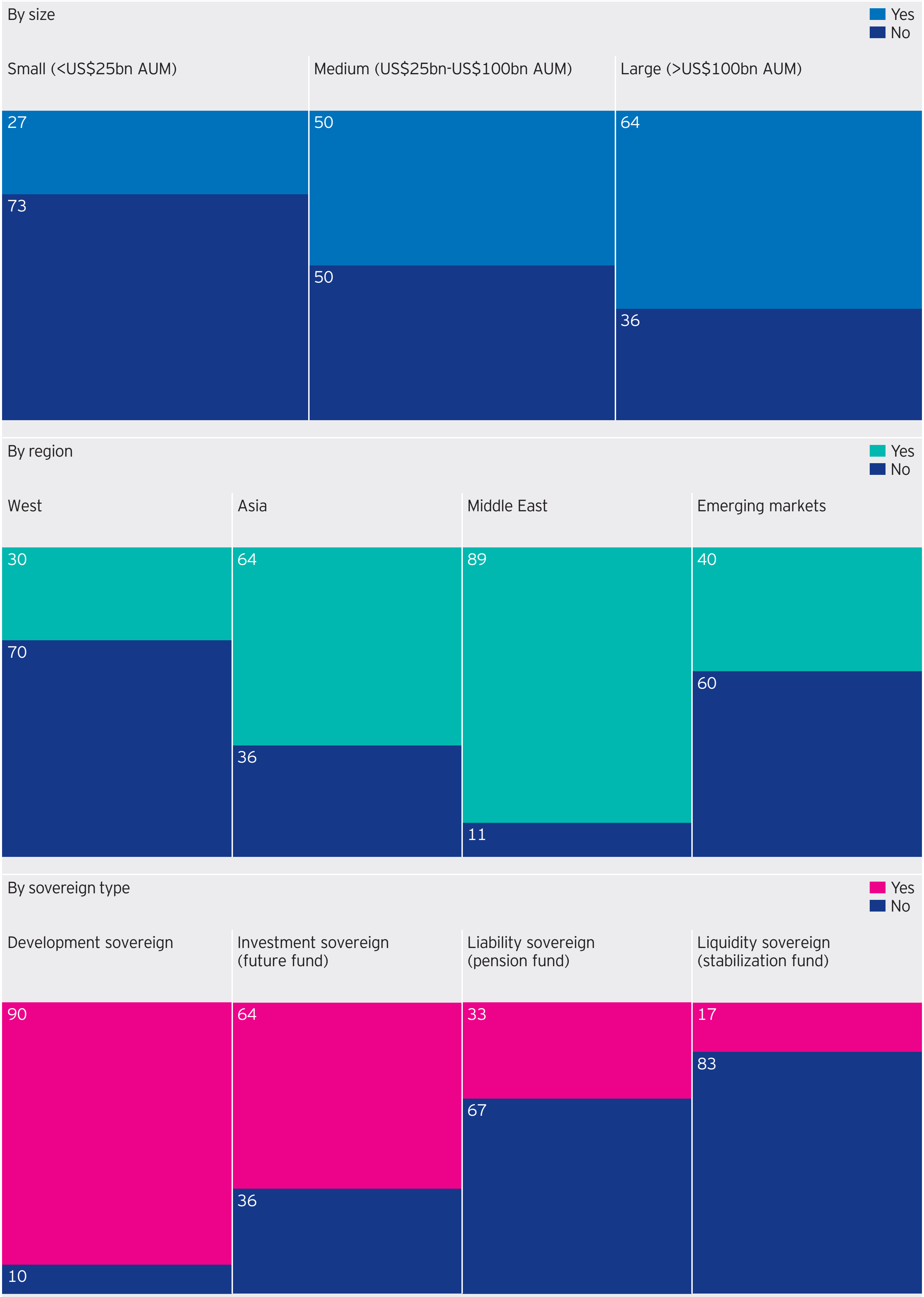
However, sovereigns face investment and structural hurdles in creating a successful thematic investment strategy focused on technology.

Within venture capital portfolios, unlike most private market assets, respondents highlighted that early stage investment opportunities in technology companies were plentiful. Rather than struggling to deploy capital due to lack of opportunities, as has been the case in real estate and private equity, investors reported that the abundance of potential investments had created issues in opportunity assessment. There have been instances where sovereigns, through their private market portfolios, have invested in companies or technology that their government has criticised, but have not had the governance structures to identify and filter such conflicts.

To take advantage of the opportunities and combat the challenges, some sovereigns have built internal technology teams and/or portfolios. The ability to devote resources to a specific investment theme such as technology relies on scale and the ability to invest over a long-time horizon (Figure 4.1), with development and investment sovereigns leading the way.

Some larger investment sovereigns have established venture capital-like teams in Silicon Valley, Beijing and elsewhere. Middle Eastern sovereigns have been leaders in utilising technology investments for the benefit of domestic society. In 2015, the UAE announced a US$80bn investment plan in the Emirates Science Technology and Innovation Higher Policy, while Saudi Arabia has made technological investment central to its Vision 2030 in an attempt to diversify away from oil and create a more sustainable economy.

Fig 4.1. Proportion of sovereigns with dedicated technology portfolio or team
Sovereigns only (% citations)



Sample size: 63.

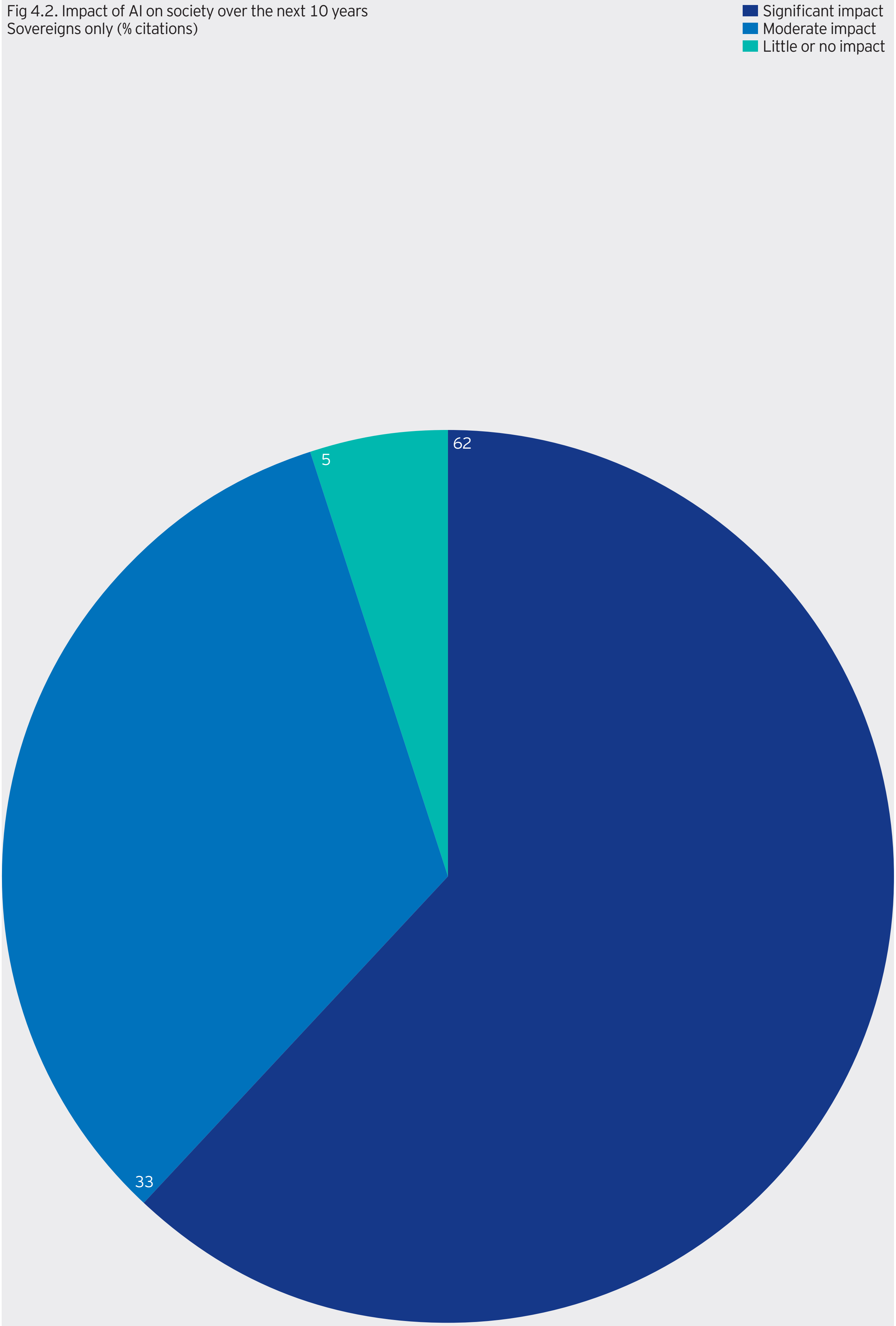
Impact of technology on society
Sovereigns are interested in not just the investment aspects of technology but also the power of technological advancements to disrupt and reshape society. Respondents expect that AI will be a key catalyst (Figure 4.2).

This is creating anxiety and pressure among stakeholders – governments, regulators, and investors – to mitigate and even pre-empt negative externalities on society such as loss of employment. The conversation has started to turn towards the political, legal and regulatory complexities that have begun to surface.

Given the size and role of sovereign wealth funds as state-owned investors, they are likely to play an important role in responding to such issues. Despite the efforts of regulators – for example to protect privacy via GDPR (General Data Protection Regulation) in Europe – and increased engagement by investors with large tech companies, the rapid pace of technological advancement, especially AI and machine learning, creates a potential role for sovereigns in protecting society. Sovereign investors are likely to consider carefully the companies and technologies they fund, and take on more active governance roles in order to ensure that their views are aligned with portfolio companies.

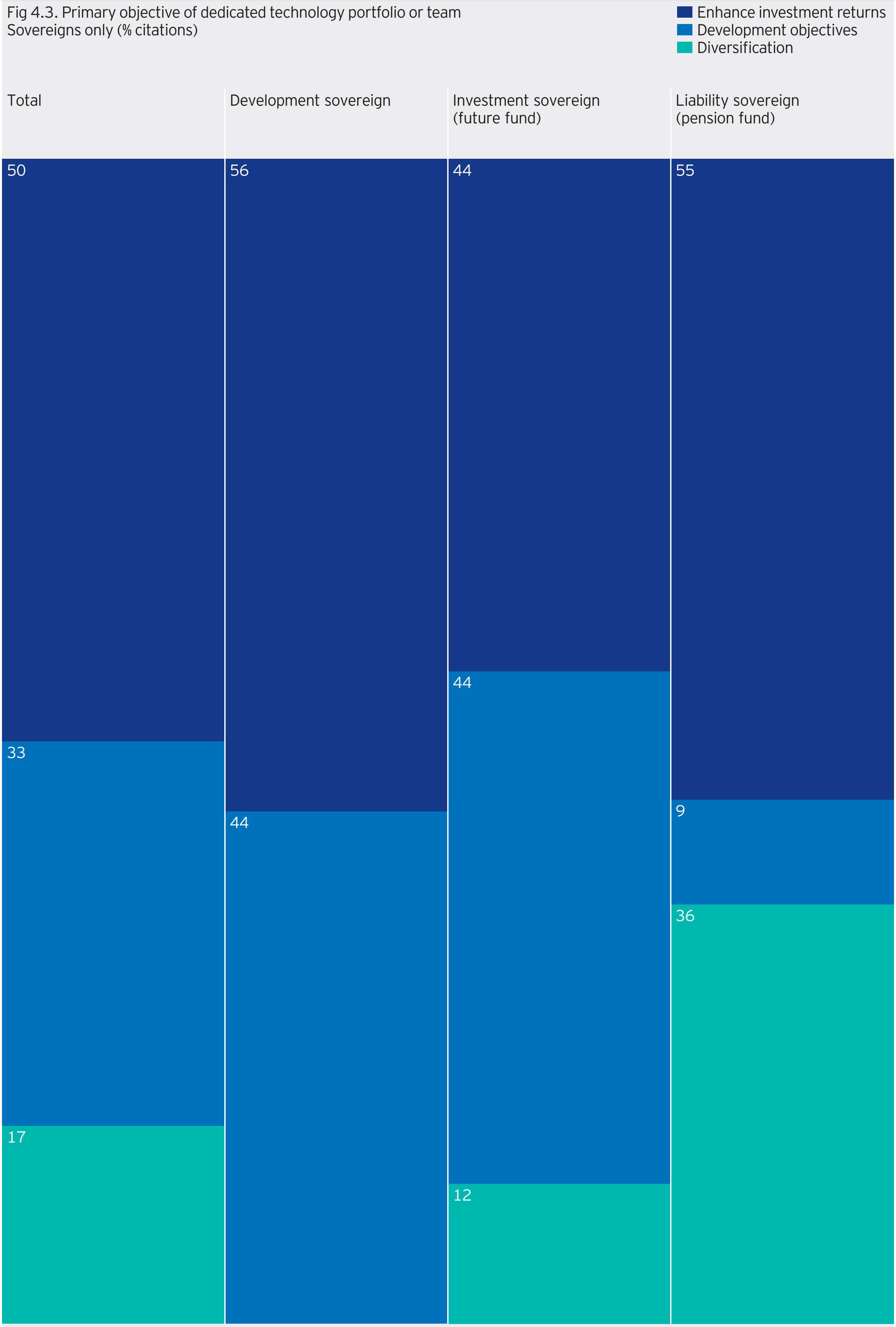
Development and investment sovereigns are furthest ahead in their thinking about the wider impact of technology. Figure 4.3 on page 64 highlights that almost half of development and investment sovereigns with a specific technology portfolio or team are focused on the wider impact beyond investment returns. In some cases, ESG policies led to greater scrutiny of the company and impact of the technology being developed, or conversely led sovereigns to identify and invest in technology companies because of the perceived positive impacts on society.

Fig 4.2. Impact of AI on society over the next 10 years
Sovereigns only (% citations)



Sample size: 60.

Fig 4.3. Primary objective of dedicated technology portfolio or team
Sovereigns only (% citations)



Sample size: 29; Development sovereign: 9; Investment sovereign: 9; Liability sovereign: 11.

Improving portfolio management through technology
The investment industry makes extensive use of technologies to improve efficiency in processes and decision making and makes large internal investments to those ends. Given the wide range of activities and the data heavy nature of the industry, technology has a critical role across the entire organisation, offering the prospect of:

- Better storage, organisation and analysis of data in front, middle and back office functions.
- Improvement in investment decision-making processes (removing behavioural biases inherent within investing) within the organisation.
- Reduction of direct and indirect costs.

Despite their significant investments in technology, asset owners have continued to struggle with the operational complexities of sophisticated portfolios involving a large number of investment holdings, derivatives, and large data sets. There is still a reliance amongst sovereigns on what is now seen as outdated technology and weak IT infrastructure for portfolio management. In many cases respondents spoke about their overreliance on technology that requires human input (such as Microsoft Excel, bringing with it the biases and limitations of human behaviour).

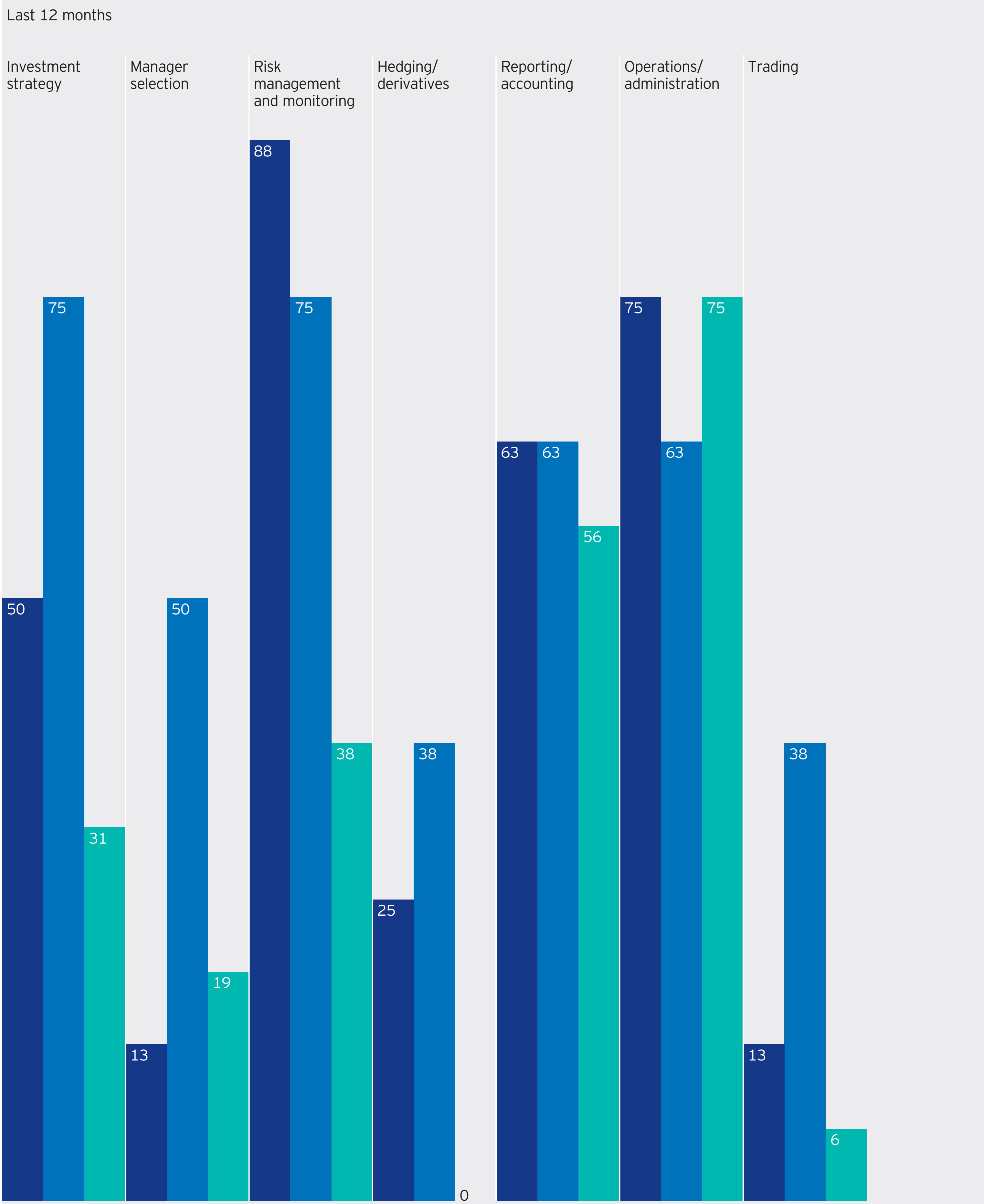
In other cases, respondents referred to a tech/IT environment that inhibited collaboration and the sharing of knowledge, leading to key man risk. Respondents noted that given the upfront costs and resources required to implement a significant IT upgrade, the attitude towards technological advancements amongst asset owners has often fallen into the 'if it ain't broke, don't fix it' category. There have been too few examples of significant negative impacts resulting from use of outdated technology to act as a catalyst for change. Even so, our respondents noted the smaller issues that are beginning to increasingly surface, such as increased costs and reduced efficiency.

As asset owners acknowledge the benefits that technology can have on improving the portfolio management process, this trend is beginning to change with greater engagement from sovereigns and other asset owners. In the last 12 months alone, ~50% of sovereigns have implemented technological innovations into their organisation, with ~65% intending to so in the coming 12 months (Figure 4.4 on page 66).

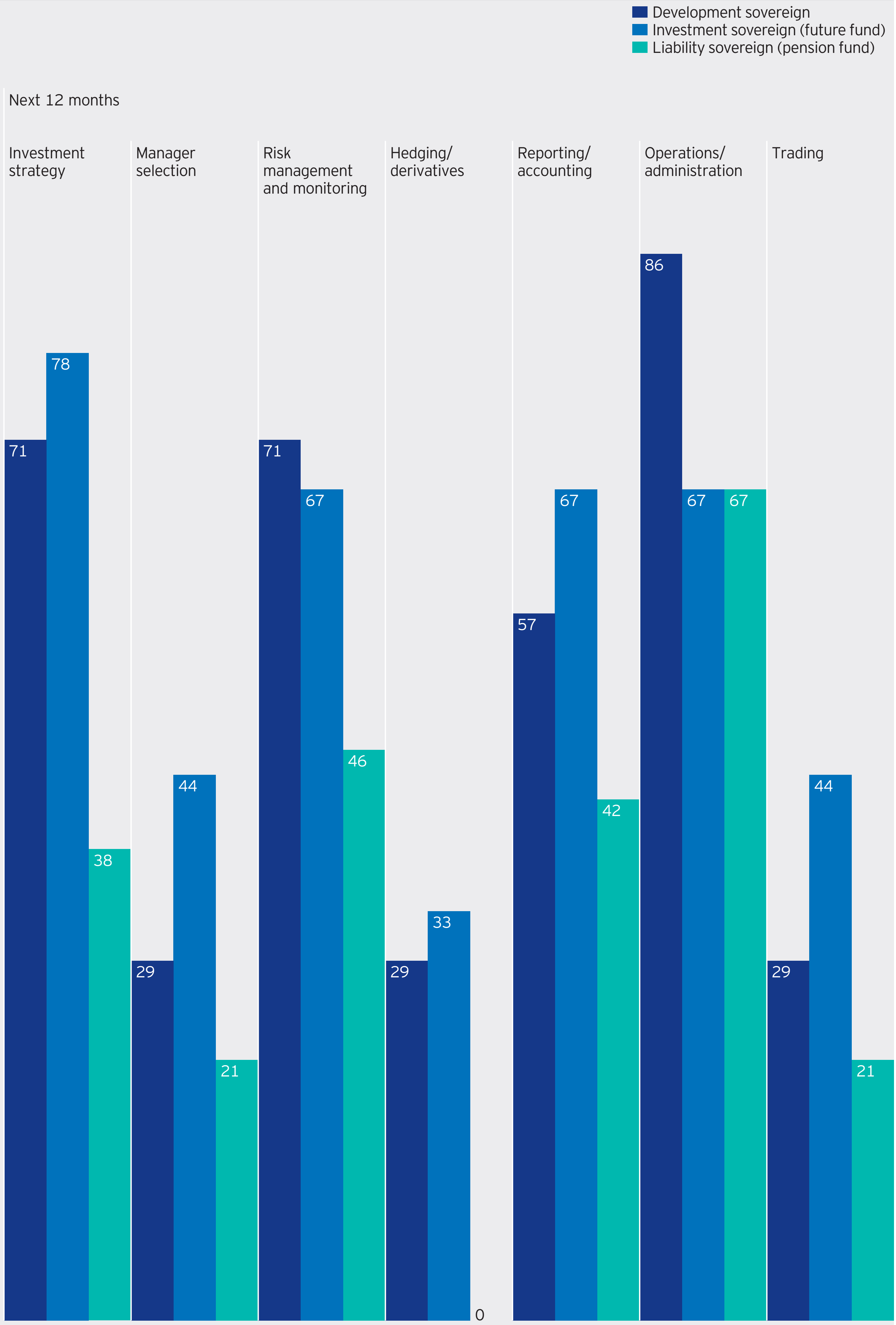
Investors acknowledge the benefits of utilising technology beyond the portfolio. Liability sovereigns, for example, are beginning to explore the use of blockchain to reduce administration costs and are also utilising technological and digital solutions to improve outcomes of beneficiaries, with AI being used to better communicate with pension fund members that they have found historically difficult to engage. Employee engagement will become increasingly important as the pension landscapes continues its shift away from defined benefit and towards defined contribution, with the responsibility and risk moving from the employer to the employee.

As a group, sovereigns acknowledge there is a significant way to go to fully integrate technology into their portfolios in order to optimise its application. There was a consensus that this shift has just started, and that the end result is likely to be an overhaul of current systems and processes in a move to more rules-based and continually adaptable (AI) systems.

Fig 4.4. Areas of technological innovation
Sovereigns only (% citations)



Last 12 months sample size: 32; Development sovereign: 8; Investment sovereign: 8; Liability sovereign: 16.



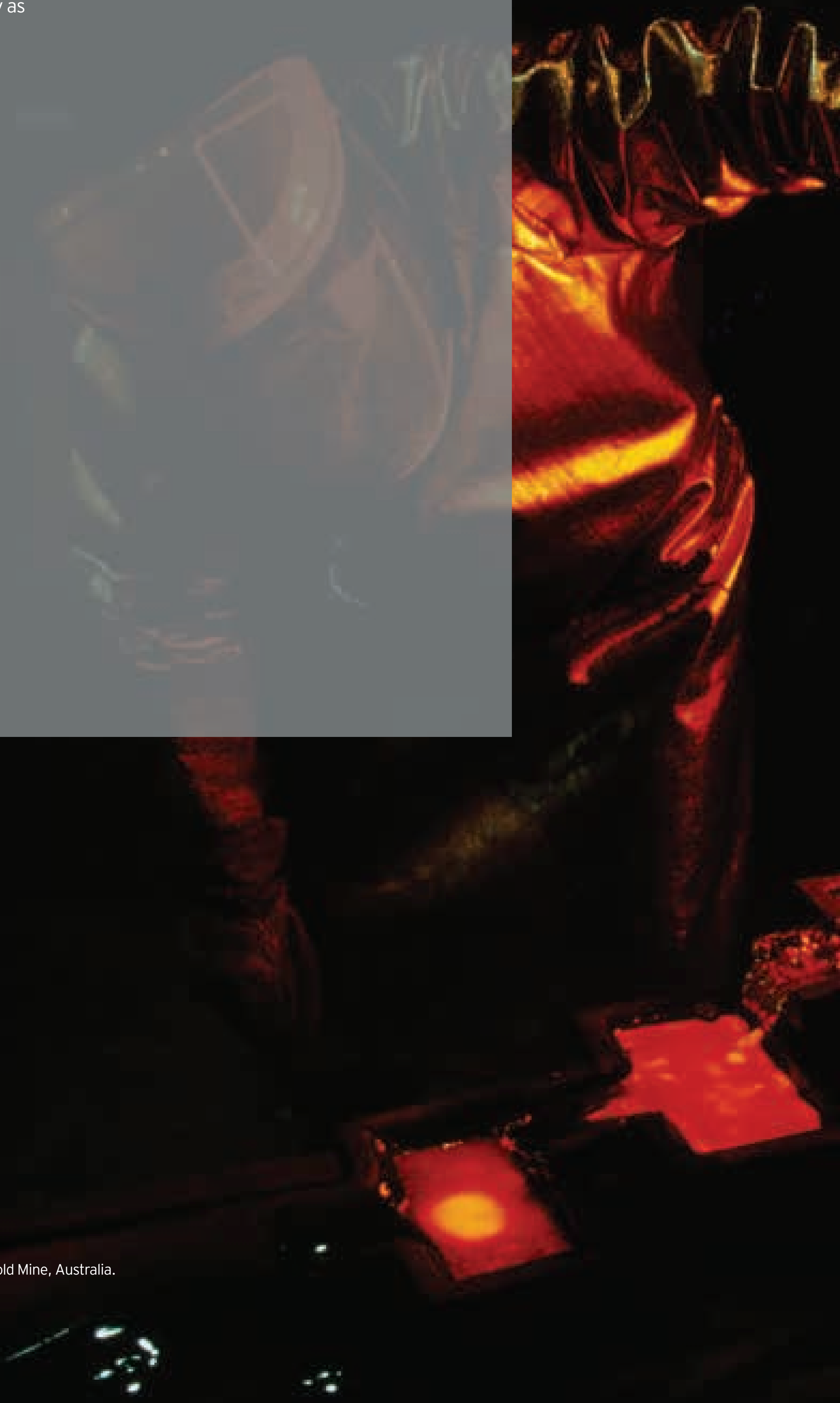
Next 12 months sample size: 40; Development sovereign: 7; Investment sovereign: 9; Liability sovereign: 24.

Central banks seek liquidity and safety, shifting away from government bonds and traditional reserve currencies

Key takeaways:

- Central banks have maintained their commitment to alternative assets while undertaking a significant rotation of their low risk asset portfolios from government bonds to deposits.
- A significant currency diversification is occurring with central banks reducing allocations to the traditional reserve currencies of the dollar, euro and sterling.
- A small number of central banks have made large additions of gold to their reserves.
- Only a fifth of central banks have a formal ESG policy but it is widely recognised that this will become increasingly important, particularly as they move into new asset classes.

05



A mine worker pours moulten 24-karat ingots at the Telfer Gold Mine, Australia.
Image: Sam Abell/Getty Images

Increasing uncertainty drives a rotation to deposits
For the managers of central bank foreign reserves, the past decade has been characterised by reserve accumulation against a backdrop of comparatively loose monetary policy. This has led banks to become increasingly pro-cyclical and institutional in their investment strategy – a shift that is often initially facilitated through portfolio tranching before moving to more holistic approaches.

However, they are now faced with an increasingly uncertain market environment, compounded by a Federal Reserve Chairman who has publicly articulated the need to move away from rigidly defined theoretical 'star' values and exercise judgement in the formulation of monetary policy.[4] The increased uncertainty around the direction of monetary policy was a commonly cited concern for central banks in formulating their investment approach.

A consequence has been a significant rotation of allocations to deposits (both commercial deposits and deposits with other central banks) as illustrated in Figure 5.1. However, this has not been a reversal of the trajectory of recent years which has seen central banks moving into non-traditional assets, establishing systems and processes to invest in new sources of return and diversification such as corporate debt, asset-backed securities and equities. Rather, increased deposits have been funded by reducing government bonds; European banks in particular have been doing so to avoid the negative yields currently experienced in the asset class.

In order to mitigate the impact of a shift to short-term instruments, central banks have particularly expanded their deposits with commercial banks. This is notable given these instruments were a source of contagion in the financial crisis of 2008, but while central banks remain cautious, there is more confidence in the banking system with the latest round of stress tests indicating better resilience of EU banks to cope with adverse market developments and shocks.

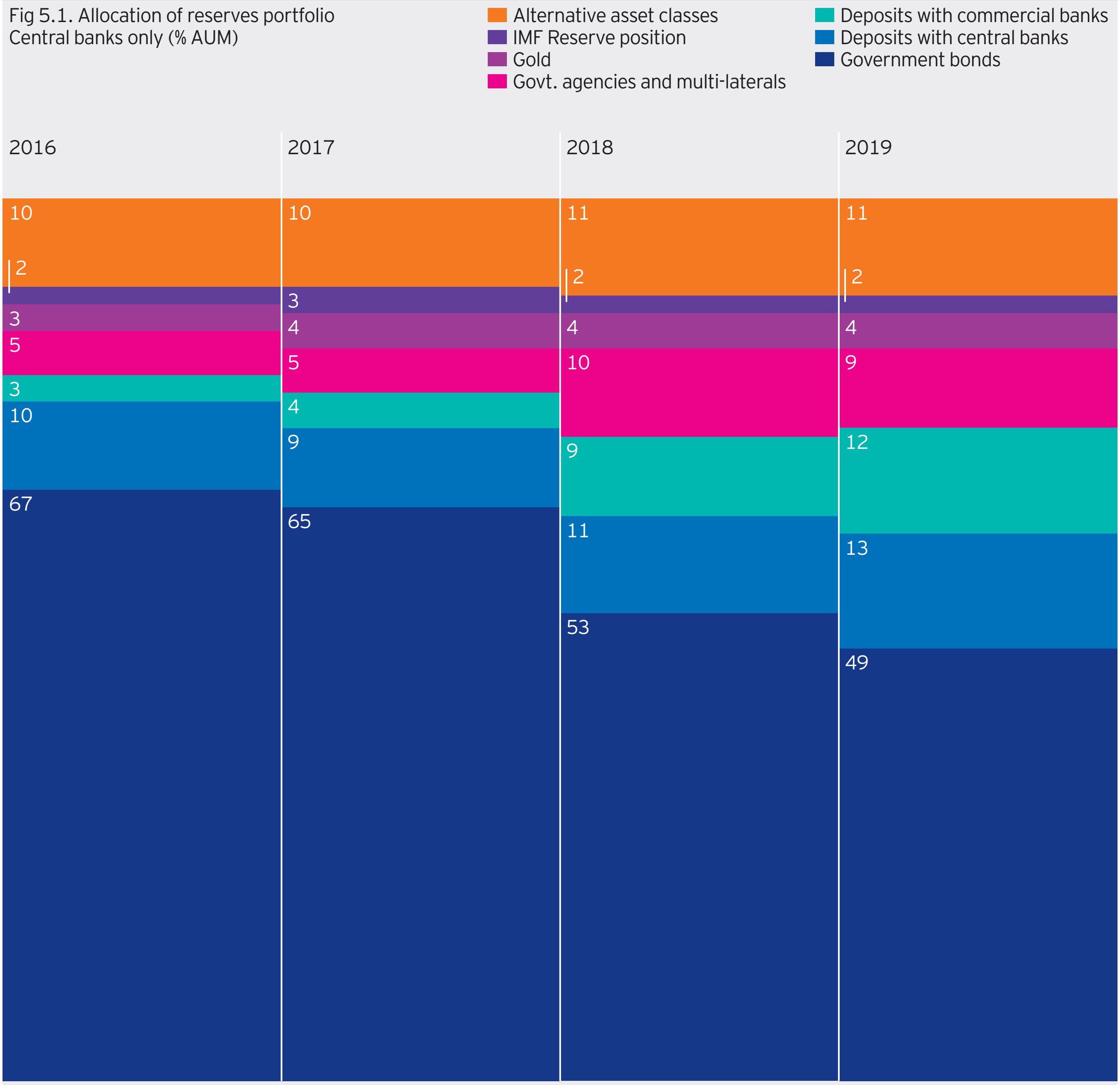
This has emboldened even those banks worst affected by contagion from commercial bank deposits during the financial crisis. Central banks as a segment believe the end of the cycle is further out than sovereigns, as discussed in theme 01, and see the end of the cycle as a gradual slowdown rather than a crisis. This outlook has enhanced confidence in commercial deposits as they look to be more defensive without exposing themselves to negative yields.

Figure 5.2 illustrates that this trend is stronger among EM banks, with deposits increasing from 21% to 28% of portfolios. Beyond concerns around the late stage of the cycle, the risk of a spreading crisis in emerging markets which took shape in early 2018 encouraged many central banks to increase liquidity in anticipation of potential future demands for intervention. Emerging markets are more dependent on central bank reserves to provide stability in times of stress and are therefore particularly sensitive to a liquidity squeeze (as witnessed in 2008). A central bank based in Latin America explained:

"Since the crisis in the region last year, we have been forced to focus on maintaining liquidity and therefore we now have significant proportions of the reserves in deposits, or other short-term instruments."
Central bank, Latin America

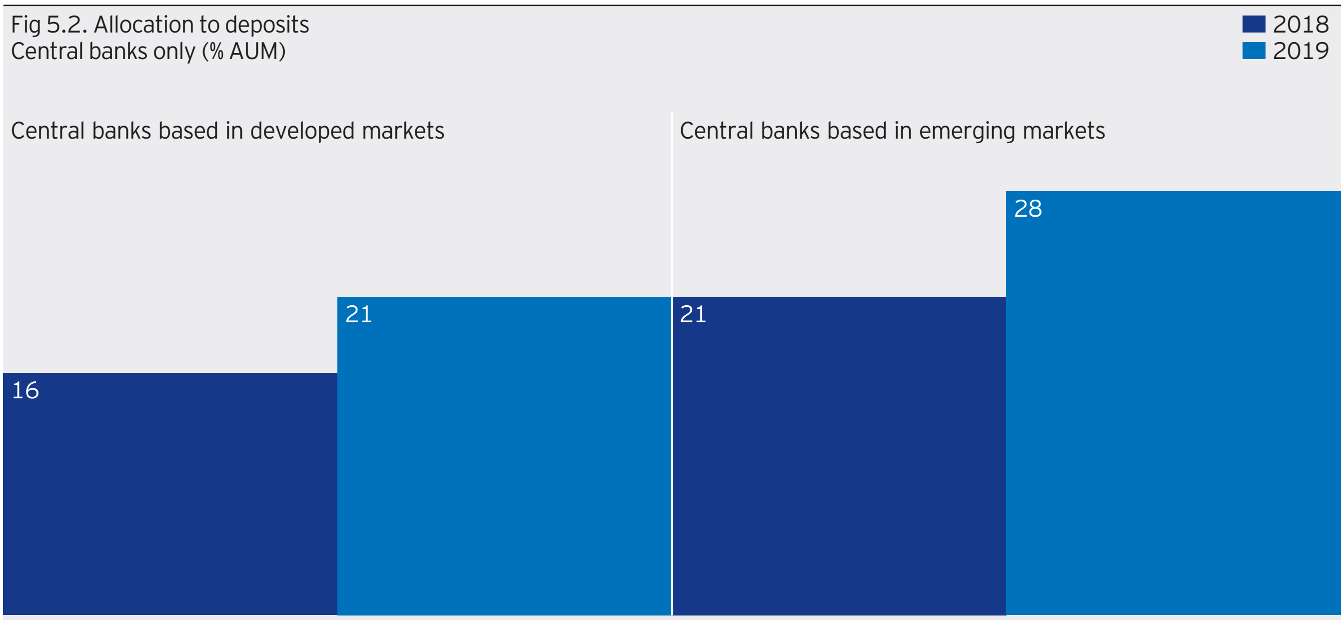
[4] Jerome Powell, Monetary Policy in a Changing Economy, Speech given at Jackson Hole, Wyoming, August 24 2018, https://www.federalreserve.gov/newsevents/speech/powell20180824a.htm

Fig 5.1. Allocation of reserves portfolio
Central banks only (% AUM)



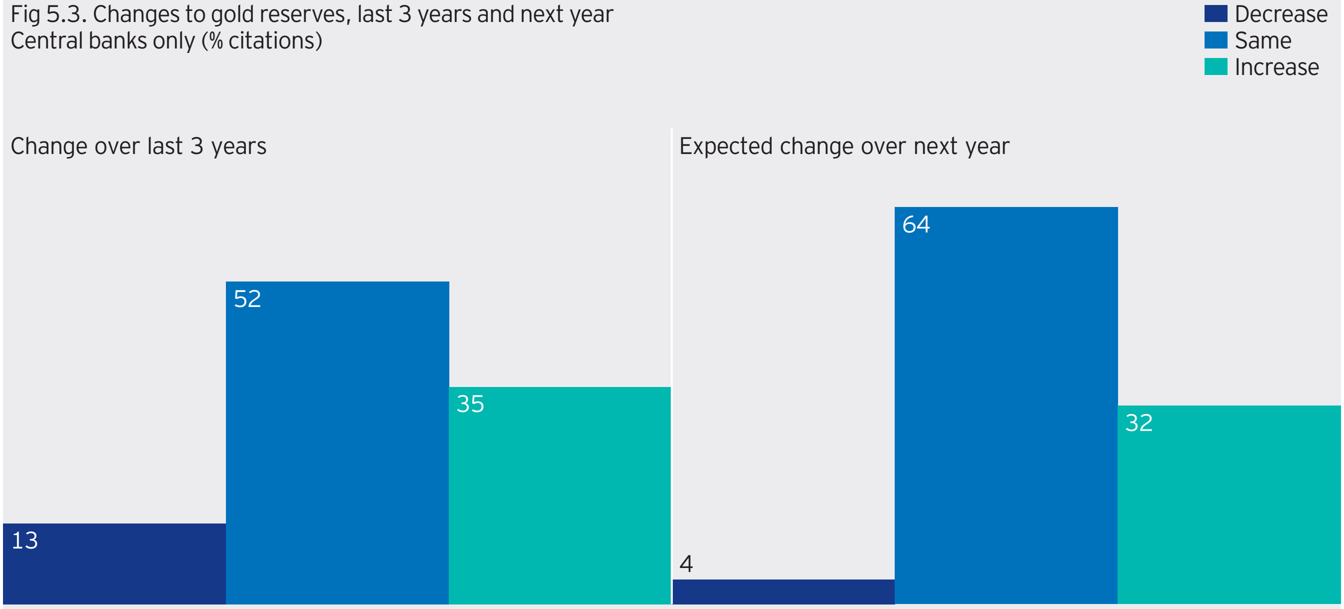
Sample size: 2016: 15; 2017: 33; 2018: 55; 2019: 36.

Fig 5.2. Allocation to deposits
Central banks only (% AUM)



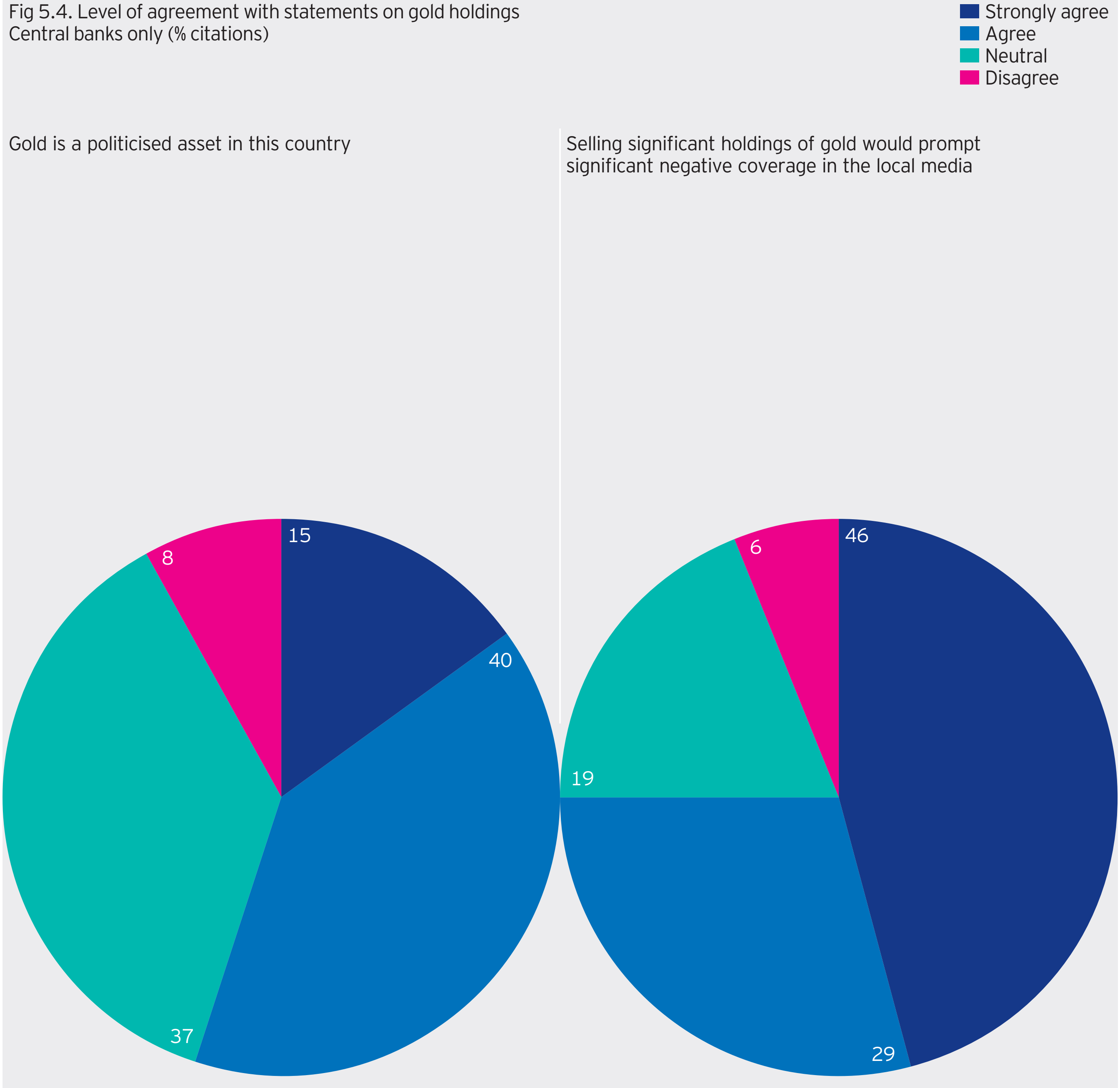
Sample size: 2018: DM: 17; EM: 38. 2019: DM: 13; EM: 23.

Fig 5.3. Changes to gold reserves, last 3 years and next year
Central banks only (% citations)



Change over last 3 years sample size: 54; Expected change over next year sample size: 57.

Fig 5.4. Level of agreement with statements on gold holdings
Central banks only (% citations)



Sample size: 27.

Gold has seen some return to favour despite adding volatility to portfolios

Concerns about global instability, political risk, and the US fiscal position have encouraged some institutions to move towards gold. Central banks bought 651.5 tonnes of gold in 2018, the second highest annual total on record and up 74% from the year earlier.[5] This trend appears set to persist. As Figure 5.3 illustrates, 35% of banks have increased gold allocations over the last three years, and 32% expect to do so next year. US debt-to-GDP levels are at levels not seen since World War II and continue to rise, leading to question marks for some over the assumed risk-free nature of US government paper and the status of the US dollar as the world's reserve currency. However, with other major reserve currencies facing similar, if not greater concerns, gold has become an alternative for central banks seeking a 'safe haven' asset also offering diversification away from the US dollar.

The increase in gold amongst central banks has been driven by a relatively small number of banks making large purchases. Holding gold as a material part of a portfolio brings with it additional considerations, including price volatility, storage and perception management when selling. Although there is evidence of gold being negatively correlated with interest rates and the US dollar, as a volatile asset that offers no yield, there is continued debate on its impact on risk-adjusted returns. This was articulated by a Latin America-based central bank:

> "If we add gold to our internal models it increases the predicted volatility of our portfolio dramatically. The only thing that would make it happen is a strategic decision as for us it does not look positive from an investment point of view."
>
> Central bank, Latin America

Some central banks increasing gold reserves stressed that it was important for the gold to be held within their own country (fieldwork conducted January-March 2019). Several cited the case of Venezuela, where the Bank of England rejected its government's request to withdraw 14 tonnes of gold (as part of a US-led effort to cut off the state from its overseas assets).

However, this incurs additional storage costs and reduces both liquidity and the potential for yield enhancement via lending or swaps which is available when gold is stored in the form of 'London Good Delivery' quality at the Bank of England. And despite being highly liquid, gold can prove difficult to sell in volume due to the political risks and the possibility of a lasting negative legacy of selling gold 'at the wrong time' (Figure 5.4).

[5] https://www.cnbc.com/2019/01/31/world-gold-council-central-banks-buy-most-gold-since-1967-.html

Renminbi growing in importance as central banks diversify from traditional reserve currencies

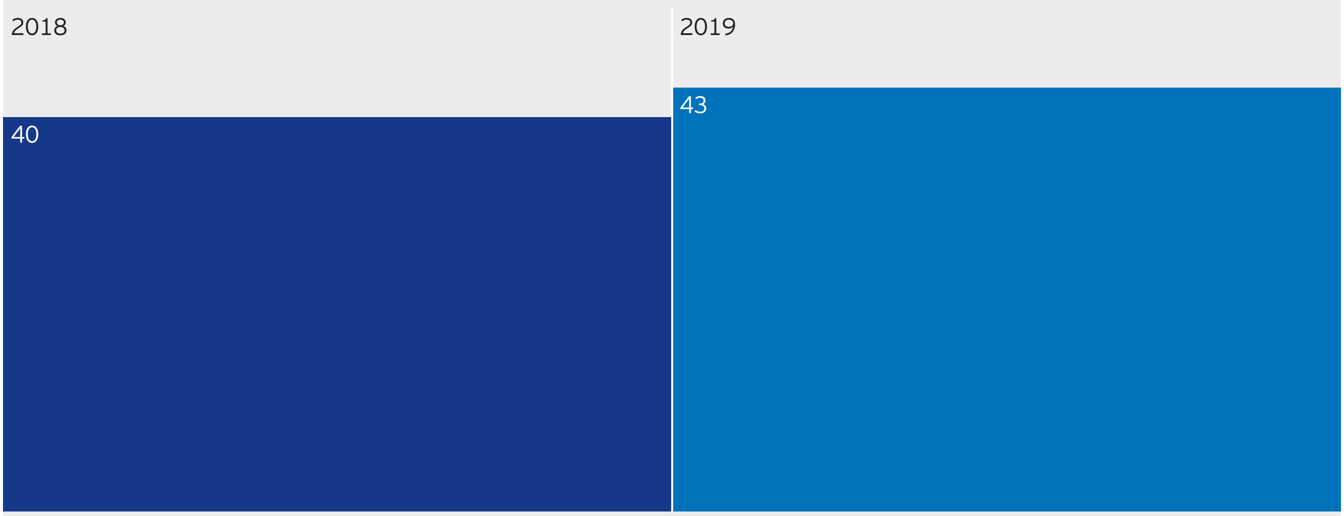
Within an overall retrenching of risk appetite, central banks continue to diversify away from government bonds into non-traditional asset classes, to reduce concentration of risk and increase expected returns. Over the last five years the most significant move has been towards EM Sovereign debt, attributable mostly to increases in exposure to Chinese government and agency debt denominated in RMB. This trend has gained momentum since the inclusion of the RMB in the Special Drawing Rights basket, the growing importance of China as a trading partner, and structural changes to the domestic bond market. In this year's study 43% of Central Banks held renminbi, compared to 40% last year (Figure 5.5).

A decrease in USD allocations, and a concurrent increase in RMB allocations (Figure 5.6), saw USD allocations drop to a 5-year low of 61.7% in 2018 (Figure 5.6)[6]. Meanwhile renminbi reserves increased from a negligible proportion of world reserves in 2016 to 1.9% at the end of 2018. During this period allocations to renminbi have overtaken the Australian dollar (AUD) and Canadian dollar (CAD), and may now close in on the role of sterling (GBP), where reserve holdings had declined to 4.4% at the end of 2018.

The trend towards more diversification away from the traditional reserve currencies looks set to continue as Figure 5.7 on page 76 indicates. With 10% to 20% of central banks expecting to decrease their reserve allocations to US dollars, euros and sterling in 2019, this is a significant move which is particularly like to benefit the renminbi.

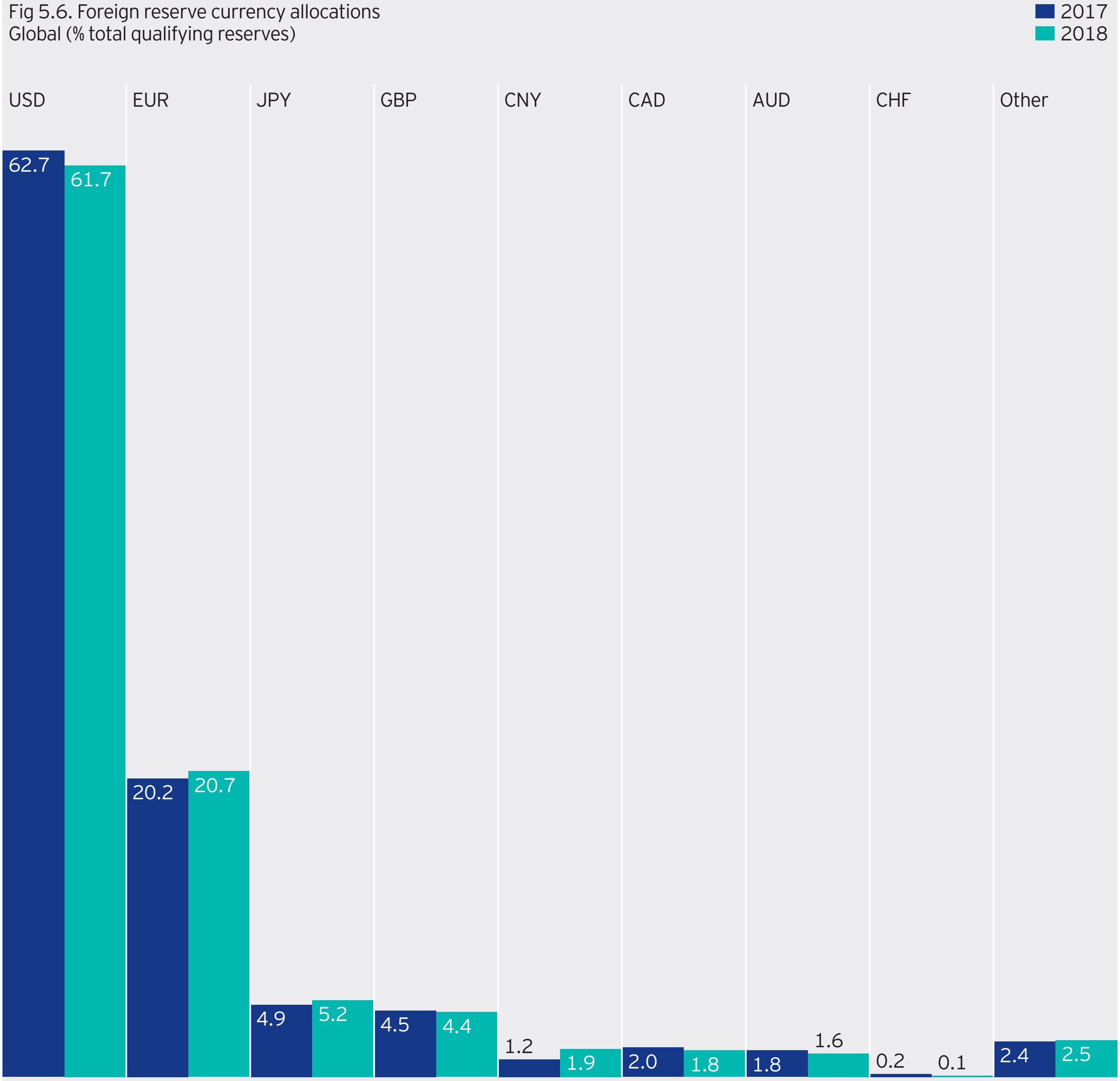
[6] https://uk.reuters.com/article/forex-reserves/update-1-us-dollar-share-of-global-currency-reserves-hits-near-5-year-low-imf-idUKL1N1YX0PC

Fig 5.5. Incidence of renminbi held in reserves portfolios
Central banks only (% citations)



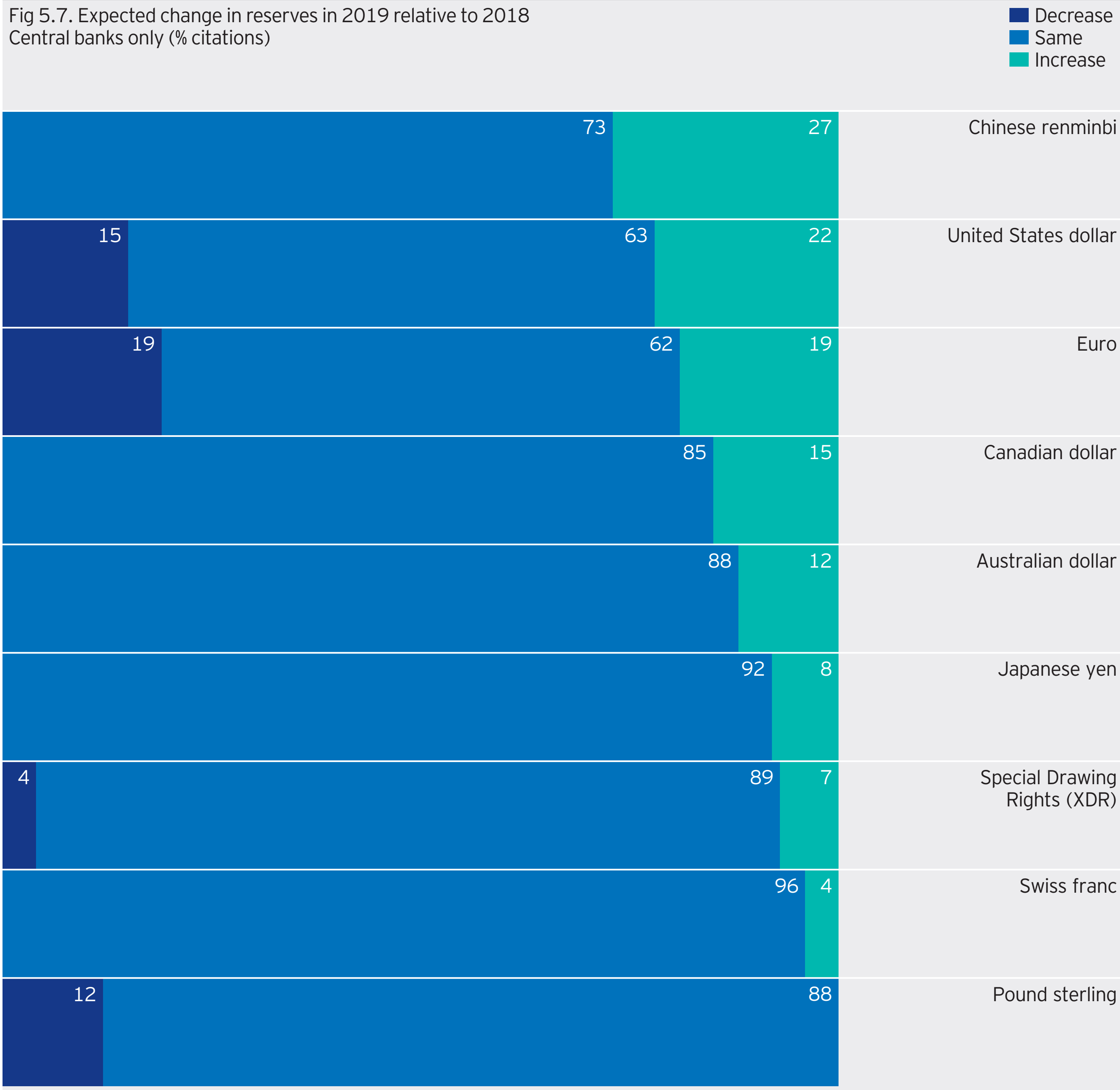
Sample size: 2018: 56; 2019: 44.

Fig 5.6. Foreign reserve currency allocations
Global (% total qualifying reserves)



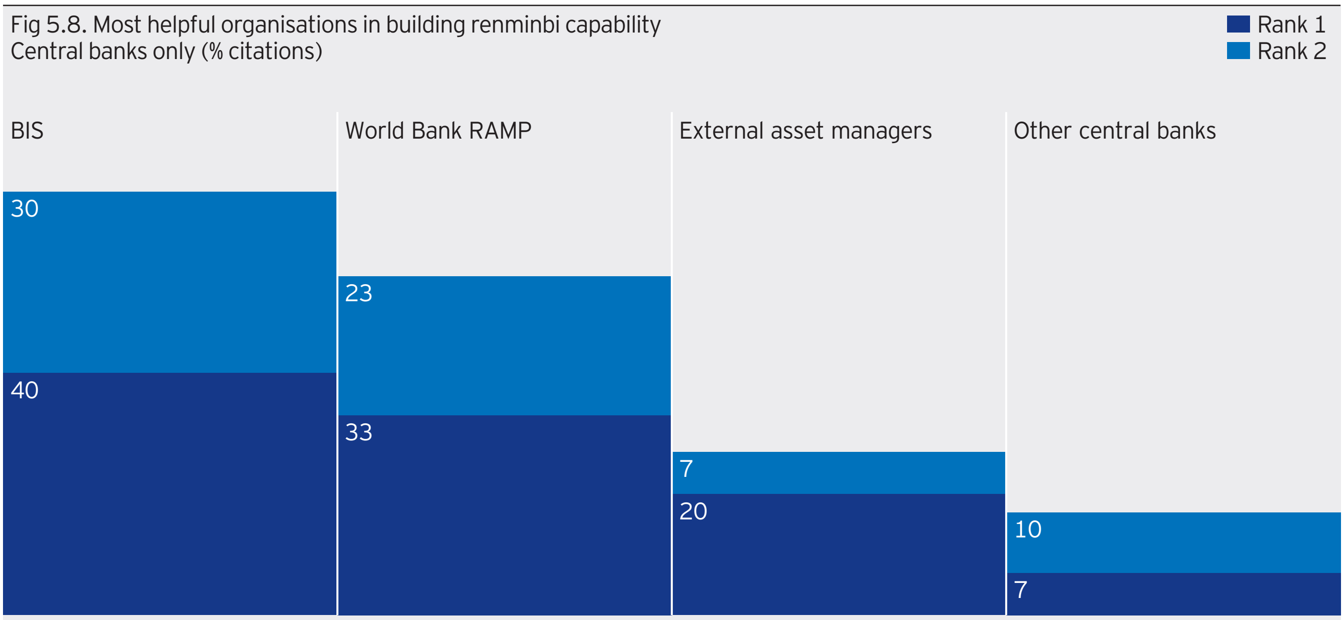
Source: IMF COFERS, Data for Q4 2017, 2018, accessed 31 May 2019.

Fig 5.7. Expected change in reserves in 2019 relative to 2018
Central banks only (% citations)



Sample size: 27.

Fig 5.8. Most helpful organisations in building renminbi capability
Central banks only (% citations)



Sample size: 30.

For those managers making their first allocations to RMB debt, the operational and investment issues are significant, with the process often taking upwards of two years. Specialist expertise and support is crucial, and is often provided by multi-laterals including the Bank of International Settlements ('BIS') and the World Bank's Reserve Advisory and Management Program (RAMP) (Figure 5.8). Banks that have made this step stress the importance of relationships with Chinese organisations and the need for personal visits to build trust, even as an official institution.

Time-zone differences are another commonly cited challenge with European based banks concerned about the ability to trade only in early hours when there is less liquidity. They contrasted this with the Australian market which trades during London hours, facilitating portfolio changes. The lack of daily margining in China was seen as problematic as this is an important risk management tool for many central banks. One of our European central bank respondents noted:

"When we started, the banks we worked with didn't understand about daily margining and we had to explain how important it was for us. We worked together to find a solution and the banks we partner with are now able to offer it."
Central bank, Europe

Investing via an external fund is an option for central banks with fewer in-house resources, offering yield and diversification benefits without the build requirement:

"We invest onshore through an external fund that just invests in China. It is highly diversified, so default risk is low and we are thinking of enlarging our position. We are able to achieve a yield of 2.5-3% even when hedged to the euro."
Central bank, Europe

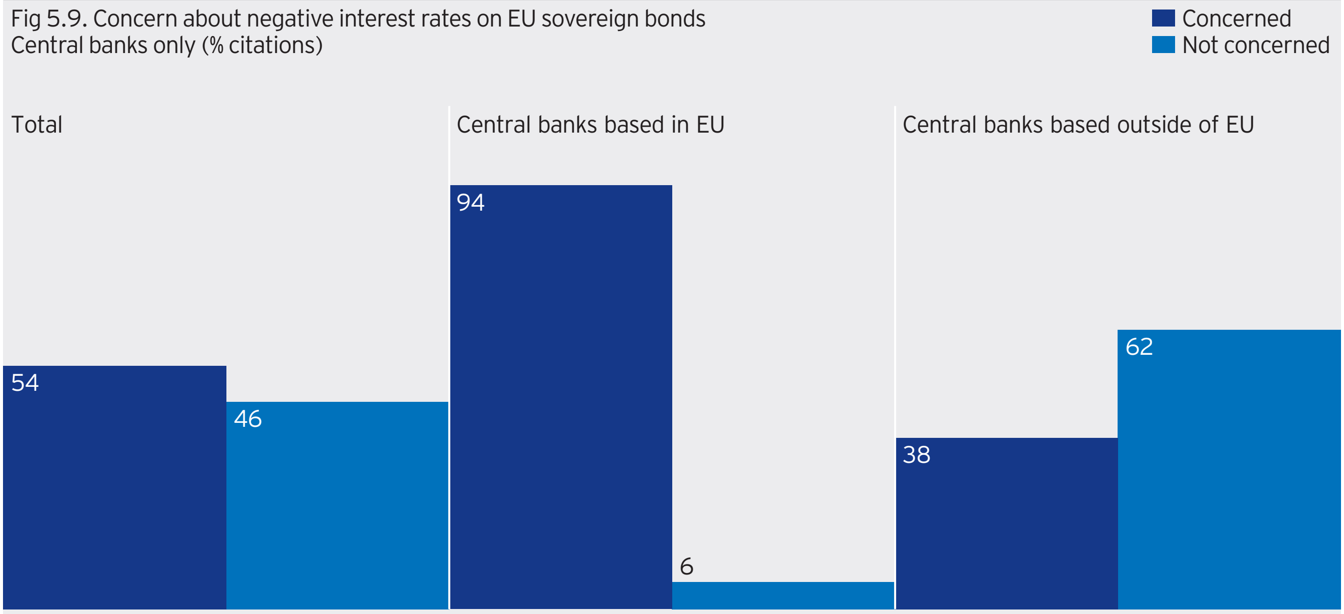
Using an external manager may not foster knowledge and internal capability development to the same extent, making it harder to scale up exposure and providing limited control over trading strategies. But once a lengthy due diligence and capability development process is complete, central banks generally feel confident increasing their exposure.

Banks struggling to cover their operational costs are looking to non-traditional assets for help
Although most central banks do not have an explicit return target, it is common for banks to have an implicit target: generate enough return to cover their running costs. This has become more challenging as allocations to long-term bonds purchased when yields were higher start to mature and banks are forced to reinvest in the prevailing low-yield environment. This is a particular problem for banks based in the EU that are required to hold negative yielding euro-denominated debt. Over half of banks said they were concerned about negative rates on European bonds, including 94% of banks based in the EU (see Figure 5.9).

As such central banks continue to add other non-traditional asset classes to their reserves in search of additional returns, with more than half of central banks introducing new asset classes over the last five years (Figure 5.10). After emerging market debt, corporate debt has been the second most common addition of the last five years, followed by US Agency Mortgage Backed Securities (MBS) and equities (Figure 5.11).

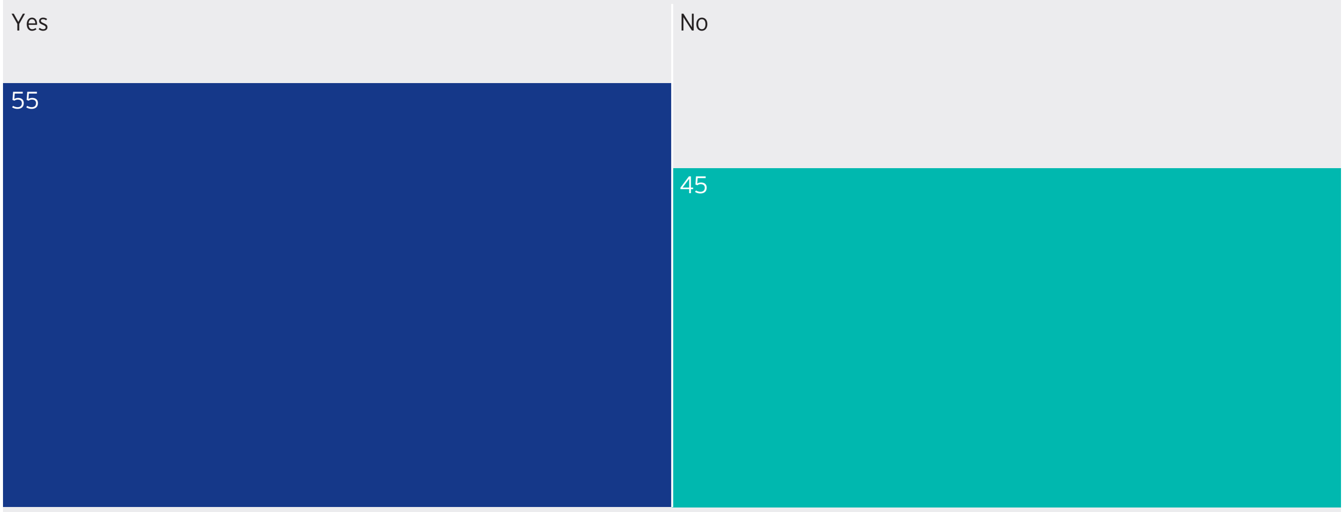
While the primary attraction of EM debt is total return potential, the addition of corporate debt and equities is primarily motivated by a desire for income and diversification (see Figure 5.12 on page 80). Meanwhile, Agency MBS is seen as having particularly strong diversification benefits, offering high liquidity and historically lower correlation to equities than corporate credit (and therefore being attractive for central banks that anticipate late cycle risk).

Fig 5.9. Concern about negative interest rates on EU sovereign bonds
Central banks only (% citations)



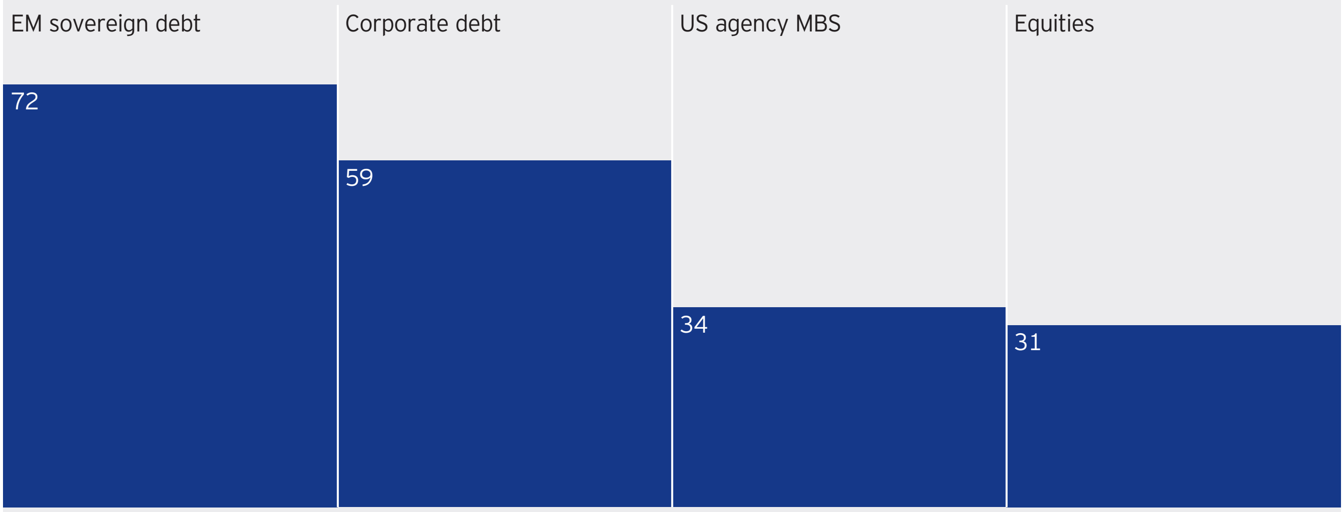
Sample size: EU: 17; Other: 42.

Fig 5.10. Banks introducing new asset classes over the last five years
Central banks only (% citations)



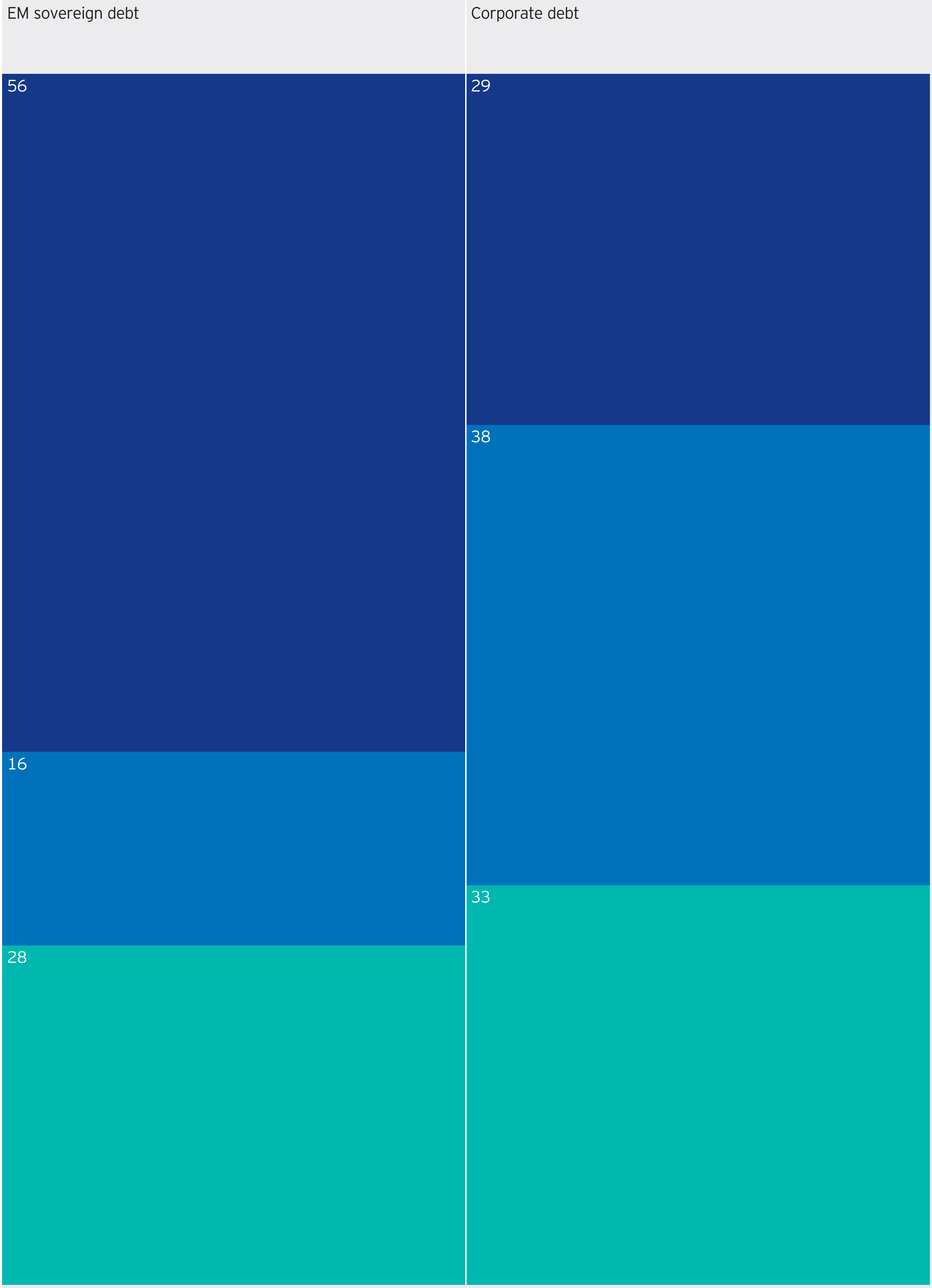
Sample size: 62.

Fig 5.11. Asset classes introduced over the last 5 years
Central banks that have introduced a new asset class only (% citations)



Sample size: 32.

Fig 5.12. Rationale for introducing each new asset class
Central banks only (% citations)



Sample size: 25.

Total returns
Current income
Diversification
US agency mortgage-backed securities
Equities
21
32
47
32
47
21

Non-traditional assets lead to heightened ESG ambition

Most central banks have been slow in adopting an explicit ESG policy into their portfolios, largely because of the nature of traditional central bank reserve assets – government or government-backed fixed income securities and other short-term deposits. This year's study found that only 20% of central banks report having a top-down ESG policy (Figure 5.13). ESG is often incorporated on an ad-hoc basis, with rudimentary screening of certain countries or industries, such as munitions or tobacco.

With the expansion of central banks into new asset classes, many acknowledge that they need to devote more time, attention and resources to the topic; in March 2019 the Dutch central bank announced it would be the first central bank to sign the UN's Principles for Responsible Investment (PRI). It subsequently launched a new responsible investment charter, with commitments related to the environment and an inclusive financial and economic system.

Despite the lack of formal ESG policies, many central banks believe they have an obligation to include ESG principles in their investment process and contribute to the debate for ethical investments, including the take-up of green bonds. Green bonds are considered to offer an interesting opportunity for yield enhancement within the government and multi-lateral bond sector, making it a natural extension to existing positions from a credit perspective.

As such, a significant number of banks report that they are already investing or planning to invest in green bonds, as illustrated by Figure 5.14. Many also reported interest in new green bond instruments, with a lack of supply currently the principle barrier to investment, as described by an APAC central bank;

> "We are interested in green bonds but with so few being issued they are difficult to buy in the primary market. They are also usually held in hold-to-maturity portfolios so the secondary market is also illiquid. It is therefore currently hard to have a strategy with meaningful volumes."
> Central bank, APAC

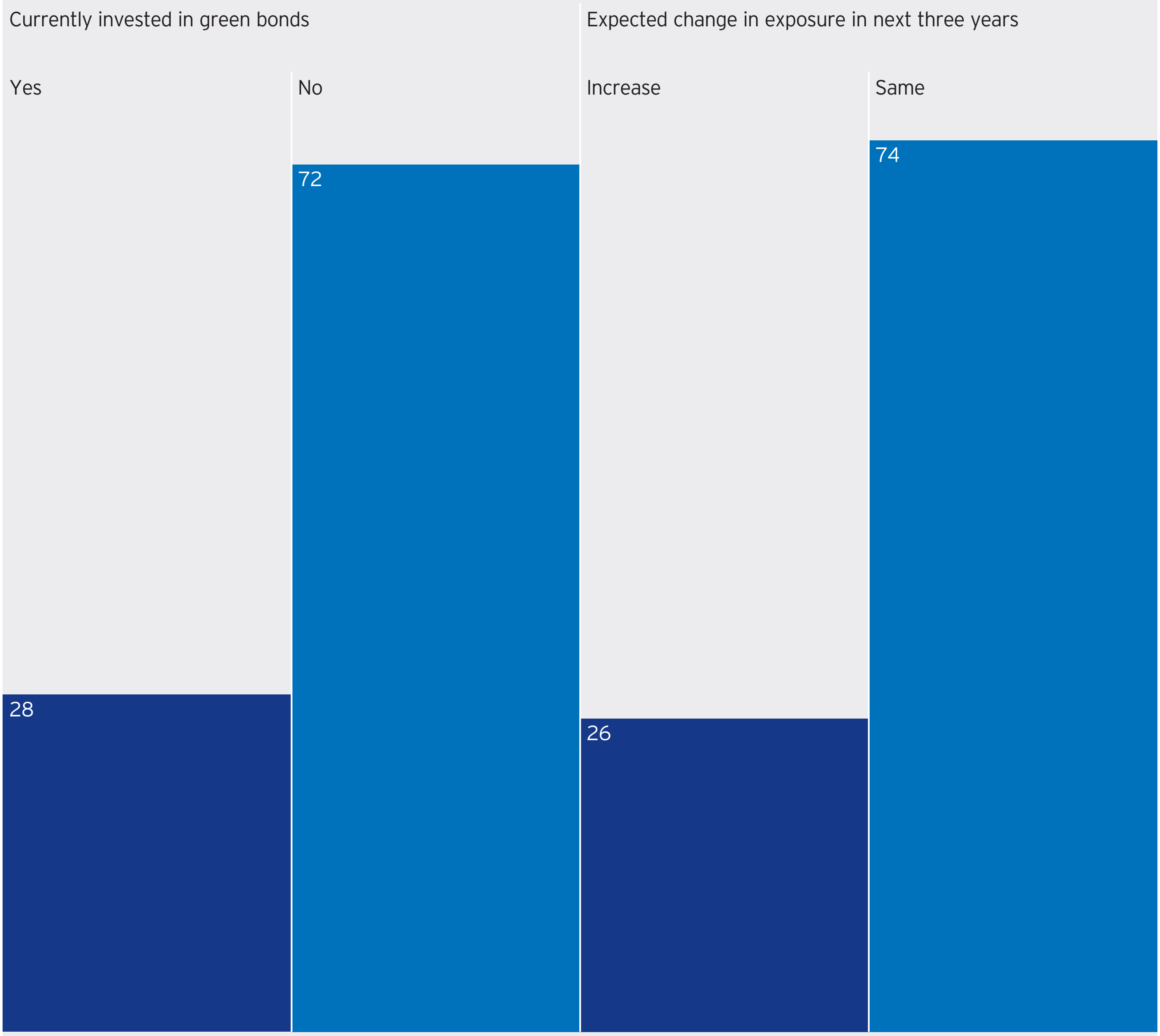
Central banks in transition

Ten years on from the financial crisis, central banks are in transition. Banks are continuing to develop reserve portfolio investment approaches, becoming more procyclical and more sophisticated in their approaches to investment and risk management – diversifying both asset classes and currencies. Meanwhile, banks are also recognising and responding to the requirements of their high-profile public role – improving transparency and developing ESG capabilities to meet the expectations of a more engaged and informed public. These trends are likely to continue as banks share expertise and experience, as well as face greater transparency and public accountability for their investment strategy.

Fig 5.13. Banks with a specific ESG policy at the organisational level
Central banks only (% citations)

Sample size: 53.

Fig 5.14. Green bond investments and future intentions
Central banks only (% citations)



Currently invested in green bonds sample size: 71; Expected change in exposure in the next three years sample size: 68.

Giant kaleidoscope with orange and black patterns.
Image: Marco Giardini/Millennium Images

Sample and methodology

The fieldwork for this study was conducted by NMG Consulting during January, February and the first half of March 2019. Invesco chose to engage a specialist independent firm to ensure high-quality objective results. Key components of the methodology included:

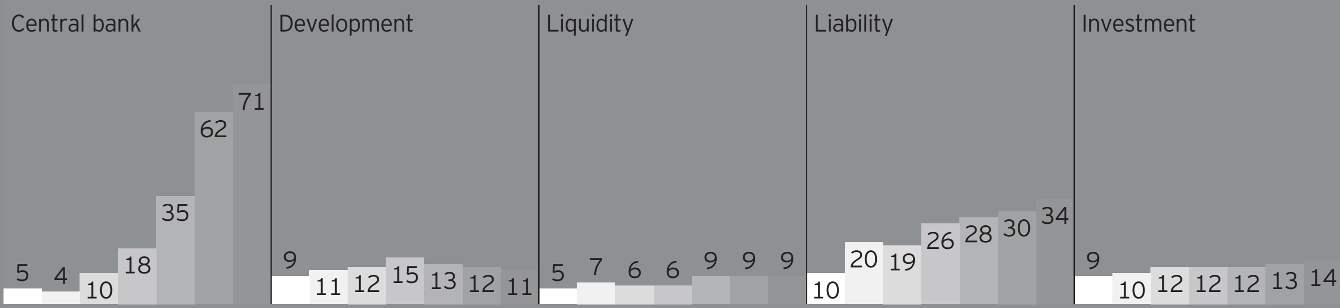
- A focus on the key decision makers within sovereign wealth funds and central banks, conducting interviews using experienced consultants and offering market insights rather than financial incentives.
- In-depth (typically 1-hour) face-to-face interviews using a structured questionnaire to ensure quantitative as well as qualitative analytics were collected.
- Analysis capturing investment preferences as well as actual investment allocations with a bias toward actual allocations over stated preferences.
- Results interpreted by NMG's team with relevant consulting experience in the global asset management sector.

In 2019, we conducted interviews with 139 funds: 68 sovereign investors and 71 central banks. The 2019 sovereign sample is split into three core segmentation parameters (sovereign investor segment, region and size of assets under management). The 2019 central bank sample is broken down by developed vs. emerging markets.

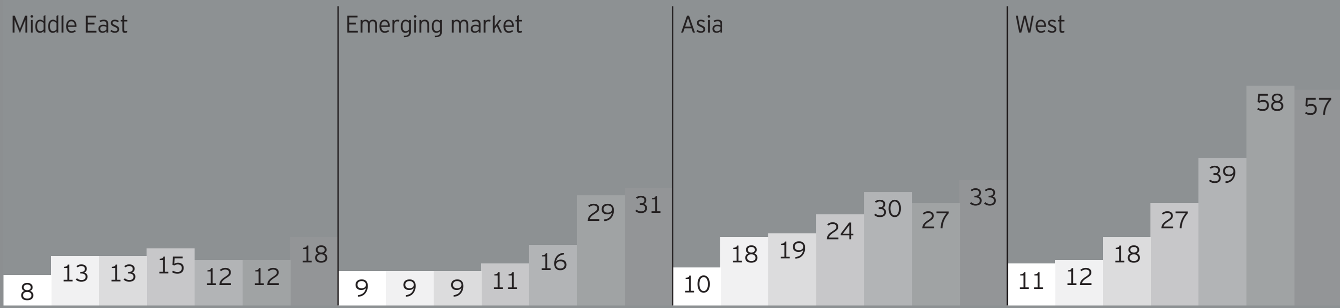
Sovereign investor sample

2013 2014 2015 2016 2017 2018 2019

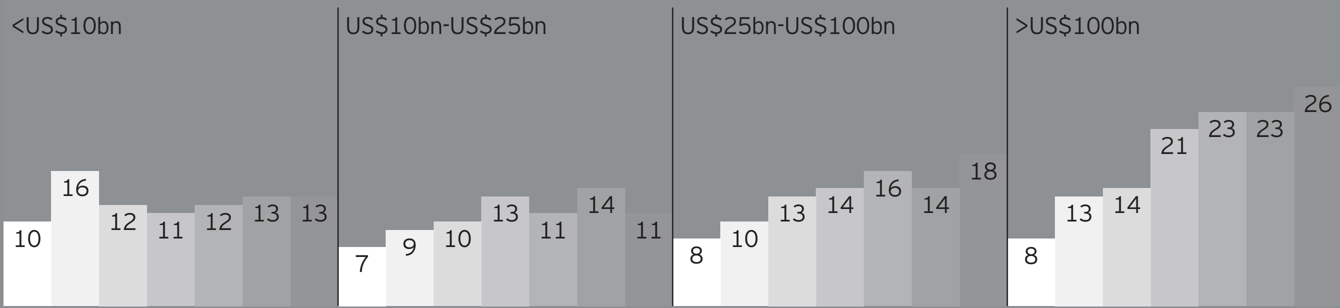
By segment



By region

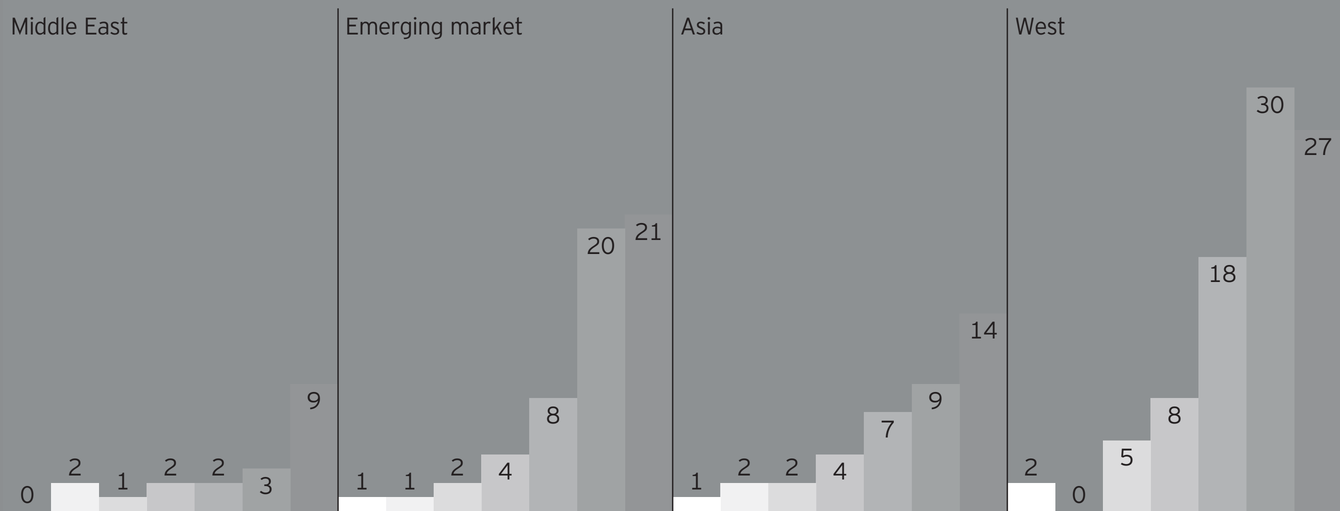


By assets under management



Central bank sample by region

2013 2014 2015 2016 2017 2018 2019



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 with funding requirements 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.

Sovereign profile segmentation

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

Time horizon and illiquidity tolerance

For illustrative purposes only.

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