Invesco

Invesco Global Sovereign Asset Management Study 2016

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

Important info
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Cover photography
Tokyo cityscape Marunouchi

Welcome
Over the past couple of years sovereigns have been operating in an environment of increased volatility, whether it be in financial markets, commodity prices or currencies. Low interest rates have added further complexity, however sovereign investors remain broadly confident in their position as long-term investors. Our 2016 Sovereign Asset Management Study seeks to build on the findings from previous years' studies by analysing long-term trends as well as uncovering new insights from face-to-face interviews with chief investment officers or strategy unit executives at 77 leading global sovereign wealth funds, government pensions funds and central banks, covering more than US$ 7 trillion of assets (as at March 2016).

The first theme in this year's report looks at how the challenging investment environment has impacted both current and future expected returns. Despite the clear challenges sovereign confidence has remained stable with many sovereigns continuing to receive new funding. And with time horizons increasing we see sovereigns as sophisticated, strategic, long-term investors.

In previous years we've noted strong allocations to alternatives. Today's low return environment has seen this trend continue however we note a change in the preferred asset class with real estate becoming the primary driver of increasing alternative allocations. We explore the drivers for these changes and highlight how sovereigns are accessing real estate.

We highlight how weak economic performance of major emerging markets has driven allocations to higher growth frontier markets in our third theme. Despite this the US is now the most the attractive market to sovereigns. We explore the role of public policy in influencing sovereign investment and highlight the opportunity for governments globally.

We look in detail at sovereigns' growing interest in factor-based investing. With levels of perceptions, awareness and adoption varying, we explore how asset managers can help sovereigns overcome perceived barriers to entry.

We conclude the report by focusing on central banks. This year we've increased our central bank sample and classified them as a separate segment of sovereign investor. We explore the relative importance of different investment objectives and focus on the development of investment tranches.

We hope the unique, evidence-based findings in this year's report provide a valuable insight into a fascinating and important group of investors.

Summary of key themes

1
A positive outlook in a challenging environment
A sustained low oil price and falling government bond yields have affected returns but sovereigns remain confident and continue to take a long-term view.

2
Growth in sovereign real estate investments
Fewer execution challenges have made real estate a more attractive asset class to sovereign investors than infrastructure and private equity.

3
Sovereign capital flow from BRIC to frontier markets and the US
Weak economic performance of major emerging markets has driven allocations to higher growth frontier markets and to the US based on positive economics and public policy changes.

4
Growing interest from sovereigns in factor-based investing
Sovereigns understand macro factors but would like more information on style factors and their potential applications within their portfolios.

5
Central banks to become important sovereign investors
The presence of investment tranches with significant corporate bond and equity allocations suggests that central banks are becoming long-term sovereign investors.

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Visit the study webpage to view more content on this year's themes.

A positive outlook in a challenging environment

A sustained low oil price and falling government bond yields have affected returns but sovereigns remain confident and continue to take a long-term view.

1

The low return environment means some sovereigns have missed their target returns

We completed our fourth annual cycle of executive interviews with leading sovereign investors covering more than US$ 7 trillion of assets in March 2016. Over the course of the last four years sovereign investors have faced an increasingly challenging investment environment driven by a sustained fall in the oil price and an unprecedented low return environment. Low returns continued in 2015 as developed market central banks continued extensive quantitative easing programmes. Between the end of Q1 2014 and Q1 2016 the oil price fell by more than US$ 60 per barrel[1] and yields on 10-year German and Japanese government bonds fell from 1.5%[2] and 0.6%[3] to 0.1% and -0.1% respectively. Furthermore, at the time of our field work, sovereigns remained cautious on the medium term outlook for oil given uncertainty with respect to OPEC discussions and on the outlook for the risk free rate based on recent guidance from central banks.

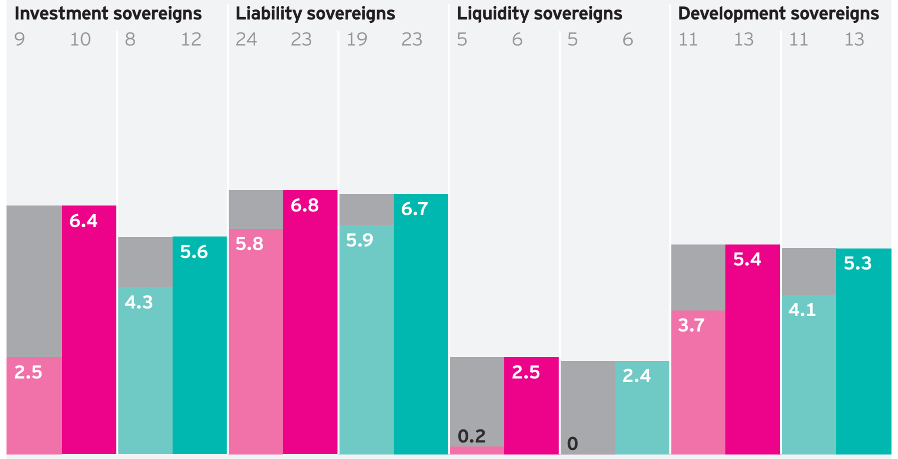
This challenging macro environment has impacted sovereign investment performance. Across the sovereign investors we interviewed, average actual annual portfolio returns fell from 6.6% on a 5-year view to 4.1% on a 1-year view to December 2015. Actual 2015 annual returns of 4.1% represent a return gap of 1.8% from average sovereign investor targets of 5.9% and because target returns are rarely reviewed, sovereigns expect to miss their target returns again next year. Figure 1 sets out the decline in average portfolio returns and the size of current and expected future return gaps.

Fig 1. Average current, target and expected future annual returns for sovereign investors

Sample is based on sovereign investors and excludes central banks. Sample size shown in grey. Data is not weighted by AUM.

Fig 2. Average actual, current and future target 1-year returns by sovereign investor profile

2015 Actual returns, Target returns
2016 Forecast returns, Target returns
1-year return/future gap



Note: all responses are from the 2016 study. Sample is based on sovereign investors and excludes central banks. Sample size show in grey.

[1]Monthly spot price of West Texas Intermediate Crude oil. Source: US Energy Information Administration - Short Term Energy Outlook, 12th April 2016.
[2]Monthly secondary market rate of 10-year German government bond. Source: European Central Bank Statistical Data Warehouse
[3]Monthly secondary market rate of 10-year Japanese government bond. Source: Ministry of Finance Japan data

Investment and liquidity sovereigns face the largest return gaps

The size of the return gap, defined as the difference between target and actual returns, varied for different sovereign investor segments. These differences are displayed in figure 2 showing the current 1-year return gap for 2015 and the expected return gap in 2016. Investment and liquidity sovereigns have the largest return gaps (3.9% and 2.3% respectively) compared to liability and development sovereigns (1.0% and 1.7%) who noted reporting benefits. Most liability sovereigns were based outside of the US and reported in local currency.

These portfolios typically had significant exposure to US fixed income (notably Treasury bonds) and so these investments and the broader portfolio benefited from the strengthening of the US$ against their local currency. Indeed 28% of sovereigns had left their portfolio overweight US$ (figure 3) in order to benefit from the currency appreciation relative to their reporting currency. In contrast fewer investment and liquidity sovereigns benefited from currency movements because more of these sovereigns report in US$ or hedge their currency exposures. Development sovereigns benefited from significant private equity holdings which were not marked to market and so had not fallen to the same extent as public equity investments.

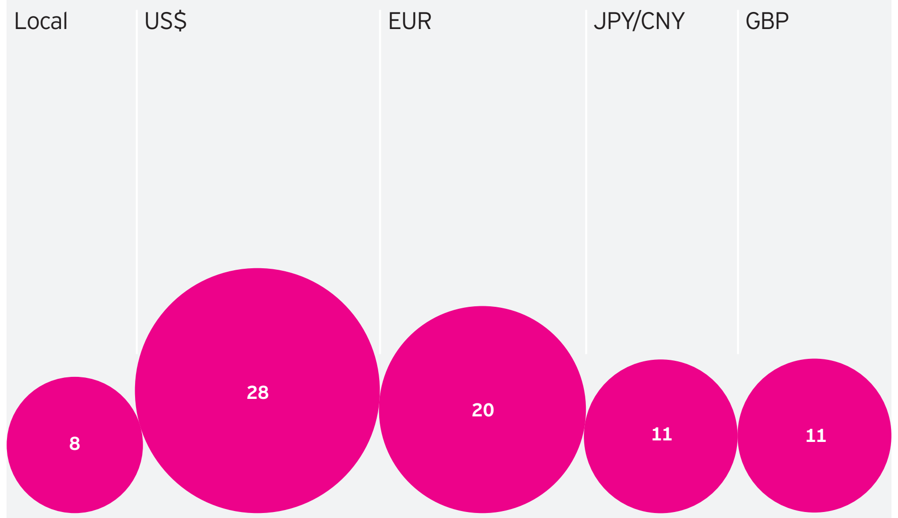
However sovereign investor assets continue to grow on a net flow basis

Despite high profile withdrawals from major investment sovereigns, our study reports that on average more money is entering a typical sovereign investor portfolio. Across all our interviews the average new funding is 7% of assets while only 3% of assets are withdrawn or cancelled. Oil and commodity dependent investment sovereigns face the most challenges but these are offset by continued new funding, as well as growth in new funding from liability and development sovereigns as shown in figure 4. Defined benefit state pension funds in emerging markets are the most significant contributors to growth although current portfolio sizes remain relatively small. We also note that a couple of development sovereigns received large one-off government contributions during 2015.

Many investment sovereigns are now comfortable operating in an environment with limited new funding. Some sovereigns have ceded assets to governments without cancelling long-term investments. Furthermore a number of sovereigns expecting withdrawals have not been called upon over the last 12 months. These institutions are now feeling more confident in their funding outlook and are increasing the importance of their investment objectives relative to their short-term liquidity needs.

Many investment sovereigns are now comfortable operating in an environment with limited new funding.

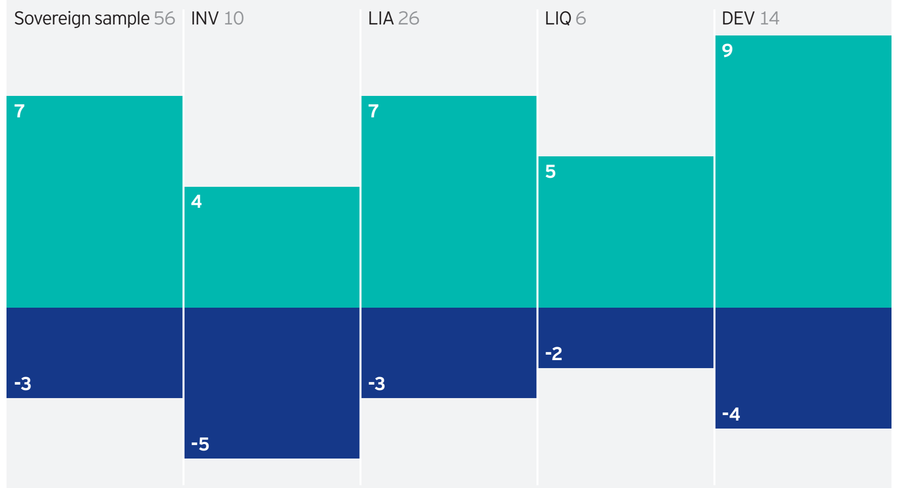
Fig 3. Overweight currency positions (percentage of sovereign investor citations for each category), Q1 2016



Sample is based on sovereign investors and excludes central banks.

Fig 4. Sovereigns views on funding and cancellations as a % of AUM, full year 2015

New funding
Cancelled investments



Sample is based on sovereign investors and excludes central banks. Sample size shown in grey. INV = Investment sovereigns, LIA = Liability sovereigns, LIQ = Liquidity sovereigns, DEV = Development sovereigns. Data is not weighted by AUM.

91%

91% of sovereigns expect their time horizons to either stay the same or increase in 2016.

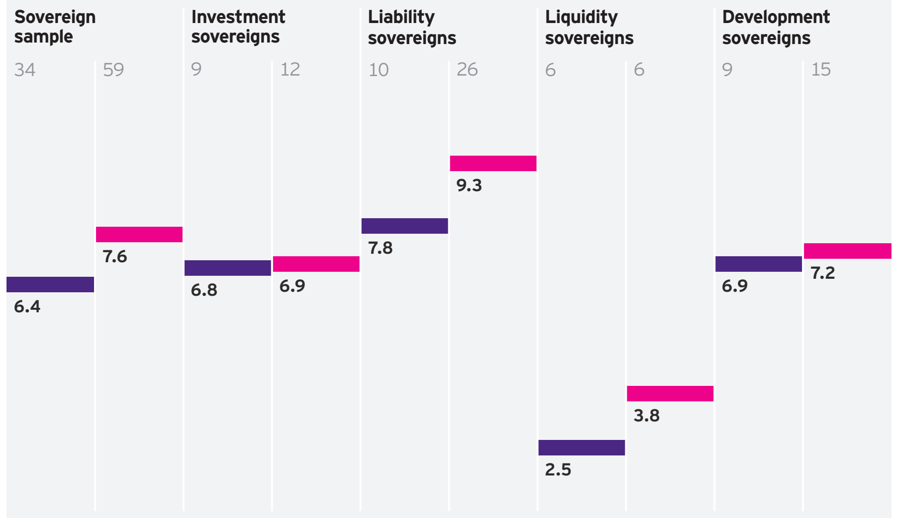
7.6 yrs

Average time horizon across our sovereign sample was 7.6 years.

And sovereign investors continue to take a long-term view

We indicated last year that sovereign investors were better prepared in terms of investment capability and governance for the challenging macroeconomic environment following the global financial crisis. Our discussions this year reaffirm this finding. Despite the existing return gap and a less positive funding outlook, sovereigns are increasing their average time horizons for investing. Figure 5 shows that, over the past four years, average time horizons have increased from 6.4 years to 7.6 years across our sovereign sample with increases amongst all sovereign investor profiles. Increased time horizons are linked to continued interest in diversification benefits and illiquidity premiums via alternatives which we will explore in more detail in the next theme.

Fig 5. Average time horizons by sovereign investor profile, Q1 2013 and Q1 2016



2013 Data calculated as the weighted average of the horizon band. 2016 Data is based on absolute time horizon. Sample size shown in grey.

Fig 6. Invesco sovereign confidence index methodology

[1]Invesco Sovereign Confidence Index is based on the average of sovereign capability and performance scores. [2]Capability scores are based on the average score of each of the capability components. [3]Performance scores are based on each sovereign's 2015 performance score of their primary capability (e.g. Investment return for Investment sovereigns, Liability matching for Liability sovereigns etc.). [4]Investment expertise scores are based on each sovereign's 2015 capability performance score for a range of benchmarks, asset allocation, investment risk management, currency management, internal asset management, internal private equity. [5]People and talent scores are based on each sovereign's 2015 capability performance score for people (expertise / knowledge / talent). [6]Governance and operations scores are based on each sovereign's 2015 capability performance score for investment reporting, governance, transparency, operational risk management. [7]Governance and operations scores are based on each sovereign's 2015 capability performance score for use of asset consultants / advisers, fund manager selection.

Despite a challenging environment overall sovereign confidence has been stable since 2013

Consistent sovereign confidence despite short term underperformance relative to target returns is a key theme this year. In 2014 we created the Invesco sovereign confidence index based on perceptions of historic investment performance and current capability.

This year we have updated the index to be weighted equally between performance and capability, and aggregate capability scores were developed from 13 underlying capabilities across investment strategy, asset management, governance and operational factors (figure 6). The Invesco sovereign confidence index in figure 7 shows that overall sovereign confidence has increased from 7.4 to 7.8 between 2014 and 2016.

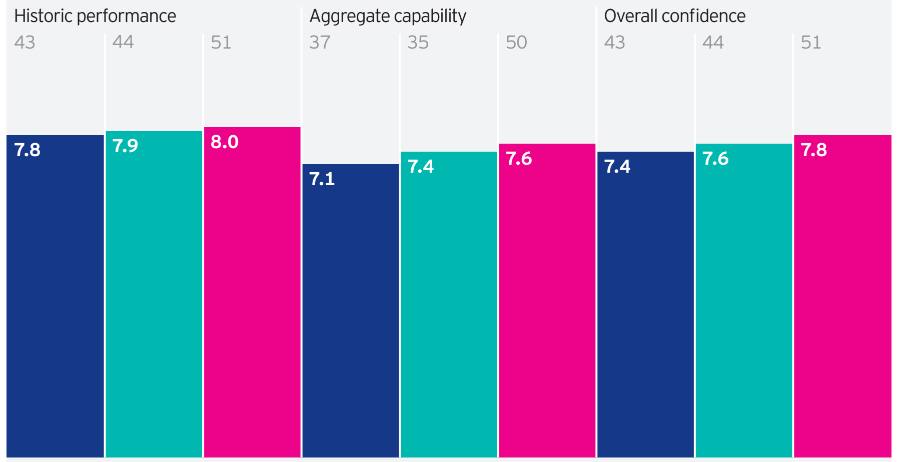
Meanwhile figure 8 shows that the negative impact of performance within investment and liquidity sovereigns is more than offset by small increases in perceived performance and capability among liability and development sovereigns. Furthermore, the underlying analysis of individual capabilities shows that liquidity and development sovereigns have remained confident across all investment capabilities (including asset allocation and investment risk management), despite a challenging investment environment.

Sovereigns are shifting their focus from strategic issues to investment trends and execution

These capability improvements indicate that liability and development sovereigns are successfully addressing some of the investment capability gaps we have identified in our previous reports. The results also explain why our 2016 themes in this report move from strategic portfolio level issues to execution challenges or emerging investment trends. We will discuss some of these challenges and emerging trends and the implications for the industry throughout the rest of the report.

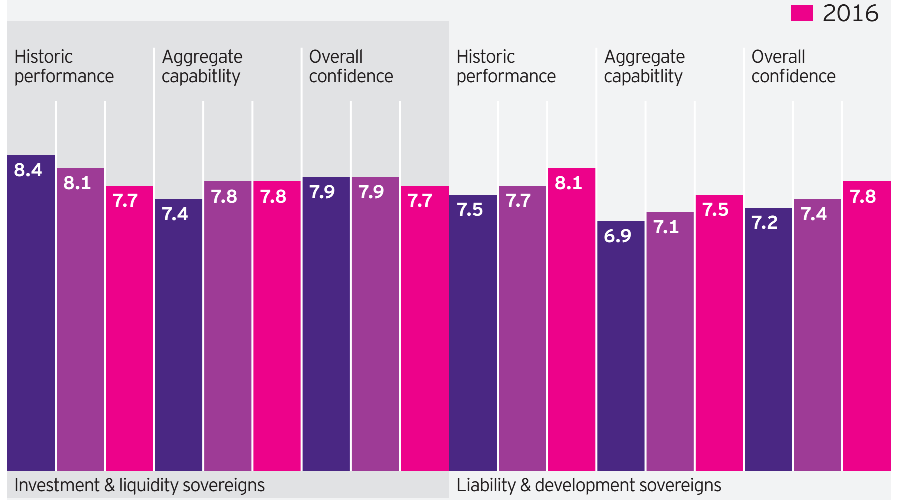
Consistent sovereign confidence despite short-term underperformance relative to target returns is a key theme this year.

Fig 7. Invesco Sovereign Confidence Index (historic performance plus aggregate capability equals overall confidence), 2014 – 2016



Performance rated on a score from 1 to 10 where 10 = highest performance. Capability rated on a score from 1 to 10 where 10 = highest capability. Average across all capabilities where the importance and performance scores are greater than or equal to 6 Invesco sovereign confidence index methodology is explained in figure 6. Sample is based on sovereign investors and excludes central banks. Sample size shown in grey.

Fig 8. Invesco sovereign confidence index by sovereign investor profiles, 2014 – 2016



Performance rated on a score from 1 to 10 where 10 = highest performance. Capability rated on a score from 1 to 10 where 10 = highest capability. Average across all capabilities where the importance and performance scores are greater than or equal to 6. Invesco sovereign confidence index methodology is explained in figure 6. Sample is based on sovereign investors and excludes central banks.

Growth in sovereign real estate investments

Fewer execution challenges have made real estate a more attractive asset class to sovereign investors than infrastructure and private equity.

2

The ongoing shift from international fixed income to alternatives
Since 2013 we have monitored major changes in investment strategy, benchmarks and strategic asset allocation. Following the global financial crisis, sovereigns noted high levels of correlation between asset classes. This observation increased the shift towards alternatives which seek to diversify returns and give access to liquidity premiums. This shift to alternative assets accelerated as quantitative easing drove down returns on government bonds and put pressure on portfolio returns relative to targets (as we have noted in the previous theme). Figure 9 shows that international fixed income allocations for the average sovereign investor portfolio have fallen from 25% to 16% over the last four years.

Major execution challenges in private equity and infrastructure
Over the past two years, most sovereign investors have focused on the importance of increasing infrastructure and private equity investments within their strategy for growing alternative assets. Large ticket sizes, long time horizons, the ability to move quickly and accommodate flexible deal structures were some of the reasons why sovereigns felt they had competitive advantage in these asset classes. However, we noted sovereign attitudes have changed in 2016. Most sovereigns have found it difficult to deploy assets in these areas. Figure 10 shows that over the last three years infrastructure allocations have increased each year but total allocations remain low at 2.8% on average of total portfolio assets. Similarly private equity allocations have increased but remain below 5% of average portfolio assets.

2.8%

Over the last three years infrastructure allocations have increased each year but total allocations remain low at 2.8% on average of total portfolio assets.

< 5%

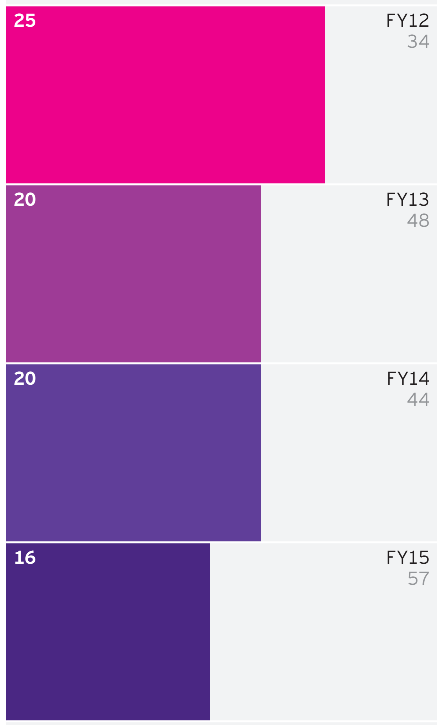
Private equity allocations have increased but remain below 5% of average portfolio assets.

Sovereigns have consistently cited 'sourcing deals' as the primary challenge for private equity and infrastructure investment. The 2016 Preqin Global Private Equity & Venture Capital Report estimates that US$ 755 billion of assets (or 24% of all private equity assets) were yet to be deployed by the industry[4]. For infrastructure, supply is varied and dependent on multiple third parties including support from governments. These challenges are validated by our research on deployment times and asset class allocations relative to target. On average sovereigns estimated that the time from increasing allocation targets to actual deployment of assets takes more than two years for private equity and approximately three and a half for infrastructure, as shown in Figure 11. Furthermore, in figure 12 more than 62% of sovereigns explained they were underweight infrastructure and 52% underweight private equity relative to their target allocations. Perhaps more importantly, the number of sovereigns expecting to increase actual allocations to private equity and infrastructure has fallen for the first time this year. There is now a sub-segment of sovereigns who do not plan to increase allocations to these asset classes even though they are underweight relative to their strategic asset allocation targets.

[4]The 2016 Preqin Global Private Equity & Venture Capital Report. Data as at 30 June 2015.

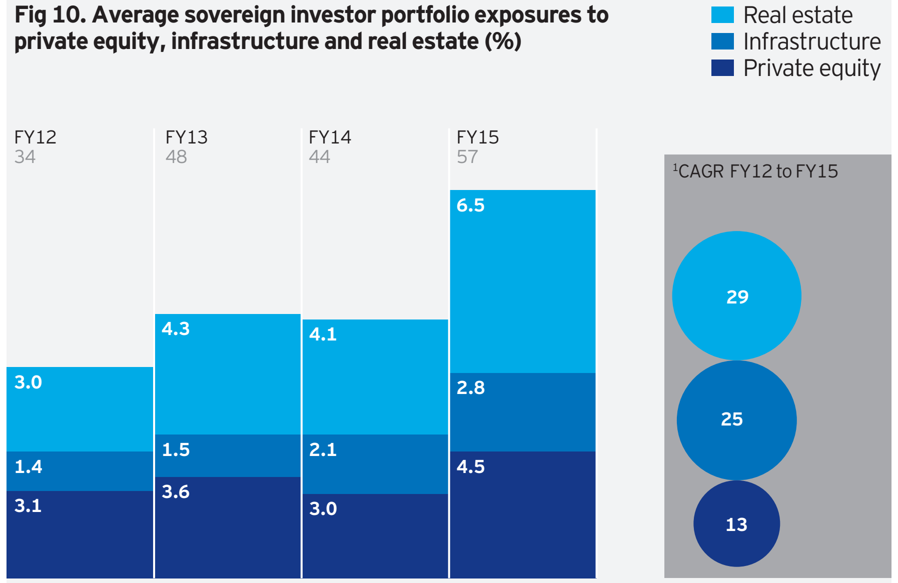
Real estate has become the primary driver of increasing alternative allocations
Our analysis of sovereign allocations shows that real estate has contributed to increases in alternatives. Figure 10 shows that portfolio allocations have risen from 3.0% to 6.5% (a 29% compound annual growth rate) over a three-year period. This means that real estate allocations have increased faster than private equity and infrastructure combined despite more sovereigns forecasting future growth in private equity and infrastructure during the same period.

Fig 9. Average global fixed income allocations for sovereign investors, full year 2012-2015 (%)



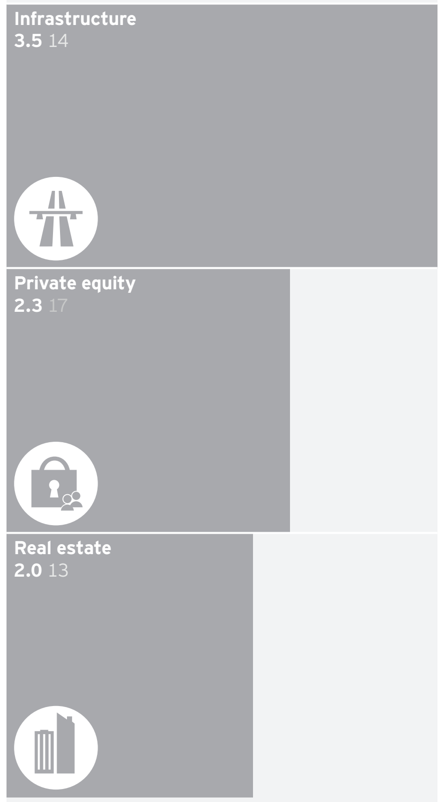
FY = Full year, assets stated at end of given year. Sample is based on sovereign investors and excludes central banks. Sample size shown in grey. Data is not weighted by AUM.

Fig 10. Average sovereign investor portfolio exposures to private equity, infrastructure and real estate (%)



[1]CAGR = Compound Annual Growth Rate. FY = Full year, assets stated at end of given year. Sample is based on sovereign investors and excludes central banks. Sample size shown in grey. Data is not weighted by AUM.

Fig 11. Average time for sovereigns to deploy capital in infrastructure, private equity and real estate (years), Q1 2016



Sample is based on sovereign investors and excludes central banks. Sample size shown in grey.

Fig 12. Percentage of sovereign investors underweight relative to target asset allocation for selected asset classes, Q1 2016

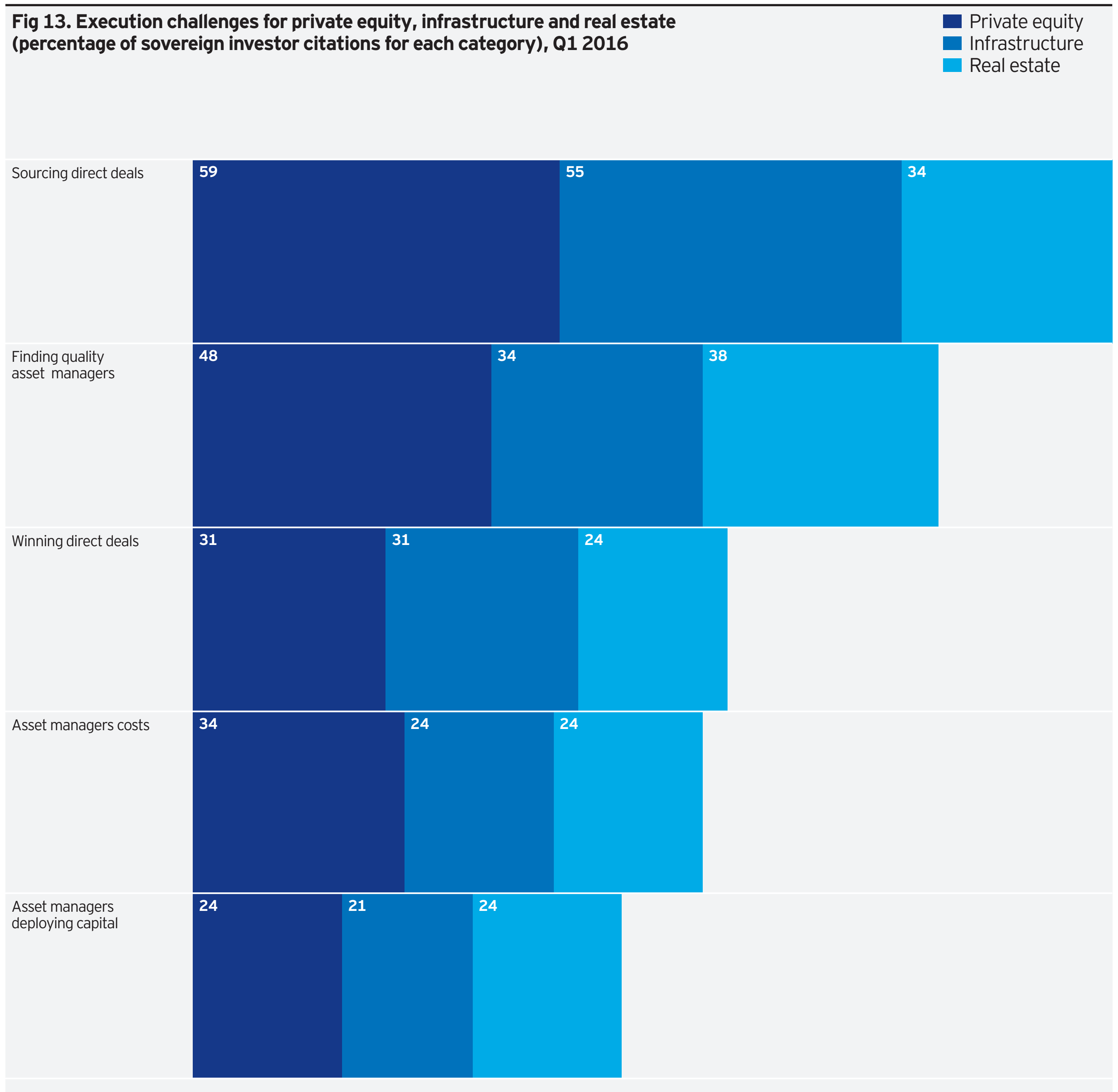
Sample: 21. Sample is based on sovereign investors and excludes central banks.

Sovereigns explained that real estate achieves the diversification benefits and absolute returns they desire with fewer execution challenges than private equity or infrastructure. Figure 13 shows that only 34% of sovereigns cite challenges sourcing direct deals for real estate compared to 55% for infrastructure and 58% for private equity. Sovereigns also explained that, in comparison to private equity and infrastructure, there were a greater number of credible global asset managers in real estate as well as a long list of developers and operators to partner with on a more direct basis.

Execution challenges and sourcing deals remain a challenge for alternatives
The trend of fewer execution challenges on a relative basis is also supported by shorter deployment times (two years for real estate in Figure 11) and the fact that fewer sovereigns are underweight real estate (38% in Figure 12) relative to private equity and infrastructure. However the results for real estate also confirm that execution remains a challenge for a number of sovereign investors. Two years for deployment is a long time in absolute terms even after considering a lengthy asset manager selection process or the creation of a joint venture partnership with a real estate operator or developer.

In comparison to private equity and infrastructure, there were a greater number of credible global asset managers in real estate.

Fig 13. Execution challenges for private equity, infrastructure and real estate (percentage of sovereign investor citations for each category), Q1 2016



Sample: 29. Sample is based on sovereign investors and excludes central banks.

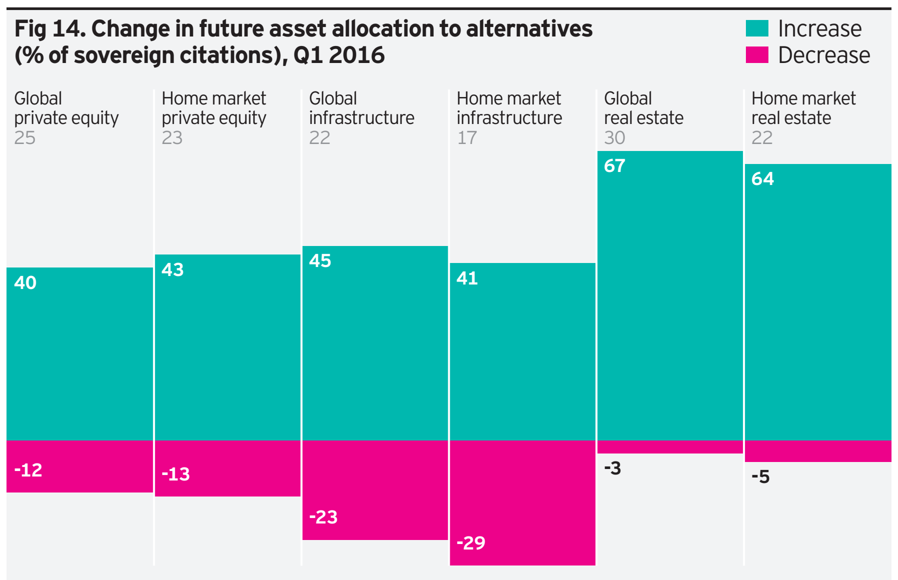
Greater emphasis on development and direct partnerships as real estate allocations grow
As average sovereign investor allocations to real estate have increased, there have been changes to where and how sovereigns invest. Some of the large investment sovereigns explained that they were diversifying away from high-profile assets in gateway cities (such as New York and London) and taking a more global perspective. Sovereigns also cited growing interest in partnerships with developers and more complex real estate debt structures which have the potential to deliver higher returns. In general sovereigns in the Middle East and North America were more focused on direct investing while those in Asia and Africa placed more emphasis on global expansion beyond gateway cities.

Sovereigns also expected the percentage of real estate investments via direct investments or operator and developer partnerships to increase. Currently 50% of real estate investments were placed on a direct or partnership basis and 35% of sovereigns expected this percentage to increase in the future. Not only has real estate grown fastest but more sovereigns expect to increase global and local allocations to real estate than any other asset class (see figure 14). Sovereigns explained that as their real estate allocations increase and competitor intensity grows, they will seek to participate further along the value chain to maintain returns.

Recognition that global asset managers have an important role to play and long-term relationships matter
Many sovereigns recognised that a growing portfolio of direct activity, joint venture partnerships and asset manager mandates creates complexity. Sovereigns cited growing operational risk and the need for internal resources to manage real estate partnerships. There is also growing competition between different parties representing the same sovereign investor, a theme also evident in infrastructure and private equity. Sovereigns recognised that while partnerships with developers and operators increased control and potential returns, large global asset managers often had access to the best deals. As competition for real estate investments increases, a number of sovereigns cited the importance of moving from a purely transactional basis to a longer term relationship-based model with a subset of asset managers.

Sovereigns also cited growing interest in partnerships with developers and more complex real estate debt structures which have the potential to deliver high returns.

Fig 14. Change in future asset allocation to alternatives (% of sovereign citations), Q1 2016



Sample is based on sovereign investors and excludes central banks. Sample size shown in grey. Future asset allocations are those which are due to be placed within the next 12 months relative to those placed within the last 12 months.

3

Sovereign capital flow from BRIC to frontier markets and the US
Weak economic performance of major emerging markets has driven allocations to higher growth frontier markets and to the US based on positive economics and public policy changes.

A move away from BRIC and emerging market terminology

Over the last four years, we have observed two primary strategic themes on sovereign asset allocation. The first has been increasing alternatives allocations, the second has been increasing allocations to emerging markets. In the previous theme we identified a trend of alternative assets shifting towards real estate. This theme explains the changing geographic focus of sovereign investors. Sovereigns are now reluctant to talk about emerging markets or BRIC (Brazil, Russia, India, China) as a collective due to divergent economic performance. To substantiate this view, sovereigns typically cite strong performance in India and certain frontier markets versus weaker performance in Brazil, Russia and China.

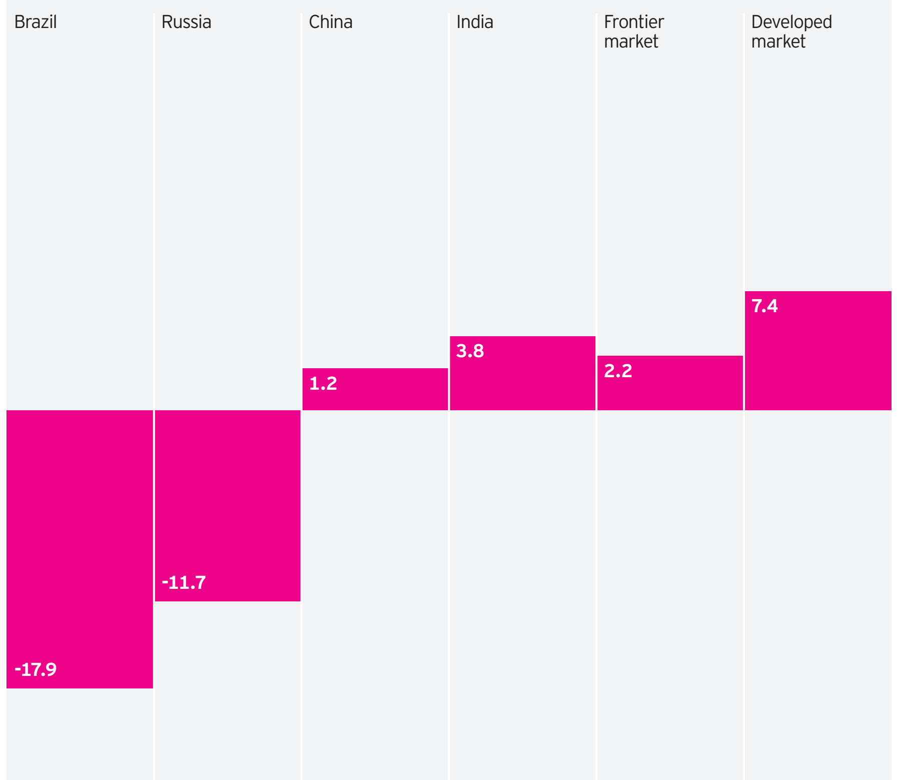
Sovereign concerns over the performance and outlook for Russia, Brazil and China

Large export markets like Brazil and Russia have struggled with the slump in commodity prices and stock markets have fallen annually by an average of 17.9% and 11.7% respectively over the past three years (see figure 15). Sovereigns explained that China is also under pressure with stock markets down 18.7% in the last 12 months to March 2016, despite growth of 1.2% over the past three years[5]. While the Chinese economy is larger and more diversified than Russia or Brazil, a shrinking labour force is driving up manufacturing costs and squeezing private sector margins. Figure 16 shows that GDP per capita growth across Brazil, Russia and China has declined from 6.4% in 2010 to just 1.7% in 2015. Certain sovereign investors explained that lead indicators such as low steel productivity in China were additional concerns on top of recent performance statistics.

[5]MSCI China Index, one-year gross returns. Value based on US$ price of index. Returns as of 31 March 2016.

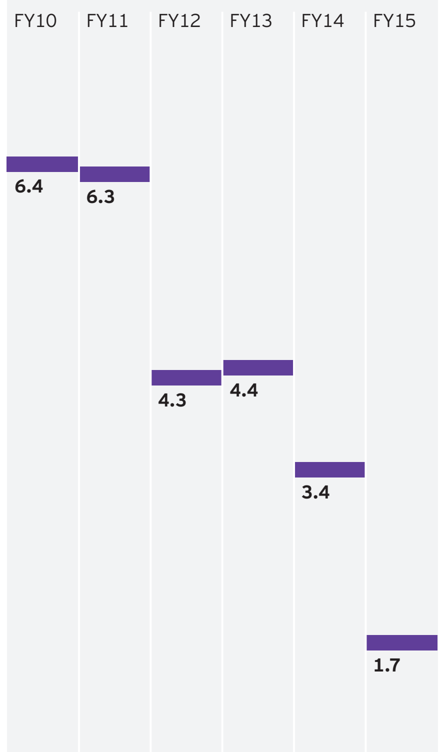
Lead indicators such as low steel productivity in China were additional concerns on top of recent performance statistics.

Fig 15. Overall annualised gross stock market return for BRIC, frontier and developed markets, 31 March 2013 to 31 March 2016 (%)



Source: MSCI Indexes. Values based on US$ price of index. Developed market returns based on MSCI World Index. Returns as of 31 March, 2016. Frontier Markets: Argentina, Bahrain, Bangladesh, Bulgaria, Croatia, Estonia, Jordan, Kenya, Kuwait, Lebanon, Lithuania, Kazakhstan, Mauritius, Morocco, Nigeria, Oman, Pakistan, Romania, Serbia, Slovenia, Sri Lanka, Tunisia and Vietnam...and can include Mexico, Indonesia, Turkey and South Africa.

Fig 16. Aggregate annual GDP per capita growth for Brazil, Russia and China, full year 2010 to 2015 (%)



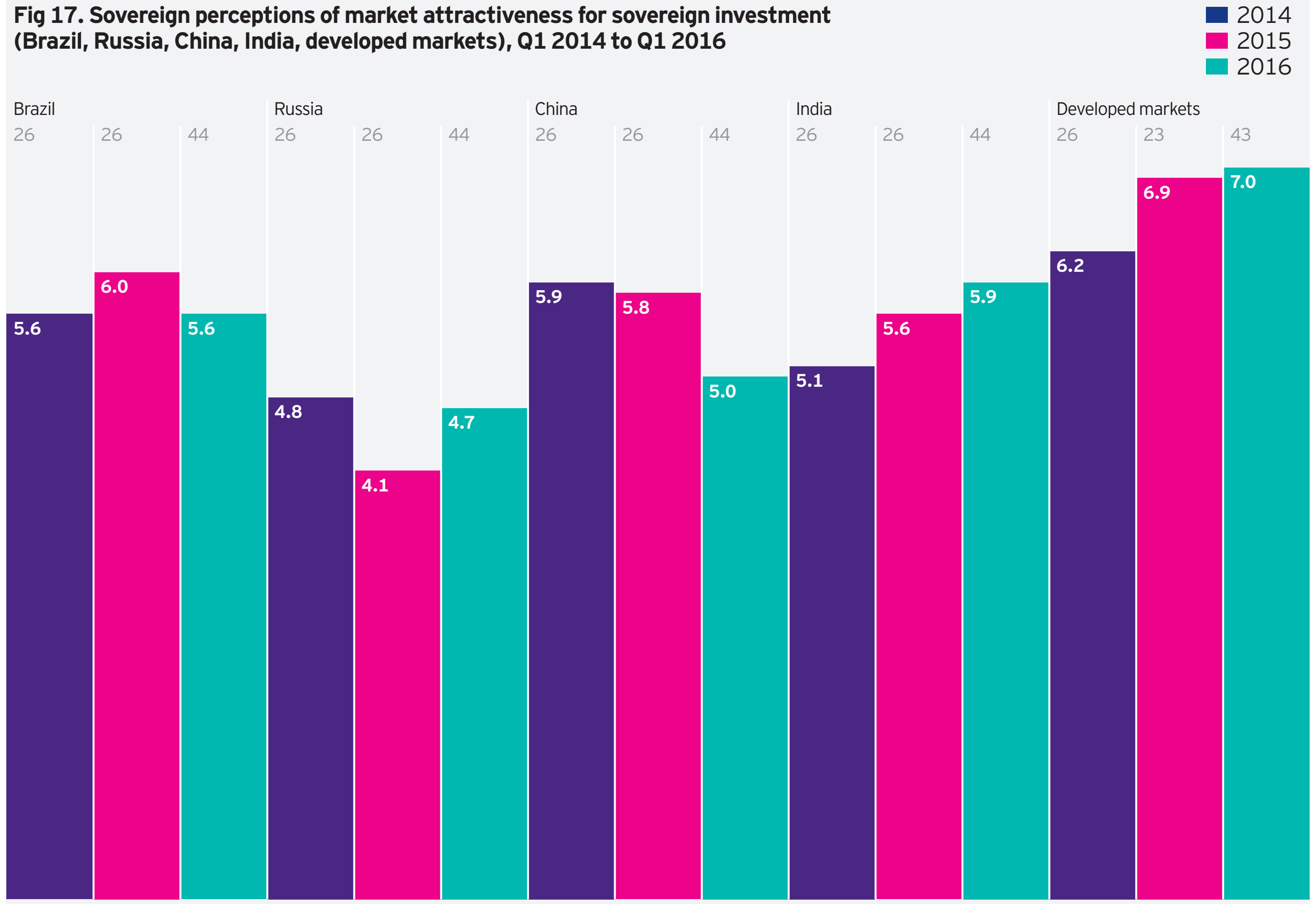
Source: OECD. FY = Full Year. Data - Level of GDP per capita and productivity 2015 data includes OECD and NMG estimate (Chinese 2015 GDP per capita estimated based on a 7.3% linear growth of 2014 GDP).

Performance issues have impacted sovereign allocations to Brazil, China and Russia

In comparison to 2013 and 2014, sovereigns indicate that they are now less willing to overlook political and regulatory concerns in Brazil, Russia and China in order to hit target allocations. These concerns are evidenced by low or declining scores by sovereigns for economic performance, stock market attractiveness and sovereign investor attractiveness. Figure 17 shows that Russia has scored below 5 out of 10 in terms of market attractiveness to sovereign investors for the last three years while Brazil and China have declined to 5.6 and 5.0 out of 10 respectively. In contrast India scores 5.9 out of 10 in terms of attractiveness with a positive year-on-year trajectory, largely attributable to increasing GDP from growing domestic consumption. The developed market average is higher than any of the BRIC markets (7.0 out of 10) indicating that these regions have benefited from growing uncertainty around some of the BRIC economies.

Larger investment sovereigns and sovereigns in emerging markets appear to be leading investment into frontier markets.

Fig 17. Sovereign perceptions of market attractiveness for sovereign investment (Brazil, Russia, China, India, developed markets), Q1 2014 to Q1 2016



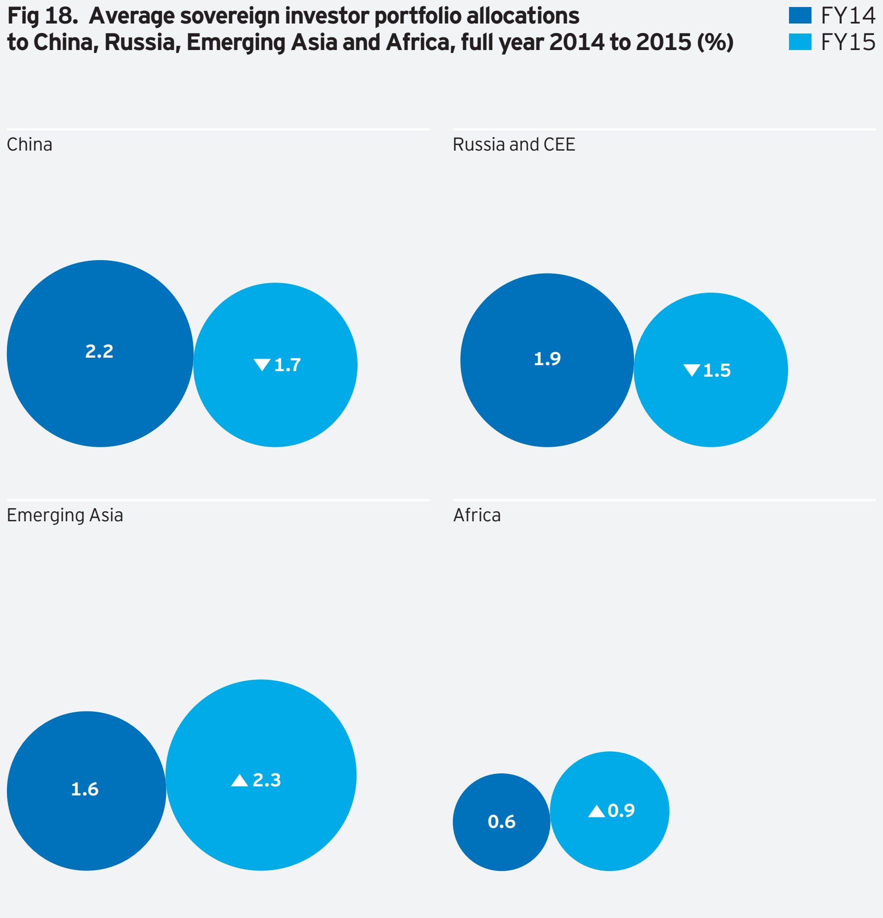
Developed markets is the average score of allocations to US, Japan, Germany, France, UK and Italy. Rating on a scale from 1 to 10 where 10 is the most attractive. Rating scored as of Q1 of the given year. Sample is based on sovereign investors and excludes central banks. Sample size shown in grey.

Larger investment sovereigns and sovereigns in emerging markets appear to be leading investment into frontier markets.

Sovereigns are shifting new asset allocations to frontier markets
One of the key beneficiaries of reduced allocations to the largest emerging markets are frontier markets. Figure 18 shows that from year end 2014 to 2015 average asset allocations to Russia (and CEE) and China fell (from 1.9% and 2.2% to 1.5% and 1.7% respectively) while emerging Asia grew from 1.6% to 2.3% and Africa increased to 0.9%. Sovereigns cited manufacturing capability, political stability and the quality of infrastructure as key factors driving their selection of markets in emerging Asia and Africa. Sovereigns are using a range of products and asset classes to increase this exposure to frontier markets. There were references to conventional equity and fixed income products with exposure to frontier markets but also to direct investments into a range of alternatives including real estate. Based on our interviews, larger investment sovereigns and sovereigns in emerging markets appear to be leading investment into frontier markets as they have the scale and confidence to increase allocations. Importantly, the changes in sovereign emerging market allocations are primarily linked to new asset allocations. Beyond a few switched or consolidated mandates, sovereigns do not appear to have withdrawn existing assets from any emerging market.

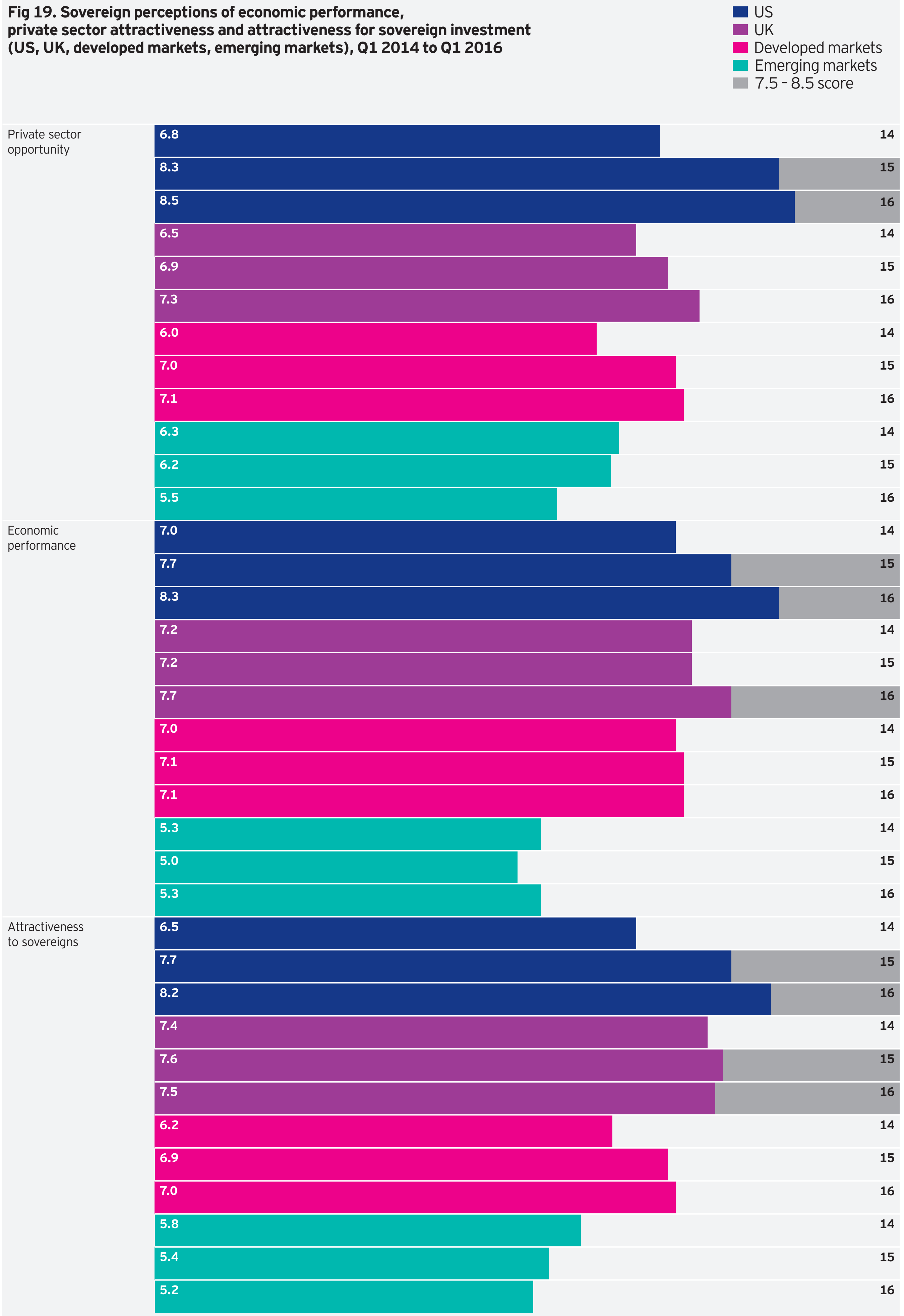
The US is now perceived as the most attractive market for sovereign investment
We reported in 2013 that the UK had successfully positioned itself as an attractive developed market destination for sovereign investment. This observation is supported by data in figure 19 showing that in 2014 the UK scored only 6.5 out of 10 for economic performance but achieved an average rating of 7.4 out of 10 for attractiveness to sovereign investors. The US has always been viewed as a leading economy with high private sector attractiveness but over the past two years its attractiveness to sovereign investors has increased significantly. Some sovereigns explained that the US appears increasingly open to their investments following positive perceptions of sovereign investments into the US financial sector during the global financial crisis. Figure 19 shows that sovereign perceptions of the attractiveness of the US to sovereigns has risen from 6.5 out of 10 in 2014 to 8.2 out of 10 in 2016, making the US the clear preferred destination of sovereign investment in 2016.

Fig 18. Average sovereign investor portfolio allocations to China, Russia, Emerging Asia and Africa, full year 2014 to 2015 (%)



Sample: 14 = 40, 15 = 37, 16 = 38. FY = Full year, assets stated at end of given year. Sample based on repeat participants from 2015 and 2016 only. Sample is based on sovereign investors and excludes central banks. CEE is Central and Eastern Europe. Data is not weighted by AUM.

Fig 19. Sovereign perceptions of economic performance, private sector attractiveness and attractiveness for sovereign investment (US, UK, developed markets, emerging markets), Q1 2014 to Q1 2016



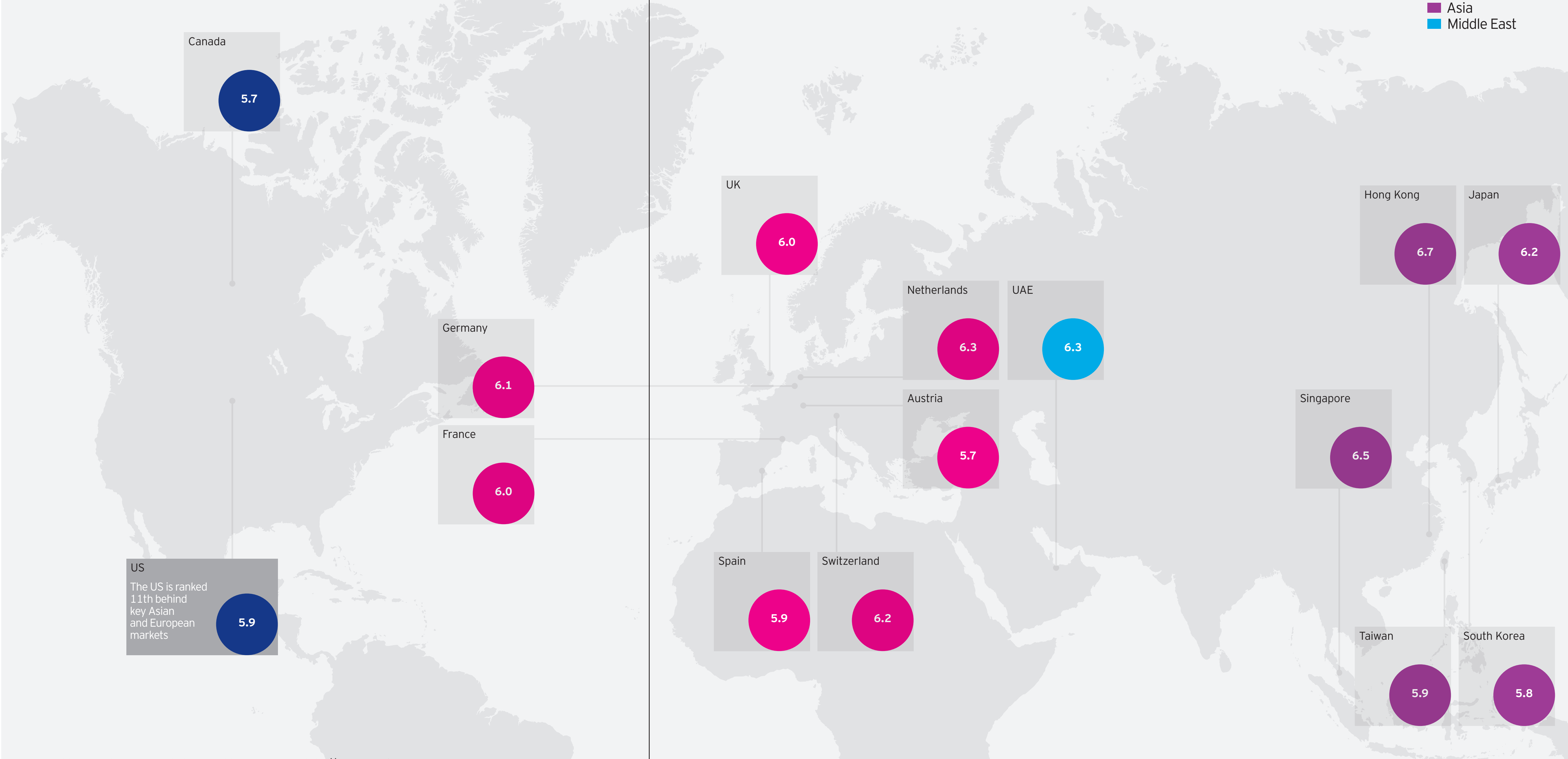
Sample: 14 = 26, 15 = 26, 16 = 44. Sample is based on sovereign investors and excludes central banks. Rating on a scale from 1 to 10 where 10 is the highest performance/ greatest opportunity/ most attractive. Rating scored as of Q1 of the given year.

Public policy influences sovereign investment and presents an opportunity for governments globally

Sovereigns explained that it is now easier and more attractive to invest in the US. For example, in early 2016 the exemption of 'qualified foreign pension funds' from the Foreign Investment in Real Property Tax Act (1980) was cited as a motive for direct real estate purchases in the US. Figure 21 highlights the importance of governments in further increasing sovereign investment, showing citations for private ownership, shareholder rights, openness to sovereign investment and political stability as factors which influence their geographic allocations. Perhaps more importantly, sovereigns are bullish on future opportunities, noting potential scope to invest in US infrastructure. The need for infrastructure investment is supported by a recent report on the asset class by the World Economic Forum. The report analyses global competitiveness, defined as "the set of institutions, policies, and factors that determine the level of productivity of an economy". Within infrastructure the US is ranked 11th behind key Asian and European markets in figure 20 indicating poor quality of infrastructure due to a lack of competition and investment. This verifies sovereign difficulties in investing in US infrastructure and suggests the potential for infrastructure upgrades.

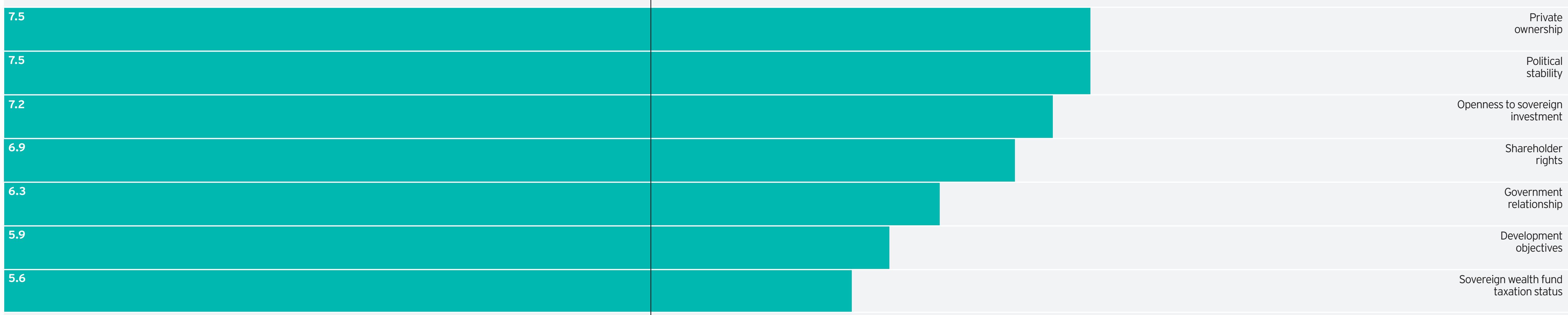
In conclusion, it is evident that sovereigns are quick to adjust perceptions of market attractiveness based on changes in economic performance and public policy. In most cases these investments by sovereigns appear to be relatively tactical responding to the latest market data or regulatory change. However sovereigns explained that market performance and public policy will also shape longer term strategic asset allocations to different geographic regions. The ability of governments to attract sovereign investment via policy decisions is a key finding. It presents an opportunity for governments globally to attract significant long-term capital to support economic growth.

Fig 20. Infrastructure competitive rankings (top 15 markets), World Economic Forum 2015



Source: World Economic Forum, Global Competitiveness Report (http://reports.weforum.org/global-competitiveness-report-2015-2016/)

Fig 21. Average sovereign investor ratings on the importance of selected non-investment factors in influencing geographic allocations, Q1 2016



Sample: 40. Rating on a scale from 1 to 10 where 10 is the most important.

4

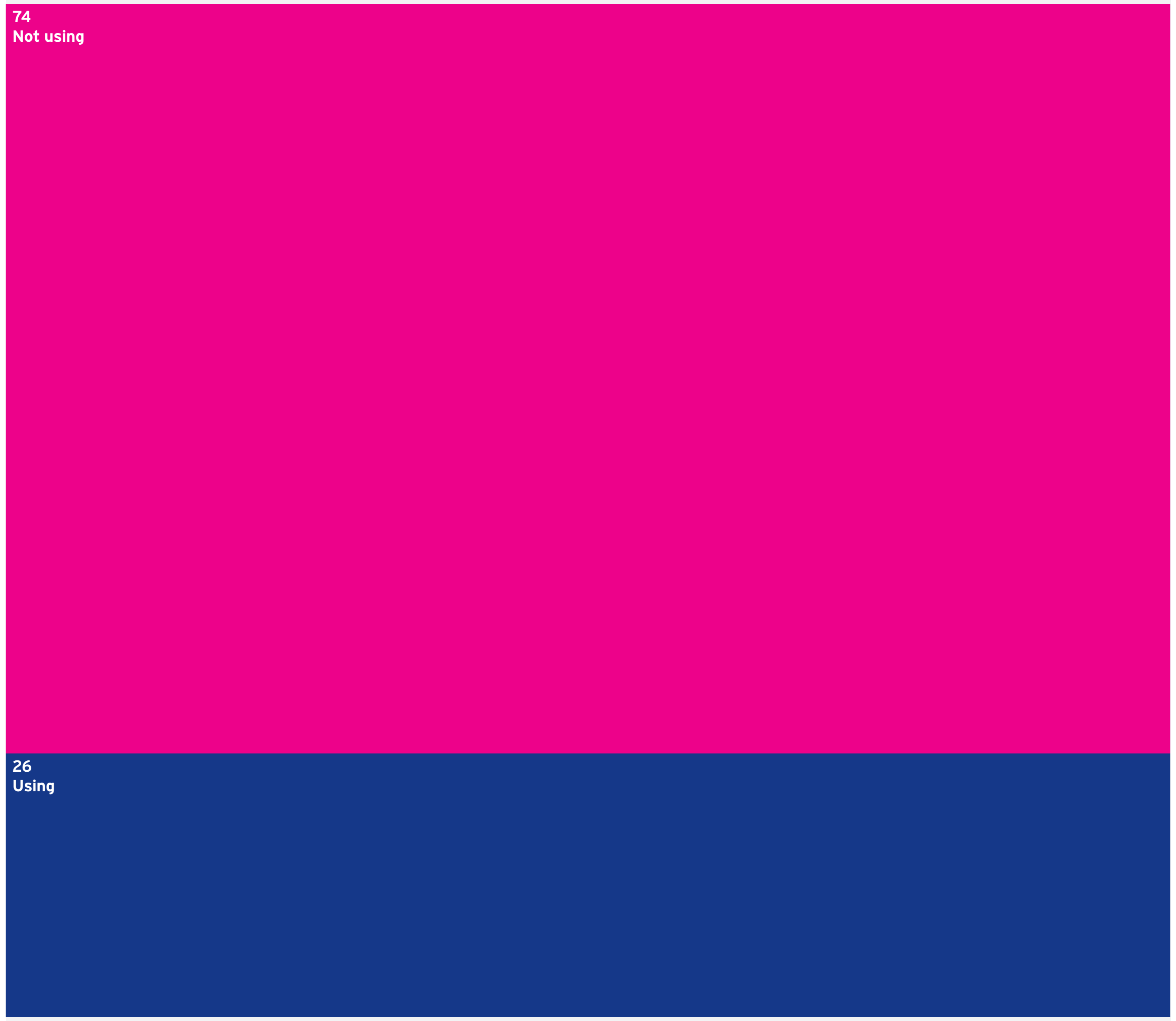
Growing interest from sovereigns in factor-based investing

Sovereigns understand macro factors but would like more information on style factors and their potential applications within their portfolios.

Factor-based investing is an emerging area of interest amongst sovereigns
In 2013 we described the introduction of risk factor benchmarks by leading sovereign investors in Europe and the US. We also noted sovereign challenges in migrating portfolios from asset allocation to risk factors in terms of both portfolio reporting and market timing risks. These findings are part of a broader theme around the role of factor-based investing within sovereign portfolios. Since 2013 we have observed ongoing interest in factor-based investing from sovereigns as well as increasing commentary and product development from asset managers in this space. This theme explores the current sovereign perceptions, awareness and interest in factor-based investing considering both macro and style factors.

Sovereigns understand macro risk factors even if they haven't aligned their portfolios to these factors
Macro factors are defined as non-diversifiable risks that generate investment returns. The theory was developed by Barra Inc. during the 1970s. Sovereigns were generally comfortable talking about 'macro' risk factors such as economic growth, liquidity, currency, credit, inflation and political risk. While only a small number of sovereigns use these factors as the primary building blocks for their portfolio, all sovereigns understand these concepts and have an appreciation for the exposure of their portfolio to these risks. As we have noted earlier in this report, the desire to diversify risks from economic growth into liquidity (and other macro risk factors) has been a key driver for increasing alternative allocations since the global financial crisis.

Fig 22. Percentage of sovereign investors using factor-based investing



Sample: 34 . "Using" is defined as any sovereign stating a non-zero allocation to factor-based strategies. Sample is based on sovereign investors and excludes central banks.

Sovereigns are uncertain about the definition and role of style factors within their portfolios
Style factors are defined as any factor (or set of uncorrelated factors) which has historically delivered a return premium and the theory was established by Fama and French[7] in the early 1990s. Sovereigns were less comfortable talking about 'style' factors and their role within their portfolios. These factors are typically behavioural or structural traits which have historically delivered outperformance such as value, momentum, quality, size and low volatility. Whilst macro factor exposures can be easily derived from traditional asset classes, many sovereigns felt that the understanding of exposure to style factors was complex and had unclear benefits.

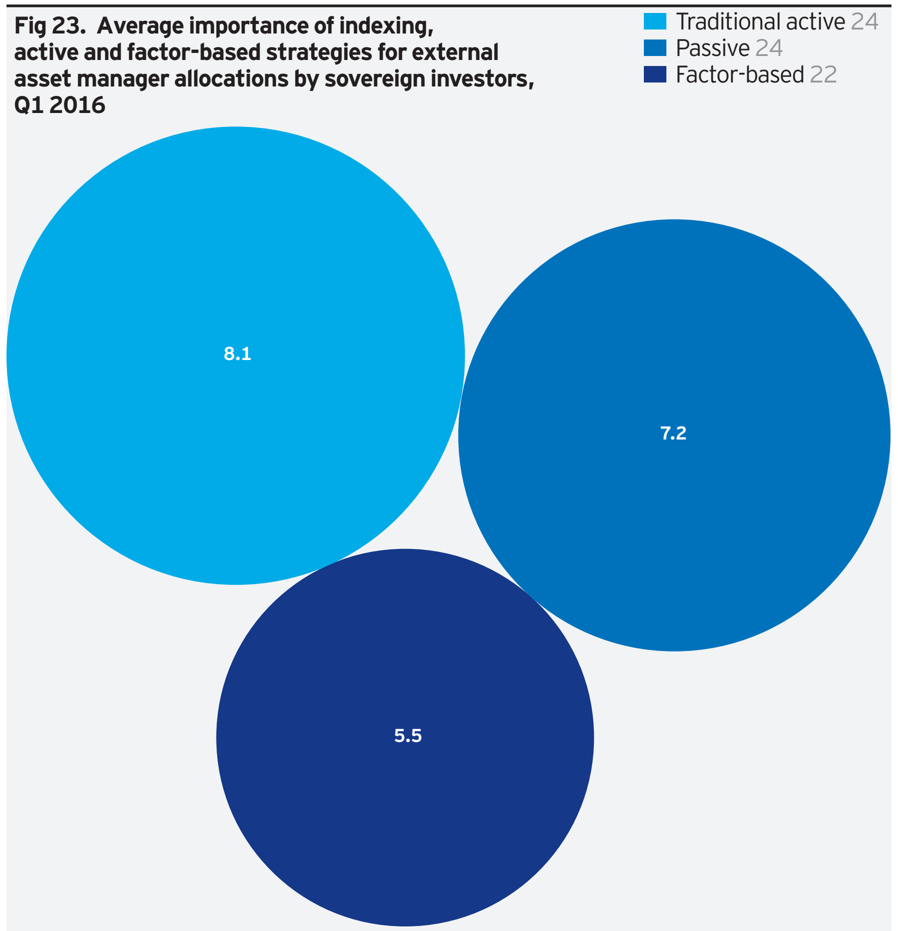
Sovereigns struggled to understand how the separation of returns into quantitative (style factors) and qualitative (manager selection skill) factors would work in practice and what it means for benchmarking. Some sovereigns have already separated asset class portfolios into beta and alpha and into internal and manager selection divisions and felt that introducing style factors might create further complexity.

[7]Sources: The Cross Section of Expected Stock Returns – Fama & French (1992), Common Risk Factors in the Returns on Stocks and Bonds – Fama & French (1993)

Just over a quarter of sovereigns say they have invested in factor-based strategies
Based on our interviews, 26% of sovereign investors say they have invested in factor-based strategies (see figure 22). Our discussions indicated that these investments into style factor strategies were almost entirely placed with external asset managers. We believe this usage figure may be understated as the Chief Investment Officers and heads of strategy in our interviews explained that there may be factor-based mandates within their passive allocations that they were not aware of. For sovereigns who had invested in factors there was a strong appreciation of the value of factor strategies. In contrast a significant percentage of the non-user sovereign investors rated factor-based investing's importance as low. Overall the importance of external factor-based investing was rated 5.5 out of 10 compared to 7.2 out of 10 for passive and 8.1 of 10 for traditional active management (see figure 23).

We have observed ongoing interest in factor-based investing from sovereigns as well as increasing commentary and product development from asset managers in this space

Fig 23. Average importance of indexing, active and factor-based strategies for external asset manager allocations by sovereign investors, Q1 2016



Sample size shown in grey. Importance rated on a scale from 1 to 10 where 10 is the most attractive.

Some of the more experienced sovereigns are now considering internal factor-based investing.

Positive growth outlook for factor-based investing from existing and new users

The observation that factor-based investing is of relatively low importance compared to active management and indexing is not a surprise given its developmental phase. Instead the level of factor adoption and direction of future factor allocations is more important.

Six out of the eight sovereign investors using factor-based strategies expected allocations to increase over time, a strong vote of confidence from existing users.

A further three sovereign investors planned to start allocating to factor-based investments in the future. Figure 24 shows that more sovereigns expect to increase factor-based investing than passive or active allocations.

Sovereigns also explained that they were increasingly issuing tender documents for factor mandates in order to better understand the concept and differences in approach between asset managers. Sovereigns noted that while certain asset managers have first mover advantage, many managers were investing heavily in this area. Some of the more experienced sovereigns are now considering internal factor-based investing (see figure 24) but nearly all of these investors were continuing to use external managers at the same time to keep pace with industry change.

Sovereigns are looking for support from asset managers to improve their understanding of factor-based investing

We have observed positive sentiment within existing factor users but this is a small subset of sovereign investors.

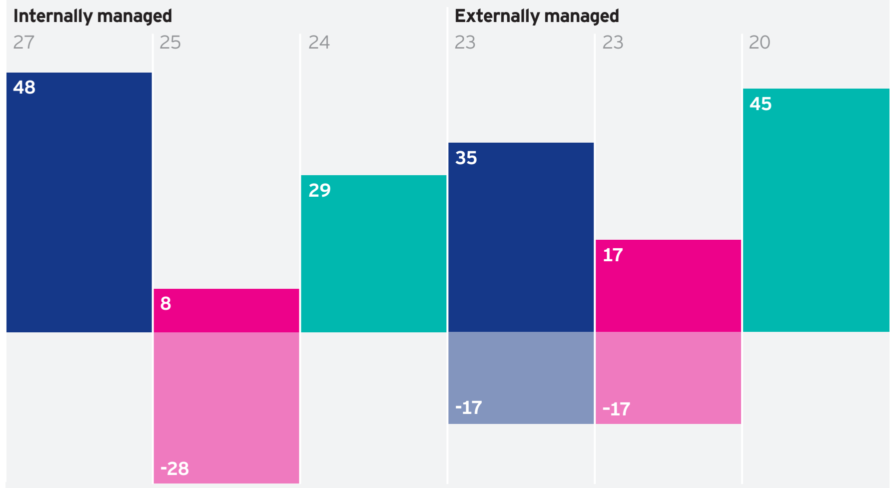
To really gain traction amongst sovereigns, factor-based strategies need to overcome the perceived barriers of non-users.

Figure 25 sets out a range of perceived barriers to factor-based investing. The most commonly cited barrier by 72% of sovereigns is a lack of in-house expertise and understanding of factor-based investing. This presents an opportunity for the asset management industry to help sovereigns understand factor-based investing and support the implementation of factor strategies. A lack of fit with wider strategy and a lack of interest from decision making bodies were also cited, which indicates further structural barriers to adoption. However even these barriers can be overcome by effective communication of a compelling value proposition.

Identifying a requirement from sovereigns for training and education on factor investing is relatively straightforward. Delivering these programmes will be harder and we note three challenges for the asset management industry identified by sovereigns during our discussions:

1. The wide range of stakeholders within sovereigns who need to be engaged including the CIO, strategy units and asset class heads across internal and external management.
2. A tendency for asset managers to push their own strategies and products rather than considering factor-based investing from a sovereign perspective.
3. The resources required for sovereigns to complete the investment process: understanding concepts, determining current and target exposures, signing off new factor-based investments and finally monitoring and benchmarking performance.

Fig 24. Expected change in active, passive and factor allocations over time for internally and externally managed portfolios (%)



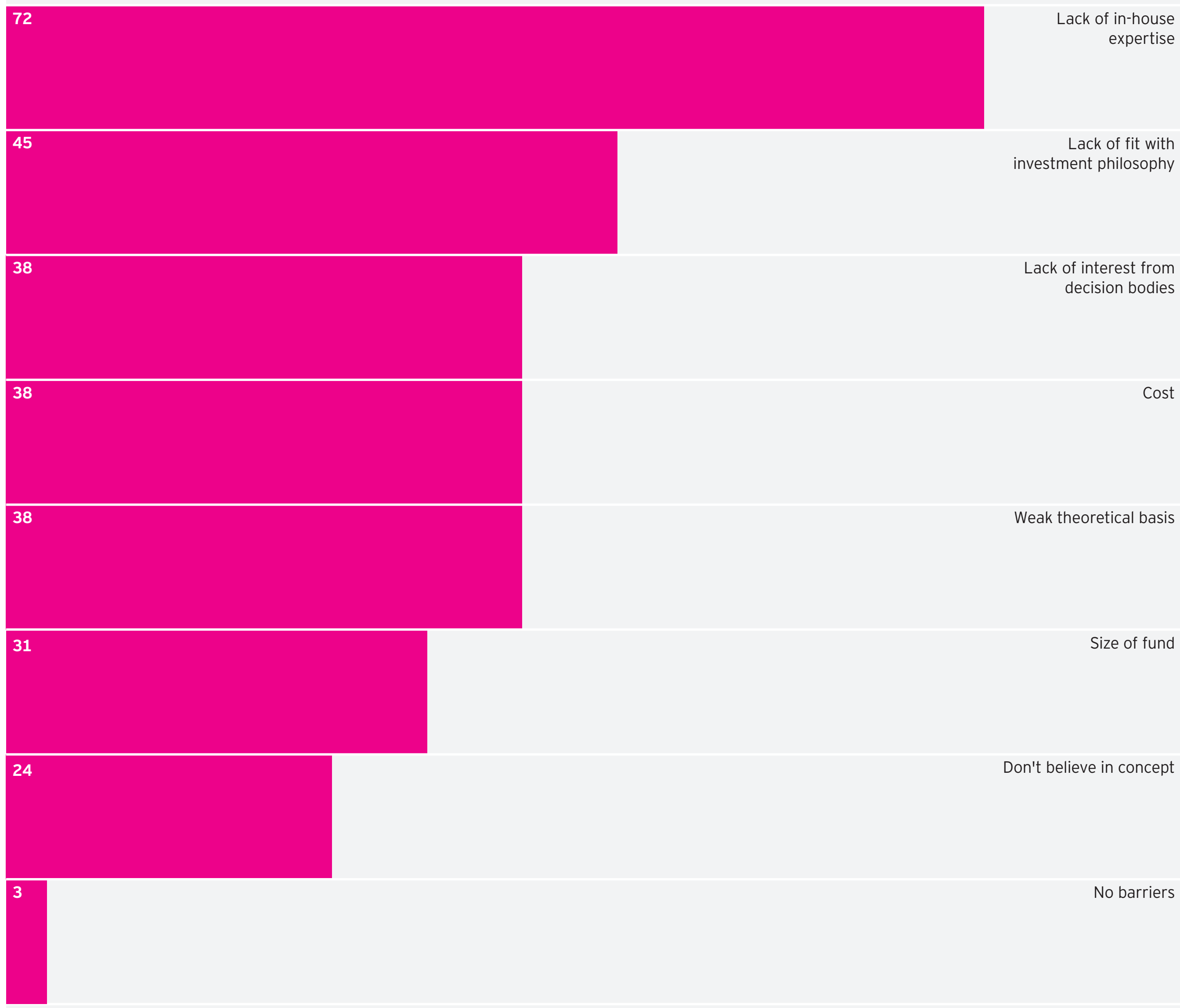
Sample is based on sovereign investors and excludes central banks. Sample size shown in grey.

72%

The most commonly cited barrier by 72% of sovereigns is a lack of in-house expertise and understanding of factor-based investing.

In the past we have noted several investment topics where sovereigns want more insight and support from the asset management industry. Sovereigns are large, sophisticated investors who are quick to learn and lead other institutional investors into complex, emerging investment topics. This year we have identified an information gap around factor-based investing: sovereigns want to understand how to approach factor-based investing within their portfolios. Academic research points to restructuring portfolios but this is not feasible for most sovereigns. Looking forward, we expect sovereign investors to plug gaps in their knowledge quickly. We will monitor sovereign perceptions of factor-based investing and objectively report on the industry's ability to support the sovereign community in this space.

Fig 25. Sovereign views on barriers to factor investing (% of sovereign citations, multiple answers allowed)



Sample: 29
Sample is based on sovereign investors and excludes central banks.

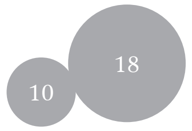
Central banks to become important sovereign investors
The presence of investment tranches with significant corporate bond and equity allocations suggests that central banks are becoming long-term sovereign investors.

5

Central banks are distinct from other sovereign investor profiles
Last year we interviewed a small number of central banks with large investment portfolios in our sovereign investor study. We analysed central banks together with stabilisation funds (defined as liquidity sovereigns) because both sovereign profiles prioritised liquidity and capital preservation objectives over investment return. This year we have expanded our sample of central banks from 10 to 18, focusing on progressive central banks with ample reserves across Europe, Middle East and Asia. We have also separated these institutions from liquidity sovereigns because central banks have a broader remit and formal independence from government (see figure 26). This theme provides unique evidence-based findings on the investment objectives and investment tranches of central banks and the implications for the asset management industry.

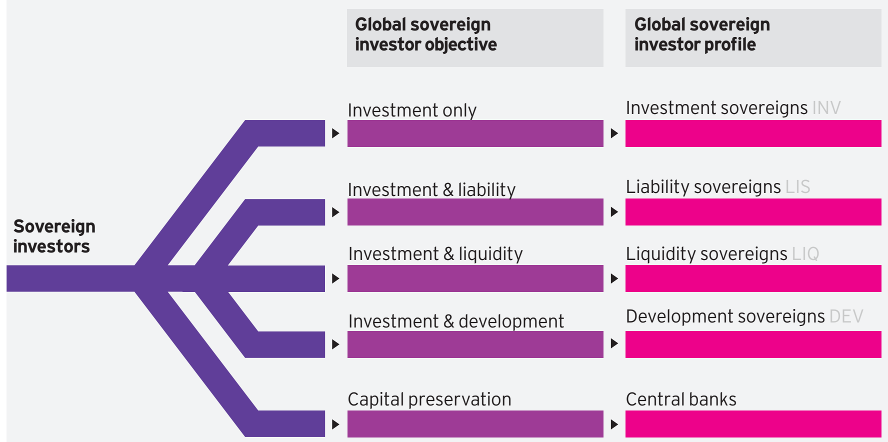
The emergence of central banks as independent institutions to manage currency and financial crises
Before the late 1600s government funding relied on loans from the private sector. During times of war and crisis, governments would face challenges in raising the capital required to run the country. The Bank of England was the first central bank to issue debt to the government at the turn of the 18th century and the terms of reference drawn up during this process became the basis for a central bank which was independent from government.

During the late 19th and early 20th centuries a number of local financial crises highlighted issues with the banking system. If a bank failed, it required other privately owned banks to step in. In response central banks gradually adopted the role of lender of last resort. This additional responsibility encouraged central banks to accumulate a pool of reserves beyond the gold required to match its notes issued. The move from the gold standard to a fiat money system in the mid-1900s eliminated the need for banks to hold large levels of gold reserves. Gold was replaced by financial assets (typically AAA-rated government bonds) which enabled central banks to intervene in currency pricing. Towards the end of the 20th century the move from gold to fixed income accelerated and the US Treasury note became the standard "risk-free" asset, reflecting the importance of the US$ in international trade and its central role in the international monetary system.



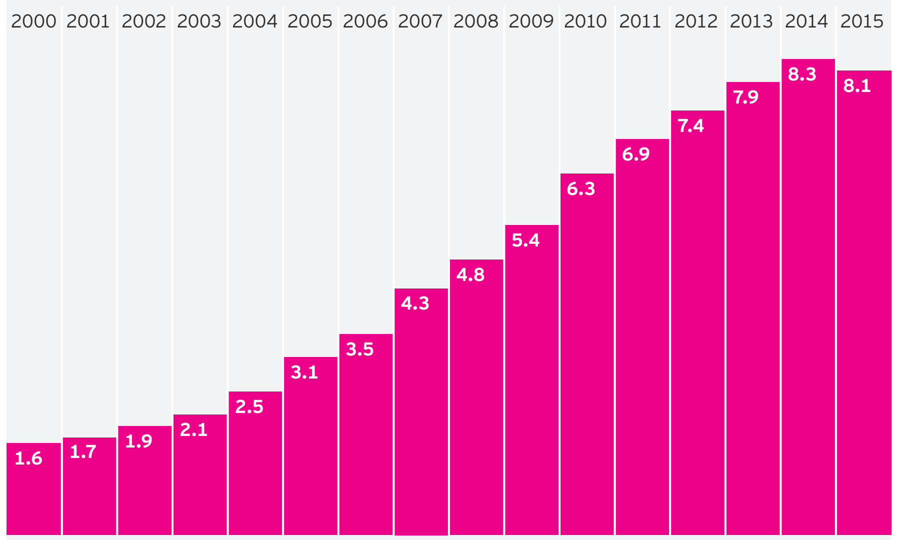
This year we have expanded our sample of central banks from 10 to 18, focusing on progressive central banks across Europe, Middle East and Asia.

Fig 26. Invesco's sovereign investor profile



[1]Central banks have both capital preservation and liquidity objectives. They are also distinct from other sovereigns due to their formal independence from government

Fig 27. Official Foreign Exchange Reserves (US$ trillions), 2000 - 2015



Source: IMF International Financial Statistics - central bank foreign currency reserves in USD, ex-SDR and gold. SDR=Special Drawing Rights. Data as at 31 December 2015.

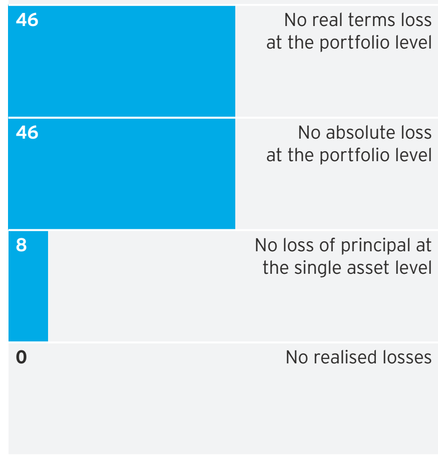
Growth in central banking reserves following currency crises
Central banking reserves went through a period of accelerated growth following crises in Asia (1997) and Argentina 1998-2002. A large portion of these new reserves were accumulated by central banks in emerging markets to support exchange rates and mitigate the risk of financial crises through self-insurance. Figure 27 shows that central banking assets grew from US$ 1.6 trillion in 2000 to US$ 8.3 trillion at the high watermark in 2014. At the end of 2015 the total market value of central bank reserve assets including gold was estimated at US$ 12 trillion of which US$ 8.1 trillion is allocated within the IMF official foreign exchange reserves.

Central banks have dual objectives of capital preservation and stabilisation
Central banks have two primary objectives: capital preservation and stabilisation. Figure 28 confirms the importance of capital preservation and stabilisation objectives with average ratings of 9.3 and 8.7 out of 10 respectively compared to 5.7 out of 10 for investment return. Stabilisation is most commonly measured by reserves adequacy, a metric which compares the actual level of central bank reserves to likely scenarios in which the government would draw down on central bank reserves. The standard reserves adequacy formula is the sum of national short-term debt coverage and import coverage. In our study, central banks typically defined capital preservation as no absolute losses at portfolio level or as no portfolio losses in real terms (see sovereign responses to capital preservation definitions in figure 29). Only 8% of central banks in our study measured capital preservation at the single asset level but we note that our sample deliberately targeted a progressive group of central banks focused on investment return. Globally we believe the number of central banks measuring capital preservation at the single asset level is higher than in our study.

Central banks are struggling to meet their capital preservation objectives
As central bank reserve adequacy positions improved, central banks have become more confident in their ability to meet stabilisation objectives. Figure 30 confirms that the majority of central banks believe they have sufficient or ample reserves to meet their stabilisation objectives. Moreover, European Central Bank reserves are held for liquidity purposes throughout the system, the result of which national central banks in the Euro system can focus more on capital preservation and return. However, central banks are struggling to meet their capital preservation objectives in the current low return environment. In figure 31 for example, 80% of central banks agree that low returns on traditional government bonds are a key driver of increasing diversification into other assets. assets. Given negative yields on certain Eurozone government bonds this challenge is particularly acute for central banks where the currency composition of reserves is heavily weighted towards the Euro. Where central banks measure capital preservation in real terms, the hurdle is even higher given the negative real returns on US$ and Euro government debt.

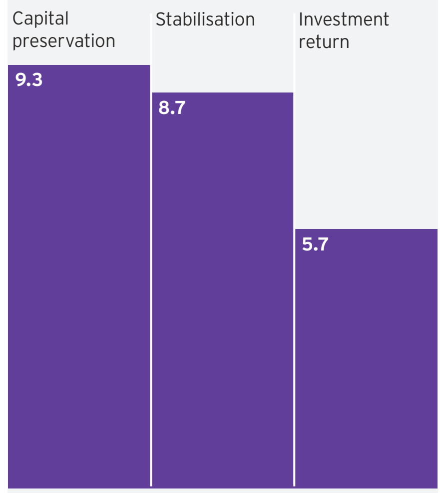
Capital preservation was a major challenge for central banks in emerging markets managing a currency peg because of the higher level of short-term liquidity required to meet intervention requirements. This accounted for 40% of the central banks in the study. The combination of the dollar's strength and the negative outlook for oil placed a strain on the currency pegs, forcing intervention to maintain the value of the currency within the bands of the peg. The high level of liquidity negatively affected their ability to meet capital preservation objectives.

Fig 29. Central bank definitions of capital preservation (% of central bank citations attributed to each definition), Q1 2016



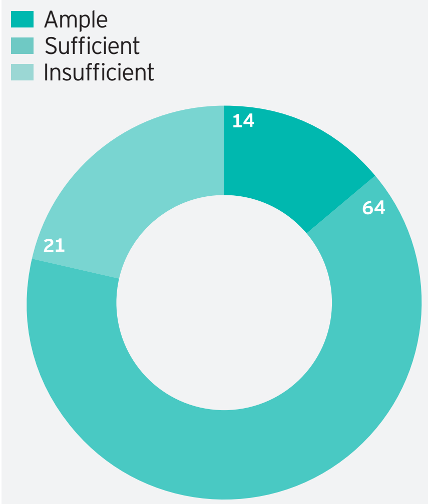
Sample: 13. Sample comprises of central banks only.

Fig 28. Average ratings for central bank objective importance, Q1 2016



Sample: 16. Sample comprises of central banks only. only. Importance rated on a score from 1 to 10 where 10=most important.

Fig 30. Central bank views on their level of reserves adequacy (% of central bank citations), Q1 2016



Sample: 14. Sample comprises of central banks only.

Central banks are increasing investment return objectives to ensure they meet and exceed their capital preservation objectives.

Capital preservation challenges increase the importance of investment return

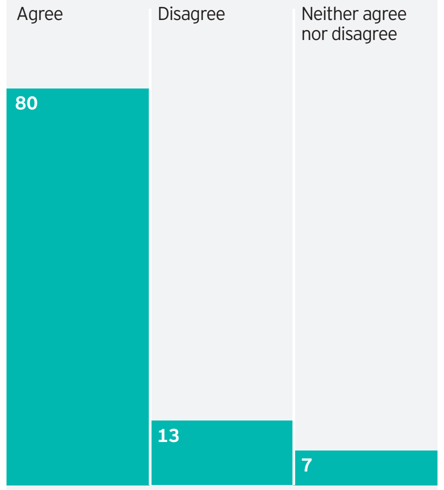
Central banks are increasing investment return objectives to ensure they meet and exceed their capital preservation objectives. Central banks explained that the rationale for promoting investment return objectives were twofold: first to deliver an investment return and second to minimise volatility through diversification into new asset classes. Many central banks focused more on diversification and reduced volatility than on investment returns and yields. The desire to diversify and seek higher returns is illustrated in figure 32 by a number of central banks expecting to shift assets from low yielding deposits to increase allocations to corporate debt and equities in the future. In some cases central banks explained that they are continuing to sell off gold reserves and these assets would be redeployed into higher risk fixed income and equity investments.

The development of investment tranches within central bank portfolios

Allocations to new asset classes have forced central banks to reconsider the structure of their reserves. Central banks now manage multiple objectives and there is clearly scope for conflict between stabilisation and investment return objectives. As a result central banks have split their reserves into tranches. Figure 33 shows that central banks in our study operate up to four tranches: liquidity tranche, hold to maturity tranche, cash or working capital tranche and investment tranche. This dynamic is very different to other sovereign investors who do not generally split their portfolio into formal tranches with different objectives.

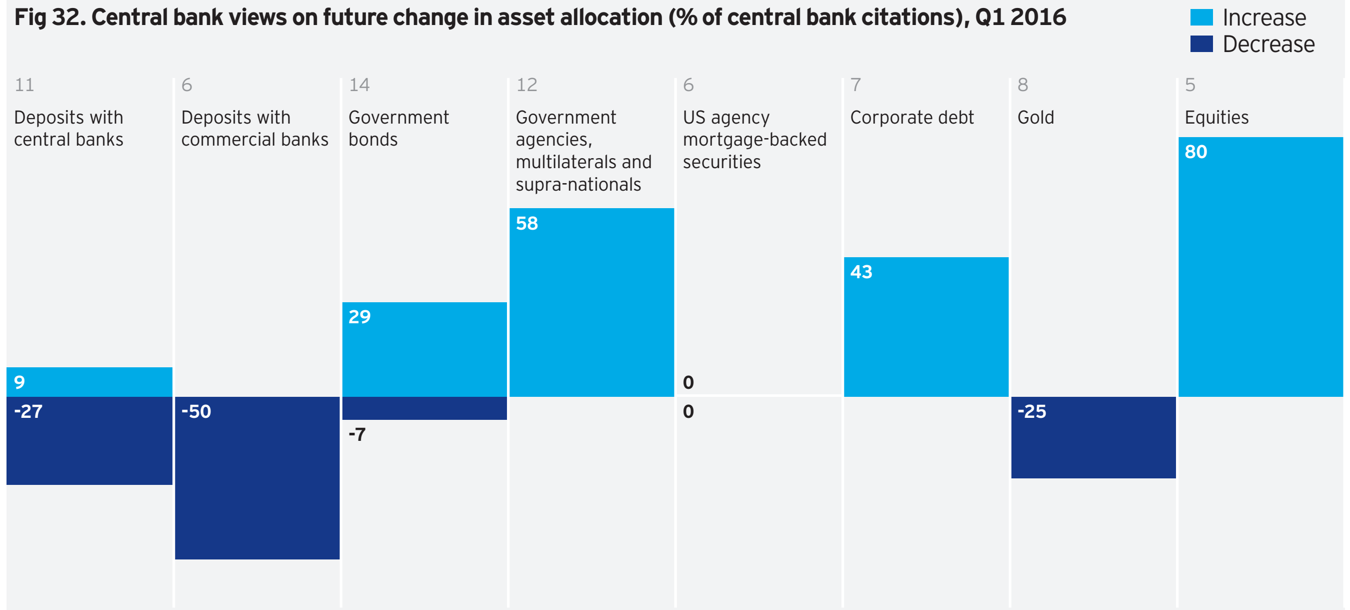
The liquidity tranche is typically the largest tranche of reserves, comprised of low risk assets (typically AAA-rated, short duration government bonds) and primarily responsible for stabilisation objectives. The hold to maturity tranche is a tranche of longer term fixed income which is held to maturity to generate return and guarantee capital preservation. The cash or working capital tranche represents cash balances required for operational purposes. The investment tranche tends to hold riskier assets such as corporate bonds and equities. The investment tranche is typically smaller than the liquidity tranche with a primary objective of investment return. The differences in asset allocation for liquidity and investment tranches are set out in figure 34. While there are higher allocations to corporate debt (18%) and equities (18%) in the investment tranche we note that a significant percentage of these assets remain allocated to sovereign debt.

Fig 31. Low government bond returns are driving diversification of central bank portfolios (% of central bank citations), Q1 2016



Sample: 15. Sample comprises of central banks only.

Fig 32. Central bank views on future change in asset allocation (% of central bank citations), Q1 2016

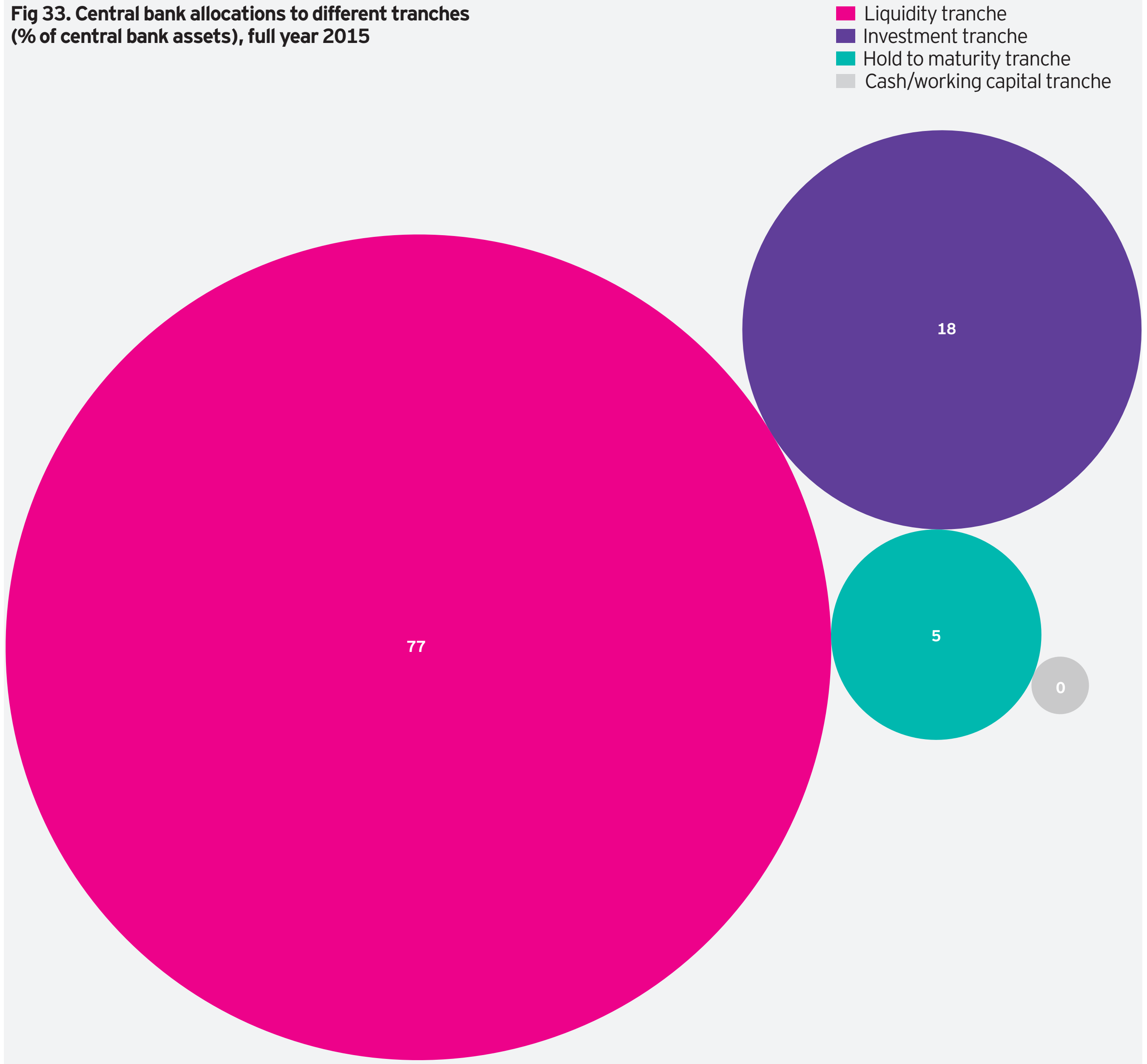


Sample comprises of central banks only. Sample size shown in grey.

13

All 13 respondents that had tranched their reserves had included an investment tranche.

Fig 33. Central bank allocations to different tranches (% of central bank assets), full year 2015



Sample: 13. Sample comprises of central banks only. Data is not weighted by AUM.

Fig 34. Central bank allocations by tranche (% of central bank assets), full year 2015

Sample: 15. [1]IMF = International Monetary Fund, MBS = Mortgage-backed securities, Multi-lats = Multi-laterals, Supra-nats = Supra-nationals, CBs = central banks. Sample comprises of central banks only. Data is not weighted by AUM.

Uncertainty over size and asset allocation within the investment tranche

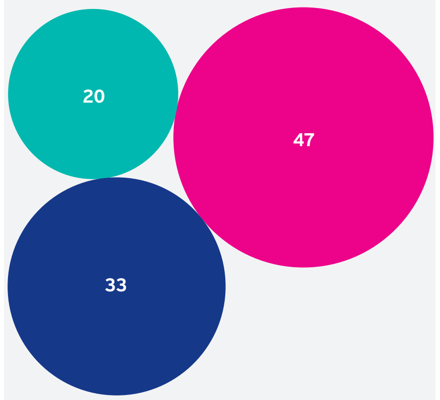
While every central bank in our study had an investment tranche, the creation of these tranches is a relatively new phenomenon. Many interviewees were in the process of designing or testing their allocations and there was no clear consensus on the target size for the investment tranche or the underlying asset allocation. Furthermore, there was also a lack of clarity on how these allocations related to risk-adjusted returns and volatility. Many respondents emphasised that this was an experimental stage. Limited allocations to corporate bonds and equities were frequently attributed to inexperience rather than an evidence-based view of strategic asset allocation. Furthermore only 20% of central banks stated that investment guidelines were overly restrictive (see figure 35). This is a positive message for the asset management industry, as it suggests that there will be limited opposition from executive committees to the ongoing development of the investment tranche.

A major opportunity for the industry to support central banks on investment strategy

Central banks account for more than US$ 10 trillion of assets[8]. If the subset of progressive central banks we interviewed are a proxy for the wider central banking community, central bank could become major global investors and key clients for global asset managers. However, a comparison of central banks with other sovereign investors confirms a significant gap in investment capability. Figure 36 shows that central banks rated their 2015 asset allocation performance at 6.7 out of 10 compared to 8.0 for investment and liability sovereigns. Central banks were clear that they need more support in growing their portfolio of risk assets and they are looking to peers, sovereign investors and asset managers for help on their journey. The challenge for the industry is providing support through tailored training, white papers and, where appropriate, consulting, given their unique context, portfolio structure and objectives.

Fig 35. "Investment guidelines are overly restrictive", level of agreement or disagreement from central banks (%), Q1 2016

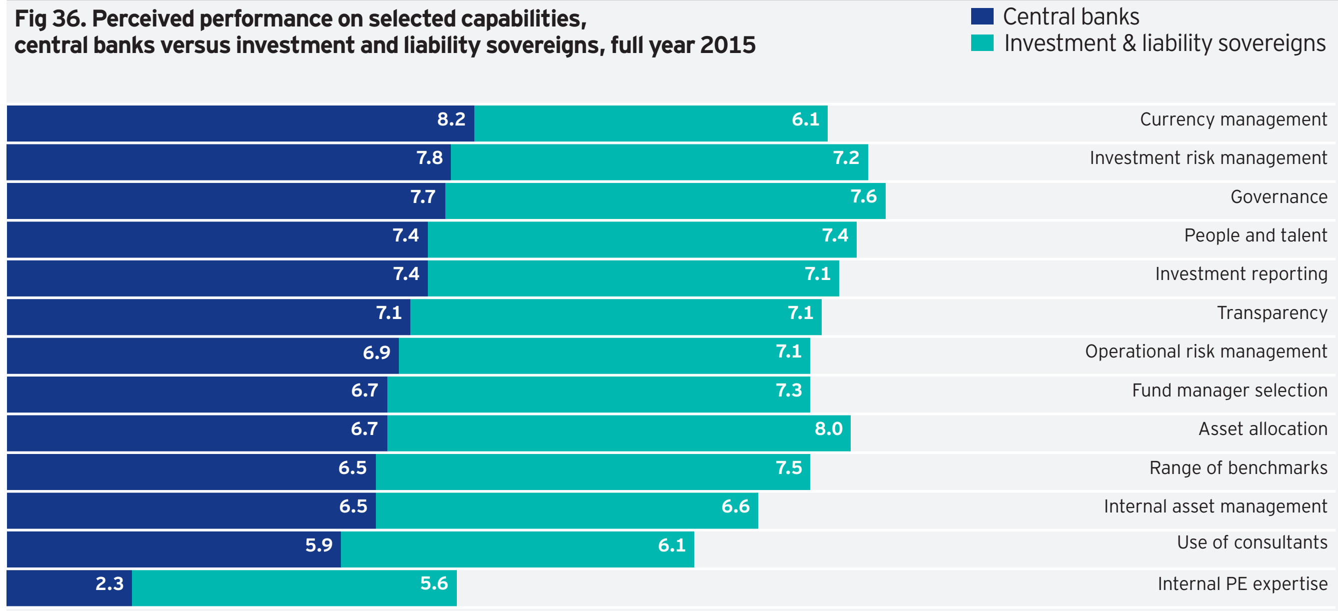
Disagree
Neither agree or disagree
Agree



Sample: 15.

[8]Source: IMF International Financial Statistics - Official Reserve Assets, US Dollars Date as at 31 December 2015.

Fig 36. Perceived performance on selected capabilities, central banks versus investment and liability sovereigns, full year 2015



Sample: 33. Rating on a scale from 1 to 10 where 10 is the highest performance. Capability deficit/ asset is defined as capability performance subtract capability importance.

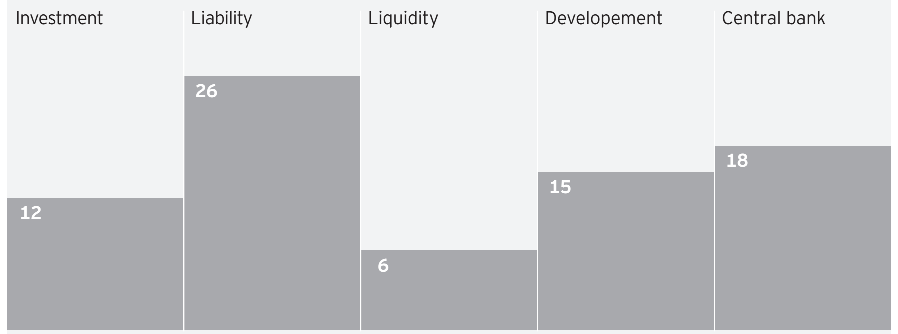
A

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

- A focus on the key decision makers within sovereign investors conducting interviews using experienced consultants and offering market insights rather than financial incentives
- In-depth (typically one 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 strategy team with relevant consulting experience in the global asset management sector

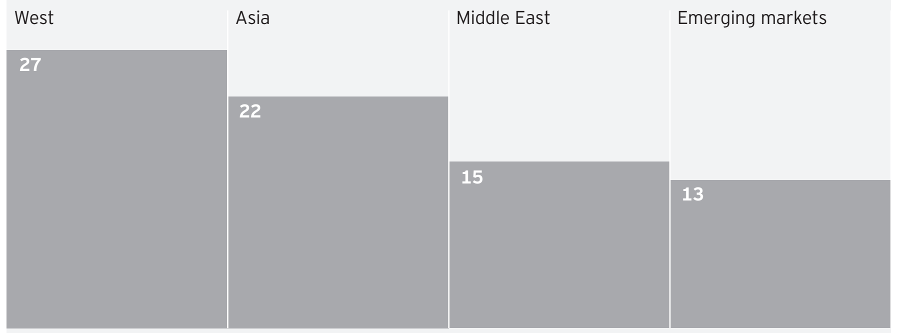
In 2016 we conducted interviews with 77 different sovereign investors and central banks, compared to 59 in 2015. This year we have created a separate central bank segment. The breakdown of the 2016 interview sample split by three core segmentation parameters (sovereign investor profile, region and size of assets under management) is displayed in figures 37 to 39.

Fig 37. Sample by sovereign investor profile



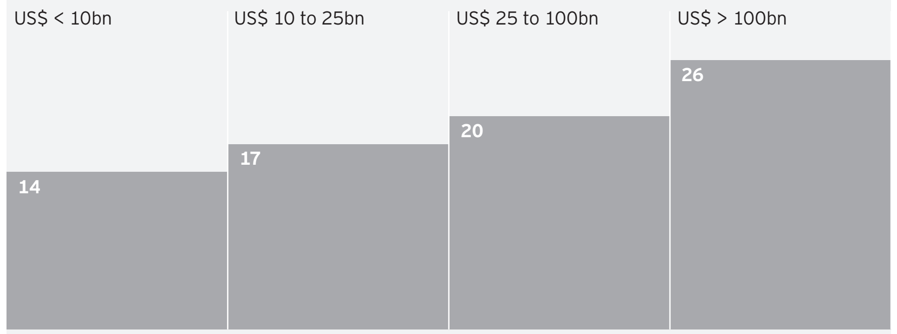
Sample: 77

Fig 38. Sample by region



Sample: 77

Fig 39. Sample by size of assets under management



Sample: 77

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NMG's evidence-based insight programmes carry out interviews with industry-leading experts, top clients and intermediaries as a basis to analyse industry trends, competitive positioning and capability. Established programmes exist in asset and wealth management, life insurance and reinsurance across North America, the UK and Europe, Asia Pacific, South Africa and the Middle East.

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